

GB

ST



Chain Hoists

Operating and Maintenance Instructions

STAHL

R. STAHL chain hoists, models ST10, ST20, ST30, ST32 and ST50, can be supplied with various versions of electrical equipment:

a) Direct control:

The motor of the chain hoist is switched on and off directly, i.e. without the use of contactors. Mains voltage and mains current are present in the control pendant. Due to the limited ampacity of the control pendants, direct control is only available up to 1.6 kW motor output at 400 V, 3 ph, 50 Hz. Direct control is not permissible in various countries (e.g. Canada, U.S.A.) due to legal stipulations and standards.

b) Contactor control:

The motor of the chain hoist is switched by means of a contactor-transformer combination.

A safety extra-low voltage is present in the control pendant.

Contactor control is available for all motor sizes and outputs and is accepted world-wide. The control voltage generated by the transformer is selected corresponding to customer requirements and national standards. 48 V or 230 V control voltage is generally used in Europe, 120 V in North America.

c) Version without control:

STAHL chain hoists are available without control. The switchgear (e.g. contactors and transformer) are then not supplied. The rectifier for activating the brake remains part of the supply.

Safety note: if the hoist is supplied without control, it is recommended that the customer install a phase monitoring relay. If the control is not installed in the terminal box on the chain hoist, but in a control cabinet for example, a phase monitoring relay is obligatory.

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Symbols

In these operating instructions, the following symbols indicate particularly important information on risks and safety in operation.

Safety at work



This symbol marks all information on safety at work where risks to life and limb are entailed.

Warning of electrical voltage



Covers such as hoods and caps which are marked with this symbol may only be opened by "skilled or suitably instructed personnel".

Warning of suspended load



It is forbidden for persons to stand under suspended loads. This entails risks to life and limb!

Safety in operation



Information marked with this symbol must be observed to avoid damage to the chain hoist or the goods transported.

References



See page ..., see sketch, see table

Guarantee

The guarantee expires if these operating instructions are not observed for installation, operation, inspection and maintenance.

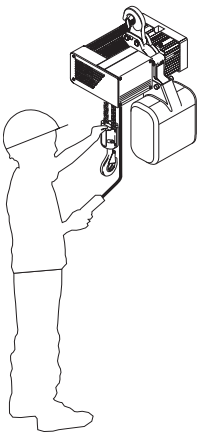
- Use the chain hoist solely for lifting freely movable loads.
- When it is used in machines, the applicable regulations must be observed.
- Runways, suspensions and end stops must be of suitable dimensions.
- Load chain hoist only up to the permissible safe working load, following the data on the rating plate. (Caution: danger of load falling)

The following are not permitted for example:

- Alterations and modifications to the chain hoist
- Exceeding the permissible safe working load
- Transporting persons
- Pulling loads at an angle
- Pulling loose loads which are jammed, dragging or towing loads
- Manipulating the slipping clutch
- Operation with slack chain
- Touching the chain during hoisting
- Operating a damaged hoist
- Operating the hoist with the chain twisted
- Activating the emergency limit switch in normal operation
- Approaching the top and bottom hook position (slipping clutch) during normal operation
- Operating the chain hoist without a phase monitoring relay if the control provided by the customer is not installed in the terminal box on the chain hoist, but for example in a stationary control cabinet.



Safety-conscious operation



- Read and follow these instructions.
- Observe statutory safety and accident prevention regulations.
- Do not remove information plates from the hoist. Replace illegible or damaged plates.
- It is forbidden for persons to stand under suspended loads. This entails risks to life and limb!
- **Do not** insert your hand between edges which may pinch or cut. ↑ sketch
- If one phase of the supply voltage fails, the load drops slowly during lifting. Stop the hoist by releasing the control switch!
- An emergency stop is brought about by activating the emergency stop button.

Organisational safety precautions



- Only direct persons to operate the hoist if they have been trained or instructed in its use.
- Installation, commissioning, maintenance and repairs may only be carried out by qualified persons* ↑ 6.
- Use only original spare parts.
- Observe the intervals specified for periodic tests.
- Have the chain hoist tested regularly by a qualified person* ↑ 6 in accordance with the manufacturer's instructions and statutory regulations.
- The test results must be recorded and kept in the test logbook.
- All tests must be initiated by the operator.
- If the control is not installed in the terminal box on the chain hoist, but for example in a stationary control cabinet, the installation of a phase monitoring relay is obligatory.

Electrical voltage



The chain hoist functions with dangerous electrical voltages.

- Disconnect the chain hoist before opening covers marked with this symbol.
- The chain hoist may only be opened by qualified persons* or personnel which has been instructed.

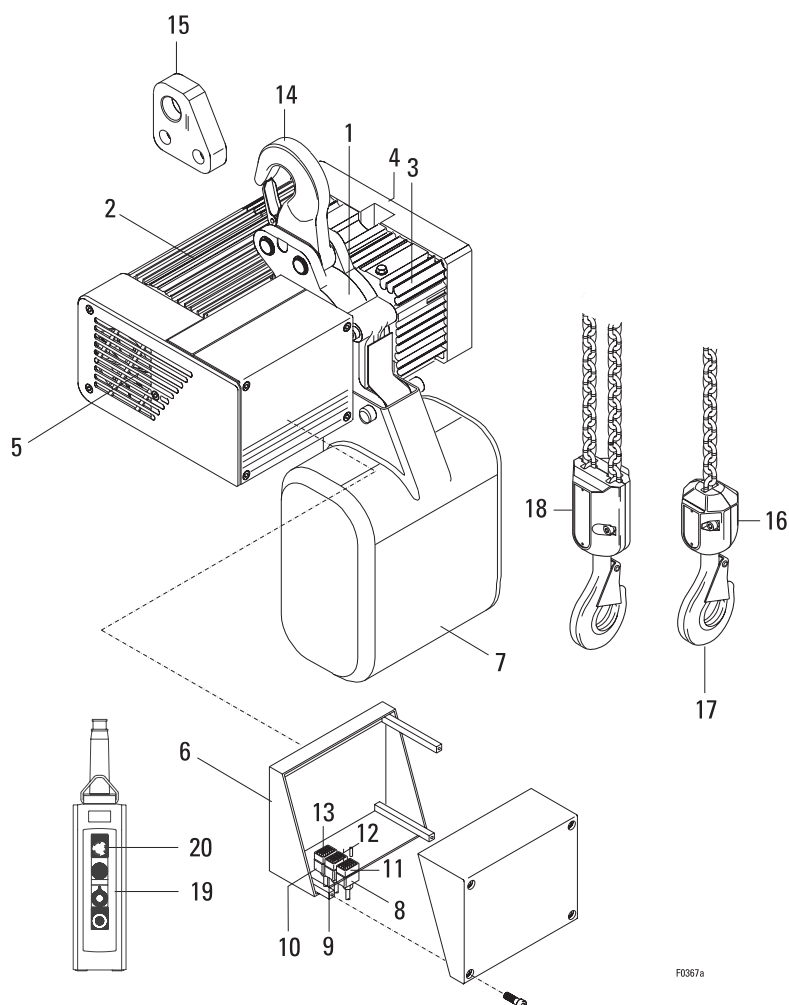
* A qualified person has the necessary theoretical and practical knowledge required for the maintenance of series hoists and crane installations. The extent of the knowledge is governed by these operating instructions and other statutory or technical stipulations. A qualified person must have state of the art knowledge in order to be able reliably to assess the availability of the installation.

Duties of crane operator



When working with chain hoists, the following must be observed:

- Every day before starting work, check brakes, load suspension devices and limit switches and inspect the installation for any visible defects.
- No-one must stand within the danger area of the moving load.
- The crane operator must be able to see the whole of the working area. If this is not the case, an assistant must guide the operator.
- Loads must be attached safely and correctly, do not leave suspended loads unattended. Control and emergency stop devices must be within easy reach.
- **Do not** insert your hand between edges which may pinch or cut.
- If the chain should become slack, tauten it at slow speed before lifting.
- The slipping clutch is a safety device.
- It must not be activated during normal operation.
- Approach the final positions for lifting, lowering and travelling in normal operation only if an operational limit switch is fitted.
- As far as possible, avoid inching operation (briefly switching on the motor to achieve small movements.) This could damage switchgear and motors.
- Do not move in the opposite direction until the hoist has come to a stop.



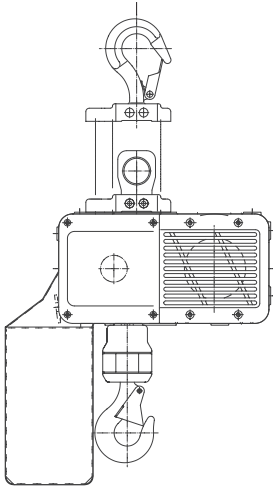
- 1 Chain drive
- 2 Motor
- 3 Gear
- 4 Slipping clutch
- 5 Brake
- 6 Panel box
- 7 Chain box
- 8 Plug for control pendant
- 9 Plug for travel drive
- 10 Plug for mains connection
- 11 Socket for control pendant
- 12 Socket for travel drive
- 13 Socket for mains connection
- 14 Suspension hook
- 15 Suspension eye
- 16 Bottom hook block, single fall
- 17 Load hook
- 18 Bottom hook block, 2-fall
- 19 Control pendant
- 20 Emergency off

Some illustrations include options

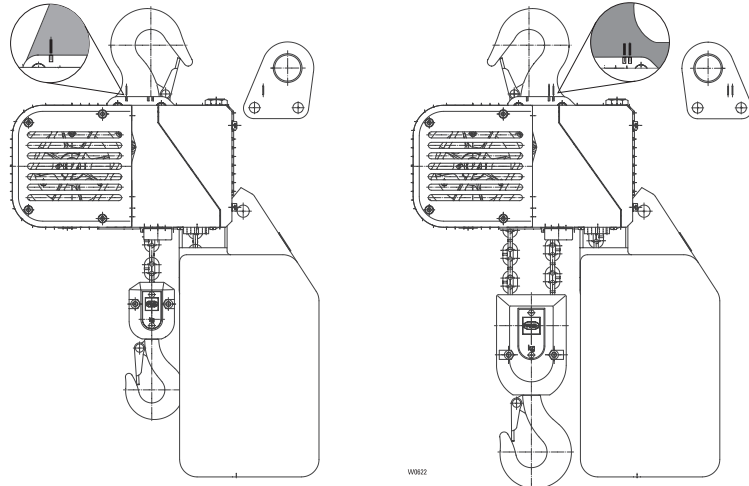
Installing stationary chain hoist

Note installation position of suspension eye or suspension hook ↑ sketch!
(Tightening torque ST05 ↑ 12)

ST05



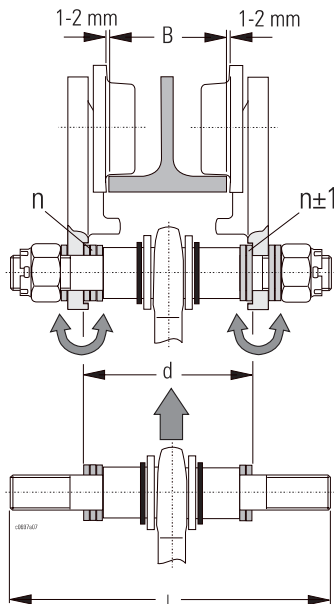
ST10 - 50



Installing trolley

Adjusting trolley to runway flange

1. Adjust play of wheel flanges, ↑ sketch and table
2. Tighten nut with specified torque ↑ 12
3. Fit screw retentions.



US-G 10			KE-T 22		
B [mm]	L [mm]	d [mm]	B [mm]	L [mm]	d [mm]
42 - 58	158	B + 27*	50 - 91	140	B + 13*
66 - 110	206		98 - 143	190	
113 - 150	253		149	240	
155 - 180	303				

KFN 10 / KFK 10			KFN 20 / KFK 20.30		
B [mm]	L [mm]	d [mm]	B [mm]	L [mm]	d [mm]
58 - 110	210	B + 27*	66 - 110	244	B + 35*
113 - 154	252		113 - 154	292	
155 - 193	293		155 - 193	334	
200 - 240	340		200 - 240	380	
260 - 300	400		260 - 300	440	
400	506		400	538	

UE -P 40			KFU / KFK 50		
B [mm]	L [mm]	d [mm]	B [mm]	L [mm]	d [mm]
66 - 110	277	B+58*	82 - 110	304	B+61*
113 - 150	325		115 - 154	344	
155 - 190	367		155 - 190	386	
200 - 240	413		200 - 240	431	
260 - 300	473		260 - 300	492	
			400	608	

Use only original spare parts for modifying the flange width.

* For I-beam: -2 mm

Installing trolley on chain hoist

1. US-G 10 with ST05

Always suspend chain hoist from centre of trolley. ↑ sketch ↑ 8

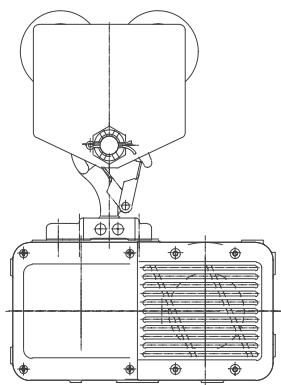
US-G 10 with ST10

Fit suspension piece with suspension bolt (a) to chain hoist. Note installation position of suspension piece. Lock bolt (a) with washer (b) and cheese-head screw (c). ↑ sketch

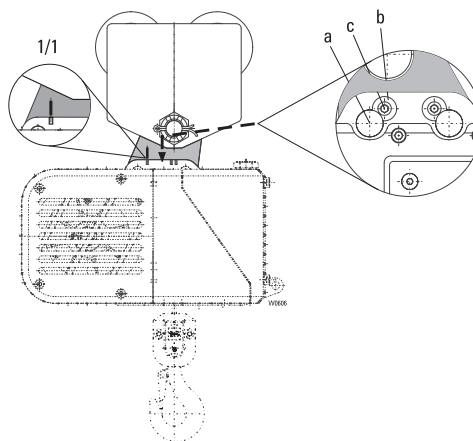
KFN 10/20 with ST10/ST20

Fit suspension piece with suspension bolt (a) to chain hoist. Note installation position of suspension piece. Lock bolt (a) with washer (b) and cheese-head screw (c). ↑ sketch

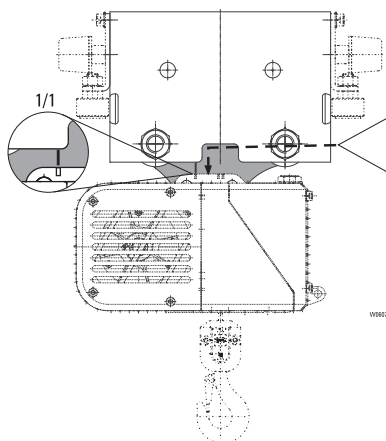
US-G10 with ST05 1/1 ... 2/1



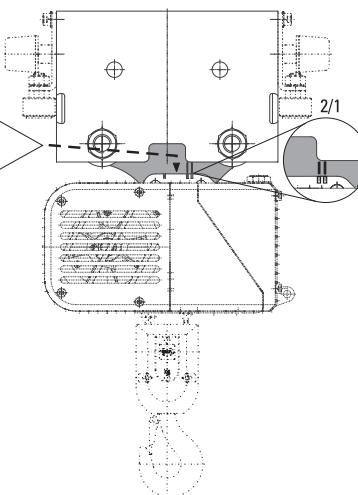
US-G10 with ST10 1/1



KFN10/20 1/1



KFN10/20 2/1



2. Slide trolley onto runway or push on from below after swivelling the side cheeks up.

3. Check that screws and nuts are tightened with specified torque ↑ 12.

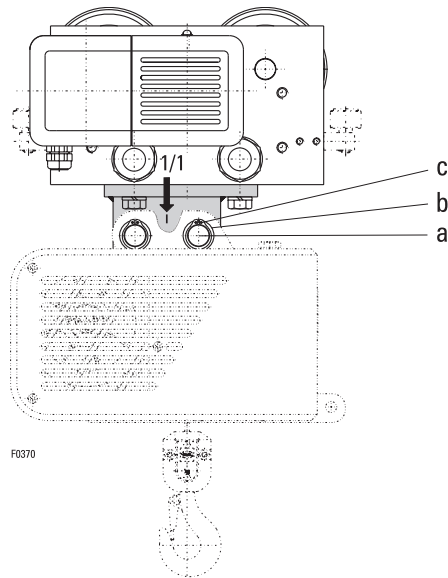
4. The screw retentions must be fitted!

Installing trolley on chain hoist

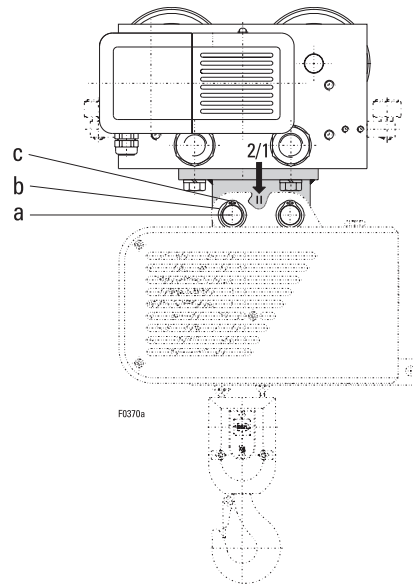
UE-P40 / KFU 50

Fit suspension piece with suspension bolt (a) to chain hoist. Observe installation position of suspension piece for 1/1 and 2/1 reeving! Lock bolt (a) with washer (b) and circlip (c). ↑ sketch

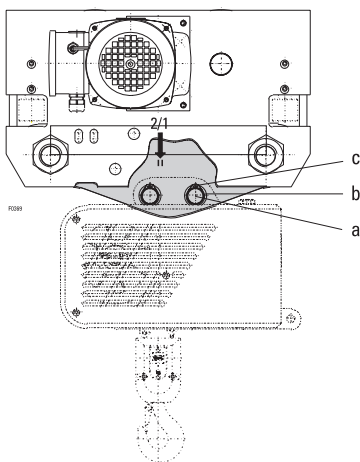
UE-P40 1/1



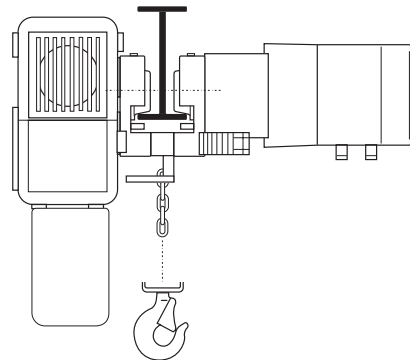
UE-P 40 2/1



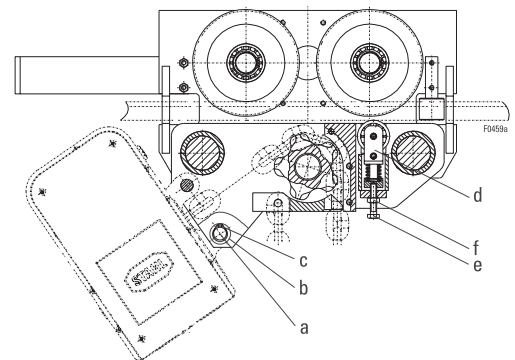
KFU 50 2/1



KE-T 22



KFK



Wheel Ø	Max. S.W.L.
50	500
63	1000
80	2000
100	3200
125	5000

1. Slide trolley onto runway or push on from below after swivelling the side cheeks up.
2. Check that screws and nuts are tightened with specified torque ↑ 12.
3. The screw retentions must be fitted!

KFK

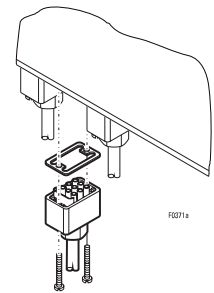
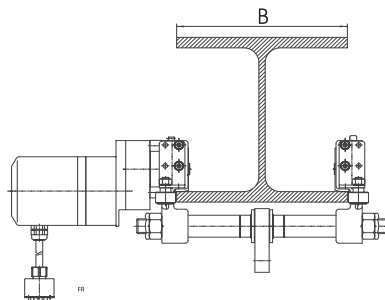
4. Press pressure roller (d) against runway by means of screw (e) until all wheels are in contact with the running surface of the runway. Lock screw (e) with nut (f).

Caution: The lower flange must not have any fishplates or unevenness!

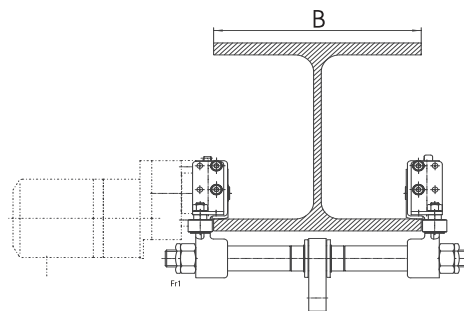
Installation

Connecting electric trolley

Plug connection cable into chain hoist and secure.



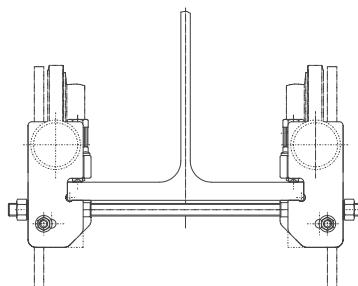
Fitting guide rollers



KFN / KFU 10/ 20: $B \geq 260$
 UE-P 40: $B \geq 260$
 KFU / KFK: $B \geq 260$

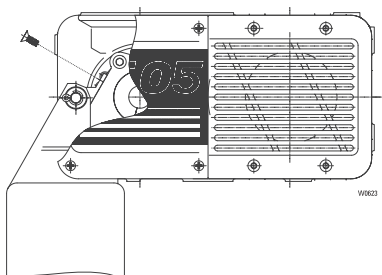
Caution: If trolley travels frequently or is used on a crane bridge, always fit guide rollers!

Runway end stop

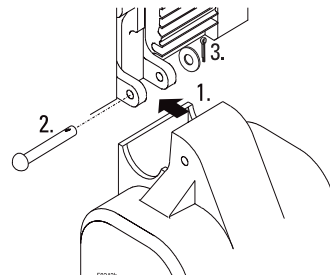


Fitting and securing chain box

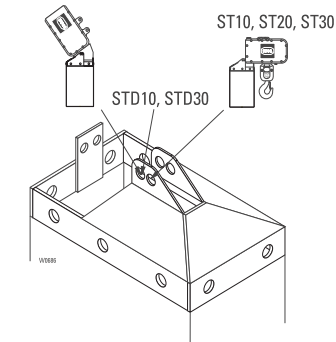
ST 05



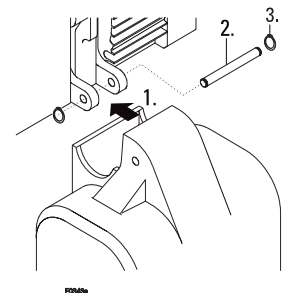
ST 10/ 20/ 30



ST10, ST20, ST30

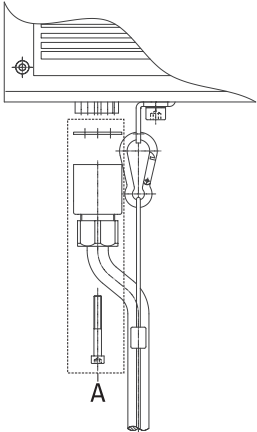


ST 32/ 50



Lubricate chain with the chain lubricant supplied!
Chain box must be able to move freely.max.
Max. length of chain ↑ sticker on chain box.

Installing control pendant



Note

The control pendant must be suspended from the strain relief wire and not from the cable!

Ensure sufficient clearance of the cable to the chain by turning the plug if necessary ($\pm 360^\circ$)! The cable must **not** touch the chain.

1. Plug in and secure cable.
2. Fit strain relief wire.

If the customer connects the control cable by means of a plug kit, the circuit diagram must be followed (parts marked "A" are supplied loose).

Prepare ends of cable acc. to sketch "Mains connection, plug-type".

For connecting control pendant without plug, see circuit diagram supplied. (Terminal strip X1, terminals 1...9. Connection is via a cable gland.)

Checking screw connections

	[Nm]
M5	6(5)*1
M6	10
M8	24(10)*1
M10	48
M12	83
M16	120
M24	320
M30	640
M36	1100
M5*2	1.0
*3	1.5

- Chain guide attachment
- Distance bolt on trolley
- Trolley suspension

*1 Self-locking/self-tapping screws

*2 Plug connection

*3 Cable gland (in plastic)

Mains connection

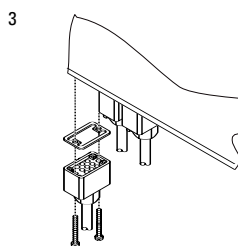
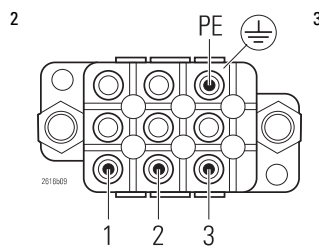
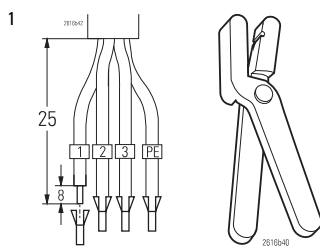


Safety note

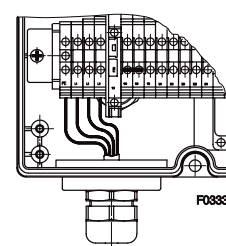
The chain hoist may only be connected by a skilled electrician.

The mains cable must meet the specifications given in the technical data [↑] 25.

Mains connection, plug-type



Mains connection via cable gland



Dismantling

Dismantling chain hoist

1. Remove load from hoist
2. Disconnect chain hoist from mains at main isolator
3. Disconnect electrical connections
4. Remove chain hoist
5. Remove trolley, if any
6. Clean chain hoist and oil lightly
7. Seal air vent screw in gear.



The chain hoist may only be commissioned by a qualified person.
When recommissioning after a period in storage or stoppage, the following test steps must be repeated.

Checklist for commissioning

Test steps

- Remove sticker from air vent screw in gear
- Check suspension hook or suspension (visual inspection)
- Check tightening torque of screw connections on hooks
- Check load chain
 - clean and oiled
 - not twisted
- Check chain box
 - attachment
- Attach chain stopper to chain with hook at floor level and check chain anchorage
- Check chain stopper and chain anchorage, see chap. 7.
- Measure and record hook aperture
- Check electrical connection
- Check runway
 - clean, free of grease and paint, even
 - end stops present
- Check tightening torque of screw connections of suspension piece or trolley suspension.
- Open step of travel drive clean and greased.



During the following test steps, you must be able to activate the emergency off button at all times.

- Check function of chain hoist
 - Direction of movement must correspond to the symbols on the control pendant. If not, reverse two phases of the mains connection. (Do not open manufacturer's control.)
- Check function of slipping clutch ↑ 16, the clutch torque may be altered after a long stoppage.
- Check function of brake ↑ 17
- Check function of travel drive
 - Direction of motion must correspond to the symbols on the control pendant.
 - Check function of brake ↑ 18.
- Confirm correct commissioning in test logbook.

If required by national regulations, have chain hoist tested before commissioning by a safety organisation (e.g. TÜV).



FEM classification

Maintenance work on the chain hoist may only be carried out by qualified persons. Maintenance work beyond that described in these operating instructions may only be carried out by the manufacturer or trained after-sales service personnel.

The maintenance intervals given in the following table apply for a chain hoist operated in mechanism group 1 Bm to FEM 9.511.

If the hoist is operated in a different mechanism group, the maintenance work specified must be carried out more frequently corresponding to the correction factors.

1Bm	1Am	2m	4m
1	2	4	8

Mechanism group (operation)
Correction factor

Example: Check hook attachment

1 Bm 1 x per quarter

2 m 4 x per quarter

General overhaul after expiry of service life

The general overhaul is intended to ascertain any invisible wear (e.g. gear). In compliance with FEM 9.755, the service life expired must be recorded in order to calculate that remaining.

Depending on the gear classification according to FEM 9.511, which is given in the hoist data sheet, the theoretical full load operating hours (D) stated below apply, see table.

FEM 9.511	1Bm	1Am	2m	3m
D (h)	400	800	1600	3200

If the full load lifetime has expired, the chain hoist must be overhauled by the manufacturer.

N.B.: does not apply to wearing parts

If the chain hoist is not used as a series hoist (system, deadweight etc.), the full load operating hours may be reduced. Please contact the manufacturer.

Maintenance intervals

Every day

- Check correct functioning of brake(s).
- Check load chain
 - clean, lubricated and not twisted

Every month

- Check suspension of control pendant (cable and strain relief wire must be fitted).
- Check load chain for wear ↑ 15

Every three months

- Check function of slipping clutch
- Check hook for wear ↑ 15
- Check hook attachment
- Grease output pinion and open step of gearing on electric trolley
- Check attachment of rigid suspension or trolley suspension

Every year

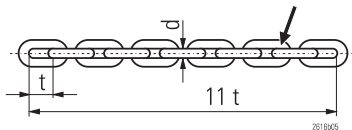
- Check screw connections (tightening torques, corrosion)
- Adjust brake *
- Adjust slipping clutch *
- Calculate service life expired. Read operating hours counter if any.
- Check chain stopper (visual inspection)

For a description of the maintenance work see the following pages or the section on commissioning.

* These jobs may only be carried out by a qualified person.

Check and lubricate load chain

- DIN 685 Part 5



N.B.:

Lubricate the load chain above all at the joints.

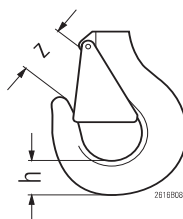
- Replace load chain, ↑ 20
- if the load chain does not meet the required dimensions at any point
↑ table

	ST05	ST10	ST20	ST30	ST32	ST50
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
dxt	4x12	5x16	7x21.9	9x27	9x27	11x31
d min	3.6	4.5	6.3	8.1	8.1	10.2
t max	12.5	16.8	23	28.3	28.3	32.5
11 t max	134.7	179.5	245.7	302.9	302.9	347.8

- if distortion, breaks, cracks or corrosion impair the lifting capacity
- if the joints of the chain show wear
- Check chain guide and idler sheave on the bottom hook block and replace if necessary ↑ 20
- Check chain anchorage, if necessary contact our after-sales service

Checking hook for wear

- DIN 15405 Part 1



If load hook or suspension hook no longer meet the required dimensions or if distortion, breaks, cracks or corrosion impair the lifting capacity:

- Replace bottom hook block or suspension hook, ↑ 21
- Hook safety latch must close automatically

		ST05		ST10		ST20		ST30		ST32		ST50	
		1/1	2/1	1/1	2/1	1/1	2/1	1/1	2/1	1/1	2/1	1/1	2/1
		[mm]		[mm]		[mm]		[mm]		[mm]		[mm]	
*1	h	19	24	19	24	24	31	31	37	31	40	37	48
	h min.	18	22.8	18	22.8	22.8	29.5	29.5	35.2	29.5	38	35.2	45.6
	z	22	29.5	22	29.5	29.5	30	30	33	30	35	33	41
	z max.	24.2	32.5	24.2	32.5	32.5	33	33	36.3	33	38.5	36.5	45.1
*2	h	24	24	24	24	37	37	37	37	39.5	39.5	39.5	39.5
	h min.	22.8	22.8	22.8	22.8	35.1	35.1	35.1	35.1	37.5	37.5	37.5	37.5
	z	29.5	29.5	31.5	31.5	41	41	41	41	42	42	42	42
	z max.	32.5	32.5	34.6	34.6	45.1	45.1	45.1	45.1	46.2	46.2	46.2	46.2

*1 Load hook
*2 Suspension hook

Checking function of slipping clutch (without load)



1. At creep speed, lift bottom hook block without load to top hook position.
2. Let clutch slip in top hook position for a maximum of 3 seconds. The chain must not move, the motor must rotate.

Slipping clutch and brake(s) may only be adjusted by a qualified person.

When starting to adjust the slipping clutch, the load must lie on the ground!

The motor must be at a standstill during all work on the slipping clutch! There is a risk of accidents, we recommend contacting our after-sales service.

Adjusting slipping clutch with test load

It is forbidden to hoist test load to top hook position and activate the slipping clutch. The test load may be lifted by a maximum of 300 mm.

- In bottom hook position attach 1.25 x rated load (test load).
- Remove cover (1).
- A small amount of gear oil may escape when the cover is removed.
- Bend back locking plate (2) (ST05).
- Release slipping clutch setting with clamping screw (2a) (ST32/ST50)
- Adjust slipping clutch by turning the adjusting screw or nut (3).
- Turning to the right → the reaction force increases
- Turning to the left → the reaction force decreases

If the reaction force is too high, the adjusting screw or nut must be loosened by one turn.

- Adjust slipping clutch so that the above load (test load) is just lifted. The rated load must be held firmly in every position.
- Bend locking plate (2) up over 2 surfaces of the adjusting screw (ST05).
- Lock slipping clutch setting with clamping screw (2a) (ST32/ST50)

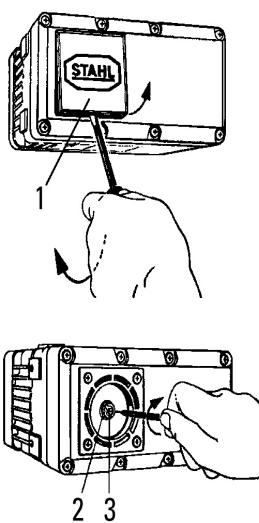
- Replace cover (1) and gasket.

ST 05: if no further adjustment is possible, replace clutch

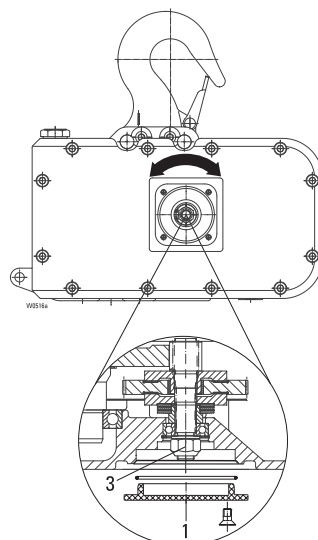
ST 10 - ST 30: wear-free lining

ST 32 - ST 50: if stamped dimension x-2 mm is reached, replace clutch

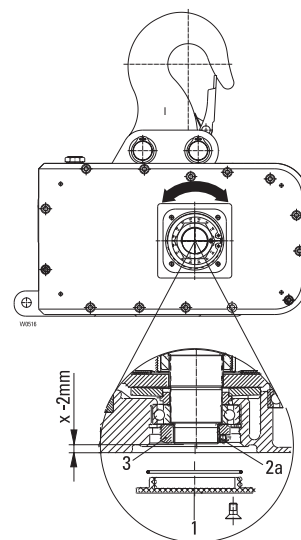
ST05



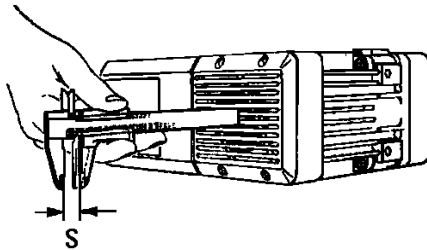
ST10/ 20/ 30



ST32/ 50



Checking hoist brake

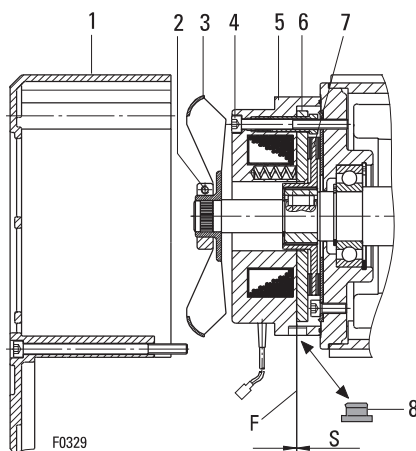


1. Attach rated load
2. Activate brake during lifting and lowering.
Slowing-down paths of up to 10 cm are permissible.

ST05

- Measure distance between fan cover and motor shaft
1. with motor standing still
 2. with motor running

The brake displacement is the difference between these two values. If value (S) is greater than 1.5 mm, the brake must be adjusted. Nominal dimension: 1 ± 0.25 mm.

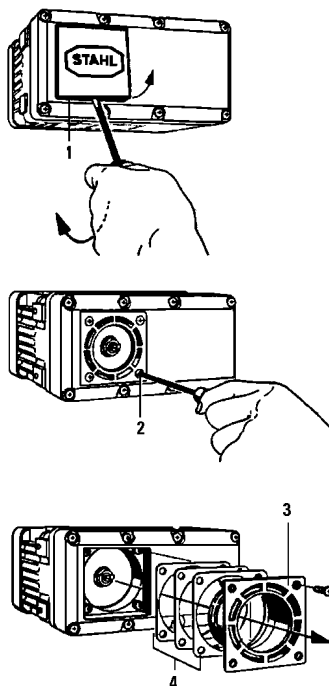


ST10 - ST50

1. Remove fan cover (1)
2. Remove plug (8)
3. Measure air gap (S) with feeler gauge (F). See table for max. permissible air gap (S). If the max. permissible air gap (S) has been reached, the brake disc (brake rotor) must be replaced

Type	S max. [mm]
ST10	1
ST20	1
ST30	1
ST32	1
ST50	1

Adjusting brake



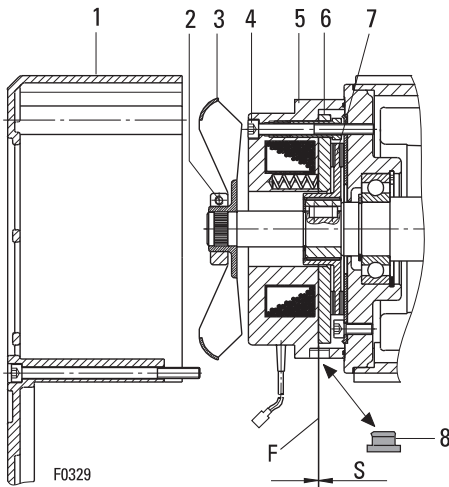
ST05

- Set load down.
Calculate number of shims to be removed. The brake displacement is altered by 0.5 mm per shim.
Example:
Brake displacement measured: 0.8 mm
Remove 2 shims: -1.0 mm
New brake displacement: 0.8 mm
- Lever off cover (1) with a screwdriver.
- Remove 4 screws (2).
- Pull off brake flange (3).
- Remove number of shims (4) calculated.
- Push on brake flange.
- Reassemble in reverse order.
- Check brake displacement.

Replace brake/slipping clutch unit if all shims have been removed.
Then reset brake displacement.

Caution: After working on brake, always perform a functional test with rated load.

Replacing brake disc (brake rotor)



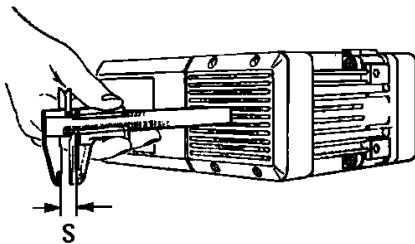
ST10 - ST50

1. Remove fan cover (1)
2. Release clamp (2) of fanwheel(3)
3. Remove fanwheel (3)
4. Disconnect brake
5. Remove fixing screws (4)
6. Remove magnet piece (5) complete with armature disc (6)
7. Remove brake disc (brake rotor) (7)

Reassemble in reverse order. Ensure that the inspection hole for measuring the air gap is at the bottom.

Caution: After working on brake, always perform a functional test with rated load.

Checking trolley brake



FU-A

Measure clearance between fan cover and motor shaft:

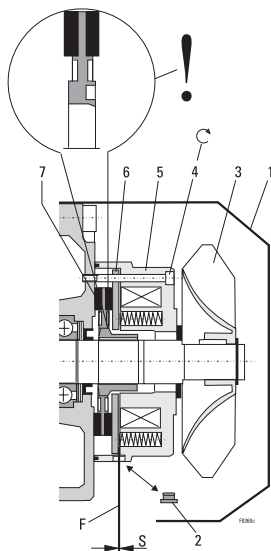
1. with motor at a standstill
2. with motor running

The difference between the two values is the brake displacement. If the value is greater than 2.5 mm, the brake housing with brake lining must be replaced.

SF

1. Remove fan cover (1)
2. Remove plug (2)
3. Measure air gap with feeler gauge (F). See table for max. permissible air gap. If the max. permissible air gap has been reached, the brake disc (brake rotor) must be replaced.

Type	S max. [mm]
SF ... 123	0.2...2.0
SF ... 133	0.2...2.0

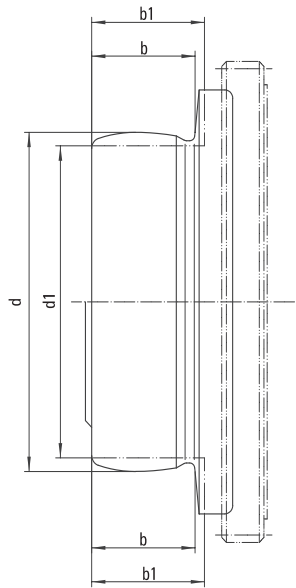


Replacing brake disc (brake rotor)

1. Remove fan cover (1)
2. Remove fanwheel (3), remove feather key
3. Disconnect brake
4. Remove fixing screws (4)
5. Remove magnet piece complete with armature disc (6)
6. Remove brake disc (brake rotor)
7. Take note of installation position of new brake rotor (7), ↑ sketch.

Replace in reverse order. Ensure that the inspection hole for measuring the air gap is at the bottom.

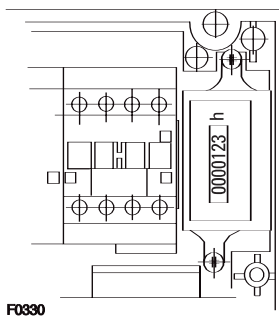
Wheels, wheel drive and runway



- Visual inspection of wheels for wear. Replace if original diameter is reduced by max. 5%.
- Visual inspection of runway beam for wear.
The running characteristics can be improved by a guide system. This avoids wear and the flange play can be reduced.
- Inspection of flanges for wear.
A high degree of wear on the flanges indicates that the trolley is canting or running heavily on one side. The cause must be ascertained and eliminated.

d [mm]	d1 [mm]	b [mm]	b1 [mm]
50	≤48	15.5	≥17
63	≤60	17	≥18.5
80	≤76	27.5	≥29.5
100	≤95	33	≥35
125	≤119	38	≥40

Limit value for wear → replace



Operating hours counter (option)

The operating hours counter fitted measures the hoisting time only, thus the value measured must be doubled.

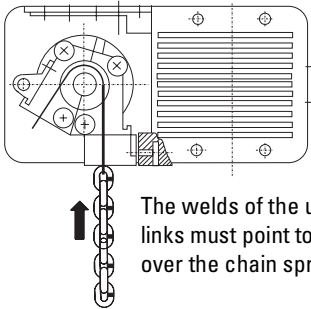
Example: 123 h measured; 246 h to be recorded

Chain drive

Fitting chain

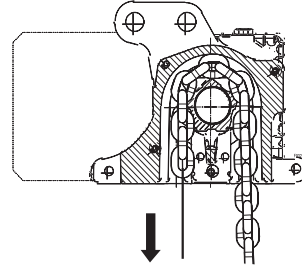
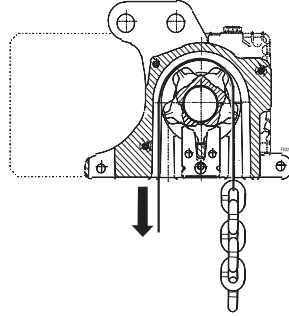
Use only original R. STAHL chains. Max. chain length ↑ sticker on chain box.

ST05



The welds of the upright chain links must point to the outside over the chain sprocket.

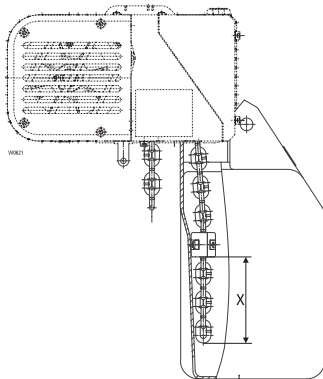
ST10 - ST50



1. Attach a fitting aid, e.g. cable tie, to last link.
2. Let chain run into guide at slow speed.

Caution: risk of injury!

Replacing chain stopper

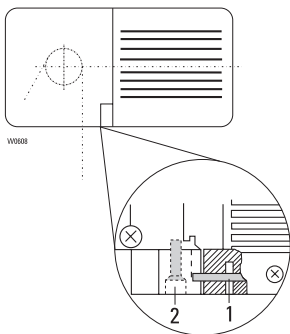


Projecting chain length X

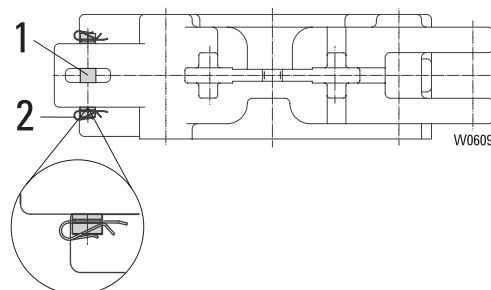
ST05	X = 130 mm
ST10-ST30	X = 100 mm
ST32-ST50	X = 150 mm

Checking and fitting chain anchorage

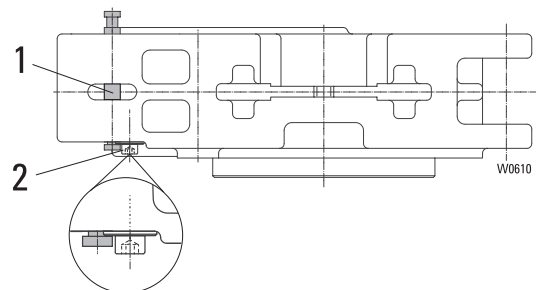
ST05



ST10 - ST30



ST32/50



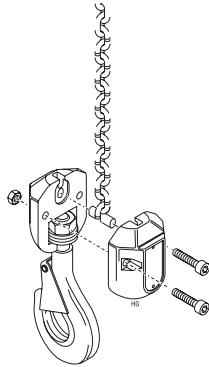
Secure chain suspension bolt (1) with lock (2).

Replace chain suspension bolt if any grooves or distortion are visible.

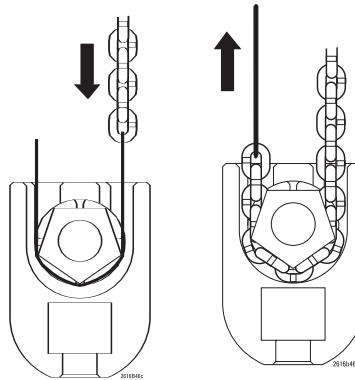
Caution: Do not turn over a chain suspension bolt that has been in use!

Repairs

Replacing single-fall bottom hook block

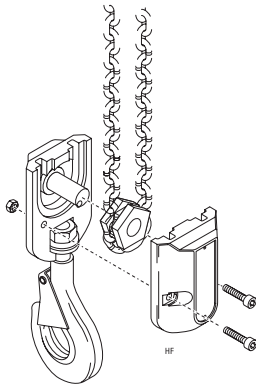


Replacing 2-fall bottom hook block

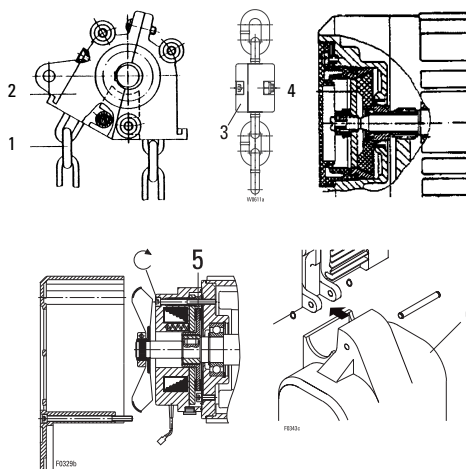


1. Unscrew chain anchorage.
2. Run chain into new bottom hook block.
3. Refit chain anchorage.
4. Grease moving parts.
5. Run through hook path, check that chain is not twisted.

Replacing idler sheave



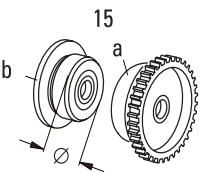
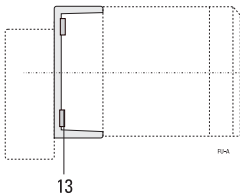
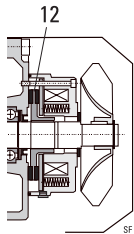
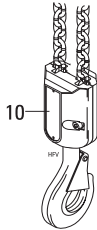
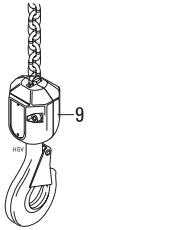
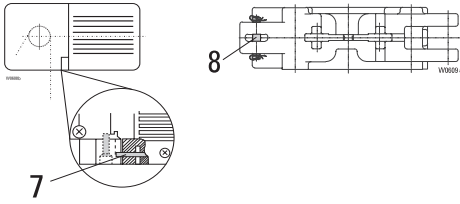
Wearing parts



	Designation	ST05	ST10	ST20	ST30	ST32	ST50
1*1	Chain	331 005 9	331 006 9	331 001 9	331 004 9	331 004 9	331 013 9
2	Chain drive	nBh	nBh	nBh	nBh	nBh	nBh
		32 320 96 30 0	14 320 00 41 0	16 320 00 41 0	13 320 00 41 0	17 320 00 41 0	18 320 00 41 0
		kBh	kBh	kBh	kBh	kBh	kBh
		32 320 96 30 0	14 320 01 41 0	16 320 01 41 0	13 320 01 41 0	18 320 02 41 0	18 320 01 41 0
3	Chain stopper	32 320 01 27 0	14 320 01 27 0	16 320 01 27 0	17 320 00 27 0	17 320 00 27 0	18 320 02 27 0
4	Brake/slipping clutch	32 320 90 30 0	-	-	-	-	-
5	Brake disc	-	E21/E22 567 306 0	E31/E32 567 305 0	E31/E32 567 305 0	E40/E42 567 192 0	E40/42 567 192 0
6	Chain box	32 320 00 26 0	12m	8m	6m	6m	8m
		32 320 03 26 0*2	35 322 04 32 0	35 32204 32 0	35 320 04 32 0	17 320 00 32 0	18 320 00 26 0
			25m	16m	10m	20 m	12m
			33 320 26 26 0	33 320 26 26 0	33 32026 26 0	18 322 00 32 0	18 322 00 32 0

*1 Please state length
 *2 For chain hoist with KE-T trolley
 nBh = standard headroom
 kBh = short headroom

Wearing parts



	Designation	ST05	ST10	ST20	ST30	ST32	ST50
7	Suspension bolt	32 240 10 92 0	-	-	-	-	-
8	Suspension bolt	-	14 320 00 24 0	16 320 00 24 0	13 320 00 24 0	17 320 00 24 0	18 320 00 24 0
9	Bottom hook block 1/1	32 320 00 59 0*3 32 320 01 59 0*4	14 320 01 59 0	16 320 02 59 0	17 320 00 59 0	17 320 00 59 0	18 320 00 59 0
10	Bottom hook block 2/1	32 32 00 50 0	14 320 01 50 0	16 320 03 50 0	13 320 01 50 0	17 320 01 50 0	18 320 01 50 0

	Designation	SF ... 123	SF ... 133				
12	Brake disc	567 100 0	567 100 0				
	Designation	FU-A 1. ... 00	FU-A 1. ...				
13	Brake housing	51 250 80 37 0	51 250 81 37 0				

	Designation	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	
15	Wheel	a b 01 250 00 41 0	a 02 250 00 40 0 b 02 250 01 41 0	a 03 250 00 40 0 b 03 250 00 41 0	a 04 250 01 40 0 b 04 250 00 41 0	a 05 240 04 40 0 b 05 250 03 41 0	

Replacement and repairs may only be performed by skilled personnel!

*3 125 kg
*4 250 kg

Technical data

Motor data

50 Hz														
Typ	*1	kW	ED %	c/h	In			Ik			cos φ k	Mains fuse		
					230V	400V	500V	230V	400V	500V		230 V	400 V	500 V
					[A]			[A]						
ST 0501-8	2A04	0,2	40	240	2,3	1,3	1,0	5,7	3,3	2,6	0,88	6	6	6
ST 0501-8/2	2/8A04	0,2/0,05	35/15	120/240	2,3/1,9	1,3/1,1	1,0/0,9	5,7/2,1	3,3/1,2	2,6/1,0	0,88/0,83	6	6	6
ST 0501-16	2A04	0,4	40	240	2,3	1,3	1,0	5,7	3,3	2,6	0,88	6	6	6
ST 0501-16/4	2/8A04	0,4/0,1	35/15	120/240	2,3/1,9	1,3/1,1	1,0/0,9	5,7/2,1	3,3/1,2	2,6/1,0	0,88/0,83	6	6	6
ST 0502-8	2A04	0,4	40	240	2,3	1,3	1,0	5,7	3,3	2,6	0,88	6	6	6
ST 0502-8/2	2/8A04	0,4/0,	35/15	120/240	2,3/1,9	1,3/1,1	1,0/0,9	5,7/2,1	3,3/1,2	2,6/1,0	0,88/0,83	6	6	6
ST 0503-6	2A04	0,4	40	240	2,3	1,3	1,0	5,7	3,3	2,6	0,88	6	6	6
ST 0503-6/1	2/8A04	0,4/0	35/15	120/240	2,3/1,9	1,3/1,1	1,0/0,9	5,7/2,1	3,3/1,2	2,6/1,0	0,88/0,83	6	6	6
ST 1005-8	2E21	0,8	60	360	3,4	2,0	1,6	20,0	11,5	9,2	0,79	10	6	6
ST 1005-8/2	2/8E21	0,8/0,2	40/20	120/240	3,7/2,1	2,2/1,2	1,7/1,0	15,8/4	9,1/2,3	7,3/1,8	0,89/0,73	10	6	6
ST 1005-12	2E22	1,2	60	360	5,4	3,1	2,5	28,2	14,3	13,0	0,85	10	6	6
ST 1005-12/3	2/8E22	1,2/0,3	40/20	120/240	7,1/3,8	4,1/2,2	3,3/1,8	20,5/6,8	11,8/3,9	9,4/3,1	0,93/0,77	10	6	6
ST 2006-12	2E31	1,5	60	360	6,3	3,6	2,9	28,9	16,6	13,3	0,82	10	10	6
ST 2006-12/3	2/8E31	1,5/0,37	40/20	120/240	6,8/3,7	3,9/2,1	3,1/1,7	25,6/7,3	14,7/4,2	11,8/3,4	0,92/0,80	10	6	6
ST 2010-8	2E31	1,5	60	360	6,3	3,6	2,9	28,9	16,6	13,3	0,82	10	10	6
ST 2010-8/2	2/8E31	1,5/0,37	40/20	120/240	6,8/3,7	3,9/2,1	3,1/1,7	25,6/7,3	14,7/4,2	11,8/3,4	0,92/0,80	10	6	6
ST 2010-12	2E32	2,3	60	300	9,0	5,7	4,6	55,7	24,5	19,6	0,90	16	10	10
ST 2010-12/3	2/8E32	2,3/0,57	40/20	120/240	9,9/5,2	5,7/3,0	4,6/2,4	42,6/10,6	24,5/6,1	19,6/4,9	0,90/0,79	16	10	10
ST 3016-8	2E32	2,3	60	300	9,0	5,7	4,6	55,7	24,5	19,6	0,90	16	10	10
ST 3016-8	2/8E32	2,3/0,57	40/20	120/240	9,9/5,2	5,7/3,0	4,6/2,4	42,6/10,6	24,5/6,1	19,6/4,9	0,90/0,79	16	10	10
ST 3212-16	2E42	3,8	60	360	15,7	9,0	7,2	66,8	38,4	30,7	0,8	20	16	10
ST 3212-16/4	2/8E42	3,8/0,9	33/17	100/200	16,0/7,0	9,2/4,0	7,4/3,2	55,7/14,3	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
ST 3216-8	2E40	2,4	60	360	9,7	5,7	4,5	55,7	25,0	25,6	0,87	16	16	10
ST 3216-8/2	2/8E40	2,4/0,6	40/20	120/240	10,3/5,4	5,7/3,0	4,6/2,4	43,5/10,8	25,0/6,2	20,0/5,0	0,87/0,74	16	10	10
ST 3216-12	2E42	3,8	60	360	15,7	9,0	7,2	66,8	38,4	30,7	0,80	20	16	10
ST 3216-12/3	2/8E42	3,8/0,9	33/17	100/200	16,0/7,0	9,2/4,0	7,4/3,2	55,7/14,3	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
ST 5025-6	2E42	3,0	70	420	11,1	7,3	5,1	66,8	38,4	30,7	0,80	20	16	10
ST 5025-6/1	2/8E42	3,0/0,76	40/20	120/240	12,7/6,9	7,3/3,8	5,8/3,2	55,7/14,3	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
ST 5025-8	2E42	3,8	60	360	15,7	9,0	7,2	66,8	38,4	30,7	0,80	20	16	10
ST 5025-8/2	2/8 E42	3,8/0,9	33/17	100/200	16,0/7,0	9,2/4,0	7,4/3,2	55,7/14,3	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
FU-A 14	2/8A04	0,05/0,2	20/40	-		0,9/0,9			1,1/2,4		0,8/0,89	-	-	-
SF 14	8/2F12	0,09/0,37	20/40	-		0,8/1,0			1,3/3,3		0,74/0,9	-	-	-

*1 Hoist motor type

Technical data

Motor data

60 Hz														
Typ	*1	kW	ED %	c/h	In			Ik			cos φ k	Mains fuse		
					400V	460V	575V	400V	460V	575V		400 V	460 V	575 V
					[A]			[A]						
ST 0501-8	2A04	0,24	40	240	1,6	1,4	1,1	4,0	3,5	2,8	0,88	6	6	6
ST 0501-8/2	2/8A04	0,24/0,06	35/15	180/360	1,6/1,3	1,4/1,1	1,1/0,9	4,0/1,5	3,5/1,3	2,8/1,0	0,88/0,83	6	6	6
ST 0501-16	2A04	0,48	40	240	1,6	1,4	1,1	4,0	3,5	2,8	0,88	6	6	6
ST 0501-16/4	2/8A04	0,48/0,12	35/15	180/360	1,6/1,3	1,4/1,1	1,1/0,9	4,0/1,5	3,5/1,3	2,8/1,0	0,88/0,83	6	6	6
ST 0502-8	2A04	0,48	40	240	1,6	1,4	1,1	4,0	3,5	2,8	0,88	6	6	6
ST 0502-8/2	2/8A04	0,48/0,12	35/15	180/360	1,6/1,3	1,4/1,1	1,1/0,9	4,0/1,5	3,5/1,3	2,8/1,0	0,88/0,83	6	6	6
ST 0503-6	2A04	0,48	40	240	1,6	1,4	1,1	4,0	3,5	2,8	0,88	6	6	6
ST 0503-6/1	2/8A04	0,48/0,12	35/15	180/360	1,6/1,3	1,4/1,1	1,1/0,9	4,0/1,5	3,5/1,3	2,8/1,0	0,88/0,83	6	6	6
ST 1005-8	2E21	0,96	60	360	2,2	2,0	1,6	13,2	11,5	9,2	0,79	10	6	6
ST 1005-8/2	2/8E21	0,96/0,24	40/20	120/240	2,5/1,4	2,2/1,2	1,7/1,0	10,5/2,6	9,3/2,3	7,3/1,8	0,89/0,73	10	6	6
ST 1005-12	2E22	1,4	60	360	3,6	3,1	2,5	18,6	16,2	13,0	0,85	10	6	6
ST 1005-12/3	2/8E22	1,4/0,36	40/20	120/240	4,7/2,5	4,1/2,2	3,3/1,8	13,6/4,5	11,8/3,9	9,4/3,1	0,93/0,77	10	6	6
ST 2006-12	2E31	1,8	60	360	4,1	3,6	2,9	19,1	16,6	13,3	0,82	10	10	6
ST 2006-12/3	2/8E31	1,8/0,44	40/20	120/240	4,5/2,4	3,9/2,1	3,1/1,7	16,9/4,8	14,7/4,2	11,8/3,4	0,92/0,80	10	6	6
ST 2010-8	2E31	1,8	60	360	4,1	3,6	2,9	19,1	16,6	13,3	0,82	10	10	6
ST 2010-8/2	2/8E31	1,8/0,44	40/20	120/240	4,5/2,4	3,9/2,1	3,1/1,7	16,9/4,8	14,7/4,2	11,8/3,4	0,92/0,80	10	6	6
ST 2010-12	2E32	2,8	60	360	6,6	5,7	4,1	28,2	24,5	25,6	0,90	16	10	10
ST 2010-12/3	2/8E32	2,8/0,68	40/20	120/240	6,6/3,5	5,7/3,0	4,6/2,4	28,2/7,0	24,5/6,1	19,6/4,9	0,90/0,79	16	10	10
ST 3016-8	2E32	2,8	60	360	6,6	5,7	4,1	28,2	24,5	25,6	0,90	16	10	10
ST 3016-8	2/8E32	2,8/0,68	40/20	120/240	6,6/3,5	5,7/3,0	4,6/2,4	28,2/7,0	24,5/6,1	19,6/4,9	0,90/0,79	16	10	10
ST 3212-16	2E42	4,6	60	360	10,4	9,0	7,2	44,2	38,4	30,7	0,80	20	16	10
ST 3212-16/4	2/8E42	4,6/1,1	33/17	100/200	10,6/4,6	9,2/4,0	7,4/3,2	36,8/9,4	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
ST 3216-8	2E40	2,9	60	360	6,4	5,6	4,5	36,8	32,0	25,6	0,87	16	10	10
ST 3216-8/2	2/8E40	2,9/0,72	40/20	120/240	6,6/3,5	5,5/3,0	4,6/2,4	28,8/7,1	25,0/6,2	20,0/5,0	0,87/0,74	16	10	10
ST 3216-12	2E42	4,6	60	360	10,4	9,0	7,2	44,2	38,4	30,7	0,80	20	16	10
ST 3216-12/3	2/8E42	4,6/1,1	33/17	100/200	10,6/4,6	9,2/4,0	7,4/3,2	36,8/9,4	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
ST 5025-6	2E42	3,6	70	420	7,4	6,4	5,1	44,2	38,4	30,7	0,78	20	16	10
ST 5025-6/1	2/8E42	3,6/0,91	40/20	120/240	8,4/4,4	7,3/3,8	5,8/3,0	36,8/9,4	32,0/8,2	25,6/6,6	0,78/0,49	20	16	10
ST 5025-8	2E42	4,6	60	360	10,4	9,0	7,2	44,2	38,4	30,7	0,80	20	16	10
ST 5025-8/2	2/8E42	4,6/1,1	33/17	100/200	10,6/4,6	9,2/4,0	7,4/3,2	36,8/9,4	32,0/8,2	25,6/6,6	0,86/0,82	20	16	10
FU-A 14	2/8A04	0,06/0,24	20/40	-	1,1/1,1			1,3/2,9			0,89/0,89	-	-	-
SF 14	8/2F12	0,11/0,44	20/40	-	0,9/1,2			1,5/3,8			0,74/0,9	-	-	-

*1 Hoist motor type

Technical data

Specifications for mains connection

- All poles of the mains cable must be disconnected by a lockable switch.
- The mains voltage must correspond to that stated on the rating plate.
- Fixed installed cables e.g. NYM, NYY
- Flexible cables e.g. RN-F, NGFLGöu, H07VVH2-F
- Cable cross-section min. 1.5 mm²
- Mains voltage 380-415 VAC, 50 Hz
Other mains voltages are available as options.
- In compliance with **EN 55014**, the installation of a radio interference suppression module FEM1 is obligatory for all motors ≤1kW.
- If a residual current operated circuit breaker is used, a fault current of approx. 17 mA per FEM1 must be taken into consideration.

Max. length of supply cable

Direct control													
50 Hz		Max. cable length with direct control [m]											
Chain hoist		Stationary *1						With trolley along runway *2					
Connecting cable cross-section		1.5 mm²			2.5 mm²			1.5 mm²			2.5 mm²		
		230 V	400 V	500 V	230 V	400 V	500 V	230 V	400 V	500 V	230 V	400 V	500 V
Hoist motor type *	2A04 2/8A04	57	170	269	94	283		29	80	120	49		
	2E21	17	50	79	28	84	131	10	30	47	17	50	79
	8/2E21	18	55	87	31	92	144	11	33	52	18	55	87
	2E22	11	34	53	19	57	88	7	20	32	11	34	53
	8/2E22	14	42	65	23	70	109	8	25	39	14	42	65
	2E31	11	34	53	19	57	89	7	21	32	11	34	53
	8/2E31	11	34	53	19	57	89	7	21	32	11	34	53

Contactor control													
50 Hz	Max. cable length with contactor control [m]												
Chain hoist	Stationary *3						With trolley along runway *4						
Connecting cable cross-section	1.5 mm²			2.5 mm²			1.5 mm²			2.5 mm²			
	230 V	400 V	500 V	230 V	400 V	500 V	230 V	400 V	500 V	230 V	400 V	500 V	
Hoist motor type *	2A04	113	340	531	-	-	-	71	214	334	118	-	-
	8/2A04												
	2E21	36	109	170	60	181	283	27	81	126	44	134	210
	8/2E21	40	122	190	67	203	317	29	89	139	49	148	231
	2E22	24	72	112	40	119	187	18	54	85	30	91	142
	8/2E22	30	90	141	50	150	234	22	67	104	37	111	174
	2E31	24	73	113	40	121	189	18	55	86	30	92	143
	8/2E31	24	73	114	40	122	190	18	55	86	30	92	143
	2E32	-	45	60	21	75	99	-	35	46	16	58	77
	8/2E32	15	45	70	25	75	117	11	34	54	19	58	90
	2E40	-	40	62	22	66	103	-	31	48	17	51	80
	8/2E40	15	45	71	25	76	118	12	35	55	19	58	91
	2E42	-	32	50	18	54	84	-	25	39	14	42	65
	8/2E42	-	36	56	20	60	93	-	28	43	15	46	72

* Allocation to chain hoists ↑ "Motor data" table

*1 Voltage drop 2.5%

*2 Voltage drop 1.5%

*3 Voltage drop 5.0%

*4 Voltage drop 4.0%

Technical data

Max. length of supply cable

Direct control													
60 Hz		Max. cable length with direct control [m]											
Chain hoist		Stationary *1						With trolley along runway *2					
Connecting cable cross-section		1.5 mm ²			2.5 mm ²			1.5 mm ²			2.5 mm ²		
		230 V	400 V	460 V	230 V	400 V	460 V	230 V	400 V	460 V	230 V	400 V	460 V
Hoist motor type *	2A04												
	2/8A04												
	2E21	14	44	58	24	73	97	9	26	35	14	44	58
	8/2E21	16	48	64	27	80	106	10	29	38	16	48	64
	2E22	12	30	39	20	49	65	7	18	23	12	30	39
	8/2E22	12	36	48	20	61	80	7	22	29	12	36	48
	2E31	10	30	40	16	50	66	6	18	24	10	30	40
	8/2E31	10	30	40	16	50	66	6	18	24	10	30	40

Contactor control													
60 Hz		Max. cable length with contactor control [m]											
Chain hoist		Stationary *3						With trolley along runway *4					
Connecting cable cross-section		1.5 mm ²			2.5 mm ²			1.5 mm ²			2.5 mm ²		
		230 V	400 V	460 V	230 V	400 V	460 V	230 V	400 V	460 V	230 V	400 V	460 V
Hoist motor type *	2A04												
	8/2A04												
	2E21	31	94	125	52	157	208	23	70	93	39	117	155
	8/2E21	35	106	140	58	177	234	26	77	102	43	129	170
	2E22	26	62	82	43	104	137	19	47	62	32	79	104
	8/2E22	26	78	103	43	130	172	19	58	77	32	97	128
	2E31	21	63	83	35	105	139	16	48	63	26	80	105
	8/2E31	21	63	84	35	106	140	16	48	63	26	80	105
	2E32	-	39	51	18	65	86	-	30	40	14	50	66
	8/2E32	13	39	51	21	65	86	10	30	40	17	50	66
	2E40	-	34	45	19	57	76	-	27	35	15	44	59
	8/2E40	13	39	52	22	66	87	10	30	40	17	51	67
	2E42	-	28	37	15	47	62	-	22	29	12	36	48
	8/2E42	-	31	41	17	52	69	-	24	32	13	40	53

* Allocation to chain hoists ↑ "Motor data" table



*1 Voltage drop 2.5%

*2 Voltage drop 1.5%

*3 Voltage drop 5.0%

*4 Voltage drop 4.0%

Technical data

	
IP 55	IP 55
-20°C...+60°C	-20°C...+60°C
-20°C...+40°C	-20°C...+40°C

Ambient conditions

Protection class

Storage

Operation

Sound level

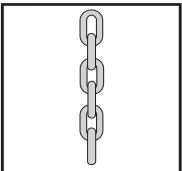
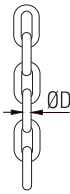



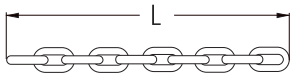
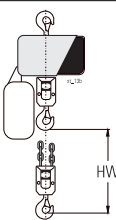
Sound level at 1 m from chain hoist, averaged out for an operating cycle of 50% with rated load and 50% without load.

[dB A]
74

Classification in acc. with FEM (ISO)

1/1					2/1					Type
1Bm (M3)	1Am (M4)	2m (M5)	3m (M6)	4m (M7)	1Bm (M3)	1Am (M4)	2m (M5)	3m (M6)	4m (M7)	
[kg]					[kg]					
-	-	-	125	-	-	-	-	-	-	ST 0501-8
-	-	125	100	-	-	-	-	-	-	ST 0501-16
-	250	200	160	-	-	500	400	320	-	ST 0502-8
320	250	200	160	-	630	500	400	320	-	ST 0503-6
-	400	320	250	-	-	800	630	500	-	ST 1004-16
-	500	400	320	-	-	1000	800	630	-	ST 1005-..
-	-	-	-	630	-	-	-	-	1250	ST 2006-12
-	-	800	630	-	-	-	-	-	-	ST 2008-16
-	-	1000	800	-	-	-	2000	1600	-	ST 2010-8
-	1000	800	630	-	-	2000	1600	1250	-	ST 2010-12
-	-	-	1250	-	-	-	-	-	-	ST 3212-16
1600	1250	1000	800	-	3200	2500	2000	1600	-	ST 3016-8
-	-	1600	1250	-	-	-	3200	2500	-	ST 3216-8
-	1600	1250	1000	-	-	3200	2500	2000	-	ST 3216-12
-	2500	2000	1600	-	-	5000	4000	3200	-	ST 5025-..

Chain certificate

			Order No.					
							1/1	2/1
				[mm]	[kg]	[kN]	[kN]	3 [m]
	ST 05	4	331 005 9	250	12,5	20	HW + 0.3	2xHW + 0.4
	ST 10	5	331 006 9	500	20	32	HW + 0.5	2xHW + 0.6
	ST 20	7	331 001 9	1000	40	60	HW + 0.6	2xHW + 0.7
	ST 30	9	331 004 9	1600	63	100	HW + 0.6	2xHW + 0.8
	ST 32	9	331 004 9	1600	63	100	HW + 0.7	2xHW + 1.0
	ST 50	11.3	331 013 9	2500	100	160	HW + 0.7	2xHW + 1.0

*1 Tensile force on chain
*2 Test load
*3 Minimum breaking load

Technical data

A	B	C	D	E
a	<ul style="list-style-type: none"> CLP 460 ‡PG 220 		ST 10: 700 ml	1
			ST 10: 1000 ml*	2
			ST 20: 1200 ml	
			ST 20: 1500 ml*	
			ST 30: 1200 ml	
			ST 30: 1500 ml*	
			ST 32: 2000 ml	
			ST 32: 2500 ml*	
			ST 50: 2000 ml	
			ST 50: 2500 ml*	
	<ul style="list-style-type: none"> ◆ GOOF ◆ ‡GPG00K 		ST 05: 250 ml	3
				4
b	<ul style="list-style-type: none"> ◆ GOOF ◆ ‡GPG00K 		FU-A: 180 g	3
			SF 14-1... 100 g	4
c	<ul style="list-style-type: none"> ◆ GOOF ◆ ‡GPG00K 		FU-A: 180	
			SF 14-1... 100 g	
d	<ul style="list-style-type: none"> ◆ GOOF ◆ ‡GPG00K 		ST 05:	3
			approx. 50 g	4
e	<ul style="list-style-type: none"> - 			5

Lubricants

A Lubrication point

- a Hoist gear
- b Trolley gear
- c Hoist motor bearing
- d Wheel gearing
- e Chain

B Type of lubricant

- ◆ Grease
- Oil

C Designation

D Quantity

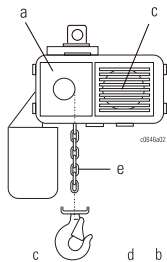
E Characteristics, makes

‡ (Lubricant for low ambient temperatures, max. -40°C)

* Factory filling

Characteristics, makes

ST05



1 Viscosity 460 cSt/40°C

Pour point -20°C

Flash point +265°C

e.g. Fuchs Renep Compound 110*, Aral Degol BG 460, BP Energol GR-XP 460, Esso Spartan EP 460, Mobilgear 634, Shell Omala Oil 460, Texaco Meropa 460

2 Viscosity 460 cSt/40°C

Pour point -40°C

Flash point +320°C

e.g. Shell Tivela Oil WB

3 Soap base: natron

Dripping point approx. +150°C

Penetration: 400-430

Operating temperature: -30°C to 80°C

e.g. Aralub PDP 00, BP Energrease HT 00 EP, ESSO Liquid Gear Grease

4 Soap base: Li / polyglycol oil

Dripping point approx. + 180°C

Penetration 400 - 430

Operating temperature: down to -40°C

e.g. Esso liquid grease S 420

5 Oil or liquid grease

Normal ambient conditions: Ceplattyn Chain Lubricant Fluid

Extreme applications, food industry, medicinal baths: SKD 3000

* Short headrom

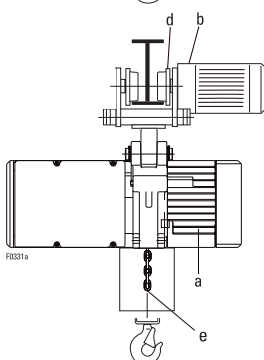
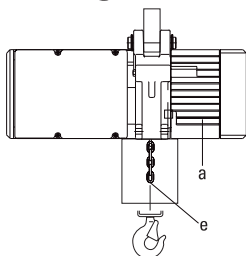
ST10

ST20

ST30

ST32

ST50





EC declaration of conformity

as defined by machinery directive 98/ 37/ EEC, Annexe IIA

We herewith declare that the STAHL hoist type ST., with or without trolley, complies with the following provisions applying to it:

- EC machinery directive 98/ 37/ EC
- EC low voltage directive 73/ 23/ EEC
- EC EMC directive 89/ 336/ EEC

Applied harmonized standards:

- EN 292 Part 1 and Part 2 (Safety of machines)
- EN 55014 / 1993 (Radio interference suppression of electrical equipment and installations)
- EN 50081-1 / EN 50082-2 (Electromagnetic compatibility)
- EN 60034-1 (Rotating electrical machines)
- EN 60034-5 (IP protection classes)
- EN 60204-32 (Electrical equipment of hoists)

Applied national technical standards and specifications:

- FEM 9.511 (Classification of mechanisms)
- FEM 9.671 (Chain qualities, selection criteria and requirements)
- FEM 9.683 (Selection of hoist and travel motors)
- FEM 9.755 (Safe working periods - S. W. P.)
- IEC 947-5-1 (Low voltage switchgear)

As stipulated by Annexe V of the EC machinery directive:

- CE symbol affixed to hoist
- Technical documentation filed in manufacturer's works

R. STAHL Fördertechnik GmbH

Künzelsau, 09.12.2002

i.V. M. Finzel

Director - Development

i.V. R. Raum

Director - Quality

The EC declaration of conformity is valid only in conjunction with confirmation that commissioning has been effected correctly according to Operating Instructions

FKE 14

R. STAHL Fördertechnik GmbH

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