

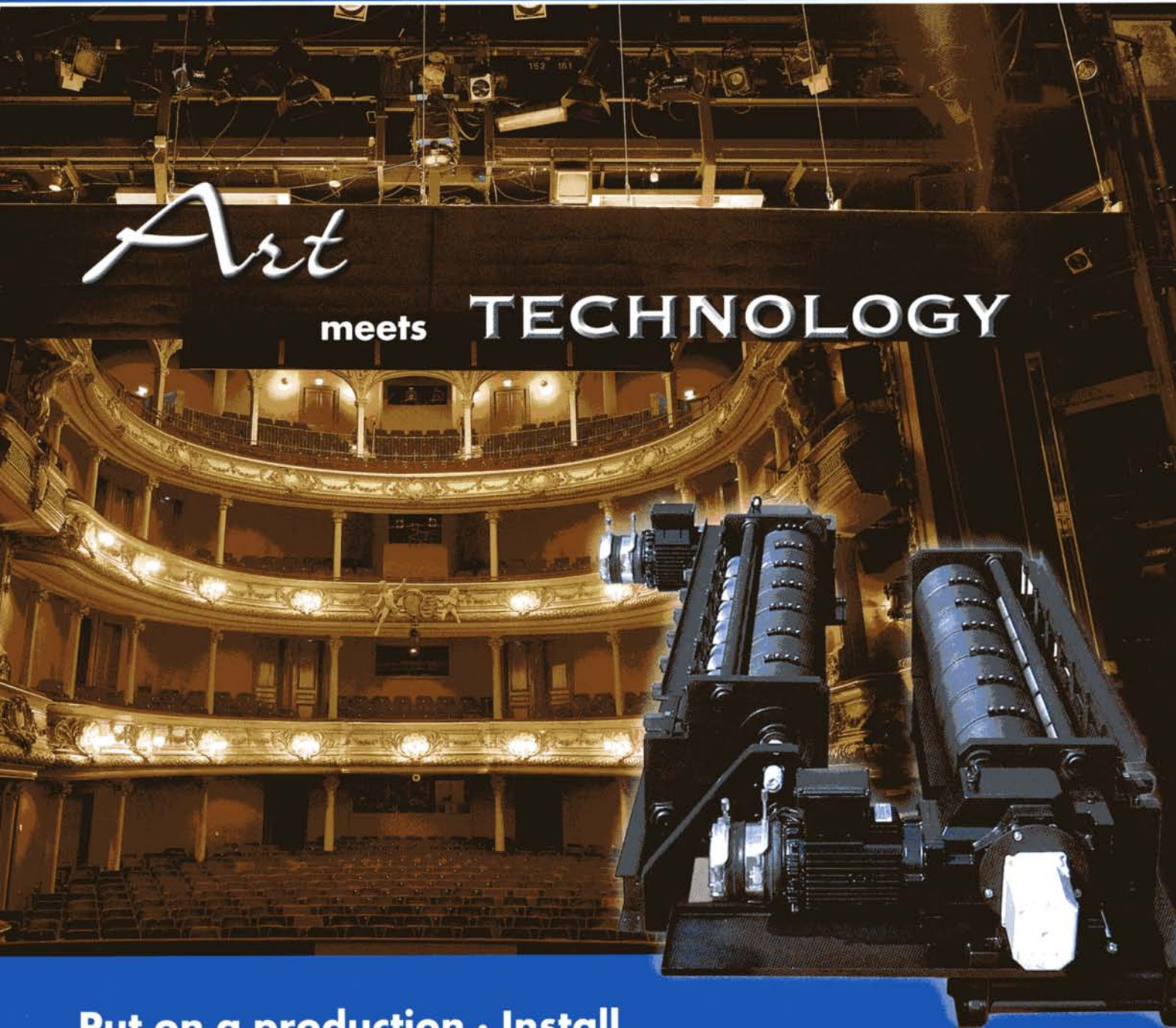
# KÖSTER

STAGE TECHNOLOGY

Cable Winches - Scenery Hoists - Multiple Cable Hoists  
With manual or electric drive in acc. with BGV C1

*Art*

meets **TECHNOLOGY**



Put on a production • Install  
Operate • Applaud

**ADLER**<sup>®</sup> winches





# Meeting stage technology requirements

## FORWARD-LOOKING TRADITION

The KÖSTER machine factory and foundry in Heide / Schleswig Holstein has now been in existence for almost 150 years.

The many generations of manual and electric winches that have been designed and built up to now have been the foundation for a quality expression that is held in high esteem by all the people who use them: ADLER winches from KÖSTER!

KÖSTER sells more than 20 different standard versions of manual and electric winches, both domestically and internationally.

These winches are tailored to many different tasks, purposes and capacity requirements.

KÖSTER has specifically tailored its tried and tested winch construction mass production engineering to the requirements of theatres, studios and shows. Time and time again, KÖSTER produces model series and special constructions that have proven their efficiency and reliability during countless performances and productions, particularly in the stage equipment area.





## KÖSTER Stage Winches

### 1. QUIET RUNNING:

Extremely quiet running provided by the top quality mechanical system in combination with top class engineering.

The winches are fully encapsulated and therefore effectively protected against dust, water spray and the like (up to protection class IP65).

ADLER winches therefore whisper along at an almost inaudible 55 dBa!

### 2. PERFORMANCE:

Single or multiple cable operation per winch, load-bearing capacity of up to 5000 kg, cable speeds of up to 2 m/sec., everything contained within a small area and in accordance with customer requirements. .

### 3. SUMMARY



Köster is certified in accordance with DIN EN ISO 9001.

The winches are approved for carrying persons in accordance with BGR 158 and BGV C1 for stages and studios.

KÖSTER punctually supplies made-to-measure solutions for individual customer requirements.



# Manual Stage Winches



## EQUIPMENT FEATURES:

- Grooved cable drum
- Single-layer cable reel-in
- Equipped with cable pressing device
- Cable attached through hole, with two setscrews
- With two independent friction disk brakes. The load is therefore held securely in any position. (Exception: WH 16 SB, which has dynamic self-locking provided by a worm gear pair)
- ADLER manual winches are designed in accordance with drive gear group 1 Bm

Model	Load capacity (kg)	Cable Ø <sup>2)</sup> mm	Cable hoist <sup>1)</sup> m	Remarks
WH 5 LB gr - 100	100	4	7.7	2 independent brakes
WH 5 LB gr - 180	180	5	6.3	
WH 5 LB gr - 250	250	6	5.3	
WH 5 LB gr - 300	300	7	4.5	
WH 5 LB gr - 301	300	8	4	

Right reserved to make technical changes.

Model	Load capacity (kg)	Cable Ø <sup>2)</sup> mm	Cable hoist <sup>1)</sup> m	Remarks
WH 2 SB	250	6	3.8	2 independent brakes
WH 5 SB	450	8	5	
WH 7 SB	600	9	7.5	
WH 16 SB	560	9	7	dyn. self-locking

Right reserved to make technical changes.

Model	Load capacity (kg)	Cable Ø <sup>2)</sup> mm	Cable hoist <sup>1)</sup> m	Remarks
WH 2 SB Lx	250	The drum length, cable hoist, cable diameter and number of cables can be adapted in accordance with the application.		
WH 5 SB Lx	450			
WH 7 SB Lx	600			
WH 16 SB Lx	560			

Right reserved to make technical changes. Additional technical information on request.

<sup>1)</sup> 2 spare wraps have already deducted from the cable reel-in information.

<sup>2)</sup> The cable diameter relates to low-torsion cables with a steel inlay in accordance with DIN 3069.

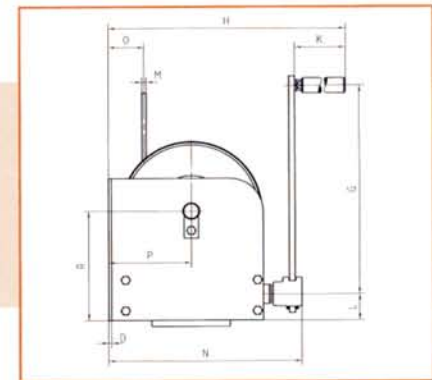
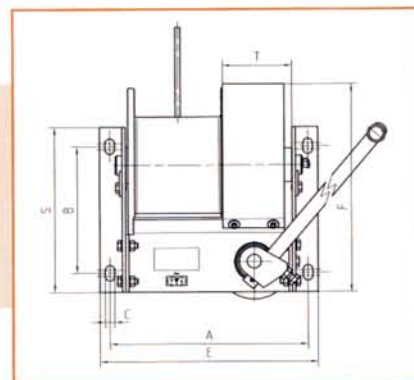
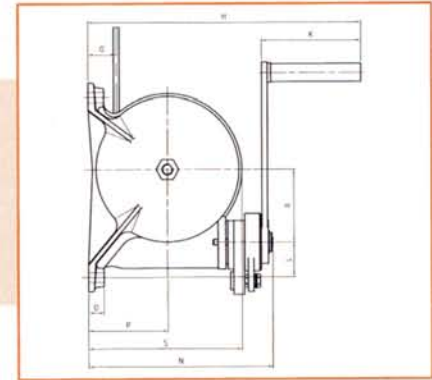
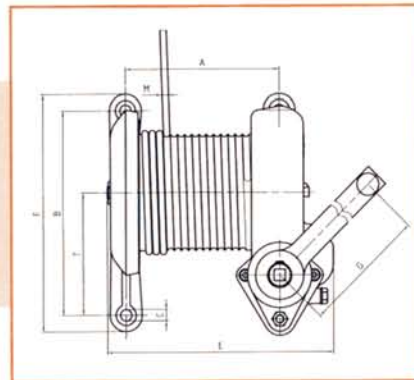
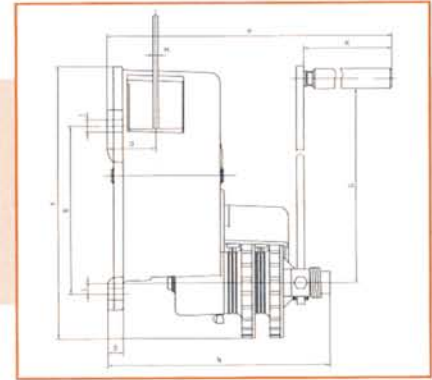
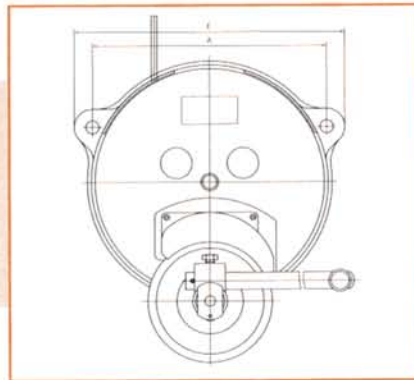


# Dimensions and weights

ADLER WINCH DIMENSION TABLE in accordance with BGV C1 (basic dimensions)

Model	Drum diam. Ø	Drum length	Weight approx. (kg)	A	B	C	D	E	F	G	H	K	L	M Ø	N	O	P	R	S	T
WH 2 SB	105	98	12.5	141	205	12	18	223	240	250	360	140	41	6	235	45	96	79	184	120
WH 5 SB	136	141	22	195	250	14	22	285	290	250	390	140	49	8	265	40	112	101	217	150
WH 7 SB	160	182	40	244	330	20	36	350	390	250	465	140	58	9	335	81	160	147	312	205
WH 16 SB	175	155	67	354	230	17	6	390	380	440	625	238	55	9	405	75	172	231	300	124
WH 5 LB gr	178	86	47	335	270	19	25	387	437	440	553	238	17	4.8	356	78	-	-	-	-

Right reserved to make technical changes.



## AVAILABLE ADDITIONAL VERSIONS:

- Hand crank with folding plastic handle
- Individual drum partitioning and design of cable securing mechanism, e.g. using partitioning rail
- Multi-cable operation or extended cable drum version "Lx" for additional cable reel-in with WH 2 SB, WH 5 SB, WH 7 SB, and WH 16 SB



# Electric Stage Winches



## MODERN DESIGN

- Winch is fully encapsulated (up to protection class IP 65), therefore essentially insensitive to interfering environmental influences
- Compact, space-saving design: Built-in brake motor in the drum; with insulation class "F" for an ambient temperature of -20°C to +60°C as standard
- Easy replacement of all wearing parts. Low maintenance, only one lubricating point, planetary gear running in oil bath
- Robust design, guarantees long service life
- Wire cable can exit in any direction
- Extremely fast cable speeds of up to 2 m/sec
- Extremely quiet running
- Axially transported cable drum, cable exit point remains constant
- Different operating and control voltages possible in accordance with customer requirements

## EQUIPMENT FEATURES

- Grooved cable drum
- Single-layer cable reel-in
- Equipped with cable pressing device
- Two independent disk brakes
- Hoist restriction with operating and emergency limit switches for both limit position
- Electronic overload protection
- The ADLER electric winches are designed in accordance with drive gear group 2<sub>m</sub>

## EASY TO OPERATE

- Controlled via radio remote control, wall-mounted control unit or suspended control unit
- Dead man's switch
- Several command locations
- Connection to central controller possible

## TESTED SAFETY

- All winches are checked with a 25% overload before delivery
- Large drum diameter with turned cable grooves provides maximum cable protection
- Overdimensioned brake system, almost wear-free because of spring pressure brake
- Adjustable hoist limit with operating and emergency limit switch
- Electronic overload shut-off



Spring pressure brake – double safety from double brake system



# Equipment features



Radio remote control with control unit



Controlled using wall-mounted control unit



Controlled using suspended control unit



Hoist restriction with operating and emergency limit switches for both limit positions



Easy replacement of all wearing parts



Wire cable can exit in any direction



Extended cable drum for holding more cable or multi-cable operation

## INDIVIDUAL SOLUTIONS

- Slack cable switch for the use of guided loads
- Extended cable drum for holding additional cable or for multi-cable operation
- Brake lifting lever in combination with emergency handwheel for manual winch clearing if power fails
- Electric controller, ready wired in switch box
- Repair switch at winch for switching off during set-up and maintenance work
- Version with frequency converter for smooth speed adjustments
- Painted in accordance with customer requirements
- Different types of drum grooves

State Theatre in Oldenburg





# Electric Stage Winches



## Load capacities and speeds

## Cable reel-in single cable

Model	ver.	Load capacity (kg)	v (m/min)	P/ED (kW/%)	n (rpm)	cable Ø <sup>2)</sup> (mm)	Standard <sup>1)</sup> (m)
WE 1 B	10/2	100	36.0 <sup>3)</sup>	0.75 / 40	3000	5	23.0
	10/4	160	18.0	0.55 / 40	1500	6	19.4
	10/6	160	12.0	0.37 / 40	1000	6	19.4
	10/8	160	9.0	0.27 / 40	750	6	19.4
	20/2	225	20.0	0.75 / 40	3000	6	19.4
	20/4	225	10.0	0.55 / 40	1500	6	19.4
	20/6	225	6.0	0.37 / 40	1000	6	19.4
	20/8	225	5.0	0.27 / 40	750	6	19.4

WE 5 B	20/4	230	34.0 <sup>3)</sup>	1.90 / 40	1500	6	29.2
	20/6	230	22.0	1.23 / 40	1000	6	29.2
	20/8	230	17.0	0.90 / 40	750	6	29.2
	60/4	230	8.0	0.66 / 40	1500	6	29.2
	60/6	230	5.5	0.44 / 40	1000	6	29.2
	10/4	450	18.0	1.90 / 40	1500	9	19.8
	10/6	450	12.0	1.23 / 40	1000	9	19.8
	10/8	450	9.0	0.90 / 40	750	9	19.8
	50/4	450	4.2	0.66 / 40	1500	9	19.8
	50/6	450	2.7	0.44 / 40	1000	9	19.8

WE 10 B	30/4	500	36.0 <sup>3)</sup>	3.90 / 40	1500	9	34.9
	20/4	645	27.0	3.90 / 40	1500	10	31.5
	20/6	645	18.0	2.50 / 40	1000	10	31.5
	20/8	645	13.5	1.80 / 40	750	10	31.5
	60/4	645	6.3	1.90 / 40	1500	10	31.5
	60/6	645	4.0	1.23 / 40	1000	10	31.5
	10/4	930	18.0	3.90 / 40	1500	12	25.2
	10/6	930	12.0	2.50 / 40	1000	12	25.2
	10/8	930	9.0	1.80 / 40	750	12	25.2
	50/4	930	4.5	1.90 / 40	1500	12	25.2
50/6	930	3.0	1.23 / 40	1000	12	25.2	

WE 20 B	20/4	1200	32.0 <sup>3)</sup>	8.00 / 40	1500	14	38.6
	20/6	1200	22.0	6.10 / 40	1000	14	38.6
	20/8	1200	16.0	4.30 / 40	750	14	38.6
	10/4	1600	21.0	8.00 / 40	1500	16	31.8
	10/6	1600	14.0	6.10 / 40	1000	16	31.8
	10/8	1600	10.5	4.30 / 40	750	16	31.8
	10/12	1600	7.0	2.90 / 40	500	16	31.8
	50/4	1600	4.5	1.90 / 40	1500	16	31.8
	50/6	1600	3.0	1.23 / 40	1000	16	31.8

Right reserved to make technical changes. Additional technical information on request.

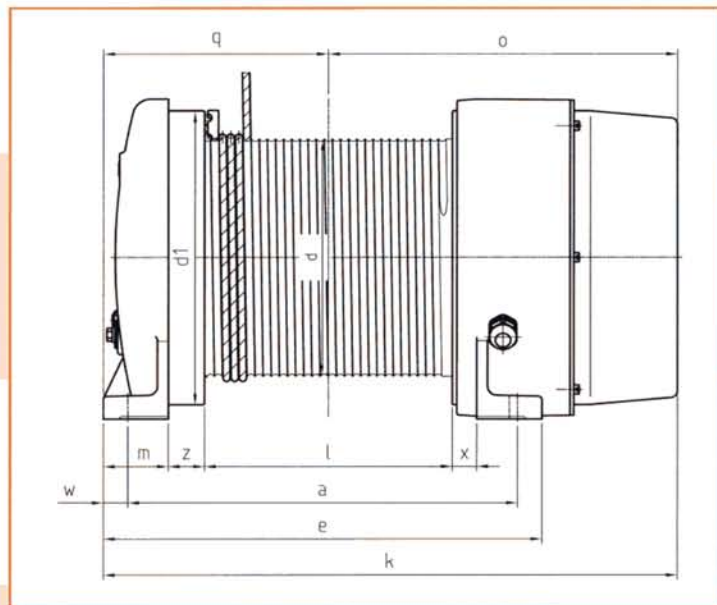
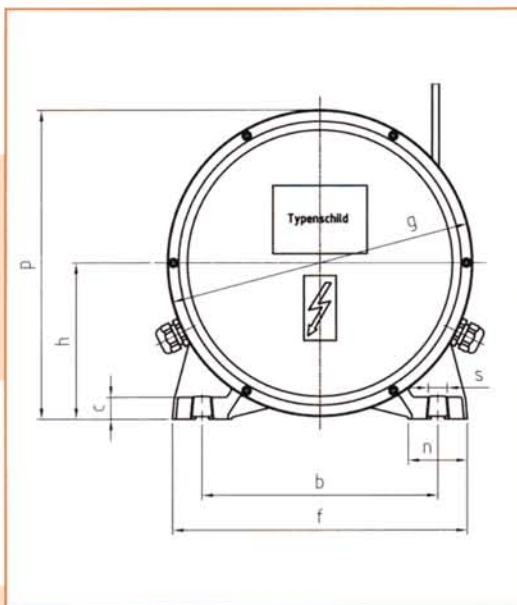
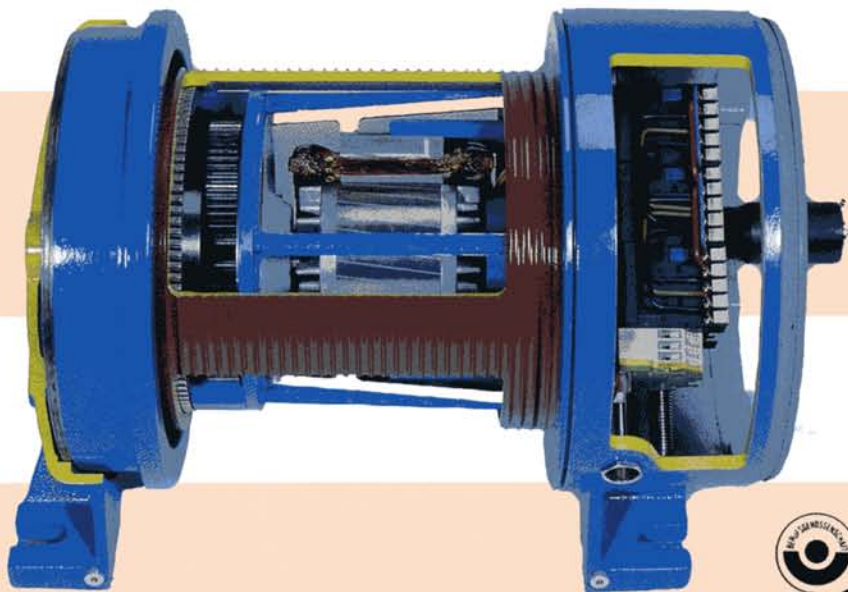
<sup>1)</sup> 2 spare wraps have already deducted from the cable reel-in information.

<sup>2)</sup> The cable diameter relates to low-torsion cables with a steel inlay in accordance with DIN 3069.

<sup>3)</sup> Recommendation: Version with frequency converter for speeds of 30 m/min or above.



# Dimensions and Weights



ADLER WINCH DIMENSION TABLE in accordance with BGV C1 (basic dimensions)

Model	Weight approx. (kg)	a	b	c	d	d1	e	f	g	h	k	l	m	n	o	p	q	s*	w	x	z
WE 1 B	73	351	220	17	203	254	401	275	277	141	503	234	63	55	301	280	202	M 12	25	19	22
WE 5 B	143	431	270	25	257	325	485	338	350	178	634	274	72	68	385	353	249	M 16	27	27	40
WE 10 B	243	567	360	30	330	437	647	443	470	238	780	365	102	83	442	475	338	M 20	40	28	50
WE 20 B	450	716	460	33	430	540	804	556	595	298	920	475	120	96	505	595	415	M 24	40	31	58

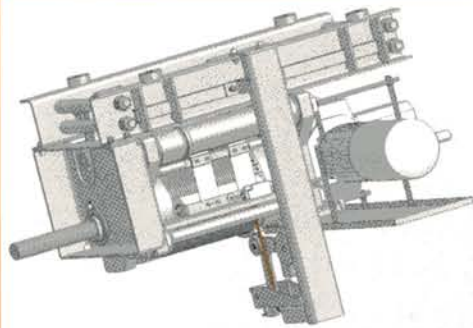
Right reserved to make technical changes. \* Leadthrough slot for screw.



# Electric Stage Winches

## KÖSTER Special Examples

E 200 B

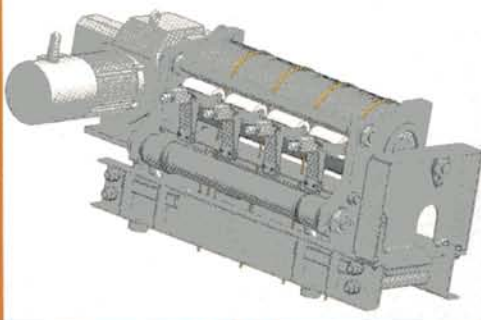


### Technical data

Load capacity	200 kg
Cable speed	15 m/min
Number of cables	1
Cable diameter	6 mm
Cable hoist	18.5 m
Noise emission	55 dBa
Ident number	21 0000 0011 a
Usage area	BGV C1

- Theatre winch with travelling drive for constant cable run-on point
- Slack cable switch with cable inspection window for vertical cable exiting, compensates for slight pendulum movements of load
- Cable push-on rollers, monitored
- Extremely low noise

E 500 B



### Technical data

Load capacity	500 kg
Cable speed	12 m/min
Number of cables	4
Cable diameter	5 mm
Cable hoist	18.5 m
Noise emission	55 dBa
Ident number	22 0000 0023
Usage area	BGV C1

- Theatre winch with travelling drive for constant cable run-on point
- Cable push-on rollers, monitored
- Extremely low noise

Right reserved to make technical

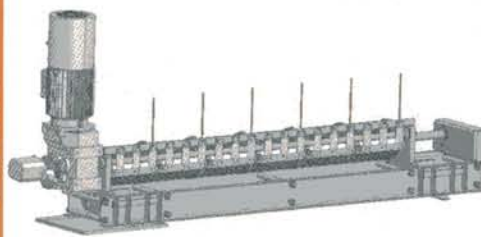


Esbjerg House of Music



# Specialist Solutions For Special Tasks

**E 500 B**



## Technical data

Load capacity	500 kg
Cable speed	60 m/min
Number of cables	6
Cable diameter	6 mm
Cable hoist	22 m
Noise emission	55 dBa
Ident number	22 0000 0024
Usage area	BGV C1

- Theatre winch with wall-mounted drive for constant cable run-on point
- Cable push-on roller for every cable
- Fast cable speed
- Extremely compact design
- Extremely low noise

**H 350 B**

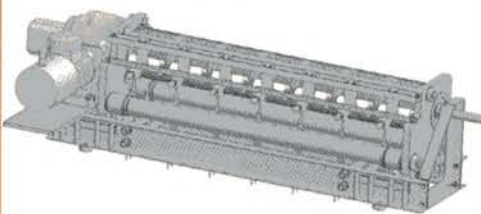


## Technical data

Load capacity	350 kg
Cable speed	Hand winch
Number of cables	1
Cable diameter	8 mm
Cable hoist	8 m
Noise emission	Silent
Ident number	44 0613 00
Usage area	BGV C1

- Raising and lowering loads
- Cable push-on roller
- Manual winch without stopping noise of friction disk brake

**E 10 B**

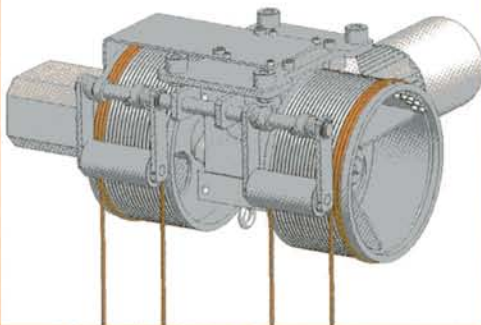


## Technical data

Load capacity	600 kg
Cable speed	18 m/min
Number of cables	7
Cable diameter	5 mm
Cable hoist	12.5 m
Noise emission	55 dBa
Ident number	23 0000 0033
Usage area	BGV C1

- Theatre winch with travelling drive for constant cable run-on point
- Cable push-on rollers, monitored
- Extremely low noise

**E 100 B**



## Technical data

Load capacity	100 - 150 kg
Cable speed	5 m/min
Number of cables	2
Cable diameter	4 - 5 mm
Cable hoist	12 - 20 m
Noise emission	50 dBa
Ident number	21 0000 0013
Usage area	BGV C1

- Theatre winch with cable push-on roller
- Extremely low noise
- Winch is designed for continuous operation, e.g. moving decoration

Right reserved to make technical changes.





## WINCHES

ADLER®-manual and electric winches are a reliable solution to hoisting problems!  
Compact, space-saving design Special versions for many different applications  
Stage and studio use in accordance with VBG 70 / BGVC 1



## PUMPS

Delivery heights of 1 m to 25 m  
Flow rates of 100 l/sec. to 8000 l/sec.  
Design, materials, dimensions:  
made to measure for **your** application



## SWIMMING POOL ENGINEERING

Wave generating machines – pneumatic or mechanical  
Pool partitioning, starting bridges and turning bridges, rising floors  
everything durable, low maintenance and made to measure



## Hydraulic engineering

Round sliders up to DN 1800, square sliders up to 3 x 3 m  
Round flaps up to DN 2000, square flaps up to 3 x 3 m  
Sluices up to 8 m wide, weirs up to 12 m wide  
Flooding protection gates up to 12 m wide, damming beams for channel widths of up to 7 m  
Precast concrete plants with integrated fittings, accessories and service



## CAST AND STEEL COMPONENTS

Ready for installation as individual components, assemblies or entire systems made from grey cast iron, ductile iron, SiMo, cast steel or cast aluminium.  
Steel engineering/sheet metal processing

