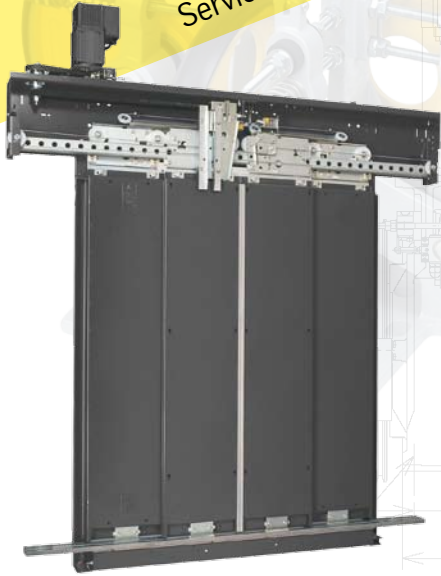


Service and Competence

# Produkt Information Product Information



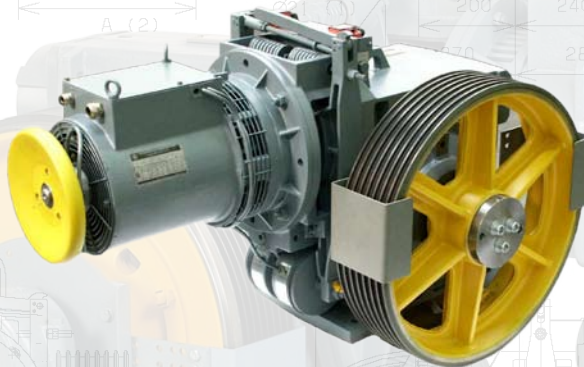
Schiebetüren  
Sliding doors



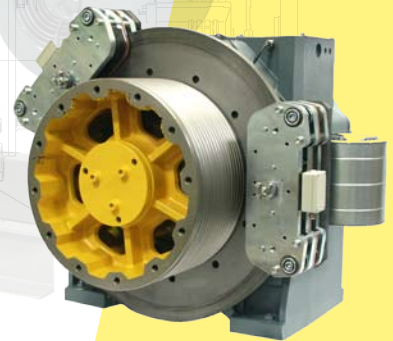
MINI Gearless



Fangrahmen TCS  
Car sling TCS



TW 130



COMPACT Gearless



Sicherheitstechnik  
Safety components



Frequenzumrichter  
Frequency inverter

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

## **Liftequip GmbH Elevator Components**

Bernhäuser Straße 45  
D-73765 Neuhausen a.d.F.  
Germany

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: [kontakt@liftequip.de](mailto:kontakt@liftequip.de)

Internet: [www.liftequip.de](http://www.liftequip.de)

9720 000 9203-1, Ausgabe 07/2007

Die einzelnen Angaben in dieser Druckschrift  
gelten als zugesicherte Eigenschaften,  
soweit sie jeweils im Einzelfall ausdrücklich  
als solche schriftlich bestätigt sind

Printed in Germany

The details quoted in this brochure can only be  
viewed as binding when confirmed expressly  
in writing. Reproduction, reprint and storage  
only with the authorization of the editor.

Service and Competence

Made in Germany

Antriebstechnik  
Drive Units

Sicherheitstechnik  
Safety Components

Türen und Komponentensets  
Doors and Component Sets

Gebäudetechnik  
Building Technology

**LiftEquip GmbH Elevator Components**  
Bernhäuser Straße 45  
D-73765 Neuhausen a.d.F.  
Germany

Telefon: +49 (0) 71 58 12 - 2929  
Fax: +49 (0) 71 58 12 - 2971  
E-Mail: kontakt@liftequip.de  
Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Antriebe für jede Anforderung Machines for Every Requirement



TW 45 B

## Die ideale Lösung für kleine Lasten

- Getriebe ist erhältlich mit vertikal oder horizontal angebaurem Motor sowie als MRL-Version
- VVVF-Motor (3,8 und 7 kW) exakt regelbar
- Notbremssystem optional erhältlich
- Verschleißarme Treibscheibe, erhältlich in Ø 360, 440 oder 520 mm

## The Ideal Solution for Light Loads

- Gear can be obtained with vertical or horizontal motor position as well as a special MRL-version
- VVVF motor (3,8 and 7 kW) can be controlled accurately
- Emergency braking system (optional)
- Low-wear traction sheave, in Ø 360, 440 or 520 mm

## Der Allrounder für mittlere Lasten.

- Getriebe ist erhältlich mit vertikal oder horizontal angebaurem Motor
- VVVF-Motor (5,7 bis 16 kW) exakt regelbar
- Notbremssystem optional
- Verschleißarme Treibscheibe, erhältlich in Ø 450, 510 oder 590 mm

## The Machine for Middle Loads

- Gear can be obtained with vertical or horizontal motor position
- VVVF motor (5.7 up to 16 kW) can be controlled accurately
- Emergency braking system optional
- Low-wear traction sheave, available in Ø 450, 510 or 590 mm



TW 63



TW 130

## Der Innovative für höhere Lasten

- Getriebe ist erhältlich mit vertikal oder horizontal angebaurem Motor
- VVVF-Motor (11 bis 42 kW) exakt regelbar
- Notbremssystem (optional)
- Teil-Ex und Voll-Ex (optional)
- Verschleißarme Treibscheibe, erhältlich in Ø 540, 640 oder 720 mm

## The Ideal Solution for Higher Loads

- Gear can be obtained with vertical or horizontal motor position
- VVVF motor (11 up to 42 kW) can be controlled accurately
- Emergency braking system (optional)
- Part-Ex and Full-Ex (optional)
- Low-wear traction sheave, available in Ø 540, 640 oder 720 mm

## Das Zugpferd für größere Lasten

- VVVF-Motor (11 bis 42 kW) exakt regelbar
- Notbremssystem optional
- Teil-Ex und Voll-Ex optional
- Verschleißarme Treibscheibe, erhältlich in Ø 640, 720 oder 800 mm

## The Cart Horse for Higher Loads

- VVVF motor (11 up to 42 kW) can be controlled accurately
- Emergency braking system optional
- Part-Ex and Full-Ex optional
- Low-wear traction sheave, available in Ø 640, 720 or 800 mm



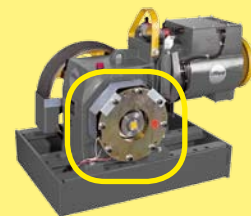
TW 160

## Leistungsdaten (1:1 oder 2:1) / Data Table (1:1 or 2:1)

Antrieb / Machine	Q [kg]	v [m/s]
TW 45 B *	320 - 1.300	0,5 - 1,25
TW 63 *	800 - 2.000	0,4 - 2,0
TW 130 *	1.000 - 3.000	0,5 - 2,5
TW 160 *	1.800 - 3.500	0,63 - 2,0
W 263 B	2.000 - 4.500	0,63 - 1,0
W 332 B	2.800 - 6.000	0,4 - 1,6
MINI-Gearless	450 - 2.000	1,0 - 2,0
COMPACT-Gearless	1.600 - 2.750	1,6 - 4,0

\* Getriebe mit synthetischem Öl und Wälzlagern.

\* Machines with synthetic oil and roller bearings.



TW 63 mit Notbremssystem NBS

TW 63 with Emergency Brake System NBS

**LiftEquip**®  
ELEVATOR COMPONENTS



# Kompakte und leistungsstarke Antriebe Compact and Powerful Machines



MINI Gearless DAF 210

## Ideal bei engen Platzverhältnissen

- Motor (4,2 bis 22,5 kW) exakt regelbar
- Einfach ansteuerbare Bremse
- Laufruhige Maschine durch Verzicht auf einen Zusatzlüfter
- Doppelte Sicherheit durch eine baumustergeprüfte 2-Kreis-Scheibenbremse
- Sicherheitsbremse nach EN 81-1, Abschnitt 9.10
- Wartungsfreie Konstruktion



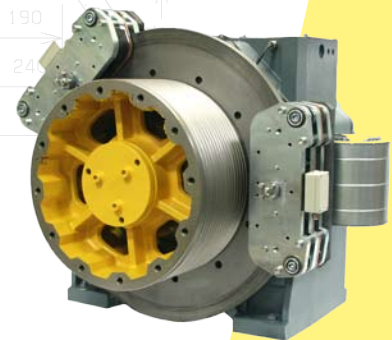
MINI Gearless DAF 270



COMPACT Gearless SC 300

## When it's Getting Really Tight

- Motor (4,2 up to 22,5 kW) can be controlled accurately
- Easy controllable brake
- Quiet running machine by the abandonment of an additional ventilator
- Double safety by a type-tested dual-circuit disc brake
- Safety brake according to EN 81-1, paragraph 9.10
- Maintenance-free construction



COMPACT Gearless SC 400

## Für große Förderhöhen & Lasten

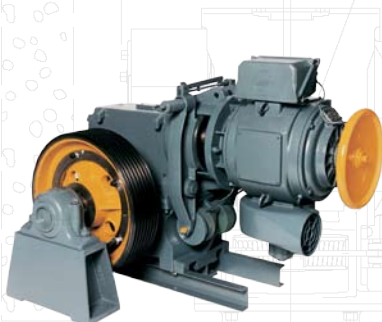
- Superleise Maschine (SC 300) durch Verzicht auf einen Zusatzlüfter
- Doppelte Sicherheit durch baumustergeprüfte 2-Kreis-Backenbremsen
- SC 400 mit Scheibenbremsen
- Sicherheitsbremse nach EN 81-1/9.10
- VVVF-Motor (10,7 bis 48,6 kW) exakt regelbar
- Wartungsfreie Konstruktion

- Einfach ansteuerbare Bremse
- Äußerst platzsparend, sowohl in der S- als auch in M-Ausführung

## For Big Travel Heights & High Loads

- Super silent machine (SC 300) by the abandonment of an additional ventilator
- VVVF motor (10,7 up to 48,6 kW) can be controlled accurately

- Double safety by a type-tested dual-circuit shoe brake
- SC 400 with disc brakes
- Safety brake according to EN 81-1/9.10
- Maintenance-free construction
- Easy controllable brake
- Very space-saving both the S and the M version



W 263 B / W 332 B

## Die Bewährte für große Lasten

- VVVF-Motor (16 bis 75 kW) exakt regelbar
- Teil-Ex und Voll-Ex optional
- Doppelte Sicherheit durch eine 2-Kreis-Außenbackenbremse
- Verschleißarme Treibscheibe, erhältlich in Ø 540, 640, 700, 740 oder 800 mm
- Erhöhte Belastbarkeit

## The Well Proven for Big Loads.

- VVVF motor (16 up to 75 kW) can be controlled accurately
- Part-Ex and Full-Ex optional
- Double safety by a dual-circuit shoe brake
- Low-wear traction sheave, available in Ø 540, 640, 700, 740 or 800 mm
- Increased load capacity

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Frequency Inverter for our Machines

## Frequency Inverter MFC 20/21

- Umrichterpaket mit Netzfilter, Netz-drossel und Bremswiderstand
- Für asynchrone (MFC 20) und synchrone (MFC 21) Antriebe
- Notstrombetrieb mit USV möglich
- schnelle und einfache Inbetriebnahme durch hinterlegte Motorparameter und vorkonfigurierte Anlagedaten
- Parametrierung von Fremdmotoren durch Autotuning
- parallele und serielle Schnittstelle (DCP3/DCP4)

## Frequency Inverter MFC 20/21

- Available as a package with line filter, line choke and braking resistor
- For asynchronous (MFC 20) and synchronous (MFC 21) drives
- Emergency power operation is possible by UPS
- Quick and easy start-up by stored motor data and pre-configured system data
- Parametrization of external motors by autotuning
- parallel and serial interface (DCP3/DCP4)



MFC 20/21

### MFC 20/21 - Leistungsdaten / Data Table

Umrichtertyp Inverter type	Inenn / I <sub>max</sub> [A] I <sub>rated</sub> / I <sub>max</sub> [A]	Motorleistung [kW] Motor power [kW]	Maße [B*H*T mm] Dimens. [W*H*D]
MFC 20/21-09	12 / 18	4,2	305 * 345 * 207
MFC 20/21-15	18 / 30	7,5	305 * 345 * 207
MFC 20/21-32	32 / 48	14	305 * 345 * 207
MFC 20/21-48	50 / 75	24,5	330 * 460 * 223
MFC 20/21-60	60 / 110	28,5	344 * 523 * 295
MFC 20/21-105	115 / 180	49	600 * 1950 * 466



Bedientableau  
Operation panel

## Frequency Inverter MFC 30/31

- Umrichterpaket mit Netzfilter, Netz-drossel und Bremswiderstand
- Für asynchrone (MFC 30) und synchrone (MFC 31) Antriebe
- Notstrombetrieb mit USV möglich
- Einfache und umfangreiche Parametereingabe
- Ergänzend zum MFC 20/21 mit integrierten, geräuscharmen Gleichstrom-schützen, Bremskarte, Eingangsfiler, Drossel.
- parallele und serielle Schnittstelle (DCP3/DCP4)

## Frequency Inverter MFC 30/31

- complete package with line filter, line choke and braking resistor
- For asynchronous (MFC 30) and synchronous (MFC 31) drives
- Emergency power operation is possible by UPS
- Easy and substantial parameter entry
- In addition to MFC 20/21 with integrated, low noise DC contactors, brake voltage card, line filter and line choke.
- parallel and serial interface (DCP3/DCP4)



MFC 30/31 Plug & Play

### MFC 30/31 \* - Leistungsdaten / Data Table

Umrichtertyp Inverter type	Inenn / I <sub>max</sub> [A] I <sub>rated</sub> / I <sub>max</sub> [A]	Motorleistung [kW] Motor power [kW]	Maße [B*H*T mm] Dimens. [W*H*D]
MFC 30/31-10	12 / 18	5	244*387*260
MFC 30/31-15	18 / 30	7,5	309*715*263
MFC 30/31-26	27 / 43	11	309*715*263
MFC 30/31-40	42 / 67	18	333*1090*270
MFC 30/31-60	60 / 110	28,5	344*1263*340

\* 50 R , 100 R mit Netzzurückspeisung / 50 R , 100 R with power recovery system

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Türen & Türantriebe nach Maß Doors & Door Machines custom-made

## Comfort-Türen - Perfekte Technik.

- Ausführung 2-blättrig / 4-blättrig
- Links / rechts / zentral öffnend
- Lasergeschweißte Türblätter
- Gehängeschiene als Spezialprofil
- Aluminium-Führungsschwelle Standard
- Geräuschgedämmte Spezialaufrollen
- Schwingungsisoliert am Fahrkorb angebaut
- Lichtvorhang serienmäßig
- Sonderausführungen möglich (Glasausführungen, verdeckte Schwelle, Vorraumüberwachung, ...)
- VVVF-Türantrieb serienmäßig

## ECO-Türen - Die preiswerte Alternative.

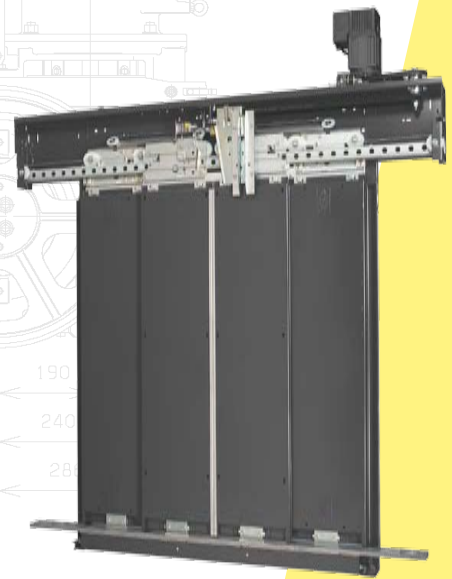
- Preiswerte Alternative zur Comfort-Tür
- Hochpräzise Fertigung durch Sonderprofile und ein patentiertes Flügelblatt ohne Schweißbearbeitung
- Ausführung 2-blättrig
- Links / rechts öffnend
- Kombinierbar mit K8
- Gemeinsam verwendbar mit S8 in einem Schacht
- Edelstahl-Türen (K220): Türblätter komplett aus Edelstahl

## Comfort-Doors - Perfect Technology.

- Design 2-panel / 4-panel
- Left / right / center-opening
- Laser-welded door panels
- Hanger rails as special section
- Aluminium guide still as standard
- Quiet special rollers
- Vibration-insulated mounting to car
- Light curtain as standard
- Special designs are possible (glass designs, hidden threshold, motion detection system, ...)
- VVVF-Door operator as standard

## ECO-Doors - Cost effective alternative.

- Cost effective alternative to Comfort doors
- High accurate manufacturing by special profiles and patented, non-welded and door panels
- Left / right opening
- Can be combined with K8
- Can be used together with S8 in one shaft
- door panels (K220): solid stainless steel



Schachttür S8  
Landing Door S8

## Leistungsstarker Türantrieb.

- Wartungsfreier, frequenz geregelter Asynchron-Motor
- Geräuscharm durch Riemenantrieb
- Fahrkurve individuell programmierbar
- Kraftbegrenzung gemäß EN 81
- Autoparametrierung zur schnellen Inbetriebnahme

## Powerful Door operator.

- Maintenance-free, frequency controlled asynchronous motor
- Low-noise by belt transmission
- Driving cycle can be programmed individually
- Force limitation according to EN 81
- Auto-parametrization for fast start-up



Türantrieb F9 / Door operator F9

## Türabmessungen / Door dimensions

Türtyp Door type	Türbreite [mm] Door Width [mm]	Türhöhe [mm] Door Height [mm]
ECO M2T	700 / 800 / 900	2000 - 2100
Comfort M2T / M2Z	700 - 1400	2000 - 2500 *
Comfort M4TZ	800 - 2500	2000 - 2500 *

\* abhängig von Türbreite und Türblattgewicht

\* depending on door width and door panel weight



**LiftEquip**®  
ELEVATOR COMPONENTS



# Maßstäbe in der Sicherheitstechnik Standards in Safety Technology

## Fangrahmen - flexibel und belastbar

- Verfügbar in Aufhängung 1:1 oder 2:1
- Variable Höhenverstellung über ein Lochraster in den Hängewinkeln
- Einfache und schnelle Montage
- Übertagende Schwingungsisolierung
- Sicheres Lösen aus dem Fang
- Niedrige Verzögerungswerte nach oben
- Exakte Schaltungsgenauigkeit der Lastmesssensoren
- Überlast- und mehrstufige Lastmessungen
- Sonderausführungen möglich

## Car Slings - Flexible and Resilient

- Available for 1:1 or 2:1 suspension
- Variable height adjustment by elbows with a raster
- Quick and easy installation
- Excellent vibration insulation
- Safe release of the safety gear
- Low upwards deceleration values
- Great switching accuracy of load-weighing sensors
- Overload and multi-level measurement
- Special designs are possible



Fangrahmen TCS  
Car sling TCS

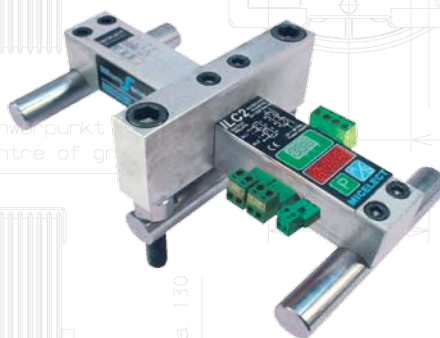
## Abstufung in folgenden Größen: / Gradation in the following measurements:

Typ / Type	Q [kg]	Breite / Width [mm]	Höhe / Height [mm]
TCS 25	< 1600	900 - 1600	2200 - 2700 *
TCS 40	< 2000	900 - 1900	2200 - 2700 *
TCS 60	< 3560	900 - 2500	2200 - 2700 *

\* im Raster von 25 mm / in steps of 25 mm

## Baumustergeprüfte Sicherheitskomponenten: Type tested safety components:

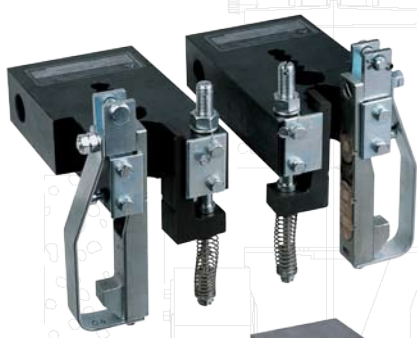
Lastmessung Micelect  
Load Weighing Devices



Sicherheitsbremse  
Safety brake



Fangzangen  
Safety gears



Geschwindigkeitsbegrenzer  
Overspeed governor

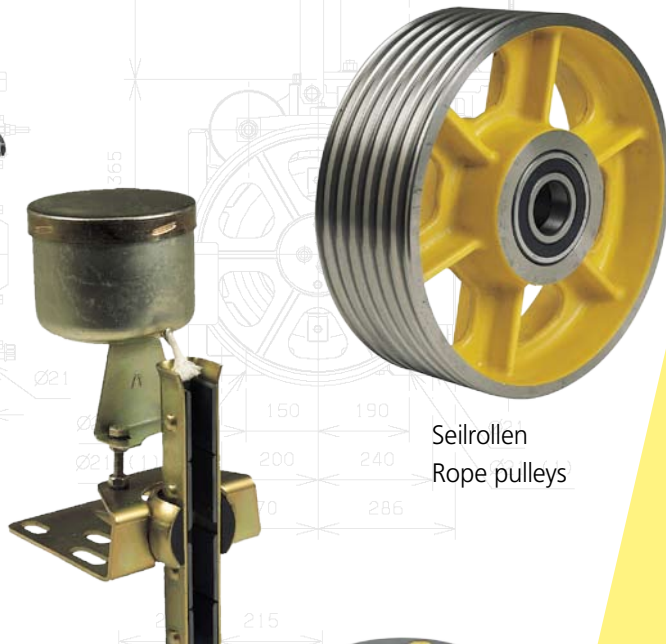


**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Umfangreiches Sortiment Large scope of components



Seilabhängungen  
Rope attachments



Seilrollen  
Rope pulleys



Ölpuffer  
Oil buffers

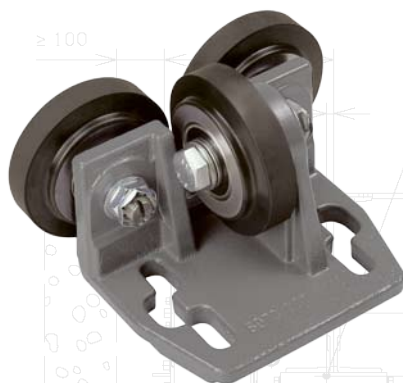
Gleitführungen  
Sliding guides



Gummipuffer  
Rubber buffers



Seilrollen aus Polyamid  
Rope pulleys of polyamid



Rollenführungen  
Roller guides



Unterbrechungsfreie Stromversorgung - USV  
Uninterruptable Power Supply - UPS



## Weitere Komponenten:

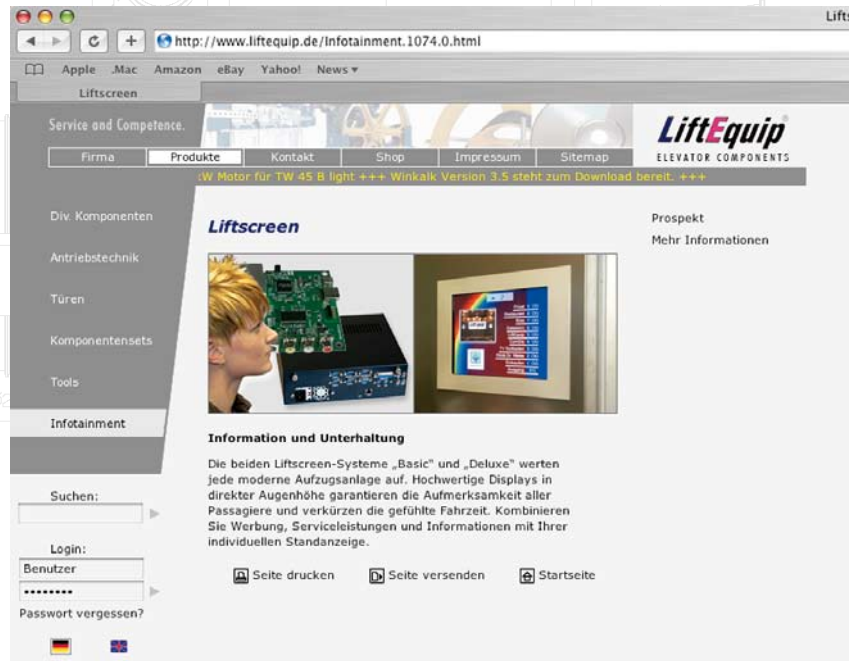
- Gegengewichte
- Führungsschienen
- Schachtausrüstung
- Seile

## Other components:

- Counter weights
- Guide rails
- Shaft equipment
- Ropes

**LiftEquip**®  
ELEVATOR COMPONENTS

*Besuchen Sie uns im Internet*  
*Visit us at [www.liftequip.de](http://www.liftequip.de)*



Sie sind auf der Suche nach technischen Daten? Auf unserer Homepage finden Sie zu jedem Produkt umfangreiche Informationen, oder Sie bestellen über unseren Online-Shop - sicher und schnell.  
 You are looking for technical data? On our homepage you can find detailed information for each product, or order the components by online shop - safe and quickly.

## *Gebäudetechnik* *Building Technology*

### **Liftscreen**

in den Ausführungen BASIC und DELUXE als Informationsplattform für den Aufzug und das Gebäude.

### **Liftscreen**

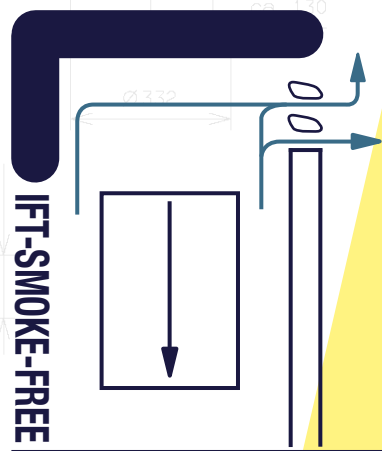
in version BASIC and DELUXE for Infotainment for lifts and buildings.

### **Lift Smoke Free**

Das System für die moderne Schachtrauchung und zur Energieeinsparung im Gebäude.

### **Lift Smoke Free**

A system for Smoke-Extraction from lift shafts and less energie consumption in the building.



9720 000 9021-4, Ausgabe 08/2007

Die einzelnen Angaben in dieser Druckschrift gelten als zugesicherte Eigenschaften, soweit sie jeweils im Einzelfall ausdrücklich als solche schriftlich bestätigt sind.

Printed in Germany

The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with the authorization of the editor.

**LiftEquip**<sup>®</sup>  
 ELEVATOR COMPONENTS



Travel Height	25 m					40 m		
Operating Speed	0,63 m/s	0,8 m/s	1 m/s	1,2 m/s	1,6 m/s	2 m/s		
Q= 320kg F= 600kg	<b>TW 45B</b> , 46:1, TS 440 1817 kJ/h, 3,8 kW 4,4 A / 7,3 A 1257 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 46:1, TS 520 2239 kJ/h, 3,8 kW 5,6 A / 8,7 A 1351 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 32:1, TS 440 2583 kJ/h, 3,8 kW 6,6 A / 10,2 A 1388 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 32:1, TS 520 3117 kJ/h, 3,8 kW 8,0 A / 12,4 A 1410 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 360 3538 kJ/h, 4,7 kW 10,1 A / 17,2 A 1131 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 440 4622 kJ/h, 6,5 kW 12,1 A / 21,6 A 1157 1/min, (NBS) MFC 20-15		
Q= 450kg F= 950kg	<b>TW 45B</b> , 46:1, TS 440 2635 kJ/h, 5,2 kW 6,6 A / 10,2 A 1257 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 46:1, TS 520 3251 kJ/h, 5,2 kW 8,4 A / 12,4 A 1351 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 32:1, TS 440 3752 kJ/h, 5,2 kW 9,9 A / 14,6 A 1388 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 32:1, TS 590 4685 kJ/h, 5,2 kW 11,9 A / 19,8 A 1243 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 48:2, TS 510 5900 kJ/h, 11 kW 15,1 A / 24 A 1438 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 48:2, TS 675 7463 kJ/h, 11 kW 18,8 A / 31,6 A 1358 1/min, (NBS) MFC 20-32		
Q= 630kg F= 1000kg	<b>*TW 45B</b> , 32:1, TS 360 3437 kJ/h, 3,6 kW 8,0 A / 12,8 A 1069 1/min MFC 20-09**	<b>TW 45B</b> , 32:1, TS 440 4421 kJ/h, 4,6 kW 12,0 A / 17,0 A 1111 1/min MFC 20-15	<b>TW 45B</b> , 32:1, TS 440 5325 kJ/h, 7,0 kW 13,0 A / 18,1 A 1388 1/min MFC 20-15	<b>*TW 63</b> , 33:1, TS 590 5834 kJ/h, 11 kW 13,9 A / 23,5 A 1281 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 48:2, TS 590 8211 kJ/h, 10,9 kW 20,2 A / 37,2 A 1243 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 48:2, TS 675 9136 kJ/h, 16,0 kW 24 A / 37 A 1358 1/min, (NBS) MFC 20-32		
Q= 800kg F= 1050kg	<b>TW 45B</b> , 32:1, TS 320 4261 kJ/h, 5,0 kW 10,9 A / 14,7 A 1203 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 32:1, TS 320 5222 kJ/h, 7,0 kW 13,0 A / 15,8 A 1527 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 33:1, TS 450 6271 kJ/h, 11 kW 15,6 A / 22,1 A 1400 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 33:1, TS 590 7715 kJ/h, 11 kW 18,7 A / 28,5 A 1281 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 48:2, TS 510 8963 kJ/h, 16,0 kW 23,7 A / 32,7 A 1438 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 43:3, TS 450 11074 kJ/h, 15,6 kW 28,9 A / 45,5 A 1216 1/min, (NBS) MFC 20-48		
Q= 1000kg F= 1200kg	<b>*TW 63</b> , 48:1, TS 450 4975 kJ/h, 5,7 kW 12,9 A / 18,8 A 1283 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 33:1, TS 450 6635 kJ/h, 9,9 kW 17,1 A / 24,5 A 1120 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 33:1, TS 450 7760 kJ/h, 11 kW 19,2 A / 26,1 A 1400 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 48:2, TS 450 9327 kJ/h, 10,8 kW 22,6 A / 34 A 1222 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS 540 11536 kJ/h, 16 kW 29 A / 45,4 A 1273 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS 640 14212 kJ/h, 20,5 kW 36 A / 55,3 A 1342 1/min, (NBS) MFC 20-48		
Q= 1200kg F= 1400kg	<b>TW 130</b> , 52:1, TS 540 7114 kJ/h, 10,4 kW 17,3 A / 26,9 A 1158 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 52:1, TS 640 8784 kJ/h, 11,1 kW 20,6 A / 32,0 A 1241 1/min, (NBS) MFC 20-32	<b>TW130</b> , 42:1, TS 640 10237 kJ/h, 11,2 kW 24,2 A / 37,4 A 1253 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 35:1, TS 640 10967 kJ/h, 16,0 kW 27,1 A / 42,6 A 1253 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS 540 13732 kJ/h, 16,0 kW 34,5 A / 52,7 A 1273 1/min, (NBS) MFC 20-48	<b>TW130</b> , 45:2, TS 640 16916 kJ/h, 20,5 kW 42,7 A / 64,3 A 1342 1/min, (NBS) MFC 20-48		
Q= 1600kg F= 1800kg	<b>TW 130</b> , 52:1, TS 540 9426 kJ/h, 10,4 kW 22,9 A / 33,4 A 1158 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 42:1, TS 540 10190 kJ/h, 15,2 kW 25,8 A / 38,3 A 1188 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 35:1, TS 540 12156 kJ/h, 15,8 kW 30,2 A / 45,1 A 1237 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 35:1, TS 540 13730 kJ/h, 20,5 kW 35,5 A / 48,9 A 1485 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 45:2, TS 540 16912 kJ/h, 27,5 kW 42,8 A / 65,6 A 1273 1/min, (NBS) MFC 20-48	<b>*TW160</b> , 45:2, TS 640 19820 kJ/h, 27,5 kW 49,3 A / 75,7 A 1342 1/min, (NBS) MFC 20-60		
Q= 1800kg F= 2000kg	<b>TW 130</b> , 52:1, TS 540 10629 kJ/h, 10,4 kW 25,8 A / 36,7 A 1158 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 42:1, TS 540 11437 kJ/h, 15,2 kW 28,9 A / 42,1 A 1188 1/min, (NBS) MFC 20-32	<b>TW130</b> , 35:1, TS 540 13641 kJ/h, 15,8 kW 33,9 A / 49,7 A 1237 1/min, (NBS) MFC 20-48	<b>TW130</b> , 45:2, TS 540 16486 kJ/h, 18,5 kW 36,9 A / 52,3 A 954 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 51:2, TS 640 19751 kJ/h, 26,8 kW 49,8 A / 76,1 A 1217 1/min, (NBS) MFC 20-60	<b>TW 160</b> , 45:2, TS 640 23048 kJ/h, 33,5 kW 58,2 A / 86,5 A 1342 1/min, (NBS) MFC 20-105		
Q= 2000kg F= 2200kg	<b>TW 160</b> , 50:1, TS 640 11269 kJ/h, 12,0 kW 32,0 A / 43,2 A 940 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 50:1, TS 640 12969 kJ/h, 15,3 kW 31,9 A / 46,2 A 1193 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 41:1, TS 640 15505 kJ/h, 20,1 kW 37,5 A / 56,3 A 1223 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 35:1, TS 640 17753 kJ/h, 20,5 kW 43,0 A / 65,3 A 1253 1/min, (NBS) MFC 20-48	<b>W263B</b> , 50:2, TS 640 24236 kJ/h, 32,0 kW 59,9 A / 95,5 A 1193 1/min MFC20-105	<b>W263B</b> , 41:2, TS 540 27871 kJ/h, 37,0 kW 67,5 A / 96,0 A 1450 1/min MFC 20-105		
Q= 2200kg F= 2400kg	<b>TW 160</b> , 50:1, TS640 12380 kJ/h, 15,4 kW 34,8 A / 47,7 A 940 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 50:1, TS 640 14246 kJ/h, 19,6 kW 34,7 A / 51,0 A 1193 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 41:1, TS 640 17031 kJ/h, 20,1 kW 41,2 A / 60,9 A 1223 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 35:1, TS 640 18241 kJ/h, 27,5 kW 44,9 A / 68,5 A 1253 1/min MFC 20-48	<b>W263B</b> , 50:2, TS 540 24814 kJ/h, 33,5 kW 62,7 A / 91,8 A 1414 1/min MFC 20-105	<b>W263B</b> , 41:2, TS 540 29895 kJ/h, 42,0 kW 75,5 A / 126,2 A 1450 1/min MFC 20-105		
Q= 2400kg F= 2600kg	<b>TW 160</b> , 50:1, TS 640 13490 kJ/h, 18,5 kW 28,2 A / 38,3 A 940 1/min MFC 20-32	<b>TW160</b> , 41:1, TS 640 16143 kJ/h, 16,0 kW 45,0 A / 62,0 A 978 1/min MFC 20-48	<b>TW160</b> , 35:1, TS 640 17696 kJ/h, 23,0 kW 48,7 A / 69,7 A 1044 1/min MFC 20-60	<b>W332B</b> , 47:1, TS 800 23859 kJ/h, 33,5 kW 57,0 A / 112,6 A 1346 1/min MFC 20-105	<b>W 332B</b> , 59:2, TS 700 31541 kJ/h, 37,0 kW 71,0 A / 126,7 A 1287 1/min MFC 20-105	<b>*W332B</b> , 46:2, TS 700 33791 kJ/h, 45,4 kW 83,9 A / 167,7 A 1255 1/min MFC 20-105		
Q= 2600kg F= 2800kg	<b>*W332B</b> , 63:1, TS 640 14897 kJ/h, 26,0 kW 33,4 A / 83,2 A 1184 1/min MFC 20-60	<b>W332B</b> , 63:1, TS 700 18125 kJ/h, 27,5 kW 43,7 A / 96,0 A 1375 1/min MFC 20-60	<b>W332B</b> , 47:1, TS 700 23138 kJ/h, 27,5 kW 54,9 A / 99,6 A 1282 1/min MFC 20-60	<b>W332B</b> , 47:1, TS 800 25824 kJ/h, 33,5 kW 61,7 A / 118,2 A 1346 1/min MFC 20-105	<b>W 332B</b> , 59:2, TS 700 32059 kJ/h, 45,4 kW 82,3 A / 157,2 A 1287 1/min MFC 20-105	<b>*W332B</b> , 46:2, TS 700 36563 kJ/h, 45,4 kW 90,7 A / 167,6 A 1255 1/min MFC 20-105		
Q= 2800kg F= 3000kg	<b>W 332B</b> , 63:1, TS 640 16630 kJ/h, 26,0 kW 39,1 A / 88,8 A 1184 1/min MFC 20-60	<b>W 332B</b> , 63:1, TS 700 19504 kJ/h, 27,5 kW 47,0 A / 99,5 A 1375 1/min MFC 20-60	<b>W 332B</b> , 47:1, TS 700 24352 kJ/h, 33,5 kW 57,25 A / 103,4 A 1282 1/min MFC 20-60	<b>W 332B</b> , 47:1, TS 800 27789 kJ/h, 33,5 kW 66,3 A / 123,8 A 1346 1/min MFC 20-105	<b>W 332B</b> , 59:2, TS 700 34487 kJ/h, 45,4 kW 88,5 A / 177,0 A 1287 1/min MFC 20-105			

\* 50% compensation of rated load  
\*\* only Drako 250T, 5x8 mm rope

Machine type, Ratio, TS-Ø (mm)  
Heat dissipated [kJ/h], Motor perf. [kW] at RPM  
Req. Motor current [A] // Req. Start up current [A]  
Motor RPM [1/min], (NBS possible)  
Inverter type.

The calculations are examples, alterations are possible!

Q = Rated load,  
F = Maximum mass of car,  
TS = Traction sheave diameter,  
(NBS) = Compatible with emergency brake system.

Travel Height	25 m				40 m
Operating Speed	0,63 m/s	0,8 m/s	1 m/s	1,2 m/s	1,6 m/s
Q= 450kg F= 950kg	<b>TW 45B</b> , 32:1, TS 520 2458 kJ/h, 3,8 kW 6,6 A / 9,2 A 1480 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 360 2774 kJ/h, 3,4 kW 7,9 A / 12,2 A 1131 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 360 3341 kJ/h, 3,8 kW 8,8 A / 13,0 A 1414 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 440 3919 kJ/h, 5,2 kW 10,8 A / 16,3 A 1388 1/min, (NBS) MFC 20-09	<b>TW 45B</b> , 40:3, TS 520 5406 kJ/h, 7,0 kW 14,1 A / 19,9 A 1567 1/min, (NBS) MFC 20-15
Q= 630kg F= 1000kg	<b>TW 45B</b> , 32:1, TS 520 3354 kJ/h, 5,2 kW 9,0 A / 11,3 A 1480 1/min, (NBS) MFC 20-15	<b>TW 45B</b> , 32:1, TS 590 3990 kJ/h, 5,2 kW 11,0 A / 12,8 A 1657 1/min, (NBS) MFC 20-15	<b>TW 45B</b> , 40:3, TS440 2908 kJ/h, 5,2 kW 11,1 A / 18,7 A** 1415 1/min, (NBS) MFC 20-15	<b>TW 45B</b> , 40:3, TS440 5465 kJ/h, 7,0 kW 13,6 A / 19,6 A 1388 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 43:3, TS 675 8640 kJ/h, 11,0 kW 21,5 A / 32,9 A 1297 1/min, (NBS) MFC 20-32
Q= 1000kg F= 1500kg	<b>TW 45B</b> , 32:1, TS 520 5357 kJ/h, 7,0 kW 13,3 A / 16,1 A 1480 1/min MFC 20-15	<b>TW 45B</b> , 40:3, TS 360 5910 kJ/h, 6,3 kW 15,8 A / 22,2 A** 1131 1/min, (NBS) MFC 20-15	<b>*TW45B</b> , 40:3,TS360 6535 kJ/h, 7,0 kW 16,1 A / 22,1 A** 1414 1/min, (NBS) MFC 20-15	<b>TW 63</b> , 43:3, TS 510 9232 kJ/h, 11,0 kW 22,6 A / 34,1 A 1288 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 43:3, TS 675 11660 kJ/h, 16,0 kW 30,4 A / 45,3 A 1297 1/min, (NBS) MFC 20-48
Q= 1600kg F= 1800kg	<b>TW 63</b> , 33:1, TS 590 8033 kJ/h, 11,0 kW 19,7 A / 25,5 A 1345 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 48:2, TS 510 9719 kJ/h, 11,0 kW 24,1 A / 29,8 A 1438 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 43:3, TS 450 11105 kJ/h, 15,6 kW 28,6 A / 39,9 A 1216 1/min, (NBS) MFC 20-32	<b>TW 63</b> , 43:3, TS 510 12944 kJ/h, 16,0 kW 33,1 A / 46,1 A 1288 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 43:3, TS 640 16938 kJ/h, 27,5 kW 44,0 A / 63,2 A 1368 1/min, (NBS) MFC 20-48
Q= 2000kg F= 2200kg	<b>TW 63</b> , 48:2, TS 450 9736 kJ/h, 11,0 kW 23,5 A / 30,6 A 1283 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS540 11428 kJ/h, 16,0 kW 28,6 A / 41,4 A 1273 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS640 14078 kJ/h, 20,5 kW 35,4 A / 50,5 A 1342 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 43:3, TS 540 16914 kJ/h, 19,9 kW 42,7 A / 64,1 A 1216 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 43:3, TS 640 21303 kJ/h, 27,5 kW 55,0 A / 76,3 A 1368 1/min, (NBS) MFC 20-60
Q= 2500kg F= 2500kg	<b>TW 130</b> , 35:1, TS 640 11815 kJ/h, 16,0 kW 29,6 A / 40,3 A 1316 1/min, (NBS) MFC 20-32	<b>TW 130</b> , 45:2, TS 540 14144 kJ/h, 16,0 kW 35,3 A / 48,8 A 1273 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 45:2, TS 640 17422 kJ/h, 20,5 kW 43,7 A / 59,6 A 1342 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 43:3, TS 540 19531 kJ/h, 26,8 kW 50,0 A / 73,5 A 1216 1/min, (NBS) MFC 20-60	<b>TW 130</b> , 43:3, TS 540 24548 kJ/h, 33,5 kW 65,3 A / 79,1 A 1622 1/min, (NBS) MFC 20-105
Q= 3000kg F= 2800kg	<b>TW 130</b> , 35:1, TS 540 13334 kJ/h, 20,5 kW 34,9 A / 42,9 A 1559 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 45:2, TS 540 16856 kJ/h, 20,5kW 41,6 A / 57,4 A 1273 1/min, (NBS) MFC 20-48	<b>TW 130</b> , 45:2, TS 540 18505 kJ/h, 27,5 kW 49,4 A / 60,1 A 1591 1/min, (NBS) MFC 20-60	<b>TW 130</b> , 43:3, TS 540 22750 kJ/h, 32,6 kW 57,8 A / 84,5 A 1216 1/min, (NBS) MFC 20-60	<b>*W 332B</b> , 57:3, TS 800 31348 kJ/h, 42,0 kW 77 A / 153 A 1451 1/min MFC 20-105
Q= 3500kg F= 3200kg	<b>TW 130</b> , 45:2, TS 540 16568 kJ/h, 18,5 kW 37,6 A / 45,6 A 1002 1/min, MFC 20-48	<b>TW 160</b> , 57:2, TS 640 18699 kJ/h, 27,5 kW 47,1 A / 62,6 A 1360 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 45:2, TS 640 22231 kJ/h, 33,5 kW 55,7 A / 76,3 A 1342 1/min, (NBS) MFC 20-60	<b>W263B</b> , 41:2, TS 640 28967 kJ/h, 37,0 kW 70,0 A / 94,0 A 1468 1/min MFC 20-105	<b>*W 332B</b> , 57:3, TS 800 36934 kJ/h, 55 kW 87 A / 128,6 A 1451 1/min MFC 20-105
Q= 4000kg F= 3500kg	<b>TW 160</b> , 35:1, TS 640 17129 kJ/h, 27,5 kW 42,7 A / 57,6 A 1316 1/min, (NBS) MFC 20-48	<b>TW 160</b> , 51:2, TS 640 21693 kJ/h, 26,8 kW 54,2 A / 73,9 A 1217 1/min MFC 20-60	<b>W263B</b> , 41:2, TS 540 22608 kJ/h, 37,0 kW 66,4 A / 88,4 A 1450 1/min MFC 20-105	<b>W263B</b> , 41:2, TS 640 32232 kJ/h, 42,0 kW 81,2 A / 126,2 A 1468 1/min MFC 20-105	
Q= 4500kg F= 4000kg	<b>W 263B</b> , 40:1, TS 700 22011 kJ/h, 27,5 kW 54,2 A / 75,1 A 1375 1/min MFC 20-60	<b>W 263B</b> , 50:2, TS 540 25153 kJ/h, 33,5 kW 63,2 A / 86,6 A 1414 1/min MFC 20-105	<b>W 263B</b> , 41:2, TS 540 30307 kJ/h, 42,0 kW 76,0 A / 118,1 A 1450 1/min MFC 20-105	<b>*W332B</b> , 57:3, TS 640 34549 kJ/h, 45,4 kW 90,4 A / 177,5 A 1360 1/min MFC 20-105	
Q= 5000kg F= 4500kg	<b>W 263B</b> , 50:2, TS 540 24304 kJ/h, 29,9 kW 61,9 A / 87,4 A 1114 1/min MFC 20-105	<b>W263B</b> , 41:2, TS 540 29925 kJ/h, 34,3 kW 71,4 A / 99,6 1160 1/min MFC 20-105	<b>W 332B</b> , 46:2, TS 700 35532 kJ/h, 45,4 kW 88,1 A / 176,2 A 1255 1/min MFC 20-105		
Q= 5500kg F= 5000kg	<b>W332B</b> , 47:1, TS 800 28486 kJ/h, 37,0 kW 66,0 A / 116,7 A 1413 1/min MFC 20-105	<b>W332B</b> , 59:2, TS 640 33633 kJ/h, 42,0 kW 81,8 A / 159,9 A 1408 1/min MFC 20-105	<b>*W332B</b> , 46:2, TS 640 37368 kJ/h, 45,4 kW 96,5 A / 174,1 A 1372 1/min MFC 20-105		
Q= 6000kg F= 5500kg	<b>W332B</b> , 47:1, TS 740 29933 kJ/h, 37,0 kW 72,0 A / 121,5 A 1528 1/min MFC 20-105				

\* 50% compensation of rated load

Machine type, Ratio, TS-Ø (mm)  
Heat dissipated [kJ/h], Motor perf. [kW] at RPM  
Req. Motor current [A] // Req. Start up current [A]  
Motor RPM [1/min], (NBS possible)  
Inverter type.

The calculations are examples, alterations are possible!

Q = Rated load,  
F = Maximum mass of car,  
TS = Traction sheave diameter,  
(NBS) = Compatible with emergency brake system.

# Drive TW 45 B

## The ideal solution for small loads

For rated loads up to 630 kg and operating speeds up to 1,25 m/s with 1:1 suspension

Our machine TW 45 B suits ideal for standard lifts. Its capacity is up to 630 kg for 1:1 suspension and up to 1000 kg for 2:1 suspension.

### Variable Motor Position

Depending on the required space you can obtain this gear with vertical or horizontal motor position. Moreover both designs are available as left- or right-hand version. For the installation in the shaft, there is a version without handwinding wheel with electrical, aired operational brake available.

### Excellent Motor Control

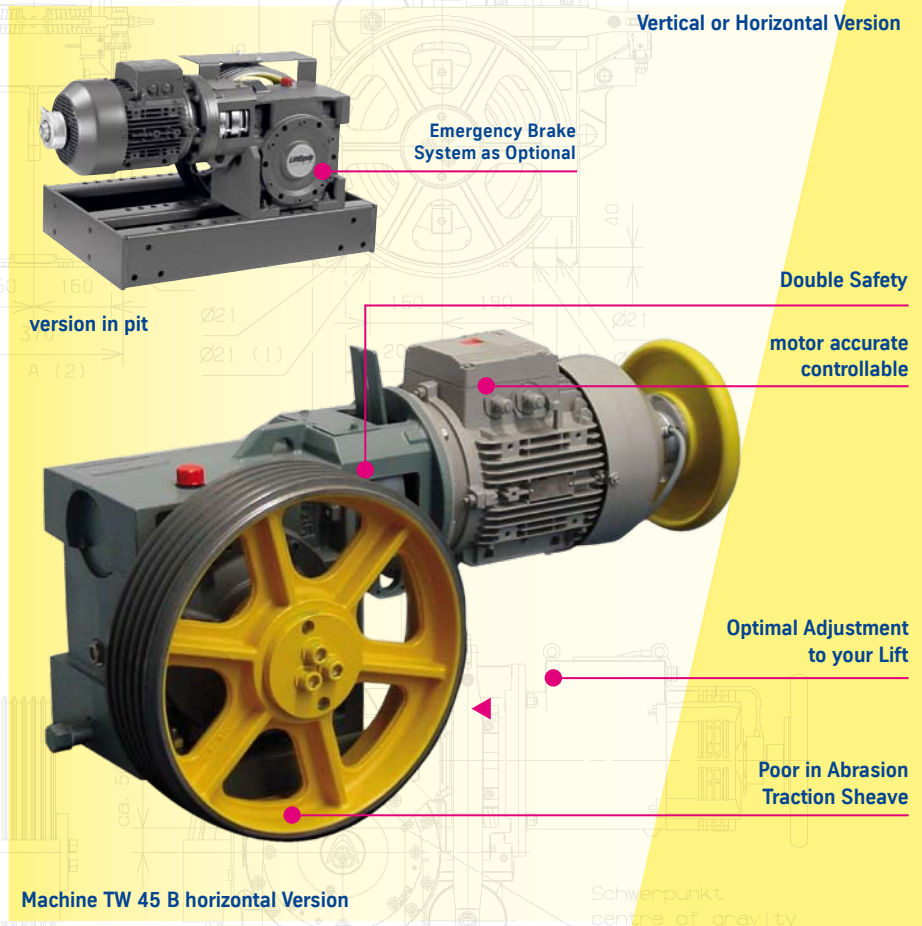
The VVVF motor (3,8; 5,2 or 7kW) with elastic coupling in B5 design stands for optimal running performance.

### Emergency Brake as Option (NBS)

As one-circuit spring operated disc brake it enables braking in upward direction and meets the requirements set out in the European standard for lifts the EN 81-1/9.10.

### Continuous Smoothness of Running

is due to a single-stage worm gear mounted on roller bearings. Minor process tolerances and the use of high-quality material ensure quiet running. Synthetic gear oil assures for optimal lubrication and high efficiency.



### Low-Wear Traction Sheave

High durability is a main feature of the hardened traction sheave. It is available in the following diameters: 360, 440 or 520 mm. The traction sheave is conceived for a maximum of 7x8, 6x10, 6x11 or 5x12 mm ropes.

### Optimal Adjustment to Your Lift

The TW 45 B allows stress of the rope departure from the traction sheave in all directions.

### Double Safety

The operational brake is a dual-circuit shoe brake. It safely stops the lift even with one power circuit effective only.

### Machine TW 45 B – Performance Data

Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
320	0,63 – 1,20	1:1
450	0,5 – 1,25	1:1
630	0,5 – 1,0	1:1
900	0,4 – 0,63	2:1
1000	0,4 – 1,0	2:1
1300	0,4	2:1

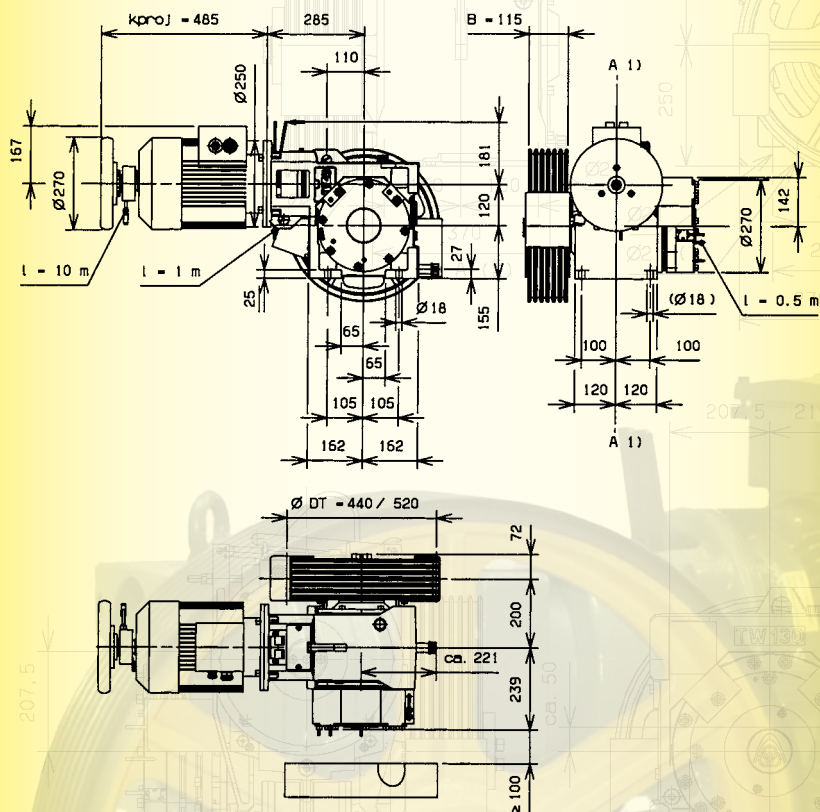
**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Drive TW 45 B

## A Custom-Made Machine

### Dimensions



### Weight: about 225 kg

The weight of the machines vary depending on motor and traction sheave. The emergency braking system and alternatively the machine frame are not included.

### Radial Shaft Load

The admissible radial shaft load is:  
 $F_{tzul} \leq 30$  kN at  $n_2 = n_1/i \leq 50$  1/min,  
 $F_{tzul} \leq 26$  kN at  $n_2 = n_1/i \leq 50$  1/min,  
 $n_1$  is the motor speed and  $i$  the gear ratio.

### Colour

The products shown are available in blue-grey – RAL 7031 – as standard. Dynamic parts are in a yellow finish.

9720 000 6758-2, issue 08/2007

The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with the authorization of the editor.sind.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

# LiftEquip®

ELEVATOR COMPONENTS

# Drive TW 63

## The handy drive for middle loads

For rated loads up to 1000 kg or operating speeds up to 2,5 m/s with 1:1 suspension

Our machine TW 63 has an optimal cost effectiveness for middle loads. Its capacity is 1:1 up to 1000 kg and 2:1 up to 2000 kg.

### Variable Motor Position

Depending on the required space you can obtain this gear with vertical or horizontal motor position. Both designs are available as left-hand version, the horizontal version can also be supplied as right-hand version.

### Excellent Motor Control

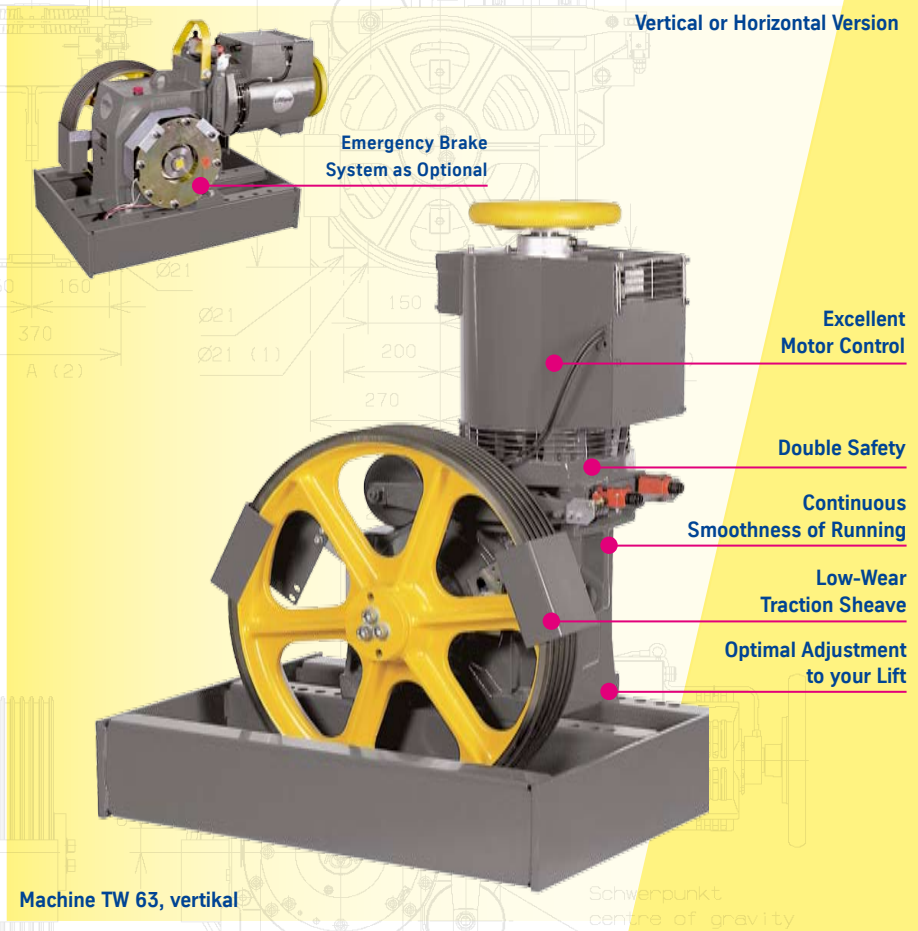
The VVVF motor (5.7 up to 16 kW) in A4 design or with flexible coupling in B5 structural shape stands for optimal running performance. It is also available in IP54, which means splash water protected.

### Emergency Brake NBS as Option

As one-circuit spring operated disc brake it enables braking in upward direction and meets the requirements set out in the EN 81-1/9.10.

### Continuous Smoothness of Running

Due to a single-stage worm gear mounted on roller bearings. Minor process tolerances and the use of high-quality material ensure quiet running. Synthetic gear oil means optimal lubrication.



Machine TW 63, vertikal

### Low-Wear Traction Sheave

High durability is a main feature of the hardened traction sheave. It is available in the following diameters: 450, 510, 590 or 675 mm. The traction sheave is designed for a maximum of 9x8, 7x10, 7x11 or 6x12 mm ropes.

### Optimal Adjustment to Your Lift

The TW 63 allows rope exit from the traction sheave in all directions.

### Double Safety

The operational brake is a dual-circuit shoe brake. It safely stops the lift even with one power circuit effective only.

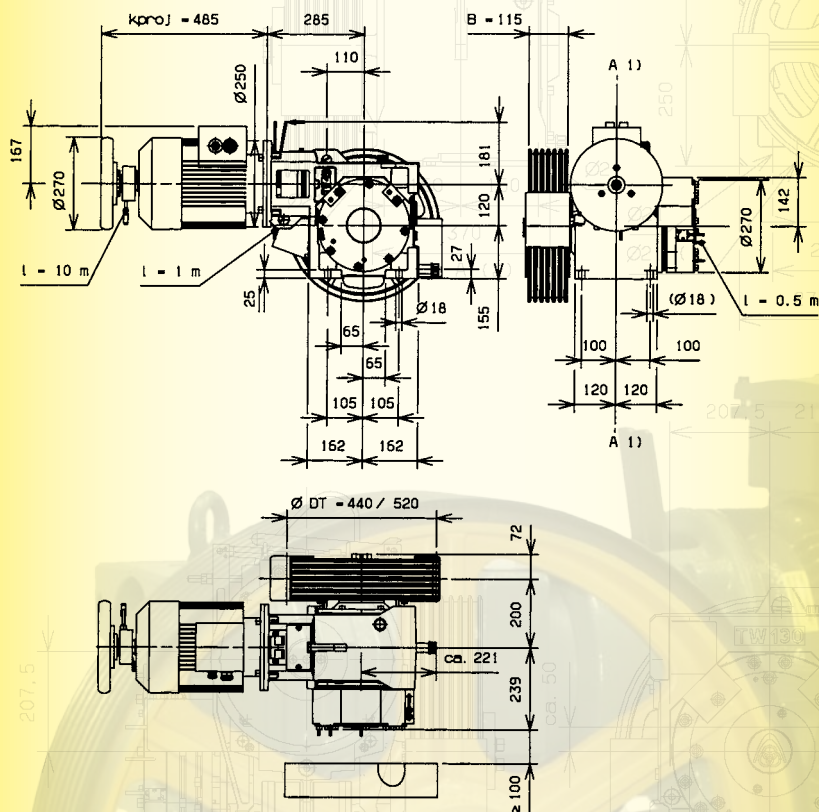
### Machine TW 63 – Performance Data

Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
800	0,63 – 2,0	1:1
1000	0,5 – 1,2	1:1
1000	0,4 – 1,6	2:1
1600	0,4 – 1,2	2:1
2000	0,4 – 0,63	2:1

# Drive TW 63

## A Custom-Made Machine

### Dimensions



### Weight: about 370 kg

The machine weights vary depending on the motor and traction sheave. The emergency braking system and the machine frame are not included.

### Radial Shaft Load

The admissible radial shaft load is:

$F_{tzul} \leq 43\text{ kN}$  for the standard traction sheave shaft;

$F_{tzul} \leq 41\text{ kN}$  for the extended traction sheave shaft (SA 9).

### Colour

The products shown are available in blue-grey - RAL 7031 - as standard. Movable parts are in a yellow finish.

### Special Versions

- Emergency braking system NBS: braking upwards acc. to EN 81-1/9.10
- Brake monitoring switch: monitors brake ventilation and line wear (SA 3)

9720 000 6760-1, issue 08/2007

The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with the authorization of the editor.sind.

### LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

# LiftEquip®

ELEVATOR COMPONENTS



# Drive TW 160

## The cart horse for higher loads

For rated loads up to 2000 kg or operating speeds up to 2.5 m/s with 1:1 suspension

**Our Machine TW 160 has a good cost effectiveness for higher loads. Its capacity is up to 2500 kg with 1:1 suspension and up to 4000 kg with 2:1 suspension.**

### Excellent Motor Control

The VVVF motor (11 up to 42 kW) in B5 design with flexible coupling stands for optimal running performance.

### Part-Ex as Option

An extended traction sheave shaft with wall bearing, vapour-proof shaft duct and the suitable machine base frame allows to use standard machines for Ex-applications.

### Emergency Brake NBS as Option

As one-circuit spring operated disc brake it enables braking in upward direction and meets the requirements set out in the European standard for lifts the EN 81-1/9.10.

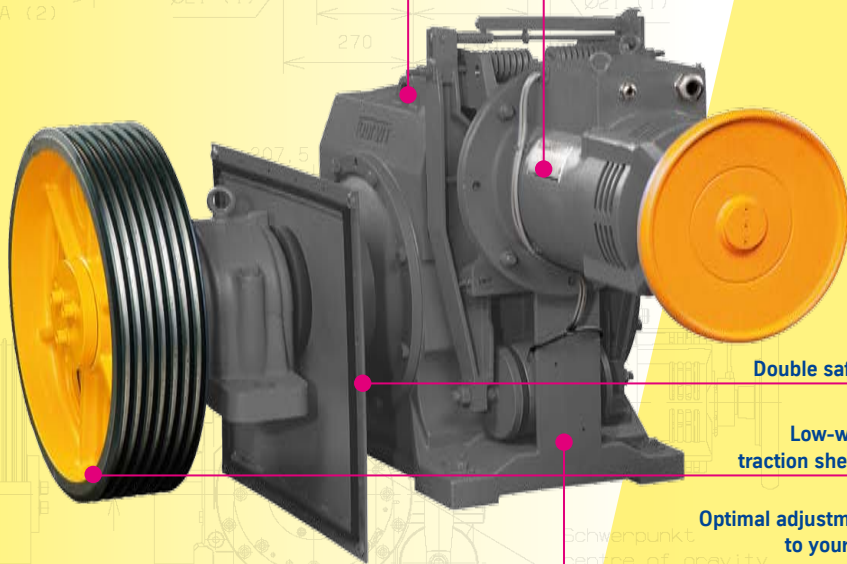
### Low-Wear Traction Sheave

High durability is a main feature of the hardened traction sheave. It is available in the following diameters: 640, 720 or 800 mm. The traction sheave is designed for a maximum of 10x10, 9x11, 9x12, 8x13, 7x14, 7x15 or 6x16 mm ropes.



Emergency Brake NBS as Option

Teil-Ex optional



Maschine TW 160

Continuous smoothness of running

Excellent motor control

Double safety

Low-wear traction sheave

Optimal adjustment to your lift

### Optimal Adjustment to Your Lift

The TW 160 allows rope exit from the traction sheave in all directions.

### Double Safety

The operational brake is a dual-circuit shoe brake. It safely stops the lift even with one power circuit effective only.

### Continuous Smoothness of Running

Because of a single-stage worm gear mounted on roller bearings. Minor process tolerances and the use of high-quality material ensure quiet running. Synthetic gear oil means optimal lubrication and high efficiency.

### Machine TW 160 – Performance Data

Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
1800	0,8 – 2,0	1:1
2000	0,8 – 1,2	1:1
2500	0,63 – 1,6	2:1
3000	0,63 – 1,2	2:1
3500	0,63 – 1,0	2:1



# Drive W 263 B

## The well proven for big loads

For rated loads up to 2200 kg or operating speeds up to 2.5 m/s with 1:1 suspension

Our machine W 263 B has well proven in long reliable use for big loads. Its capacity is up to 2200 kg with 1:1 suspension and up to 5000 kg with 2:1 suspension.

### Excellent Motor Control

The VVVF motor (16 up to 75 kW) in B5 design with flexible coupling stands for optimal running performance.

### Part-Ex as Option

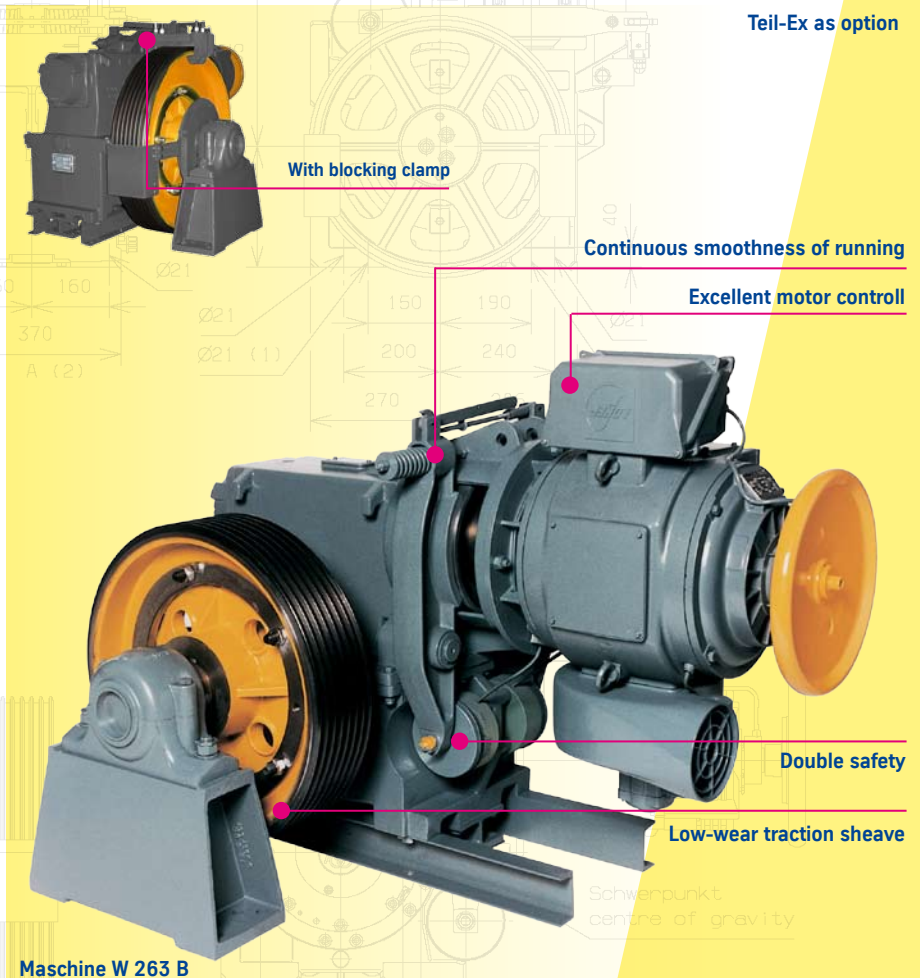
An extended traction sheave shaft with wall bearing, vapour-proof shaft duct and the suitable machine base frame allows to use standard machines for Ex-applications. This saves costs for expensively upgraded Ex-machines.

### Increased Admissible Load

A reinforced traction sheave shaft enables the machine to be stressed with up to 50 % higher radial shaft load. In this way the W 263 B reaches load areas of bigger machines.

### Continuous Smoothness of Running

Because of a single-stage worm gear mounted on sliding bearings. Minor process tolerances and the use of high-quality material ensure quiet running. High grade gear oil means reliable lubrication and good efficiency.



Maschine W 263 B

### Low-Wear Traction Sheave

High durability is a main feature of the hardened traction sheave. It is available in the following diameters: 540, 640, 700, 740 or 800 mm. The traction sheave is designed for a

maximum of 12x10, 11x11, 10x12, 10x13, 9x14, 8x15 or 8x16 mm ropes.

### Double Safety

The operational brake is a dual-circuit shoe brake. It safely stops the lift even with one power circuit effective only.

### Machine W 263 B – Data table

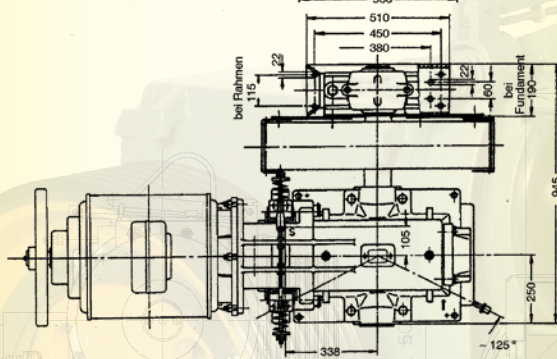
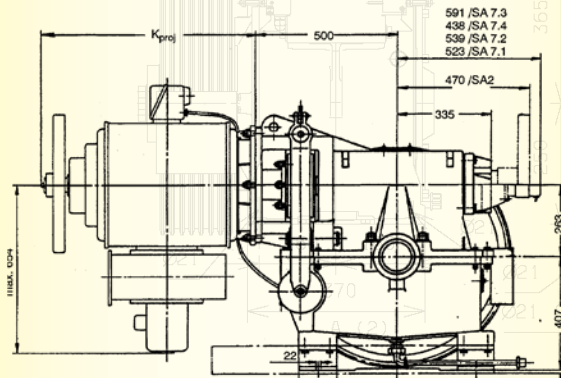
Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
2000	0,8 – 2,0	1:1
2200	0,63 – 1,2	1:1
3500	0,63 – 1,2	2:1
4000	0,63 – 1,0	2:1
4500	0,63 – 1,0	2:1



# Drive W 263 B

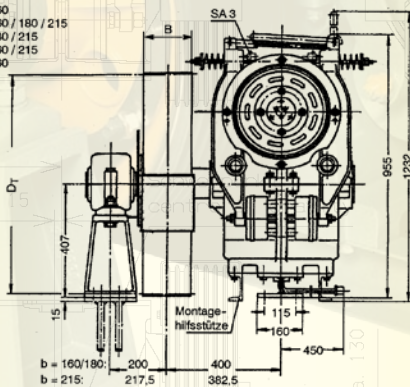
## A custom-made machine

### Abmessungen



ohne Motor gezeichnet

D <sub>r</sub>	B
540	160
640	160 / 180 / 215
700	180 / 215
740	160 / 215
800	160



Linksausführung wie gezeichnet, Rechtsausführung spiegelbildlich

Gewicht der Maschine ca. 1300 kg  
S = Schwerpunkt der Maschine

### Weight: about 1250 kg

The machine weights vary depending on the motor and traction sheave. The machine base frame is not included.

### Radial Shaft Load

The admissible radial shaft load for the rope departure in downward direction is:

$F_{tzul} \leq 84$  kN for the standard traction sheave shaft;

$F_{tzul} \leq 76$  kN for the extended traction sheave shaft (SA 9);

$F_{tzul} \leq 100$  kN for Part-Ex with reinforced traction sheave shaft (SA 4+13);

$F_{tzul} \leq 126$  kN for the reinforced traction sheave shaft (SA 13).

### Colour

The products shown are available in blue-grey - RAL 7031 - as standard. Movable parts are in a yellow finish.

### Special Versions

- Horizontal rope departure (SA 1)
- Brake monitoring switch: monitors brake ventilation and line wear (SA 3)
- Traction sheave in shaft with extended traction sheave shaft and pedestal bearing (SA 9)
- Part-Ex proof: wall bearing with vapour-proof shaft duct, extended traction sheave shaft and the suitable machine base rame (SA 4)
- Reinforced traction sheave shaft (SA 13)
- Gear according to ATEX
- Brake magnets, Ex-proof (SA 15)

9720 000 6763-1, Ausgabe 08/2007

Die einzelnen Angaben in dieser Druckschrift gelten als zugesicherte Eigenschaften, soweit sie jeweils im Einzelfall ausdrücklich als solche schriftlich bestätigt sind.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Drive W 332 B

## The well proven for extreme loads

For rated loads up to 3200 kg or operating speeds up to 2.5 m/s with 1:1 suspension

Our machine W 332 B has well proven in long reliable use for extreme loads. Its capacity is up to 3200 kg with 1:1 suspension and up to 6000 kg with 2:1 suspension.

### Excellent Motor Control

The VVVF motor (16 up to 75 kW) in B5 design with flexible coupling stands for optimal running performance.

### Part-Ex as Option

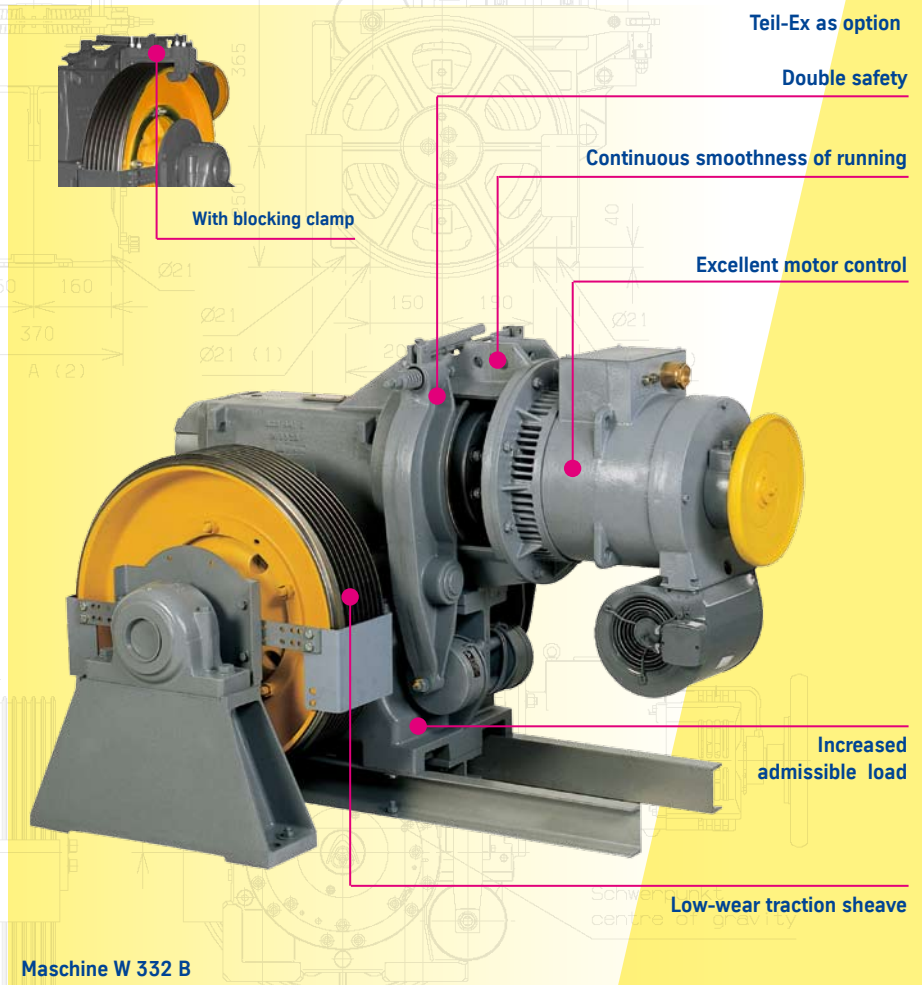
An extended traction sheave shaft with wall bearing, vapour-proof shaft duct and the suitable machine base frame allows to use standard machines for Ex-applications. This saves costs for expensively with special motors and braking magnets upgraded Ex-machines.

### Continuous Smoothness of Running

Because of a single-stage worm gear mounted on sliding bearings. Minor process tolerances and the use of high-quality material ensure quiet running. High grade gear oil means reliable lubrication and good efficiency.

### Double Safety

The operational brake is a dual-circuit shoe brake. It safely stops the lift even with one power circuit effective only. Line wear can be continuously checked with the brake monitoring.



Maschine W 332 B

### Low-Wear Traction Sheave

High durability is a main feature of the hardened traction sheave. It is available in the following diameters: 640, 700, 740 or 800 mm. Its width can

be 160, 180 or 215 mm. The traction sheave is designed for a maximum of 12x10, 11x11, 10x12, 10x13, 9x14, 8x15 or 8x16 mm ropes.

### Machine W 332 B – Data table

Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
2800	0,63 – 1,6	1:1
3200	0,63 – 1,2	1:1
4500	0,4 – 1,2	2:1
5500	0,4 – 1,0	2:1
6000	0,4 – 0,63	2:1

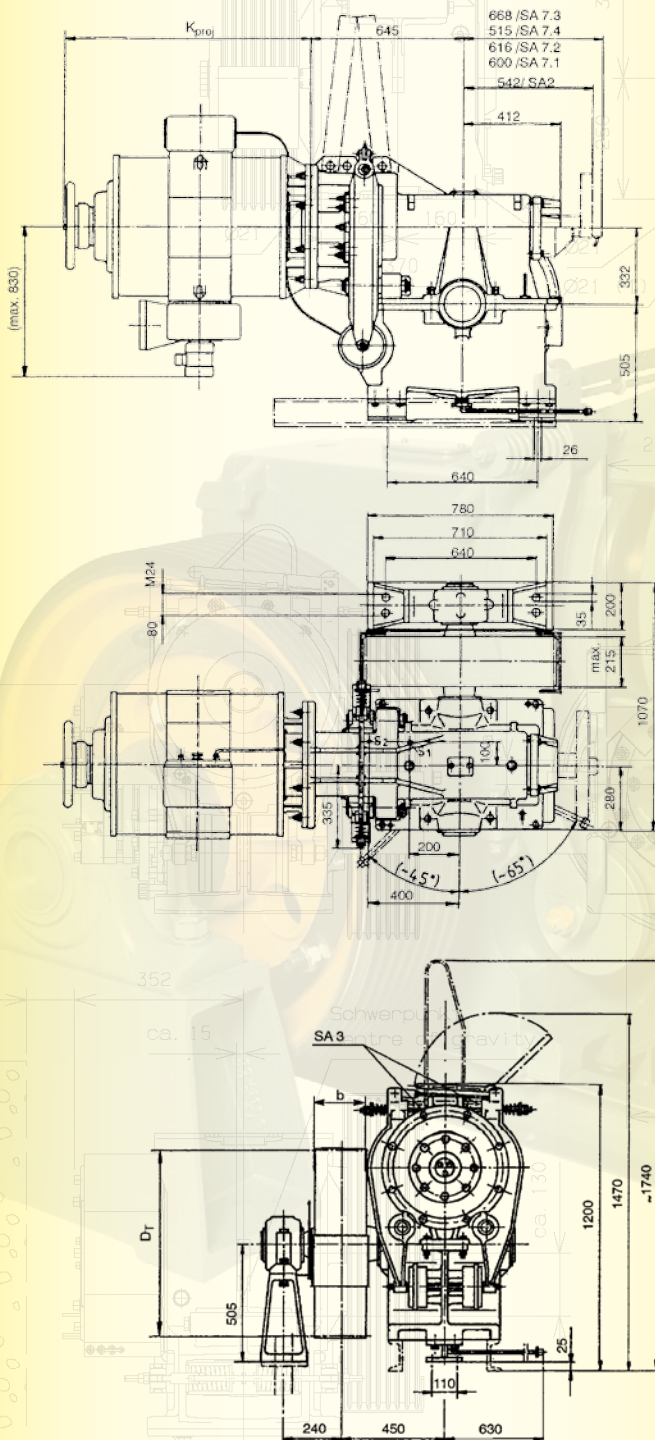
**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Drive W 332 B

## A custom-made machine

### Dimensions



### Weight: about 1700 kg

The machine weights vary depending on the motor and traction sheave. The machine base frame is not included.

### Radial Shaft Load

The admissible radial shaft load for the rope departure in downward direction is:

- $F_{zul} \leq 155 \text{ kN}$  for the standard traction sheave shaft;
- $F_{zul} \leq 124 \text{ kN}$  for the extended traction sheave shaft (SA 9);
- $F_{zul} \leq 124 \text{ kN}$  for Part-Ex (SA 4).

### Colour

The products shown are available in blue-grey - RAL 7031 - as standard. Movable parts are in a yellow finish.

### Special Versions

- Horizontal rope departure (SA 1)
- Brake monitoring switch: monitors brake ventilation and line wear (SA 3)
- Traction sheave in shaft with extended traction sheave shaft and pedestal bearing (SA 9)
- Part-Ex proof: wall bearing with vapour-proof shaft duct, extended traction sheave shaft and the suitable machine base frame (SA 4)
- Gear according to ATEX
- Brake magnets, Ex-proof (SA 15)

9720 000 6764-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Emergency Braking System Optimal Solution for Modernisation

Space-Saving, Easy, Affordable - Certified and Type-Tested According to EN 81-1/2

Our emergency braking system, named NBS, is the optimal solution to comply with the requirements for the modernisation of existing lifts, if „safety gear operation in upwards direction acc. to EN81“ is required. The emergency braking system has 5 main features:

## For Rated Loads up to 4750 kg

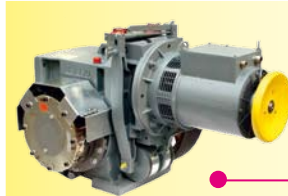
Our NBS is designed for rated loads up to 2200 kg and 1:1 suspension. In case of 2:1 suspension it is suitable for up to 4750 kg rated load.

## Continuously Available

As an option the emergency braking system is available for the following machines: Our gears TW 63, TW 130, TW 160 and for most applications of the TW 45 B - our machine with the smallest dimensions.

## Calculable Costs

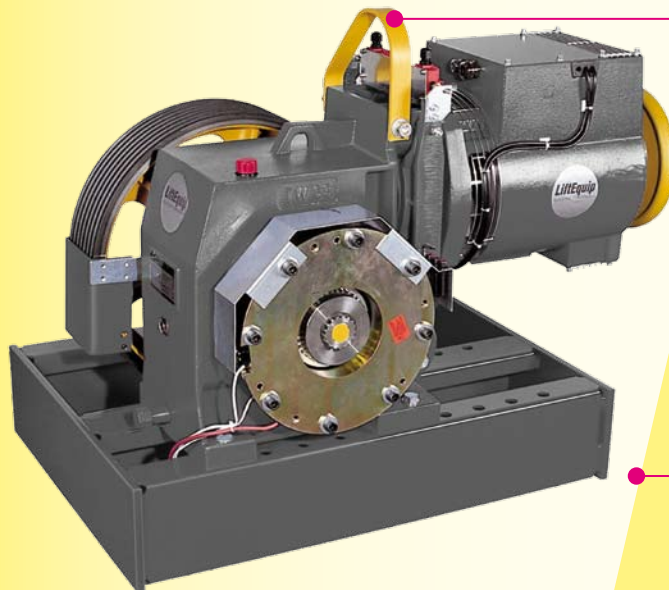
We offer you an elaborated and well-designed package solution: Machine with emergency brake, overspeed governor with safety switch as well as separate control unit. They represent a self contained functioning system. Time-consuming in-house constructions and high consequential costs are avoided.



NBS an TW 130

Continuously Available

For Rated Loads  
up to 4750 kg



Emergency brake  
mounted at machine

Calculable Costs

Compact Design  
Easy Conversion

## Easy Conversion

For a modernization of your lift you simply need in addition to our machine a safety switch at the overspeed governor and a separate control unit with voltage supply for wall-mounted installation in the machine-room.

## Compact Design

Our emergency braking system is mounted at the A-side of the traction sheave shaft: A configuration which offers you a space-saving solution.

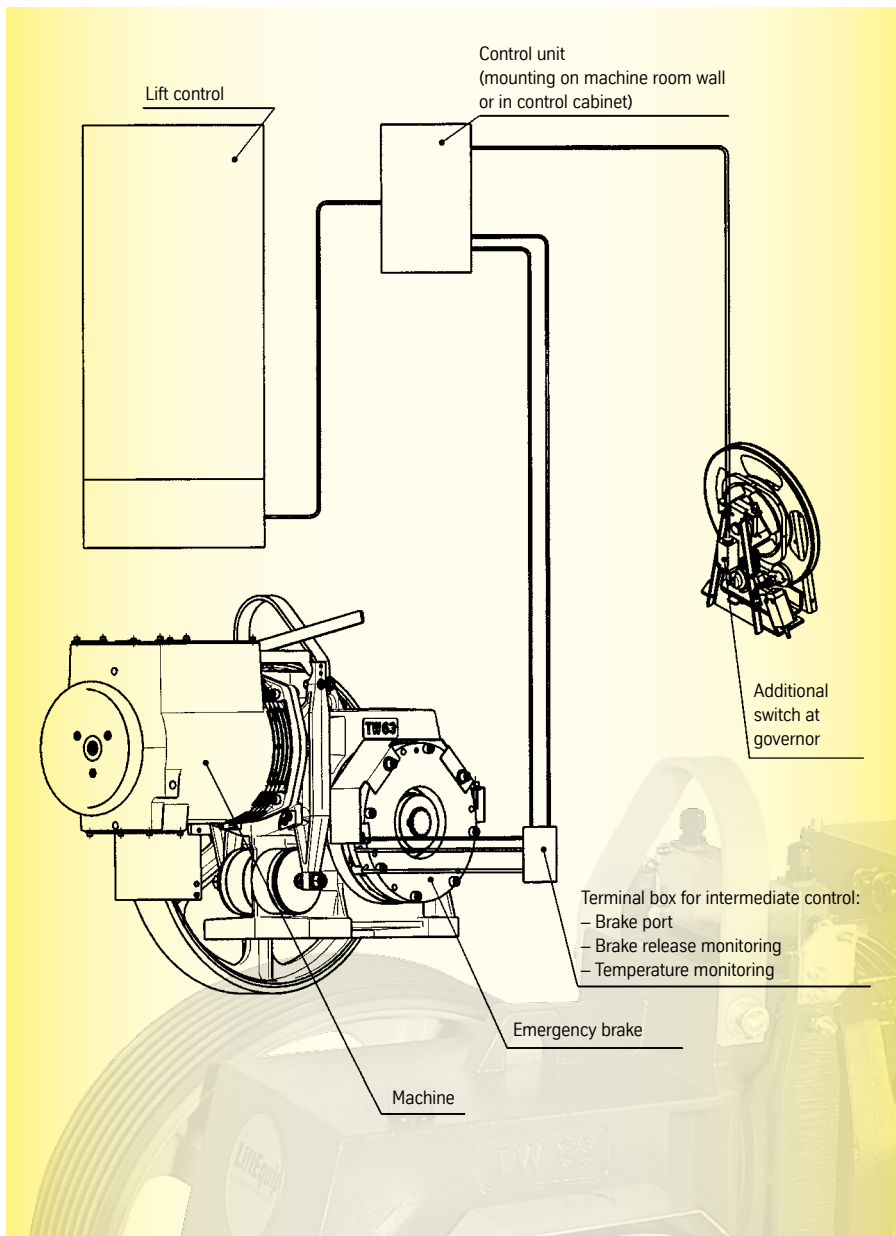
### Emergency Braking System - Available for:

Machine	Rated Load Q[kg]*	Suspension r	Brake Torque [Nm]
TW 45 B	500/1000	1:1/2:1	800 Nm
TW 63	1125/2100	1:1/2:1	1700 Nm
TW 130	1800/3500	1:1/2:1	3000 Nm
TW 160	2200/4750	1:1/2:1	5000 Nm

(Dimensioning acc. to installation data, \*Maximum amount depending on operating speed v)

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Emergency Braking System Functional Principle



## Surface

Our emergency braking system NBS is available with zinc-coated or metallic surface.

## NBS - Weights and Dimensions

Machine	Weight [kg]	Ø [mm]	Depth [mm]
TW 45 B	33	270	119
TW 63	45	332	118
TW 130	60	332	137
TW 160	124	474	215

9720 000 6765-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing.

Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Safety Brake

## The solution for more Safety

Easy, Affordable Re-fitting – Certified and Type-Tested According to EN 81-1/2

The safety brake on the side of the traction sheave is the optimal solution for the modernisation of already existing lifts for the “safety gear operation in upwards direction acc. to EN81”.

### Availability

We provide an adapted solution for re-fitting for our gears W125, W149B, W191 and TW63 which satisfies the requirements of the operational safety regulations according to EN 81-80.

### Compact Design

Our safety brake is mounted on the A-side of the traction sheave centre, offering you a space-saving solution. The inductor voltage for the brake is 207 V DC.

The opening of the brake is system controlled and works in a silent mode. For service the brake could also be manually opened.

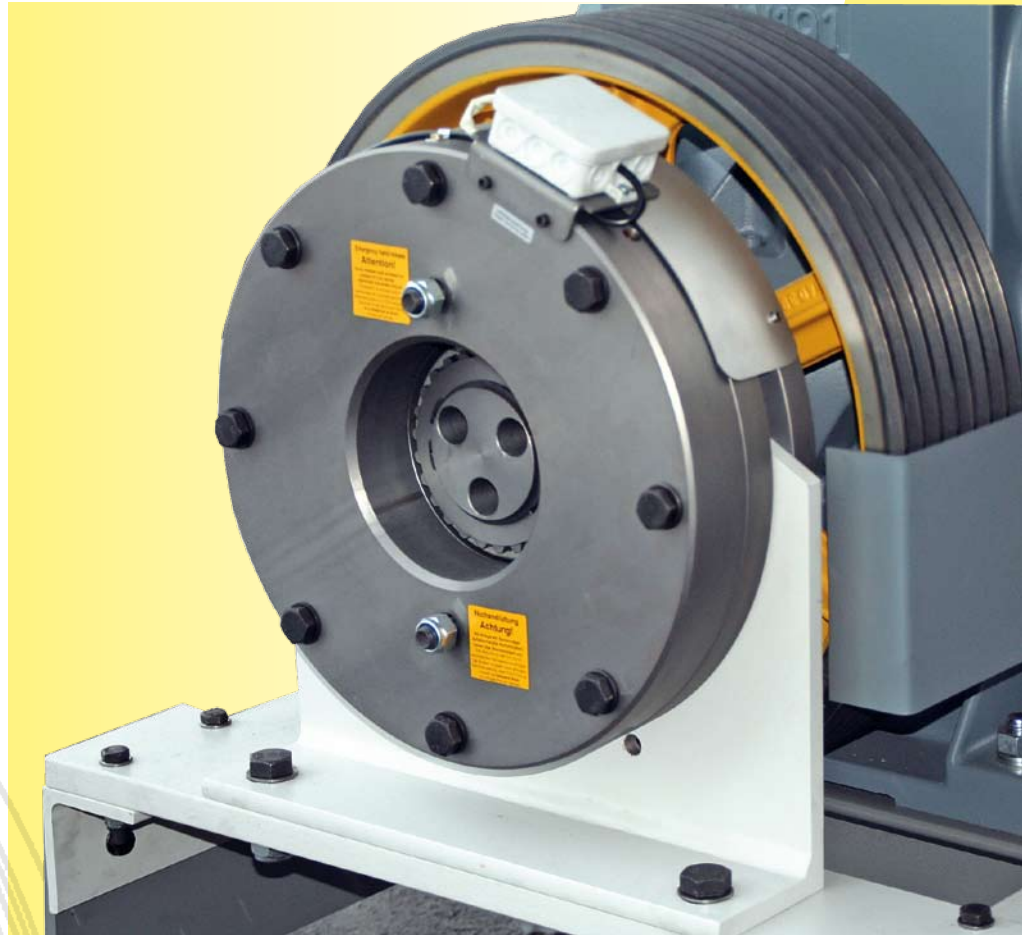
### Calculable Costs

You obtain a cost saving and well elaborated solution packet consisting of the components brake, flange centre, torque support and, if desired, the extension adapter for our machine frame and a braking drive unit.

### Easy Conversion

For modernisation the system works completed with the following components.

The system starts with the additional switch on the overspeed governor which activates a separate braking drive unit attached to the machine room.



Safety Brake – available for following drives:

Machine	Load Q [kg]	Suspension r	Type of Brake	Braking Torque Mb
W 125	630 / 1000	1:1 / 2:1	BG 800	600 Nm
W 149 B	1070 / 1760	1:1 / 2:1	BG 800	1000 Nm
W 191	1420 / 2840	1:1 / 2:1	BG 800 Double rotor	1800 Nm
TW 63	1125 / 2200	1:1 / 2:1	BG 800 Double rotor	1800 Nm

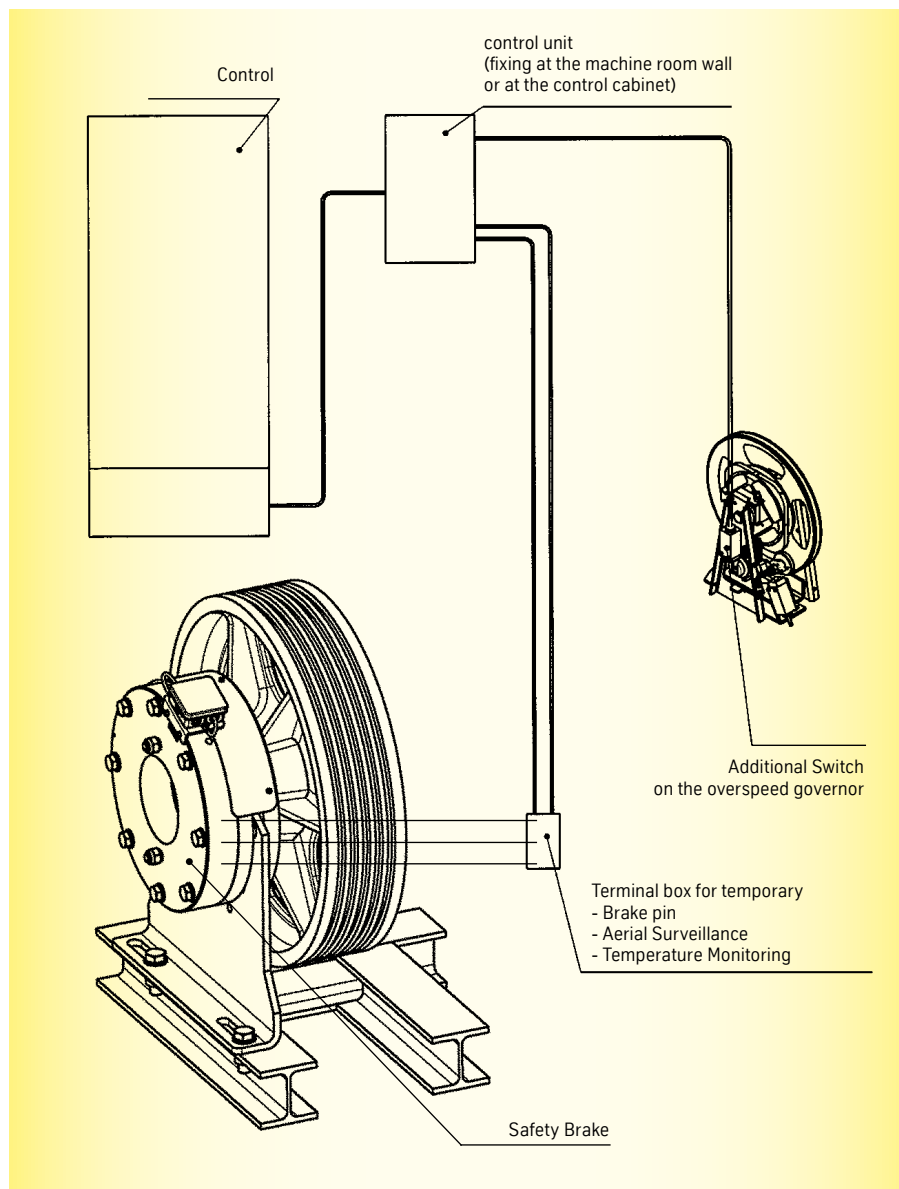
\* In special version available for TW 160

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Safety Brake

## Functional principle



### Surface

The safety brake is composed of both galvanised and metallic specification. The adapter parts are primed.

### Safety Brake – Weight and Dimensions

Machine	Brake Type	Weight [kg]	Extension depth [mm]
W 125	BG 800	72	181
W 149 B	BG 800	72	181
W 191	BG 800 Double rotor	94	221
TW 63	BG 800 Double rotor	91	221

9720 000 9207-1, issue 08/2007

The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with the authorization of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.  
 Telefon: +49 (0) 71 58 12 - 2929  
 Fax: +49 (0) 71 58 12 - 2971  
 E-Mail: kontakt@liftequip.de  
 Internet: www.liftequip.de

**LiftEquip**®  
 ELEVATOR COMPONENTS

# *Gearless drive PMC 145*

## *A smart solution for MRL systems*

With the new series, the synchronous Gearless PMC 145 is one of the worldwide most compact drives for the use in MRL systems. The drive PMC 145 is especially for central leaded elevator cars, conceived in 2:1 suspension.

The drives are super quietly (smaller than 55 decibel), with a high efficiency with more than 180 s/h and an operating time of 50 %. By the use of a traction sheave with hardened grooves diameter of 240 mm for 6 mm ropes, we deliver an extremely low wear solution by regarding the regulation with traction sheave diameter to rope diameter of at least 40. The machines will be delivered completely with connection lines for motor, posistor, brake, brake control and pulse generator.

The use of special ropes with a diameter smaller than 8 mm was checked by a corresponding expert opinion with a certificate.

The drive system is rounded off by a flat frequency inverter. Drive parameters of Gearless are deposited, which makes the initial operation and optimization of installation easier for you.

As all the other Gearless drives offered by LiftEquip a type approved brake is used here, which is authorized as a safety brake against over speed in upward direction.

As a compact construction for a space saving and economic use by MRL systems, we offer an innovative drive package with this PMC's and the matching frequency inverters.

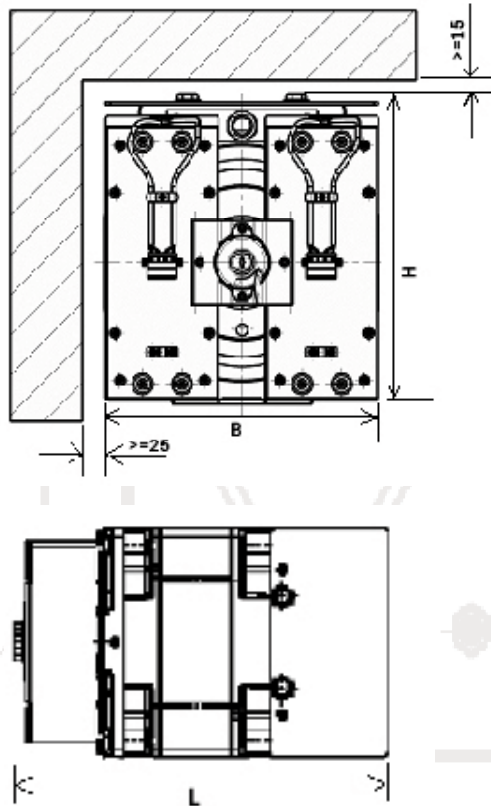


B

> 170

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Gearless drive PMC 145



	W	L	H
PMC 145 S	290	470,5	323
XS	290	500,5	323
M	290	509,5	323
XM	290	539,5	323
L	290	612,5	330
XL	290	642,5	330

		PMC 145								
		S 103	XS 106	M 102	XM 105	L 101	XL 104			
suspension	r	2:1								
rated speed	v	m/s	1	1,6	1	1,6	1	1,6		
maximum rated load	Q	kg	450		630		1000			
traction sheave diameter	DT	mm	240							
rope diameter	d	mm	6							
number of grooves	z		max. 7		max. 9		max.12			
groove type			seat groove, hardened(min 50 HRc)							
traction sheave	zxd / b		6 x 6 / S80° / S100°		7 x 6 / S100° 8 x 6 / S85° / S90°		10 x 6 / S100° 11 x 6 / 95°			
nominal power	PN	kW	2,8	4,4	3,9	5,3	6	9,3		
rated torque	MN	Nm	170		235		360			
axle load		kN	14	15	18	19	24	27		
mass		kg	154	174	185	205	242	263		
travel/hour			120		180					
operating time		%	50							
rated current	IN	A	7	9,5	9,4	14	14,2	23		
power factor	cos φ		0,94		0,92		0,93			
breaking torque		Nm	2 x 250		2 x 350		2 x 550			
brake design			2 circuit disc brake							
brake lining			asbestos free							
power consumption - high speed excitation		W	2 x 151		2 x 158		2 x 181			
power consumption - current reducing circuit		W	2 x 72		2 x 76		2 x 89			
brake monitoring			1 micro switch per brake circuit							
enclosure protection class			IP 21							
authorization			ABV 766/1							

9720 000 9230, issue 09/2008

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 - D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# MINI-Gearless When it's Getting Really Tight

For Rated Loads up to 2000 kg and Operating Speeds up to 2.0 m/s with 2:1 Suspension

Our MINI-Gearless is ideal for use in machine-room-less lifts. However it can also be integrated in machine rooms. Capable of rated loads up to 2000 kg with 2:1 suspension and speeds up to 2.0 m/s.

## Excellent Motor Control

The vector controlled, synchronous machines with permanent magnets are known for outstanding driving comfort. They are available in several power classes ranging from 4.2 kW to 22.5 kW.

## Component Set MRL

Take advantage of our component sets for various capacities and speeds to facilitate your project planning work.

## Easy Controllable Brake

The electrically released brake is easy to install. Laborious, time-consuming constructions, which may occur with mechanically-released brakes, can be avoided.

## Silent Running Machine

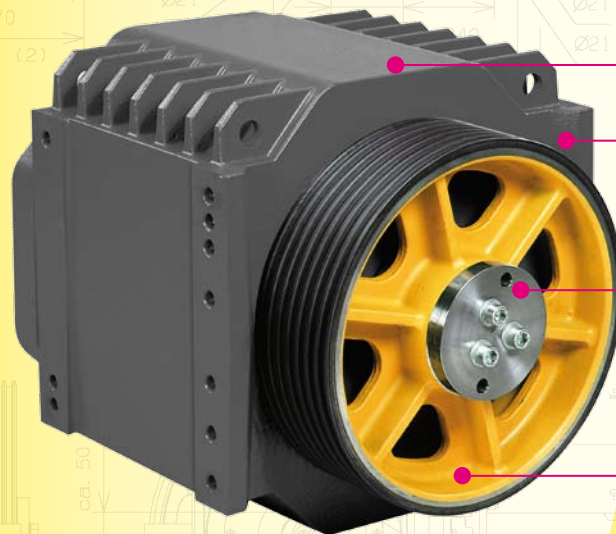
As synchronous machine the MINI-Gearless can pass on an additional ventilation. This results in a comfortable low sound-pressure level even in the lift shaft.



Machine MINI-Gearless DAF 210

Double Safety,  
Easy Controllable Brake

Silent  
Running  
Machine



Machine MINI-Gearless DAF 270

Maintenance-free

Excellent Motor Control

Optimal Adjustment  
to your Lift

Poor in Abrasion  
Traction Sheave

## Double Safety

The type-tested dual-circuit disc brake ensures safety at the best. This device is certified as safety brake according to the European standard for lifts EN 81. An additional and costly braking system for upwards braking operation is due to this not necessary.

## Maintenance-Free

Due to its design our MINI-Gearless has a small number of mechanical components. In addition, since no oil is needed, a positive effect on maintenance and product life is achieved.

## Trend-Setting up to 2000 kg and 2.0 m/s with 2:1 Suspension

Rated Load Q [kg]	Cabin Weight F [kg]	Operating Speed v [m/s]
450 (DAF 210)	900	1.0 - 2.0
675 (DAF 210)	1150	1.0 - 2.0
1050 (DAF 210)	1500	1.0 - 2.0
1600 (DAF 270)	2300	1.0 - 2.0
2000 (DAF 270)	2800	2.0

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



- Package Content:
- Machine (synchronous gearless, VVVF 3-phase drive) for 240 F/h and 50 % operating time with integrated encoder 2048 EnDat and 10 m encoder cable, high-speed brake excitation, hardened traction sheave;
  - MFC frequency inverter without energy regeneration including line filter, including line filter, line choke and braking resistor.

**MINI-Gearless Package with MFC Inverter (VVVF)  
1:1 Suspension**

Travel Height	30 m	30 m
Operating Speed	1 m/s	1,6 m/s
Q= 450kg F= 675kg	DAF 210 M 209 2.6 kW, 60 1/min 11.3 A / 18 A TS 320, MFC21-09	DAF 210 M 201 4.1 kW, 95 1/min 11.4 A / 22 A TS 320, MFC21-15
Q= 630kg F= 1000kg	DAF 210 L 210 3.6 kW, 60 1/min 14.1 A / 26.9 A TS 320, MFC21-15	DAF 210 L 202 5.7 kW, 95 1/min 14.0 A / 29.6 A TS 320, MFC21-15
Q= 1000kg F= 1400kg	DAF 270 M 012 5.6 kW, 60 1/min 18.4 A / 31.7 A TS 320, MFC21-32	DAF 270 M 001 9.1 kW, 95 1/min 25.9 A / 48 A TS 320, MFC21-32

Machine type  
Motor performance [kW] at RPM  
Req. motor current [A] / Req. start up cu. [A]  
Traction sheave diameter, inverter type.

Q = Rated load,  
F = Maximum mass of car,  
TS = Traction sheave diameter.

Additional Parts	Part Number
High-speed brake excitation (electronic board)	
" brake voltage card 2*	65 100 27 68 0
" brake voltage card BSV 1 (for 50-60 Hz and higher currents)	65 000 06 67 0

\*Already included in machine price.



**MINI-Gearless Package with MFC Inverter (VVVF)**

**2:1 Suspension**

<b>Travel Height</b>	<b>50 m</b>	<b>60 m</b>	<b>80 m</b>
<b>Operating Speed</b>	1 m/s	1.6 m/s	2 m/s
Q= 450kg F= 900kg	DAF 210 M 201 2.8 kW, 106 1/min 7 A / 14.6 A TS 360, MFC21-09	DAF 210 M 203 4.6 kW, 170 1/min 10.9 A / 24.2 A TS 360, MFC21-15	**DAF 210 M 205 5.4 kW, 212 1/min 11.6 A / 28.4 A TS 360, MFC21-15
Q= 675kg F= 1150kg	DAF 210 M 201 4.1 kW, 106 1/min 10.3 A / 20.5 A TS 360, MFC21-15	DAF 210 M 203 6.7 kW, 170 1/min 16 A / 33 A TS 360, MFC21-32	**DAF 210 M 205 7.9 kW, 212 1/min 16.9 A / 37 A TS 360, MFC21-32
Q= 1050kg F= 1500kg	DAF 210 L 202 6.2 kW, 106 1/min 14.6 A / 27 A TS 360, MFC21-15	DAF 210 L 204 10.1 kW, 170 1/min 22.2 A / 45.0 A TS 360, MFC21-32	**DAF 210 L 206 11.2 kW, 212 1/min 22.4 A / 48.0 A TS 360, MFC21-32
Q= 1600kg F= 2300kg	DAF 270 M 000 9.7 kW, 87 1/min 21.8 A / 40.2 A TS 440, MFC21-32	**DAF 270 M 002 14.4 kW, 139 1/min 33.8 A / 69.1 A TS 440, MFC21-48	**DAF 270 M 005 18 kW, 174 1/min 37.7 A / 75.0 A TS 440, MFC21-48
Q= 2000kg F= 2600kg	**DAF 270 L 009 11.1 kW, 78 1/min 23.8 A / 40.9 A TS 490, MFC21-32	**DAF 270 L 007 16.9 kW, 125 1/min 33.9 A / 68.4 A TS 490, MFC21-48	**DAF 270 L 013 21.2 kW, 156 1/min 49.3 A / 109.1 A TS 490, MFC21-60
Q= 2250kg F= 2400kg	**DAF 270 M 001 10,9 kW, 119 1/min 28,2 A / 48 A TS 320, MFC21-32	-	-

Q = Rated load, F = Maximum mass of car, TS = Traction sheave diameter.

\*\*With compensation chain.

# Synchronous COMPACT-Gearless For middle and big travel heights

For rated loads up to 1600 kg or operating speeds up to 3,5 m/s with 2:1 suspension

The synchronous COMPACT-Gearless SC 300 is our work-horse for superior lifts. Capable of rated loads up to 1600kg with 2:1 suspension or for operating speeds up to 3.5m/s.

## Super Quiet Machine

Thanks to its excellent efficiency the SC 300 can pass on an additional ventilation. This results in a comfortable low sound-pressure level.

## Excellent Motor Control

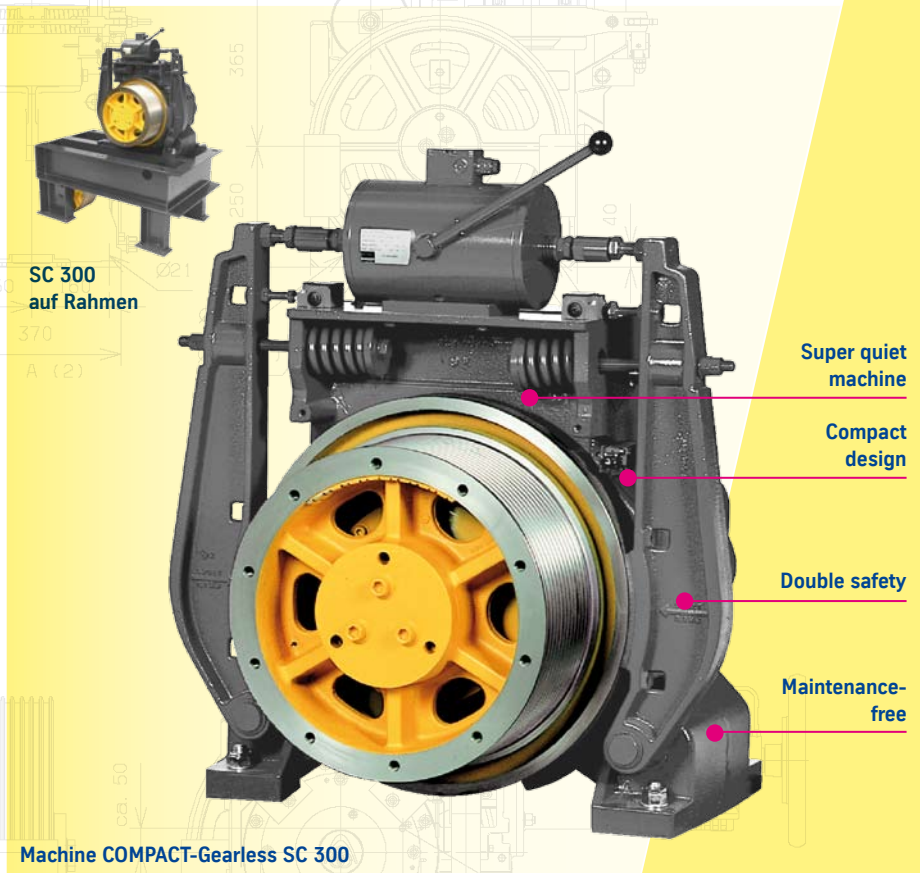
The vector controlled, synchronous machines with permanent magnet excitation are known for outstanding driving comfort. They are available in several power classes ranging from 10 kW up to 24.8 kW and as standard in protection class IP 54 (splash resistant from all directions).

## Compact Design

As synchronous machine with a monobloc housing the SC 300 is very space-saving in both the S- and the M-version.

## Package Solution

High precision machine frames facilitate the construction of lifts with double wrap. If desired you



can also obtain a frame for single wrap.

## Double Safety

The type-tested dual-circuit disc brake ensures safety at the best. This device is certified as safety brake according to the European standard for lifts EN 81. An additional and costly braking system

for upwards braking operation is thus not necessary.

## Maintenance-Free

Due to its design our COMPACT-Gearless has a small number of mechanical components. In addition, since no oil is needed, a positive effect on maintenance and product life is achieved.

### Trend-setting up to 1600 kg or 3.5 m/s with 2:1 suspension

Rated Load Q [kg]	Cabin Weight F [kg]	Operating Speed v [m/s]
1000	1350	1.0 - 3.5
1150	1700	1.0 - 3.5
1250	1900	1.0 - 3.5
1350	2200	1.0 - 2.5
1600	2300	1.0 - 2.5

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS





# Asynchronous COMPACT-Gearless For Big Travel Heights & High Loads

For Rated Loads up to 2000 kg or Operating Speeds up to 4.0 m/s with 2:1 Suspension

Our asynchronous COMPACT-Gearless DAF 380 is designed for fast running lifts with high loads. Capable of rated loads up to 2000 kg with 2:1 suspension or for operating speeds up to 4.0 m/s. With 1:1 suspension its capacity is up to 1000 kg with up to 4.0 m/s.

## Excellent Motor Control

The vector controlled, asynchronous machines stand for high driving comfort. They are available in several power classes ranging from 18.8 kW up to 37.5 kW.

## Package Solution

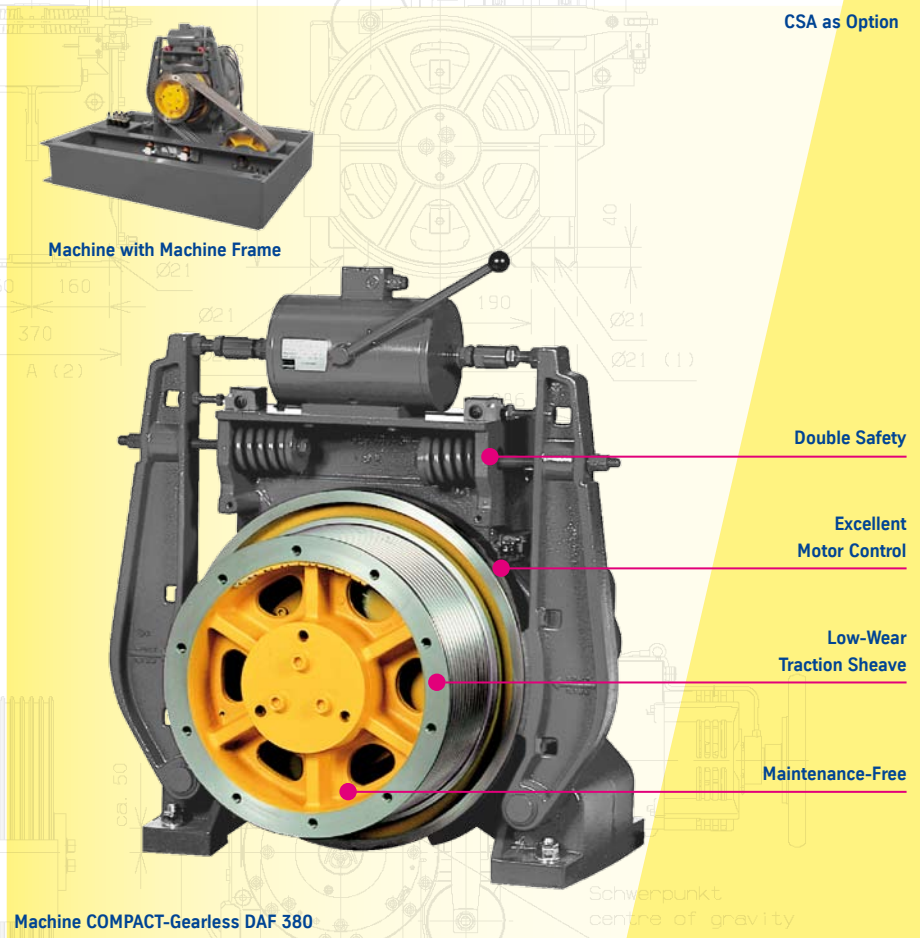
High precision machine frames in various assemblies with or without hitch plates facilitate the construction of lifts with double wrap. If desired you can also obtain a frame for single wrap.

## Double Safety

The type-tested dual-circuit shoe brake ensures safety at the best. This device is certified as safety brake according to the European standard for lifts EN 81. An additional and costly braking system for upwards braking is thus not necessary.

## Maintenance-Free

Due to its elaborated design our COMPACT-Gearless has a small number of



Machine COMPACT-Gearless DAF 380

mechanical components. In addition, since no oil is needed, a positive effect on maintenance and product life is achieved.

## CSA as Option

The COMPACT-Gearless DAF 380 can also be supplied in the CSA version

as required on the North American continent.

## Low-Wear Traction Sheave

For lifts with single wrap (SW) the traction sheave is hardened. High durability is therefore its main feature.

## Machine DAF 380 – Performance Data

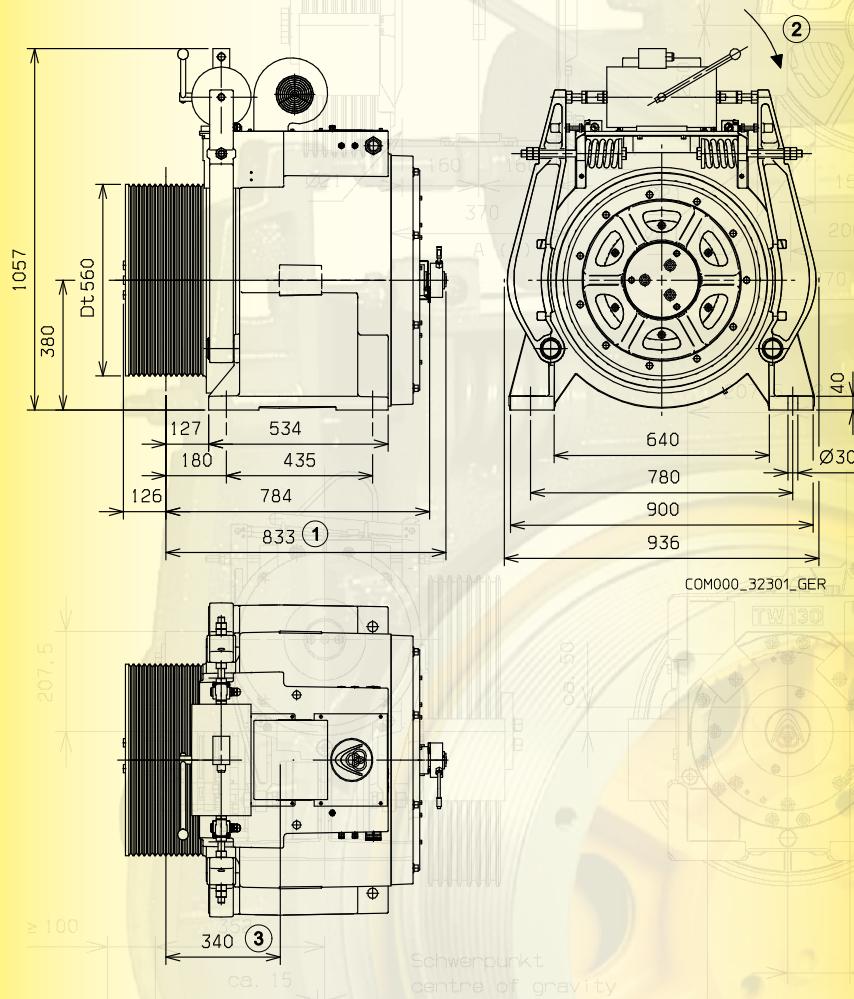
Rated Load Q [kg]	Operating Speed v [m/s]	Suspension r
800	3.0 – 4.0	1:1
1000	3.0 – 4.0	1:1
1350	1.6 – 4.0	2:1
1600	1.6 – 4.0	2:1
2000	1.6 – 3.0	2:1

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# COMPACT-Gearless DAF 380

## A Custom-Made Machine

### Dimensions



### Weight ca. 1500 kg

The weight does not include the machine frame.

### Radial Shaft Load

The admissible radial shaft load for the rope departure in downward direction is:  
 $F_{zul} \leq 190 \text{ kN}$  with SW\* and with DW\*.

\*SW means single wrap and

\*DW means double wrap of the traction sheave.

### Colour

The products shown are available in blue-grey - RAL 7031 - as standard. Movable parts are in a yellow finish.

9720 000 6767-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

### LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**®  
ELEVATOR COMPONENTS

# COMPACT-Gearless SC 400

## For high rise travels & high loads

For rated loads up to 2750 kg or operating speeds up to 4,0 m/s with 2:1 suspension

The synchronous COMPACT-Gearless SC 400 is the drive for high-speed lifts and heavy loads. Capable of rated loads up to 2750 kg with 2:1 suspension or for operating speeds up to 4.0 m/s.

### Super Quiet Machine

Machine with an excellent efficiency. This results in a comfortable low sound-pressure level. The separate ventilation is for defined heat removal.

### Excellent Motor Control

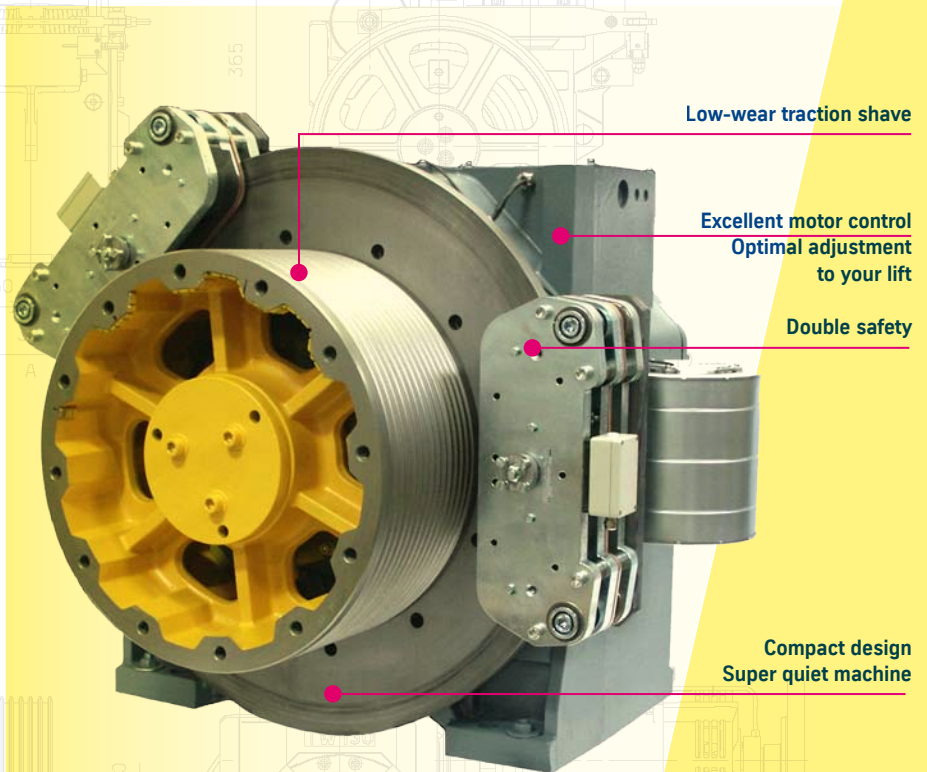
The vector controlled, synchronous machines with permanent magnet excitation are known for outstanding driving comfort. They are available in several power classes ranging from 19.4 kW up to 48.6 kW and IP44 as standard protection class.

### Compact Design

As synchronous machine with a monobloc housing the SC 400 in both version (S- and M-version) is very compact and space-saving built.

### Package Solution

High precision machine frames facilitate the construction of lifts with double wrap. If desired you can also obtain a



Machine SC 400

flat frame for single wrap.

### Maintenance-Free

Due to its design our COMPACT-Gearless has a small number of mechanical components. In addition, since no oil is needed, a positive effect on maintenance and product life is achieved.

### Double Safety

The type-tested dual-circuit brake ensures safety at the best. This device is certified as safety brake according to the European standard for lifts EN 81. An additional and costly braking system for upwards braking operation is thus not necessary.

### Trend-setting up 2750 kg or 4.0 m/s with 2:1 suspension

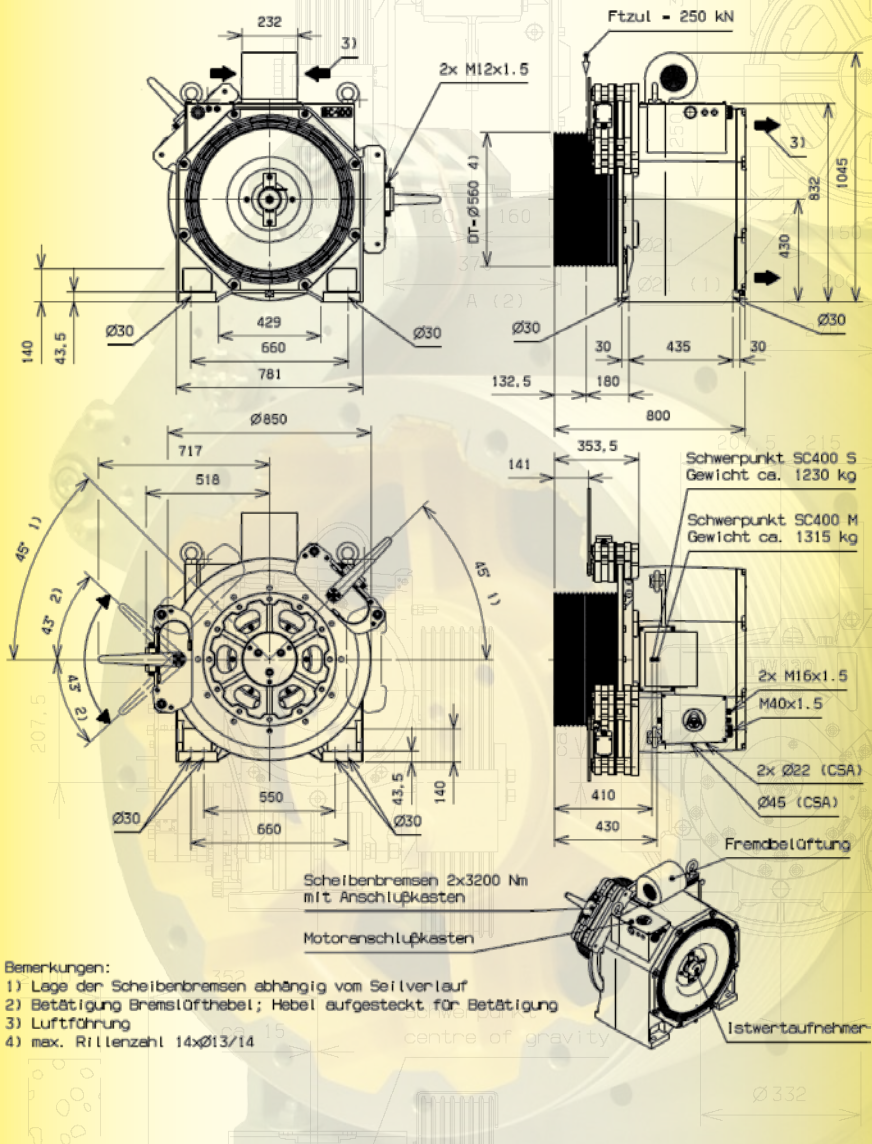
Type	Rated load Q [kg]	Car weight F [kg]	Operating speed v [m/s]
SC 400 S	1600	3200	3,5 - 4,0
SC 400 S	1800	3600	2,5 - 3,0
SC 400 S/M	2000	3600	1,6 - 4,0
SC 400 M	2500	3800	2,5
SC 400 M	2750	3300	1,6 - 2,0



# COMPACT-Gearless SC 400

## A custom-made machine

### Dimensions



**Weight: about 1230 (S) or 1315 (M) kg**

S stands for shmall, the SC 400 (S) where M means medium, the SC 400 (M). The weight of the machine frame is not included.

### Radial Shaft Load

The radial shaft load of the traction sheave shaft for the vertical rope departure is:

$F_{tzul} \leq 250 \text{ kN}$

\* SW means single wrap and DW double wrap of the traction sheave.

### Colour

The products shown are available in blue-grey - RAL 7031 - as standard. Movable parts are in yellow finish.

### Bemerkungen:

- 1) Lage der Scheibenbremsen abhängig vom Seilverlauf
- 2) Betätigung Bremslöfthebel; Hebel aufgesteckt für Betätigung
- 3) Luftführung
- 4) max. Rillenzahl 14xØ13/14

9720 000 9016-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**®  
ELEVATOR COMPONENTS

**Without Energy Regeneration**

2:1 Suspension

Travel Height	80 m			110 m		135 m	
Operating Speed	1 m/s	1.6 m/s	1.75 m/s	2 m/s	2.5 m/s	2.5 m/s	3 m/s
Q= 750-1000kg F= 1350kg	SC 300 S 003 5.6 kW, 93 1/min TS 410, MFC21-32	SC 300 S 003 10 kW, 149 1/min TS 410, MFC21-32	SC 300 S 003 11 kW, 163 1/min TS 410, MFC21-32	SC 300 S 004 12 kW, 186 1/min TS 410, MFC21-48	SC 300 S 004 13.3 kW, 233 1/min TS 410, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 011 16.1 kW, 260 1/min TS 440, MFC21-48
Q= 1050kg F= 1500kg	SC 300 S 003 5.9 kW, 93 1/min TS 410, MFC21-32	SC 300 S 003 10 kW, 149 1/min TS 410, MFC21-32	SC 300 S 003 11 kW, 163 1/min TS 410, MFC21-32	SC 300 S 004 12 kW, 186 1/min TS 410, MFC21-48	SC 300 S 004 14 kW, 233 1/min TS 410, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 011 16.9 kW, 260 1/min TS 440, MFC21-60
Q= 1150kg F= 1700kg	SC 300 M 000 10.7 kW, 87 1/min TS 440, MFC21-15	SC 300 M 002 14.9 kW, 139 1/min TS 440, MFC21-48	SC 300 M 002 16.3 kW, 152 1/min TS 440, MFC21-48	SC 300 M 005 18.2 kW, 174 1/min TS 440, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 011 18.5 kW, 260 1/min TS 440, MFC21-60
Q= 1250kg F= 1900kg	SC 300 M 000 10.7 kW, 87 1/min TS 440, MFC21-32	SC 300 M 002 14.9 kW, 139 1/min TS 440, MFC21-48	SC 300 M 002 16.3 kW, 152 1/min TS 440, MFC21-48	SC 300 M 005 18.2 kW, 174 1/min TS 440, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-48	SC 300 M 011 20.1 kW, 260 1/min TS 440, MFC21-60
Q= 1350kg F= 2200kg	SC 300 M 000 10.7 kW, 87 1/min TS 440, MFC21-32	SC 300 M 002 14.9 kW, 139 1/min TS 440, MFC21-48	SC 300 M 002 16.3 kW, 152 1/min TS 440, MFC21-48	SC 300 M 005 18.2 kW, 174 1/min TS 440, MFC21-48	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-60	SC 300 M 006 19.5 kW, 217 1/min TS 440, MFC21-60	(Only with energy regeneration)
Q= 1600kg F= 2300kg	SC 300 M 000 10.7 kW, 87 1/min TS 440, MFC21-32	SC 300 M 002 14.9 kW, 139 1/min TS 440, MFC21-48	SC 300 M 002 16.3 kW, 152 1/min TS 440, MFC21-48	SC 300 M 005 18.2 kW, 174 1/min TS 440, MFC21-48	SC 400 S 005 21,5 kW, 171 1/min TS 560, MFC21-105	SC 400 S 005 22 kW, 171 1/min TS 560, MFC21-105	(Only with energy regeneration)
Q= 2000kg F= 2500kg	SC 400 S 001 11.2 kW, 68 1/min TS 560, MFC21-48	SC 400 S 001 17,2 kW, 109 1/min TS 560, MFC21-60	SC 400 S 001 18,8 kW, 119 1/min TS 560, MFC21-60	SC 400 S 007 21,6 kW, 136 1/min TS 560, MFC21-105	(Only with energy regeneration)	(Only with energy regeneration)	(Only with energy regeneration)
Q= 2500kg F= 2800kg	SC 400 M 008 13,3 kW, 68 1/min TS 560, MFC21-60	SC 400 M 008 21,3 kW, 109 1/min TS 560, MFC21-105	SC 400 M 012 23,3 kW, 119 1/min TS 560, MFC21-105	SC 400 M 009 26,8 kW, 136 1/min TS 560, MFC21-105	(Only with energy regeneration)	(Only with energy regeneration)	—

Q = Rated load, F = Maximum mass of car, TS = Traction sheave diameter.

With "Energy Regeneration" see next page.

\* Machine with inverter without frame.

**With Energy Regeneration**

2:1 Suspension

Travel Height	80 m		110 m		135 m		180 m	
Operating Speed	1.6 m/s	1.75 m/s	2 m/s	2.5 m/s	2.5 m/s	3 m/s	3.5 m/s	4 m/s
Q= 750-1000kg F= 1350kg	SC 300 S 004 9,1 kW, 149 1/min TS 410, MFC21-50R	SC 300 S 004 9,9 kW, 163 1/min TS 410, MFC21-50R	SC 300 S 004 12.2 kW, 186 1/min TS 410, MFC21-50R	SC 300 S 004 14.5 kW, 233 1/min TS 410, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 005 21.3 kW, 261 1/min TS 440, MFC21-50R	SC 300 M 006 24.8 kW, 304 1/min TS 440, MFC21-50R	SC 400 S 003 22.8 kW, 273 1/min TS 560, MFC21-100R
Q= 1050kg F= 1500kg	SC 300 S 004 9,1 kW, 149 1/min TS 410, MFC21-50R	SC 300 S 004 9,9 kW, 163 1/min TS 410, MFC21-50R	SC 300 S 004 12.2 kW, 186 1/min TS 410, MFC21-50R	SC 300 S 004 14.5 kW, 233 1/min TS 410, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 005 21.3 kW, 261 1/min TS 440, MFC21-50R	SC 300 M 006 24.8 kW, 304 1/min TS 440, MFC21-50R	SC 400 S 003 23.9 kW, 273 1/min TS 560, MFC21-100R
Q= 1150kg F= 1700kg	SC 300 M 001 15.3 kW, 139 1/min TS 440, MFC21-50R	SC 300 M 001 16.7 kW, 152 1/min TS 440, MFC21-50R	SC 300 M 001 18.2 kW, 174 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 005 21.3 kW, 261 1/min TS 440, MFC21-50R	SC 300 M 006 24.8 kW, 304 1/min TS 440, MFC21-100R	SC 400 S 003 26.1 kW, 273 1/min TS 560, MFC21-100R
Q= 1250kg F= 1900kg	SC 300 M 001 15.3 kW, 139 1/min TS 440, MFC21-50R	SC 300 M 001 16.7 kW, 152 1/min TS 440, MFC21-50R	SC 300 M 001 18.2 kW, 174 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 005 21.3 kW, 261 1/min TS 440, MFC21-50R	SC 300 M 006 24.8 kW, 304 1/min TS 440, MFC21-100R	SC 400 S 003 28.2 kW, 273 1/min TS 560, MFC21-100R
Q= 1350kg F= 2200kg	SC 300 M 001 15.3 kW, 139 1/min TS 440, MFC21-50R	SC 300 M 001 16.7 kW, 152 1/min TS 440, MFC21-50R	SC 300 M 001 18.2 kW, 174 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 002 19.5 kW, 217 1/min TS 440, MFC21-50R	**SC 400 S 007 22 kW, 205 1/min TS 560, MFC21-100R	**SC 400 S 005 26.6 kW, 239 1/min TS 560, MFC21-100R	SC 400 S 003 30.4 kW, 273 1/min TS 560, MFC21-100R
Q= 1600kg F= 2300kg	SC 300 M 001 15.3 kW, 139 1/min TS 440, MFC21-50R	SC 300 M 001 16.7 kW, 152 1/min TS 440, MFC21-50R	SC 300 M 001 18.2 kW, 174 1/min TS 440, MFC21-50R	SC 300 M 002 21.6 kW, 217 1/min TS 440, MFC21-50R	SC 300 M 002 21.6 kW, 217 1/min TS 440, MFC21-50R	**SC 400 S 007 26kW, 205 1/min TS 560, MFC21-100R	**SC 400 M 010 31.1 kW, 239 1/min TS 560, MFC21-100R	SC 400 M 010 35.6 kW, 273 1/min TS 560, MFC21-100R
Q= 2000kg F= 2500kg	SC 400 S 004 17.9 kW, 109 1/min TS 560, MFC21-100R	SC 400 S 004 18,5 kW, 119 1/min TS 560, MFC21-100R	SC 400 S 004 21.3 kW, 136 1/min TS 560, MFC21-100R	SC 400 M 012 26,9 kW, 171 1/min TS 560, MFC21-100R	SC 400 M 012 26,9 kW, 171 1/min TS 560, MFC21-100R	SC 400 M 009 32,1 kW, 205 1/min TS 560, MFC21-100R	SC 400 M 010 38,3 kW, 239 1/min TS 560, MFC21-150R	SC 400 M 010 43,8 kW, 273 1/min TS 560, MFC21-150R
Q= 2500kg F= 2800kg	SC 400 M 011 21,3 kW, 109 1/min TS 560, MFC21-100R	SC 400 M 011 21,3 kW, 109 1/min TS 560, MFC21-100R	SC 400 M 011 21,3 kW, 109 1/min TS 560, MFC21-100R	SC 400 M 012 33,7 kW, 171 1/min TS 560, MFC21-100R	SC 400 M 012 33,7 kW, 171 1/min TS 560, MFC21-100R	-	-	-

Q = Rated load, F = Maximum mass of car, TS = Traction sheave diameter. \*\*Suitable also for 180 m travel height.

Without "Energy Regeneration" see page before.

\* Machine with inverter without frame.  
\*\*Suitable also for 180 m travel height.



# Frequency inverter MFC 20/21

## The completion of our machines

Reliable & safe - Quick installation and parameter entry

These vector-controlled frequency inverters perfectly harmonise with asynchronous (MFC 20) or synchronous (MFC 21) machines.

### Frequency Inverter Package

It contains in addition to the inverter the line filter and the line choke to connect in TN- TT- and IT- power supply system. The MFC 20/21 can be connected via a parallel- or a DCP-interface (DCP3/DCP4).

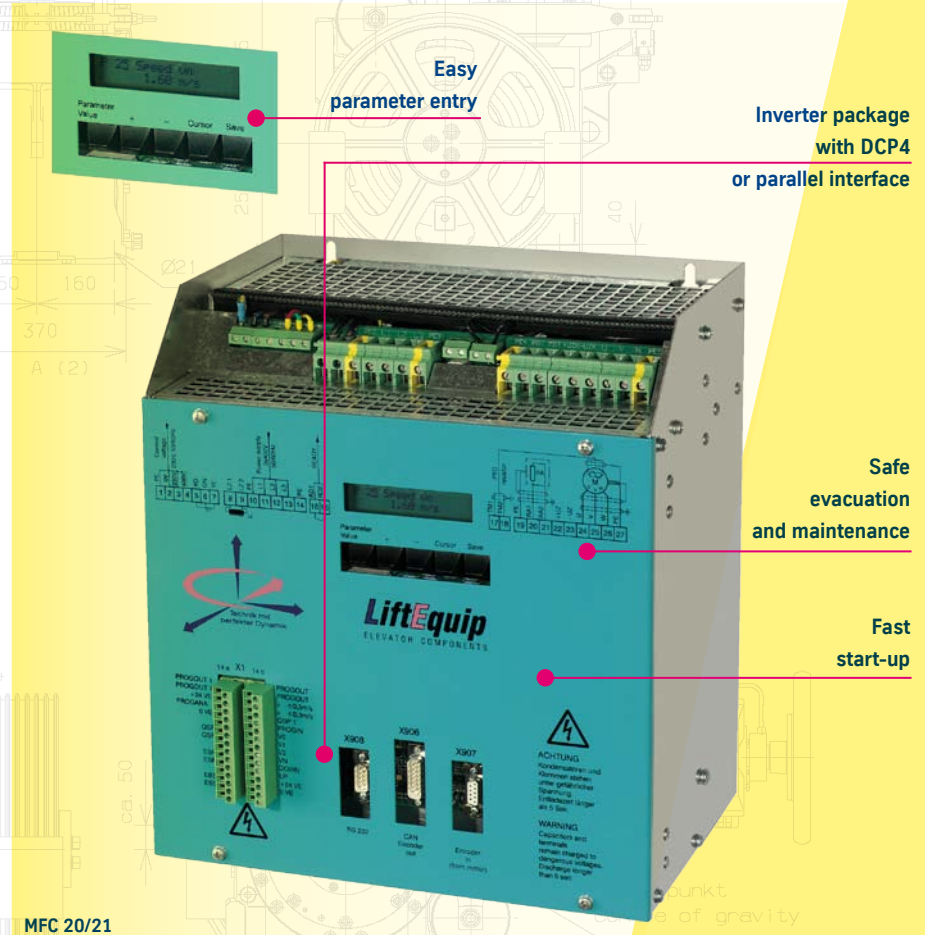
The braking resistor is supplied in a separate housing.

### Safe Evacuation and Maintenance

If the power supply has a breakdown standby supply is possible with the help of an one phase UPS (uninterruptible power supply). During maintenance when the main controller is switched-off and the operational brake of a synchronous gearless is released, an optional braking device limits the car speed to safe values by connecting an additional braking resistor.

### Easy Parameter Entry

The frequency inverter MFC 20/21 is equipped with an operator panel with a two-line LCD display. It is also available as external operator panel. Parameters such as operating speed, acceleration,



MFC 20/21

jerk, gear ratio, encoder pulse number, traction sheave diameter, etc. can be directly fed in physical values.

### Fast Start-Up

The data of our motors are completely preset in our inverters. You can thus

easily and quickly select the relevant motor from a range of motors which are preset in the memory. Manual and laborious parameterising is in this way avoided.

Third party motors can be defined by autotuning.

### MFC 20/21 - Data table

Type	I <sub>rated</sub> / I <sub>max</sub> [A]	Motor power [kW]	Dim. [W*H*D mm]
MFC 20/21-09	12 / 18	7,2	305 * 345 * 210
MFC 20/21-15	18 / 30	11	305*345*210
MFC 20/21-32	32 / 48	20	305*345*210
MFC 20/21-48	50 / 75	31	330*460*225
MFC 20/21-60	60 / 110	36	344*523*295
MFC 20/21-105	115 / 180	70	440*900*280

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Frequency inverter MFC 20/21

## The completion of our machines

### MFC 20/21 - Data table

Inverter Type MFC 20/21-...		09	15	32	48	60	105
Motor power	[kW]	4,2	7,5	14	24,5	28,5	49
<b>Input data (from net)</b>							
Line voltage range	[V]	3 AC 380, -10 % bis 415, +10 %					
Rated input current	[A]	10	16	27	43	52	92
Peak input current	[A]	17	26	42	64	95	145
Line fuses AFF (external)*	[A]	25	25	40	63	80	125 **
Cable cross-sectional area	[mm <sup>2</sup> ]	2,5	2,5	6	10	16	25
<b>Output data (to motor)</b>							
Rated output voltage	[V]	3 AC 350					
Rated output current, I <sub>rated</sub>	[A]	12	18	32	50	60	115
Peak output current for 10 s, I <sub>max</sub>	[A]	18	30	48	75	110	180
Rated output power	[kVA]	7,2	11	20	31	36	70
Peak output power for 10 s	[kVA]	11	18,5	30	46	60	110
Cable cross-sectional area	[mm <sup>2</sup> ]	2,5	2,5	6	10	16	35
Loss at rated power	[W]	200	350	600	900	1200	2100
Total efficiency		0,97	0,97	0,97	0,97	0,97	0,97
<b>Mechanical data</b>							
Width	[mm]	305	305	305	330	334	440
Height	[mm]	345	345	345	460	523	900
Depth	[mm]	210	210	210	225	295	278
Additional for connector	[mm]	+ 70	+ 70	+ 70	+ 70	+ 70	+ 70
Minimum top / bottom clearance	[mm]	100/100	100/100	100/100	100/100	100/100	100/100
Fan power	[m <sup>3</sup> /h]	140	140	140	360	360	620
Weight	[kg]	16	17	18	26	35	59
*Duty Class gR		**line-fuse intern gRL					

9720 000 6772-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Frequency inverter MFC 30/31

## The optimum for our machines

Reliable & safe - Quick installation and parameter entry - Optimal for MRL use

These vector-controlled frequency inverters are the optimum completion to control asynchronous (with MFC 30) or synchronous (with MFC 31) machines.

### Ready-to-install inverter package

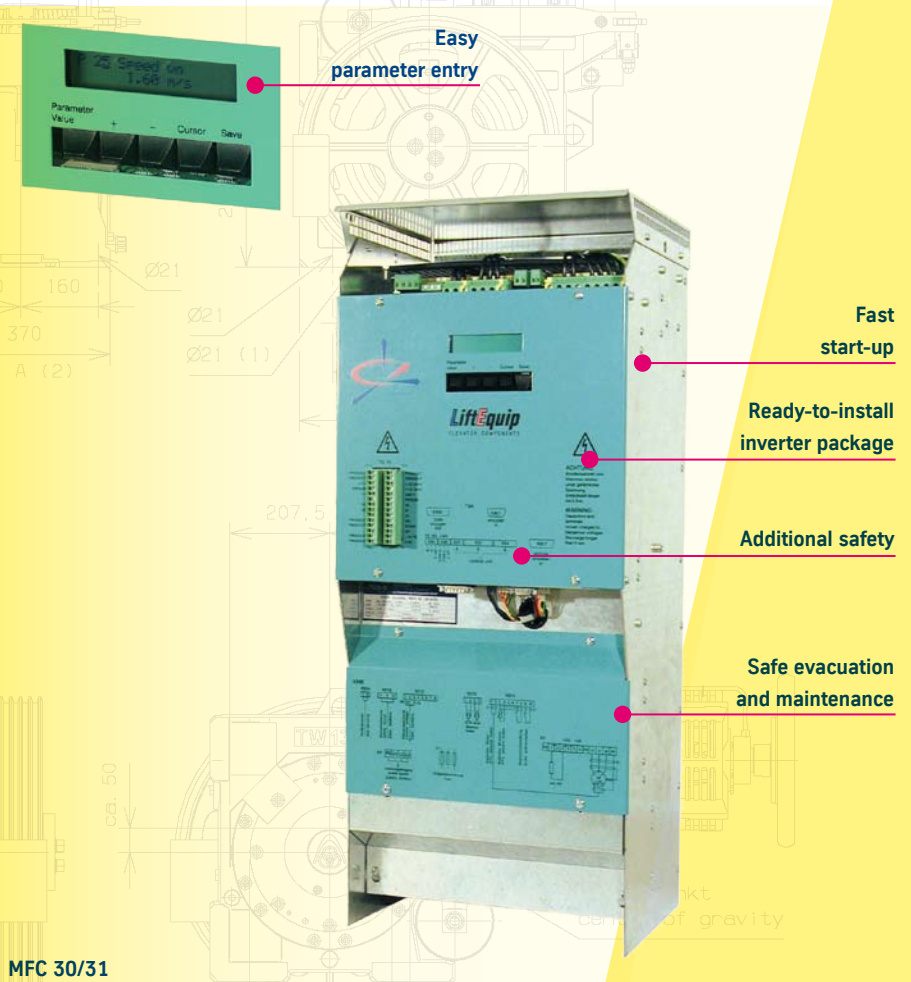
It contains in addition to the inverter the brake control, the line filter, the line choke and the travel contactors completely installed and integrated in one housing to be connected in TN- TT- and IT power supply system. The MFC 30/31 can be connected via a parallel- or a DCP-interface (DCP3/DCP4). The braking resistor is supplied in a separate housing.

### Safe evacuation and maintenance

If the mains supply has a breakdown, standby supply is possible with the help of an one phase UPS (uninterruptible power supply). During maintenance when the control is switched-off and the operational brake of a synchronous machine is released, an optional braking device limits the car speed to safe values by connecting an additional braking resistor.

### Easy parameter entry

Parameters such as operating speed, acceleration, jerk, gear ratio, traction sheave diameter, etc. can be changed with an external parameter table.



MFC 30/31

### Additional safety

Our inverter package checks and manages the release of the operational brake with the integrated control unit. The MFC 30/31 checks the brakes for wear if the machines are equipped with brake monitoring switches (SA 3). Additional to that,

the travel contactors are also checked for „switching of contactors after change of run direction“ as set out in the EN 81.

### Fast start-up

The data of our motors are completely preset in our inverters.

### MFC 30/31\* - Data table

Type	I <sub>rated</sub> / I <sub>max</sub> [A]	Output power [kW]	Dim. [W*H*D mm]
MFC 30/31-10	12 / 18	7,2	244*387*260
MFC 30/31-15	18 / 30	11	309*715*263
MFC 30/31-26	27 / 43	16	309*715*263
MFC 30/31-40	42 / 67	25	333*1075*270
MFC 30/31-60	60 / 110	36	366*1263*340

\* 50 R, 100 R with energy recovery system

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Frequency inverter MFC 30/31

## The optimum for our machines

### MFC 30/31 - Data table

Inverter type MFC 30/31-...	10	15	26	40	60	50 R	100 R
Motor power [kW]	5	7,5	11	18	28,5	49	
<b>Input data (from net)</b>							
Line voltage range [V]	3 AC 380, -10 % bis 415, +10 %						
Rated input current [A]	10	16	23	34	52	36	72
Peak input current [A]	17	26	38	55	95	90	170
Line fuses AFF (internal) [A]	25*	25	40	63	80	80	50
Cable cross-sectional area [mm <sup>2</sup> ]	2,5	2,5	4	6	16	10	108
<b>Output data (to motor)</b>							
Rated output voltage [V]	3 AC 350	3 AC 350	3 AC 350	3 AC 350	3 AC 350	3 AC 440	3 AC 440
Rated output current, I <sub>rated</sub> [A]	12	18	27	42	60	54	54
Peak output current 10 s, I <sub>max</sub> [A]	18	30	43	67	110	75	75
Rated output power [kVA]	7,2	11	16	25	36	24	24
Peak output power 10 s [kVA]	11	18,5	26	40	60	54	54
Cable cross-sectional area [mm <sup>2</sup> ]	2,5	2,5	4	10	16	6	6
Loss at rated power [W]	220	330	500	800	1200	1500	1500
Total efficiency	0,97	0,97	0,97	0,97	0,97	0,94	0,94
<b>Mechanical data</b>							
Width [mm]	244	309	309	333	366	401	600
Height [mm]	387	715	715	1075	1263	1105	1950
Depth [mm]	260	263	263	270	340	284	470
Minimum top / bottom clearance [mm]	100/100	100/100	100/100	100/100	100/100	100/100	100/100
Fan power [m <sup>3</sup> /h]	80	140	140	360	360	360	app. 700
Weight [kg]	19	35	38	55	81	80	195

\* Line fuses AFF (external), duty class gR

9720 000 6772-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Overspeed Governor GBTK 6023F

Reliable safety in compact design

**Innovative advancement based on approved and established concept**

## Extremely compact

Due to optimized dimensions perfect for machine-room-less applications and space saving in machine-rooms.

## Highest safety

With integrated rope guard and contact protection; casing of all moving parts, protection against dust, dirt and damage.

## Easy to install with short erection time

All electrical components are prewired on a connection plug board and tested in our works. The control manufacturer is able to do packaging of all electrical connections beforehand (plug & play), thus remarkable reduction of erection time and faultless installation.

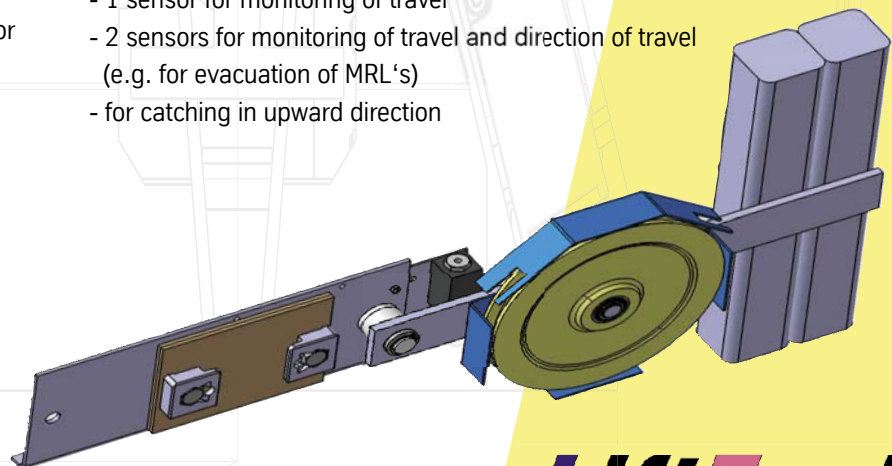
## Versions

Diameter of governor pulley is 200 mm, for rope diameter 6,5 mm

- $V_n=0,55 \dots 1,6$  m/s
- $V_a=0,70 \dots 2,09$  m/s
- electrical remote and reset
- hardened pulley (wear-resistant)
- connections on system-connector assembly
- pin-and-socket connector

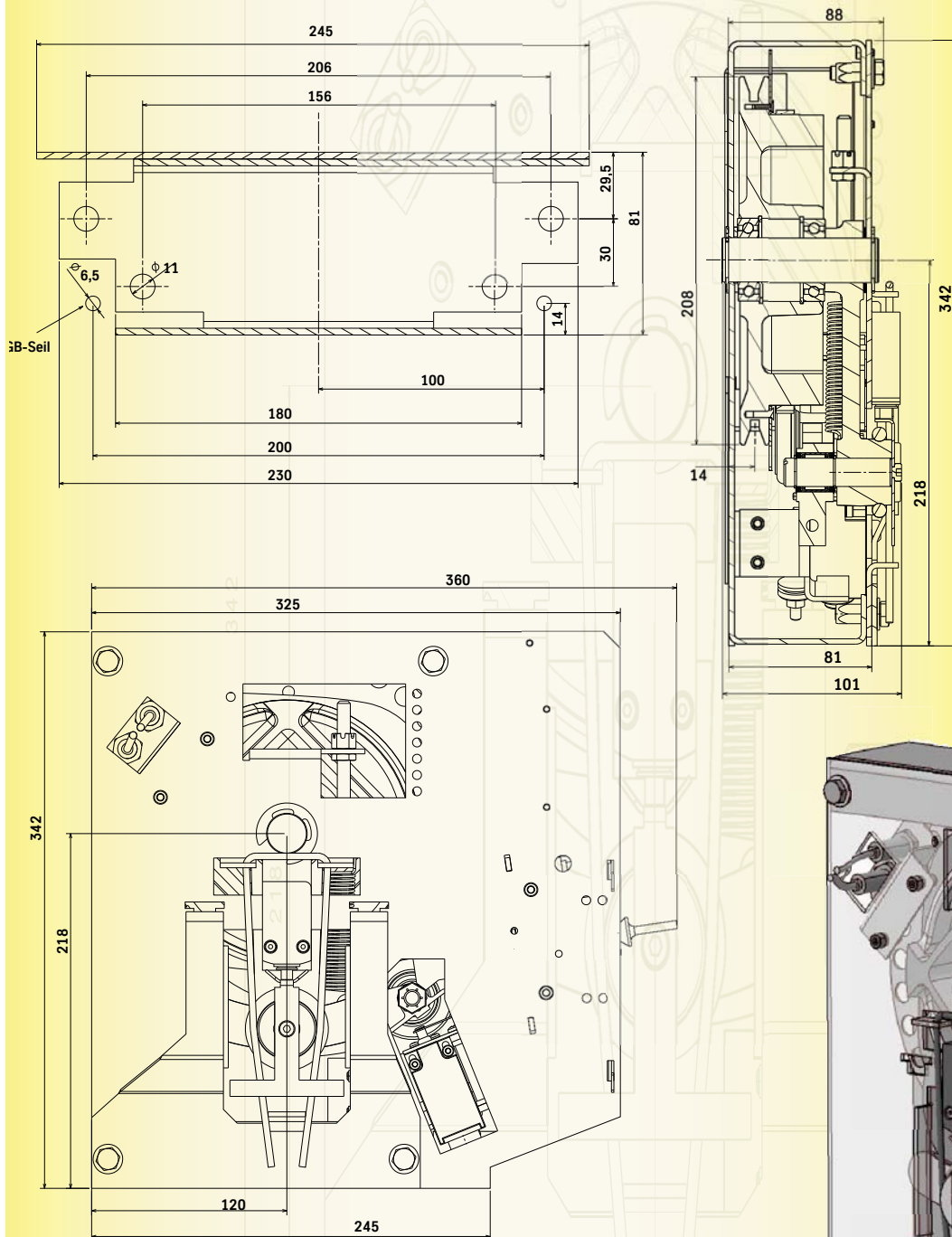
## Options

- Safety contacts with up to 4 contacts
- electrical remote via voltage drop
- 1 sensor for monitoring of travel
- 2 sensors for monitoring of travel and direction of travel (e.g. for evacuation of MRL's)
- for catching in upward direction



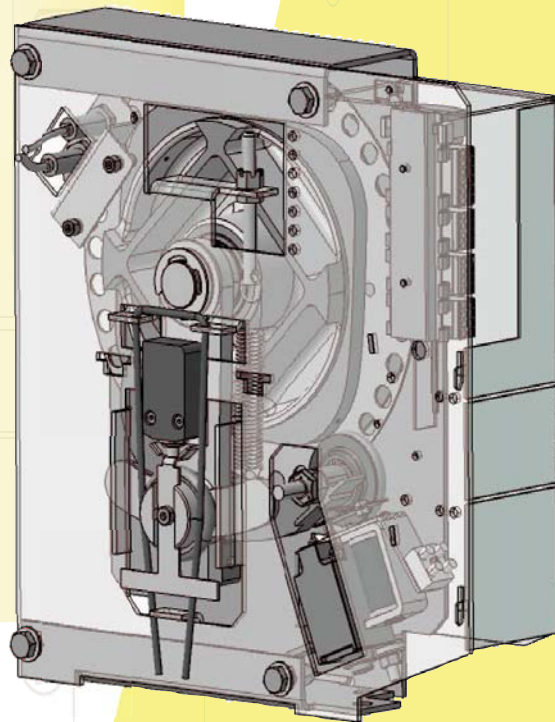
# Overspeed governor GBTK 6023F

## Dimensions



**We deliver in components  
but think in systems**

- With suitable tension pulley and console for mounting on guide rail.
- Zinc coated steel plate box
- Mass approx. 14,5 kg



9720 000 9213, Issue 10/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

12

**LiftEquip GmbH Elevator Components**

Bernhäuser Straße 45 - D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



# Car Sling TCS

## The Flexible One for Medium Loads

For Safety Gear Masses up to 6500 kg or Operating Speeds up to 4.0 m/s

Our car sling TCS is designed for safety gear masses  $m_{ges}$  up to a maximum of 6500 kg depending on cabin width, operating speed and car sling type.

### Great Stability

Multiple bent sheet steel profiles in the top and the bottom beam ensure the required stability. Polyamide-pulleys are used with suspension 2:1.

### Variable Height Adjustment

The side beams consist of 2 sheet steel profiles which are screwed together. They are fixed at the top and the bottom beam and a punched grid allows their length to be adjusted in steps of 25 mm.

### Excellent Driving Comfort

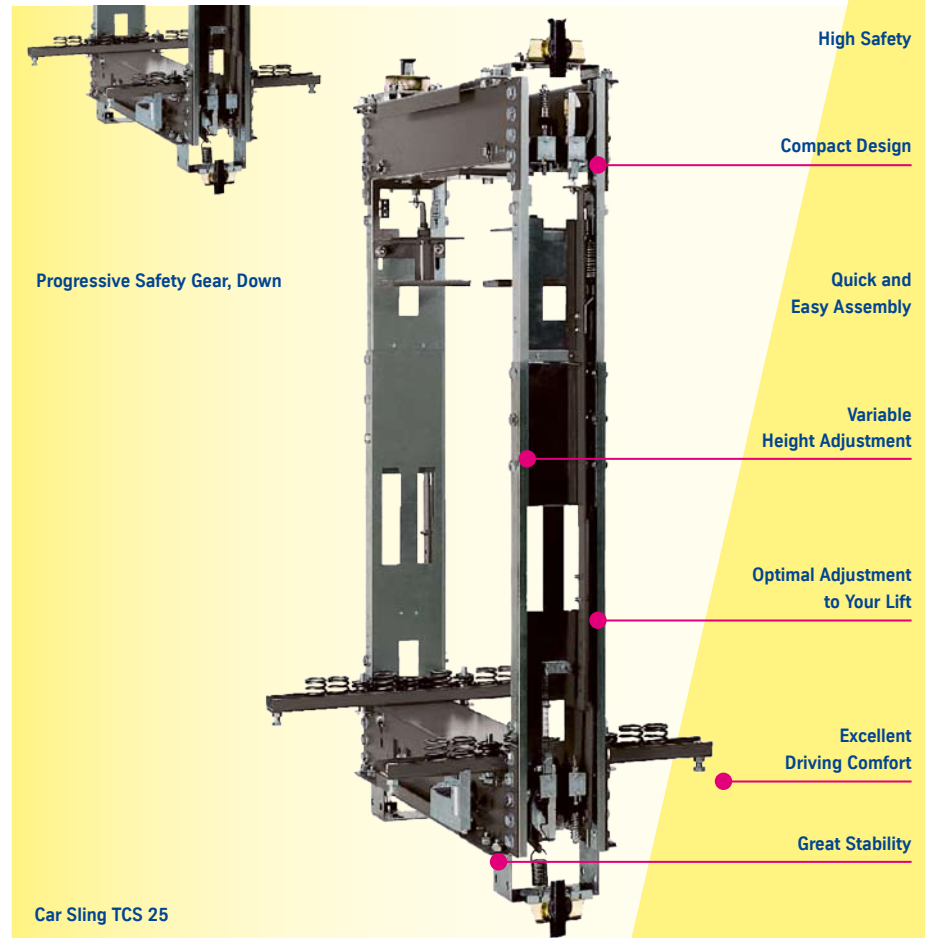
The cabin is bedded on compression springs, which are mounted in a specially isolated U-profile. This results in an outstanding vibration isolation. Roller guides instead of sliding guides can be supplied on demand.

### Compact Design

With safety gears mounted in the top and the bottom beam compact overall dimensions of the car sling are possible.

### High Safety

The complete car sling as well as its single parts were calculated on the com-



puter with the finite elements method (FEM). They are therefore verifiably safe!

### Quick and Easy Assembly

The true to size production of all parts and a small number of components

permit an easy and quick assembly in next to no time.

### Optimal Adjustment to Your Lift

A great variety of configuration alternatives make an optimal customisation to many requests possible. Special versions are shown overleaf.

### Car Sling TCS - Performance Data

	TCS 25	TCS 40	TCS 60
Rated Load Q [kg]	≤ 1600	≤ 2000	≤ 3200
v [m/s]	≤ 4.0	≤ 4.0	≤ 2.5
$m_{ges}$ [kg]	≤ 3560	≤ 5000	≤ 6500
Cabin Width [mm]	900 ÷ 1600	900 ÷ 1900	900 ÷ 2500
Cabin Height [mm]	2100 ÷ 2700 adjustment in a 25 mm punched grid		



# GTK counterweight

## The flexible solution for many installation situations

For a counterweight mass of up to 6460 kg in various versions

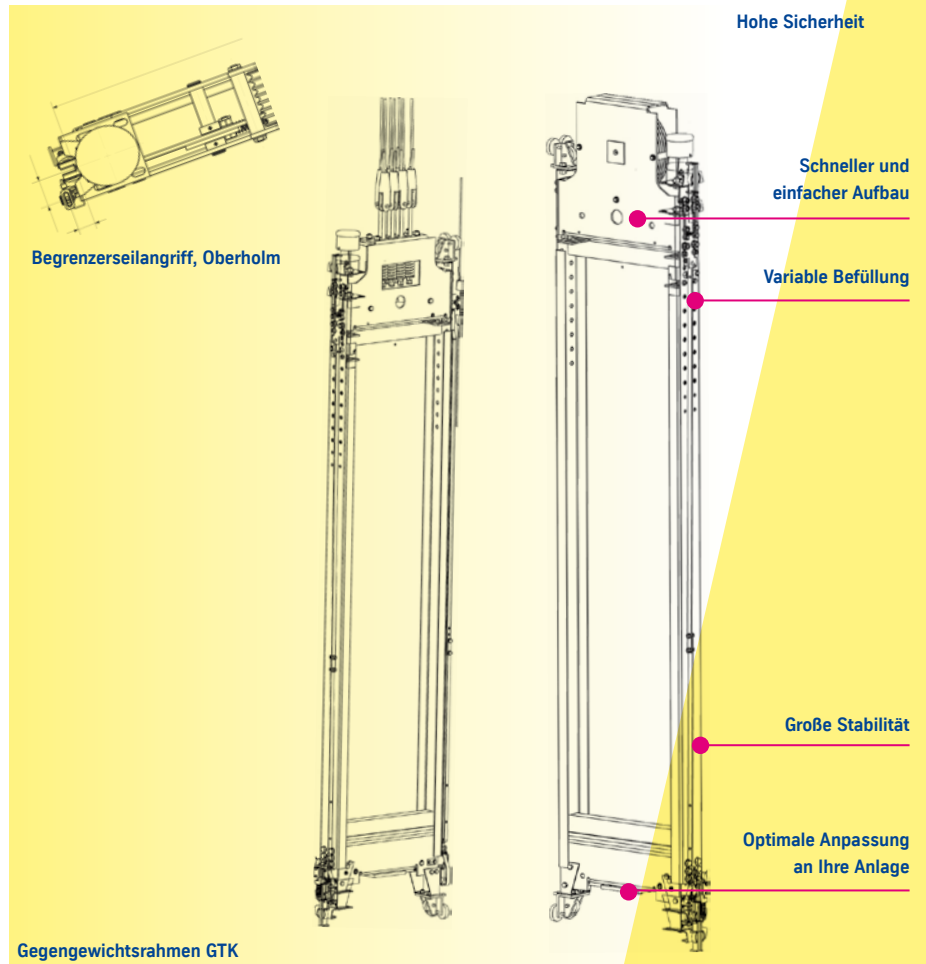
The counterweight frames calculated for an overall mass up to 6460 kg. The various necessary widths, gauges between rails and suspensions (1:1 and 2:1) are available in the modular system:

### Optimum adjustment to your installation

With the variations in length, width and gauge between rails, the counterweight is an optimum fit for the most diverse project planning dimensions. In the standard versions, the counterweight frames with rope attachment for 1:1 arrangement and rope pulleys are available for 2:1 arrangement. Besides the standard gauge between rails of 700, 1050 and 1370 mm, other clearance dimensions can be produced as well.

### Additional options

Various special versions such as sliding and pulley guides, and a safety gear on the counterweight can be selected. For aesthetic purposes, the counterweight can be encased in a glass shaft. Diverse accessories for the mounting of compensation chains and compensating ropes are selectable. The path cover in the pit area in compliance with EN81-1, adjusted to the mass of the counterweight, is available in the program.



### Variable filling

The two lengths for a multilayer filling with max. 30 or 40 levels (a layer is 60 mm) and various filler materials such as Gussolith, steel and lead allow variable adjustment to the dimensions of the shaft.

### High level of safety

The frame construction of angular sheet metal profiles in the top and bottom beams and reinforced knot junctions and their connections were calculated and optimised with the Finite Element Method (FEM), whereby the necessary proofs of solidity were also provided.

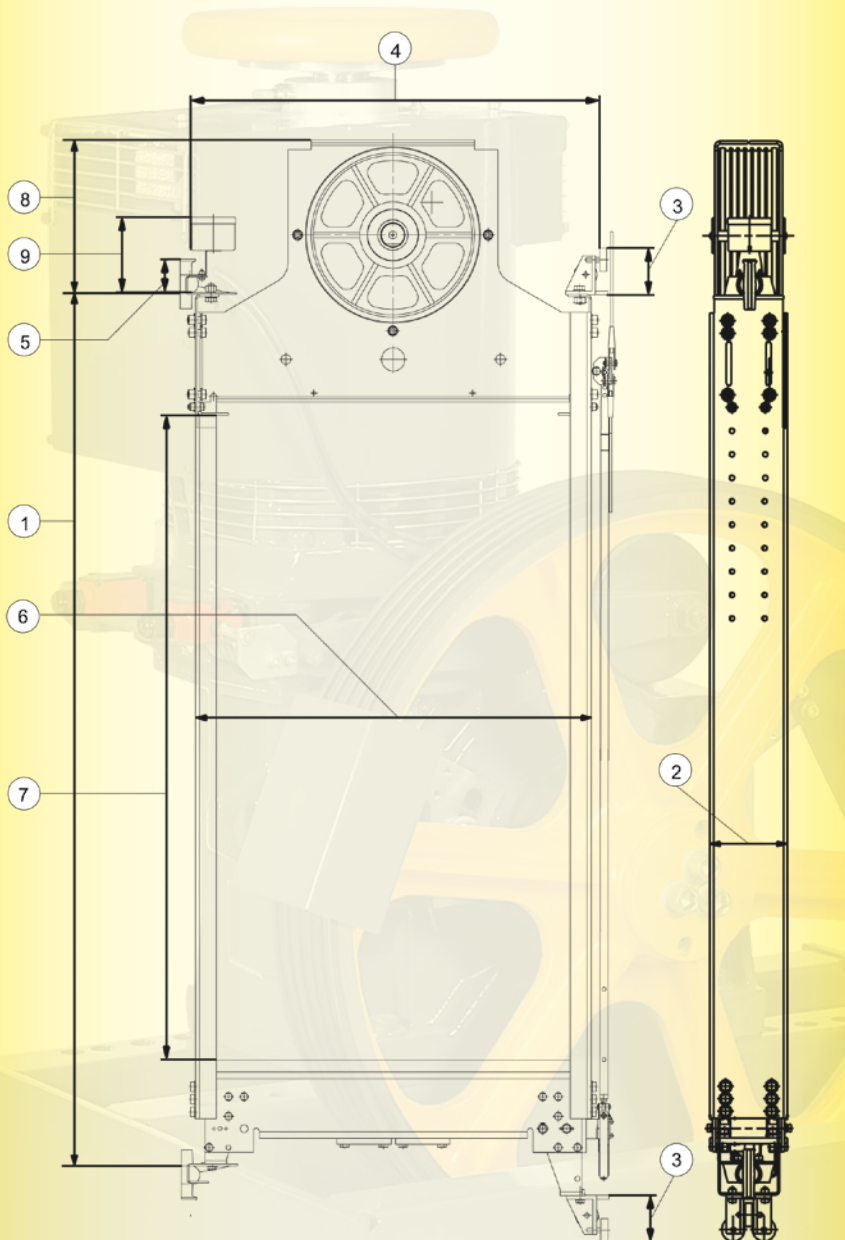
### Counterweight (CW) GTK - Data table

	Width of CW [mm]	Total Mass [kg]	Pulleys [mm]*
GTK 700	135	≤ 1560	360
GTK 1050	135	≤ 2360	360
GTK 1050	200	≤ 3500	450 / 540
GTK 1370	270	≤ 6110	540
*for 2:1 suspension			



# Counterweight GTK Module Solutions as Cast On

## Dimensions



## Counterweight Mass

The following approximated values do include the masses of the counterweight frame, the hitch plate or the rope pulley, one or two buffer plates and the sliding guides:

GTK 700/135:	127 kg, 1:1 suspension;
	155 kg, 2:1 suspension;
GTK 1050/135:	151 kg, 1:1 suspension;
	179 kg, 2:1 suspension;
GTK 1050/200:	178 kg, 1:1 suspension;
	255 kg, 2:1 suspension;
GTK 1370/270:	342 kg, 1:1 suspension;
	391 kg, 2:1 suspension.

## Colour

The products shown are available in blue-grey - RAL 7031 - as standard and with zinc coated parts.

## Special Versions

- Roller guides
- Rope pulleys for 2:1 suspension fixed in a pulley carrier on the top beam
- Progressive safety gears (type 0, 1 and 2)
- Buffer plates additionally
- Panelling of counterweight on one or on both sides
- Compensation chain or compensation rope mounting

9720 000 6776-1, issue 08/2007

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Machine-room-less - Tailor-made component set

Machine-room-less gearless technology with centrally suspended car (2:1) precisely adapted to your requirements is also available for solutions with front and rear entrance. We assist you in your project planning works and provide the technical design drawings for your special requirements.

Installations with speeds less than 1 m/s can be also designed with reduced shaft pit.

- **Drive package**

MINI-Gearless machines DAF 210 to DAF 270 equipped with safety brake acc. to EN 81-1/9.10 and frequency inverter MFC 21 or MFC 31 (Plug & Play). The drive package is designed adapted to your installation parameters. The machine has isolated supports for wall mounting and rope suspensions.

- **Sling / safety gear**

TCS 25 and TCS 40 with gauge KB + 50 mm or TCS 40 or TCS 60 with gauge KB + 110 mm including safety gear, overload sensor, car isolation and sliding or roller guides.

- **Governor**

With remote tripping and electrical remote reset as well as tensioning weight and fastenings.

- **Car and landing door**

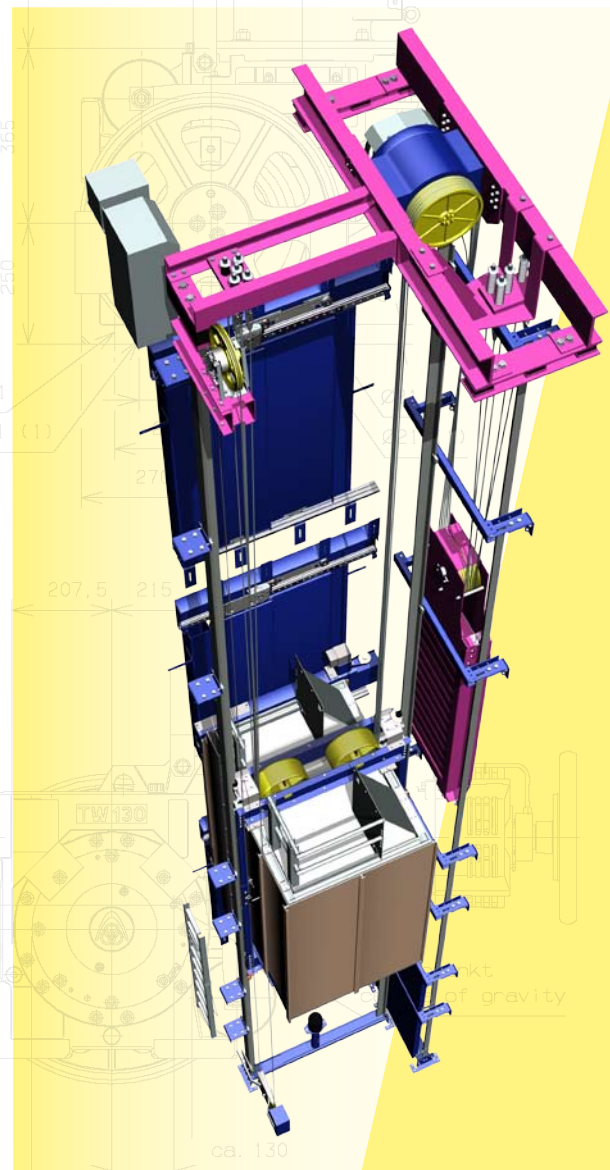
Comfort S8/K8 and / or ECO S12/K8 light as telescopic or center-closing door

- **Counterweight**

With fillers and safety gears with sliding or roller guides and travel path cladding, if necessary.

- **Shaft equipment**

Rail brackets for car and counterweight including fastenings, car and counterweight rails with fishplates and rail clips.



- **Buffer**

Plastic and oil buffers acc. to calculation and design drawings.

- **Ropes**

Suspension ropes with attachments and governor rope.

## Performance data with 2:1 suspension and center-guided rails

Q [kg]	v [m/s]
450 kg / 475 kg	$0,50 \text{ m/s} \leq v \leq 2,0 \text{ m/s}$
630 kg / 675 kg	$0,50 \text{ m/s} \leq v \leq 2,0 \text{ m/s}$
1.000 kg / 1.050 kg	$0,50 \text{ m/s} \leq v \leq 2,0 \text{ m/s}$
1.600 kg / 1.650 kg	$0,63 \text{ m/s} \leq v \leq 2,0 \text{ m/s}$
2.000 kg / 2.050 kg	$0,63 \text{ m/s} \leq v \leq 2,0 \text{ m/s}$







# LEA®

## *the type examination tested lift system*

The new system LEA brings a type examined passenger lift for new installations and for the range of modernization. With the latest drive and technology for innovated safety shaft dimension, we offer an economic solution package. With latest Gearless-technology, solution for reduced safety spaces, different variants of designs, competent advisory service and short delivery time we set new benchmarks on the MRL lift market.

### **Integrated concept**

With the system LEA you get a passenger lift which unites its compact dimensions and its matching components for a maximum of quality, compactness and technology with attractive design. The type examined system is designed for a rated load up to 1000 kg and speed of 1.0 m/s.

Together with headroom of 2600 mm and pit of 400 mm the LEA needs less space than a conventional MRL system.

On construction side, there are no recesses needed and the system can be used for building in existing shafts and modernization without additional planning consume.

The lift can be delivered in a handicapped accessible version.

### **Drive system and control**

For drive system there is used a gearless drive which guarantees a high ride comfort and together with the frequency inverter and the safety brake, a low noise level. The components of the controller are installation-specific pre configured.

### **Security technology**

The security technology is based on proven safety gears and buffers and was completed with a customised flat governor with tensioning weight.

### **Doors**

The doors are fire resistant, according to the European standard and optimized to the proportions of the shaft installation.

### **Shaft equipment**

The components of the shaft equipment were matched, so that an easy and competitive installation of the lift system is possible.

### **Design**

For the self-supporting car feature variants are defined, which can meet the different tastes of our clients. As operating and indicator element, buttons in installation panel and surface boxes are offered and a high flexibility of installation can be reached.



**LiftEquip®**  
ELEVATOR COMPONENTS

# Project planning data

RATED LOAD	450 kg	630 kg	630 kg	1000 kg	1000 kg
Number of passengers	6	8	8	13	13
One-sided entrance	•	•	-	•	-
Two-sided entrance (front and rear entrance)	-	-	•	-	•
<b>Speed</b>					
Speed	1,0 m/s	1,0 m/s		1,0 m/s	
Travel height max.	33 m	33 m		33 m	
Number of landings max.	12	12		12	
<b>Dimensions in mm</b>					
Car width CW	1000	1100		1100	
Car depth CD	1250	1400		2100	
Car height CH [DH+100]	2100 / 2200 / 2300 / 2500				
Shaft and car door	Two-panel telescopic sliding doors				
Door width DW	800	800 / 900		800 / 900	
Door height DH	2000 / 2100 / 2300				
Shaft width SW	1500	1600		1600	
Shaft depth SD door in shaft	1650	1770	2010	2470	2710
Shaft depth SD door in recess	1580	1700	1870	2400	2570
Shaft depth SD door on landing	1540	1660	1790	2360	2490
Shaft head height without shaft head [CH+500] <sup>1</sup>	2600 / 2700 / 2800 / 3000				
Shaft head height conventional [CH+1300]	3400 / 3500 / 3600 / 3800				
Shaft pit depth without shaft pit 1, 2	400	400		400	
Shaft pit depth conventional	1100	1100		1100	
Floor-to-floor-distance min [DH+360]	2360	2360		2360	
<b>Drive</b>					
Drive	Synchronous gearless drive, frequency controlled VVVF				
Starts per hour max.	180 s/h	180 s/h		180 s/h	
Operating input power <sup>3,4</sup>	3.7 kVA	5.3 kVA		7.8 kVA	
Operating current <sup>3,5</sup>	5.4 A	7.7 A		11.3 A	
Starting current <sup>3,5</sup>	8.3 A	11.8 A		17.1 A	
<b>Landing accuracy</b>					
Landing accuracy	+/- 5 mm	+/- 5 mm		+/- 5 mm	

<sup>1</sup>During the planning phase, please consider all applicable regulations stipulated by the relevant notified body and all applicable national regulations. Our sales advisors would be glad to provide information or explanations on these issues. <sup>2</sup>With elevator car flooring material thickness of up to 3.5 mm; shaft pit depth of 425 mm with flooring material thickness of up to 25 mm. <sup>3</sup>With 400 Volt / 50 Hz. <sup>4</sup>For the control unit 2.1 kVA have to be added. <sup>5</sup>For the control unit 3 A have to be added.

## Benefits of advanced technology:

- No machine room.
- Compact: no shaft head, no shaft pit (optional).
- Low-noise, low-vibration design.
- Gearless drive unit protected from vibration.
- Self-supporting elevator car.
- Modern control concept: decentralized in the shaft.
- Electrical control panel installed in any landing as desired (optional)
- Easy adaptation of elevator for handicapped access.
- Easy to design.
- Short delivery time.
- Quick installation.
- Extremely economical to operate.

9720 000 9232, issue 09/2008

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components  
 Bernhäuser Straße 45 - D-73765 Neuhausen a.d.F.  
 Telefon: +49 (0) 71 58 12 - 2929  
 Fax: +49 (0) 71 58 12 - 2971  
 E-Mail: kontakt@liftequip.de  
 Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
 ELEVATOR COMPONENTS

# ModKit M061

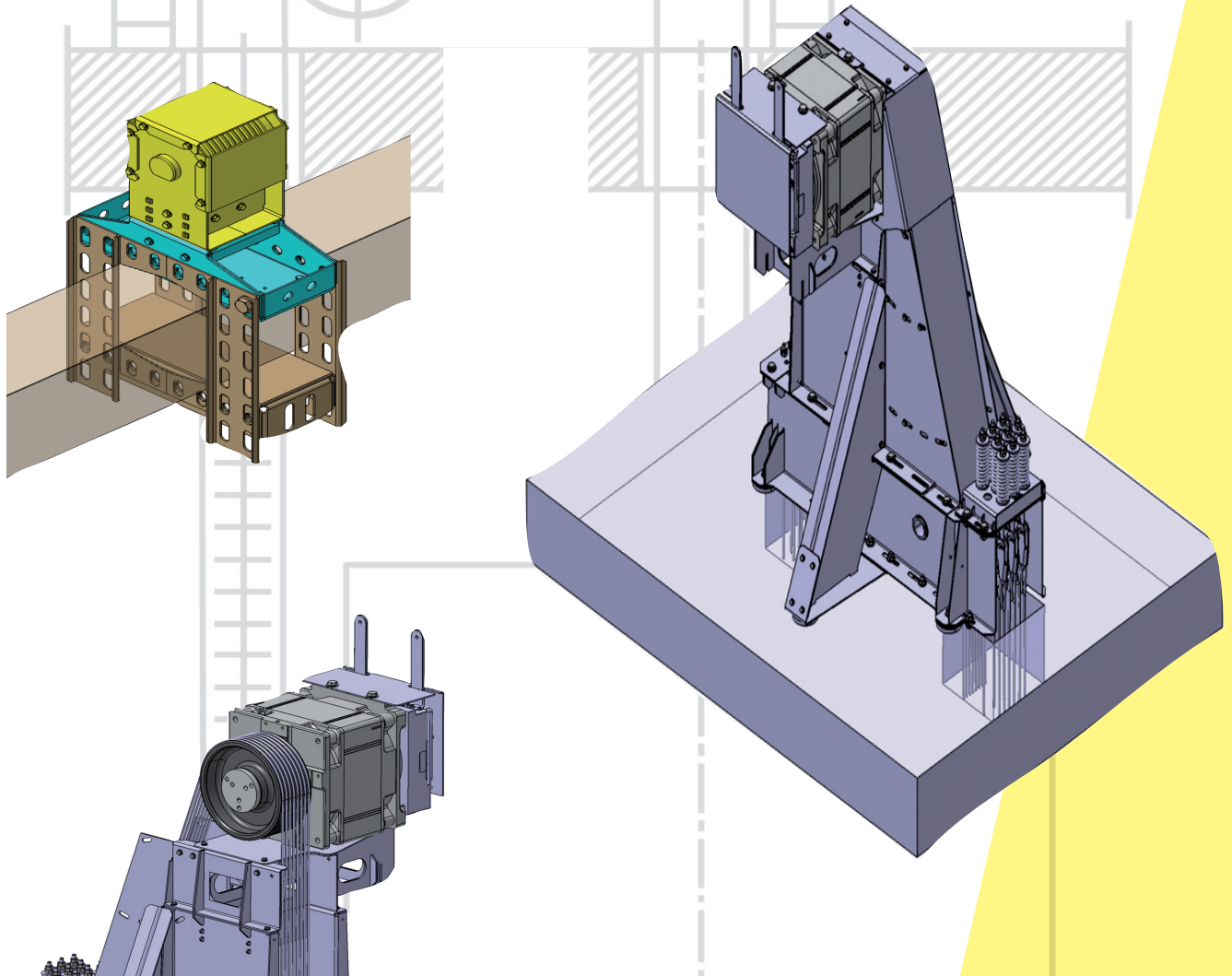
## Updating with gearless technology

with loading capacity up to 630kg, speed up to 1.0 m/s, 2:1 suspension

Many existing lifts have to be modernised.

In consideration of boundary conditions provided by the customer – ceiling break, car slings and counterweight can be kept-

We provide a patented gearless solution packet for retrofitting your installation to the latest state-of-the-art technology.



We deliver a flexible retrofitting set, which comprise the components:

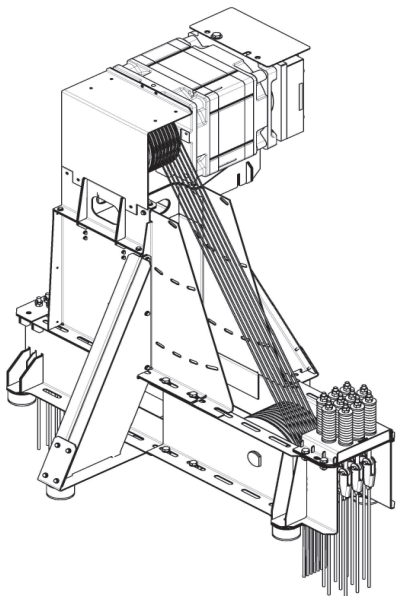
- > PMC Gearless
- > Machine base frame for 2:1 suspension and rope anchorage
- > MFC frequency inverter
- > rope pulley for existing 1:1 car slings
- > rope pulley for existing 1:1 counterweight
- > 6 mm rope



# ModKit M061

## Updating with gearless technology

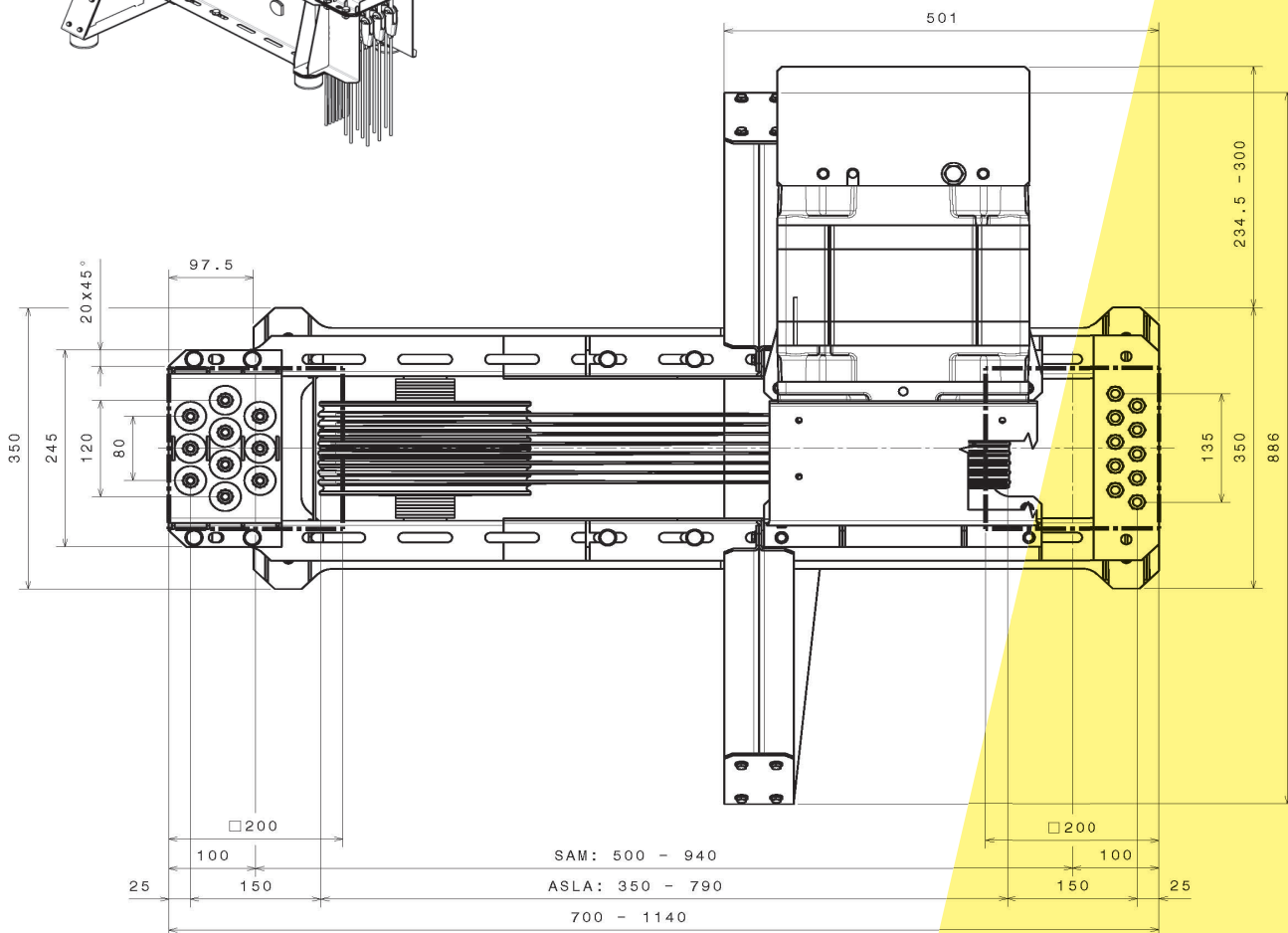
with loading capacity up to 630kg, speed up to 1.0 m/s, 2:1 suspension



Performance data for 2:1 suspension

Gearless	Q [kg]	Traction sheave and ropes	Frequency inverter
PMC 145 S 103	450	DT 240, ropes 6*6 mm	MFC 21-09 <sup>1</sup> MFC 31-10 <sup>2</sup>
PMC 145 M 102	630	DT 240, ropes 8*6 mm	MFC 21-09 <sup>1</sup> MFC 31-10 <sup>2</sup>

1) = external brake control 2  
2) = integrated brake control 2



9721 000 9234, issue 06/2009

The details quoted in this Product Information can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with authorisation of the editor.

LiftEquip GmbH Elevator Components

Bernhäuser Straße 45 - D-73765 Neuhausen a.d.F.

Telefon: +49 (0) 71 58 12 - 2929

Fax: +49 (0) 71 58 12 - 2971

E-Mail: kontakt@liftequip.de

Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Liftscreen information and entertainment

Innovative position indicators with TFT displays • Live news, video clips, news ticker, special messages

The two Liftscreen systems „Basic“ and „Deluxe“ are an improvement for every modern elevator installation. High-quality displays mounted directly at eye-level are guaranteed to attract the attention of every passenger, thus shortening the travel time. You can even combine commercials, services and information by using your individual position indicator.

## Pure innovation

The elevator ride is often the first and the last impression your customers and visitors take home with them. Liftscreen offers a high-quality display with advanced functions and application ranges in two versions.

## Elevator control unit interfaces

- Interface card to transmit landing information between elevator control unit and Liftscreen.
- The landing information can be coded OneHot, BCD or Gray. This makes Liftscreen compatible with all common control systems.
- In addition, any kind of special control unit messages can be put out onto the display.

## Liftscreen Basic

- Connection of analog video feeds
- Video files in DVD quality (MPEG 1+2)
- Images and photographs in JPG format
- Update via USB stick
- Position indicator via overlay technology  
special messages such as overload, special travel, fireman service, etc.

## Liftscreen Deluxe

Additional performance range compared to Basic:

- Computer with embedded OS.
- Liftscreen infoCTRL software
- Customizable graphic position indicator. Individual special messages and landing-specific contents.
- Internet for breaking news.
- Ticker messages.
- Central administration of any number of displays in various elevators.
- Week planer and calendar functions.
- Timer-controlled change-over between all inputs possible (RGB, Video).



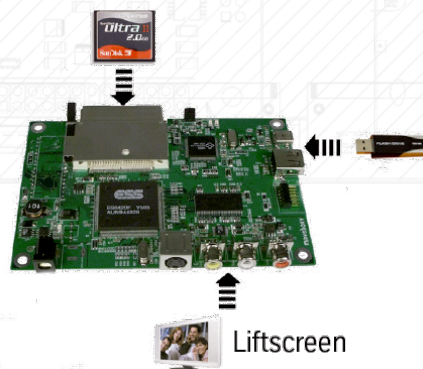
left: 19" display, rear-mounted • right: 15" display, front-mounted with frame

## System structure

Liftscreen Basic: Your individual images and videos are fed directly from the CF player to the display. The interface card directly processes the control unit information and superimposes them on the display using overlay technology. Liftscreen Deluxe: Central system control unit is a computer which receives the elevator control unit information via interface card. This information can be graphically edited according to your preferences and can be displayed in combination with your individual images and videos.

## Display

- Monitor diagonals: 10.4" - 15" - 17" - 19" - 23" - 32" - 37" - 42" - 55"
- All resolutions from VGA (640x480) to SXGA (1280x1024), 4:3 and 16:9
- Graphic boot logo. Your company logo can be displayed during every system start for a preset time period or when the signal feed drops out.
- Many display settings such as brightness, contrast, colors, etc. can be individually set using the Liftscreen software.
- Video inputs: 3x FBAS (CVBS / Cinch) and optional 1x Y/C (SVideo) video norm: PAL, PAL60, SECAM, NTSC autodetect.
- As an option, the inputs can be used for additional video feeds.
- Weight: 10.4" approx. 4.5 kg - 15" approx. 5.5 kg - 17" approx. 7 kg - 32"-42" approx. 25-35 kg.



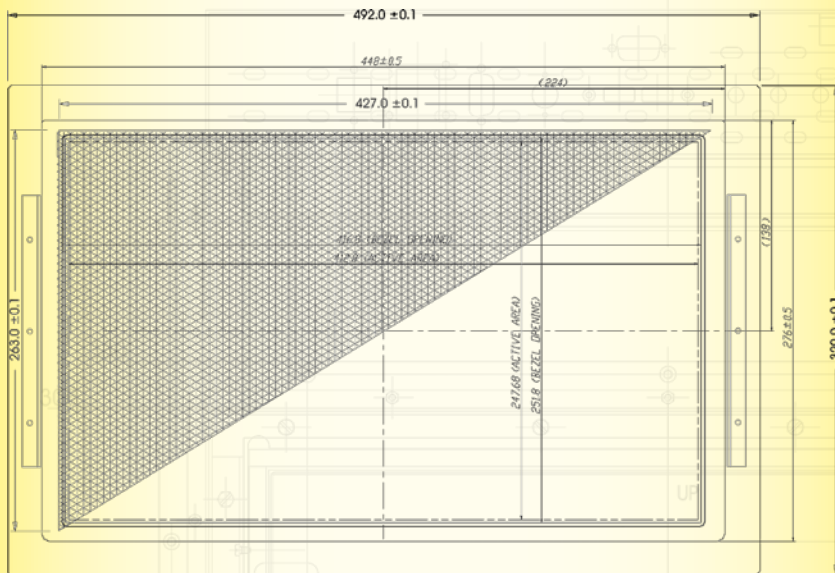
Video card Liftscreen Basic

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

# Liftscreen

## Position indicator and infotainment

### Display dimensions



19" Display, mounting depth 70 mm



10.4" Display, mounting depth 70 mm



Liftscreen computer (deluxe), rear view, WxDxH 280x264x93 mm,

### Installation variants

- Front-mounted with frame (face plate), screwed connection on the rear.
- Complete rear installation without frame.
- Optional fastening during installation on glass wall panels
- Mounting location: Wall panel or door entrance frame
- Mounting depth max. 70 mm (100 mm starting 32") display size

### Face plate

- Aluminum natural or anodized in various colors (on request).
- Steel, varnished (RAL acc. to customer preference)
- Stainless steel in various textures
- Plastic in various thicknesses and colors.

### Front panes

- Plastic (Macrolon dereflected and HighGlare)
- Glass in various thicknesses (single-pane to vandal-resistant), dereflected / not dereflected.

### Further range of application

Liftscreen systems can be used in more places than in elevators. Further displays can be installed as info terminals to become part of a building information system which can be centrally administered (regardless of where you are via LAN/Internet). These solutions are especially interesting for large office centers, chain stores, hotel chains, shopping malls, etc.

9720 000 9205-2, issued 08/2007  
The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing.

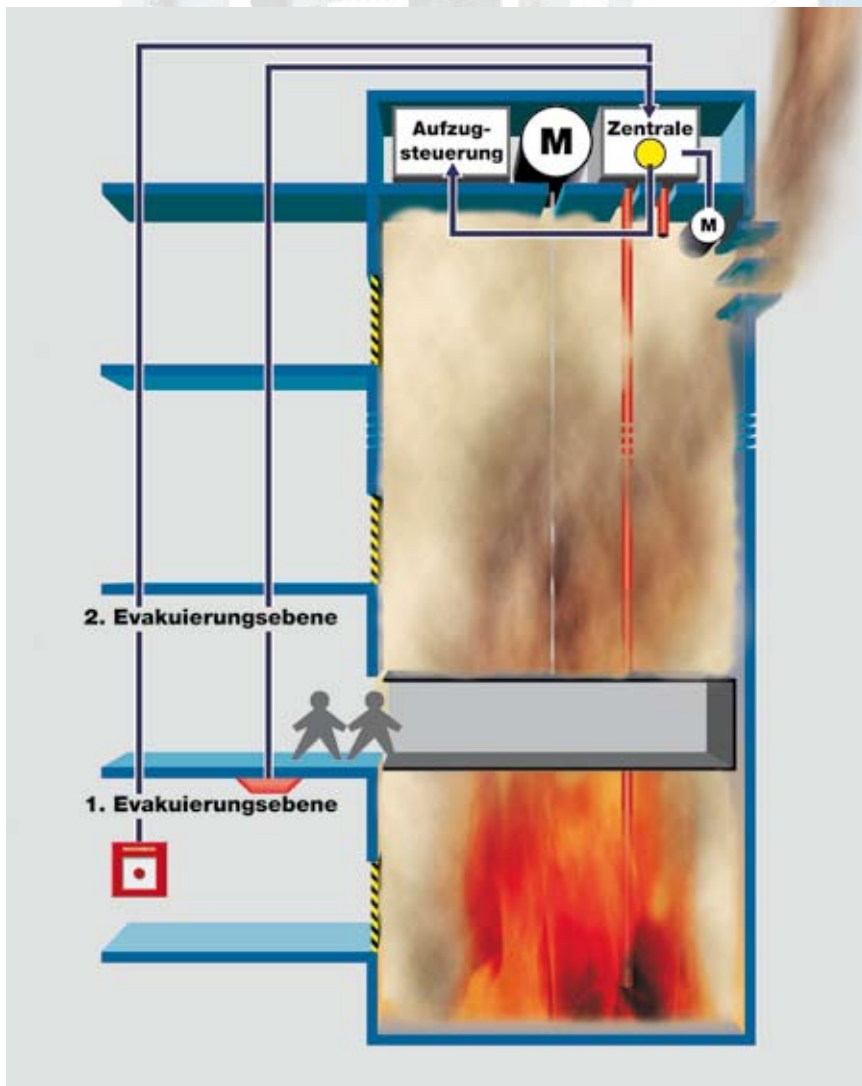
**LiftEquip GmbH Elevator Components**  
Bernhäuser Straße 45 – D-73765 Neuhausen a.d.F.  
Telefon: +49 (0) 71 58 12 - 2929  
Fax: +49 (0) 71 58 12 - 2971  
E-Mail: kontakt@liftequip.de  
Internet: www.liftequip.de

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS



Service and Competence.

# The smoke must go Lift - Smoke - Free The innovative concept for smoke extraction from lift shafts



**LiftEquip GmbH Elevator Components**  
Bernhäuser Straße 45  
D-73765 Neuhausen a.d.F.  
Germany

Telefon: +49 (0) 71 58 12 - 2929  
Fax: +49 (0) 71 58 12 - 2971  
E-Mail: [kontakt@liftequip.de](mailto:kontakt@liftequip.de)  
Internet: [www.liftequip.de](http://www.liftequip.de)

**LiftEquip**<sup>®</sup>  
ELEVATOR COMPONENTS

## LIFT-SMOKE-FREE – Innovative Smoke Extraction from Lift Shafts

Lift shafts are very important sections of a building complex, having to fulfill many requirements. One of these requirements is that ventilation and smoke extraction must be assured in case of a fire.

The most important conditions for smoke extraction from lift shafts result from the respective applicable state building codes. The lift shaft must be ventilated and equipped with smoke extraction devices. The smoke exhaust openings must have an area of at least 2.5 % of the area of the lift shaft, however, at least 0.1 m<sup>2</sup> (in Brandenburg 5 % of the area, but at least 0.2 m<sup>2</sup>). Aside from the smoke exhaust function, the lift shaft must also allow ventilation in accordance with the state building code.

With the introduction of the Energy Conservation Decree in 2002, the approach using a permanently installed ventilation opening, which has

been used widely up to now [Fig. 1], is no longer permissible. Buildings must now be designed in such a way that the heat-transferring envelope of the building is permanently airtight.

With regard to smoke extraction and ventilation of lift shafts, this means that any installed ventilation openings must be able to close.

The main problem is the exact and, to the largest possible extent, false alarm-proof detection of smoke from a fire in the lift shaft. Smoke detectors installed at certain points [Fig. 2] have not been proven to be a good solution.

For that reason, a smoke intake system is used. The VdS-approved fire alarm system consists of a pipe with a diameter of 25 mm, running vertically the length of the shaft. Through defined intake boreholes, air samples are continually extracted from the monitored shaft [Fig. 3].

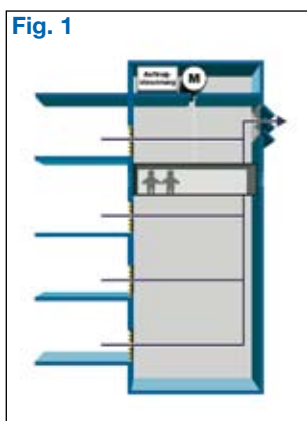
In case of a fire in the shaft itself or smoke penetrating from the outside, this is securely detected by the system. The central fire alarm unit goes into alarm mode and transmits a fire alarm signal to the lift control system.

The intake boreholes are permanently marked by means of colored bands.

Aside from automatic triggering of a fire alarm, the smoke extraction system can also be actuated manually from the main entrance area of the lift [Fig. 4]. A SHEV button is provided for this purpose. Actuation by this button also causes activation of the central fire alarm and signal transmitted to the lift control system.

The lift control system then initiates the evacuation travel of the lift car, moving it to a predetermined first evacuation level [Fig. 5]. In most cases, this will be the main lift lobby, where passengers are able to safely evacuate the lift car. The lift control system then prevents any further travel of the lift cars until a release signal is received.

Should the fire be on the first evacuation level, the system will detect this by means of an



optional smoke detector and send a corresponding signal to the central fire alarm. This signal is forwarded to the lift control system, which in turn moves the lift car to the second evacuation level, where passengers can safely evacuate the lift car [Fig. 6].

The central fire alarm unit also contains a VdS-approved smoke and heat exhaust ventilation (SHEV) system. This system moves, by means of a 24 V motor drive, a vertically installed smoke exhaust shutter into the open position [Fig. 7]. As a result, smoke from a fire is safely extracted.

The smoke extraction shutters are normally closed. Heat-insulated glazing, if desired, is available to let daylight in.

Alternatively, smoke extraction can also be facilitated through a twin-shell domelight with heat-insulated crown, if the installation of a vertical shutter is physically not possible [Fig. 8]. This type of drive also does not protrude into the safety area of the lift shaft.

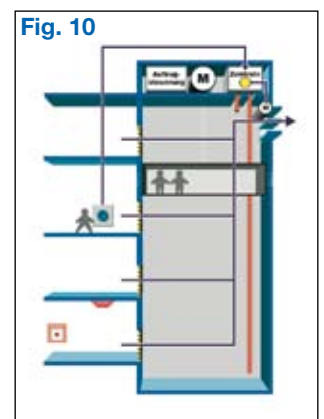
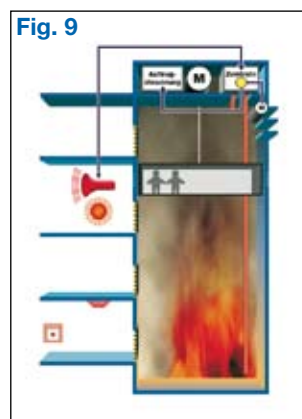
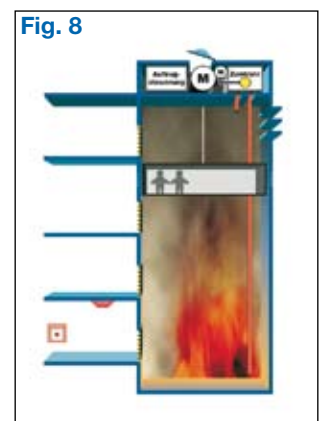
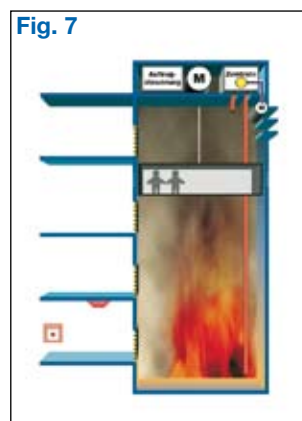
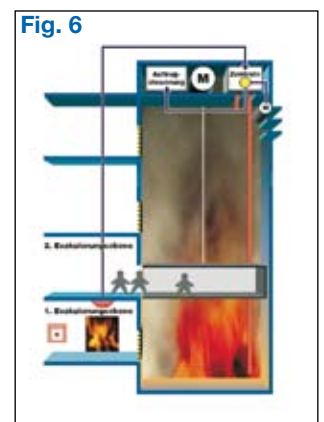
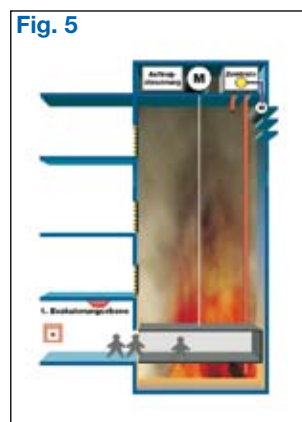
Optional visual and acoustic alarm signals can be connected directly to the central alarm system, in order to alert inhabitants of the building in case of a fire [Fig. 9].

For the purpose of ventilation, the central control unit can be actuated via a manual key-operated switch [Fig. 10]. Operating the switch sets the central control unit into the ventilation mode, opening or closing the ventilation shutter or domelight. The operation by key assures use by authorized persons only.

The Lift Directive 95/16/EG stipulates in Article 2, Paragraph 3, that no equipment not part of the lift may be installed in the lift shaft. According to an expertise by TÜV Hanover, the system described here does not fall into this category and therefore may be installed and used in all lift shafts.

Maintenance of the LIFT-SMOKE-FREE system must be performed by properly trained and authorized service personnel. In most cases,

these will be lift technicians having taken part in special training measures by the manufacturer. This keeps maintenance costs on a very economical level.





# Products for Smoke Extraction from Lift Shafts

## LSF central control unit

### Article No. 700.100

Central control unit with integrated VdS-approved smoke intake system type PRO-SENS-1, including detector module and VdS-approved SHEV main control system type EL6000. The system is supplied with emergency power by maintenance-free emergency power batteries 2 x 12 V, 2/2,2 Ah. The unit is delivered ready for connection in a ventilated steel housing 600 x 600 x 210 mm. Cable inlets are provided at the top through screw-fittings. Access for intake pipe through push-out openings top and bottom. Terminal clamps suitable for wires up to 4 mm<sup>2</sup>. Internal LED indicators for:

- Operation PRO-SENS
  - Alarm PRO-SENS
  - Trouble PRO-SENS
  - Operation SHEV main control
  - Alarm SHEV main control
  - Trouble SHEV
  - Central information LED with programming key for setting system-related variations.
- Function selection via changeable jumpers. Space for integration of test adapter. In ventilation mode controllable by ventilation switch or other building management systems.



## Piping system with accessories

### Article No. 700.200

Piping system for intake of smoke and ducting to the LSF central control unit, under consideration of standard project engineering, consisting of:

- 40 m intake pipe, 25 x 1.9 mm, in lengths of 5 m each
- 1 PVC test adapter
- 1 Titanus air filter
- 1 two-way ball valve
- 1 quick-action coupling
- 1 spring-loaded check valve
- 10 sleeves
- 80 pipe clips
- 2 reducing couplings, ABS/brass
- 3 elbows 90°
- 4 elbows 45°
- 10 intake reducing films 3.0 mm
- 10 bands for intake reducing films
- 1 tube special adhesive.

## Motor-driven shutter window

### Article No. 700.300

Shutter window with electric motor drive for the discharge of combustion gases as well as for ventilation purposes. Made from thermally isolated aluminum profiles with insulating glass. Optimal ventilation in open position and excellent heat insulation when closed. 3 shutters, flush with the window frame on the outside. Frame installation depth 65 mm. Elevation width of frame horizontal 20 mm, vertical 40 mm. Pivot bearings of individual shutters made from glass fiber reinforced plastic. Shutters driven via integrated toothed rack with drive pin. Top-mounted 24 V motor with integrated electronic limit stop for secure seal when closed. Geometrically clear exhaust area approx. 0.3 m<sup>2</sup>.

Test certificates by the Institute for Window Engineering IFT in Rosenheim are available upon request for testing the thermal transmission coefficient according to DIN 52619-1, partial test of air permeability of joints and watertightness under heavy rain according to DIN 18055, as well as testing of sound insulation factor according to DIN EN 20140.

Color: E6-EV1

Nominal size: width 600 mm, height 752 mm

Glazing: Climaplus 1.1/ 2 x 4 mm float



## Installation frame for shutter window

### Article No. 700.310

The installation frame is used, if the shutter window can be installed from the inside in an existing smoke extraction opening. In this case, the shutter window does not have to be attached to the masonry itself. The frame is made from aluminum L profiles. If required, it is factory-installed on the shutter window or supplied for retrofit attachment. The contact flange width is 46 mm all around. The entire assembly has a height of 250 mm. Flange attachment holes are provided in sufficient quantity.

## Motor-driven domelight

### Article No. 700.330

Note: The motor-driven domelight can be used in cases where it is not possible to install the shutter window described above.

Domelight with electric motor drive for the discharge of combustion gases as well as for ventilation purposes. Nominal size 900 x 600 mm. With PVC crown 15 cm high for correct installation of the roof. Dome made from twin-shell opal acrylic glass. Drive equipped with TÜV-approved 24 V chain drive. Geometrically clear exhaust area approx. 0.3 m<sup>2</sup>.

## SHEV button

### Article No. 700.400

Manual actuation device and display for alarm signal and status. With label "SMOKE VENTS LIFT SHAFT". Orange, lockable, surface-mounted plastic housing with breakable glass, 125 x 125 x 30 mm (W x H x D), incl. key.

Buttons for

- Alarm
- Reset

LED indicators for

- Alarm
- Trouble
- Operation





## Smoke detector for 1st evacuation level

**Article No. 700.500**

Automatic smoke detector functioning according to the scattered light principle for installation on the first evacuation level. With red alarm LED. Smoke detector with locking base. Diameter 100 mm. Color: white. VdS-Certificate No. G 200017



## Acoustic alarm buzzer

**Article No. 700.600 (w/o fig.)**

Electronic siren 24V to alert inhabitants in case of fire. Color: grey. Warning sound approx. 90 db. Surface-mounted plastic housing.



## Key-operated ventilation switch

**Article No. 700.700**

Manual key-operated switch for surface-mounted or flush-mounted installation for actuation of shutter window or domelight in ventilation mode. With LED indicator "Open". Symbols for operating directions OPEN-CLOSE. The function of the ventilation switch is automatically disabled in case of a fire alarm or trouble.

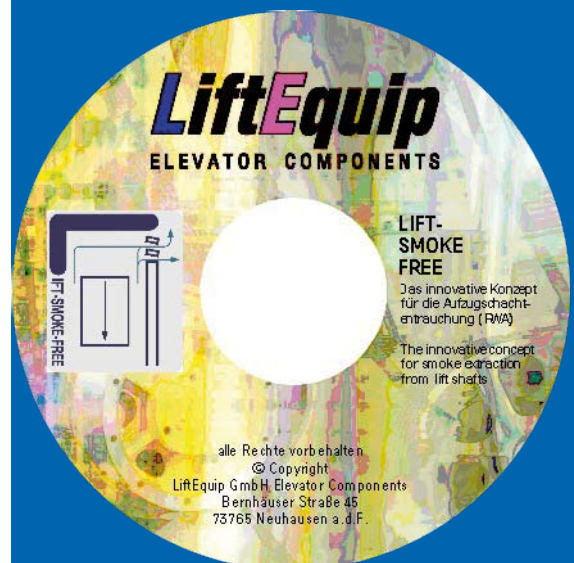
## The new CD-ROM full of information for planners, constructors and operators

- with complete specifications and schedules of prices
- detailed product information
- detailed, interactive system presentation

### Preferably order the CD today either by post:

LiftEquip GmbH Elevator Components  
Bernhäuser Straße 45  
D-73765 Neuhausen a.d.F.

or via eMail to:  
kontakt@liftequip.de



Wasting energy due to fire protection:

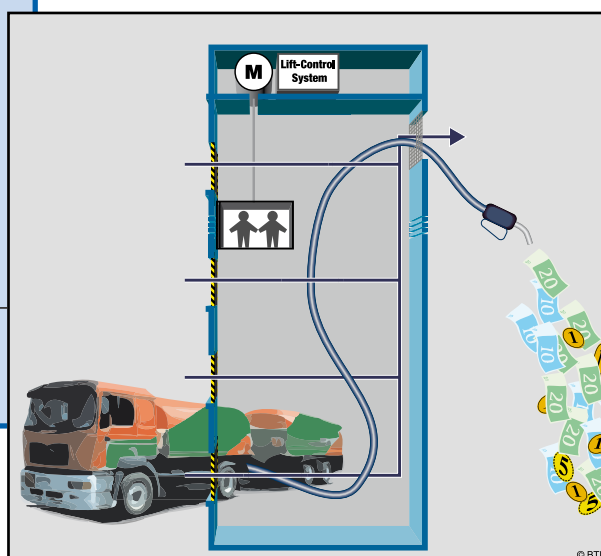
# Calculation of ventilation heat loss online

On our website you can precisely calculate the annual loss of heat as a result of a permanently attached smoke outlet opening in euros and cents under [www.lift-smoke-free.de/en/framelsf.html](http://www.lift-smoke-free.de/en/framelsf.html) (select "calculator")!

Ventilation Air Loss By Lift Shaft Smoke Extraction	
<small>Calculation of ventilation heat loss of a smoke exhaust system in a lift shaft with a permanently installed exhaust opening. This calculation program is based on the available space and technical conditions of lift shafts and the basic principles for the determination of volume flow in free ventilation according to Hansen (Recknagel / Sprenger - 92/93, p. 929). The gap of doors has been assumed at 3 mm. The actual energy cost charged by the local utility must be entered (assumption by the program: 0.045 €/kWh).</small>	
Project / Object No.	<input type="text" value="20.05.2005"/>
Contact	<input type="text" value="Sample Object"/>
	<input type="text" value="Dipl.-Ing. Sam Sample"/>
Width of shaft	<input type="text" value="2,00"/>
Depth of shaft	<input type="text" value="2,80"/>
Height of shaft	<input type="text" value="22,00"/>
Number of vertical door gaps per stop	<input type="text" value="3"/>
Total of individual doors	<input type="text" value="14"/>
Total of door widths	<input type="text" value="1,80"/>
Door height	<input type="text" value="2,00"/>
Annual energy cost	
Price per kWh € / kWh	<input type="text" value="0,045"/>
Energy cost of annual heat loss € / a	<input type="text" value="1.162"/>

[show print version](#)

You can find out the very latest about the LIFT-SMOKE-FREE system and other BTR system solutions on our website at [www.btr-hamburg.de](http://www.btr-hamburg.de), which is constantly updated.



## LiftEquip GmbH Elevator Components is a sales partner of BTR-Hamburg

BTR BRANDSCHUTZ-TECHNIK UND RAUCHABZUG GmbH in Hamburg, an innovative company in fire protection technology, has formed a sales partnership in Stuttgart with LIFTEQUIP GMBH, ELEVATOR COMPONENTS a strong sales partner. The two companies want to jointly sell the new, officially approved elevator well smoke removal system 'LIFT-SMOKE-FREE'. The system has been launched in most of Germany, providing not only an increase in the safety level in the elevator well but also huge energy savings for the operator.

Mr. Andreas Hönnige, General Manager of LIFTEQUIP GMBH, ELEVATOR COMPONENTS comments on the co-operation as follows: „We offer you quality. That's what we stand for! At LiftEquip, you get only high-quality elevator components. But quality also means **service and competence**. Our team of well-trained and qualified experts supports you comprehensively and quickly.“ This is why Mr. Hönnige is looking forward to the co-operation in the field of elevator well smoke removal.

The company presents its wide range of products and services at HYPERLINK „<http://www.liftequip.de>“ [www.liftequip.de](http://www.liftequip.de).

Printed in Germany

The details quoted in this brochure can only be viewed as binding when confirmed expressly in writing. Reproduction, reprint and storage only with the authorization of the editor.