ALTRA INDUSTRIAL MOTION

# SIME Brakes
# Industrial Braking Systems

Stromag®
Altra Industrial Motion

# Stromag

Founded in 1932, Stromag has grown to become a globally recognized leader in the development and manufacture of innovative power transmission components for industrial drivetrain applications. Stromag engineers utilize the latest design technologies and materials to provide creative, energy-efficient solutions that meet their customer's most challenging requirements.

Stromag's extensive product range includes flexible couplings, disc brakes, limit switches, an array of hydraulically, pneumatically, and electrically actuated brakes, and a complete line of electric, hydraulic and pneumatic clutches.

Stromag engineered solutions improve drivetrain performance in a variety of key markets including energy, off-highway, metals, marine, transportation, printing, textiles, and material handling on applications such as wind turbines, conveyor systems, rolling mills, agriculture and construction machinery, municipal vehicles, forklifts, cranes, presses, deck winches, diesel engines, gensets and stage machinery.

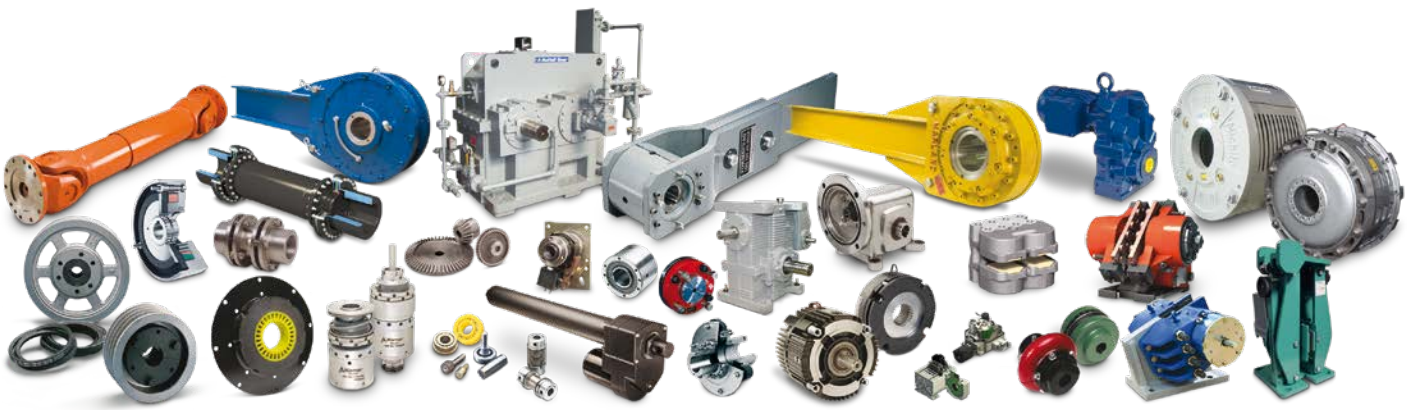
VISIT US ON THE WEB A **STROMAG.COM**

# Altra Industrial Motion

Altra is a leading global designer and manufacturer of quality power transmission and motion control products utilized on a wide variety of industrial drivetrain applications. Altra clutches and brakes, couplings, gearing and PT component product lines are marketed under the industries most well known manufacturing brands. Each brand is committed to the guiding principles of operational excellence, continuous improvement and customer satisfaction. Highly-engineered Altra solutions are sold in over 70 countries and utilized in a variety of major industrial markets, including food processing, material handling, packaging machinery, mining, energy, automotive, primary metals, turf and garden and many others.

Altra's leading brands include **Ameridrives**, **Bauer** Gear Motor, **Bibby** Turboflex, **Boston** Gear, **Delroyd** Worm Gear, **Formsprag** Clutch, **Guardian** Couplings, **Huco**, **Industrial** Clutch, **Inertia** Dynamics, **Kilian**, **Lamiflex** Couplings, **Marland** Clutch, **Matrix**, **Nuttall** Gear, **Stieber**, **Stromag**, **Svendborg** Brakes, **TB Wood's**, **Twiflex**, **Warner** Electric, **Warner** Linear and **Wichita** Clutch.

VISIT US ON THE WEB AT **ALTRAMOTION.COM**



# SIME Brakes

## SECURITY - QUALITY - RELIABILITY

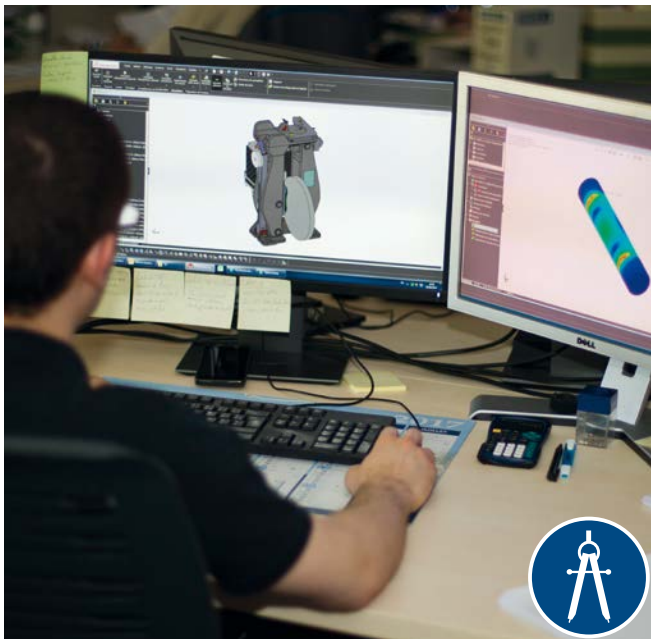
**With more than 60 years of experience, Stromag provide high efficiency braking systems to equip steel industries, nuclear plants, port cranes, offshore winches and mass transports throughout the world.**

Quality and innovation have always been the two essential features in the development of the company. Therefore Stromag provide disc brakes certified by recognized authorities such as DNV, ABS, TUV, Loyd's Register and EDF.

In 2016, ISO 9001 certification of our Quality management system was renewed under the version V2008 and our Safety management system was awarded OHSAS 18001 - V2007 certification.

Whatever the application, Stromag meet the global supply requirements with standard or fully customised braking systems solutions.

# OUR KNOW-HOW AT YOUR DISPOSAL



## RESEARCH & DEVELOPMENT DEPARTMENT

In a mutually beneficial way, Stromag create a strong relationship with their customers in order to understand their needs and provide them the best solution.
With in-depth knowledge and experience in all key applications and markets, our teams keep constantly abreast of every changing needs and market development.

## TRAINING

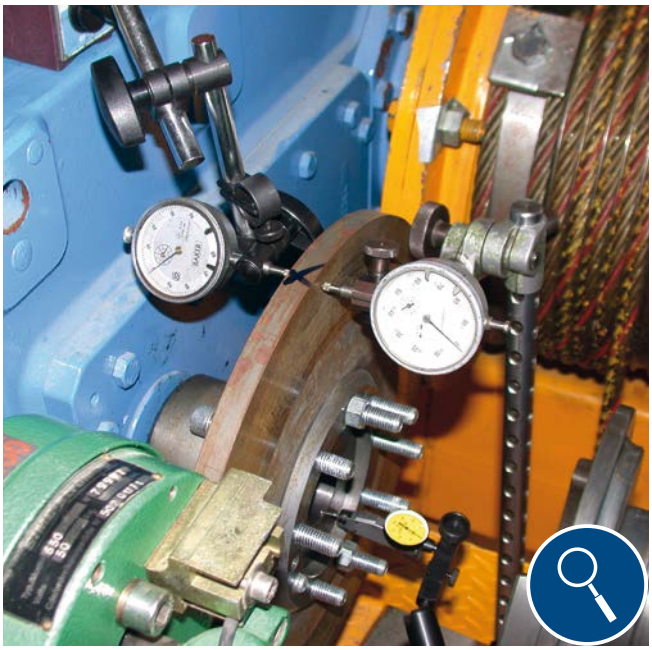
After sales service team can provide to its customers training sessions : upgrade operations on-site or trainings in the production center in La Guerche (France). Each training consists of two parts : theoretical in a classroom / practical in the work-shop.
Topics : products operation, periodic maintenance, settings, fault diagnosis.

## BENEFITS

- A team of experts at your disposal
- Reactivity of the interventions
- Study of the specific requirements
- Secured installation

- Optimal operation of the braking systems
- Preventive maintenance
- Expertise sustainability

# Reactivity. availibility and listening at the customer are values which define our teams. We put all our experience and knowledge at your disposal:

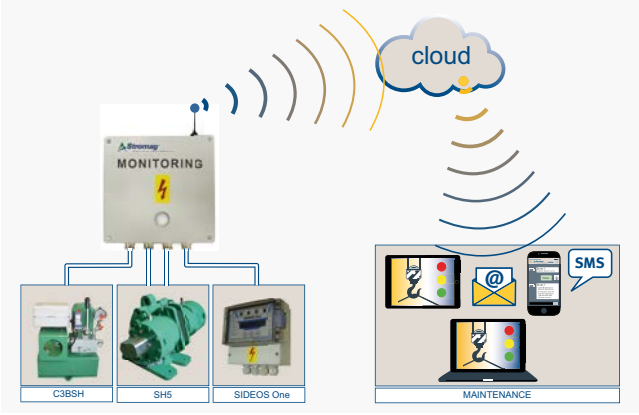



## DIAGNOSIS

The After Sales team shares its “know-how” with companies having an important fleet to help them to realise a self-diagnosis on their brakes systems to achieve their maximal reliability in compliance with the safety regulations. The diagnosis takes place in two stages : a complete on-site examination of the different devices and a detailed report with synthesis for a global visibility.

## INTERVENTION

Stromag has many sub-structures in France and worldwide ; these allow our After Sales Service Department to operate very fast in the customer sites. Each member or our team has a qualified engineering background which means they are totally able to help and advise customers technically and commercially.

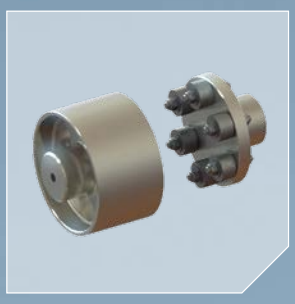



Stromag developed a Monitoring system which allows to connect your braking system to one or several monitoring modules.
CAN Bus enables an easy connection, transmission and processing of a great quantity of data.
The modules offer a high degree of adaptability and allow utilisation of transmission means as : SD cards, mobile telephone, internet.

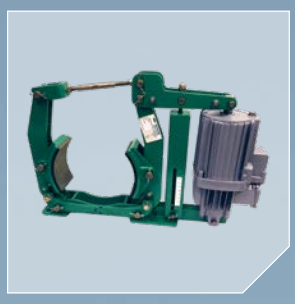
# SIME Brakes PRODUCTS

Hydraulic
emergency brakes

Hydraulic
Power Packs

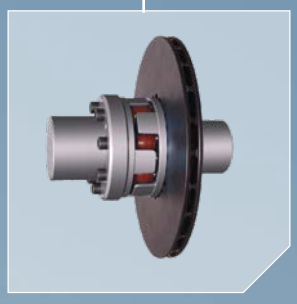


Drums &
couplings



Drum brakes
with thrustor

Disc brakes
with thrustor



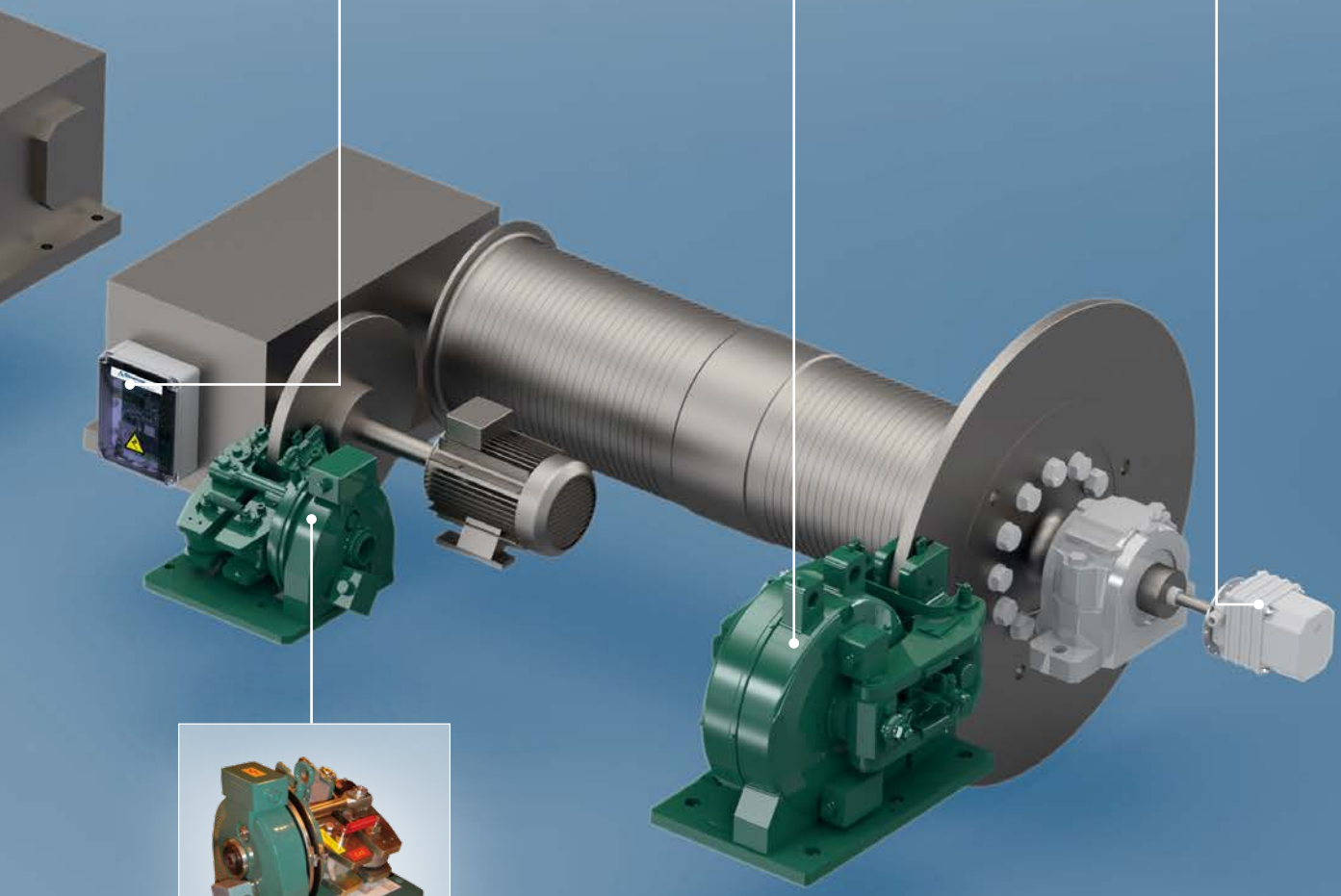
Discs &
couplings

# COMPLETE BRAKING SOLUTIONS

Electrical
power units

Electromagnetic
emergency brakes

Safety systems



Electromagnetic
service brakes

# SOLUTIONS FOR YOUR APPLICATION

Solutions for
## RENEWABLE ENERGIES

- Brakes for wind turbines rotor high and low speed
- Brakes for wind turbines yaw
- Rotorlocks
- Braking systems for tidal turbines
- Hydraulic Power Packs
- Limit switches
- Tailor made solutions

Solutions for
## CONSTRUCTION INDUSTRIES

- Hydraulic brakes
- Electromagnetic brakes
- Thrustors brakes
- Drum brakes
- Discs & Couplings
- Hydraulic Power Packs
- Electrical units
- Safety and control systems

Solutions for
## PORTS

- Hydraulic brakes
- Electromagnetic brakes
- Thrustors brakes
- Drum brakes
- Discs & Couplings
- Hydraulic Power Packs
- Electrical units
- Safety and control systems

# HIGH CUSTOMERS SATISFACTION

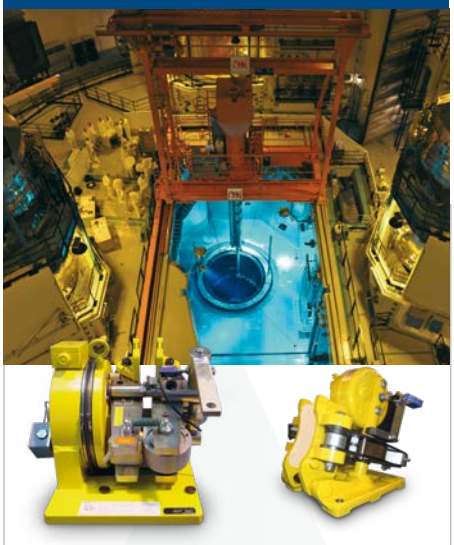
SIME Brakes products and services comply with the requirements of our customers in terms of quality, safety, service life, easy maintenance and delivery times. The quality and environmental policy is an integral part of our company policy.
The certification ISO9001 of our Quality management system is renewed under the version ISO 9001 - V2008 in 2016, combined with OHSAS 18001 - V2007 certification.
With more than 60 years of experience in the supply of high efficiency braking systems, Stromag provides disc brakes certified by recognised organisations such as DNV, ABS, TUV, Loyd's Register and EDF.

Solutions for
## STEEL INDUSTRIES

- Hydraulic brakes
- Electromagnetic brakes
- Thrustors brakes
- Drum brakes
- Discs & Couplings
- Hydraulic Power Packs
- Electrical units
- Safety and control systems

Solutions for
## MARINE & OFFSHORE

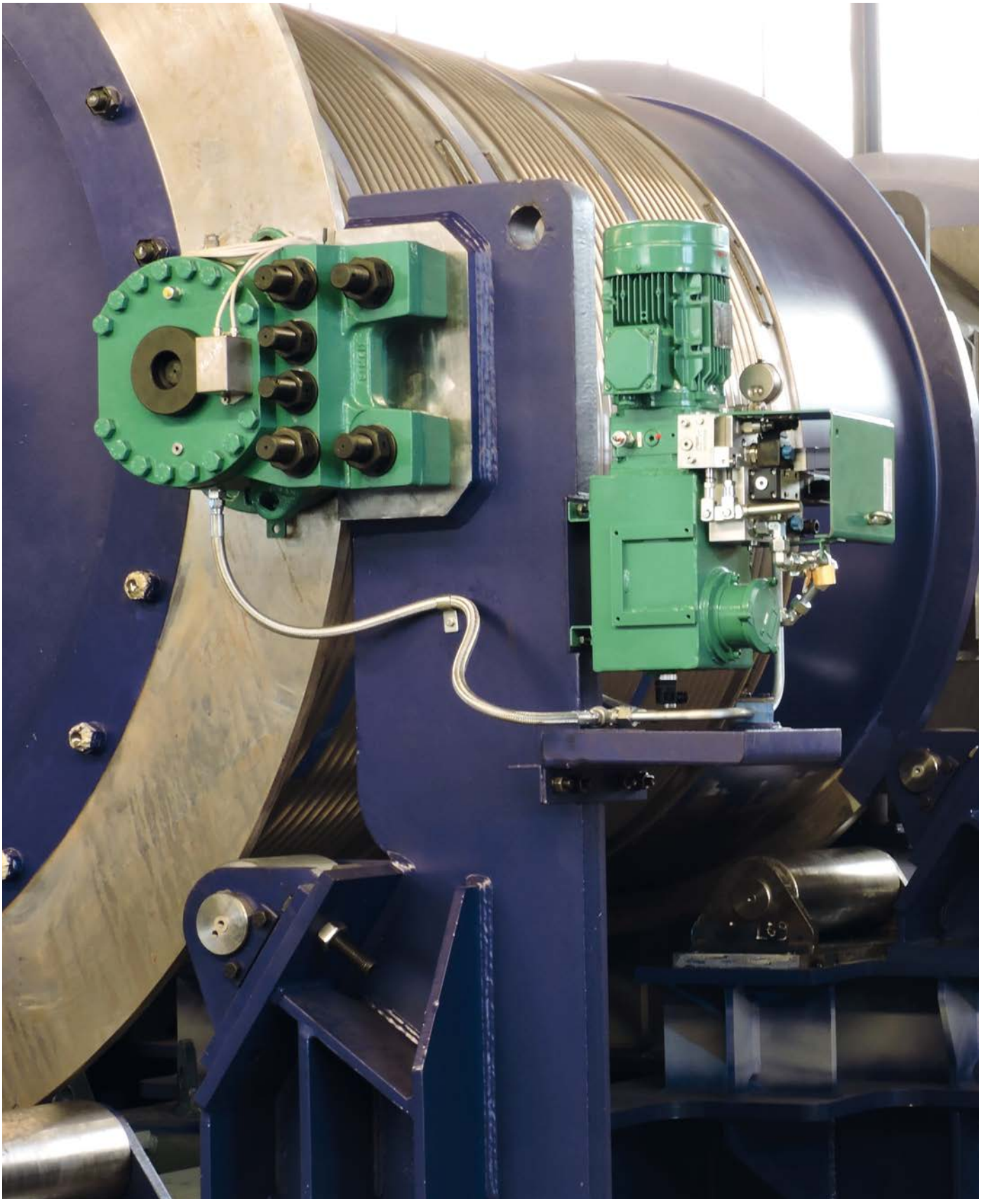
- Hydraulic brakes
- Electromagnetic brakes
- Thrustors brakes
- Drum brakes
- Discs & Couplings
- Hydraulic Power Packs
- Electrical units
- Monitoring systems



Solutions for
## NUCLEAR INDUSTRIES

- Hydraulic brakes
- Electromagnetic brakes
- Thrustors brakes
- Drum brakes
- Discs & Couplings
- Hydraulic Power Packs
- Electrical units
- Monitoring systems

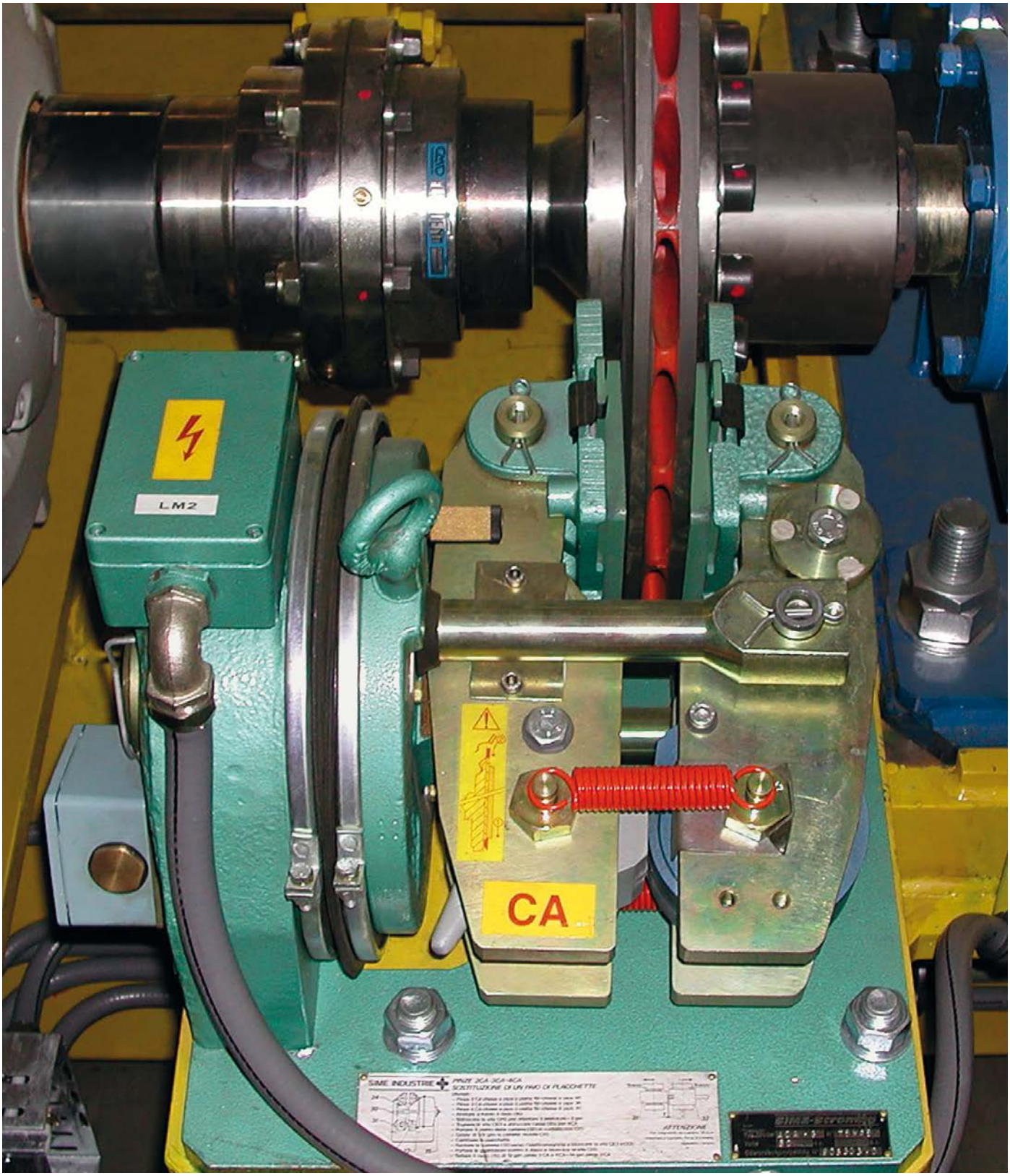
## Content



# CONTENT

### Service Brakes

# SERVICE BRAKES



## Service Brakes

### ELECTROMAGNETIC BRAKES

Braking torque (kN.m)

0 2 4 6 8 10 12 14 16 18 20 22 24 26

**645-650-660**
**5K / 45 K**
discs
Ø175 to 625

**1CA2-2CA2**
**3CA2-4CA2**
discs
Ø445 to 995

### DRUM BRAKES

Braking torque (kN.m)

0 2 4 6 8 10 12 14 16 18 20 22 24 26

**FNS-VS**
**SDB**
drums
Ø160 to 710

**FED-A**
drums
Ø150 to 750

### HYDRAULIC BRAKES

Braking torque (kN.m)

0 2 4 6 8 10 12 14 16 18 20 22 24 26

**2TB-3TB-4TB**
discs
Ø445 to 995

**1TSA-1TXA**
discs
Ø625 to 995

### THRUSTOR BRAKES

Braking torque (kN.m)

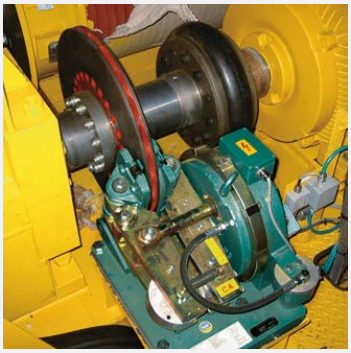
0 2 4 6 8 10 12 14 16 18 20 22 24 26

**TDXB I and II**
**FAV 10 to 50**
discs
Ø220 to 995

## Service Brakes

### APPLICATIONS

- STEEL CRANES
- PORT CRANES
- NUCLEAR CRANES
- MASS TRANSPORTS







**Service Brakes**

# ELECTROMAGNETIC SERVICE BRAKES

## MAIN CHARACTERISTICS

- FAILSAFE BRAKE BY SPRING APPLICATION
- ELECTROMAGNETIC RELEASE
- OPENING PROVING SWITCH

## OPTIONS

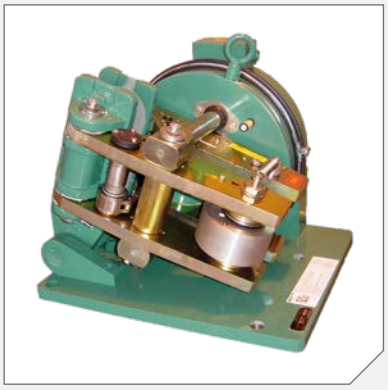
- MECHANICAL RELEASE LEVER
- HYDRAULIC RELEASE
- CLOSING PROVING SWITCH
- MANUAL RELEASE CONTROL SWITCH
- HIGH TEMPERATURE, IRON AND STEEL CONDITIONS

### 645-650-660

- Association with discs Ø175 to 625
- Manual wear compensation
- Option:
  Mounting on a vertical axis disc

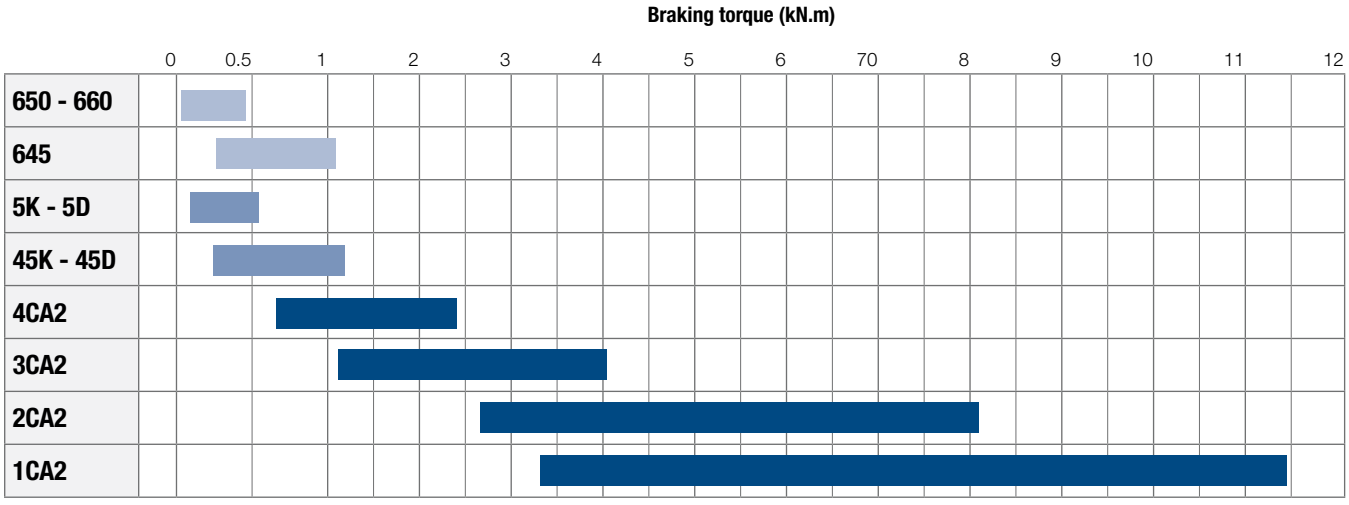
### 5K - 5D
### 45K - 45D

- Association with discs Ø315 to 625
- Automatic wear compensation
- Option:
  Mounting on a vertical axis disc



### 4CA2 - 3CA2
### 2CA2 - 1CA2

- Association with discs Ø445 to 995
- Automatic wear compensation
- Left and right hand calipers
- Option: Manual wear compensation



## Service Brakes

# DISC BRAKE - 650 AND 660 CALIPERS

**Revision number: T03150-01-F** **Revision date: 21.03.2016**

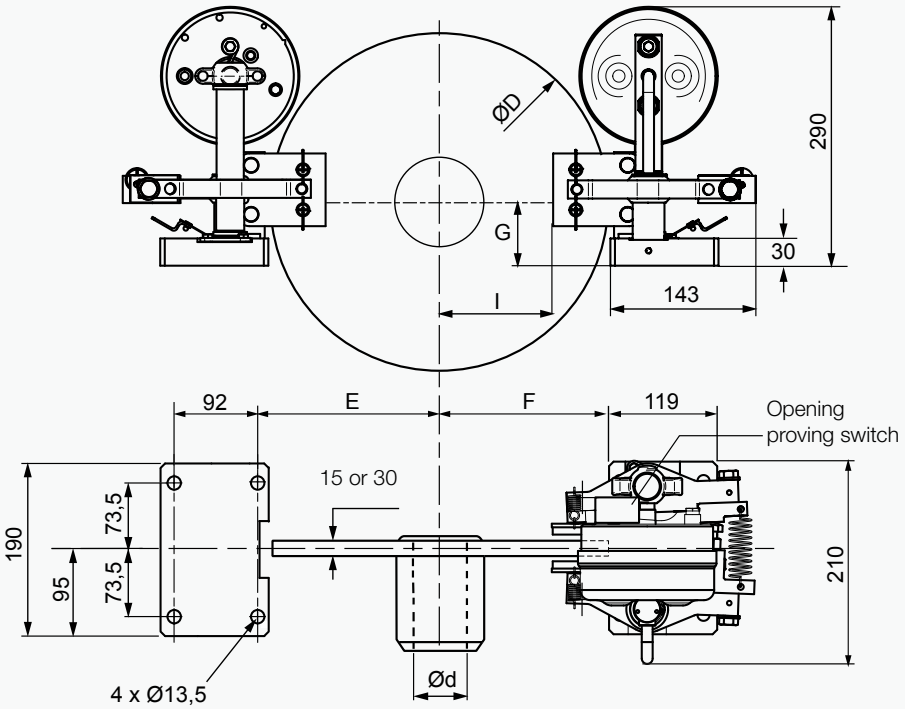
Fail safe braking
Spring application
Electromagnetic release
Manual lining wear compensation
Brake pads with wear indicator
Opening proving switch for PLC
With coil supply wire: 2 x 2mm², length 2m

**Conditions of use:**
- Ambiant temperature -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult SIME-Stromag.

**Use:**
- Service brake for application ≤ 150 stops/h

**Options:**
- Manual release lever or hydraulic release
- Mounting on vertical axis disc
- Marine protection
- Closing proving switch
- Manual release switch




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

The opening switch is delivered with 3 x 0.75mm² cable, length 2m

Weight: 19 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | Thickness 15 mm | | | | | | | | | Thickness 30 mm | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum speed of the disc for nominal torque | | tr/mn | 5000 | 4300 | 3600 | 3000 | 2400 | 2100 | 1900 | 1800 | 1500 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 175 | 220 | 260 | 315 | 395 | 445 | 495 | 550 | 625 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 0-40 | 0-55 | 0-75 | 0-75 | 0-75 | 0-75 | 0-100 | 0-100 | 0-100 | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 118 | 128 | 143 | 173 | 213 | 238 | 263 | 293 | 328 | 173 | 193 | 213 | 238 | 263 | 293 | 328 |
| F | | mm | 106 | 116 | 131 | 161 | 201 | 226 | 251 | 281 | 316 | 161 | 181 | 201 | 226 | 251 | 281 | 316 |
| G | | mm | 85 | 85 | 85 | 75 | 60 | 50 | 45 | 45 | 25 | 75 | 60 | 60 | 50 | 45 | 45 | 25 |
| I (approx. dimension) | | mm | 43 | 53 | 68 | 98 | 138 | 163 | 188 | 218 | 253 | 98 | 118 | 138 | 163 | 188 | 218 | 253 |
| **Caliper 650** : Nominal torque for 1 caliper adjustable from 100% to 50% | | N.m | 110 | 130 | 150 | 190 | 260 | 300 | 350 | 390 | 460 | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Max. reaction on shaft | 1 caliper | N | 1600 | | | | | | | | | 1600 | | | | | | |
| | 2 calipers | N | 0 | | | 260 | 570 | 580 | 560 | 510 | 680 | 260 | 550 | 570 | 580 | 560 | 510 | 680 |
| **Caliper 660** : Nominal torque for 1 caliper adjustable from 100% to 60% | | N.m | 55 | 65 | 75 | 95 | 130 | 150 | 175 | 195 | 230 | 95 | 110 | 130 | 150 | 175 | 195 | 230 |
| Max. reaction on shaft | 1 caliper | N | 800 | | | | | | | | | 800 | | | | | | |
| | 2 calipers | N | 0 | | | 130 | 285 | 290 | 280 | 255 | 340 | 130 | 275 | 285 | 290 | 280 | 255 | 340 |

# DISC BRAKE - 645 CALIPER

**Revision number: T03250-01-D** **Revision date: 21.03.2016**

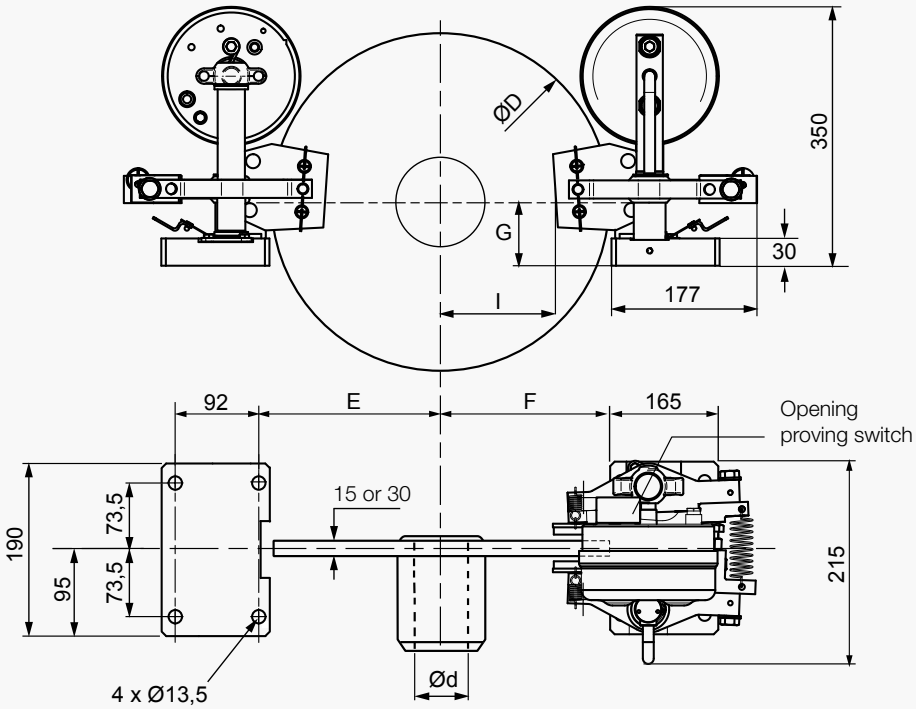
Fail safe braking
Spring application
Electromagnetic release
Manual wear compensation
Brake pads with wear indicator
Opening proving switch for PLC
With coil supply wire: 2 x 2mm², length 2m

**Conditions of use:**
- Ambiant temperature -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
- Service brake for application ≤ 150 stops/h

**Options:**
- Manual release lever or hydraulic release
- Mounting on vertical axis disc
- Marine protection
- Closing proving switch
- Manual release switch




**Opening proving switch** :
250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.
220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

Weight: 35 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Designation / Discs | | | solid and thickness 15 mm | | | | | | self-ventilated and thickness 30 mm | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal torque for 1 caliper adjustable from -30% to +20% | | N.m | 380 | 520 | 600 | 700 | 780 | 920 | 380 | 440 | 520 | 600 | 700 | 780 | 920 |
| Maximum speed of the disc for nominal torque | | rpm | 3000 | 2400 | 2100 | 1900 | 1800 | 1500 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 315 | 395 | 445 | 495 | 550 | 625 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 0-75 | 0-75 | 0-75 | 0-100 | 0-100 | 0-100 | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 173 | 213 | 238 | 263 | 293 | 328 | 173 | 193 | 213 | 238 | 263 | 293 | 328 |
| F | | mm | 161 | 201 | 226 | 251 | 281 | 316 | 161 | 181 | 201 | 226 | 251 | 281 | 316 |
| G | | mm | 95 | 80 | 70 | 65 | 65 | 45 | 95 | 80 | 80 | 70 | 65 | 65 | 45 |
| I (approx. dimension) | | mm | 76 | 116 | 141 | 166 | 196 | 231 | 76 | 96 | 116 | 141 | 166 | 196 | 231 |
| Max. reaction on shaft | 1 caliper | N | 3850 | | | | | | 3850 | | | | | | |
| | 2 calipers | N | 405 | 405 | 810 | 895 | 780 | 1230 | 405 | 515 | 450 | 810 | 895 | 780 | 1230 |

## Service Brakes

# DISC BRAKE - 5K AND 5KR CALIPERS

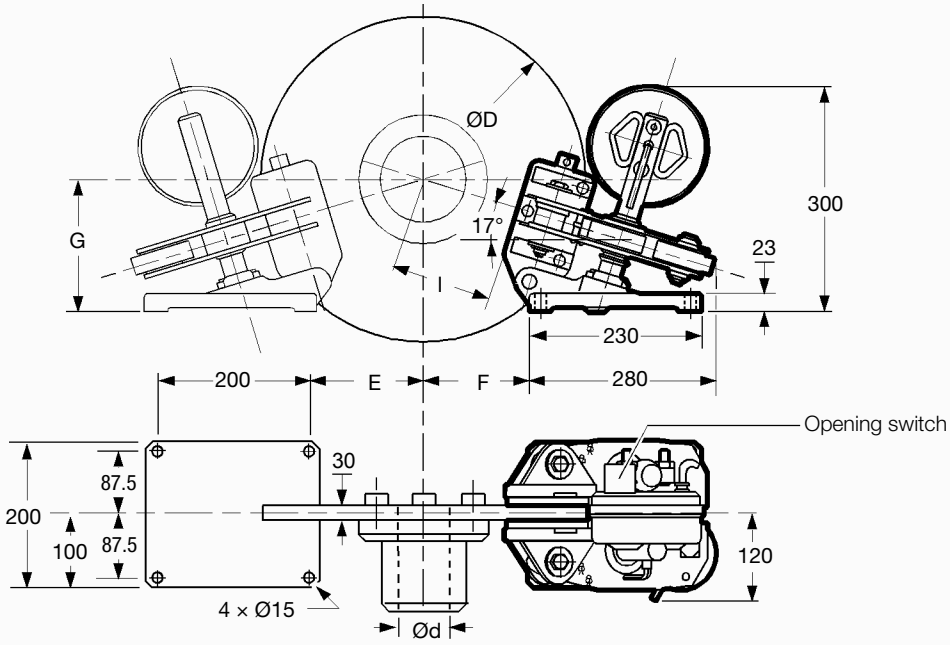
**Revision number: T03350-01-D** **Revision date: 21.03.2016**

Fail safe braking
Spring application
Electromagnetic release
Automatic wear compensation
Detection of full lining wear
Brake pads with wear indicator
Opening proving switch
With coil supply wire: 2 × 2mm², length 2m

**Conditions of use:**
- Ambiant temperature - 10°C to + 60°C
- Relative humidity ≤ 70 %
- Dust in atmosphere ≥ 65 µ

Other conditions, consult us.

**Options:**
- Manual release lever
- Hydraulic release
- Marine protection
- Vertical mounting
- Reduced torque
- Closing proving switch
- Manual release switch




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

The opening switch is delivered with 3 x 0.75mm² cable, length 2m

Weight: 27 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
|---|---|---|---|---|---|---|---|---|---|
| Maximum speed of the disc for nominal torque | | rpm | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 100 | 120 | 140 | 160 | 190 | 220 | 255 |
| F | | mm | 85 | 105 | 125 | 145 | 175 | 205 | 240 |
| G | | mm | 160 | 164 | 170 | 180 | 185 | 195 | 205 |
| I (approx. dimension) | | mm | 72 | 92 | 113 | 135 | 160 | 197 | 233 |
| **Caliper 5K** : | | | | | | | | | |
| Nominal torque for 1 caliper adjustable from - 50% to +20% | | N.m. | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Maximum reaction on shaft | 1 caliper | N | 1950 | | | | | | |
| | 2 calipers | N | 1150 | | | | | | |
| **Caliper 5KR** : | | | | | | | | | |
| Nominal torque for 1 caliper adjustable from 100% to -50% | | N.m. | 95 | 110 | 130 | 150 | 175 | 195 | 230 |
| Maximum reaction on shaft | 1 caliper | N | 815 | | | | | | |
| | 2 calipers | N | 480 | | | | | | |

# DISC BRAKE - 5KE CALIPER

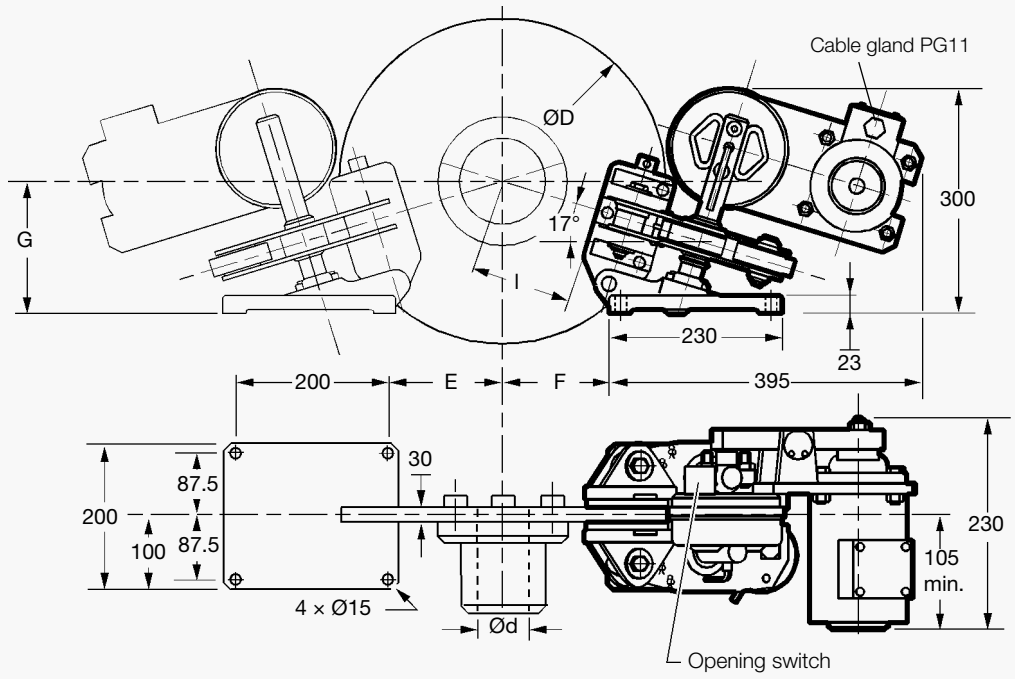
**Revision number: T03400-01-D** **Revision date: 21.03.2016**

Fail safe braking
Spring application
Electromagnetic release
Electrical progressive braking
Automatic wear compensation
Detection of full lining wear
Opening proving switch
With coil supply wire: 2 × 2mm², length 2m

**Conditions of use:**
- Ambiant temperature - 10°C to + 60°C
- Relative humidity ≤ 70 %
- Dust in atmosphere ≥ 65 µ

Other conditions, consult us.

**Options:**
- Hydraulic release
- Marine protection
- Vertical mounting




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

Opening switch is delivered with 3 x 0.75mm² cable, length 2 m

Weight: 45 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
|---|---|---|---|---|---|---|---|---|---|
| Progressive torque for 1 caliper adjustable from 0% to 100% ✱ | | N.m | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Nominal torque for 1 caliper adjustable from 100% to -50% | | N.m | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Maximum speed of the disc for nominal torque | | rpm | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 100 | 120 | 140 | 160 | 190 | 220 | 255 |
| F | | mm | 85 | 105 | 125 | 145 | 175 | 205 | 240 |
| G | | mm | 160 | 164 | 170 | 180 | 185 | 195 | 205 |
| I (approx. dimension) | | mm | 72 | 92 | 113 | 135 | 160 | 197 | 233 |
| Maximum reaction on shaft | 1 caliper | N | 1950 | | | | | | |
| | 2 calipers | N | 1150 | | | | | | |

✱ For electro with working rate of 40%

## Service Brakes

# DISC BRAKE - 5D AND 5DR CALIPERS

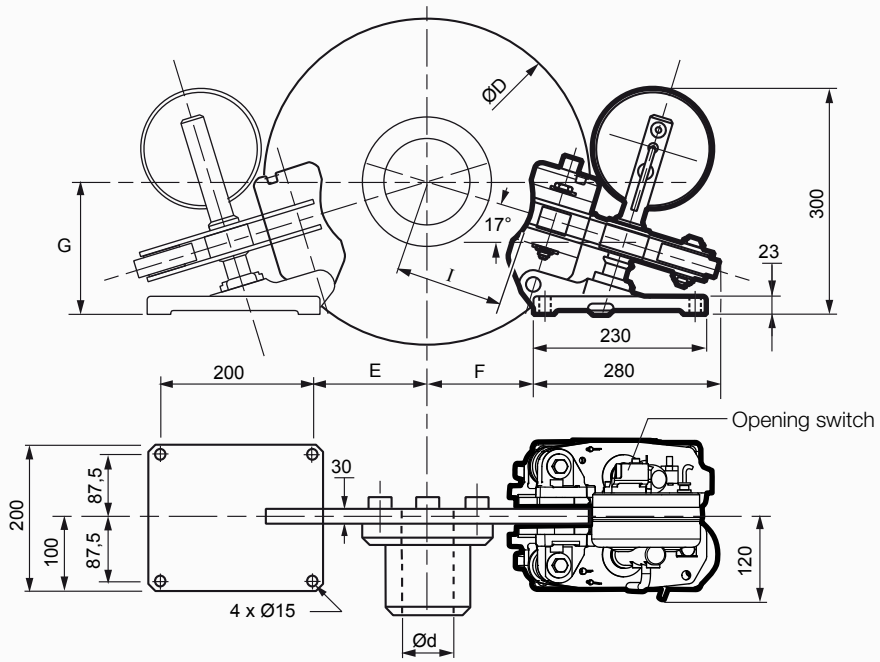
**Revision number: T03360-01-E** **Revision date: 21.03.2016**

Fail safe braking
Spring application
Electromagnetic release
Automatic wear compensation
Brake pads with wear indicator
Opening proving switch
With coil supply wire: 2 × 2mm², length 2m

**Conditions of use:**
- Ambiant temperature - 10°C to + 60°C
- Relative humidity ≤ 70 %
- Dust in atmosphere ≥ 65 µ

Other conditions, consult us.

**Options:**
- Manual release lever
- Hydraulic release
- Marine protection
- Vertical mounting
- Reduced torque
- Closing proving switch
- Manual release switch




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

The opening switch is delivered with 3 x 0.75mm² cable, length 2m

Weight: 27 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 220 M30 | 260 M30 | 315 M30 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum speed of the disc for nominal torque | | rpm | 4300 | 3600 | 3000 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 220 | 260 | 315 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 20-55 | 30-55 | 35-60 | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 65 | 80 | 100 | 100 | 120 | 140 | 160 | 190 | 220 | 255 |
| F | | mm | 50 | 65 | 85 | 85 | 105 | 125 | 145 | 175 | 205 | 240 |
| G | | mm | 150 | 153 | 160 | 160 | 164 | 170 | 180 | 185 | 195 | 205 |
| l (approx. dimension) | | mm | 51 | 68 | 88 | 88 | 108 | 128 | 151 | 176 | 213 | 248 |
| **Caliper 5D** : | | | | | | | | | | | | |
| Nominal torque for 1 caliper adjustable from - 50% to +20% | | N.m. | 130 | 150 | 190 | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Maximum reaction on shaft | 1 caliper | N | 1950 | | | | | | | | | |
| | 2 calipers | N | 1150 | | | | | | | | | |
| **Caliper 5DR** : | | | | | | | | | | | | |
| Nominal torque for 1 caliper adjustable from 100% to -50% | | N.m. | 65 | 75 | 95 | 95 | 110 | 130 | 150 | 175 | 195 | 230 |
| Maximum reaction on shaft | 1 caliper | N | 815 | | | | | | | | | |
| | 2 calipers | N | 480 | | | | | | | | | |

# DISC BRAKE - 5DE CALIPER

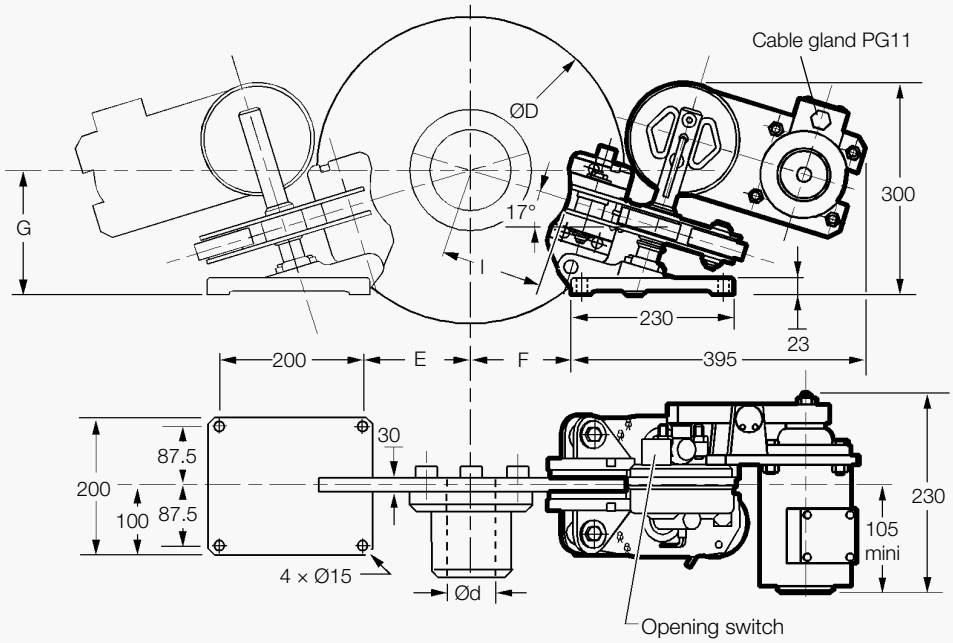
**Revision number: T03410-01-D** **Revision date: 22.03.2016**

Fail safe braking
Spring application
Electromagnetic release
Electrical progressive braking
Automatic wear compensation
Detection of full lining wear
Opening proving switch
With coil supply wire: 2 × 2mm², length 2m

**Conditions of use:**
- Ambiant temperature - 10°C to + 60°C
- Relative humidity ≤ 70 %
- Dust in atmosphere ≥ 65 µ

Other conditions, consult us.

**Options:**
- Hydraulic release
- Marine protection
- Vertical mounting




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

Opening switch is delivered with 3 x 0.75mm² cable, length 2 m

Weight: 45 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 220M30 | 260M30 | 315M30 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Progressive torque for 1 caliper adjustable from 0% to 100% ✱ | | N.m | 130 | 150 | 190 | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Nominal torque for 1 caliper adjustable from 100% to -50% | | N.m | 130 | 150 | 190 | 190 | 220 | 260 | 300 | 350 | 390 | 460 |
| Maximum speed of the disc for nominal torque | | rpm | 4300 | 3600 | 3000 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 220 | 260 | 315 | 315 | 355 | 395 | 445 | 495 | 550 | 625 |
| d | | mm | 20-55 | 30-55 | 35-60 | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 65 | 80 | 100 | 100 | 120 | 140 | 160 | 190 | 220 | 255 |
| F | | mm | 50 | 65 | 85 | 85 | 105 | 125 | 145 | 175 | 205 | 240 |
| G | | mm | 150 | 153 | 160 | 160 | 164 | 170 | 180 | 185 | 195 | 205 |
| I (approx. dimension) | | mm | 51 | 68 | 88 | 88 | 108 | 128 | 151 | 176 | 213 | 248 |
| Maximum reaction on shaft | 1 caliper | N | 1950 | | | | | | | | | |
| | 2 calipers | N | 1150 | | | | | | | | | |

✱ For electro with working rate of 40%

## Service Brakes

# DISC BRAKE - 45K and 45D calipers

**Revision number: T00140-01-I** **Revision date: 21.03.2016**

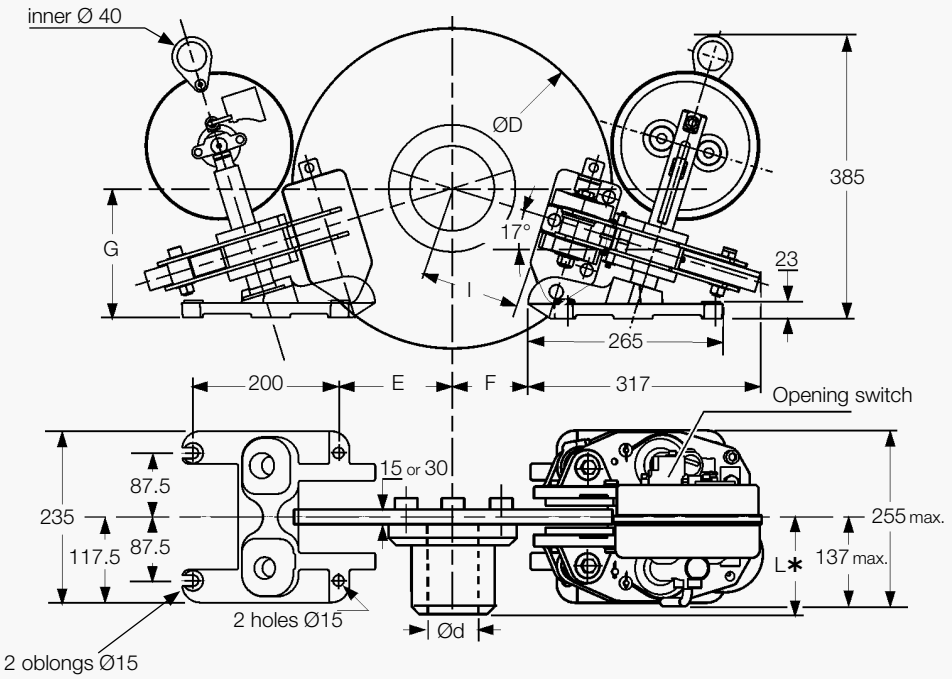
Fail safe braking
Spring application
Electromagnetic release
Automatic linings wear compensation
Opening proving switch
Coil with supply wire: 2 × 2mm², length 2m
Association with 30mm thick discs (or 15mm in option)
Shoes DIN (caliper 45D) for discs thickness 30mm only.

**Conditions of use :**
- Ambiant temperature -20°C to + 60°C
- Relative humidity ≤ 70 %
- Dust in atmosphere ≥ 65 µ

Other conditions, consult us.

**Use:**
- Service brake for application ≤ 600 cycles / h
  Possibility of quick manoeuvres :
  1000 cycles/h during 15s every 2 mn

**Options:**
- Mechanical release lever or hydraulic release
- Manual wear compensation (RM)
- Marine protection
- SIDHT steel industry high temperature
- Bearing brackets for mounting in place of a caliper 645.
- Mounting on a vertical axis disc.
- Closing proving switch
- Manual release switch




**Nota** :
The 45K-RM and 45D-RM calipers (manual wear compensation option) have the same overall dimensions as the 45K and 45D calipers with automatic wear compensation.

**∗ ATTENTION**
For discs Ø315 to 395, the length of 137 max. is higher than the length L of the standard hub. Provide space at the rear of the hub by means of a spacer.

**Opening proving switch** :
250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.
220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

Weight: 41 kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.
Caliper delivered in standard with WS1-5 lining.
For energy applications. use WS1-3 (torque loss of 20%).

| Designation | | Discs | solid and thickness 15 mm (option) | | | | | | | ventilated and thickness 30 mm | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **D Disc diameter** | | mm | **315** | **355** | **395** | **445** | **495** | **550** | **625** | **315** | **355** | **395** | **445** | **495** | **550** | **625** |
| Nominal torque for 1 caliper adjustable from -30% to +20% | | N.m | 410 | 470 | 560 | 650 | 750 | 840 | 990 | 410 | 470 | 560 | 650 | 750 | 840 | 990 |
| Maximum speed of the disc for nominal torque | | r.p.m. | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 |
| d | | mm | 0-75 | 0-75 | 0-75 | 0-75 | 0-100 | 0-100 | 0-100 | 0-50 | 0-60 | 0-70 | 0-70 | 0-100 | 0-100 | 0-100 |
| E | | mm | 100 | 120 | 140 | 160 | 190 | 220 | 255 | 100 | 120 | 140 | 160 | 190 | 220 | 255 |
| F | | mm | 50 | 70 | 90 | 110 | 140 | 170 | 205 | 50 | 70 | 90 | 110 | 140 | 170 | 205 |
| G | | mm | 160 | 164 | 170 | 180 | 185 | 195 | 205 | 160 | 164 | 170 | 180 | 185 | 195 | 205 |
| I (calipers **45K. 45K-RM**) | | mm | 75 | 95 | 116 | 138 | 168 | 200 | 236 | 75 | 95 | 116 | 138 | 168 | 200 | 236 |
| I (caliper **45D**) | | mm | | | | | | | | 75 | 95 | 116 | 138 | 168 | 200 | 236 |
| I (caliper **45D-RM**) | | mm | | | | | | | | 96 | 116 | 137 | 159 | 189 | 221 | 257 |
| Maximum reaction on shaft | 1 Caliper | N | 4200 | | | | | | | | | | | | | |
| | 2 Calipers | N | 2450 | | | | | | | | | | | | | |

# DISC BRAKE - 4CA2 CALIPER

**Revision number: T10049-01-D** **Revision date: 22.03.2016**

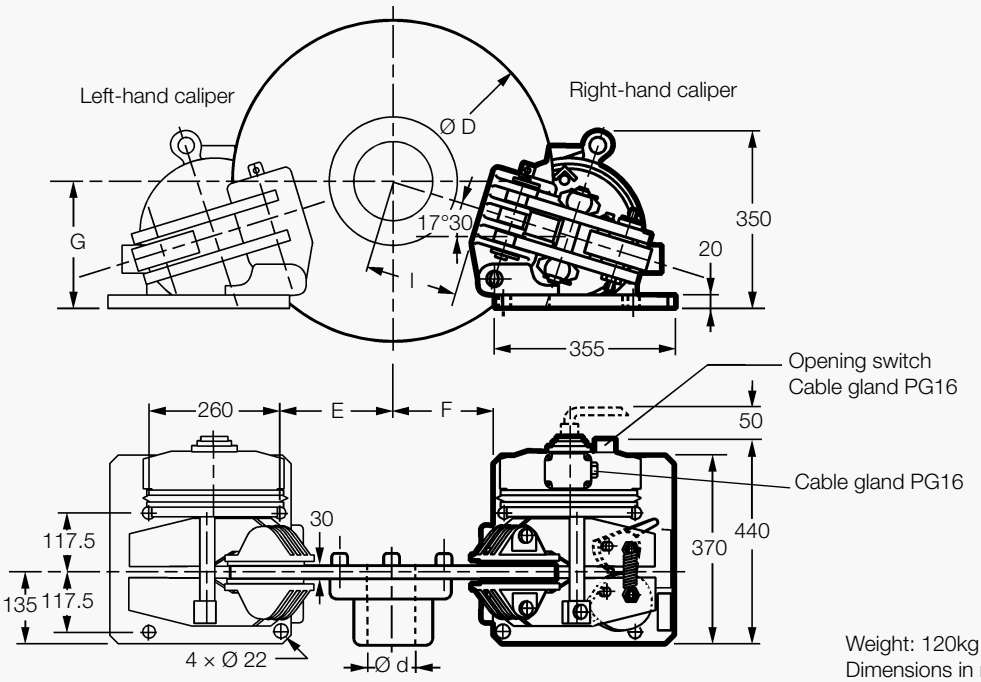
Fail safe braking
Braking by spring application
Electromagnetic release
Automatic wear compensation
Opening proving switch
Brake pads with wear indicator

**Working conditions:**
- Ambient température: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
Any application up to 1000act/h

**Options:**
- Manual release lever
- Hydraulic release
- Manual wear compensation
- Flameproof protection
- Marine protection
- Closing proving switch
- Switch on release nut




Weight: 120kg
Dimensions in mm

Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 445 | 495 | 550 | 625 | 705 | 795 |
|---|---|---|---|---|---|---|---|---|
| Nominal torque for 1 caliper adjustable from -30 to +20% | | N.m | 950 | 1100 | 1270 | 1500 | 1750 | 2000 |
| Maximum disc speed for nominal torque | | r.p.m. | 2100 | 1900 | 1800 | 1500 | 1300 | 1200 |
| D | | mm | 445 | 495 | 550 | 625 | 705 | 795 |
| d | | mm | 0-70 | 0-100 | 0-100 | 0-100 | 0-120 | 0-130 |
| E | | mm | 130 | 160 | 180 | 215 | 255 | 295 |
| F | | mm | 110 | 140 | 160 | 195 | 235 | 275 |
| G | | mm | 225 | 235 | 240 | 250 | 260 | 275 |
| I (approx. dimension) | | mm | 90 | 125 | 145 | 180 | 225 | 265 |
| Maximum reaction on shaft | 1 caliper | N | 7400 | | | | | |
| | 2 calipers | N | 4450 | | | | | |

**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

## Service Brakes

# DISC BRAKE - 3CA2 CALIPER

**Revision number: T10050-01-C** **Revision date: 19.04.2016**

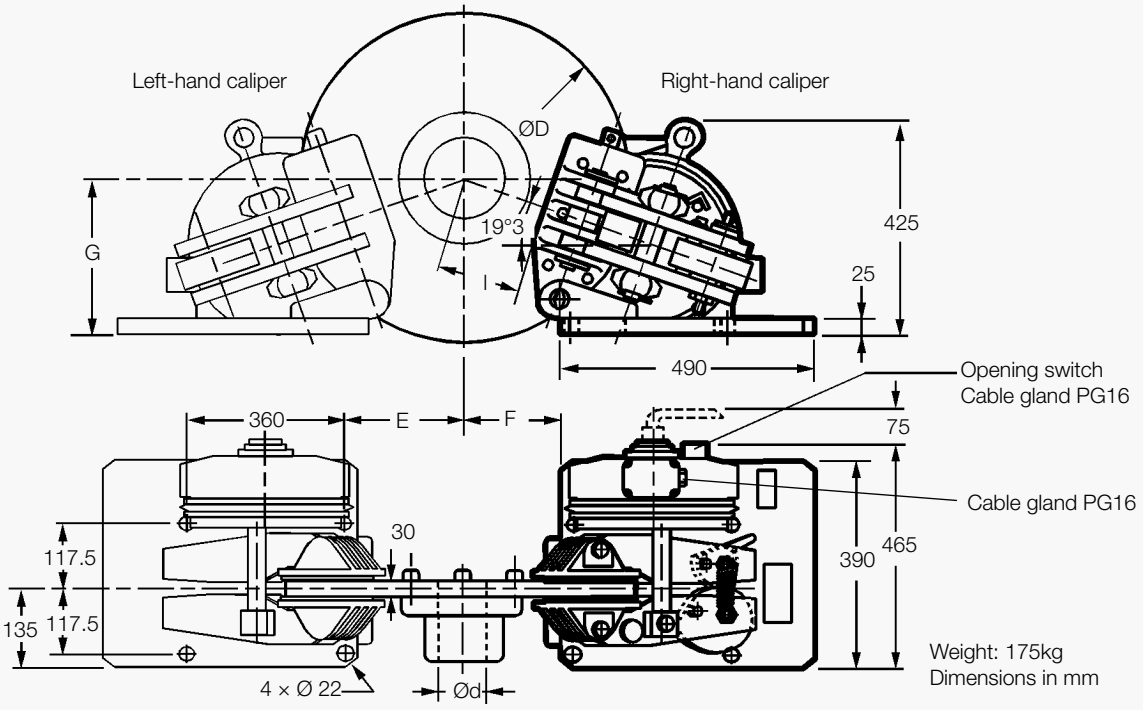
Fail safe braking
Braking by spring application
Electromagnetic release
Automatic wear compensation
Opening proving switch
Brake pads with wear indicator

**Working conditions:**
- Ambient température: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
Any application up to 1000act/h

**Options:**
- Manual release lever
- Hydraulic release
- Manual wear compensation
- Load regulated lowering
- Flameproof protection
- Marine protection
- Closing proving switch
- Switch on release nut




Response time at nominal torque : see the leaflet of the associated electrical power supply.

| Discs | | | 445 | 495 | 550 | 625 | 705 | 795 |
|---|---|---|---|---|---|---|---|---|
| Nominal torque for 1 caliper adjustable from -30 to +20% | | N.m | 1600 | 1850 | 2100 | 2500 | 2900 | 3350 |
| Maximum disc speed for nominal torque | | r.p.m. | 2100 | 1900 | 1800 | 1500 | 1300 | 1200 |
| D | | mm | 445 | 495 | 550 | 625 | 705 | 795 |
| d | | mm | 0-70 | 0-100 | 0-100 | 0-100 | 0-120 | 0-130 |
| E | | mm | 100 | 120 | 150 | 185 | 225 | 265 |
| F | | mm | 80 | 100 | 130 | 165 | 205 | 245 |
| G | | mm | 285 | 295 | 305 | 315 | 330 | 345 |
| I (approx. dimension) | | mm | 90 | 115 | 145 | 180 | 225 | 265 |
| Maximum reaction on shaft | 1 caliper | N | 12300 | | | | | |
| | 2 calipers | N | 7400 | | | | | |

**Opening proving switch** :
250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.
220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

# DISC BRAKE - 2CA2 AND 1CA2 CALIPERS

**Revision number: T10051-01-C / T10065-01-B** **Revision date: 22.03.2016 / 23.07.2012**

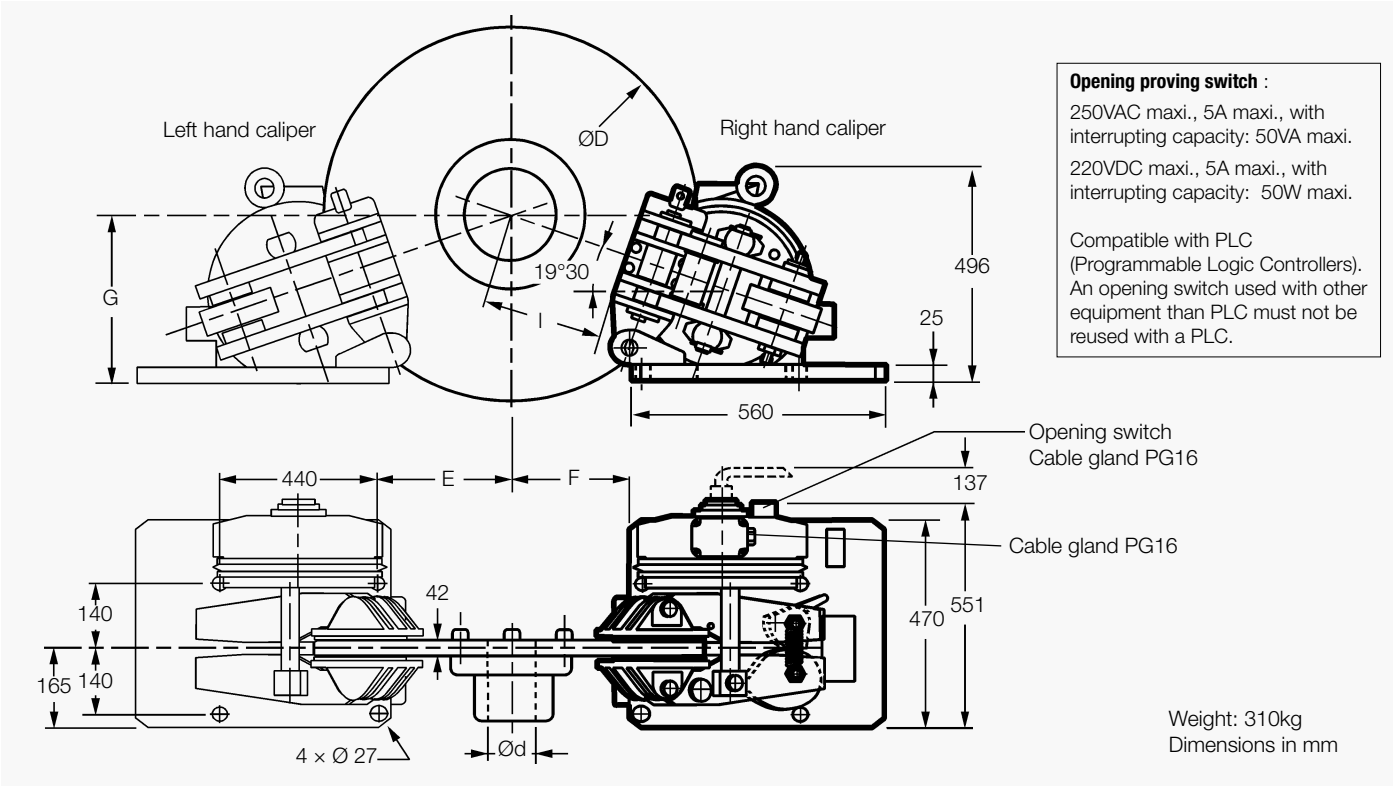
Fail safe braking
Braking by spring application
Electromagnetic release
Automatic wear compensation
Opening proving switch

**Working conditions:**
- Ambient température: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
Any application up to 600act/h

**Options:**
- Brake pads with wear indicator
- Manual wear compensation
- Hydraulic release
- Load regulated lowering
- Flameproof protection
- Marine protection.




**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi., with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers). An opening switch used with other equipment than PLC must not be reused with a PLC.

Weight: 310kg
Dimensions in mm

| Discs | | 625 | 795 | 995 |
|---|---|---|---|---|
| D | mm | 625 | 795 | 995 |
| d | mm | 40-140 | 40-180 | 40-180 |
| E | mm | 157 | 250 | 345 |
| F | mm | 127 | 220 | 315 |
| G | mm | 353 | 385 | 415 |
| l (approx. dimension) | mm | 174 | 268 | 368 |

Response time at nominal torque : see the leaflet of the associated electrical power supply.

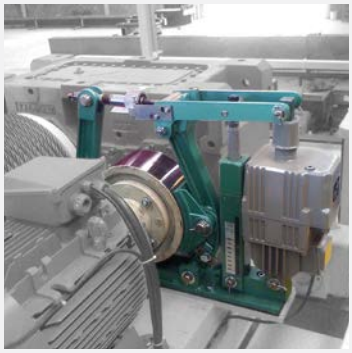
| Discs | | | 625 | 795 | 995 |
|---|---|---|---|---|---|
| 2CA2 | | | | | |
| Nominal torque for 1 caliper adjustable from -30 to +20% | | N.m | 3 800 | 5 150 | 6 700 |
| Maximum disc speed for nominal torque | | r.p.m. | 1 500 | 1 200 | 900 |
| Maximum reaction on shaft | 1 caliper | N | 18 600 | | |
| | 2 calipers | N | 12 600 | | |

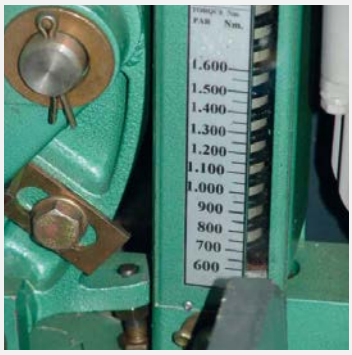
| Discs | | | 625 | 795 | 995 |
|---|---|---|---|---|---|
| 1CA2 | | | | | |
| Nominal torque for 1 caliper adjustable from -50 to 100% | | N.m | 6 610 | 8 800 | 11 370 |
| Maximum disc speed for nominal torque | | r.p.m. | 310 | 250 | 200 |
| Maximum reaction on shaft | 1 caliper | N | 25 700 | | |
| | 2 calipers | N | 16 300 | | |

## Service Brakes

### APPLICATIONS

- MINING
- HYDRO POWER
- OIL & GAS
- HARBOUR & SHIPPING
- STEEL
- POWER
- CEMENT









## Service Brakes

# DRUM BRAKES

| MAIN CHARACTERISTICS | OPTIONS |
|---|---|
| • FAILSAFE BRAKES<br>• SPRING APPLIED ELECTROHYDRAULIC THRUSTOR RELEASED<br>• ADJUSTABLE BRAKING TORQUE | • AUTOMATIC WEAR COMPENSATION<br>• OPENING PROVING SWITCH<br>• HAND RELEASE LEVER<br>• HIGH TEMPERATURE, SPECIAL PROTECTION, DELAY. ... |

### SDB

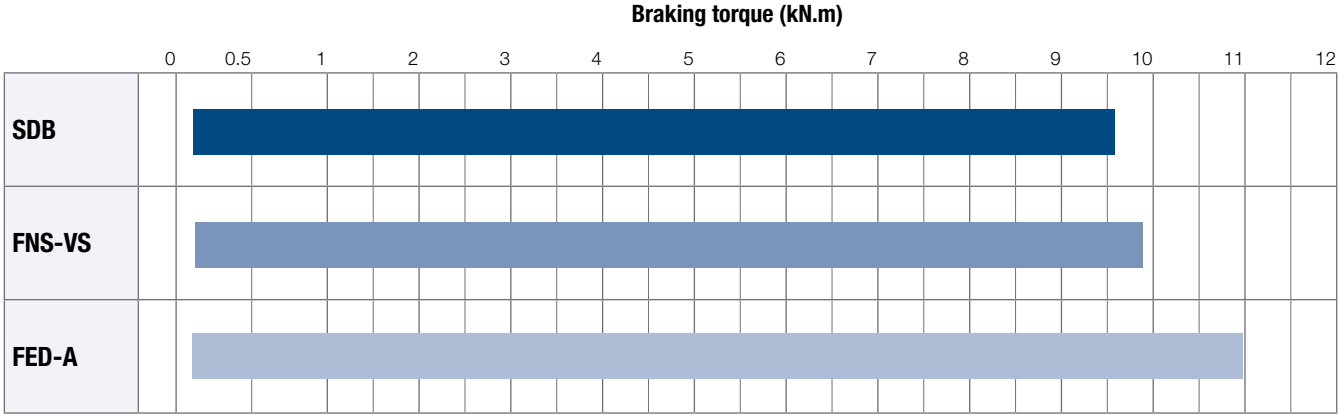
- Ass. with drums Ø 160 to 710
- Standard DIN 15435
- Vertical spring with scale for torque adjustment

### FNS-VS

- Ass. with drums Ø 160 to 710
- Standard DIN 15435
- Vertical spring with scale for torque adjustment
- Option: ATEX certificat / thrustor

### FED-A

- Ass. with drums Ø150 to 750
- Standard SIME
- Horizontal spring
- Option: ATEX certificat / thrustor



# NOTES

# DRUM BRAKE - SDB BRAKES

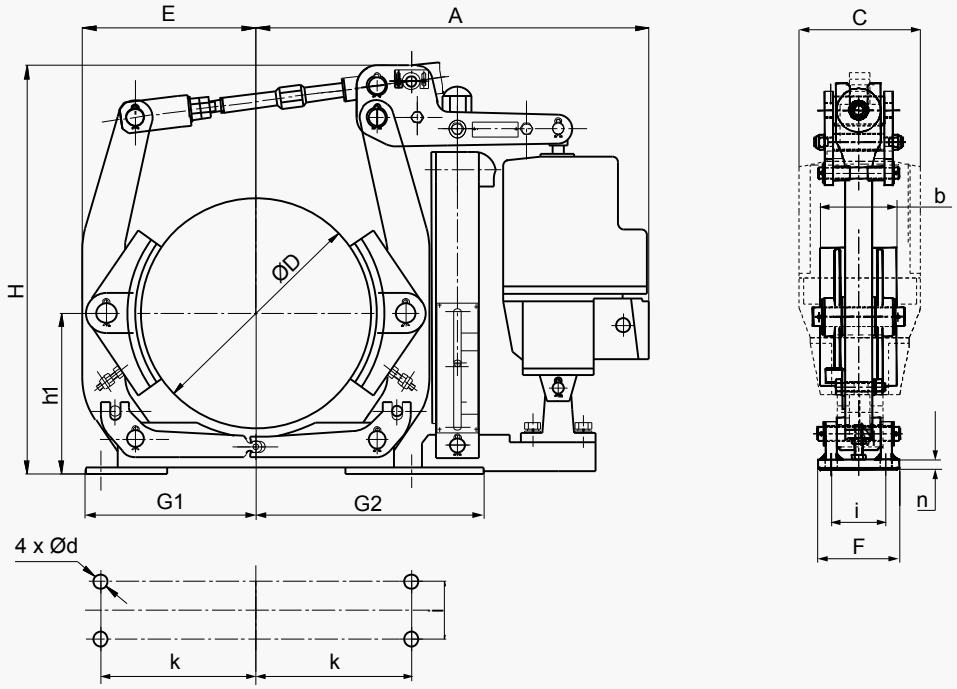
**Revision number: T10110-01-D** **Revision date: 31.10.2017**

Standard DIN 15435
Standard voltage 230/400 VAC 50Hz

Self lubricated bushings at main hinge points
Brake shoe auto-aligning device
Galvanized steel spindles and hinges
Non abestos organic linings
Scale for torque adjustment

**Operating conditions**

- Ambient temperature : -20°C to 50°C
- Relative humidity no higher than 90%




| BRAKE TYPE | THRUSTOR | TORQUE (N.m.) | | WEIGHT (kg) | DIMENSIONS (mm) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | | A | b | C | D | d | E | F | G1 | G2 | H | h1 | i | k | n |
| SDB 160 | TS 230/5 | 80 | 160 | 28 | 428 | 65 | 160 | 160 | 14 | 140 | 85 | 145 | 195 | 418 | 132 | 55 | 130 | 8 |
| SDB 200 | TS 230/5 | 110 | 260 | 35 | 470 | 70 | 160 | 200 | 14 | 172 | 90 | 165 | 255 | 490 | 160 | 55 | 145 | 10 |
| | TS 300/5 | 140 | 380 | 38 | | | | | | | | | | | | | | |
| SDB 250 | TS 230/5 | 140 | 300 | 45 | 533 | 90 | 160 | 250 | 18 | 202 | 110 | 200 | 290 | 583 | 190 | 65 | 180 | 12 |
| | TS 300/5 | 180 | 380 | 48 | | | | | | | | | | | | | | |
| | TS 500/6 | 300 | 600 | 53 | 570 | | 195 | | | | | | | | | | | |
| SDB 315 | TS 230/5 | 180 | 340 | 70 | 670 | 110 | 160 | 315 | 18 | 253 | 115 | 245 | 330 | 585 | 230 | 80 | 220 | 14 |
| | TS 300/5 | 250 | 500 | 70 | | | 195 | | | | | | | | | | | |
| | TS 500/6 | 315 | 770 | 75 | | | | | | | | | | | | | | |
| | TS 800/6 | 630 | 1200 | 80 | | | | | | | | | | | | | | |
| SDB 400 | TS 500/6 | 400 | 960 | 138 | 695 | 140 | 195 | 400 | 22 | 310 | 160 | 310 | 420 | 715 | 280 | 100 | 270 | 14 |
| | TS 800/6 | 630 | 1500 | 140 | | | | | | | | | | | | | | |
| | TS 1210/6 | 1000 | 2400 | 155 | 810 | | 240 | | | | | | | 775 | | | | |
| SDB 500 | TS 800/6 | 800 | 1920 | 176 | 925 | 180 | 240 | 500 | 22 | 380 | 180 | 365 | 535 | 803 | 340 | 130 | 325 | 21 |
| | TS 1210/6 | 1250 | 3000 | 204 | | | | | | | | | | 830 | | | | |
| | TS 2010/6 | 2000 | 4800 | 204 | | | | | | | | | | | | | | |
| SDB 630 | TS 1210/6 | 1800 | 3780 | 310 | 1150 | 225 | 240 | 630 | 27 | 465 | 220 | 450 | 600 | 1025 | 420 | 170 | 400 | 20 |
| | TS 2010/6 | 2500 | 6000 | 310 | | | | | | | | | | | | | | |
| | TS 3010/6 | 4000 | 8500 | 315 | | | | | | | | | | | | | | |
| SDB 710 | TS 2010/6 | 3150 | 6000 | 435 | 1180 | 225 | 240 | 710 | 27 | 520 | 240 | 500 | 630 | 1135 | 470 | 190 | 450 | 25 |
| | TS 3010/6 | 5000 | 9600 | 441 | | | | | | | | | | | | | | |

## Service Brakes

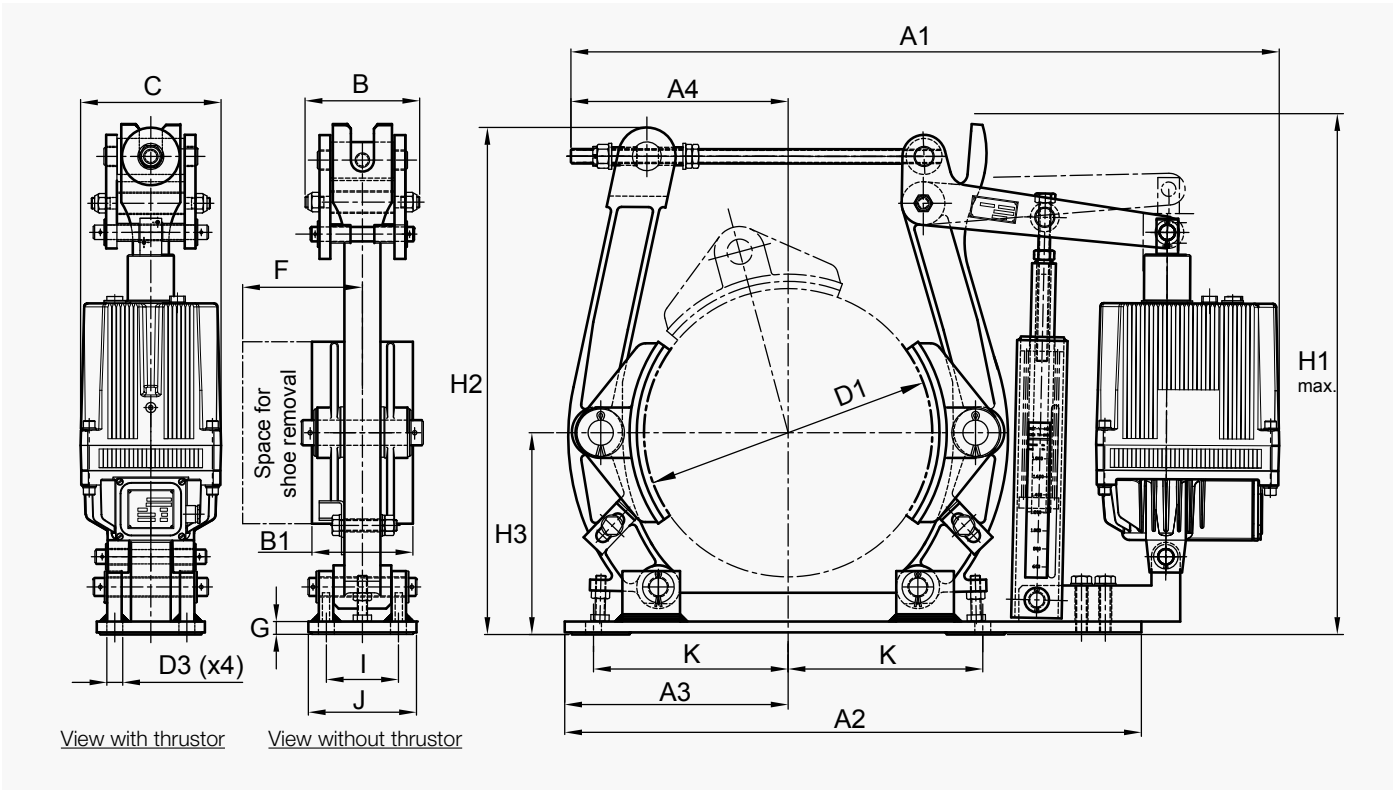
# DRUM BRAKE - FNS-VS 160 TO 400 BRAKES

**Revision number: T03109-01-E** **Revision date: 27.07.2016**

## Standard DIN 15435

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | DRUM WIDTH | SHOE WIDTH | DIMENSIONS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | | | B1 | D1 | D3 | H3 | I | K | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | J |
| 160 | I-256 | 118 | 235 | 28 | 60 | 65 | 160 | 11 | 130 | 55 | 120 | 614 | 420 | 140 | 177 | 116 | 160 | 110 | 20 | 424 | 364 | 90 |
| 200 | I-256 | 125 | 250 | 29 | 75 | 70 | 200 | 14 | 160 | 55 | 145 | 664 | 510 | 185 | 178 | 116 | 160 | 125 | 19 | 405 | 355 | 90 |
| | I-356 | 188 | 375 | 34 | | | | | | | | 674 | | | | | | | | 497 | | |
| 250 | I-256 | 128 | 255 | 35 | 95 | 90 | 250 | 18 | 190 | 65 | 180 | 710 | 580 | 220 | 210 | 116 | 160 | 130 | 13 | 425 | 413 | 100 |
| | I-356 | 235 | 470 | 40 | | | | | | | | 760 | | | | | | | | 499 | | |
| 315 | I-356 | 275 | 550 | 59 | 118 | 110 | 315 | 18 | 230 | 80 | 220 | 769 | 690 | 260 | 223 | 159 | 160 | 180 | 18 | 595 | 588 | 120 |
| | II-506 | 438 | 875 | 62 | | | | | | | | 820 | | | | | 195 | | | 620 | | |
| | II-806 | 700 | 1400 | 63 | | | | | | | | 820 | | | | | 195 | | | 635 | | |
| 400 | II-506 | 450 | 900 | 85 | 150 | 140 | 400 | 22 | 280 | 100 | 270 | 980 | 800 | 310 | 307 | 159 | 195 | 210 | 18 | 710 | 704 | 150 |
| | II-806 | 760 | 1520 | 87 | | | | | | | | 990 | | | | 159 | 195 | | | 710 | | |
| | III-1306 | 1350 | 2700 | 107 | | | | | | | | 975 | | | | 164 | 240 | | | 775 | | |

For higher torque, please consult us. Some types may present little differences in the form with the drawing

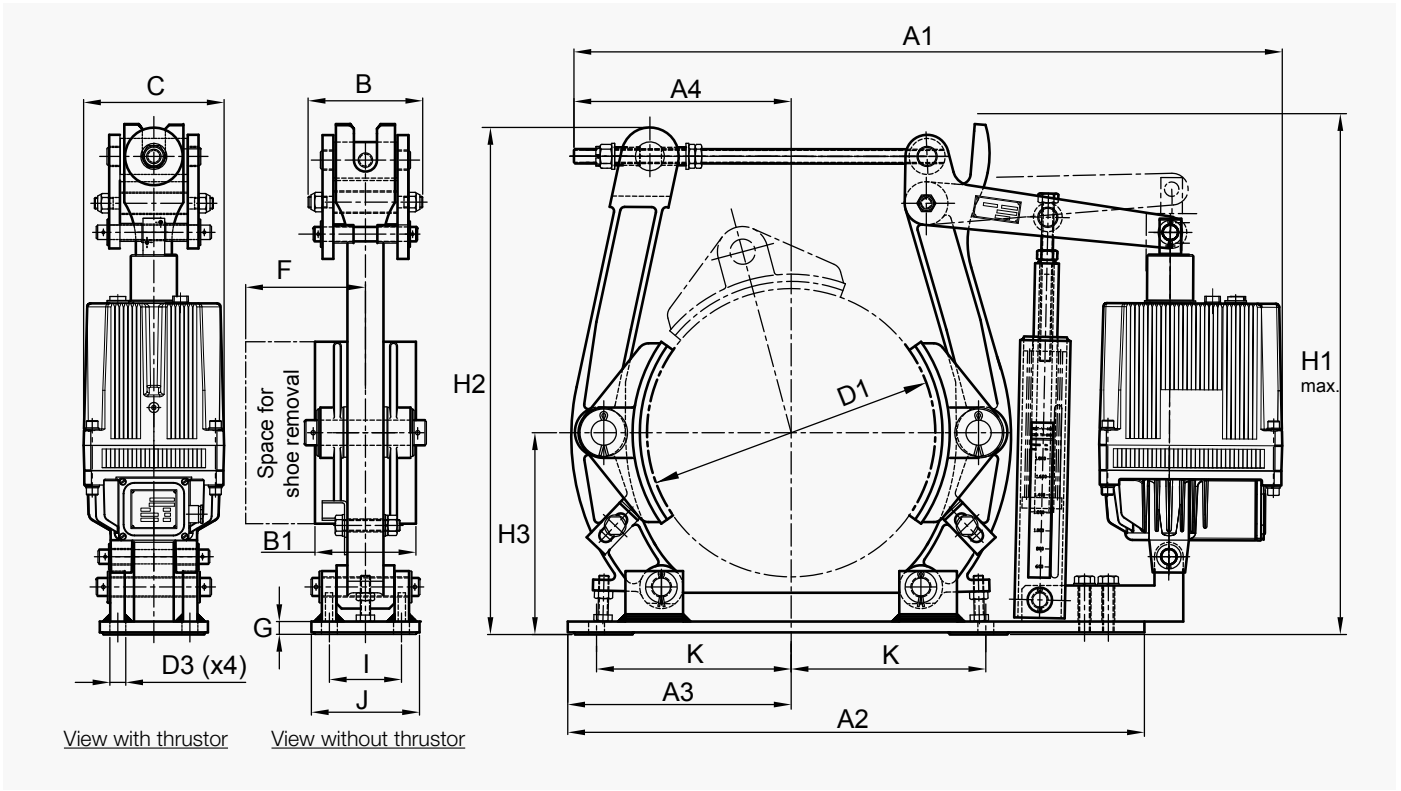
# DRUM BRAKE - FNS-VS 500 TO 710 BRAKES

**Revision number: T03109-01-E** **Revision date: 27.07.2016**

## Standard DIN 15435

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | DRUM WIDTH | SHOE WIDTH | DIMENSIONS | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | | | B1 | D1 | D3 | H3 | I | K | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | J |
| 500 | II-806 | 800 | 1600 | 125 | 190 | 180 | 500 | 22 | 340 | 130 | 325 | 1039 | 940 | 365 | 312 | 190 | 195 | 250 | 23 | 820 | 803 | 180 |
| | III-1306 | 1325 | 2650 | 145 | | | | | | | | 1060 | | | 325 | | 240 | | | | | |
| | III-2006 | 2125 | 4250 | 147 | | | | | | | | 1060 | | | 325 | | 240 | | | | | |
| 630 | III-1306 | 1450 | 2900 | 240 | 236 | 225 | 630 | 27 | 420 | 170 | 400 | 1240 | 1150 | 460 | 435 | 230 | 240 | 305 | 23 | 955 | 940 | 220 |
| | III-2006 | 2325 | 4650 | 242 | | | | | | | | 1240 | | | 435 | | | | | | | |
| | III-3006 | 3725 | 7450 | 244 | | | | | | | | 1240 | | | 435 | | | | | | | |
| | III-3012 | 3875 | 7750 | 258 | | | | | | | | 1325 | | | 427 | | | | | | | |
| 710 | III-2006 | 2875 | 5750 | 323 | 265 | 255 | 710 | 27 | 470 | 190 | 450 | 1405 | 1280 | 510 | 470 | 250 | 240 | 340 | 29 | 1085 | 1067 | 250 |
| | III-3006 | 4300 | 8600 | 324 | | | | | | | | 1405 | | | | | | | | | | |
| | III-3012 | 4950 | 9900 | 338 | | | | | | | | 1570 | | | | | | | | | | |

For higher torque, please consult us. Some types may present little differences in the form with the drawing

## Service Brakes

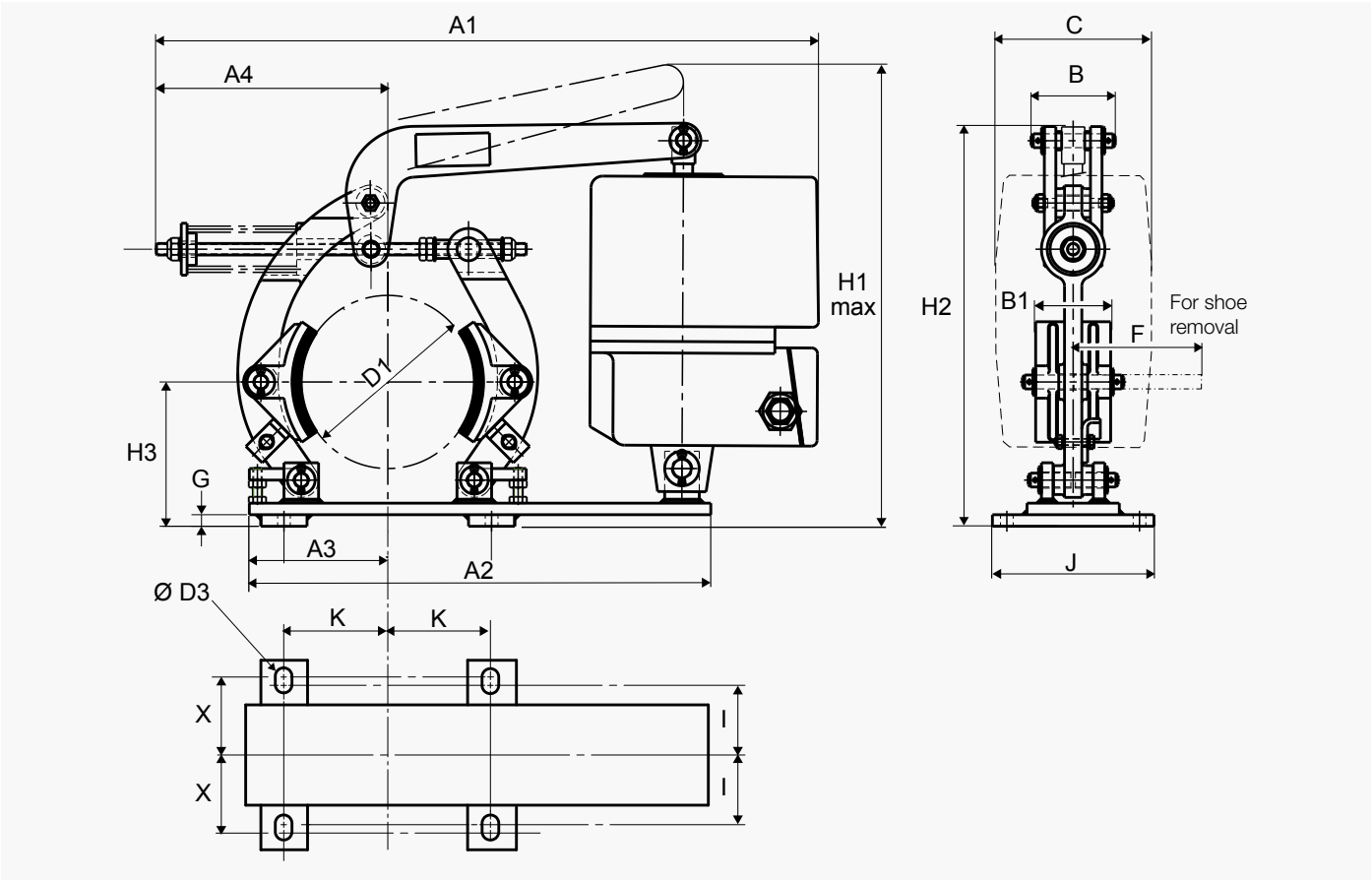
# DRUM BRAKE - FED-A 150 BRAKE

**Revision number: T03409-01-H** **Revision date: 14.06.2016**

## Standard SIME

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




Some types may present little differences in the form with the drawing.

| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | WIDTH | | DIMENSIONS | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | | DRUM | SHOE B1 | D1 | D3 | H3 | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | I | J | K | X |
| **150** | I-256 | 65 | 130 | 24 | 80 | 65 | 150 | 11 | 125 | 577 | 400 | 120 | 201 | 73 | 160 | 70 | 10 | 411 | 351 | 57.5 | 160 | 90 | 67.5 |

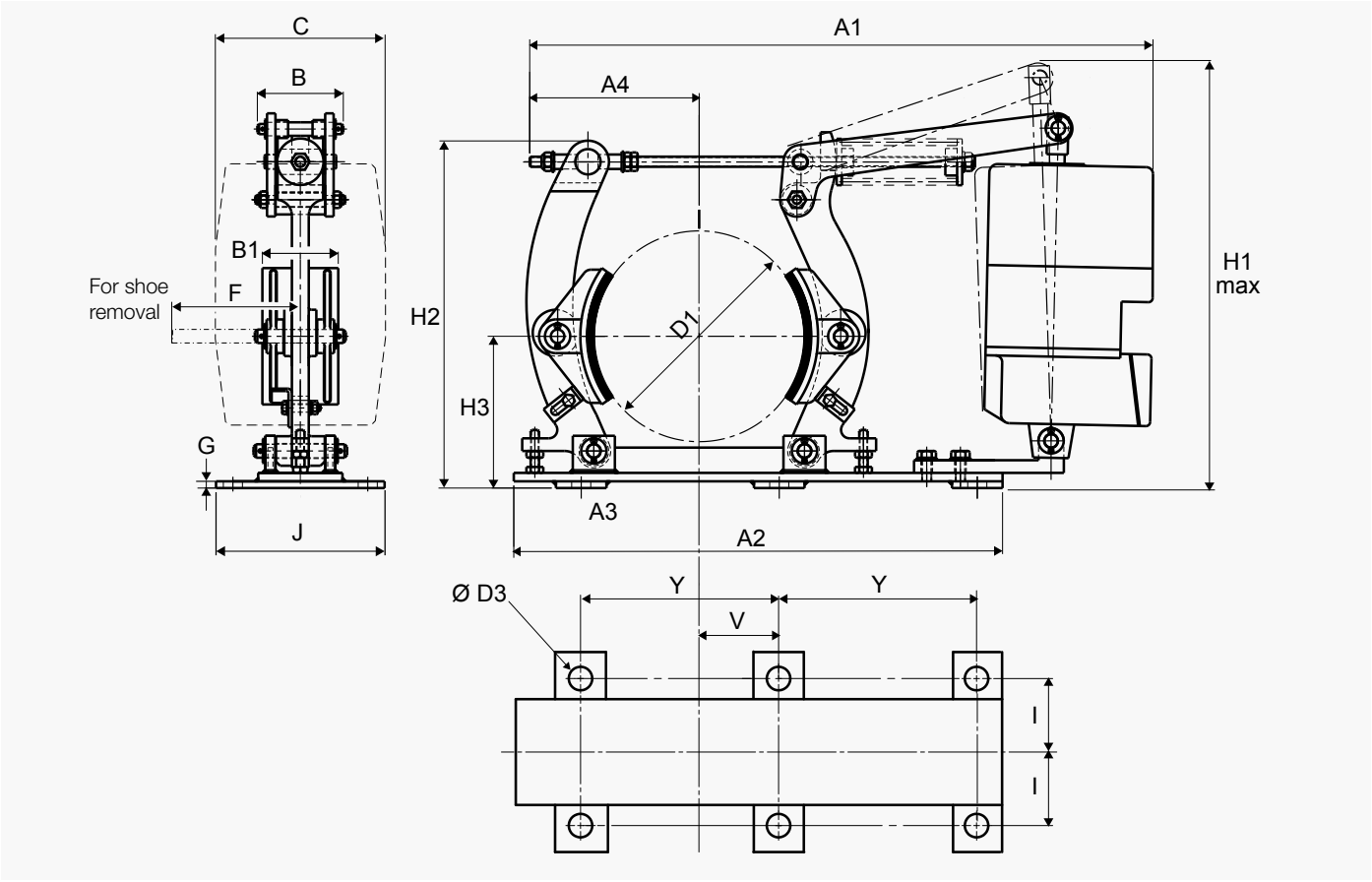
# DRUM BRAKE - FED-A 200 AND 250 BRAKES

**Revision number: T03409-01-H** **Revision date: 14.06.2016**

## Standard SIME

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




Some types may present little differences in the form with the drawing.

| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | WIDTH | | DIMENSIONS | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DRUM | SHOE | | | | | | | | | | | | | | | | | |
| | | min. | max. | | | B1 | D1 | D3 | H3 | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | I | J | V | Y |
| **200** | I-256 | 135 | 270 | 30 | 80 | 70 | 200 | 16 | 160 | 675 | 510 | 185 | 197 | 116 | 160 | 125 | 9 | 404 | 355 | 65 | 160 | 61 | 175 |
| | I-356 | 175 | 350 | 35 | | | | | | 687 | | | 202 | | | | | 497 | | | | | |
| **250** | I-256 | 165 | 330 | 36 | 90 | 90 | 250 | 18 | 180 | 690 | 580 | 220 | 201 | 107 | 160 | 130 | 9 | 423 | 413 | 80 | 160 | 95 | 235 |
| | I-356 | 250 | 500 | 41 | | | | | | 745 | | | 205 | | | | | 505 | | | | | |

## Service Brakes

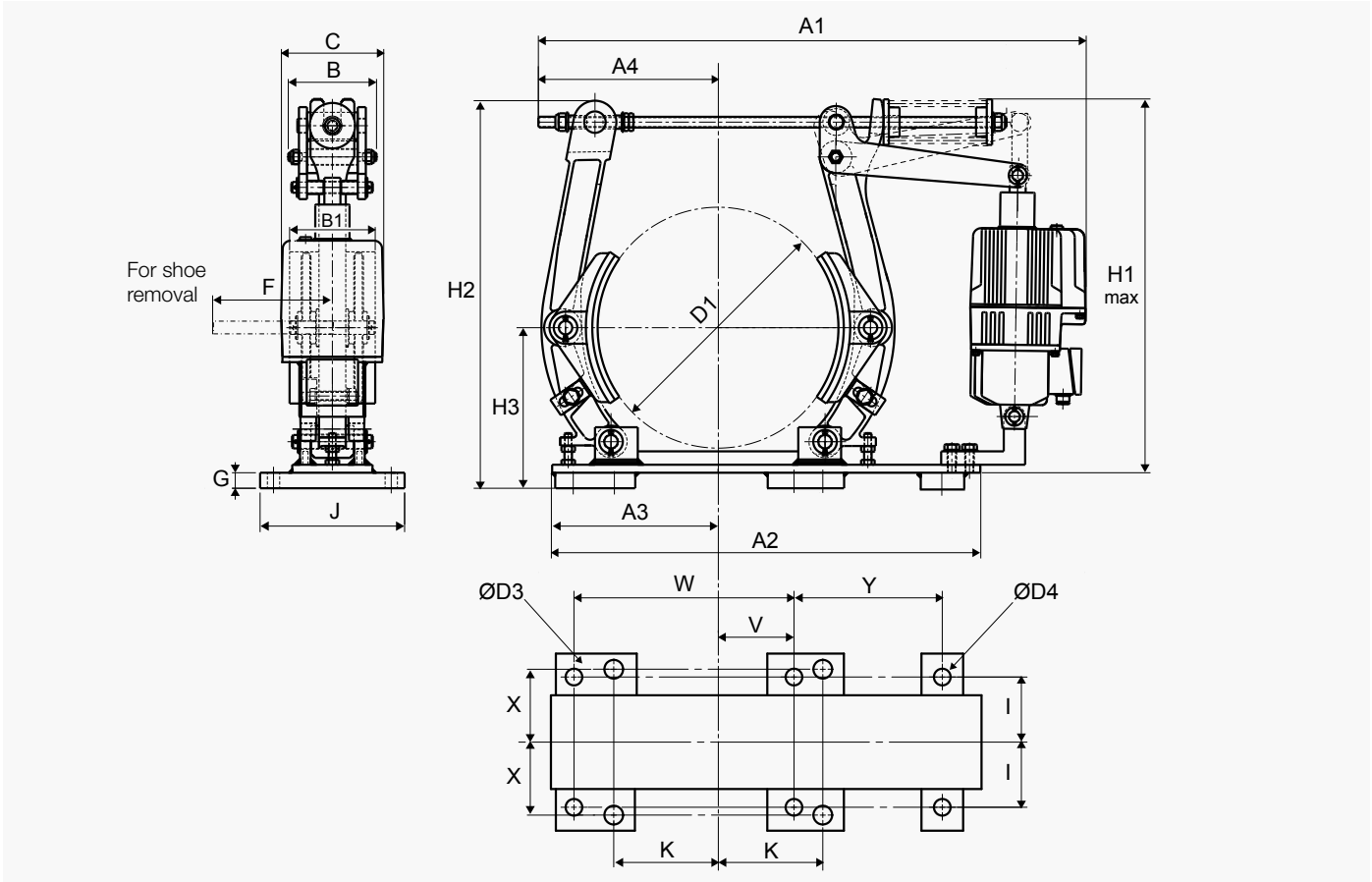
# DRUM BRAKE - FED-A 350 AND 450 BRAKES

**Revision number: T03409-01-H** **Revision date: 14.06.2016**

## Standard SIME

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




Some types may present little differences in the form with the drawing.

| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | WIDTH | | DIMENSIONS | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | | DRUM | SHOE B1 | D1 | D3 | D4 | H3 | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | I | J | K | V | W | X | Y |
| 350 | I-356 | 325 | 650 | 61 | 130 | 110 | 350 | 20.5 | 20 | 250 | 855 | 690 | 260 | 263 | 160 | 160 | 180 | 28 | 615 | 613 | 105 | 230 | 145 | 105 | 335 | 90 | 335 |
| | II-506 | 500 | 1000 | 64 | | | | | | | 920 | | | 278 | | 195 | | | 644 | | | | | | | | |
| | II-806 | 800 | 1600 | 65 | | | | | | | 960 | | | 291 | | 195 | | | 659 | | | | | | | | |
| 450 | II-506 | 625 | 1250 | 88 | 170 | 160 | 450 | 23 | 23 | 300 | 1045 | 800 | 310 | 326 | 165 | 195 | 190 | 29 | 728 | 724 | 107.5 | 270 | 190 | 238 | 603 | 110 | 302 |
| | II-806 | 850 | 1700 | 90 | | | | | | | 1055 | | | 336 | | 195 | | | 728 | | | | | | | | |
| | III-1306 | 1375 | 2750 | 110 | | | | | | | 1080 | | | 360 | | 240 | | | 803 | | | | | | | | |

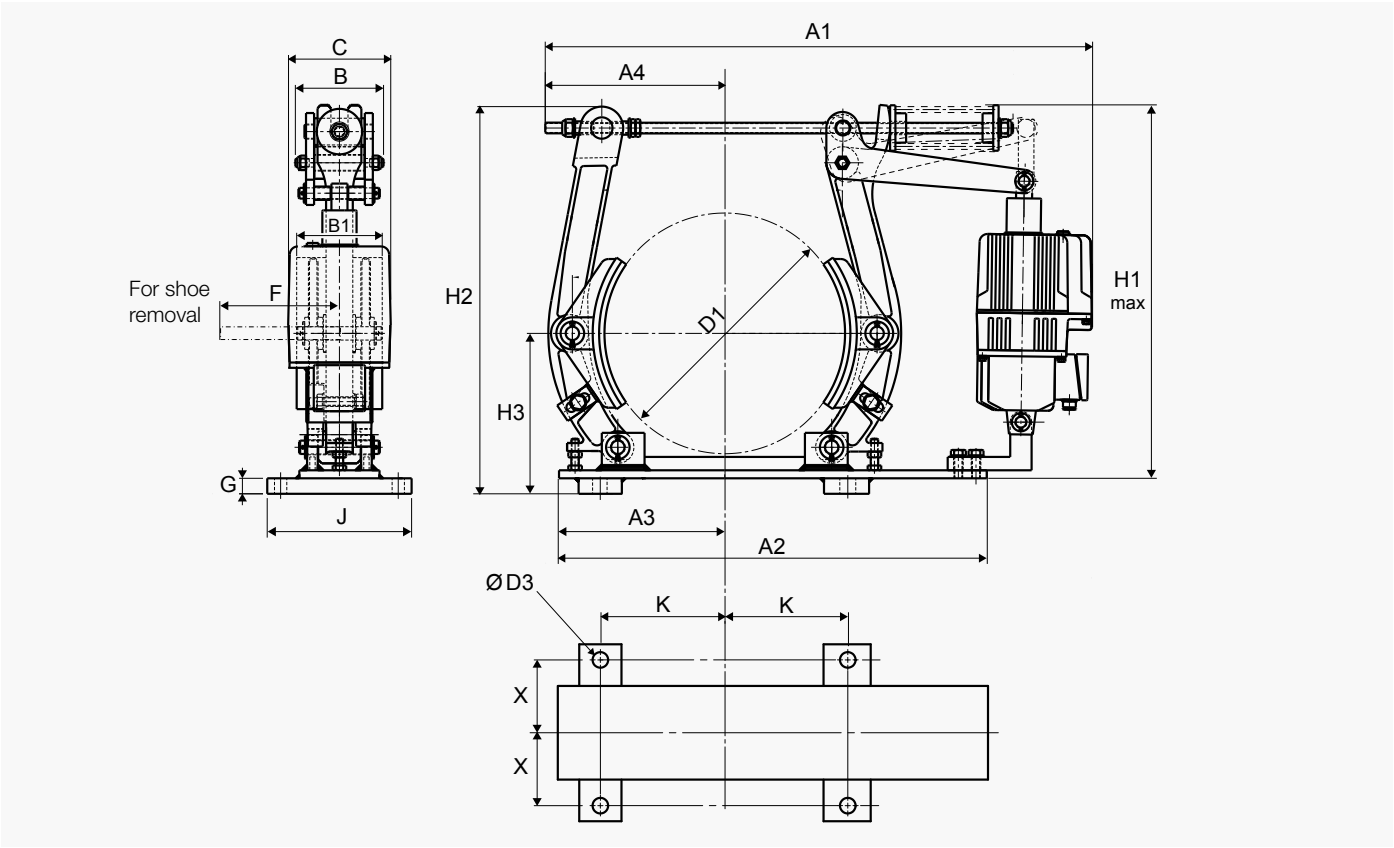
# DRUM BRAKE - FED-A 530 TO 750 BRAKES

**Revision number: T03409-01-H** **Revision date: 14.06.2016**

## Standard SIME

Spring application
Thrustor release
Protection level : C3M
Voltage : 230 / 400V 50 Hz
Other voltages, consult us.

| | |
|---|---|
| **AT** | High temperature |
| **BT** | Low temperature |
| **ATEX** | Certificat ATEX / Thrustor |
| **BI** | Stainless steel bolts |
| **CSA** | Opening proving switch |
| **DD** | Lining wear indicators |
| **DM** | Hand release lever |
| **LM** | Locking lever to hold the brake open |
| **PE** | Special paint : color / > C3M |
| **PL** | Padlock for the locking lever |
| **PR** | Reduced torque |
| **RA** | Automatic lining wear compensation |
| **VD** | Descent valve |
| | Brake not fitted with the thrustor |




Some types may present little differences in the form with the drawing.

| BRAKE TYPE | THRUSTOR VS | TORQUE N.m. | | WEIGHT kg | WIDTH | | DIMENSIONS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DRUM | SHOE | | | | | | | | | | | | | | | | |
| | | min. | max. | | | B1 | D1 | D3 | H3 | A1 | A2 | A3 | A4 | B | C | F | G | H1 | H2 | J | K | X |
| 530 | II-806 | 925 | 1850 | 131 | 195 | 180 | 530 | 25 | 355 | 1145 | 940 | 365 | 383 | 190 | 195 | 240 | 23 | 833 | 823 | 290 | 235 | 120 |
| | III-1306 | 1475 | 2950 | 151 | | | | | | 1145 | | | 396 | | 240 | | | 833 | | | | |
| | III-2006 | 2325 | 4650 | 153 | | | | | | 1150 | | | 381 | | 240 | | | 838 | | | | |
| 600 | III-1306 | 1575 | 3150 | 242 | 210 | 190 | 600 | 28 | 400 | 1175 | 1150 | 460 | 394 | 230 | 240 | 290 | 22 | 947 | 929 | 310 | 272 | 127 |
| | III-2006 | 2450 | 4900 | 244 | | | | | | 1207 | | | 424 | | | | | 947 | | | | |
| | III-3006 | 3275 | 6550 | 246 | | | | | | 1207 | | | 424 | | | | | 949 | | | | |
| | III-3012 | 4400 | 8800 | 260 | | | | | | 1330 | | | 424 | | | | | 957 | | | | |
| 750 | III-2006 | 3025 | 6050 | 328 | 230 | 210 | 750 | 31 | 475 | 1375 | 1280 | 510 | 470 | 250 | 240 | 330 | 34 | 1084 | 1071 | 350 | 338 | 145 |
| | III-3006 | 4000 | 8000 | 329 | | | | | | 1375 | | | 470 | | | | | 1084 | | | | |
| | III-3012 | 5475 | 10950 | 343 | | | | | | 1545 | | | 504 | | | | | 1084 | | | | |

## Service Brakes

### APPLICATIONS

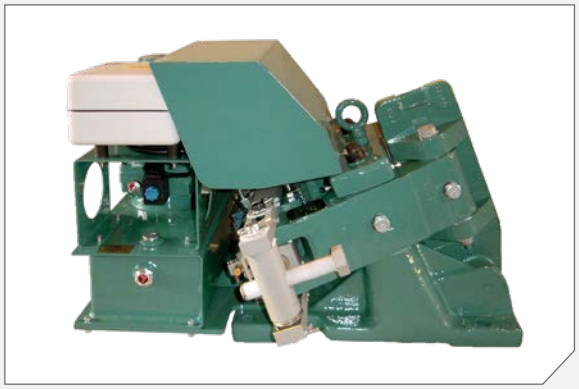
- PORT CRANES
- ALL HOISTING APPLICATIONS
- TRAVELLING CONTROL
- MASS TRANSPORT
- STEEL CRANES :
  CHARGING AND LADDLE CRANES
  SLAG AND SCRAP CRANES
- BELT CONVEYORS - MINES




## Service Brakes

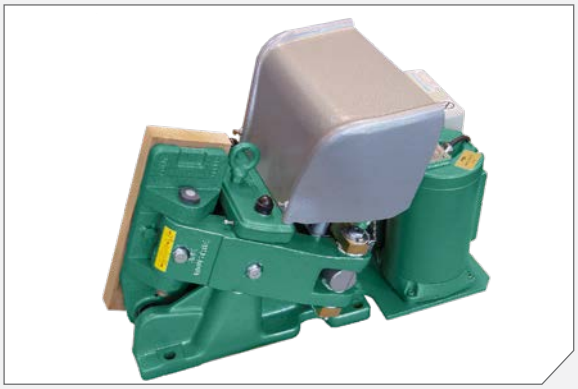
# HYDRAULIC SERVICE BRAKES

| MAIN CHARACTERISTICS | OPTIONS |
|---|---|
| • FAILSAFE BRAKES<br>• BRAKING BY HYDROSPRING® SYSTEM<br>• INTEGRAL ELECTRICAL CONNECTIONS<br>• INTEGRAL HYDRAULICAL CONNECTIONS<br>• AUTOMATIC WEAR COMPENSATION | • ADJUSTABLE DELAY OF BRAKE CLOSING<br>• MARINE PROTECTION |



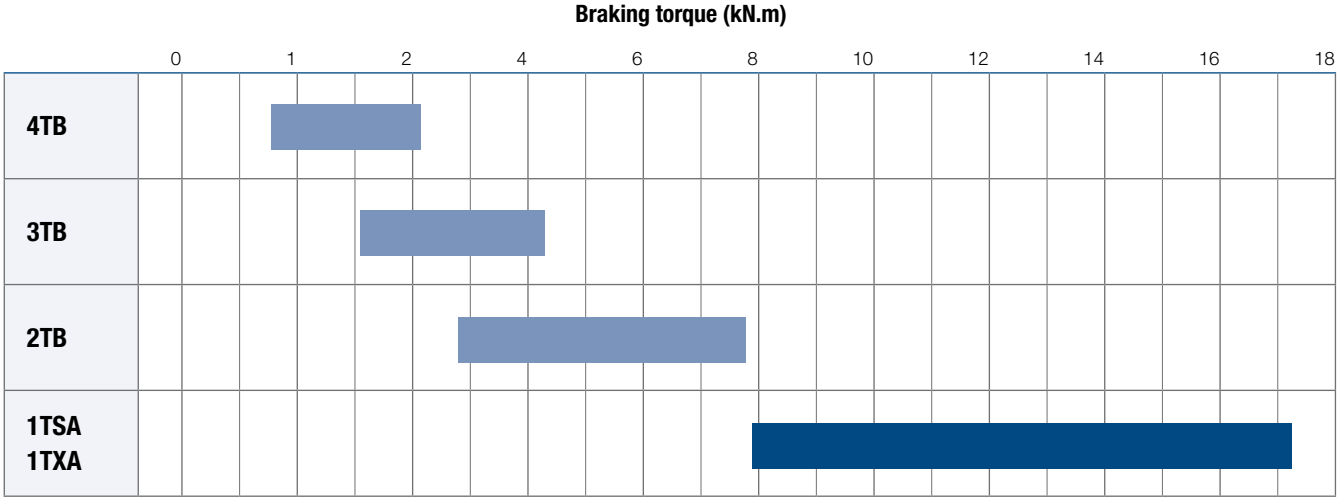
### 2TB - 3TB - 4TB

- Association with discs Ø445 to 995
- Options:
  Torque setting
  Controlled braking torque /stepped braking torque
  Protective cover



### 1TSA - 1TXA

- Association with discs Ø625 to 995
- Torque setting



## Service Brakes

# DISC BRAKE - 1TSA AND 1TXA CALIPERS

**Revision number: T03681-01-A** **Revision date: 15.02.2007**

Fail safe
Braking by HYDROSPRING® system
Electrico-hydraulically released
Integral hydraulic power unit
Self contained electrical system
Lining wear compensation
Opening proving switch
Torque setting

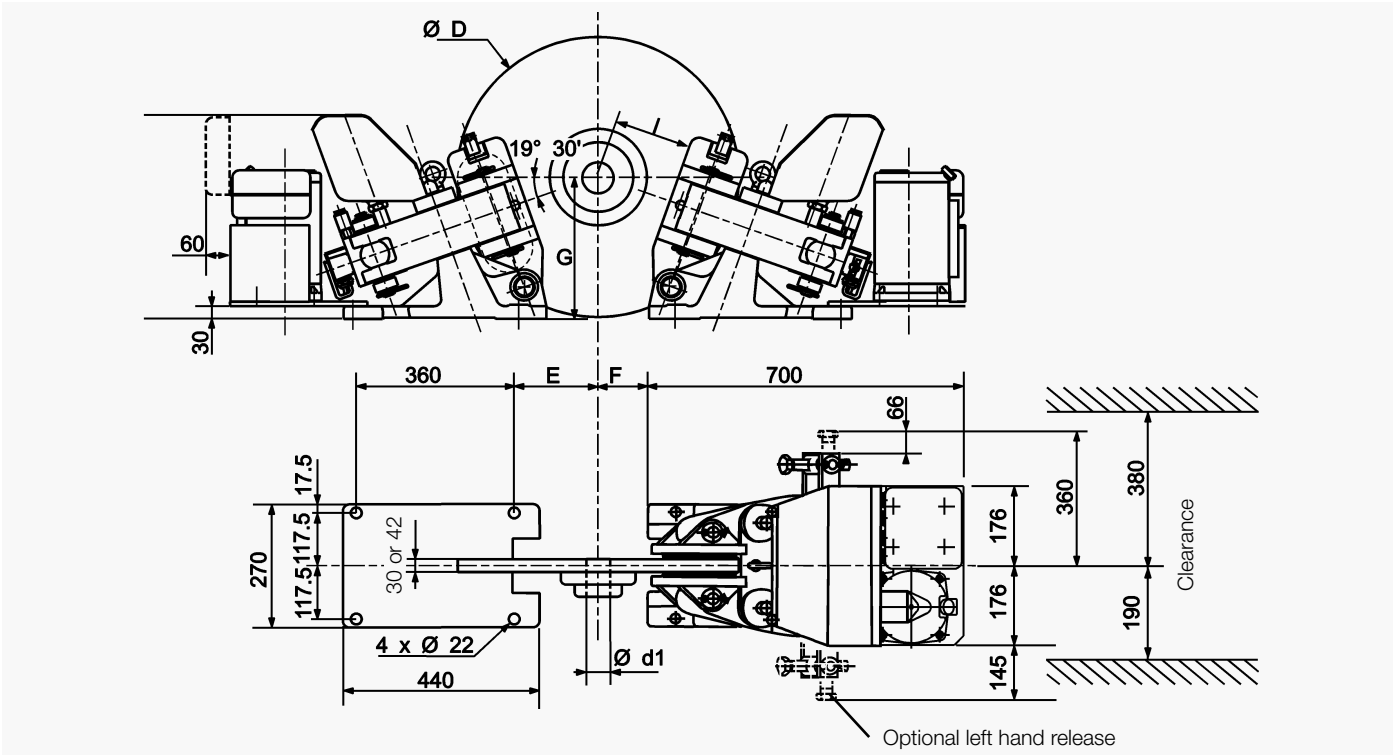
**Operating conditions :**
- Ambient temperature : -10° C to +50° C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

- **1TXA**:

Mounting of 2 calipers per disc, consult us.

**Options:**
- Linings with wear detection
- Adjustable delay brake closing system from 0.25 to 20 sec.
- Switch for PLC
- Marine protection




Weight: 160 kg
Response time at nominal torque ≤ 0.25 sec.

Caliper inclination from horizontal ± 15° maxi.
Other inclination, consult us.

| Disc | Ø | mm | 625 | | 705 | 795 | | 995 |
|---|---|---|---|---|---|---|---|---|
| | Thickness | mm | 30 | 42 | 30 | 30 | 42 | 42 |
| Nominal torque for 1 caliper | **1TSA** | N.m | 7920 | | 9180 | 10620 | | 14040 |
| | **1TXA** | N.m | 9780 | | 11300 | 13100 | | 17300 |
| Disc speed for the nominal torque ✱ | | r.p.m. | ≤ 1500 | | ≤ 1300 | ≤ 1200 | | ≤ 900 |
| **D** | | mm | 625 | | 705 | 795 | | 995 |
| **E** | | mm | 185 | | 225 | 265 | | 365 |
| **F** | | mm | 125 | | 165 | 205 | | 305 |
| **G** | | mm | 315 | | 330 | 345 | | 380 |
| **I** | | mm | 180 | | 225 | 265 | | 370 |
| **1TSA** | | | | | | | | |
| Ø $d_1$ min. for: | 1 caliper (1 key) O | mm | 97 | 97 | 100 | 111 | 111 | 130 |
| | 2 calipers (2 keys) O | mm | -- | 120 | -- | -- | 135 | 170 |
| **1TXA** | | | | | | | | |
| Ø $d_1$ min. for: | 1 caliper (1 key) | mm | 104 | 104 | 111 | 125 | 125 | 145 |
| | 1 caliper (shrink fit) | mm | 104 | 104 | 107 | 110 | 110 | 118 |
| Maximum reaction on shaft: | 1TSA ■ | N | 32 400 | | | | | |
| | 1TXA | N | 40 000 | | | | | |

**Electric data :**
- 3 phases AC supply
- Voltages :
  230V / 400V ±10% 50Hz
  415V ±5% 50Hz
  460V ±5% 60Hz
- Maximum comsumption: 775 W
- Electrical casing: IP 55
  DC supply, other voltages and conditions: consult us.
- Opening proving switch:
  240V, 3A, 10VA AC
  250V, 0.3A, 10W DC

✱ For higher speed, consult us.
O or shrink fit
■ Mounting with 2 calipers: multiply by 0.6

# DISC BRAKE - 2TB. 3TB AND 4TB CALIPERS

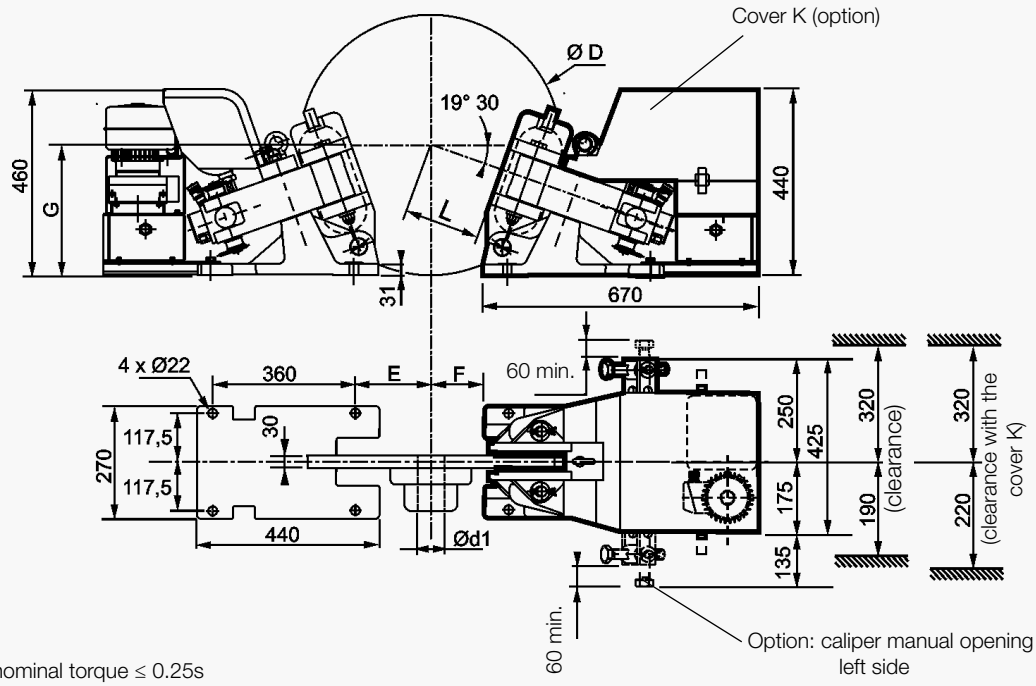
**Revision number: T03664-01-C** **Revision date: 24.08.2012**

Fail safe
Braking by HYDROSPRING® system
Electrico-hydraulically released
Integral hydraulic power unit
Self contained electrical system
Lining wear compensation
Opening proving switch

**Operating conditions:**
- Ambient temperature : -10°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Options:**
- Torque setting • Detection of full lining wear
- Adjustable delay brake closing system from 0.25 to 20secs
- Controlled braking torque **
- Marine protection • Protective cover K
- Stepped braking torque **
- Redundant circuit with 2 solenoid valves




Weight:160 kg
Response time at nominal torque ≤ 0.25s
Permissible inclination of the caliper ± 45° maximum
Other mountings: consult us.

| Discs | | | 445 | 495 | 550 | 625 | 705 | 795 | 995 |
|---|---|---|---|---|---|---|---|---|---|
| Nominal torque for 1 caliper: | **2TB** | N.m | 2800 | 3250 | 3700 | 4400 | 5100 | 5900 | 7800 |
| | **3TB** | N.m | 1550 | 1800 | 2050 | 2450 | 2850 | 3250 | 4300 |
| | **4TB** | N.m | 775 | 900 | 1030 | 1230 | 1430 | 1630 | 2150 |
| Maximum disc speed for nominal torque * | | rpm | 2100 | 1900 | 1800 | 1500 | 1300 | 1200 | 900 |
| D | | mm | 445 | 495 | 550 | 625 | 705 | 795 | 995 |
| E | | mm | 100 | 120 | 150 | 185 | 225 | 265 | 365 |
| F | | mm | 40 | 60 | 90 | 125 | 165 | 205 | 305 |
| G | | mm | 285 | 295 | 305 | 315 | 330 | 345 | 380 |
| L | | mm | 90 | 130 | 145 | 180 | 225 | 265 | 370 |
| d1 min. keyed for 1 caliper (steel St 70): | **2TB** | mm | 73 | 75 | 77 | 80 | 82 | 87 | 92 |
| | **3TB** | mm | 60 | 62 | 63 | 66 | 67 | 71 | 76 |
| | **4TB** | mm | 48 | 49 | 50 | 52 | 53 | 57 | 58 |
| d1 min. keyed for 2 calipers (steel St 70): | **2TB** | mm | 79 | 83 | 87 | 92 | 96 | 101 | 110 |
| | **3TB** | mm | 65 | 68 | 71 | 75 | 79 | 82 | 91 |
| | **4TB** | mm | 53 | 55 | 57 | 60 | 63 | 66 | 69 |
| Maximum reaction on shaft ■: | **2TB** | N | 18000 | | | | | | |
| | **3TB** | N | 10000 | | | | | | |
| | **4TB** | N | 5000 | | | | | | |

■ Mounting with 2 calipers, multiply by 0.6

*For higher speeds, consult us.
** Increased dimensions, consult us.

**Electric data:**
- Power unit motor:
3 phases:
230/400 V ±10%, 50 Hz,
0.37 kW, 4 poles
for mains:
230/400 V 50 Hz
or 415 V 50 Hz
or 460 V 60 Hz
- Options motor:
400/690 V ±10% 50Hz
255/440 V ±10% 50Hz
290/500 V ±10% 50Hz
280/480 V ±10% 60Hz
330/575 V ±10% 60Hz
- Other voltages, consult us.
- Electrical casing IP55
- Opening switch:
240 V, 3 A, 10 VA AC
250 V, 0.3 A, 10 W DC

## Service Brakes

### APPLICATIONS

- PORT CRANES
- HOIST, GANTRY AND TROLLEY MOTIONS
- BELT CONVEYORS
- MINES
- IRON AND STEEL INDUSTRY
- LADLE CRANES




**Service Brakes**

# THRUSTOR SERVICE BRAKES

## MAIN CHARACTERISTICS

- FAILSAFE BRAKES
- SPRING APPLIED
- ELECTROHYDRAULIC THRUSTOR RELEASED
- ADJUSTABLE BRAKING TORQUE

## OPTIONS

- LINING FULL WEAR CONTROL SWITCH
- HIGH TEMPERATURE STEEL WORKS (SIDHT)
- HIGH TEMPERATURE THRUSTOR (HT)

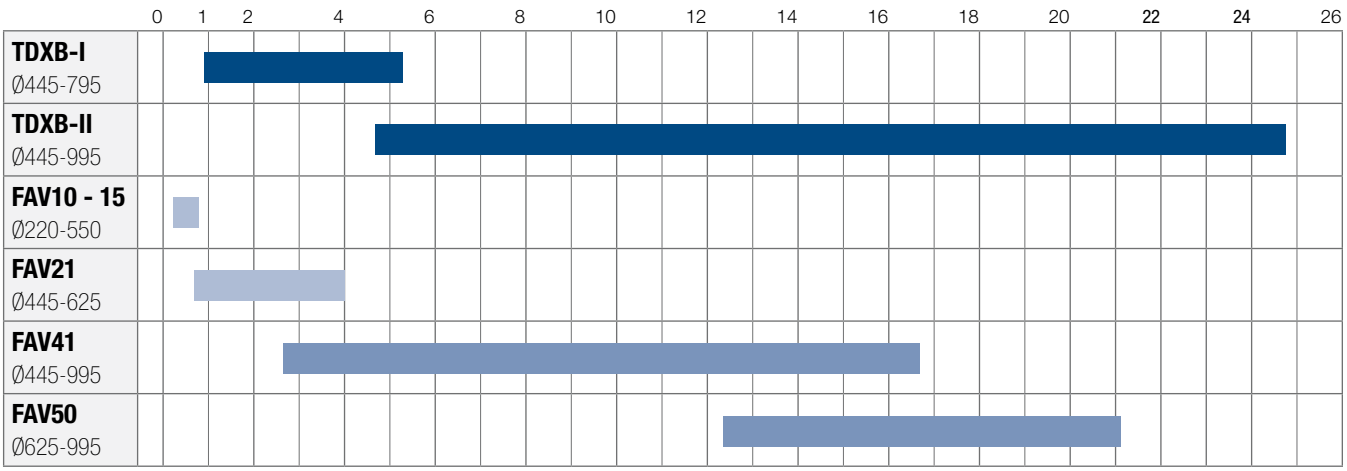
### TDXB.I - TDXB.II

- Lining wear manual compensation
- Self-centering
- Options:
  Opening and closing proximity switches
  Lining wear automatic compensation

### FAV10 - FAV15 - FAV21 - FAV40 - FAV50

- Lining wear automatic compensation
- Auto centering
- Thrustor stroke and opening proving switches
- Options: Monitoring module

**Braking Torque (kN.m)**



## Service Brakes

# DISC BRAKE - TDXB-I BRAKE

**Revision number: T10121-01-D** **Revision date: 30.06.2017**

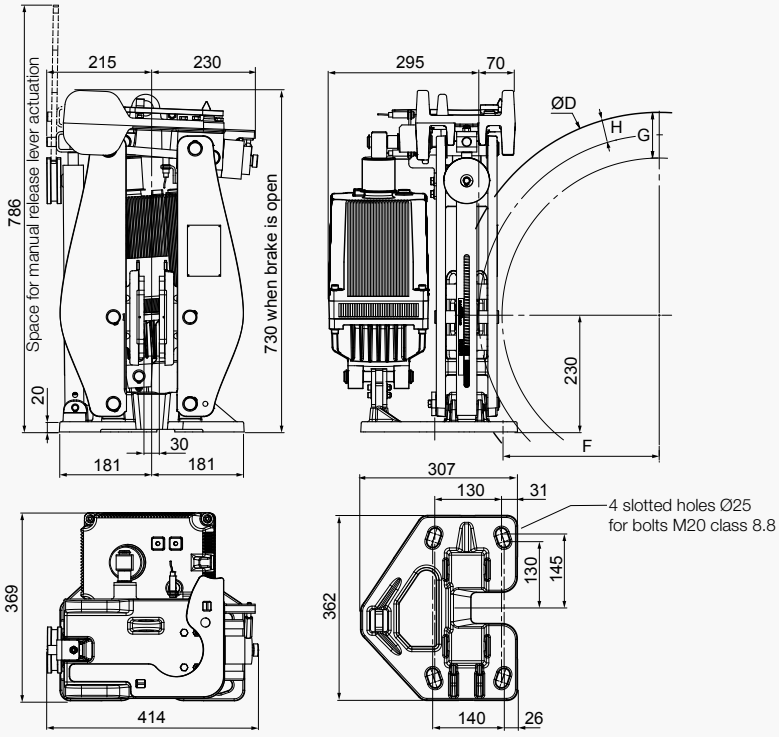
Fail safe
Spring application / Thrustor release
Self-centering
Lining wear manual compensation
Opening sensor
Low maintenance Teflon bushes
Lining full wear indicators
Manual release lever
Thrustors TS

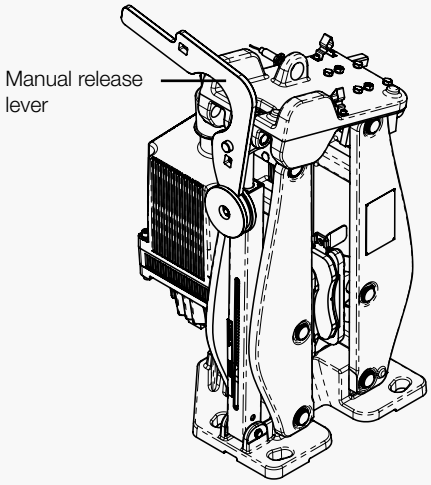
**Operating conditions**:
- Ambient temperature: -25°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- Service brake

**Options :**
- Lining wear automatic compensation
- Closing sensor
- Thrustor limit stroke sensor
- SIDHT : High Temperature Steel works
- Custom color
- Thrustors VS




Drawing : TDXB-I fitted with a VS thrustor.
Overall dimensions are identical with TS thrustor.
Dimensions in mm
Weight without thrustor with lining pads : 85 kg

Standard : Lining quality **WS1-5**
Torque and effort values are subject to a variation of 10%.

| DISCS (ØD) | | | 355 | 395 | 445 | 495 | 550 | 625 | 705 | 795 |
|---|---|---|---|---|---|---|---|---|---|---|
| **NOMINAL TORQUE. 1 caliper ✱** | **TDXB-I 1** | N.m | 945 | 1057 | 1121 | 1291 | 1477 | 1731 | 2002 | 2307 |
| | **TDXB-I 2** | N.m | 1562 | 1747 | 1854 | 2134 | 2442 | 2862 | 3310 | 3814 |
| | **TDXB-I 3** | N.m | 2176 | 2434 | 2582 | 2972 | 3401 | 3986 | 4610 | 5312 |
| MAXIMUM DISC SPEED for nominal torque ✱✱ | | rpm | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 | 1350 | 1200 |
| Maximum linear speed | | m/s | 50 | | | | | | | |
| **F** | | mm | 110 | 120 | 131 | 156 | 184 | 221 | 261 | 306 |
| | | mm | D/2-67.5 | D/2-77.5 | D/2-91.5 | | | | | |
| **G** | | mm | 94 | 104 | 136 | | | | | |
| **H** | | mm | 38 | 41.5 | 57 | | | | | |
| **MAXIMUM REACTION ON SHAFT** | **TDXB-I 1** | N | 6776 | | | | | | | |
| | **TDXB-I 2** | N | 11200 | | | | | | | |
| | **TDXB-I 3** | N | 16000 | | | | | | | |

✱ Nominal torque is adjustable from 100% to 70%
✱✱ For higher speeds, consult Stromag France

# DISC BRAKE - TDXB-II BRAKE

**Revision number: T10122-01-C** **Revision date: 30.06.2017**

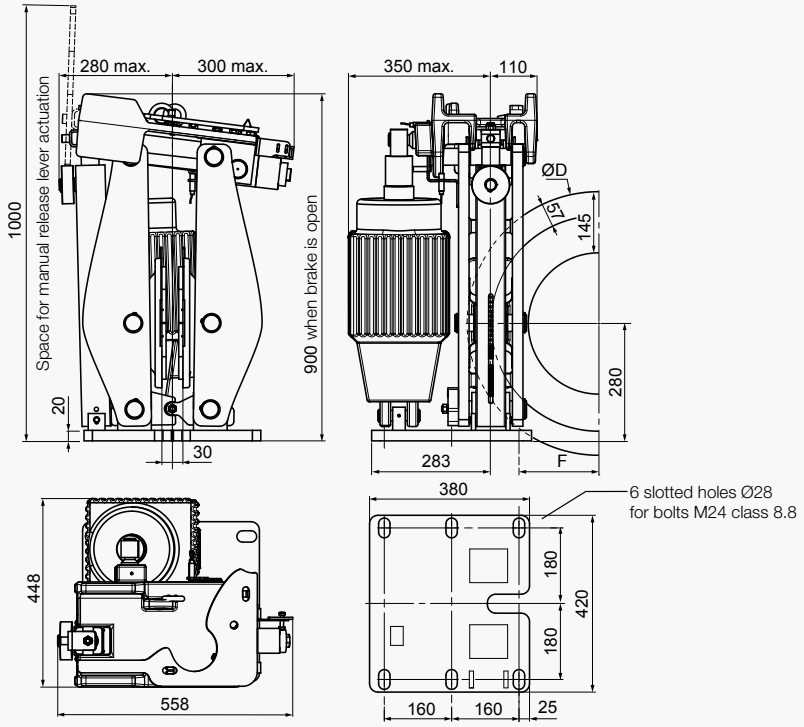
Fail safe
Spring application / Thrustor release
Self-centering
Lining wear manual compensation
Opening sensor
Low maintenance Teflon bushes
Lining full wear indicators
Manual release lever
Thrustors TS

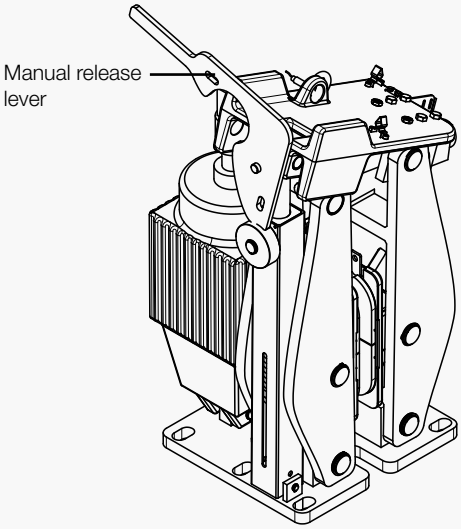
**Operating conditions**:
- Ambient temperature: -25°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- Service brake

**Options :**
- Lining wear automatic compensation
- Closing sensor
- Thrustor limit stroke sensor
- SIDHT : High Temperature Steel works
- Custom color
- Thrustors VS




Drawing : TDXB-II fitted with a TS thrustor.
Overall dimensions are identical with VS thrustor.
Dimensions in mm
Weight without thrustor with lining pads : 190 kg

Standard : Lining quality **WS1-5**
Torque and effort values are subject to a variation of 10%.

| DISCS (ØD) | | | 445 | 495 | 550 | 625 | 705 | 795 | 995 |
|---|---|---|---|---|---|---|---|---|---|
| **NOMINAL TORQUE. 1 caliper ✱** | **TDXB-II 1** | N.m | 4690 | 5390 | 6160 | 7210 | 8330 | 9590 | 12390 |
| | **TDXB-II 2** | N.m | 6700 | 7700 | 8800 | 10300 | 11900 | 13700 | 17700 |
| | **TDXB-II 3** | N.m | 9380 | 10780 | 12320 | 14420 | 16660 | 19180 | 24780 |
| MAXIMUM DISC SPEED for nominal torque ✱✱ | | rpm | 640 | 580 | 520 | 460 | 400 | 360 | 290 |
| Maximum linear speed | | m/s | 30 | | | | | | |
| **F** | | mm | 93 | 118 | 145 | 183 | 255 | 268 | 368 |
| | | mm | D/2-129.5 | | | | | | |
| **MAXIMUM REACTION ON SHAFT** | **TDXB-II 1** | N | 28000 | | | | | | |
| | **TDXB-II 2** | N | 40000 | | | | | | |
| | **TDXB-II 3** | N | 56000 | | | | | | |

✱ Nominal torque is adjustable from 100% to 70%
✱✱ For higher speeds, consult Stromag France

## Service Brakes

# DISC BRAKE - FAV10-FAV15 BRAKES

**Revision number: T10022-01-I** **Revision date: 23.05.2013**

Fail safe
Spring application / Thrustor release
Manual centering
Lining wear compensation
Linings with wear indicator wires
Thrustor stroke control switch
Opening proving switch
Stainless steel pins
Manual release lever
Protection class C5 standard ISO12944-2

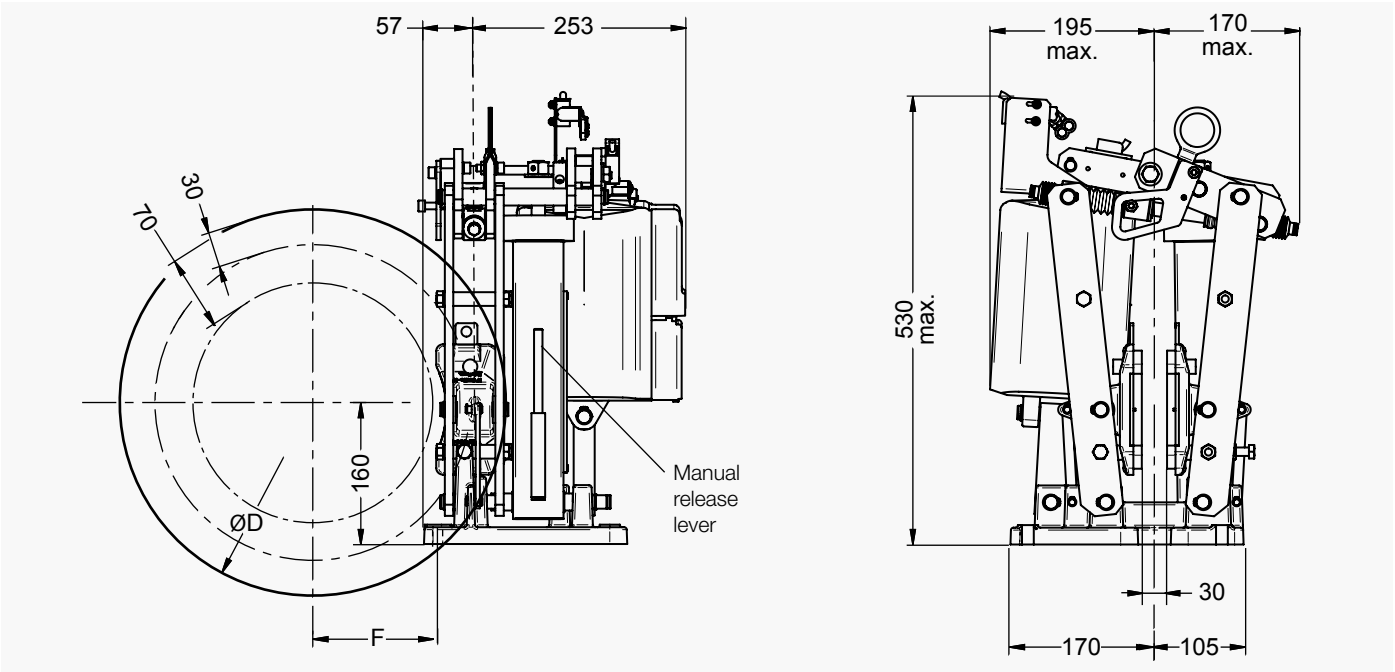
**Operating conditions**:
- Ambient temperature: -20°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- Service brake

**Options :**
- SIDHT : Steel works High Temperature
- HT : High Temperature Thrustor
- Thrustor :

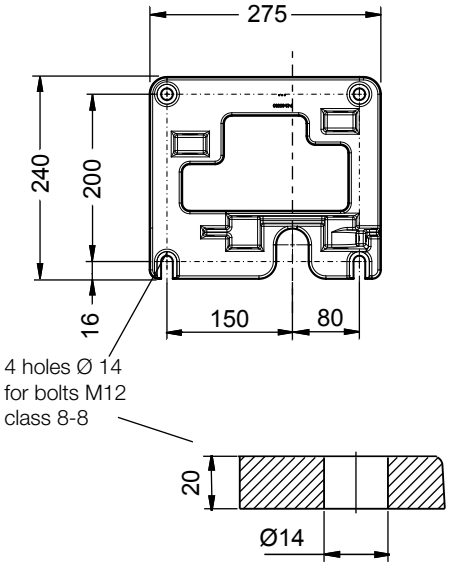
VS-I-256 or Ed23/5 - 230/400V (FAV10)
VS-I-356 or Ed30/5 - 230/400V (FAV15)




Weight without thrustor: 27 kg
Weight with thrustor : FAV10 : 40 kg. FAV15 : 44 kg
Torque and effort values are subject to a variation of ±10%

FAV10 and FAV15 calipers are associated with linings type **WS1-5.**

| Discs (ØD) | | | 220 | 260 | 315 | 355 | 395 | 445 | 495 | 550 |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal torque. 1 caliper ✱ | FAV10 | N.m. | 221 | 275 | 349 | 403 | 457 | 525 | 592 | 661 |
| | FAV15 | N.m. | 265 | 330 | 410 | 485 | 550 | 630 | 710 | 795 |
| Maximum disc speed for nominal torque ✱✱ | | rpm | 4300 | 3600 | 3000 | 2700 | 2400 | 2100 | 1900 | 1800 |
| F | | mm | 47 | 66 | 93 | 113 | 135 | 160 | 185 | 213 |
| Maximum reaction on shaft | FAV10 | N | 2700 | | | | | | | |
| | FAV15 | N | 3200 | | | | | | | |




✱ Braking torque is adjustable from 100% to 70% of nominal torque, friction factor µ =0.37
✱✱ For higher speeds, consult Stromag France

# DISC BRAKE - FAV21-VS BRAKE

**Revision number: T10044-02-E** **Revision date: 08.11.2017**

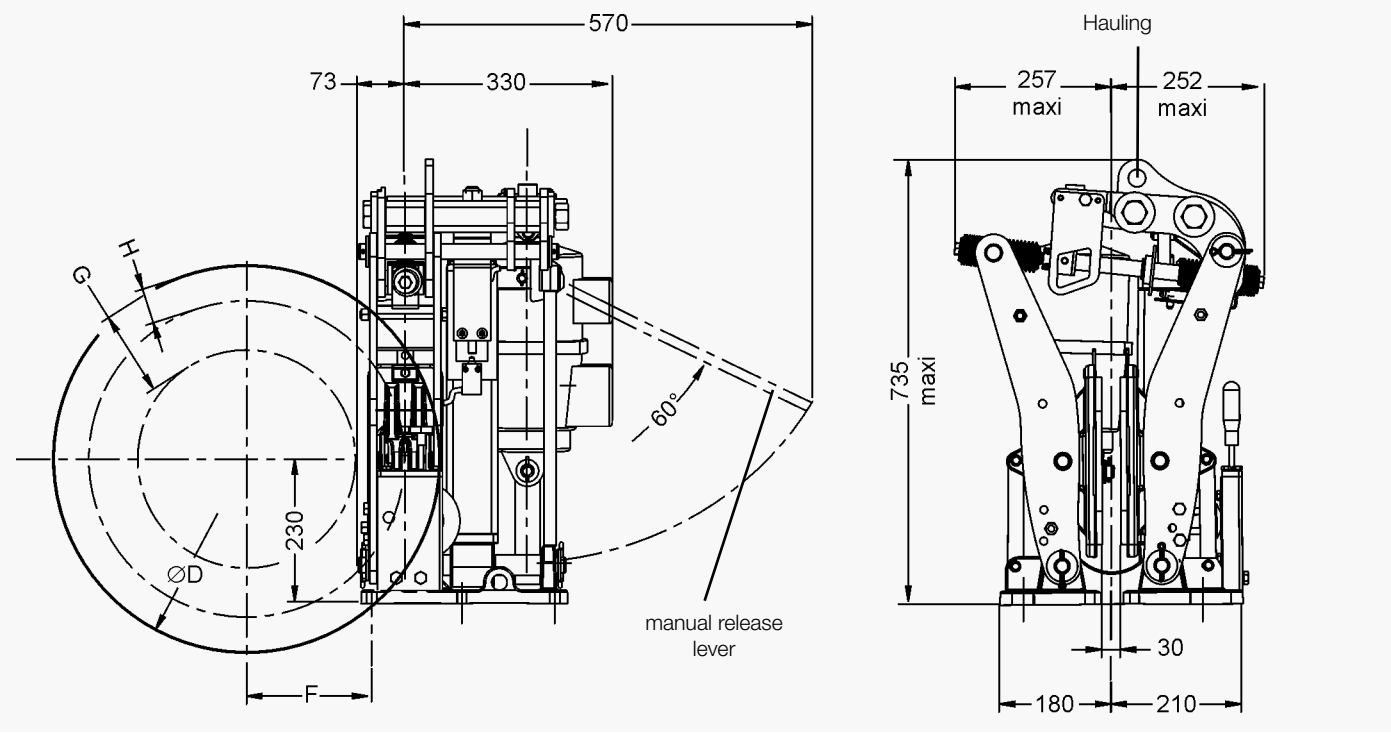
Fail safe
Spring application / Thrustor release
Auto centering
Lining wear compensation
Thrustor stroke control switch
Opening proving switch
Stainless steel pins

**Operating conditions**:
- Ambient temperature: -20°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us

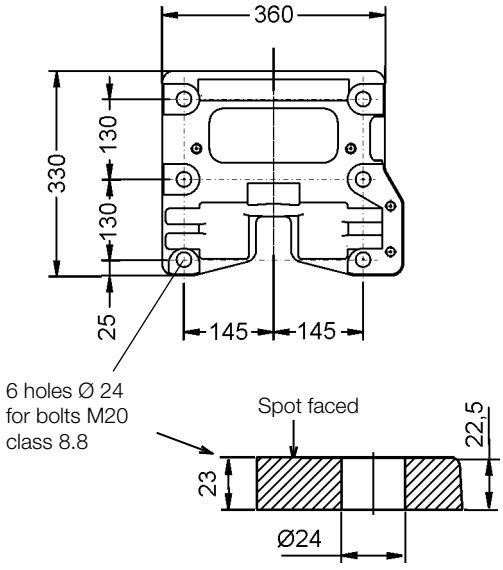
**Use:**
- Service brake

**Options :**
- Lining full wear control switch
- MSF : Monitoring modul for FAV
- SIDHT : High Temperature Steel works
- HT : High Temperature Thrustor
- Manual release lever
- Thrustors Ed50/6 - Ed80/6




Weight with thrustor and lining pads : 130 kg
Torque and effort values are subject to a variation of ±10%
Lining quality **WS1-5** in standard.

| Discs (ØD) | | | 355 | 395 | 445 | 495 | 550 | 625 | 705 |
|---|---|---|---|---|---|---|---|---|---|
| Nominal torque ✱. 1 caliper | **FAV213 VS II 1306** | N.m. | - | - | 2260 | 2590 | 2990 | 3450 | 4000 |
| | **FAV212 VS II 806** | N.m. | 1300 | 1500 | 1700 | 1950 | 2250 | 2600 | - |
| | **FAV211 VS II 506** | N.m. | 700 | 750 | 900 | 1000 | 1150 | 1350 | - |
| Max. disc speed for nominal torque ✱✱ | | rpm | 2700 | 2400 | 2100 | 1900 | 1800 | 1500 | 1500 |
| F | | mm | 122 | 142 | 118 | 143 | 170 | 208 | 248 |
| F | | mm | (D/2-56) | | (D/2-105) | | | | |
| G | | mm | 67 | | 136 | | | | |
| H | | mm | 32 | | 57 | | | | |
| Maximum reaction on shaft | **FAV213 VS II 1306** | N | - | | 13600 | | | | |
| | **FAV212 VS II 806** | N | 9100 | | 10200 | | | | - |
| | **FAV211 VS II 506** | N | 4500 | | 5300 | | | | - |




✱ Nominal torque is adjustable from 100% to 70%
✱✱ For higher speeds, consult Stromag France

## Service Brakes

# DISC BRAKE - FAV41-VS BRAKE

**Revision number: T03524-02-D** **Revision date: 08.11.2017**

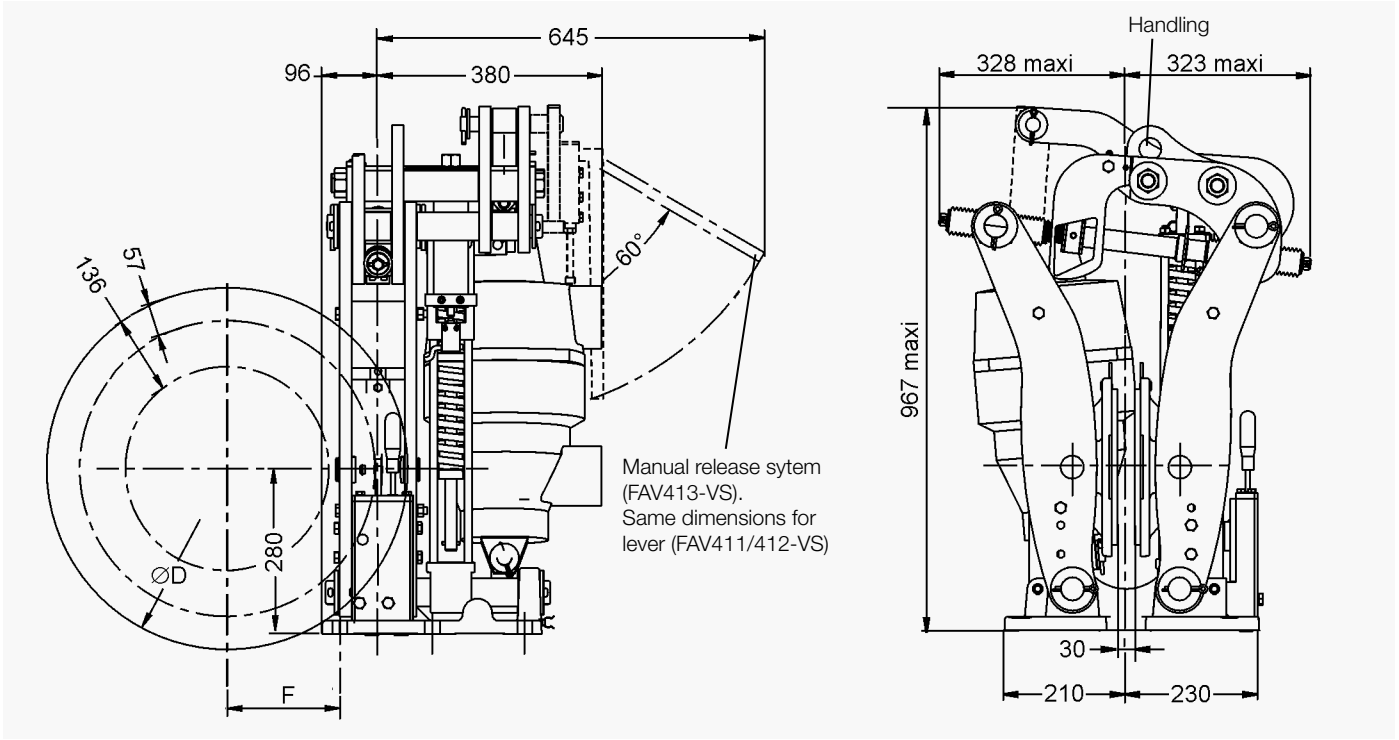
Fail safe
Spring application / Thrustor release
Auto centering
Lining wear compensation
Thrustor stroke control switch
Opening proving switch
Stainless steel pins
Manual release lever for FAV411/412-VS
Manual release system for FAV413-VS

**Operating conditions**:
- Ambient temperature: -20°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

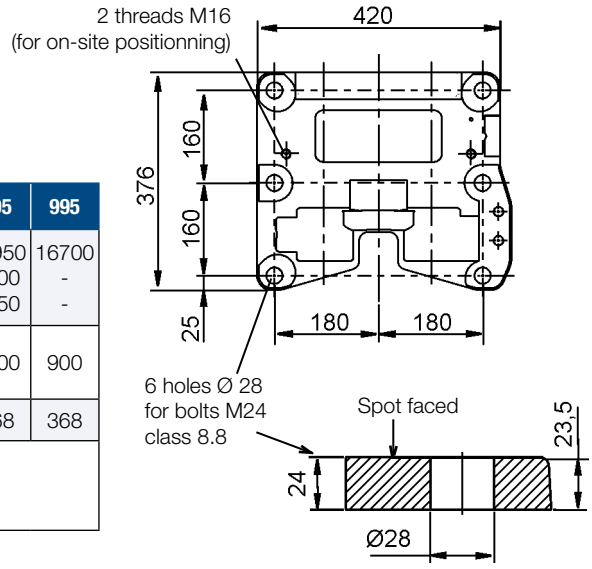
Other conditions: consult us

**Use:**
- Service brake

**Options :**
- Lining full wear control switch
- MSF : Monitoring modul for FAV
- SIDHT : High Temperature Steel works
- HT : High Temperature Thrustor
- Thrustors : Ed301/10 - Ed201/10 - Ed121/10




Weight without thrustor : 180 kg / Weight with thrustor : 222 kg
Torque and effort values are subject to a variation of ±10%
The disc run-out must not exceed 0.08 % of the maximum radius and the disc axial displacement must be smaller than 0.5 mm.
Lining quality **WS1-5** in standard.




| Discs (ØD) | | 445 | 495 | 550 | 625 | 705 | 795 | 995 |
|---|---|---|---|---|---|---|---|---|
| **Nominal torque.** 1 caliper ✱ (N.m) | **FAV413 VS-III-3010** | - | - | - | 9700 | 11200 | 12950 | 16700 |
| | **FAV412 VS-III-2010** | - | 4960 | 5650 | 6600 | 7650 | 8800 | - |
| | **FAV411 VS-III-1310** | 2650 | 3050 | 3500 | 4100 | 4750 | 5450 | - |
| Maximum disc speed for nominal torque (rpm) ✱✱ | | 2100 | 1900 | 1800 | 1500 | 1300 | 1200 | 900 |
| F (mm) ( F=D/2-130 ) | | 93 | 118 | 145 | 183 | 223 | 268 | 368 |
| **Maximum reaction on shaft** (N) | **FAV413 VS-III-3010** | 38000 | | | | | | |
| | **FAV412 VS-III-2010** | 26000 | | | | | | |
| | **FAV411 VS-III-1310** | 16000 | | | | | | |

✱ Nominal torque is adjustable from 100% to 70%
✱✱ For higher speeds, consult Stromag France

# DISC BRAKE - FAV50 / FAV50-VS BRAKES

**Revision number: T03525-01-D / T03525-02-E** **Revision date: 08.11.2017 / 08.11.2017**

Fail safe
Spring application / Thrustor release
Auto centering
Lining wear compensation
Thrustor stroke control switch
Opening proving switch
Stainless steel pins
Manual release system

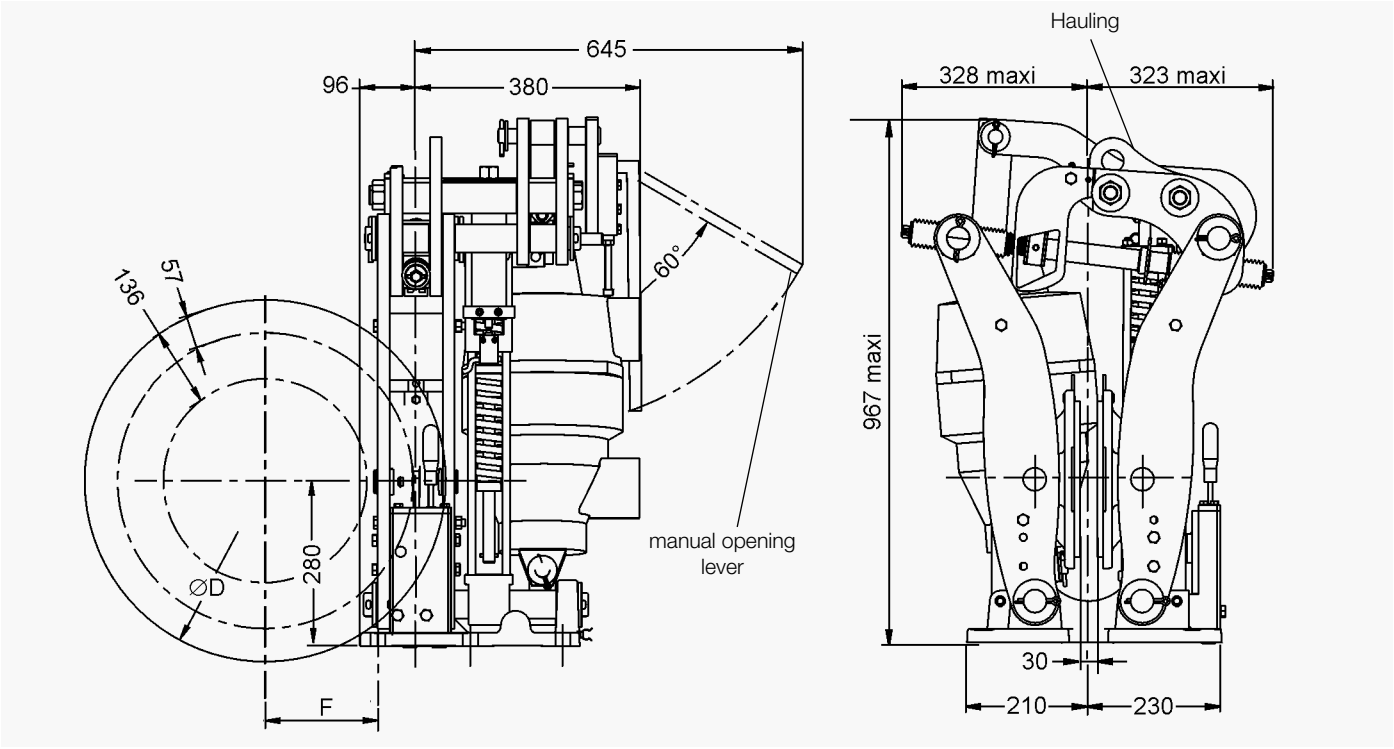
**Operating conditions**:
- Ambient temperature: -20°C to +50°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- Service brake

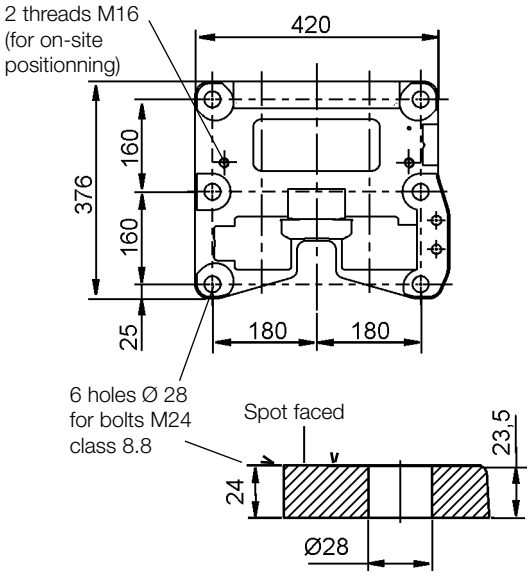
**Options :**
- Lining full wear control switch
- MSF : Monitoring modul for FAV
- SIDHT : High Temperature Steel works
- HT : High Temperature Thrustor

**FAV50** : Thrustor **Ed-301/100**
**FAV50-VS** : Thrustor **VS-III-3010**




Weight without thrustor: 180 kg
Weight with thrustor of **FAV503** : 220 kg. **FAV503-VS** : 224 kg.
Torque and effort values are subject to a variation of ±10%
Lining quality **WS1-5** in standard.

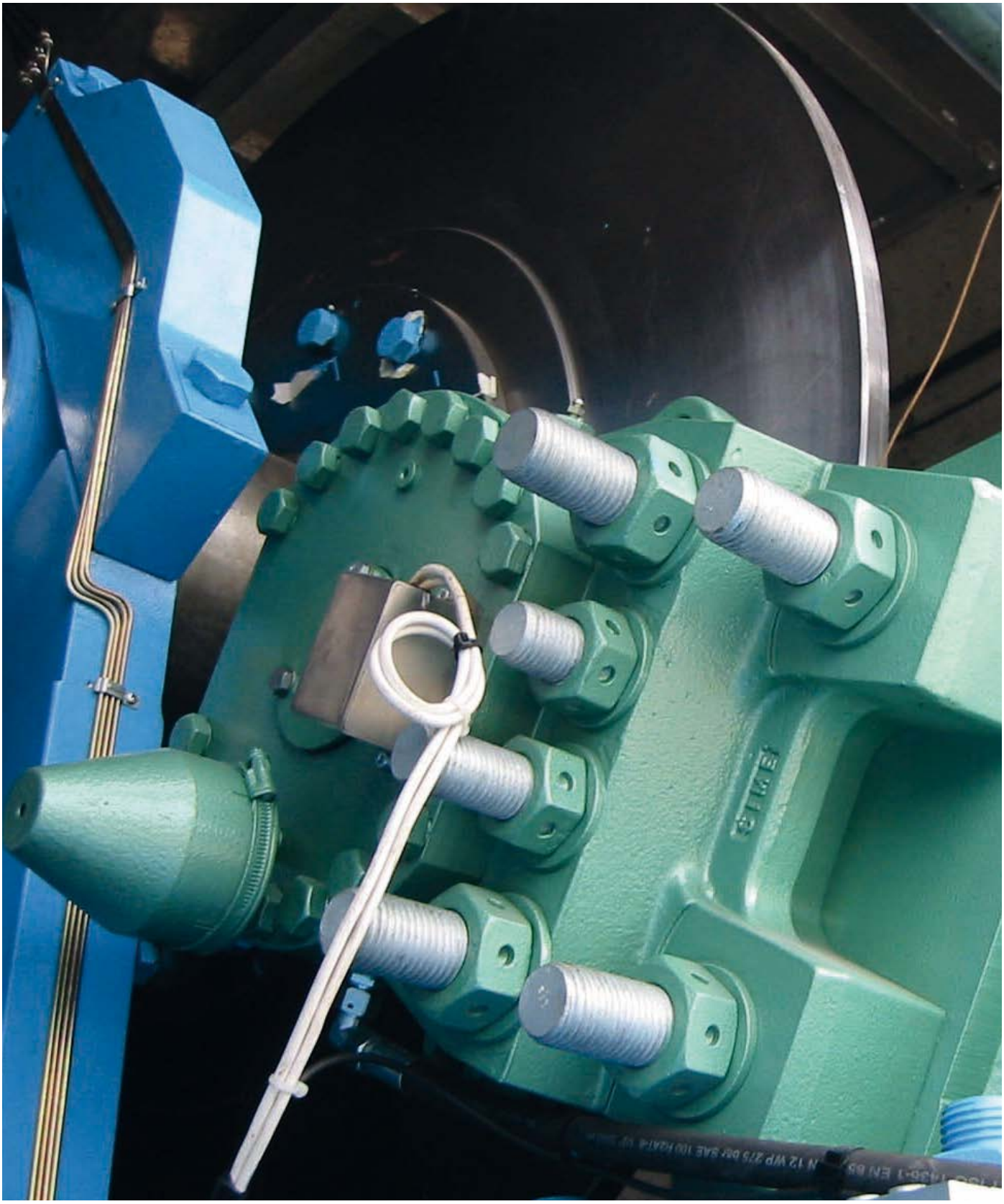
| Discs (ØD) | | 625 | 705 | 795 | 995 |
|---|---|---|---|---|---|
| **Nominal torque**. 1 caliper ✱ (N.m) | **FAV503 / FAV503-VS** | 12360 | 14270 | 16500 | 21270 |
| Maximum disc speed for nominal torque (rpm) ✱✱ | | 1500 | 1300 | 1200 | 900 |
| F (mm) ( F=D/2-130 ) | | 183 | 223 | 268 | 368 |
| **Maximum reaction on shaft** (N) | **FAV503 / FAV503-VS** | 48 400 | | | |



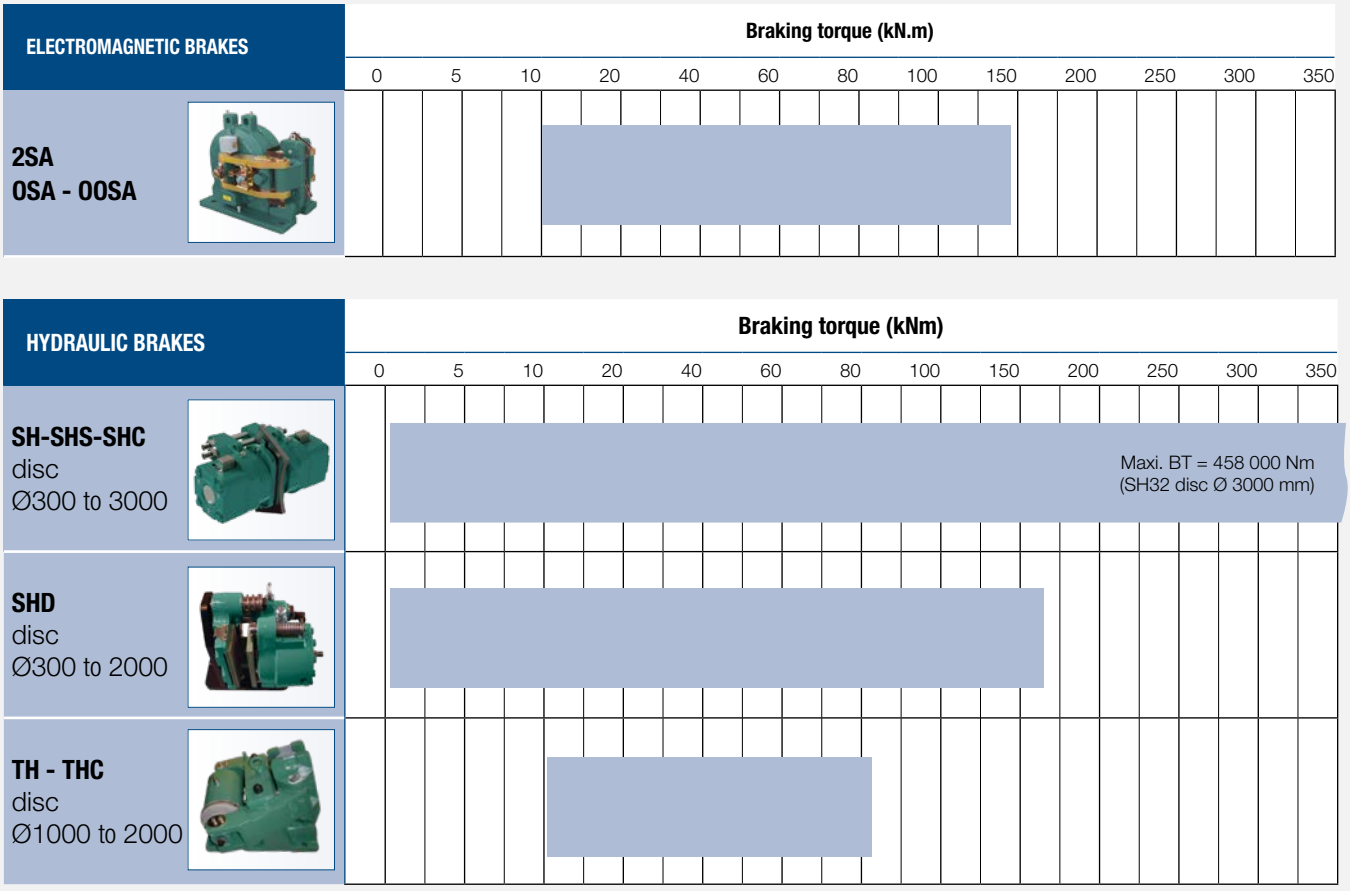

✱ Nominal torque is adjustable from 100% to 70%
✱✱ For higher speeds, consult Stromag France

### Emergency Brakes

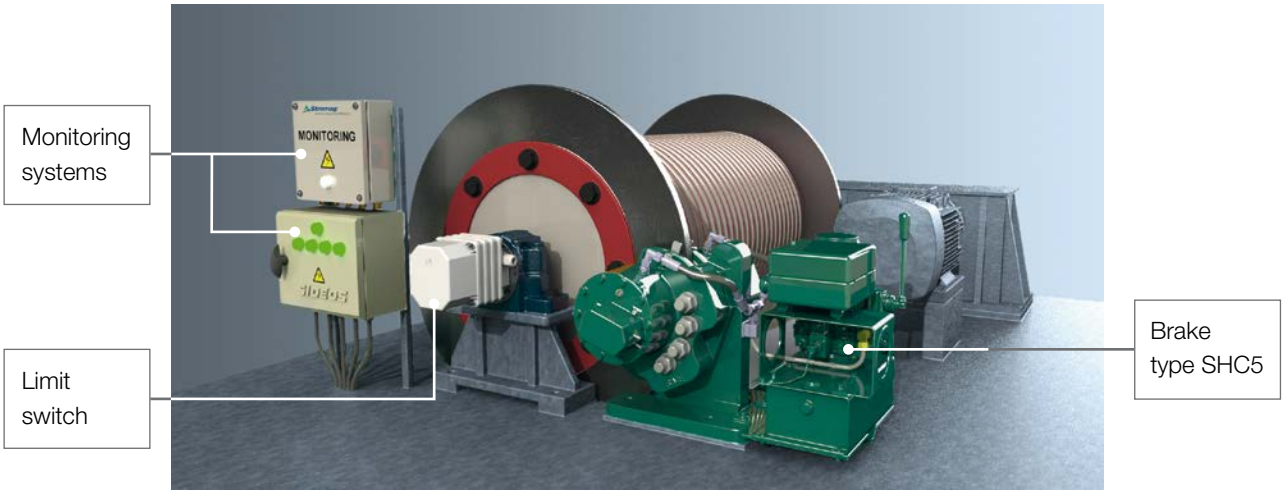
# EMERGENCY BRAKES



## Emergency Brakes




### A COMPLETE BRAKING SOLUTION



## Emergency Brakes

### APPLICATIONS

- STEEL INDUSTRY
- NUCLEAR PLANTS




# ELECTROMAGNETIC EMERGENCY BRAKES

| MAIN CHARACTERISTICS | OPTIONS |
|---|---|
| • FAILSAFE BRAKE BY SPRING APPLICATION<br>• ELECTROMAGNETIC RELEASE<br>• MANUAL LINING WEAR COMPENSATION<br>• OPENING PROVING SWITCH<br>• DETECTION OF FULL LINING WEAR | • LOAD REGULATED LOWERING |

**2SA**

Air gap switch

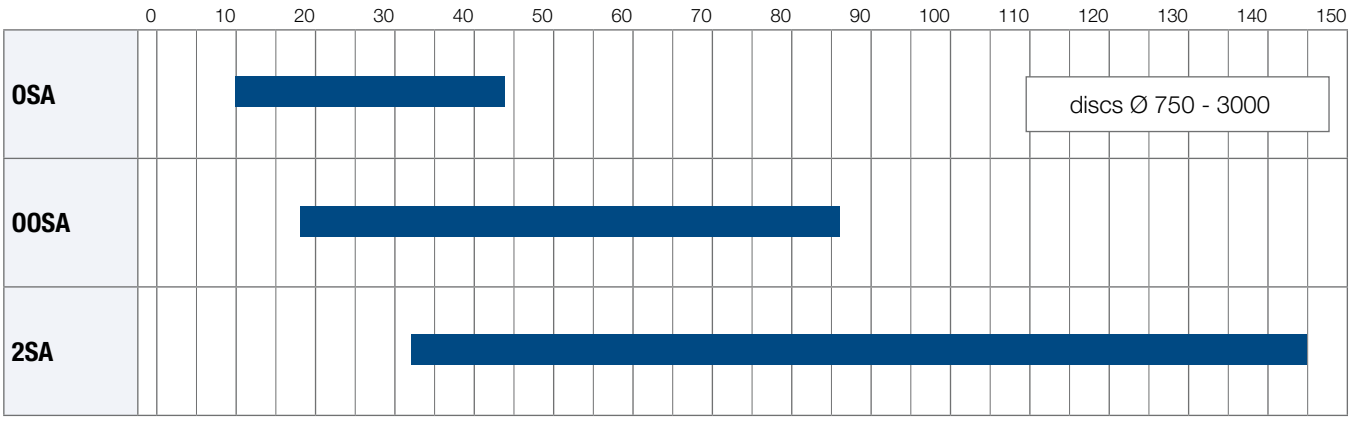
**0SA**

• Option :
Manual release lever
Hydraulic release
Mounting on a vertical axis disc
Flameproof / Marine protection...

**00SA**

• Option :
Manual release lever
Hydraulic release
Flameproof protection
Marine protection

**Braking torque (kN.m)**



## Emergency Brakes

# DISC BRAKE - OSA CALIPER

**Revision number: T03750-01-F** **Revision date: 22.03.2016**

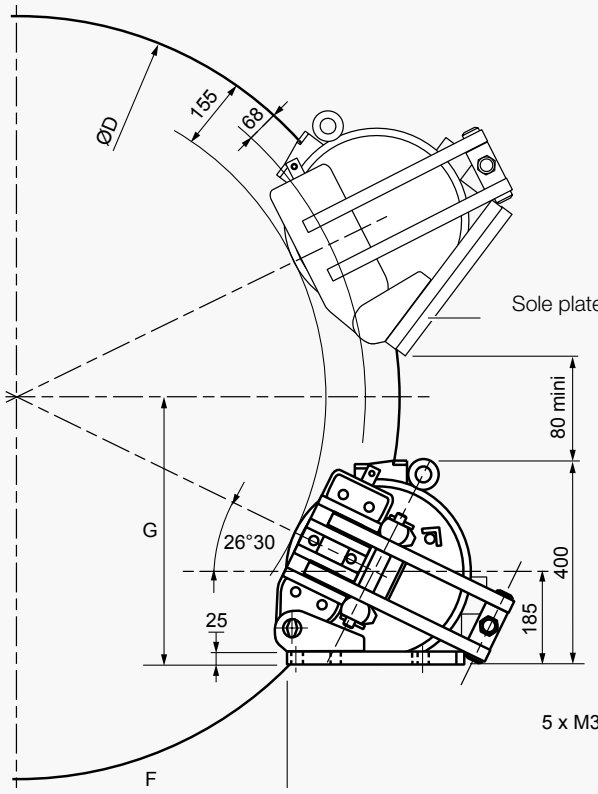
Fail safe braking
Braking by spring application
Electromagnetic release
Manual lining wear compensation
Detection of full lining wear
Opening proving switch

**Operating conditions:**
- Ambiant temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

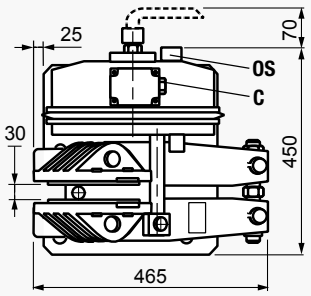
Other conditions, consult us.

**Use:**
The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.

**Options:**
- Manual release lever
- Hydraulic release
- Load regulated lowering
- Flameproof protection
- Marine protection
- Mounting on a vertical axis disc

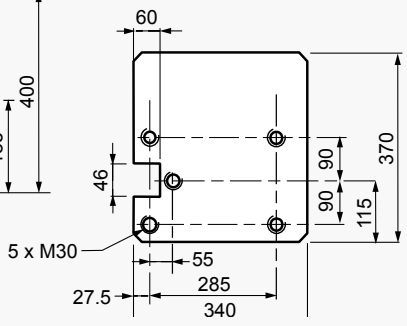



**Right hand caliper**




**Nota**: the left or right hand positionning is to be precised

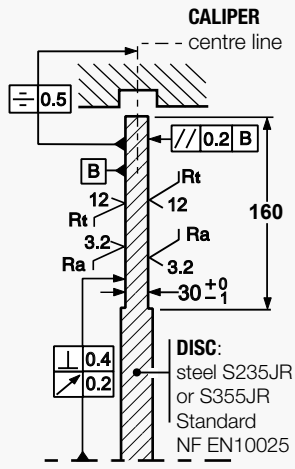
**Sole plate location - top view**




**C** = Cable gland PG16
**OS** = Opening switch, cable gland PG16

Weight: 200 kg
Dimensions in mm

**Support and disc installation**




Response time at nominal torque :
see the leaflet of the associated electrical power supply.
Force values are subject to a variation of ±10%.

| Designation | Caliper | | OSA |
|---|---|---|---|
| | Lining ∗ | | US2-1 |
| Braking force BF | Static | N | 27 900 |
| | Dynamic | N | 31 000 |
| Linear speed of the disc | | m/s | ≤ 10 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) | 1000 mm | N.m | 13 400 |
| | 1200 mm | N.m | 16 500 |
| | 1500 mm | N.m | 21 100 |
| | 2000 mm | N.m | 28 900 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.068) |
| F | | mm | F = (0.4475 × ØD) - 150 |
| G | | mm | G = 196 + (0.2231 × ØD) |

**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity : 50VA maxi

220VDC maxi., 5A maxi., with interrupting capacity : 50W maxi

Compatible with PLC (Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

∗ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: disc temperature during one braking ≤ 350°C. optional. consult us.

# DISC BRAKE - OOSA CALIPER

**Revision number: T03770-01-E** **Revision date: 22.03.2016**

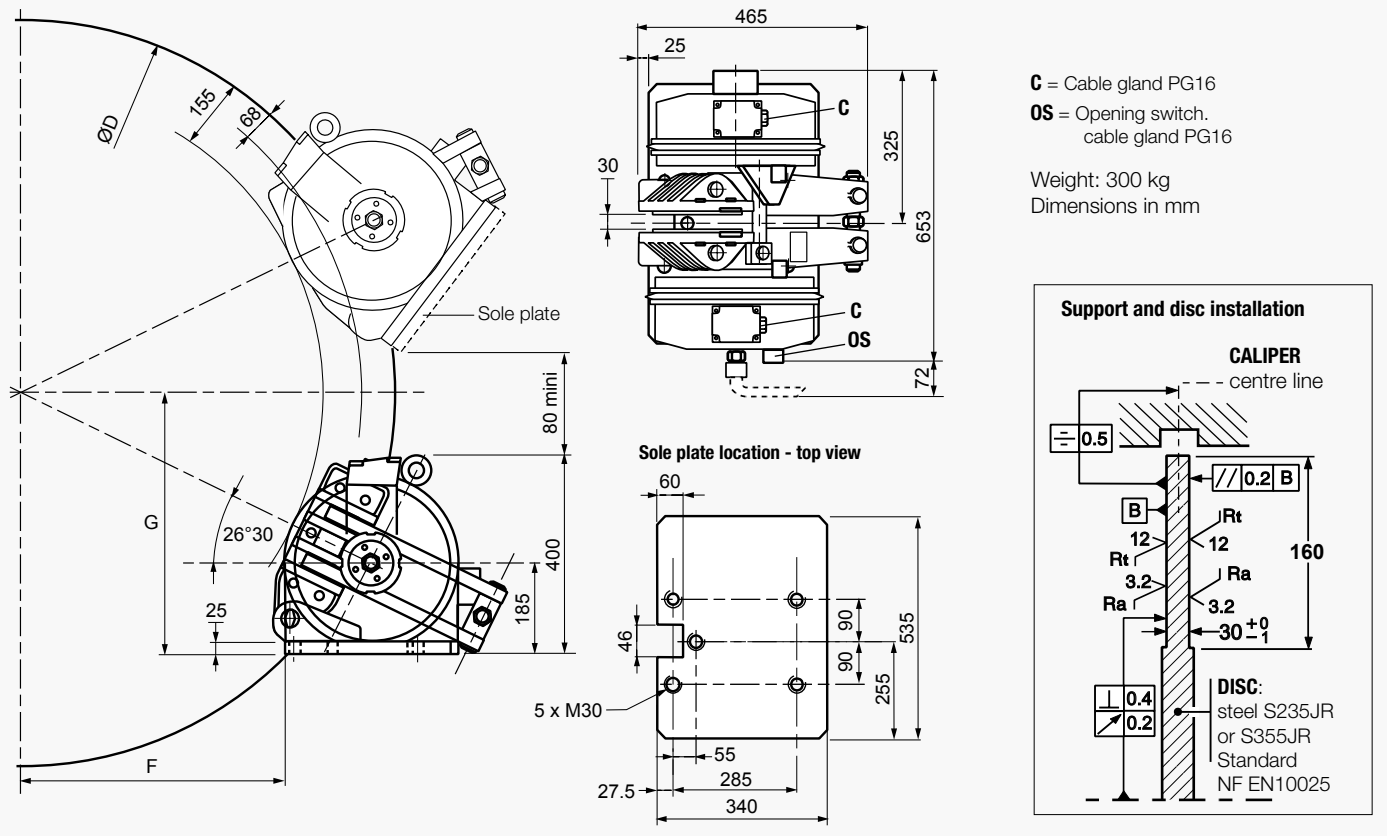
Fail safe braking
Braking by spring application
Electromagnetic release
Manual lining wear compensation
Detection of full lining wear
Opening proving switch

**Operating conditions:**
- Ambiant temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.

**Options:**
- Manual release lever
- Hydraulic release
- Load regulated lowering
- Flameproof protection
- Marine protection




Response time at nominal torque :
see the leaflet of the associated electrical power supply.
Force values are subject to a variation of ±10%.

| Designation | Caliper | | OOSA |
|---|---|---|---|
| | Lining ∗ | | US2-1 |
| Braking force BF | Static<br>Dynamic | N<br>N | 54 000<br>60 000 |
| Linear speed of the disc | | m/s | ≤ 10 |
| Dynamic braking torque BT (N.m) for 1 caliper and 1 disc ØD (mm) | 1000 mm<br>1200 mm<br>1500 mm<br>2000 mm | N.m<br>N.m<br>N.m<br>N.m | 25 900<br>31 900<br>40 900<br>55 900 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.068) |
| F | | mm | F = (0.4475 × ØD) - 150 |
| G | | mm | G = 196 + (0.2231 × ØD) |

**Opening proving switch** :

250VAC maxi., 5A maxi., with interrupting capacity : 50VA maxi

220VDC maxi., 5A maxi., with interrupting capacity : 50W maxi

Compatible with PLC (Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

∗ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: disc temperature during one braking ≤ 350°C. optional. consult us.

# NOTES

# DISC BRAKE - 2SA CALIPER

**Revision number: T03781-01-D** **Revision date: 22.03.2016**

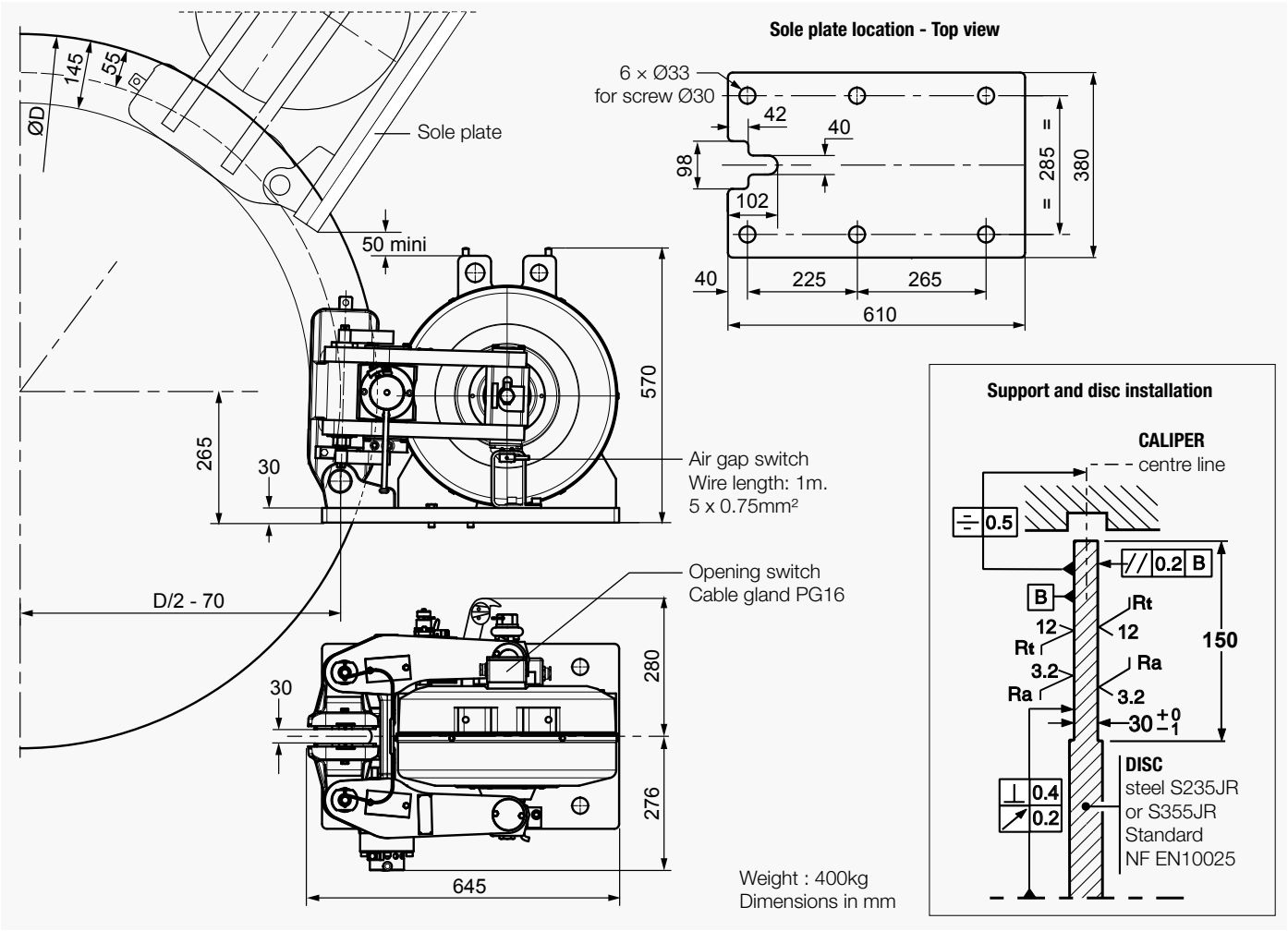
Fail safe braking
Braking by spring application
Electromagnetic release
Manual lining wear compensation
Opening proving switch
Air gap switch

**Operating conditions:**
- Ambiant temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.

**Options:**
- Detection of full lining wear
- Load regulated lowering




Torque and force values are subject to a variation of ±10%
Response time at nominal torque :
see the leaflet of the associated electrical power supply.

| Designation | Caliper | 2SA | |
|---|---|---|---|
| | Lining ∗ | US2-1 | US2-5 |
| Braking force BF for 1mm of air gap disc/lining | Static N | 90 000 | 84 600 |
| | Dynamic N | 100 000 | 94 000 |
| Linear speed of the disc | m/s | ≤ 10 | ≤ 10 |
| Dynamic braking torque BT for 1 caliper and disc ØD (mm) | N.m | BT = BF(D/2000 - 0.055) | |

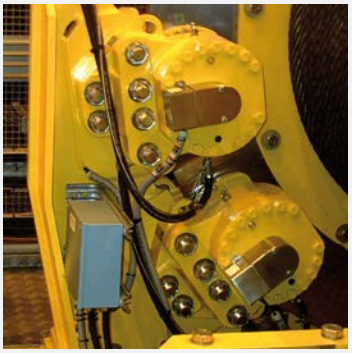
- **Opening proving switch**:
  250VAC maxi., 5A maxi., with interrupting capacity : 50VA maxi
  220VDC maxi., 5A maxi., with interrupting capacity : 50W maxi
  Compatible with PLC (Programmable Logic Controllers).
  An opening switch used with other equipment than PLC must not be reused with a PLC.
- **Air gap switch**:
  240V. 3A AC
  250V. 0.27A DC

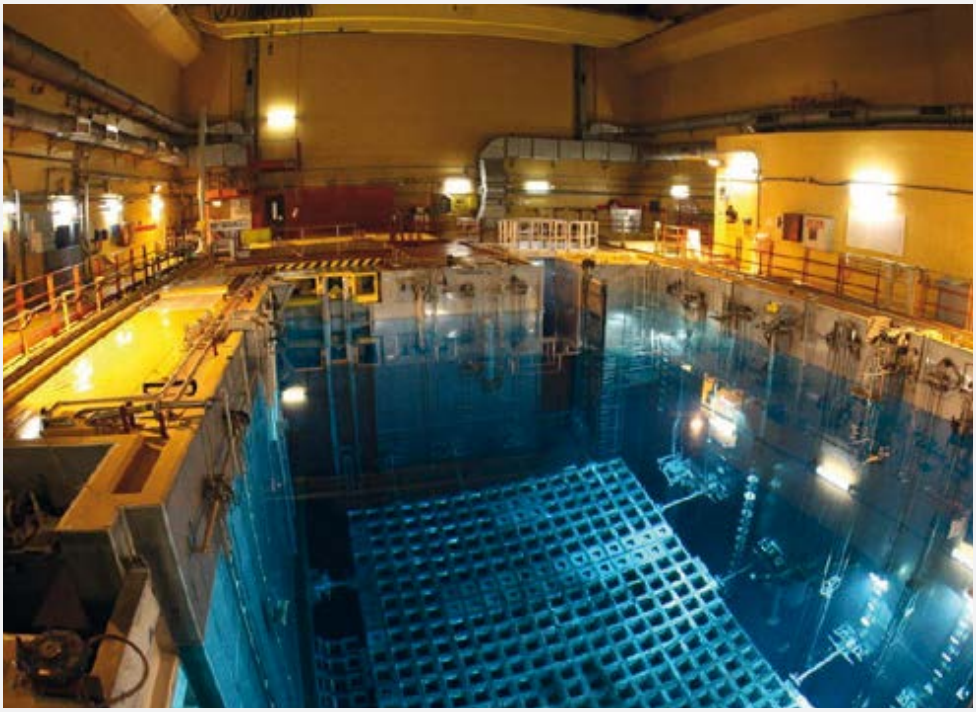
∗ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: tdisc temperature during one braking ≤ 350°C

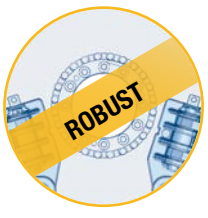
## Emergency Brakes

### APPLICATIONS

- STEEL CRANES
- PORT CRANES
- NUCLEAR CRANES
- OFFSHORE APPLICATIONS
- BOATLIFTS
- MINES AND CONVEYORS







# HYDRAULIC EMERGENCY BRAKES TYPE SH

## MAIN CHARACTERISTICS

- FAILSAFE BRAKE BY SPRING APPLICATION
- HYDRAULIC RELEASE
- OPENING PROVING SWITCH
- LINING WEAR INDICATORS

## OPTIONS

- LINING WEAR PROVING SWITCH
- PROGRESSIVE BRAKING SYSTEM
- OFFSHORE PROTECTION
- LINING TEMPERATURE SENSOR
- HIGH TEMPERATURE, IRON AND STEEL CONDITIONS

### SH

- Association with disc thicknesses : depending on the type of caliper : 12.7 - 15 - 20 - 30 or 42 mm.

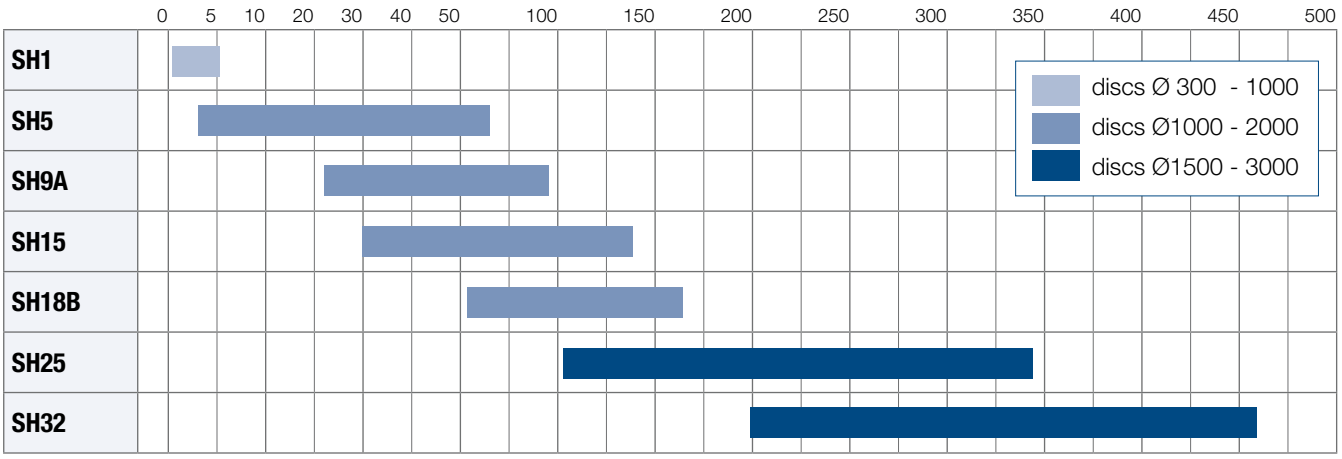
### SHS

- Caliper mounted on a support
- Tailor-made solutions for any installation : banana supports

### SHC

- Caliper and Hydraulic Power Pack mounted on the same support
- Option: Electrical unit

**Braking torque (kN.m)**



## Emergency Brakes

# DISC BRAKE - SH1 CALIPER

**Revision number: T10097-01-G** **Revision date: 12.01.2016**

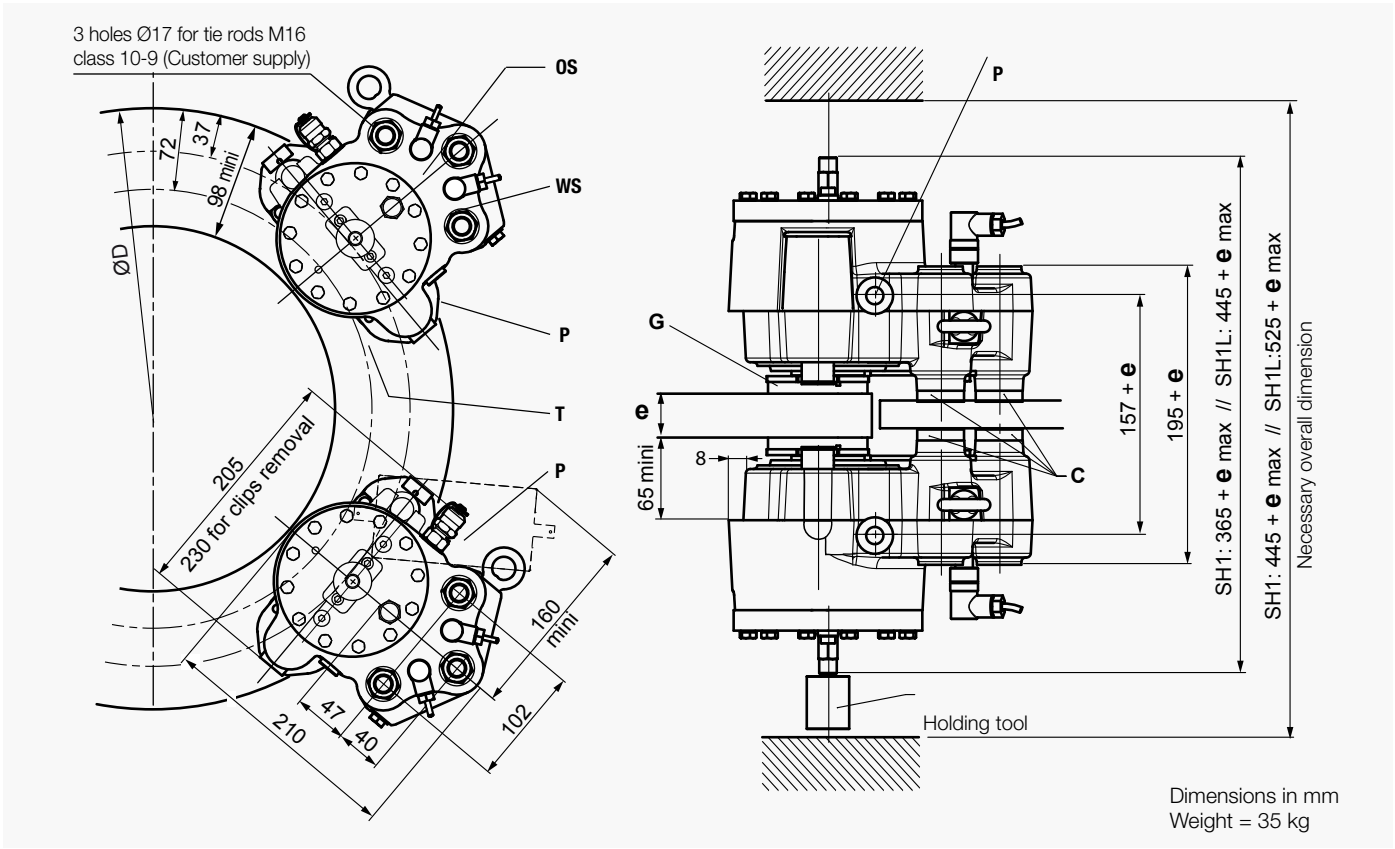
Emergency brake
Fail to safe
Spring application
Hydraulic release
Linings with wear indicators
Holding tool for maintenance operation
Manual wear centering and compensation
Asociation with discs thickness:
12.7 (1/2"), 15, 20 and 30mm.
Lining pads type **US2-1** or **ES3-7**
Lining pads with full wear indicators
Protection C5-M M

**Operating conditions**:
- Ambient temperature:
  Dynamic braking : -30°C to +70°C
  Brake applied (parking): -40°C to +70°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.
  Other use, consult us.

**Options:**
- Opening proving switch (**OS**)
- Lining wear proving switch (**WS**)
- All non-standard disc thickness > 12.7mm (1/2")
- Lining temperature sensor (**T**)
- **SH1L** : caliper requiring no manual wear compensation:
  - braking force before lining wear = +10% maxi.
  - braking force after lining wear = -10% maxi.




Dimensions in mm
Weight = 35 kg

**Electrical data:**

Inductive switches of opening and wear (options):
3 wires PNP NO
12 to 24 VDC 200mA
with male connector M12 / 5 positions
according to standard IEC61076-2-101 / code A

Sensor PT100 (option)
Detection of the temperature threshold : 100°C ± 5
Cable length = 2.5 meters
2 wires red/yellow

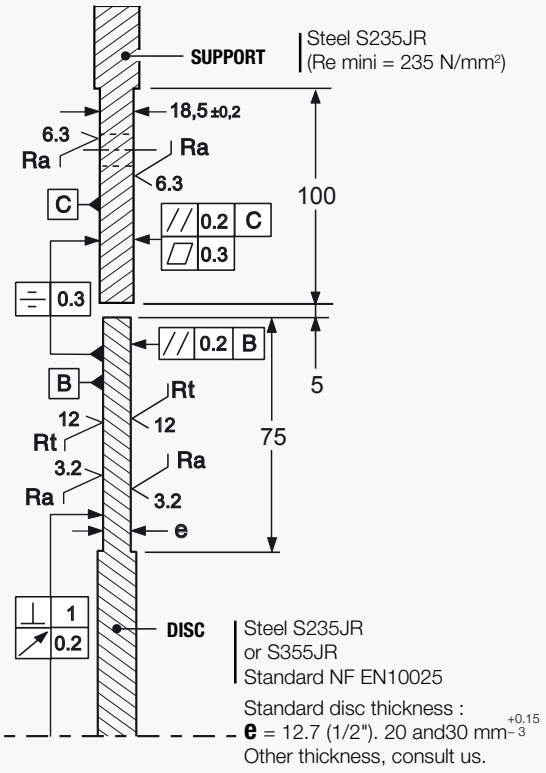
| | | |
|---|---|---|
| R | 136.6 Ω | 95°C |
| | 138.5 Ω | 100°C |
| | 140.4 Ω | 105°C |

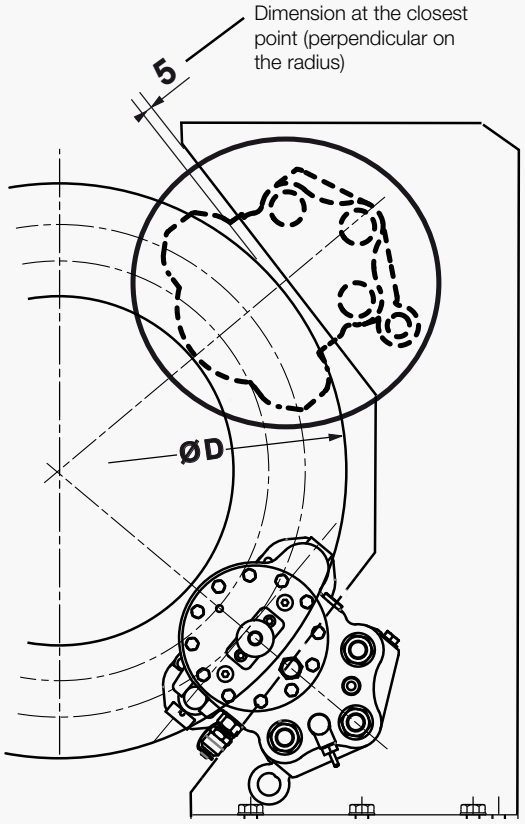
**C** = Spacers according to disc thickness
**G** = Linings : Thickness of new lining 8 mm
Thickness to wear 6 mm
Each 1mm of wear on each side: manual centering and compensation
**OS** = Opening switch (option)
**WS** = Lining wear switch (option)
**P** = 2 oil ports 1/4"G per half-caliper
Bleeder screws delivered separately
**T** = PT100 sensors (option)
**ØD** = Disc diameter = 300 mm minimum
**e** = Disc thickness

# DISC BRAKE - SH1 CALIPER

**Revision number: T10097-01-G** **Revision date: 12.01.2016**

**Disc and support :**




Torque and effort values are subject to a variation of ±10% - Closing time at nominal torque ≤ 0.3s

| Designation | Caliper SH1- | | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ∗ | | US2-1 | | | | | ES3-7 | | | | |
| **Braking force** BF for air gap disc/lining of 2x1mm | **Dynamic** | N | 11 000 | 8 000 | 6 000 | 4 000 | 3 000 | 11 000 | 8 000 | 6 000 | 4 000 | 2 000 |
| | Static | N | 9 680 | 7 040 | 5 280 | 3 520 | 2 640 | 9 900 | 7 200 | 5 400 | 3 600 | 1 800 |
| Linear speed of the disc ● | | m/s | ≤ 10 | | | | | ≤ 50 | | | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) / 300 ≤ D ≤ 1000 mm | | N.m | BT = BF (D/2000-0.037) | | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 150<br>170 | | | | | | | | | |
| Setting pressure limit valve of hydraulic unit | | bar | 190 | | | | | | | | | |
| Total volume of oil displaced for air gap disc/lining of: | 2 x 1mm (nominal opening) | $cm^3$ | 5 $cm^3$ | | | | | | | | | |
| | 2 x 3mm (wear+opening) | $cm^3$ | 13 $cm^3$ | | | | | | | | | |
| | 2 x 7mm **SH1L** (wear+open.) | $cm^3$ | 29 $cm^3$ | | | | | | | | | |

∗ **ES3-7**: disc temperature during one braking ≤ 600°C
**US2-1**: disc temperature during one braking ≤ 100°C

● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SHS1 AND SHC1 CALIPERS

**Revision number: T10099-01-F** **Revision date: 10.06.2016**

Emergency brake
Fail to safe
Spring application
Hydraulic release
Holding tool for maintenance operation
Manual wear centering and compensation
Possible association possible with discs thickness: 12.7 to 30 mm.
Lining pads type **US2-1** or **ES3-7**
Lining pads with full wear indicators
Protection : Caliper **SHS1** : C5-M M
HPP **CE1L** : C4 M

**Operating conditions**:
- Ambient temperature:
  Caliper **SHS1**:
  Dynamic braking : -30°C to +70°C
  Brake applied (parking): -40°C to +70°C
  HPP **CE1L** : -20°C to +70°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm

Other conditions: consult us.

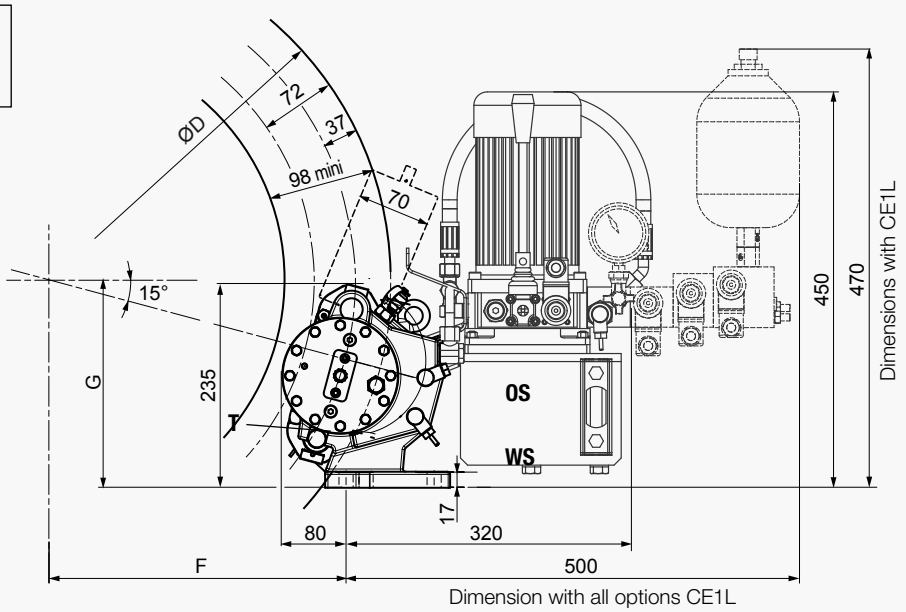
**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.
  Other use, consult us.

**Options:**
- Opening proving switch (**OS**)
- Lining wear proving switch (**WS**)
- Lining temperature sensor (**T**)
- **SHS1L - SHC1L** : caliper with no need of manual wear compensation:
  - braking force before lining wear = +10% maxi.
  - braking force after lining wear = -10% maxi.
- **CE1L** HPP options : see "Installation and maintenance" leaflet quoted below.

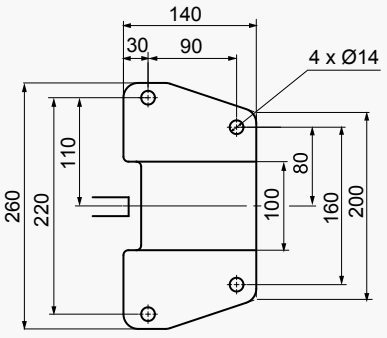
**SHS1** = **SH1** caliper with integral support
**SHC1** = **SH1** caliper with integral **CE1L** hydraulic power pack.

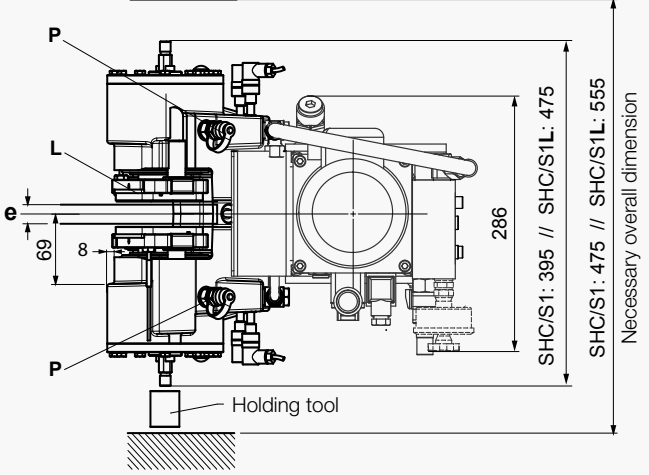
**L** = Linings :
Thickness of new lining 8 mm
Thickness to wear 6 mm
Each 1 mm of wear on each side: manual centering and compensation
**OS** = Opening proving switch (option)
**WS** = Wear proving switch (option)
**P** = Oil ports 1/4"G
Bleeder screws delivered separately
**T** = PT100 sensors (option)
**ØD** : from 300 to 1000 mm
**e** = disc thickness

Dimensions in mm
Weight : **SHC1** = 61 kg **SHC1L** = 68 kg
**SHS1** = 39 kg **SHS1L** = 46 kg




Dimension with all options CE1L



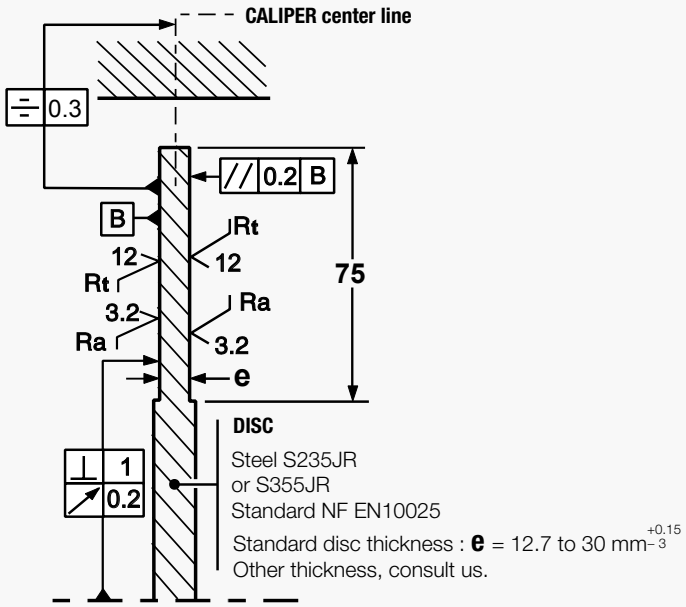




Calipers fastening :
4 bolts M12 class 10-9 (not provided)
Tightening torque = 77 Nm ± 30%

# DISC BRAKE - SHS1 AND SHC1 CALIPERS

**Revision number: T10099-01-F** **Revision date: 10.06.2016**

## Installation instructions :




## Electrical data:

**Opening and wear inductive switches (options)**

3 wires PNP NO
12 to 24 VDC 200mA
with connector M12 / 5 positions
according to standard IEC61076-2-101 / code A

**Sensor PT100 (option)**

Detection of the temperature threshold : 100°C ± 5
- R = 136.6 Ω at 95 °C
- R = 138.5 Ω at 100°C
- R = 140.4 Ω at 105°C

Cable length = 2.5 meters
2 wires red/yellow

Torque and effort values are subject to a variation of ±10% - Closing time at nominal torque ≤ 0.3s

| Designation | Caliper SHS1- SHC1- | | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ∗ | | US2-1 | | | | | ES3-7 | | | | |
| **Braking force** BF for air gap disc/lining of 2x1mm | **Dynamic** | N | 11 000 | 8 000 | 6 000 | 4 000 | 3 000 | 11 000 | 8 000 | 6 000 | 4 000 | 2 000 |
| | Static | N | 9 680 | 7 040 | 5 280 | 3 520 | 2 640 | 9 900 | 7 200 | 5 400 | 3 600 | 1 800 |
| Linear speed of the disc ● | | m/s | ≤ 10 | | | | | ≤ 50 | | | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) 300 ≤ D ≤ 1000 mm | | N.m | BT = BF (D/2000-0.037) | | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 150<br>170 | | | | | | | | | |
| Setting pressure limit valve of HPP | | bar | 190 | | | | | | | | | |
| F<br>G | | | F = (0.483 x D) - 14<br>G = (0.129 x D) + 118 | | | | | | | | | |

∗ **ES3-7**: disc temperature during one braking ≤ 600°C
**US2-1**: disc temperature during one braking ≤ 100°C

● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SH5 CALIPER

**Revision number: T03865-02-C** **Revision date: 23.09.2010**

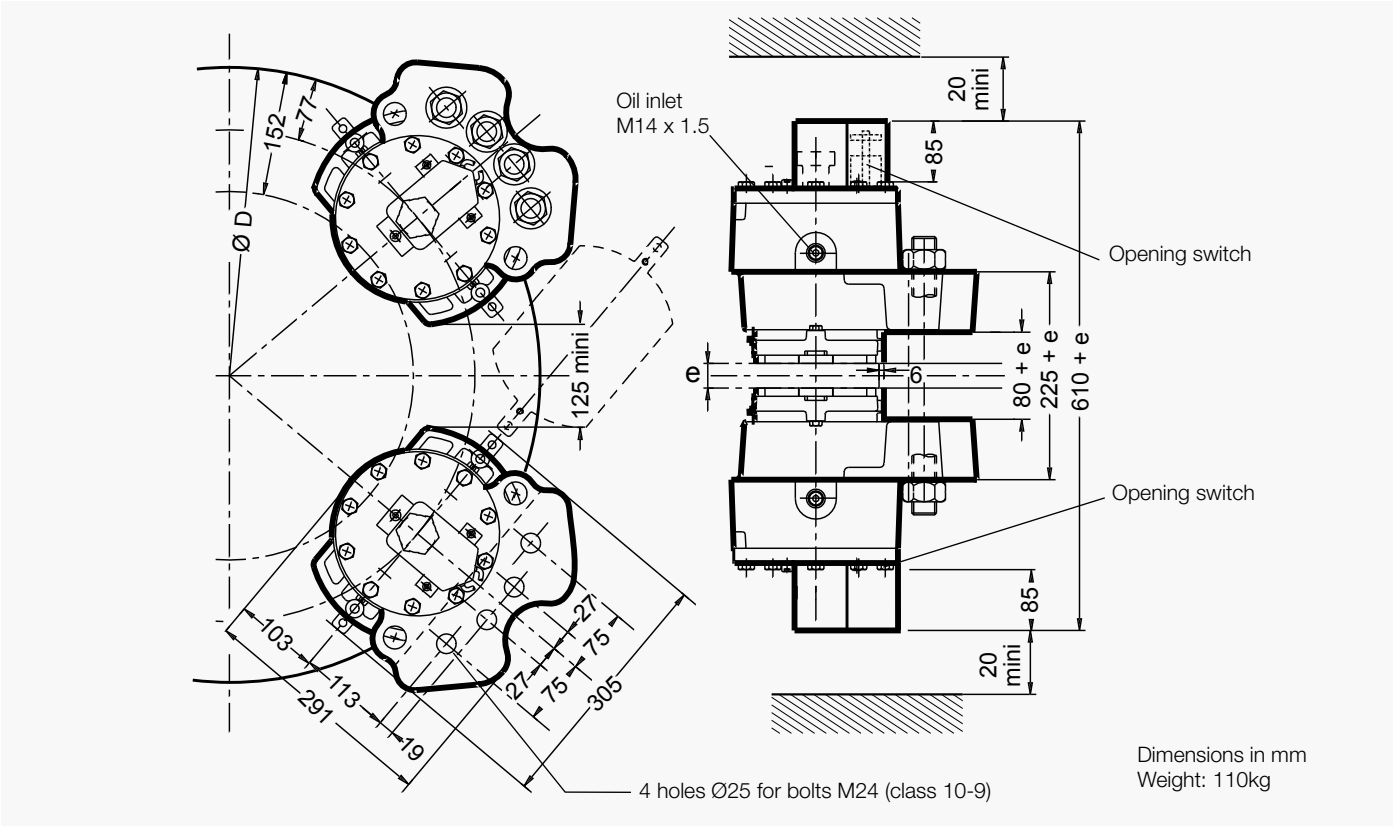
Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches
Lining wear detector

**Operating conditions** :
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use :**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options :**
- Automatic lining wear compensation (WACS)
- Lining wear control switch
- Progressive braking system
- Marine protection
- Caliper on support with integral hydraulic power unit




**Opening proving switch** :

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

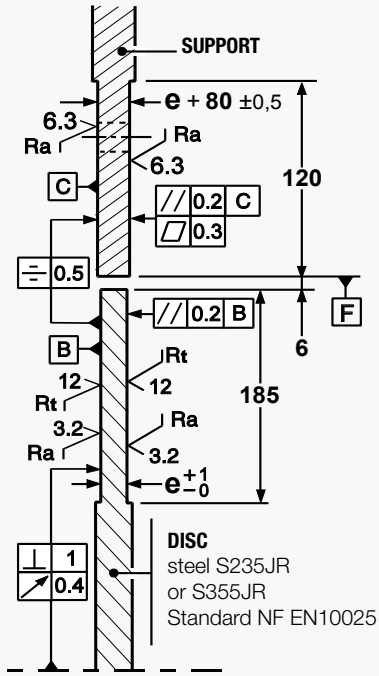
220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

Compatible with PLC
(Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

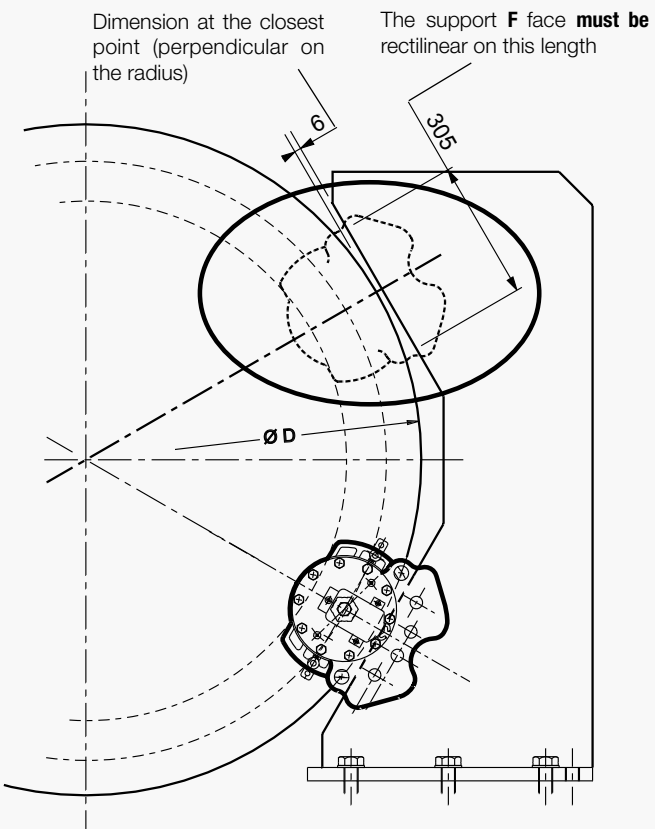
# DISC BRAKE - SH5 CALIPER

**Revision number: T03865-02-C** **Revision date: 23.09.2010**

**Disc and support :**




Standard disc thickness: 30 ≤ **e** ≤ 50 mm.
Other thickness, consult us. Dimensions in millimetre




Torque and effort values are subject to a variation of ±10%

Response time at nominal torque : see the leaflet n° G08555-01

| Designation | Caliper | | SH5-6 | | SH5-5 | | SH5-4 | | SH5-3 | | SH5-2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 63 000 | 43 200 | 51 300 | 35 100 | 37 800 | 25 900 | 21 200 | 14 500 | 9 600 | 6 500 |
| | Dynamic | N | 70 000 | 48 000 | 57 000 | 39 100 | 42 000 | 28 800 | 23 600 | 16 200 | 10 700 | 7 300 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) | 995 mm | N.m | 29430 | 20 180 | 23 960 | 16 440 | 17 660 | 12 110 | 9 920 | 6 810 | 4 490 | 3 070 |
| | 1200 mm | N.m | 36610 | 25 100 | 29 810 | 20 440 | 21 960 | 15 060 | 12 340 | 8 470 | 5 590 | 3 810 |
| | 1500 mm | N.m | 47110 | 32 300 | 38 360 | 26 310 | 28 260 | 19 380 | 15 880 | 10 900 | 7 200 | 4 910 |
| | 2000 mm | N.m | 64610 | 44 300 | 52 610 | 36 080 | 38 760 | 26 580 | 21 780 | 14 950 | 9 870 | 6 730 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.077) | | | | | | | | | |
| Regulation pressure | minimum | bar | 180 | | 140 | | 110 | | 85 | | 40 | |
| | maximum | bar | 200 | | 160 | | 140 | | 115 | | 60 | |
| Setting pressure of the limit valve of hydraulic power unit | | bar | 210 | | 190 | | 165 | | 140 | | 80 | |
| Total volume of oil displaced | | $cm^3$ | 35 for one stroke disc/lining (nominal wear and opening) | | | | | | | | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**WS1-3**: disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SHC5 CALIPER

**Revision number: T03867-02-D** **Revision date: 26.10.2011**

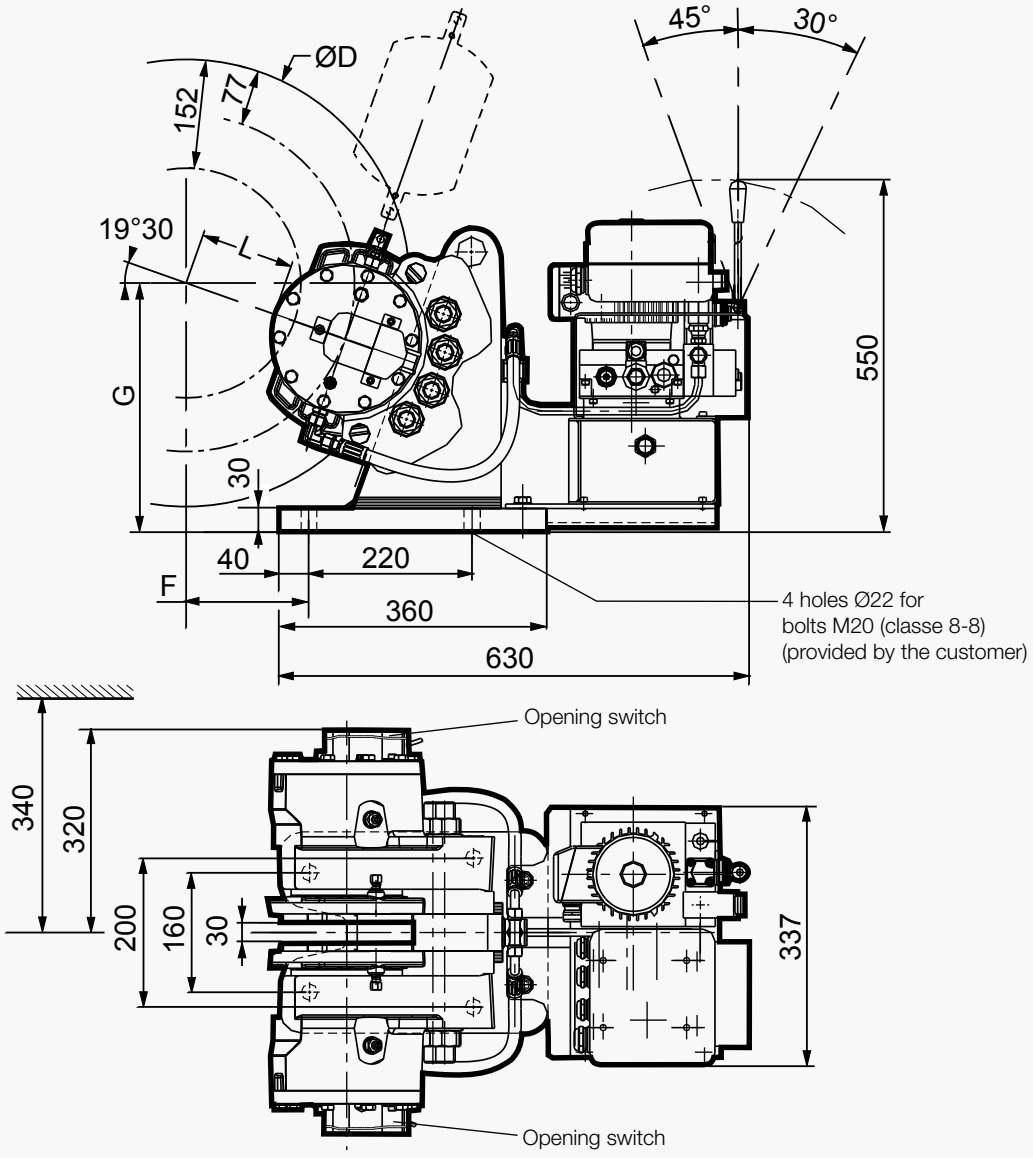
Emergency brake
Fail to safe
Spring application
Hydraulic release
Integral hydraulic power unit
Self contained electrical system
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +50°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult Stromag France.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Automatic lining wear compensation (WACS)
- Lining wear control switch
- Progressive braking system
- Marine protection

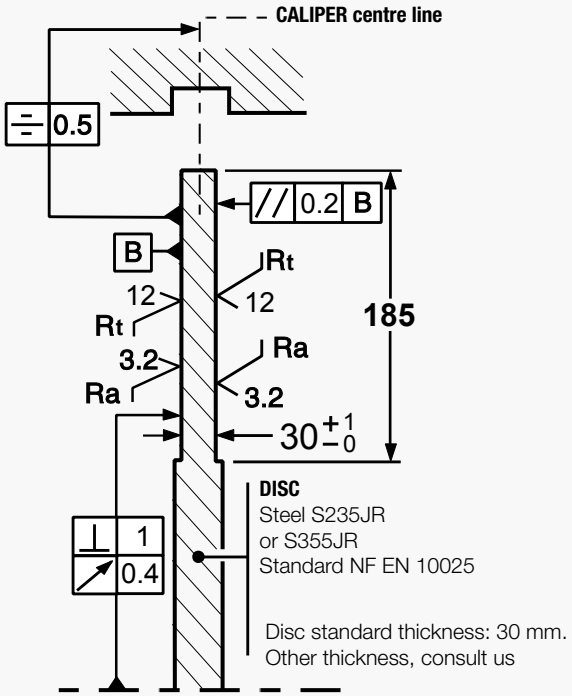



Dimensions in mm
Weight: 185 kg

# DISC BRAKE - SHC5 CALIPER

**Revision number: T03867-02-D** **Revision date: 26.10.2011**

### Installation instructions




Dimensions in mm.

### Electrical data

- Motor voltages :

  3 phases : 230/400 VAC 50 Hz
  0.37 kW. 4 poles

  for mains:
  220-230-240VAC ±10% 50Hz
  or 380-400-415VAC ±10% 50Hz

- Options motor :

  440 VAC 50Hz
  500 VAC 50Hz
  480 VAC 60Hz
  575 VAC 60Hz

- Other voltages. consult us.

- Electrical casing IP55

- Opening switch :

  250VAC maxi., 5A maxi.,
  with interrupting capacity: 50VA maxi.

  220VDC maxi., 5A maxi.,
  with interrupting capacity: 50W maxi.

  Compatible with PLC
  (Programmable Logic Controllers).
  An opening switch used with other equipment than PLC must not be reused with a PLC.

Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01.

| Désignation | caliper | | SHC5-6 | | SHC5-5 | | SHC5-4 | | SHC5-3 | | SHC5-2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 63 000 | 43 200 | 51 300 | 35 100 | 37 800 | 25 900 | 21 200 | 14 500 | 9 600 | 6 500 |
| | Dynamic | N | 70 000 | 48 000 | 57 000 | 39 100 | 42 000 | 28 800 | 23 600 | 16 200 | 10 700 | 7 300 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) | 995 mm | N.m | 29430 | 20 180 | 23 960 | 16 440 | 17 660 | 12 110 | 9 920 | 6 810 | 4 490 | 3 070 |
| | 1200 mm | N.m | 36610 | 25 100 | 29 810 | 20 440 | 21 960 | 15 060 | 12 340 | 8 470 | 5 590 | 3 810 |
| | 1500 mm | N.m | 47110 | 32 300 | 38 360 | 26 310 | 28 260 | 19 380 | 15 880 | 10 900 | 7 200 | 4 910 |
| | 2000 mm | N.m | 64610 | 44 300 | 52 610 | 36 080 | 38 760 | 26 580 | 21 780 | 14 950 | 9 870 | 6 730 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.077) | | | | | | | | | |
| Setting pressure of the limit valve of hydraulic power unit | | bar | 210 | | 190 | | 165 | | 140 | | 80 | |
| F | | mm | F = (0.4719 x D) - 122.5 | | | | | | | | | |
| G | | mm | G = (0.1652 x D) + 232.5 | | | | | | | | | |
| L | | mm | L = (D / 2) - 181 | | | | | | | | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**WS1-3**: disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SH9A CALIPER

**Revision number: T10077-01-B** **Revision date: 30.05.2013**

Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches.

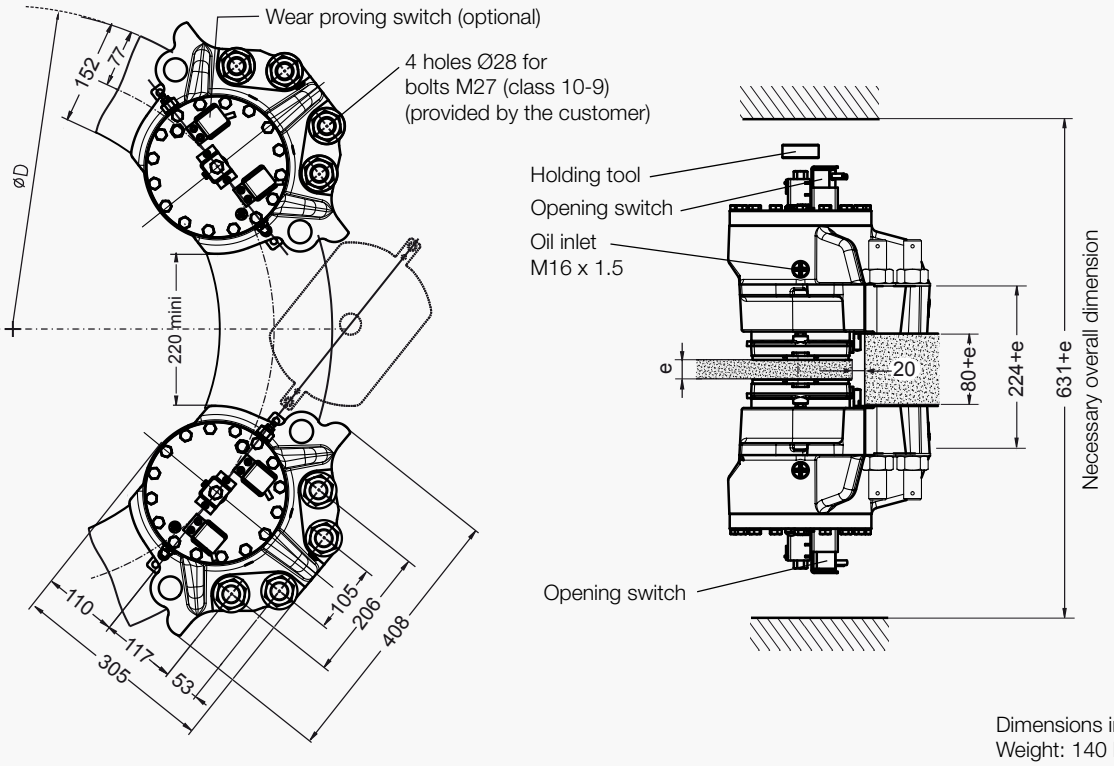
**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.
- US2-1. US2-5 for low energy braking ≤ 1 MJ
- EF3-1 for high energy braking ≤ 15 MJ

Other use. consult us

**Options:**
- Lining wear control switch
- Switch for P.L.C. (induction sensor)
- Marine protection
- Caliper on support with integral HPP
- Option GF




Dimensions in mm
Weight: 140 kg

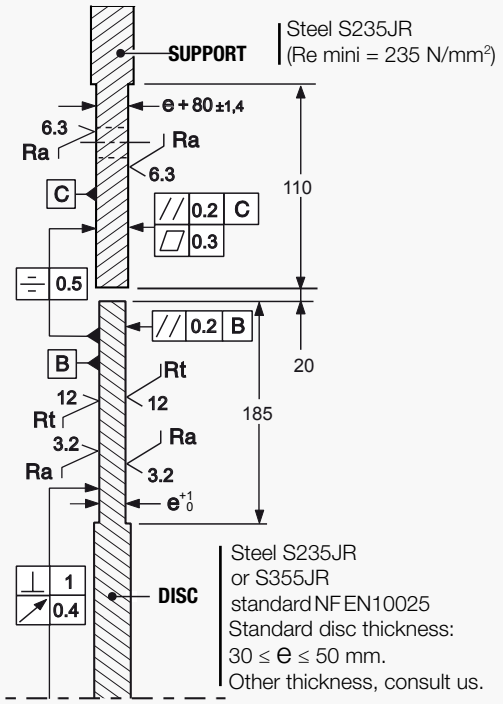
**Opening proving switch**:

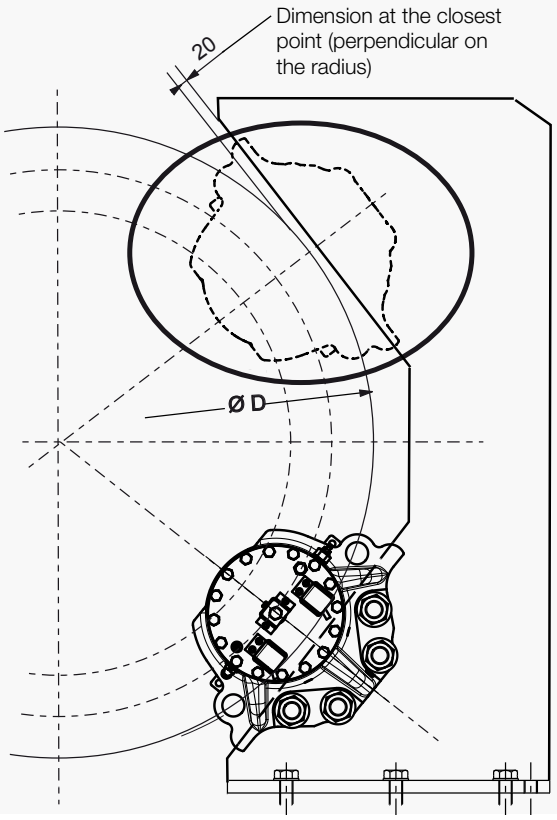
240V 1.5A AC
250V 0.1A DC
with a 5 x 0.75mm² wire
of 5m length

# DISC BRAKE - SH9A CALIPER

**Revision number: T10077-01-B** **Revision date: 30.05.2013**

**Disc and support :**




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque ≤ 0.3s

| Designation | Caliper | | SH9A-3 | | | SH9A-2 | | | SH9A-1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ∗ | | US2-1 | US2-5 | EF3-1 | US2-1 | US2-5 | EF3-1 | US2-1 | US2-5 | EF3-1 |
| Braking force BF for 1mm air gap | Static | N | 94 500 | 90 000 | 70 500 | 80 100 | 76 200 | 60000 | 66 150 | 63 000 | 49 600 |
| | Dynamic | N | 105 000 | 100 000 | 78 200 | 89 000 | 84 700 | 66 500 | 73 500 | 70 000 | 55 000 |
| Linear speed of the disc for BF | | m/s | ≤10 | ≤30 | ≤ 50● | ≤10 | ≤30 | ≤ 50● | ≤10 | ≤30 | ≤ 50● |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) ∗∗ | 995 mm | N.m | 44 150 | 42 050 | 32 880 | 37 420 | 35 620 | 27 960 | 30 910 | 29 440 | 23 130 |
| | 1500 mm | N.m | 70 670 | 67 300 | 52 630 | 59 900 | 57 000 | 44 750 | 49 470 | 47 110 | 37 020 |
| | 2000 mm | N.m | 96 920 | 92 300 | 72 180 | 82 150 | 78 180 | 61 380 | 67 840 | 64 610 | 50 770 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.077) | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar | 180<br>200 | | | 150<br>180 | | | 110<br>140 | | |
| Setting pressure of HPP limit valve | | bar | 225 | | | 210 | | | 165 | | |
| Total volume of oil displaced | | $cm^3$ | 55 for one disc/linings stroke (nominal wear and opening) | | | | | | | | |

∗ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: disc temperature during one braking ≤ 350°C
**EF3-1**: High energy braking, disc temperature during one braking ≤ 600°C

∗∗ For disc ØD < 995 mm, consult us.
● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SHC9A CALIPER

**Revision number: T10078-01-B** **Revision date: 13.06.2014**

Emergency brake
Fail to safe
Spring application
Hydraulic release
Integral hydraulic power unit
Self contained electrical system
Opening proving switches
Protection class C3L standard ISO12944-2

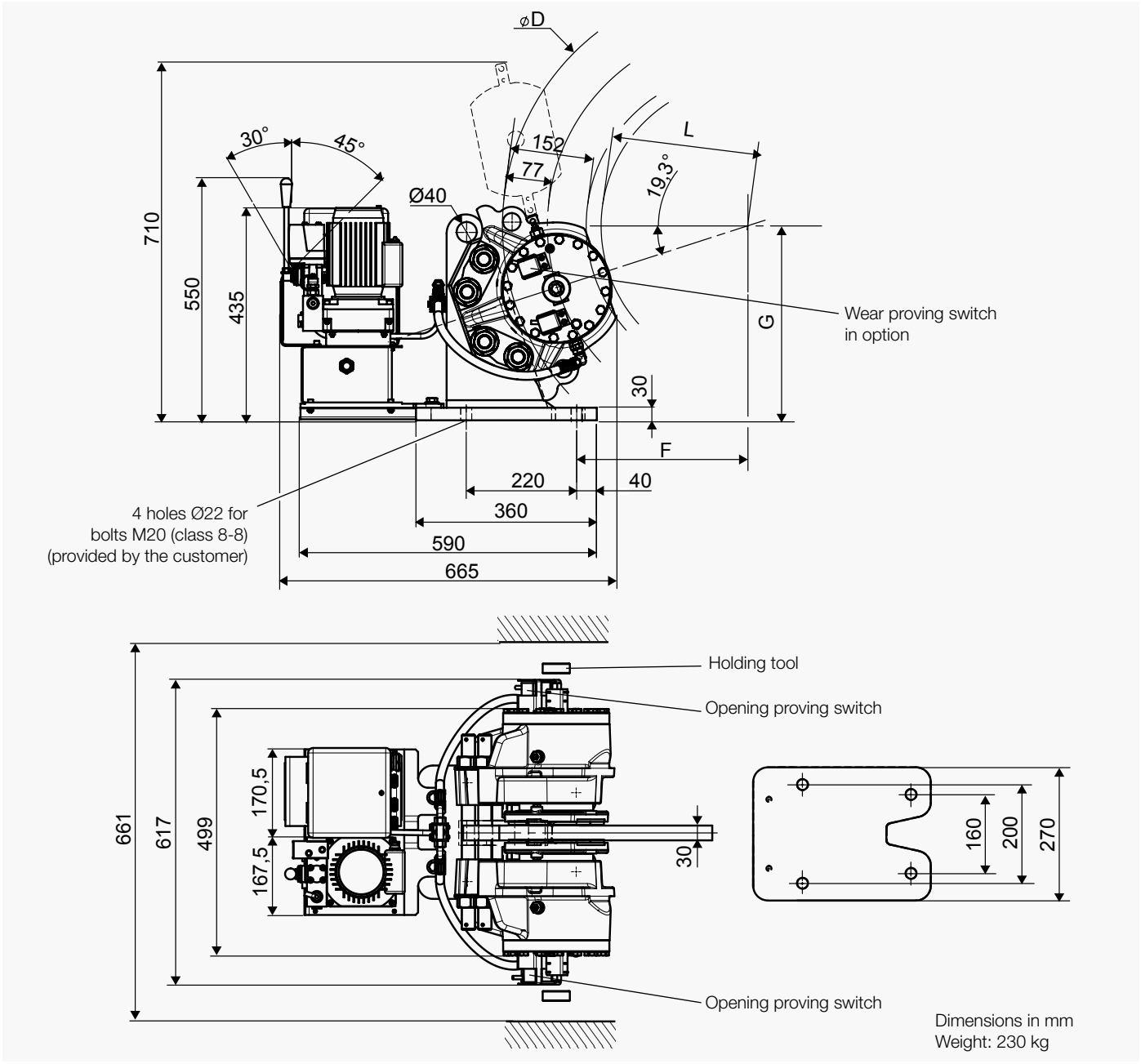
**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Options:**
- Lining wear control switch
- Switch for P.L.C.
- Protection class C4M standard ISO12944-2

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains.
- US2-1. US2-5 for low energy braking ≤ 1 MJ
- EF3-1 for high energy braking ≤ 15 MJ

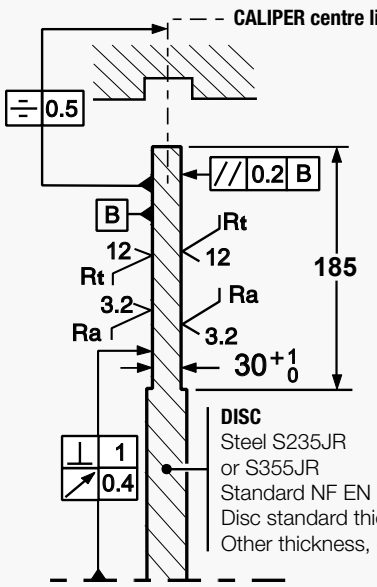
Other use, consult us



# DISC BRAKE - SHC9A CALIPER

**Revision number: T10078-01-B** **Revision date: 13.06.2014**

## Installation instructions




Dimensions in mm.

## Electrical data

- Motor voltages:
  3 phases:
  230/400 V ±10%. 50 Hz
  0.37 kW
  for voltage of 3 phases mains:
  230 V 50 Hz
  or 400 V 50 Hz
  or 415 V 50 Hz
  or 440 V 60 Hz
  or 460 V 60 Hz
- Options voltage of 3 phases mains:
  440 V ±10% 50Hz
  500 V ±10% 50Hz
  480 V ±10% 60Hz
- Other voltages, consult us.
- Electrical casing IP55

- Opening switch:
  240V. 1.5A AC
  220V. 0.1A DC
  with cable 5 x 0.75mm² length 5m

Torque and effort values are subject to a variation of ±10%
Closing time at nominal torque ≤ 0.3s

| Designation | Caliper | | SHC9A-3 | | | SHC9A-2 | | | SHC9A-1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ∗ | | US2-1 | US2-5 | EF3-1 | US2-1 | US2-5 | EF3-1 | US2-1 | US2-5 | EF3-1 |
| Braking force BF for 1mm air gap | Static | N | 94 500 | 90 000 | 70 500 | 80 100 | 76 200 | 60 000 | 66 150 | 63 000 | 49 600 |
| | Dynamic | N | 105 000 | 100 000 | 78 200 | 89 000 | 84 700 | 66 500 | 73 500 | 70 000 | 55 000 |
| Linear speed of the disc for BF | | m/s | ≤10 | ≤30 | ≤ 50● | ≤10 | ≤30 | ≤ 50● | ≤10 | ≤30 | ≤ 50● |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) ∗∗ | 995 mm | N.m | 44 150 | 42 050 | 32 880 | 37 420 | 35 620 | 27 960 | 30 910 | 29 440 | 23 130 |
| | 1500 mm | N.m | 70 670 | 67 300 | 52 630 | 59 900 | 57 000 | 44 750 | 49 470 | 47 110 | 37 020 |
| | 2000 mm | N.m | 96 920 | 92 300 | 72 180 | 82 150 | 78 180 | 61 380 | 67 840 | 64 610 | 50 770 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.077) | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar | 180<br>200 | | | 150<br>180 | | | 110<br>140 | | |
| Setting pressure of limit valve of hydraulic power unit | | bar | 225 | | | 210 | | | 165 | | |
| F<br>G<br>L | | mm<br>mm<br>mm | F = (0.4719 x D) - 113<br>G = (0.1652 x D) + 236.7<br>L = (D / 2) - 190 | | | | | | | | |

∗ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: disc temperature during one braking ≤ 350°C
**EF3-1**: High energy braking, disc temperature during one braking ≤ 600°C

∗∗ For disc ØD < 995 mm, consult us

● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SH15 CALIPER

**Revision number: T03905-01-B** **Revision date: 01.10.2010**

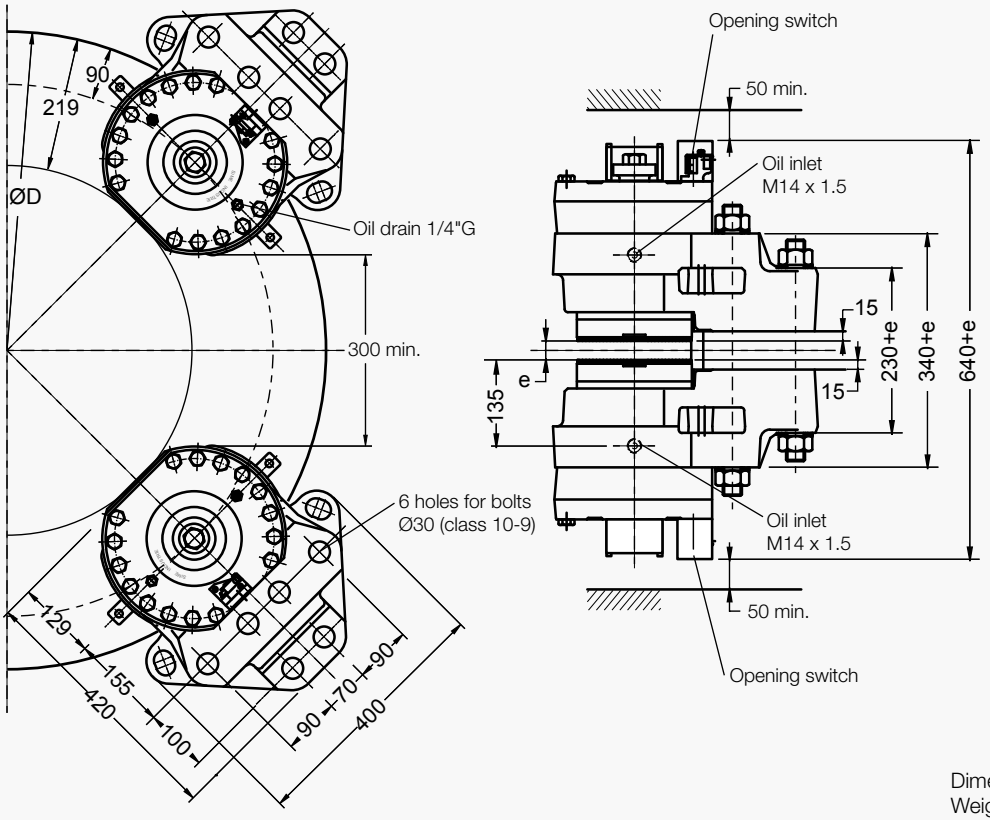
Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains, Other use. consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection
- Caliper on support with integral hydraulic power pack




Dimensions in mm
Weight: 250kg

**Opening proving switch** :

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

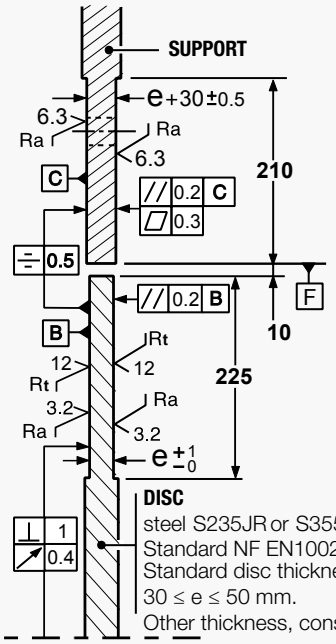
220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

Compatible with PLC
(Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

# DISC BRAKE - SH15 CALIPER

**Revision number: T03905-01-B** **Revision date: 01.10.2010**

**Disc and support**

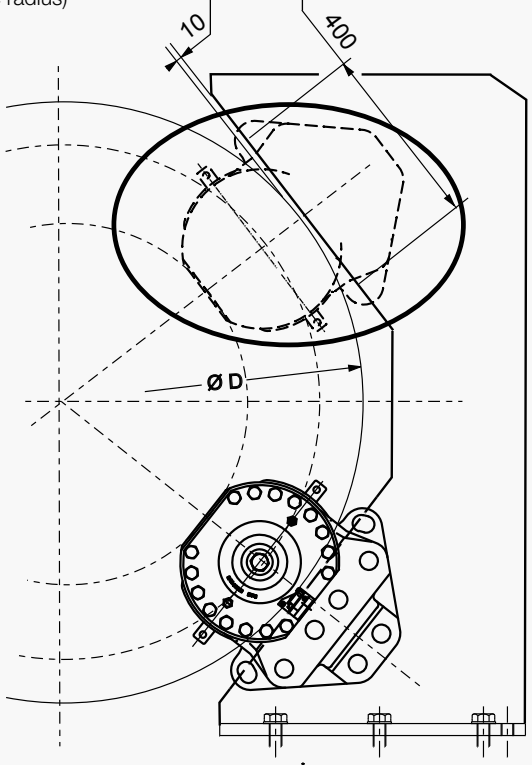



steel S235JR or S355JR
Standard NF EN10025
Standard disc thickness:
30 ≤ e ≤ 50 mm.
Other thickness, consult us.

Dimensions in mm

Dimension at the closest point (perpendicular on the radius)

The support **F** face **must be** rectilinear on the length.




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01

| Designation | Caliper | | SH15-3 | | SH15-2 | | SH15-1 | |
|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 | US2-1 | US2-4 | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 133 000 | 99 000 | 110 000 | 80 000 | 90 000 | 66 000 |
| | Dynamic | N | 150 000 | 110 000 | 120 000 | 88 000 | 100 000 | 73 000 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD | 1000 mm | N.m | 61 500 | 45 100 | 49 200 | 36 080 | 41000 | 29930 |
| | 1200 mm | N.m | 76 500 | 56 100 | 62 200 | 44 880 | 51 000 | 37 230 |
| | 1500 mm | N.m | 99 000 | 72 600 | 79 200 | 58 080 | 66 000 | 48 180 |
| | 2000 mm | N.m | 136 500 | 100 100 | 109 200 | 80 080 | 91 000 | 66 430 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.09) | | | | | |
| Regulation pressure | minimum | bar | 150 | | 140 | | 110 | |
| | maximum | bar | 180 | | 160 | | 140 | |
| Setting pressure of limit valve of the hydraulic unit | | bar | 205 | | 205 | | 165 | |
| Total volume of oil displaced | | $cm^3$ | 85 for one stroke disc/lining (nominal wear and opening) | | | | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-4** : disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SHC15 CALIPER

**Revision number: T03906-03-B** **Revision date: 05.10.2010**

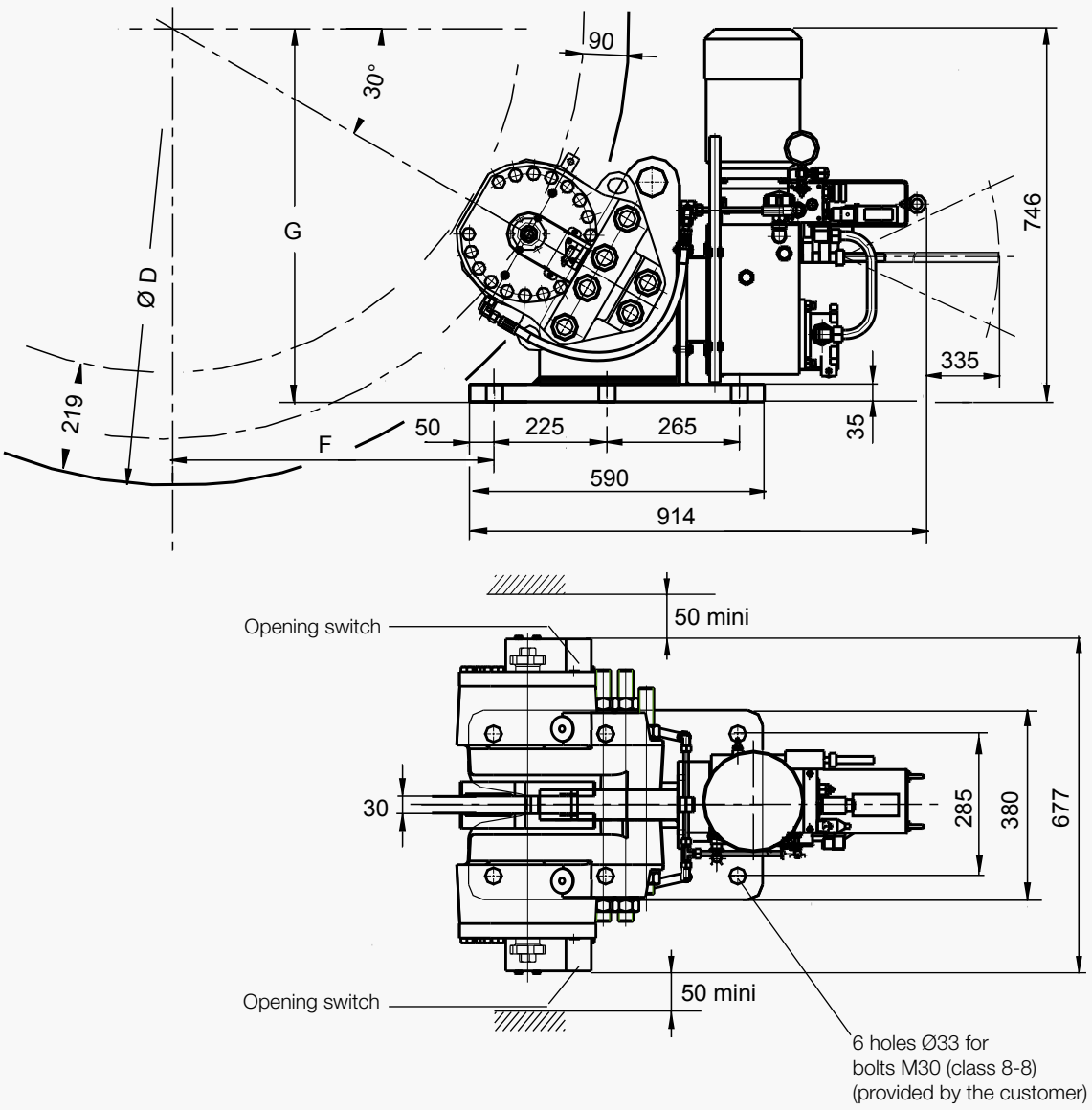
Emergency brake
Fail safe
Spring application
Hydraulic release
Integral hydraulic power pack
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection
- Self contained electric system

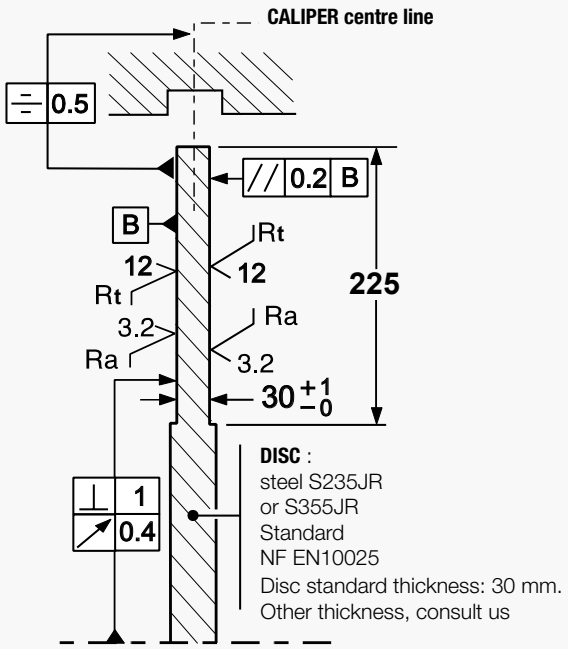



Dimensions in mm
Weight: 435kg

# DISC BRAKE - SHC15 CALIPER

**Revision number: T03906-03-B** **Revision date: 05.10.2010**

## Installation instructions




Dimensions in mm

## Electrical data

- Motor voltages :

  3 phases : 230/400VAC ±10% 50Hz
  2.2kW, 4 poles

- Options motor :

  690VAC ±10% 50Hz
  500VAC ±10% 50Hz
  230/400VAC ±10% 50Hz with PTC sensor

  Other voltage, consult us.

- Opening switch :

  250VAC maxi., 5A maxi.,
  with interrupting capacity: 50VA maxi.

  220VDC maxi., 5A maxi.,
  with interrupting capacity: 50W maxi.

  Compatible with PLC
  (Programmable Logic Controllers).
  An opening switch used with other equipment than PLC must not be reused with a PLC.

Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01.

| Designation | Caliper | | SHC15-3 | | SHC15-2 | | SHC15-1 | |
|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 | US2-1 | US2-4 | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 133 000 | 99 000 | 110 000 | 80 000 | 90 000 | 66 000 |
| | Dynamic | N | 150 000 | 110 000 | 120 000 | 88 000 | 100 000 | 73 000 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD | 1000 mm | N.m | 61 500 | 45 100 | 49 200 | 36 080 | 41 000 | 29 930 |
| | 1200 mm | N.m | 76 500 | 56 100 | 62 200 | 44 880 | 51 000 | 37 230 |
| | 1500 mm | N.m | 99 000 | 72 600 | 79 200 | 58 080 | 66 000 | 48 180 |
| | 2000 mm | N.m | 136 500 | 100 100 | 109 200 | 80 080 | 91 000 | 66 430 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.09) | | | | | |
| F | | mm | F = (0.433 x D) -154.2 | | | | | |
| G | | mm | G = (0.250 x D) + 286.2 | | | | | |
| Setting pressure of limit valve of the hydraulic unit | | bar | 205 | | 205 | | 165 | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-4** : disc temperature during one braking ≤ 600°C

**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SH18B CALIPER

**Revision number: T03907-01-B** **Revision date: 08.10.2010**

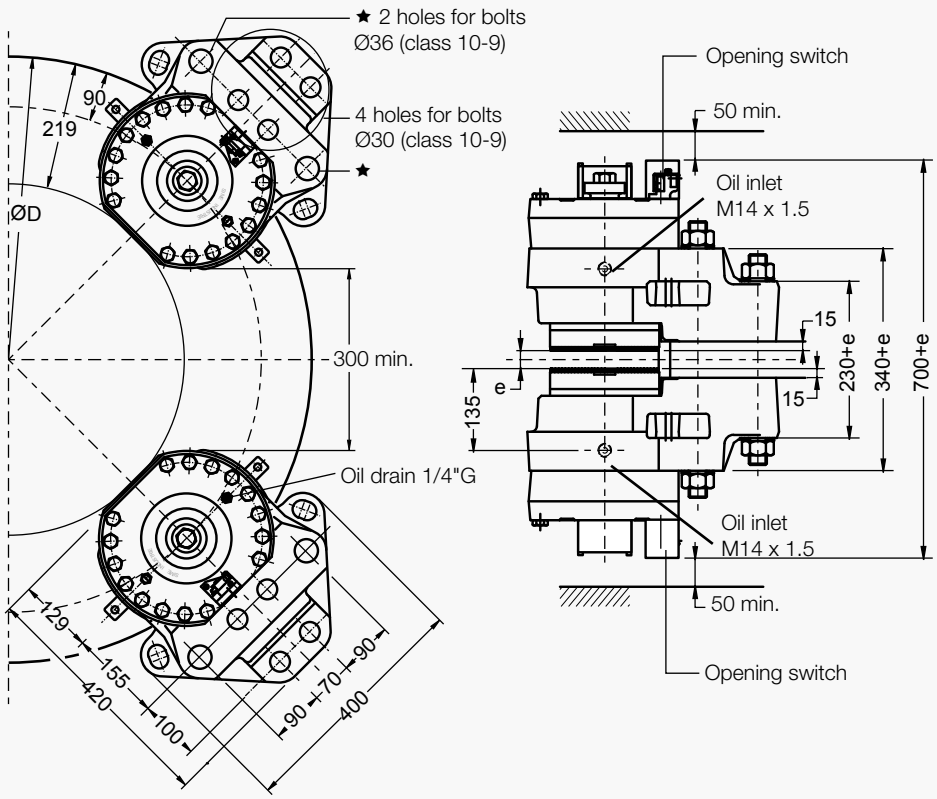
Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection
- Caliper on support with integral hydraulic power pack




Dimensions in mm
Weight: 270kg

**Opening proving switch** :

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

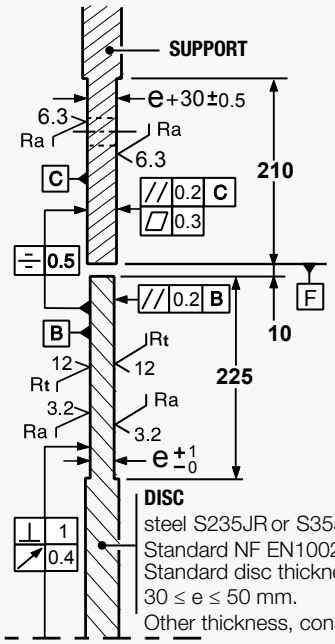
220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

Compatible with PLC
(Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

# DISC BRAKE - SH18B CALIPER

**Revision number: T03907-01-B** **Revision date: 08.10.2010**

**Disc and support**

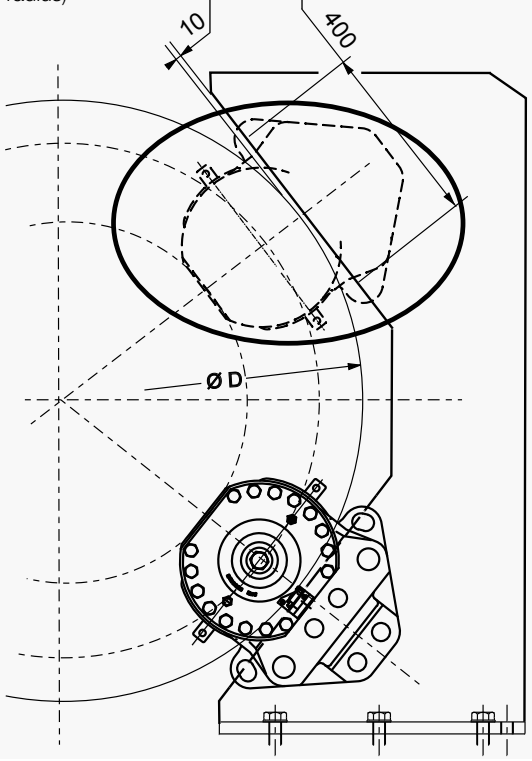



steel S235JR or S355JR
Standard NF EN10025
Standard disc thickness:
30 ≤ e ≤ 50 mm.
Other thickness, consult us.

Dimensions in mm

Dimension at the closest point (perpendicular on the radius)

The support **F** face **must be** rectilinear on the length.




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01

| Designation | Caliper | | SH18B | |
|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/ lining | Static | N | 160 000 | 117 400 |
| | Dynamic | N | 180 000 | 130 500 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD | 1000 mm | N.m | 73 800 | 53 500 |
| | 1200 mm | N.m | 91 800 | 66 500 |
| | 1500 mm | N.m | 118 800 | 86 100 |
| | 2000 mm | N.m | 163 800 | 118 700 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.09) | |
| Regulation pressure | minimum | bar | 180 | |
| | maximum | bar | 200 | |
| Setting pressure of limit valve of the hydraulic unit | | bar | 225 | |
| Total volume of oil displaced | | $cm^3$ | 85 for one stroke disc/lining (nominal wear and opening) | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-4**: disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SHC18B CALIPER

**Revision number: T03907-03-B** **Revision date: 15.10.2010**

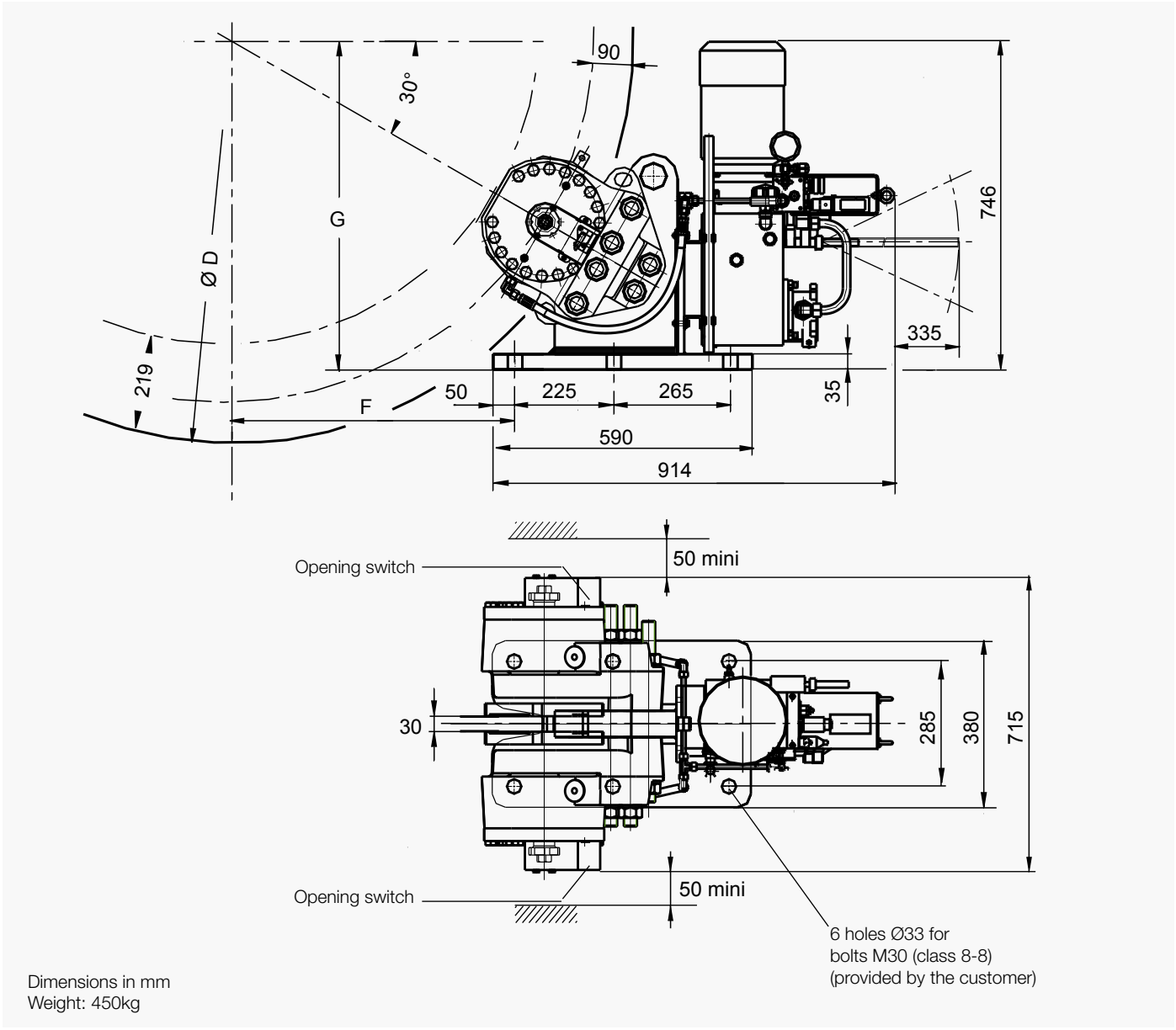
Emergency brake
Fail safe
Spring application
Hydraulic release
Integral hydraulic power pack
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection

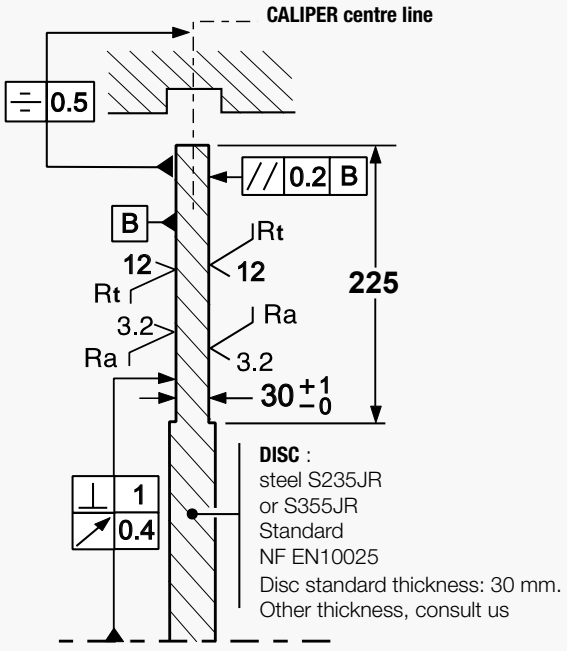



Dimensions in mm
Weight: 450kg

# DISC BRAKE - SHC18B CALIPER

**Revision number: T03907-03-B** **Revision date: 15.10.2010**

## Installation instructions




Dimensions in mm

## Electrical data

- Motor voltages :

  3 phases : 230/400VAC ±10% 50Hz
  2.2kW. 4 poles

- Options motor :

  690VAC ±10% 50Hz
  500VAC ±10% 50Hz
  230/400VAC ±10% 50Hz with PTC sensor
  Other voltage, consult us.

- Opening switch :

  250VAC maxi., 5A maxi.,
  with interrupting capacity: 50VA maxi.
  220VDC maxi., 5A maxi.,
  with interrupting capacity: 50W maxi.
  Compatible with PLC
  (Programmable Logic Controllers).
  An opening switch used with other equipment than PLC must not be reused with a PLC.

Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01.

| Designation | Caliper | | SHC18B | |
|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 160 000 | 117 400 |
| | Dynamic | N | 180 000 | 130 500 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD | 1000 mm | N.m | 73 800 | 53 500 |
| | 1200 mm | N.m | 91 800 | 66 500 |
| | 1500 mm | N.m | 118 800 | 86 100 |
| | 2000 mm | N.m | 163 800 | 118 700 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.09) | |
| F | | mm | F = (0.433 x D) -154.2 | |
| G | | mm | G = (0.250 x D) + 286.2 | |
| Setting pressure of limit valve of the hydraulic unit | | bar | 225 | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-4** : disc temperature during one braking ≤ 600°C

**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SH25 CALIPER

**Revision number: T03915-01-B** **Revision date: 21.10.2010**

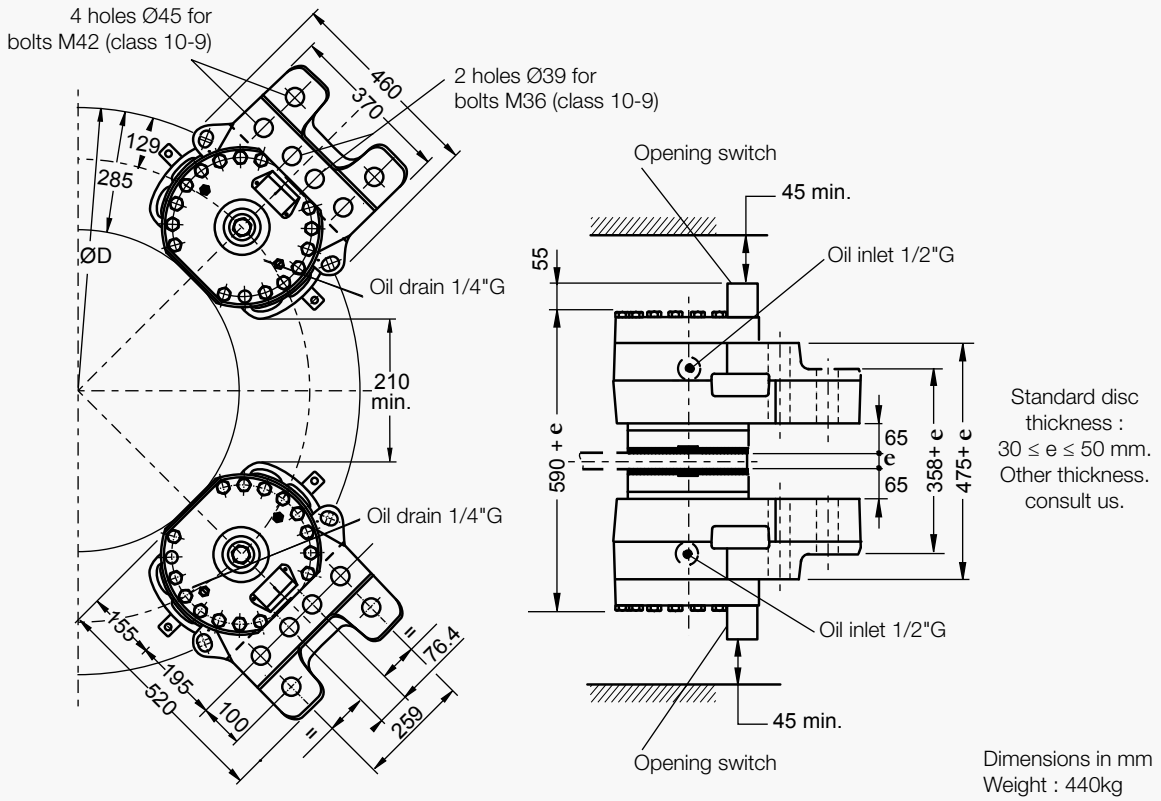
Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection
- Caliper on support with integral hydraulic power pack




**Opening proving switch** :

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

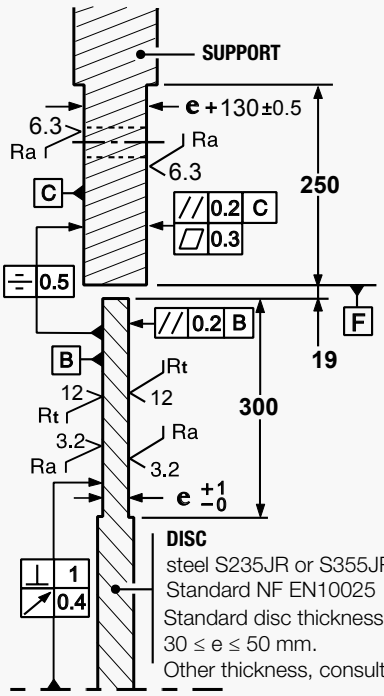
220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

Compatible with PLC
(Programmable Logic
Controllers).
An opening switch used with other equipment
than PLC must not be reused with a PLC.

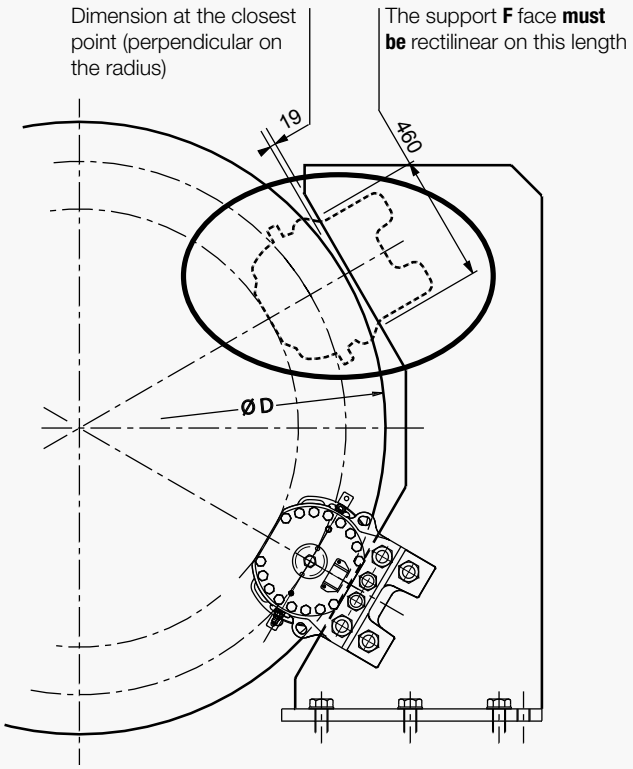
# DISC BRAKE - SH25 CALIPER

**Revision number: T03915-01-B** **Revision date: 21.10.2010**

### Disc and support




Dimensions in mm.




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01

| Designation | Caliper | | SH25-2 | | SH25-1 | |
|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/lining | Static N | N | 225 000 | 165 000 | 160 000 | 120 000 |
| | Dynamic N | N | 250 000 | 184 000 | 180 000 | 134 000 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BT (N.m) for 1 caliper and disc ØD (mm) | 1500 mm | N.m | 155 250 | 114 260 | 111 780 | 83 210 |
| | 2000 mm | N.m | 217 750 | 160 260 | 156 780 | 116 710 |
| | 2500 mm | N.m | 280 250 | 206 260 | 201 780 | 150 210 |
| | 3000 mm | N.m | 342 750 | 252 260 | 246 780 | 183 710 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.129) | | | |
| Regulation pressure | minimum | bar | 180 | | 140 | |
| | maximum | bar | 200 | | 160 | |
| Setting pressure limit valve of hydraul. Unit | | bar | 225 | | 205 | |
| Total volume of oil displaced | | $cm^3$ | 140 for one stroke disc/lining (nominal wear and opening) | | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-4**: disc temperature during one braking ≤ 600°C
**US2-5**: tdisc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SHC25 CALIPER

**Revision number: T03916-02-C** **Revision date: 15.06.2011**

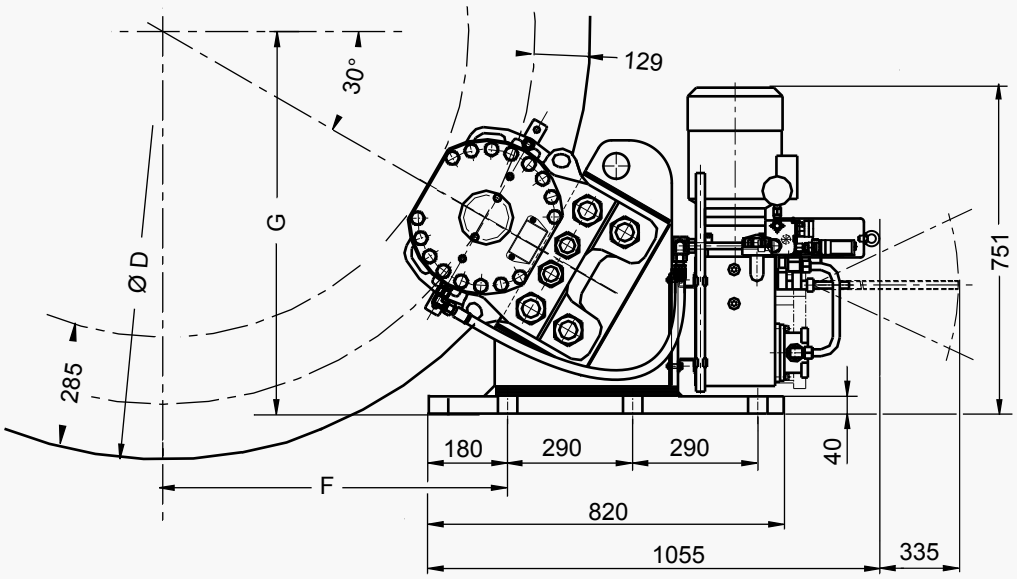
Emergency brake
Fail safe
Spring application
Hydraulic release
Integral hydraulic power unit
Opening proving switches
Lining wear detector

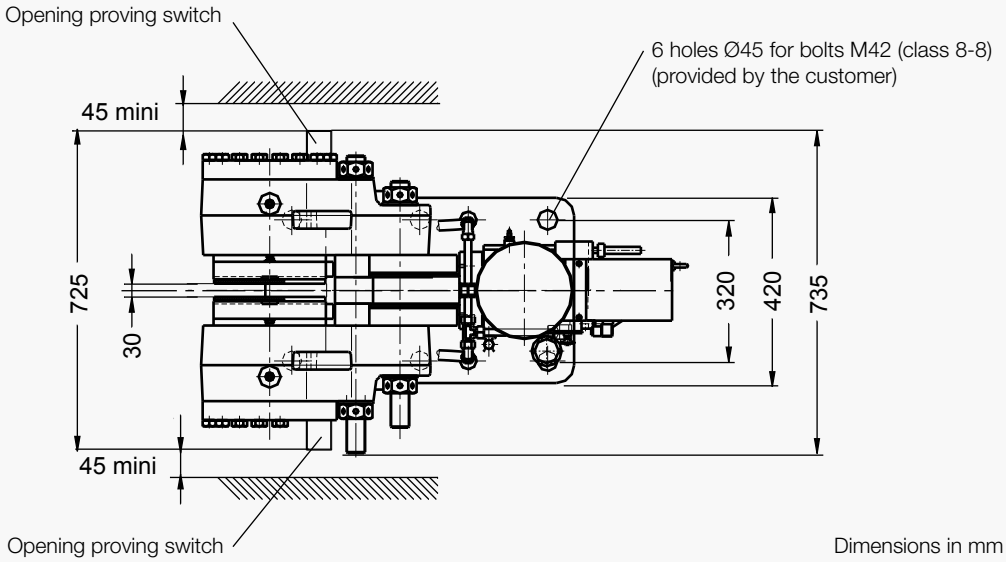
**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear control switch
- Progressive braking system
- Marine protection
- Self contained electric system



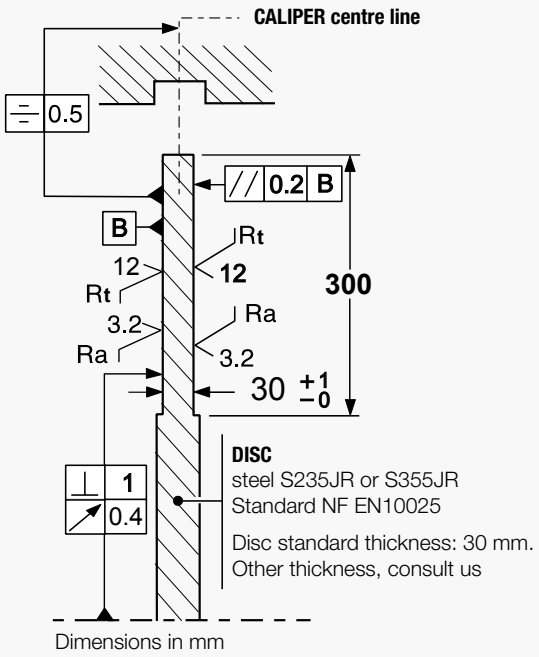




Dimensions in mm
Weight: 770 kg

# DISC BRAKE - SHC25 CALIPER

**Revision number: T03916-02-B** **Revision date: 15.06.2011**

## Installation instructions




**DISC**
steel S235JR or S355JR
Standard NF EN10025

Disc standard thickness: 30 mm.
Other thickness, consult us

Dimensions in mm

## Electrical data

- Motor voltages :

  3 phases : 230/400VAC ±10% 50Hz
  2.2kW. 4 poles

- Options motor :

  690VAC ±10% 50Hz
  500VAC ±10% 50Hz
  230/400VAC ±10% 50Hz with PTC sensor.
  Other voltage, consult us.

- Opening switch :

  250VAC maxi., 5A maxi.,
  with interrupting capacity: 50VA maxi.
  220VDC maxi., 5A maxi.,
  with interrupting capacity: 50W maxi.
  Compatible with PLC
  (Programmable Logic Controllers).
  An opening switch used with other equipment than PLC must not be reused with a PLC.

Torque and effort values are subject to a variation of ±10%
Response time at nominal torque : see the leaflet n° G08555-01.

| Designation | Caliper | | SHC25-2 | | SHC25-1 | |
|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-4 | US2-1 | US2-4 |
| Braking force BF for 1mm of air gap disc/lining | Static | N | 225 000 | 165 000 | 160 000 | 120 000 |
| | Dynamic | N | 250 000 | 184 000 | 180 000 | 134 000 |
| Linear speed of the disc | | m/s | ≤ 10 | ≤ 50 | ≤ 10 | ≤ 50 |
| Dynamic braking torque BF (N.m) for 1 caliper and a disc ØD (mm) | 1500 mm | N.m | 155 250 | 114 260 | 111 780 | 83 210 |
| | 2000 mm | N.m | 217 750 | 160 260 | 156 780 | 116 710 |
| | 2500 mm | N.m | 280 250 | 206 260 | 201 780 | 150 210 |
| | 3000 mm | N.m | 342 750 | 252 260 | 246 780 | 183 710 |
| BT for other ØD (mm) | | N.m | BT = BF (D/2000 - 0.129) | | | |
| F | | mm | F = (0.433 x D) - 62 | | | |
| G | | mm | G = (0.250 x D) + 390 | | | |
| Maximum setting pressure limit valve of hydraulic power unit | | bar | 225 | | 205 | |

✳ **US2-1** : disc temperature during one braking ≤ 150°C
**US2-4** : disc temperature during one braking ≤ 600°C

**US2-5** : disc temperature during one braking ≤ 350°C, optional, consult us.

## Emergency Brakes

# DISC BRAKE - SH32 CALIPER

**Revision number: T10040-01-C** **Revision date: 15.06.2012**

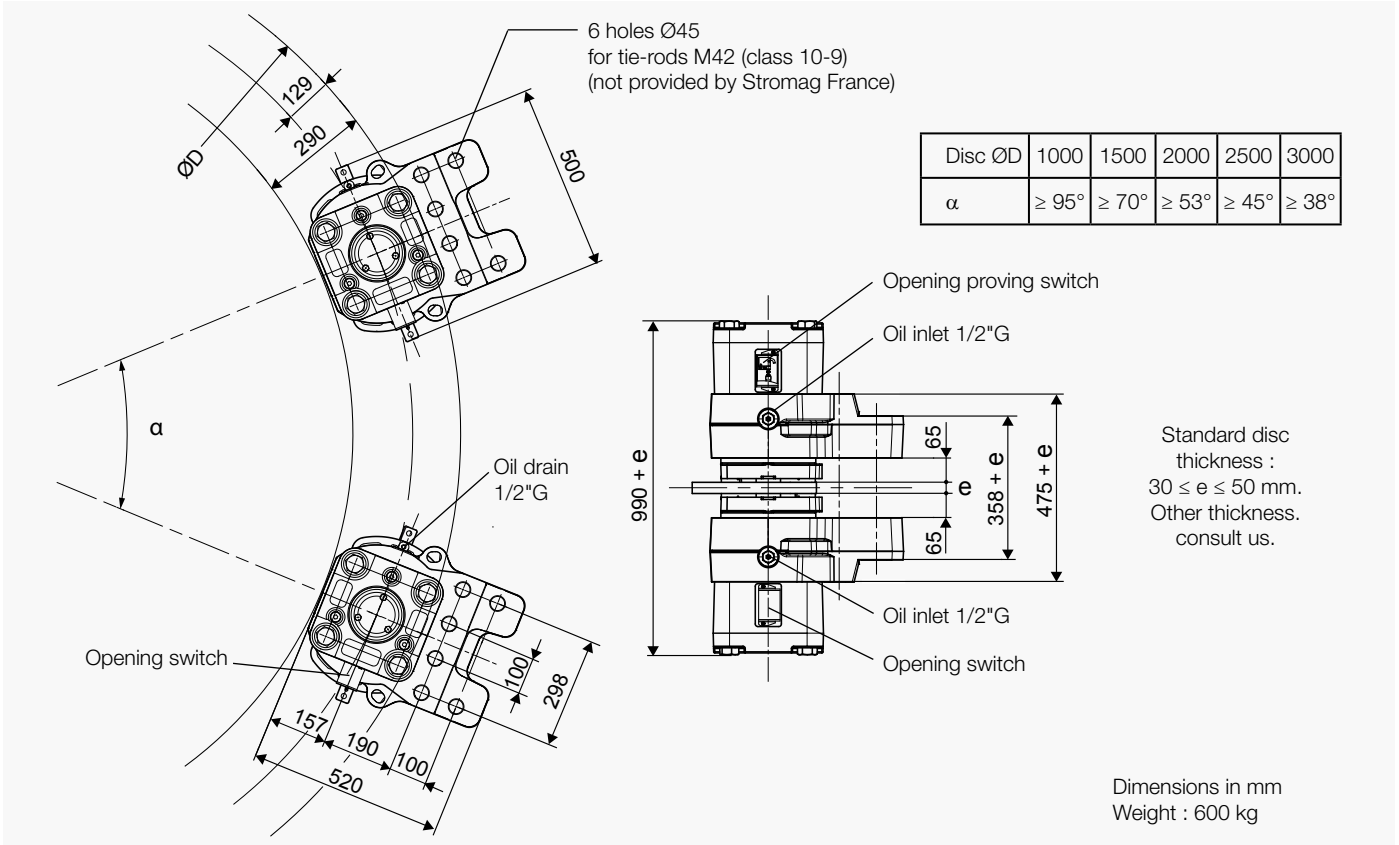
Emergency brake
Fail safe
Spring application
Hydraulic release
Opening proving switches
Lining wear indicator wires

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Lining wear proving switches
- Progressive braking system
- Marine protection




| Disc ØD | 1000 | 1500 | 2000 | 2500 | 3000 |
|---|---|---|---|---|---|
| α | ≥ 95° | ≥ 70° | ≥ 53° | ≥ 45° | ≥ 38° |

**Opening proving switches**
**Wear proving switches (optional)** :

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

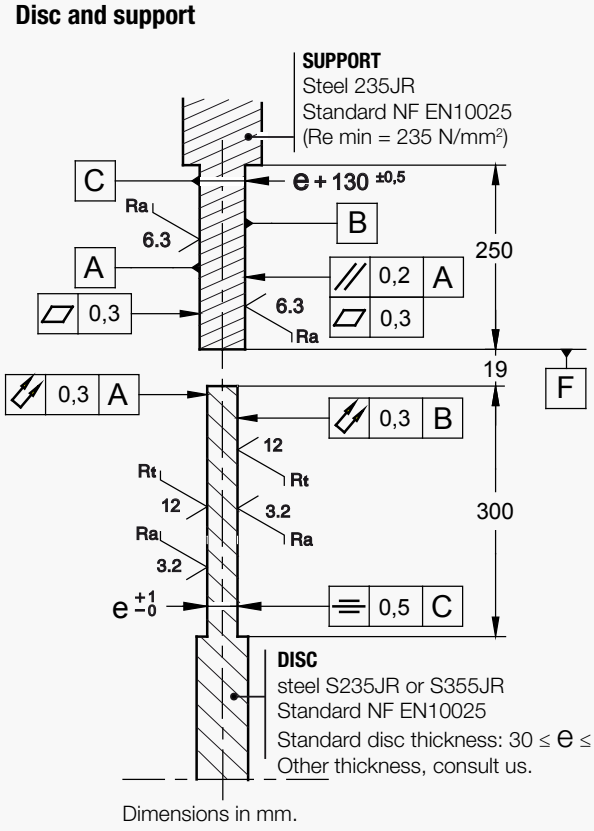
220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

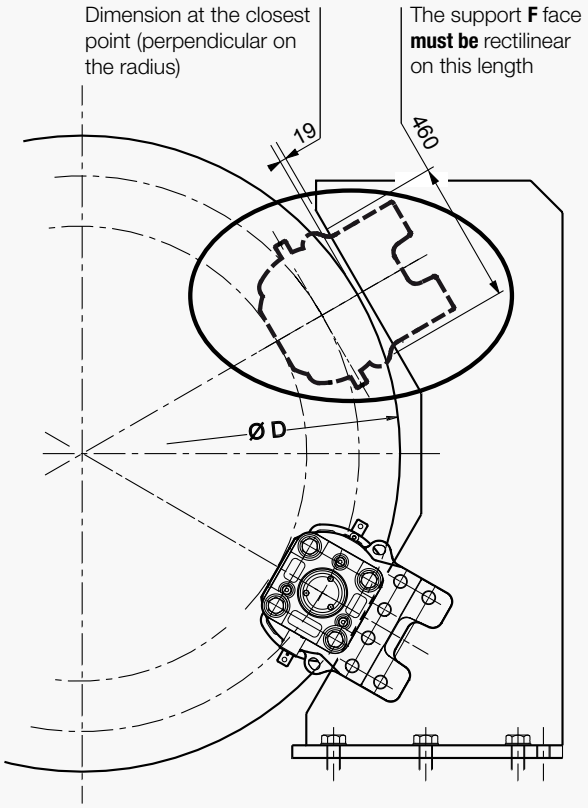
Compatible with PLC (Programmable Logic Controllers).
An opening switch used with other equipment than PLC must not be reused with a PLC.

# DISC BRAKE - SH32 CALIPER

**Revision number: T10040-01-C** **Revision date: 15.06.2012**

**Disc and support**




**IMPORTANT**

**BRAKING FORCE** and **TORQUE** values correspond to lining quality **US2-1** and disc steel S235JR or S355JR (standard NF EN10025), these values are subject to a variation of ±10%.

Response time at nominal torque ≤ 0.3s

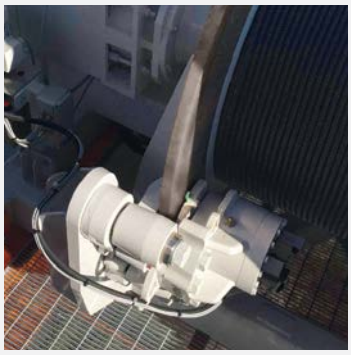
| Designation | Caliper | | SH32 |
|---|---|---|---|
| | Lining | | US2-1 |
| **BRAKING FORCE** BF for air gap disc/lining of **2 x 1.5 mm** | | **Dynamic** N<br>Static N | **333 800**<br>300 000 |
| **BRAKING FORCE** BF for air gap disc/lining of **2 x 2 mm** | | **Dynamic** N<br>Static N | **320 000**<br>288 000 |
| Linear speed of the disc | | m/s | ≤ 10 |
| **DYNAMIC BRAKING TORQUE** BT for 1 caliper and disc ØD (mm) | | N.m | BT = BF (D/2000 - 0.129) |
| Regulation pressure | minimum<br>maximum | bar<br>bar | 180<br>200 |
| Setting pressure limit valve of hydraulic unit | | bar | 225 |
| Total volume of oil displaced for air gap disc/lining of 2 x 2 mm | | $cm^3$ | 191 for one stroke disc/lining |

## Emergency Brakes

### APPLICATIONS

SHD:
- TOWER CRANES - BOOM CRANES
- OFFSHORE APPLICATIONS
- WINDTURBINES

TH/THC9:
- AERONAUTIC APPLICATIONS
- PORT CRANES






# HYDRAULIC EMERGENCY BRAKES TYPES SHD / TH

| MAIN CHARACTERISTICS | OPTIONS |
|---|---|
| • FAILSAFE BRAKE BY SPRING APPLICATION.<br>• HYDRAULIC RELEASE<br>• OPENING PROVING SWITCH<br>• LINING WEAR INDICATORS | • LINING WEAR PROVING SWITCH |

**SHD**

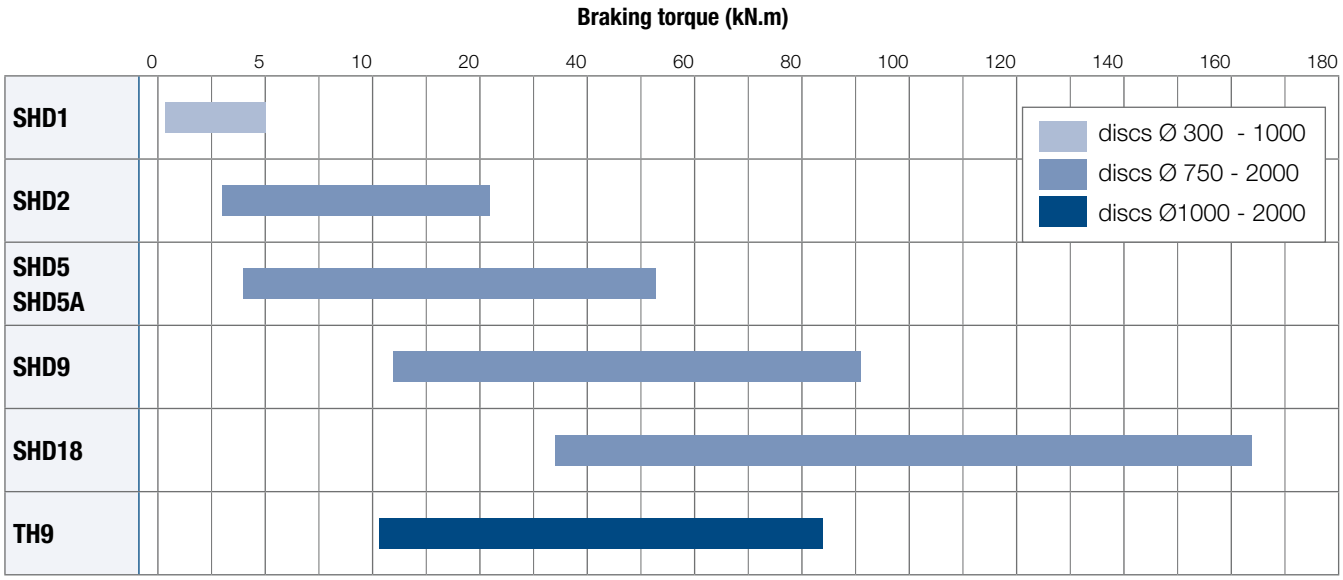
- Single-spring hydraulical caliper
- A large range from SHD1 to SHD18
- Options:
  Automatic lining wear compensation
  Manual release tool - Positive braking
  Integrated HPP - Marine protection

**TH9**

- Option :
  Disc thickness 42 mm

**THC9**

- Caliper and Hydraulic Power Pack mounted on the same support
- Option: Electrical unit



## Emergency Brakes

# DISC BRAKE - SHD1 CALIPER

**Revision number: T10098-01-E** **Revision date: 12.01.2016**

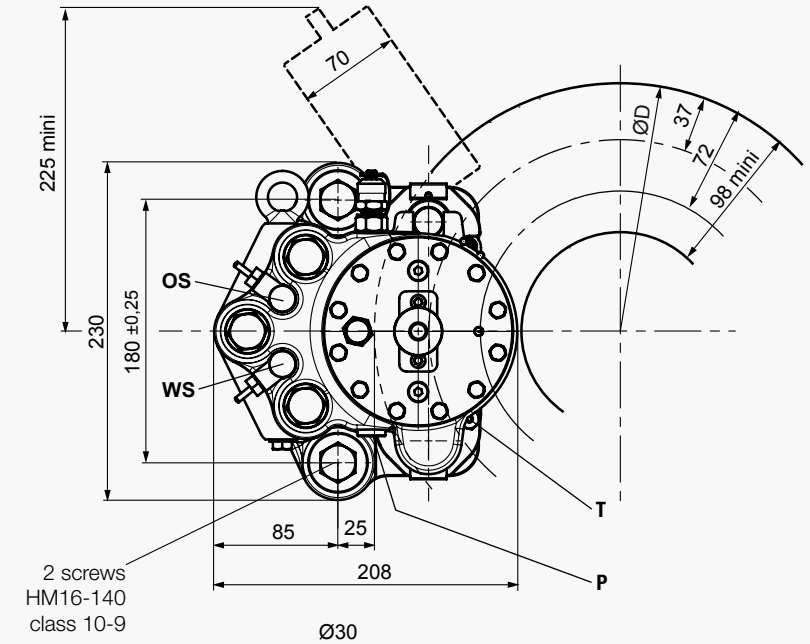
Emergency brake
Fail to safe
Spring application
Hydraulic release
Mechanical holding of the brake in open position for pads changing
Manual wear centering and compensation
Possible association with discs thickness: 12.7 (1/2"), 20 and 30mm.
Lining pads type **US2-1** or **ES3-7**
Lining pads with full wear indicators
Protection C5-M M

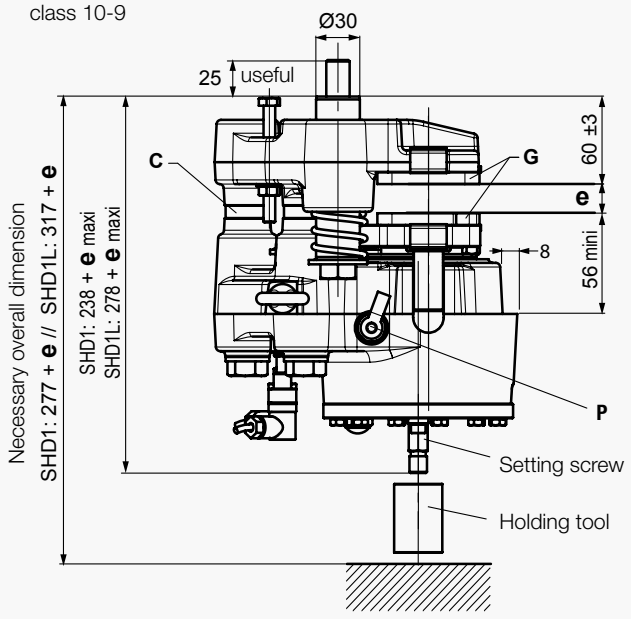
**Operating conditions**:
- Ambient temperature:
  Dynamic braking : -30°C to +70°C
  Brake applied (parking): -40°C to +70°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm

Other conditions: consult us.

**Use:**
- The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, consult us.

**Options:**
- Opening proving switch (**OS**)
- Lining wear proving switch (**WS**)
- All non-standard disc thickness > 12.7mm (1/2")
- Lining temperature sensor (**T**)
- **SHD1L** : caliper with manual wear compensation at half wear:
  - braking force before wear = +10% maxi.
  - braking force at half wear = -10% maxi.




**C** = Spacers according to disc thickness
**G** = Linings : Thickness of new lining 8 mm
Thickness to wear 6 mm
Each 1 mm of wear on each side: manual centering and compensation
**OS** = Opening proving switch (option)
**WS** = Wear proving switch (option)
**P** = 2 oil ports 1/4"G
Bleeder screw delivered separately
**T** = PT100 sensor (option)
**ØD** : from 300 to 1000 mm
**e** = disc thickness

Dimensions in mm
Weight = 24 kg

**Electrical data**

Inductive switches of opening and wear (options):
3 wires PNP NO
12 to 24 VDC 200mA
with connector M12 / 5 positions
according to standard :
IEC61076-2-101 / code A

Sensor PT100 (option)

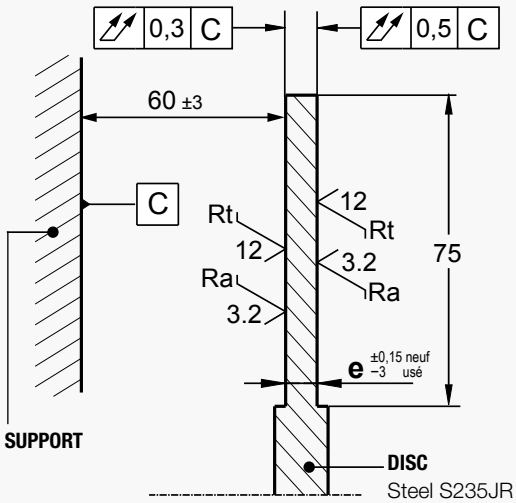
Detection of the temperature threshold : 100°C ± 5
- R = 136.6 Ω at 95 °C
- R = 138.5 Ω at 100°C
- R = 140.4 Ω at 105°C

Cable length = 2.5 meters
2 wires red/yellow

# DISC BRAKE - SHD1 CALIPER

**Revision number: T10098-01-E** **Revision date: 12.01.2016**

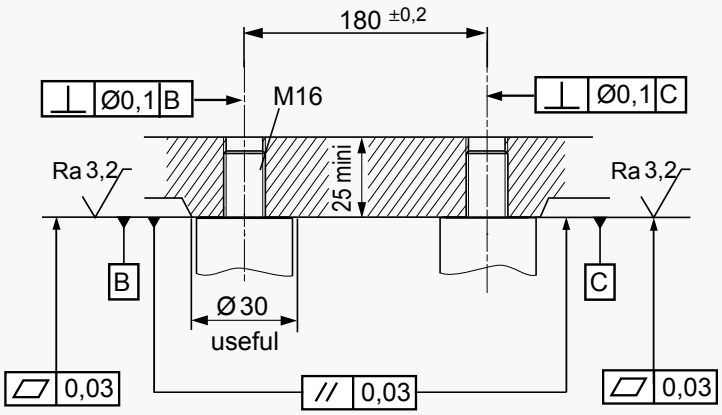
**Installation instructions :**




Steel S235JR or S235JR
Standard NF EN10025

Standard disc thickness :
**e** = 12.7 (1/2"), 20 and 30 mm $^{+0.15}_{-3}$
Other thickness, consult us.

**Support machining tolerances :**




Torque and effort values are subject to a variation of ±10%
Closing time at nominal torque ≤ 0.3s

| Designation | Caliper SHD1- | | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ∗ | | ES3-7 | | | | | US2-1 | | | | |
| **Braking force** BF for air gap disc/lining of 2x1mm | **Dynamic** | N | 11 000 | 8 000 | 6 000 | 4 000 | 2 000 | 11 000 | 8 000 | 6 000 | 4 000 | 3 000 |
| | Static | N | 9 900 | 7 200 | 5 400 | 3 600 | 1 800 | 9 680 | 7 040 | 5 280 | 3 520 | 2 640 |
| Linear speed of the disc ● | | m/s | ≤ 50 | | | | | ≤ 10 | | | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) / 300 ≤ D ≤ 1000 mm | | N.m | BT = BF (D/2000-0.037) | | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 150<br>170 | | | | | | | | | |
| Setting pressure limit valve of hydraulic unit | | bar | 190 | | | | | | | | | |
| Total volume of oil displaced for air gap disc/lining of: | 2 x 1mm (nominal opening) | | 5 cm³ | | | | | | | | | |
| | 2 x 2mm (wear+opening) | cm³ | 9 cm³ | | | | | | | | | |
| | 2 x 4mm **SHD1L** (wear+open.) | cm³ | 18 cm³ | | | | | | | | | |

∗ **ES3-7**: disc temperature during one braking ≤ 600°C
**US2-1**: disc temperature during one braking ≤ 100°C

● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SHD2 CALIPER

**Revision number: T03851-05-B** **Revision date: 04.09.2012**

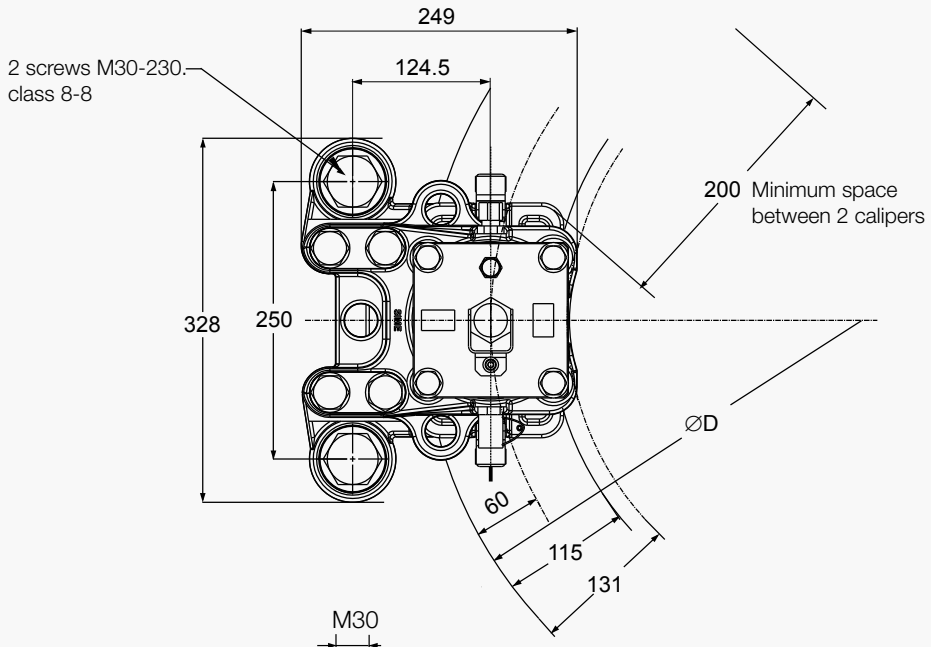
Spring application
Hydraulic release
Opening proving switch (compatible for PLC)
Lining wear proving switch (compatible for PLC)
Marine protection

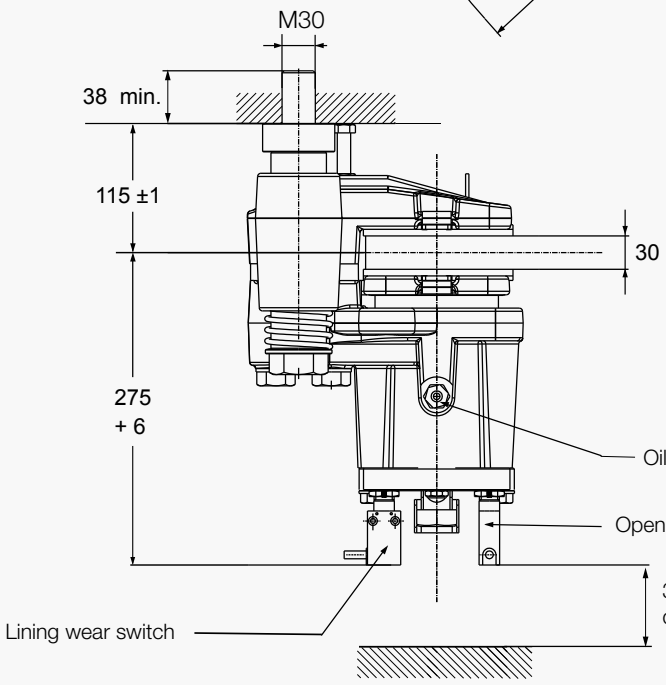
**Working conditions:**
- Ambient temperature: -20°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

**Use:**
- Emergency stopping brake in case of overspeed or loss of electrical supply

**Options :**
- Thermistors for detection of the maximum temperature of the disc



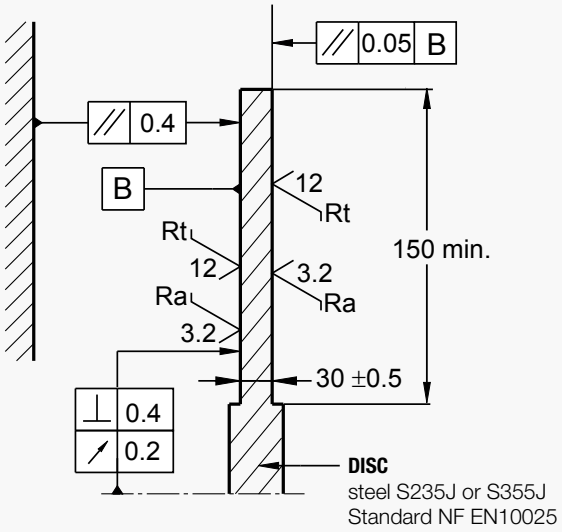

**Electrical data :**
- Proving switches:
  240V. 5A. 50VA AC
  220V. 5A. 50W CC

Dimensions in mm
Weight : 60 kg

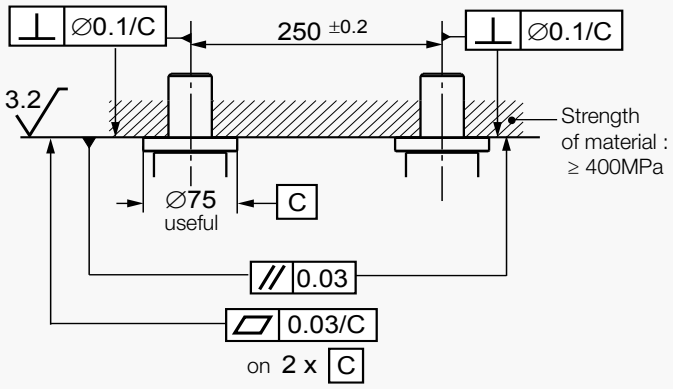
# DISC BRAKE - SHD2 CALIPER

**Revision number: T03851-05-B** **Revision date: 04.09.2012**

**Installation instructions :**




**Support machining tolerances :**




Response time at nominal torque < 0.3s
Torque and effort values are subject to a variation of ± 10%

| Designation | Caliper | | SHD2-3 | SHD2-2 | SHD2-1 |
|---|---|---|---|---|---|
| | Lining | | ES3-7 | | |
| **Braking force** BF for air gap disc/lining of 2x1mm | **Dynamic** | N | 23 000 | 15 400 | 10 540 |
| Linear speed of the disc ● | | m/s | < 50 | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) | 630 mm | N.m | 5 870 | 3 930 | 2 690 |
| | 710 mm | N.m | 6 790 | 4 540 | 3 110 |
| | 800 mm | N.m | 7 820 | 5 240 | 3 580 |
| | 1000 mm | N.m | 10 120 | 6 780 | 4 640 |
| | | N.m | BT = BF (D/2000 - 0.06) | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 180<br>200 | 110<br>140 | 85<br>115 |
| Setting pressure limit valve of hydraulic unit | | bar | 210 | 165 | 140 |
| Total volume of oil displaced<br>Max. oil volume of the jack | | $cm^3$<br>$cm^3$ | 8 per stroke (for a nominal disc/lining stroke of 1 mm per side)<br>45 | | |

● For higher speed, consult us.

## Emergency Brakes

# DISC BRAKE - SHD5 CALIPER

**Revision number: T03861-08-A** **Revision date: 29.11.2010**

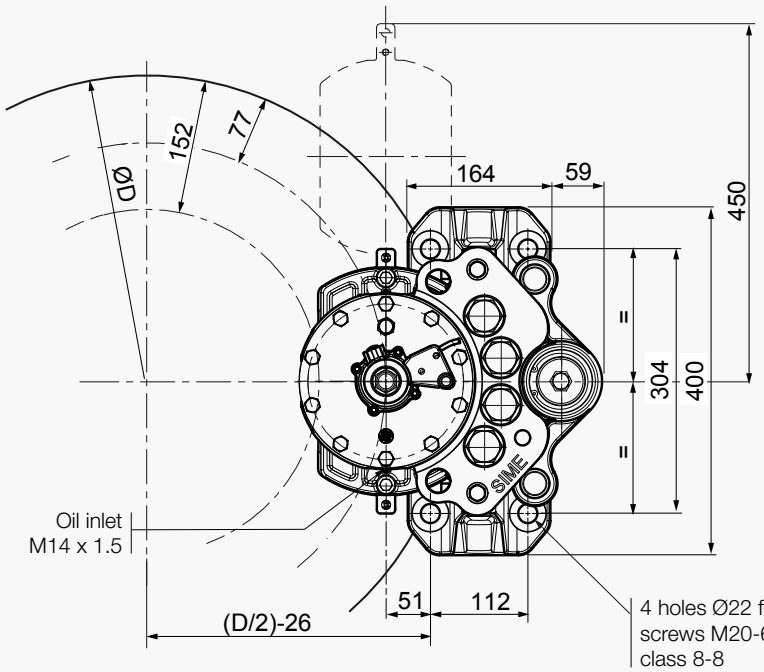
Fail safe braking
Braking by spring application
Hydraulic release
Opening proving switch
Lining wear proving switch

**Working conditions:**
- Ambient temperature: -20°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

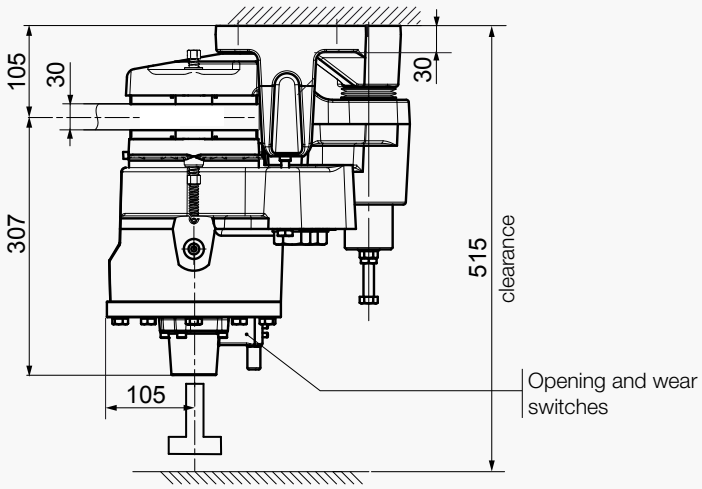
**Use:**
- Emergency stopping brake in case of overspeed or loss of electrical supply

**Options:**
- Automatic lining wear compensation (WACS)
- Manual release tool (DM)
- Positive braking
- Detection of full lining wear
- Temperature detection of the linings
- Switch for PLC
- Marine protection




**Opening and wear proving switches** :
240V. 5A. 50VA AC
220V. 5A. 50W DC
2 m length cable (3 x 0.75 mm²)

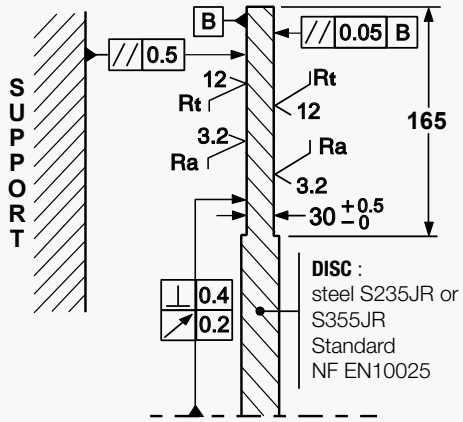
Dimensions in mm
Weight: 105 kg



# DISC BRAKE - SHD5 CALIPER

**Revision number: T03861-08-A** **Revision date: 29.11.2010**

**Installation instructions :**




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque ≤ 0.3s

| Designation | Caliper | | SHD5-6 | SHD5-5 | SHD5-4 | SHD5-3 | SHD5-2 | SHD5-1 |
|---|---|---|---|---|---|---|---|---|
| | Lining | | WS1-3 | | | | | |
| Braking force BF for 1.25 mm of air gap disc/lining | Dynamic | N | 33 000 | 27 000 | 23 000 | 18 000 | 15 000 | 13 500 |
| Linear speed of the disc for BF | | m/s | < 50 | | | | | |
| Dynamic braking torque BT (N.m) for a caliper mounted on a disc ØD (mm) | 710 mm | N.m. | 9 180 | 7 500 | 6 400 | 5 000 | 4 170 | 3 760 |
| | 1000 mm | N.m. | 13 960 | 11 420 | 9 730 | 7 610 | 6 350 | 5 720 |
| | 1500 mm | N.m. | 22 210 | 18 170 | 15 480 | 12 110 | 10 100 | 9 090 |
| | | N.m | BT = BF (D/2000 - 0.077) | | | | | |
| Regulation pressure | Min. | bar | 110 | 110 | 85 | 60 | 60 | 60 |
| | Max. | bar | 140 | 140 | 115 | 80 | 80 | 80 |
| Setting pressure limit valve hydraul. pack | | bar | 165 | 165 | 140 | 105 | 105 | 105 |
| Total volume of oil displaced | | $cm^3$ | 15.9 per stroke (for nominal disc/lining stroke of 1.25 mm per side) | | | | | |
| Max. oil volume of the jack | | $cm^3$ | 76 | | | | | |

## Emergency Brakes

# DISC BRAKE - SHD5A-M2 CALIPER

**Revision number: T10131-02-B** **Revision date: 01.12.2017**

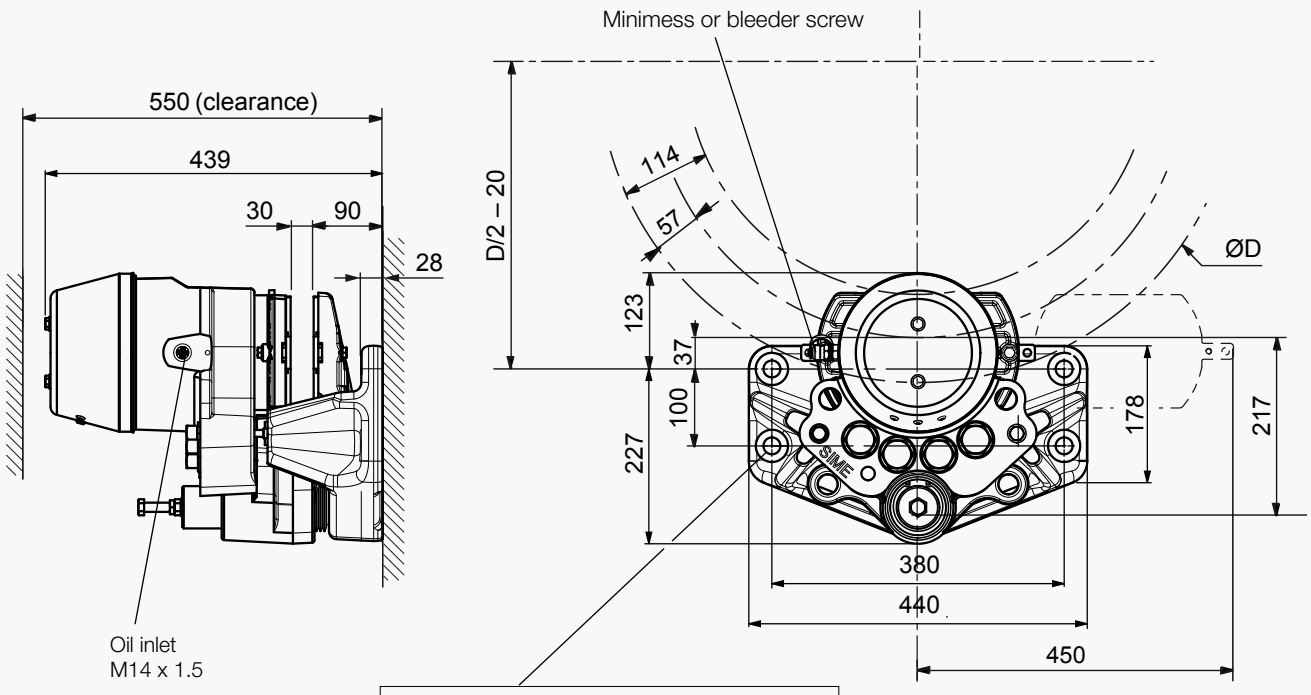
Fail safe braking
Braking by spring application
Hydraulic release
Opening proximity switch
Holding tool
Detection of full lining wear
Protection level C3-H standard ISO 12944-2
VCI packing

**Working conditions:**
- Ambient temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions. consult us.

**Use:**
- Emergency stopping brake in case of overspeed or loss of electrical supply
- Service life : 100 000 cycles

**Options:**
- Wear proximity switch
- Closing proximity switch
- Low temperature:
  - dynamic braking: -30°C to +60°C
  - brake closed (park position): -40°C to +60°C
- Protection level C5M-H

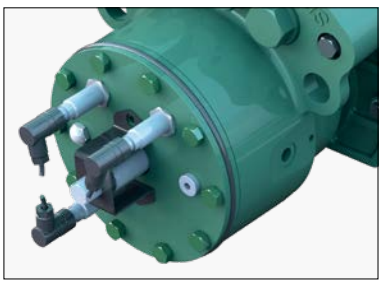



Weight: 108 kg
Dimensions in mm

**Electrical data :**

**Opening proximity switch:**
3 wires PNP NO
10 to 58 VDC 200 mA
delivered with connector M12

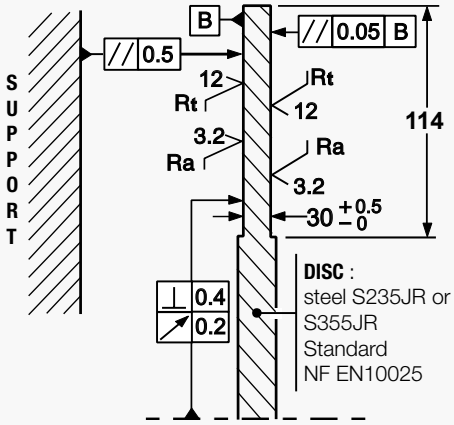
**Closing and wear switches:** optional



# DISC BRAKE - SHD5A-M2 CALIPER

**Revision number: T10131-02-B** **Revision date: 01.12.2017**

**Installation instructions :**




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque ≤ 0.3s

| Designation | Caliper SHD5A-...-M2 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lining | | US2-1 | | | | | | | |
| Braking force BF for 1.25 mm of air gap disc/lining | Dynamic | N | 15 500 | 17 700 | 20 000 | 28 000 | 33 000 | 41 000 | 48 000 | 56 000 |
| Linear speed of the disc for BF | | m/s | < 10 | | | | | | | |
| Dynamic braking torque BT (N.m) for a caliper mounted on a disc ØD (mm) | | N.m | BT = BF (D/2000 - 0.057) | | | | | | | |
| Regulation pressure | Min. | bar | 60 | 60 | 85 | 85 | 110 | 140 | 140 | 180 |
| | Max. | bar | 80 | 80 | 115 | 115 | 140 | 160 | 160 | 200 |
| Setting pressure limit valve hydraul. pack | | bar | 105 | 105 | 140 | 140 | 165 | 190 | 190 | 225 |
| Total volume of oil displaced | | $cm^3$ | 12.7 per stroke (for nominal disc/lining stroke of 1 mm per side) | | | | | | | |
| Max. oil volume of the jack | | $cm^3$ | 76 | | | | | | | |

## Emergency Brakes

# DISC BRAKE - SHD9 CALIPER

**Revision number: T10042-01-E** **Revision date: 31.08.2017**

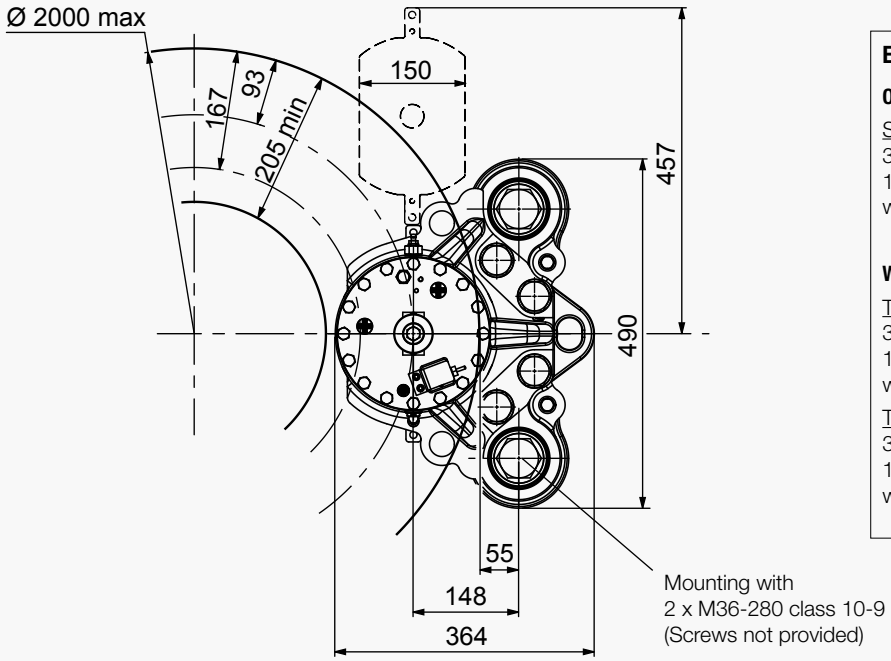
Fail safe braking
Braking by spring application
Hydraulic release
Opening proximity switch for PLC
(induction sensor)
Lining wear detectors
Association with discs thichness 30 mm

**Working conditions :**
- Ambient temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µm

Other conditions, consult us.

**Use :**
- Emergency stopping brake in case of overspeed or loss of electrical supply

**Option :**
- Lining wear proximity switch
- Discs thickness 24 ≤ **e** < 30 mm.
- Option GF :
  Ambient temperature:
  - Dynamic braking : -30°C to +60°C
  - Parking braking : -40°C to +60°C
- Marine protection




**Electrical data :**

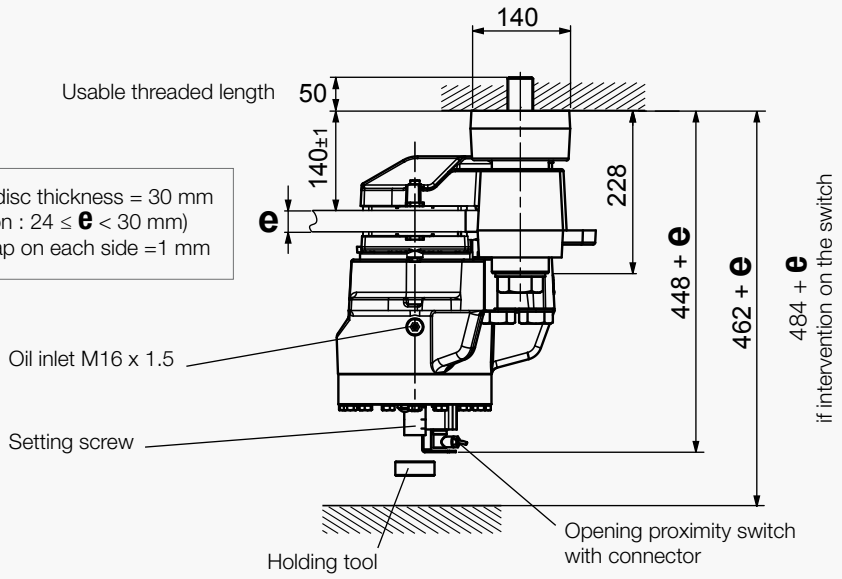
**Opening proximity switch**

Standard caliper and caliper option GF
3 wires PNP NO
10 to 58 VDC 200 mA
with connector M12

**Wear proximity switch (option)**:

Temperature -10°C to +60°C
3 wires PNP NO
10 to 58 VDC 200 mA
with connector M12

Temperature -40°C to +60°C / Option GF
3 wires PNP NO
10 to 36 VDC 200 mA
with connector M12



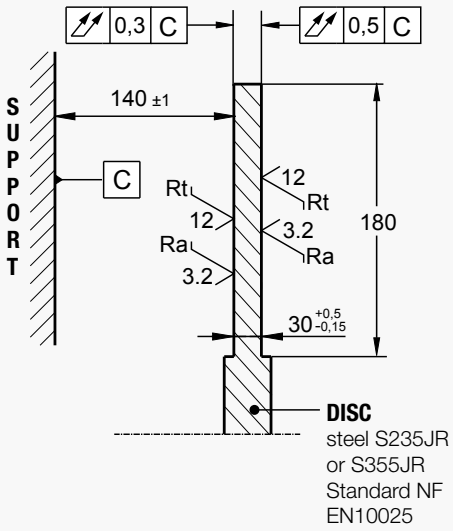

**e** = disc thickness = 30 mm
(option : 24 ≤ **e** < 30 mm)
Air gap on each side =1 mm

Weight: 148 kg
Dimensions in mm

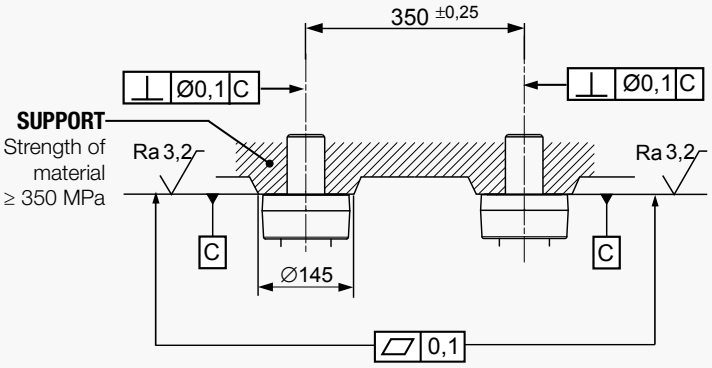
# DISC BRAKE - SHD9 CALIPER

**Revision number: T10042-01-E** **Revision date: 31.08.2017**

**Installation instructions :**




**Support machining tolerances :**




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque ≤ 0.3s

| Designation | Caliper | | SHD9-6 | | SHD9-5 | | SHD9-4 | | SHD9-3 | | SHD9-2 | | SHD9-1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | US2-5 | US2-1 | US2-5 | US2-1 | US2-5 | US2-1 | US2-5 | US2-1 | US2-5 | US2-1 | US2-5 |
| **Braking force** BF for air gap disc/lining of 2x1mm | **Dynamic** | N | 100 000 | 87 000 | 90 000 | 78 300 | 80 000 | 69 600 | 70 000 | 61 000 | 60 000 | 52 300 | 50 000 | 43 500 |
| | Static | N | 88 000 | 78 300 | 79 200 | 70 500 | 70 400 | 62 600 | 61 600 | 54 900 | 52 800 | 47 000 | 44 000 | 39 100 |
| Linear speed of the disc | | m/s | ≤ 10 | | | | | | | | | | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) / D max ≤ 2000mm | | N.m | BT = BF (D/2000 - 0.093) | | | | | | | | | | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 180<br>200 | | 170<br>190 | | 150<br>170 | | 120<br>140 | | 110<br>130 | | 90<br>110 | |
| Setting pressure limit valve of hydraulic pack | | bar | 220 | | 210 | | 190 | | 160 | | 160 | | 130 | |
| Total volume of oil displaced for air gap disc/lining of: | | | | | | | | | | | | | | |
| 2 x 1mm (nominal opening) | | $cm^3$ | 28 | | | | | | | | | | | |
| 2 x 1.5mm (nominal opening and wear before setting) | | $cm^3$ | 39 | | | | | | | | | | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**US2-5**: disc temperature during one braking ≤ 350°C.

## Emergency Brakes

# DISC BRAKE - SHD18 CALIPER

**Revision number: T10129-01-A** **Revision date: 13.01.2017**

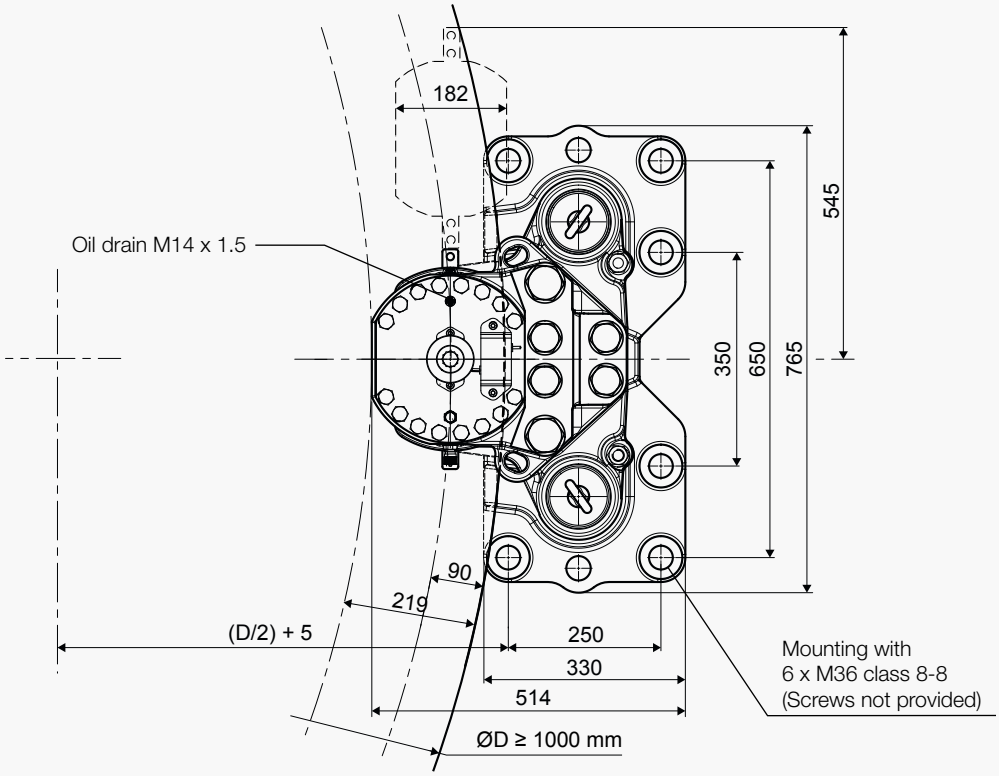
Fail safe braking
Braking by spring application
Hydraulic release
Opening proximity switch for PLC
(induction sensor)
Full lining wear indicators
Association with discs thichness 30 mm
Protection level C3 L standard NF ISO9223

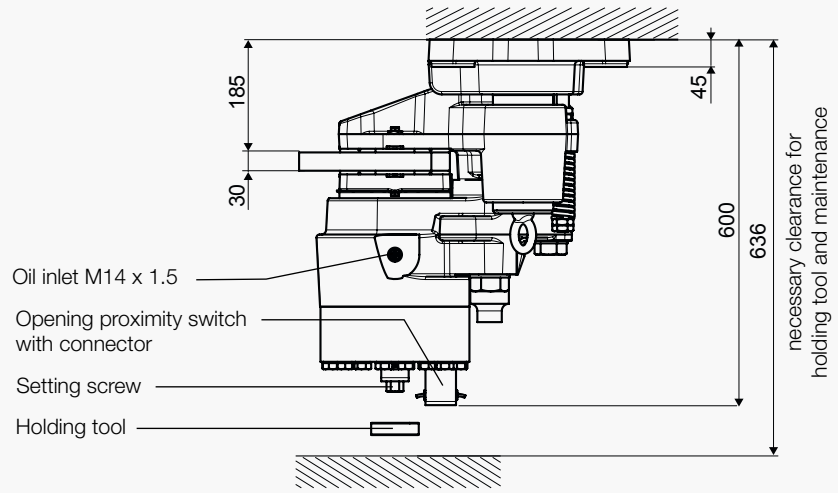
**Working conditions :**
- Ambient temperature: -20°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 70µm

Other conditions, consult us.

**Use :**
- Emergency stopping brake in case of overspeed or loss of electrical supply

**Option :**
- Lining wear proximity switch
- Protection level C5-M M standard NF ISO9223



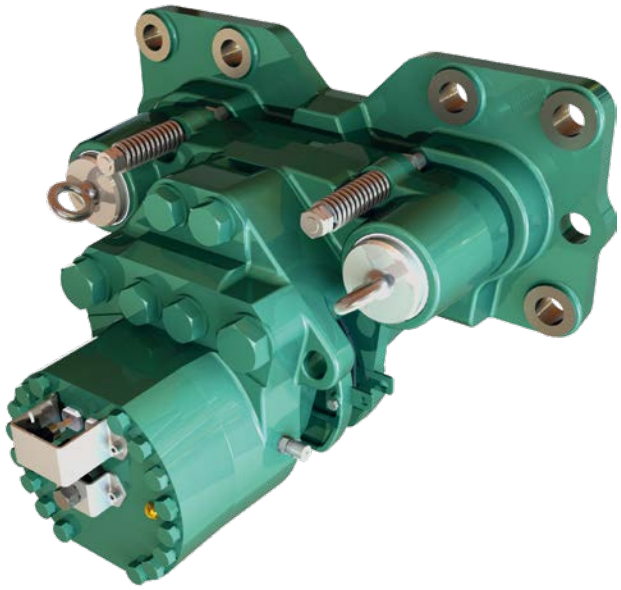

**Electrical data** :

Opening proximity switch
and wear proximity switch (option):
3 wires PNP NO
10 to 58 VDC 200 mA
with connector M12

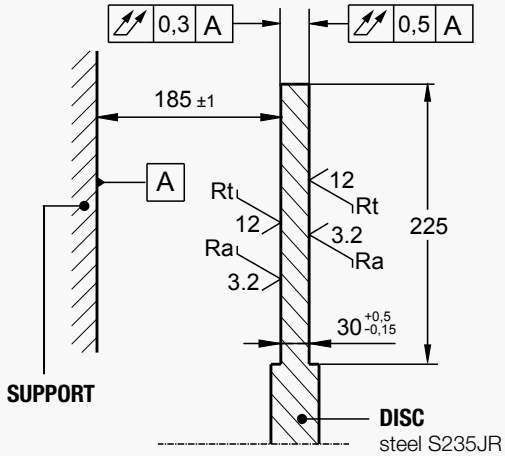
Dimensions in mm
Weight: 395 kg

# DISC BRAKE - SHD18 CALIPER

**Revision number: T10129-01-A** **Revision date: 13.01.2017**



**Installation instructions :**




Torque and effort values are subject to a variation of ±10%
Response time at nominal torque ≤ 0.3s

| Designation | Caliper | | SHD18-3 | SHD18-2 | SHD18-1 |
|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | | |
| **Braking force** BF for air gap disc/lining of 2x1mm | Dynamic | N | 180 000 | 150 000 | 120 000 |
| | Static | N | 162 000 | 135 000 | 108 000 |
| Linear speed of the disc | | m/s | ≤ 10 | | |
| **Dynamic braking torque** BT (m.N) for 1 caliper and disc ØD (mm) / D max ≤ 2000mm | | N.m | BT = BF (D/2000 - 0.09) | | |
| Regulation pressure | Minimum<br>Maximum | bar<br>bar | 195<br>205 | 160<br>170 | 130<br>140 |
| Setting pressure limit valve of hydraulic unit | | bar | 225 | 190 | 160 |
| Total volume of oil displaced for air gap disc/lining of: | | | | | |
| 2 x 1 mm (nominal opening) | | $cm^3$ | 48 | | |
| 2 x 2 mm (nominal opening + wear before setting) | | $cm^3$ | 82 | | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C

## Emergency Brakes

# DISC BRAKE - TH9 CALIPER

**Revision number: T03830-01-C** **Revision date: 13.12.2010**

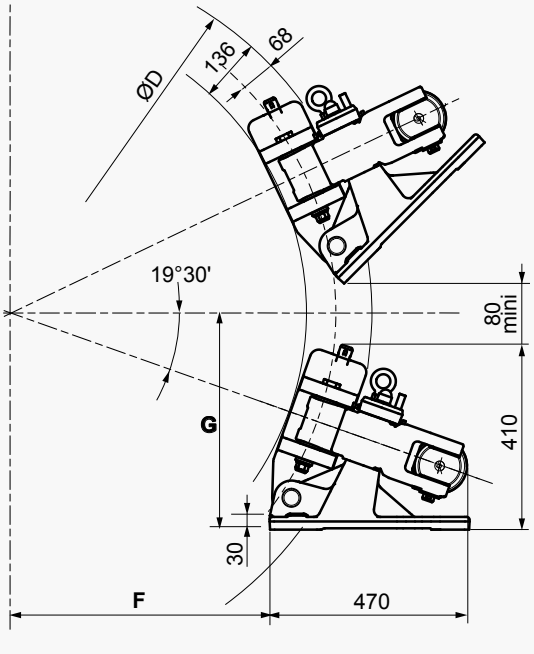
Fail safe
Spring applied
Hydraulic release (mineral oil)
Opening proving switch
Wear proving switch
Lining wear detector

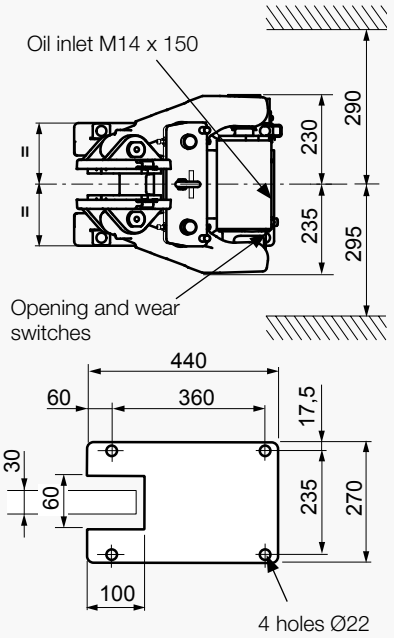
**Working:**
- Ambient temperature: -10°C to +60°C
- Relative humidity ≤ 70%
- Dust in atmosphere ≥ 65µ

Other conditions, consult us.

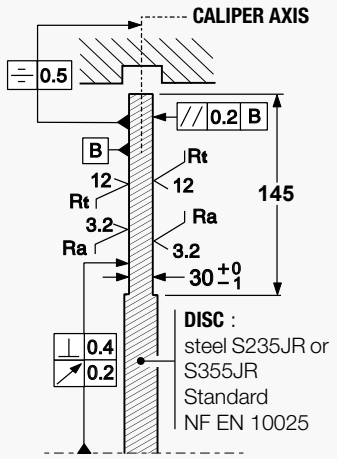
**Use:**
Service brake to operate with full or variable torque
Emergency brake in case of overspeed or loss of electrical supply

**Option:**
Disc thickness 42 mm




**Installation instructions**




Weight: 140 kg
Dimensions in mm

| Designation | Caliper | | TH9-3 | | TH9-2 | | TH9-1 | |
|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 |
| Braking force BF for 1mm of air gap disc/lining | Static N | | 81 000 | 54 000 | 52 650 | 38970 | 28 350 | 22 140 |
| | Dynamic N | | 90 000 | 60 000 | 58 500 | 43 300 | 31 500 | 24 600 |
| Linear speed of the disc | | m/s | ≤10 | ≤50 | ≤10 | ≤50 | ≤10 | ≤50 |
| Dynamic braking torque BT (N.m) for 1 caliper and a disc ØD (mm) | 1000 mm | Nm | 38 880 | 25 920 | 25 270 | 18 700 | 13 600 | 10 620 |
| | 1200 mm | Nm | 47 880 | 31 920 | 31 120 | 23 030 | 16 750 | 13 080 |
| | 1500 mm | Nm | 61 380 | 40 920 | 39 890 | 29 530 | 21 480 | 16 770 |
| | 2000 mm | Nm | 83 880 | 55 920 | 54 520 | 40 350 | 29 350 | 22 920 |
| BT for other ØD (mm) | | Nm | BT = BF (D/2000 - 0.068) | | | | | |
| Positioning when D<3000mm Above it. consult us | F | mm | (0.4713 x D) - 172 | | | | | |
| | G | mm | (0.1669 x D) + 212 | | | | | |
| Regulation pressure | minimum | bar | 140 | | 85 | | 60 | |
| | maximum | bar | 160 | | 115 | | 80 | |
| Setting pressure limit valve of hydr. unit | | bar | 190 | | 140 | | 105 | |
| Total volume of oil displaced | | $cm^3$ | 58 for one stroke disc/lining (nominal wear and opening) | | | | | |

Torque and force values are subject to a variation of ±10%.

Response time at nominal torque : see leaflet n° G08555-01.

**Opening and wear switches :**

250VAC maxi., 5A maxi.,
with interrupting capacity: 50VA maxi.

220VDC maxi., 5A maxi.,
with interrupting capacity: 50W maxi.

Compatible with PLC (Programmable Logic Controllers).
A switch used with other equipment than PLC must not be reused with a PLC.

Opening and wear switches are delivered with wire 5 x 0.75$mm^2$ and length 1m each

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**WS1-3**: disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

# DISC BRAKE - THC9B CALIPER

**Revision number: T03836-01-C** **Revision date: 24.08.2012**

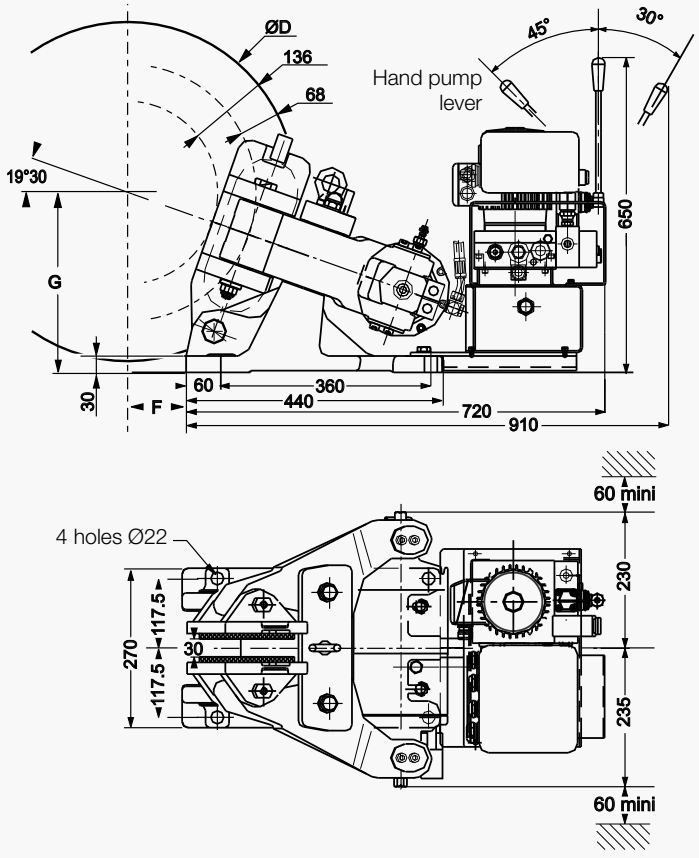
Fail safe
Spring application
Hydraulic release
Integral hydraulic power unit
Self contained electric system
Opening proving switch
Lining wear control switch
Lining wear detector

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µ

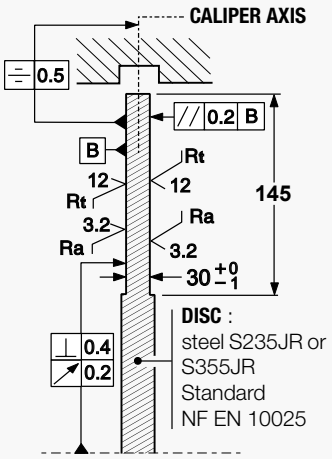
Other conditions, please contact us.

**Use:**
The brake should be applied only in case of emergency stop, overspeed or shutdown of electric mains. Other use, please contact us.

**Options:**
- Progressive braking system
- Disc thickness 42 mm




**Installation instructions**




Permissible inclination of the caliper :
±15° maximum regarding the horizontal.
For other mounting, please contact us.

Weight: 180 kg
Dimensions in mm

| Designation | Caliper | | TH9-3 | | TH9-2 | | TH9-1 | |
|---|---|---|---|---|---|---|---|---|
| | Lining ✳ | | US2-1 | WS1-3 | US2-1 | WS1-3 | US2-1 | WS1-3 |
| Braking force BF for 1mm of air gap disc/lining | Static N | | 81 000 | 54 000 | 52 650 | 38 970 | 28 350 | 22 140 |
| | Dynamic N | | 90 000 | 60 000 | 58 500 | 43 300 | 31 500 | 24 600 |
| Linear speed of the disc | | m/s | ≤10 | ≤50 | ≤10 | ≤50 | ≤10 | ≤50 |
| Dynamic braking torque BT (N.m) for 1 caliper and a disc ØD (mm) | 1000 mm | Nm | 38 880 | 25 920 | 25 270 | 18 700 | 13 600 | 10 620 |
| | 1200 mm | Nm | 47 880 | 31 920 | 31 120 | 23 030 | 16 750 | 13 080 |
| | 1500 mm | Nm | 61 380 | 40 920 | 39 890 | 29 530 | 21 480 | 16 770 |
| | 2000 mm | Nm | 83 880 | 55 920 | 54 520 | 40 350 | 29 350 | 22 920 |
| BT for other ØD (mm) | | Nm | BT = BF (D/2000 - 0.068) | | | | | |
| Positioning when D<3000mm Above it. consult us | F | mm | (0.4713 x D) - 172 | | | | | |
| | G | mm | (0.1669 x D) + 212 | | | | | |
| Setting pressure limit valve of hydr. pack | | bar | 190 | | 140 | | 105 | |

✳ **US2-1**: disc temperature during one braking ≤ 150°C
**WS1-3**: disc temperature during one braking ≤ 600°C
**US2-5**: disc temperature during one braking ≤ 350°C, optional, consult us.

**Electrical data:**

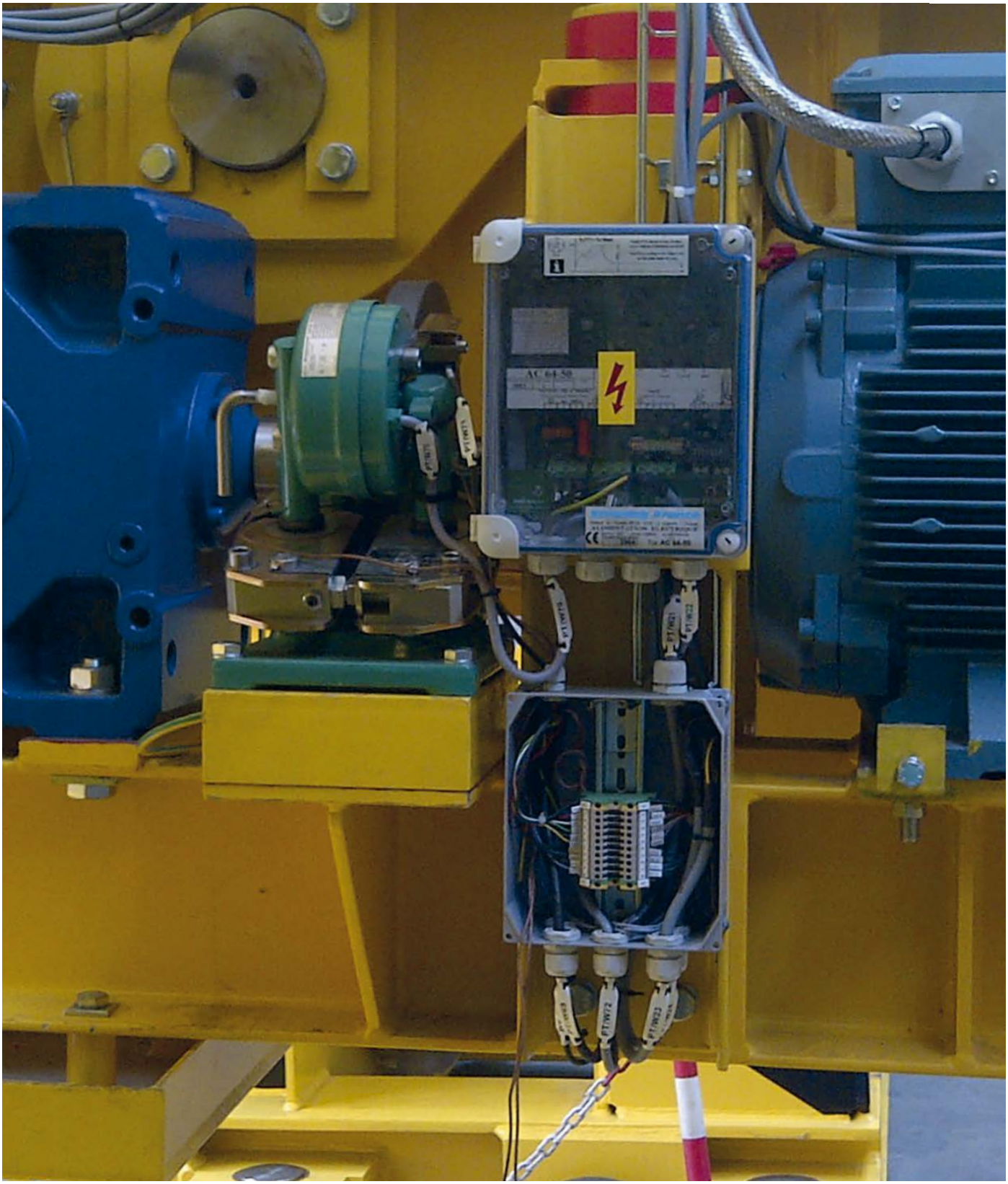
HPP motor: 3 phases: 230/400V ±10%
50Hz 0.37kW, 4 poles
for mains: 230/400 V 50 Hz
or 415 V 50 Hz or 460 V 60 Hz

Motor option: 400/690V ±10% 50Hz
255/440V ±10% 50Hz
290/500V ±10% 50Hz
280/480V ±10% 60Hz
330/575V ±10% 60Hz
Other voltage, please contact us.
Electrical casing IP55

Opening and wear proving switches:
U mini 24V AC or DC
U maxi 250V AC ou 220 V DC
I mini 0.1A AC or DC
I maxi 5A AC or DC
interrupting capacity :
mini :2.4VA AC or 2.4W DC
maxi : 50VA (AC) ou 50W (DC)

### Electrical Power Units

# ELECTRICAL POWER UNITS



# Electrical Power Units

## MAIN CHARACTERISTICS

- DESIGNED TO GIVE OPTIMUM PERFORMANCE FROM THE ELECTROMAGNETIC CALIPERS
- AC LINE SUPPLY: AB8, AC64, AC32, AS100, 4200 AND 4205
- DC LINE SUPPLY: DC64, DC32 AND DS100
- HIGH "CALL" VOLTAGE TO REDUCE OPENING RESPONSE TIME
- AUTOMATIC REDUCTION TO AN ECONOMICAL "HOLD" VOLTAGE
- A "CUT-OUT" CIRCUIT GIVING A VERY SHORT BRAKE ACTION

### AC64 & AC32

- Simplicity of adjustment and use.
- Weights and size reduced.
- Quick diagnosis of fault through the use of 6 LEDS.

### AS100

- Available in:
  - Polycabornate enclosure (CP): IP66, IK8
  - or Steel enclosure (CA): IP66, IK9

### 4200 & 4205 / AB8

- **4205** unit enables electrically controlled lowering.
- **AB8** unit is used with "E" series calipers for progressive braking torque control.

| POWER UNITS | CALIPERS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 660 | 650 | 650E | 645 - 45K | 5D - 5DR | 5DE | 4CA2 | 3CA2 | 2CA2 - 1CA2 | OSA | OOSA | 2SA |
| AC64 - DC64 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| AC32 - DC32 | | | | | | | ■ | ■ | ■ | | | |
| AS100 - DS100 | | | | | | | | | | ■ | ■ | |
| 4200 | | | | | | | ■ | ■ | | ■ | ■ | ■ |
| 4205 | | | | | | | ■ | ■ | | ■ | ■ | ■ |
| AB8 | | | ■ | | | ■ | | | | | | |

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT AC64-50 CA

**Revision number: T04560-01-D** **Revision date: 20.07.2011**

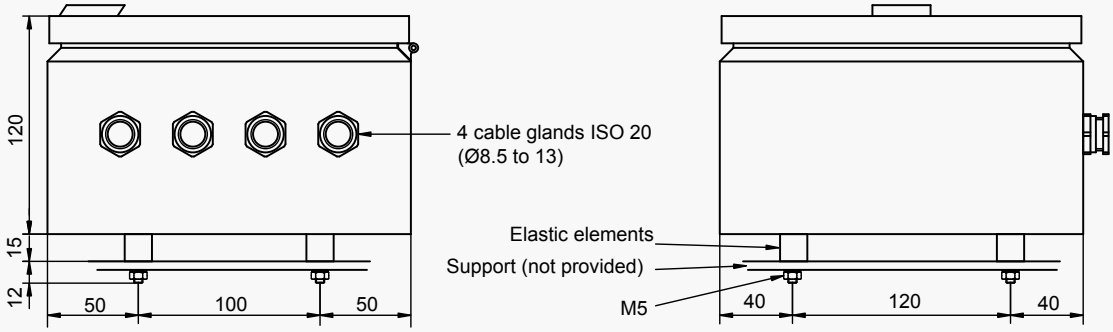
Compact power supply operating on alternating single or two-phase mains.
For SIME Disc Brakes with 50 V coil.
type : 660/650-5K/5D-645-45K-4WD-4CA2
Steel case

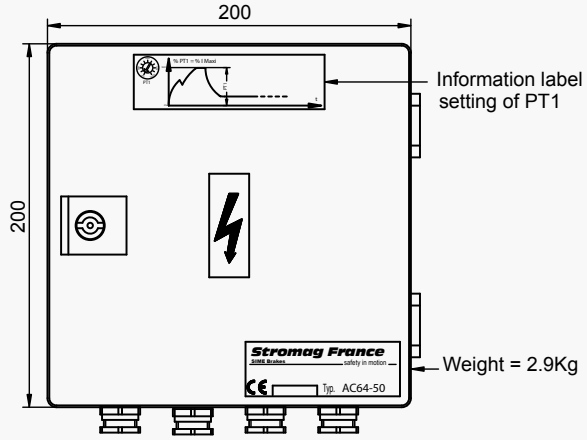
**Operating Conditions:**
- Casing protection standard IP66 IK09
- Ambient temperature : -20°C to +60°C

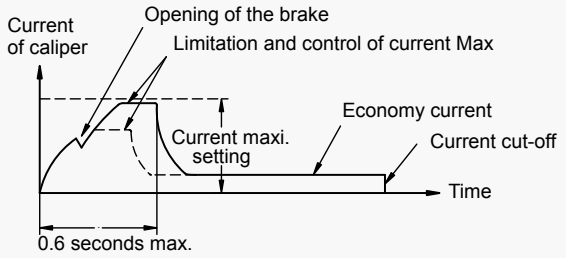
**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
- 2006/95/EC directive BT (standard EN60204-1)
- 2004/108/EC directive CEM
(standards EN61000-6-2 EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Polycarbonate case IP66 IK08




**Time of calipers closing** (time between mains cut-off and application of 66% of nominal torque).

| Caliper | 660-5KR-5DR | 650-650E 5K-5D-5KE-5DE | 645-45K | 4WD | 4CA2 |
|---|---|---|---|---|---|
| Tr 66 (ms) | 100 | 100 | 120 | 300 | 200 |

| Caliper | | | 660-650-650E | | 5K-5D-5KR/DR 5KE-5DE | | 645 | | 45K | | 4WD | | 4CA2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum number of calipers | | | 2 | | 2 | | 2 | | 2 | | 2 | | 1 |
| Resistance at 20°C per caliper | | Ω | 6.68 | | 6.68 | | 4.52 | | 4.52 | | 4.52 | | 3.08 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤40°C | | 150 | | 1000 | | 150 | | 1000 | | 60 | | 1000 |
| | 40°C<θ ≤60°C | | 150 | | 600 | | 150 | | 600 | | 60 | | 600 |
| Mains current absorbed per caliper | Max | A | 4 | | 4 | | 6 | | 6 | | 6 | | 9 |
| | Economy | A | 0.6 | | 0.6 | | 0.75 | | 0.75 | | 0.75 | | 1 |
| Maximum return resistance of the cable connecting the caliper to the power supply | | Ω | 2 | | 2 | | 1 | | 1 | | 1 | | 1 ✱ |
| Max. length of the connecting cable (Power supply - caliper) for 1 caliper per cable. depending on cable section | 2.5 mm² | m | 100 | | 100 | | 50 | | 50 | | 50 | | 50 ✱ |
| | 4 mm² | m | 160 | | 160 | | 80 | | 80 | | 80 | | 80 ✱ |
| | 6 mm² | m | 240 | | 240 | | 120 | | 120 | | 120 | | 120 ✱ |
| Protection to be provided in head of control contactor on mains input | Number of caliper | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| | Fuse aM | A | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 2 | 4 | 4 |
| | Circuit-breaker curve C | A | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 2 | 4 | 4 |

# DISC BRAKE - ELECTRICAL POWER UNIT AC64-50 CP

**Revision number: T04500-01-D** **Revision date: 19.07.2011**

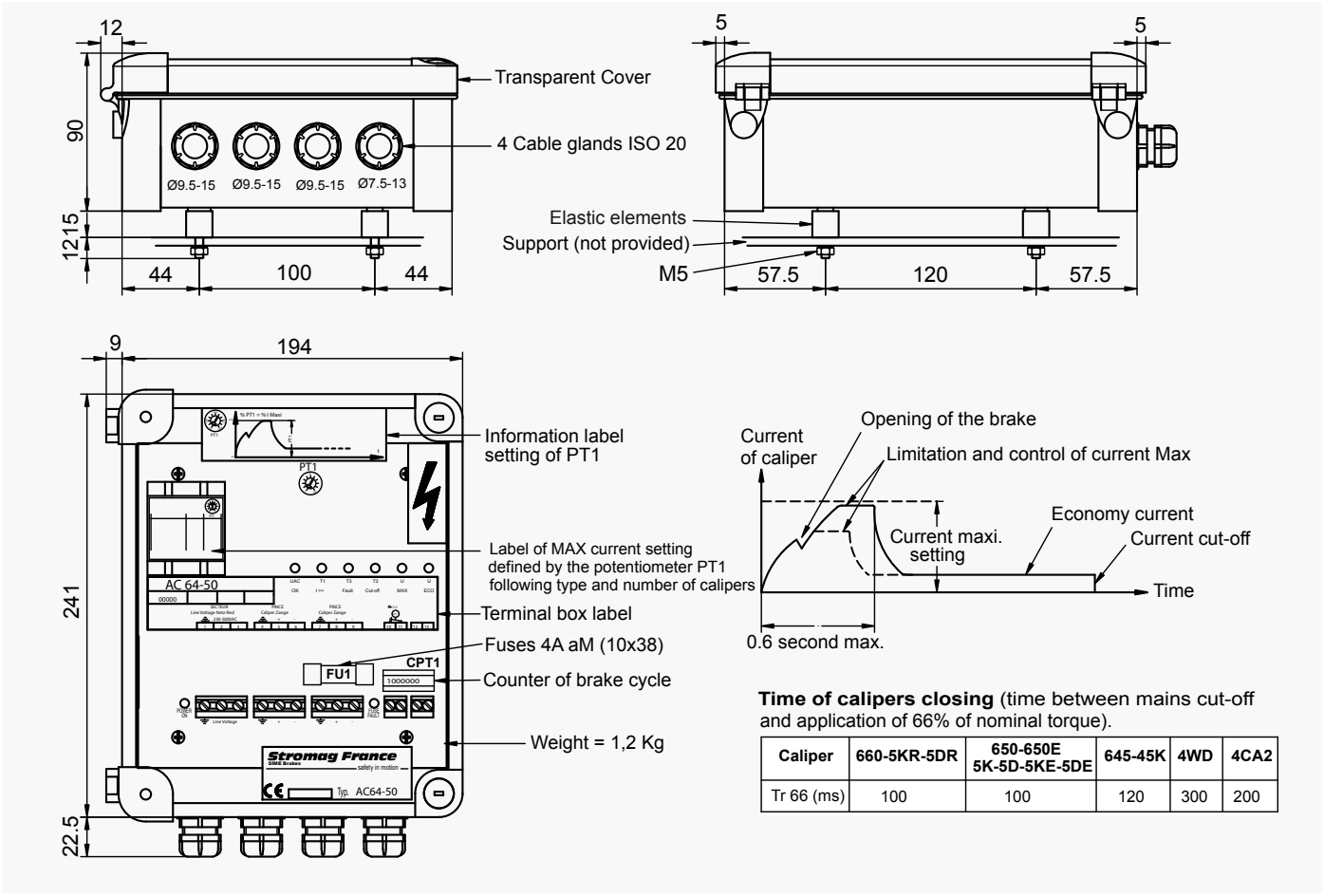
Compact power supply operating on alternating single or two-phase mains.
For S Disc Brakes with 50 V coil.
type : 660/650-5K/5D-645-45K-4WD-4CA2
Polycarbonate case

**Operating Conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
2006/95/EC directive BT (standard EN60204-1)
2004/108/EC directive CEM
(standards EN61000-6-2 EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK09




**Time of calipers closing** (time between mains cut-off and application of 66% of nominal torque).

| Caliper | 660-5KR-5DR | 650-650E 5K-5D-5KE-5DE | 645-45K | 4WD | 4CA2 |
|---|---|---|---|---|---|
| Tr 66 (ms) | 100 | 100 | 120 | 300 | 200 |

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage. The power supply must be installed by qualified personnel, used to handle this equipment type and aware of risks inherent in their utilization.

✱ If the ambient temperature of the caliper 4CA2 is higher than 60°C, the maximum return resistance and the maximum length of the connecting cable given in the above table must be divided by 2.

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT AC32-50 CA

**Revision number: T10005-02-C** **Revision date: 22.02.17**

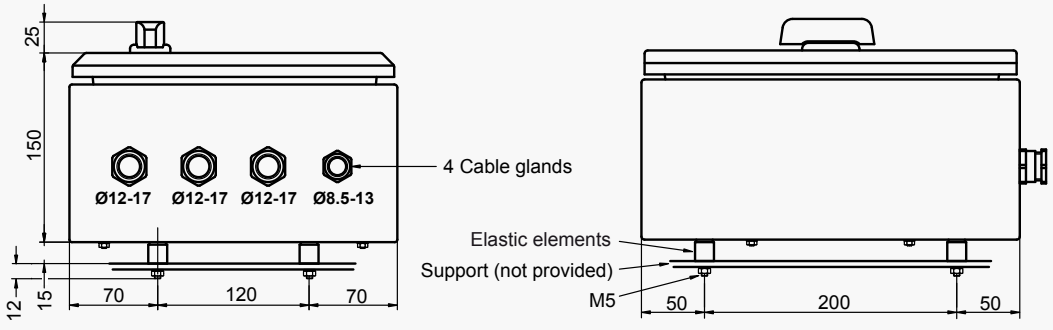
Compact power supply operating on alternating single or two-phase mains.
For SIME disc brakes with 50 V coil.
type : 4CA2 - 3WD - 3CA2 - 2CA2 - 1CA2
Steel case

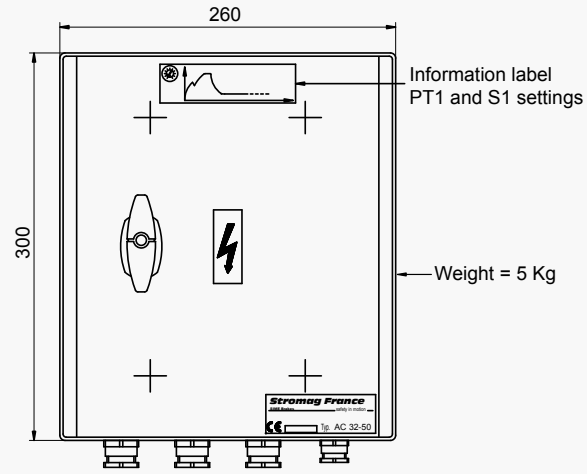
**Operating Conditions:**
- Casing protection standard IP66 IK10
- Ambient temperature : -20°C to +60°C

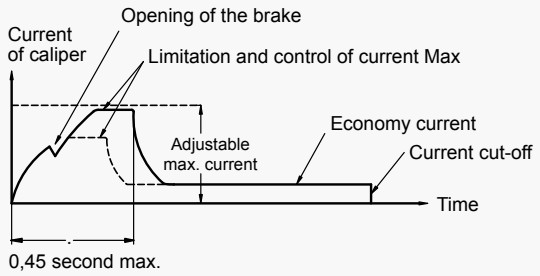
**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Polycarbonate case IP66 IK08




**Time of calipers closing** between mains cut-off and application of 66% of nominal torque.

| Caliper | 4CA2 | 3WD | 3CA2 | 2CA2 - 1CA2 |
|---|---|---|---|---|
| Tr 66 (ms) | 200 | 200 | 265 | 190 |

| Caliper | | | 4CA2 | 3WD | 3CA2 | 2CA2 1CA2 | 2CA2 + 20% 1CA2 + 20% |
|---|---|---|---|---|---|---|---|
| Maximum number of calipers | | | 2 | 1 | 1 | 1 | |
| Resistance at 20°C per caliper | | Ω | 3.08 | 1.63 | 1.01 | 0.75 | |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤40°C | | 1000 | 60 | 1000 | 1000 | 600 |
| | 40°C<θ ≤60°C | | 600 | 60 | 600 | 600 | 300 |
| Mains current absorbed per caliper | Max | A | 9 | 16 | 20 | 28.2 | |
| | Economy | A | 1 | 1.5 | 2 | 3.3 | |
| Maximum connecting cable return resistance between caliper and supply unit | | Ω | 1 | 0.75 | 1 | 0.5 | |
| Maximum connecting cable length (caliper-input) according to the cable section | 2.5mm² | m | 50 | 35 | 50 | 25 | |
| | 4mm² | m | 80 | 60 | 80 | 40 | |
| | 6mm² | m | 120 | 90 | 120 | 60 | |
| | 10mm² | m | 205 | 155 | 205 | 100 | |
| Protection to be provided in head of control contactor on mains input | Fuse aM | A | 6 | 4 | 6 | 8 | |
| | Circuit-breaker curve C | A | 8 | 6 | 10 | 12 | |

# DISC BRAKE - ELECTRICAL POWER UNIT AC32-50 CP

**Revision number: T10005-01-D** **Revision date: 22.02.2017**

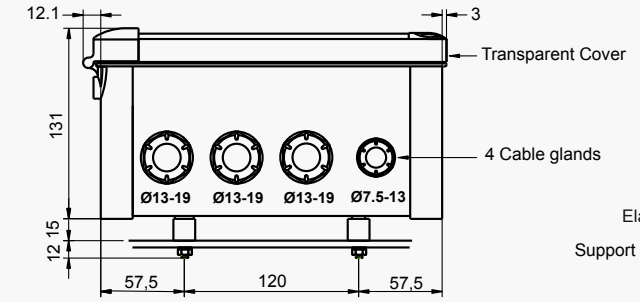
Compact power supply operating on alternating single or two-phase mains.
For SIME disc brakes with 50 V coil.
type : 4CA2 - 3WD - 3CA2 - 2CA2 - 1CA2
Polycarbonate case

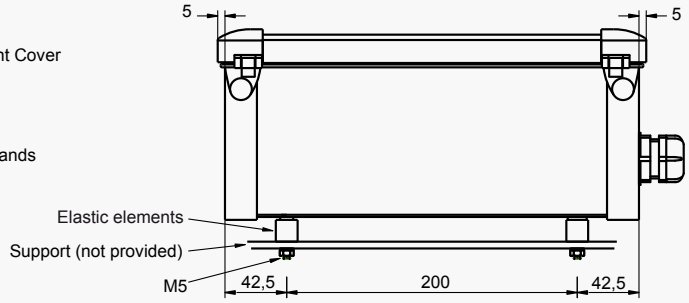
**Operating Conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

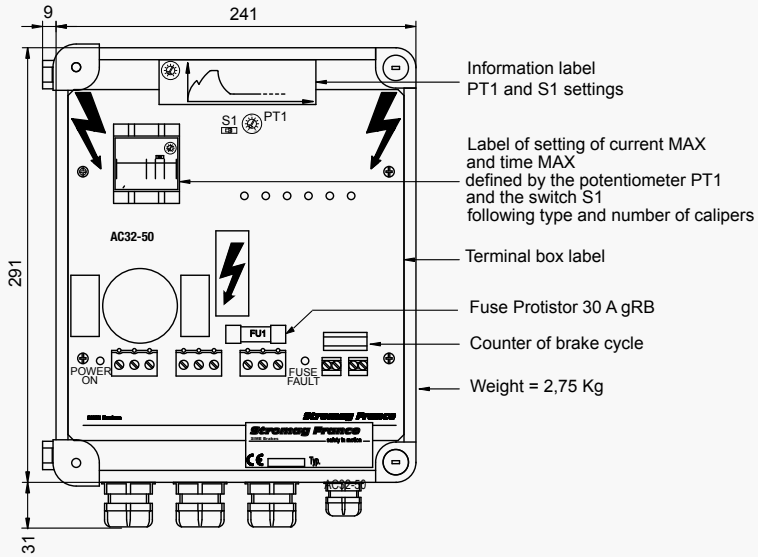
**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

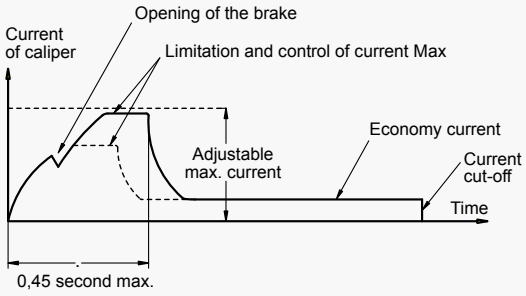
**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK10




**Time of calipers closing** between mains cut-off and application of 66% of nominal torque.

| Caliper | 4CA2 | 3WD | 3CA2 | 2CA2 - 1CA2 |
|---|---|---|---|---|
| Tr 66 (ms) | 200 | 200 | 265 | 190 |

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage. The power supply must be installed by qualified personnel, used to handle this equipment type and aware of risks inherent in their utilization.

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT AS100-50 CA

**Revision number: T10035-02-B** **Revision date: 19.10.2015**

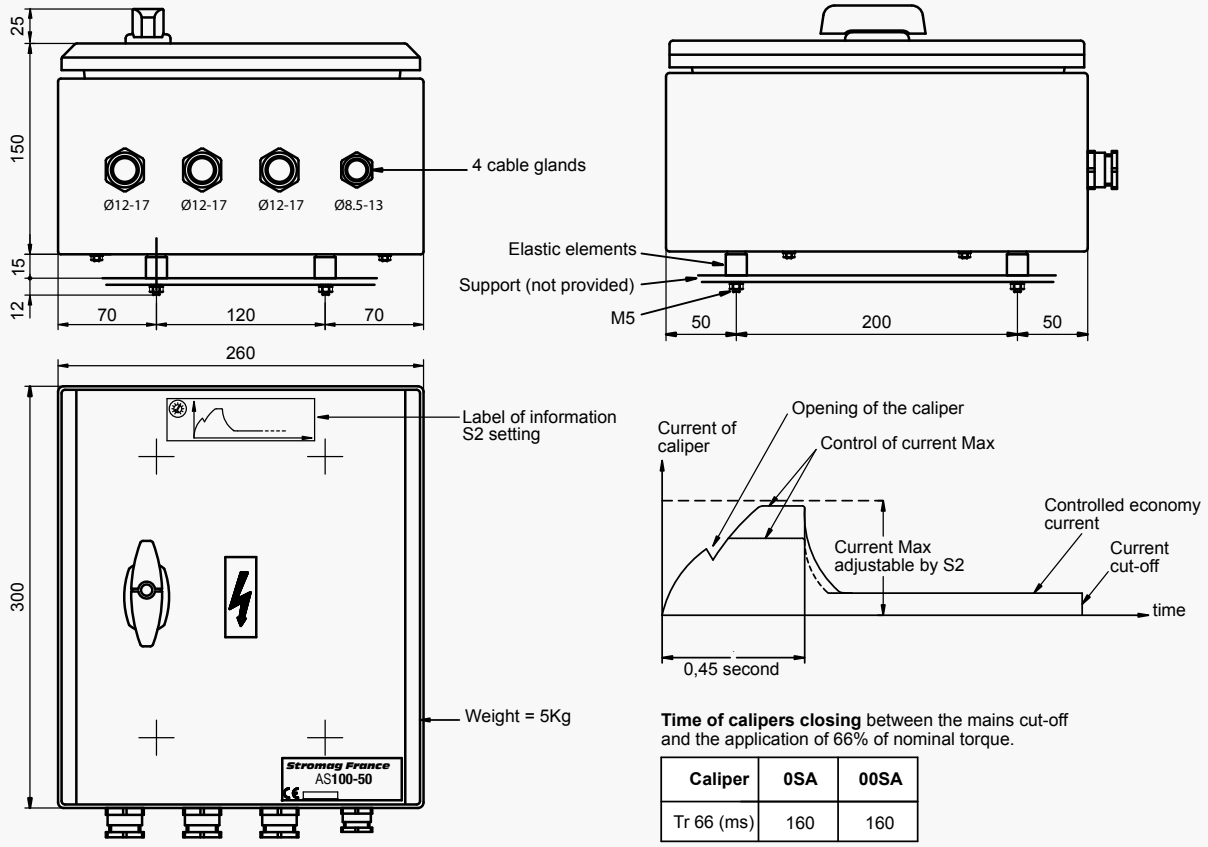
Compact power supply operating on alternating single or two-phase mains.
For SIME disc brakes with 50 V coil.
type : OSA - OOSA
Steel case

**Operating Conditions:**
- Casing protection standard IP66 IK10
- Ambient temperature : -20°C to +60°C

**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK08




**Time of calipers closing** between the mains cut-off and the application of 66% of nominal torque.

| Caliper | 0SA | 00SA |
|---|---|---|
| Tr 66 (ms) | 160 | 160 |

| Caliper | | | 0SA | | 00SA |
|---|---|---|---|---|---|
| Maximum number of calipers | | | 1 | 2 | 1 |
| Resistance at 20°C per electromagnet | | Ω | 1.01 | 1.01 | 1.01 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤60°C | | 100 | 100 | 100 |
| Mains current absorbed | Max | A | 28 | 36 | 36 |
| | Economy | A | 3.5 | 3.6 | 3.6 |
| Maximum connecting cable return resistance between caliper and supply unit | | Ω | 3.5 | 1 | 1 |
| Maximum connecting cable length (caliper input) according to the cable section | 2.5 mm² | m | 170 | 50 | 50 |
| | 4 mm² | m | 275 | 80 | 80 |
| | 6 mm² | m | 415 | 120 | 120 |
| | 10 mm² | m | 715 | 205 | 205 |
| Protection to be provided in head of control contactor on mains input | Fuse aM | A | 6 | 8 | 8 |
| | Circuit-breaker curve C | A | 16 | 16 | 16 |

# DISC BRAKE - ELECTRICAL POWER UNIT AS100-50 CP

**Revision number: T10035-01-B** **Revision date: 19.10.2015**

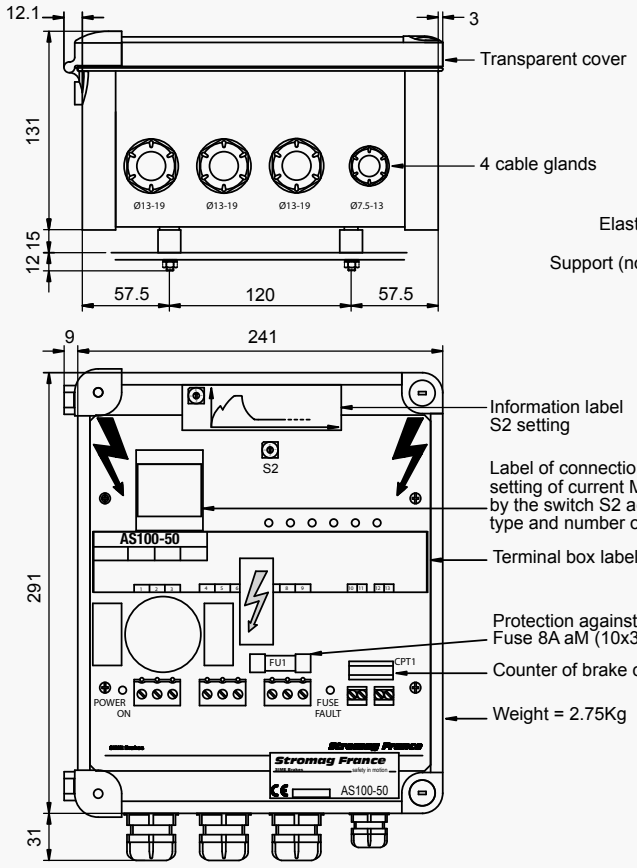
Compact power supply operating on alternating single or two-phase mains.
For SIME disc brakes with 50 V coil.
type : OSA - OOSA
Polycarbonate case

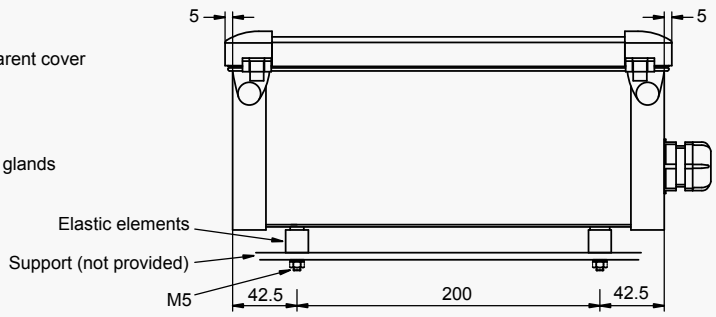
**Operating Conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical Data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

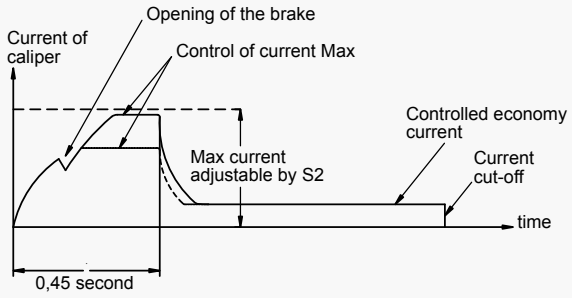
**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK10










**Time of calipers closing** between the mains cut-off and application of 66% of nominal torque.

| Caliper | 0SA | 00SA |
|---|---|---|
| Tr 66 (ms) | 160 | 160 |

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage. The power supply must be installed by qualified personnel, used to handle this equipment type and aware of risks inherent in their utilization.

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT DC64-50 CP

**Revision number: T04530-01-E** **Revision date: 15.11.2017**

Compact power supply operating on direct mains.
For SIME disc brakes with 50V coil.
type : 660/650-5K/5D-645-45K-4WD-4CA2
Polycarbonate case

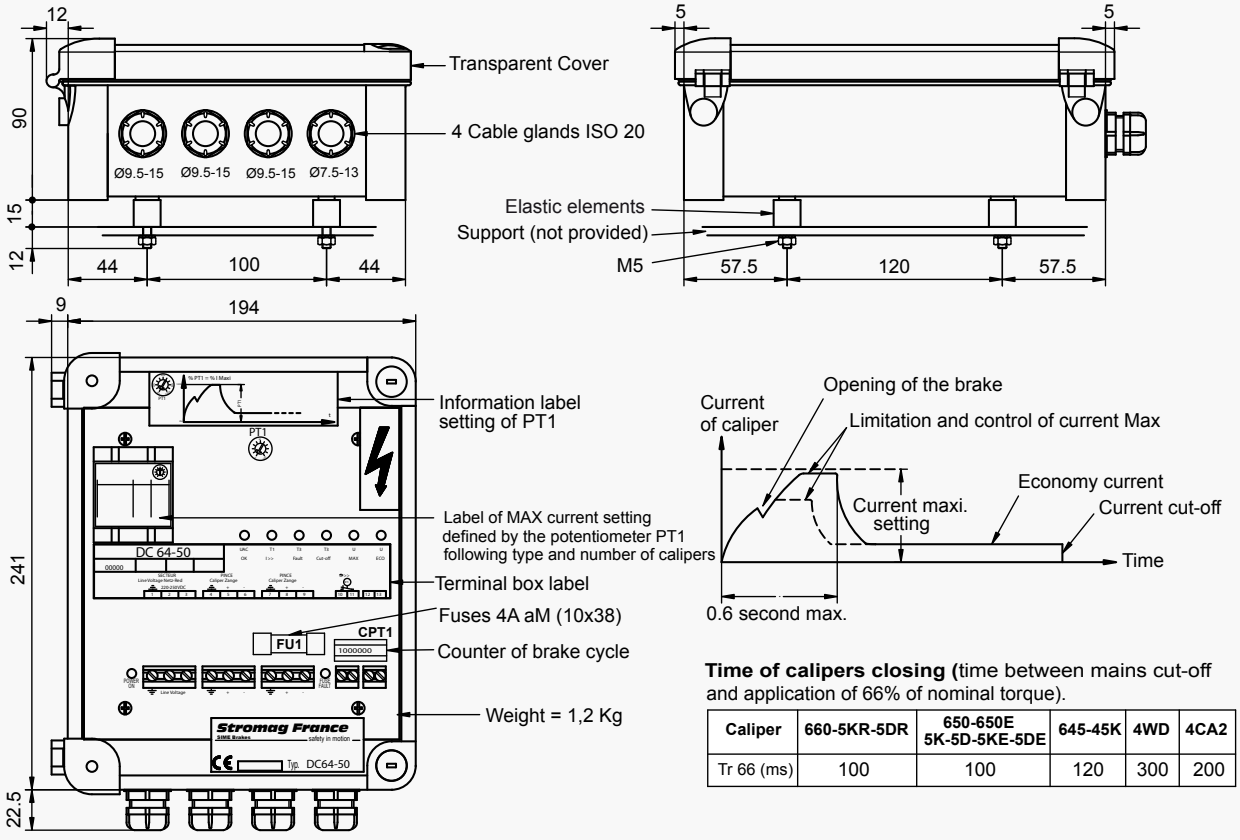
**Operating conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical data :**
Mains DC : 110 to 275 V DC ± 10%
Possible operation in 115 V AC ± 20%

**EC marking of conformity** :
2006/95/EC directive BT (standard EN60204-1)
2004/108/EC directive CEM (EN61000-6-2 EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK09

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage.




**Time of calipers closing (**time between mains cut-off and application of 66% of nominal torque).

| Caliper | 660-5KR-5DR | 650-650E 5K-5D-5KE-5DE | 645-45K | 4WD | 4CA2 |
|---|---|---|---|---|---|
| Tr 66 (ms) | 100 | 100 | 120 | 300 | 200 |

| Caliper | | | 660-650-650E | | 5K-5D-5KR-5DR 5KE-5DE | | 645 | | 45K | | 4WD | | 4CA2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum number of calipers | | | 2 | | 2 | | 2 | | 2 | | 2 | | 1 |
| Resistance at 20°C per caliper | | (Ω) | 6.68 | | 6.68 | | 4.52 | | 4.52 | | 4.52 | | 3.08 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤40°C | | 150 | | 1000 | | 150 | | 1000 | | 60 | | 1000 |
| | 40°C<θ ≤60°C | | 150 | | 600 | | 150 | | 600 | | 60 | | 600 |
| Mains current absorbed per caliper | Max | (A) | 3.5 | | 3.5 | | 5 | | 5 | | 5 | | 9 |
| | Economy | (A) | 0.4 | | 0.4 | | 0.5 | | 0.5 | | 0.5 | | 0.75 |
| Maximum return resistance of the cable connecting the caliper to the power supply | | (Ω) | 2 | | 2 | | 1 | | 1 | | 1 | | 1 ✱ |
| Max. length of the connecting cable (Power supply - caliper) for 1 caliper per cable, depending on cable section | 2.5 mm² | (m) | 100 | | 100 | | 50 | | 50 | | 50 | | 50 ✱ |
| | 4 mm² | (m) | 160 | | 160 | | 80 | | 80 | | 80 | | 80 ✱ |
| | 6 mm² | (m) | 240 | | 240 | | 120 | | 120 | | 120 | | 120 ✱ |
| Protection to be provided in head of control contactor on mains input | Number of caliper | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| | Fuse aM | (A) | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 2 | 4 | 4 |
| | Circuit-breaker curve C | (A) | 1 | 2 | 1 | 2 | 2 | 4 | 2 | 4 | 2 | 4 | 4 |

✱ If the ambient temperature of the caliper 4CA2 is higher than 60°C. The maximum return resistance and the maximum length of the connecting cable given in the above table must be divided by 2.

# DISC BRAKE - ELECTRICAL POWER UNIT DC32-50 CP

**Revision number: T10007-01-F** **Revision date: 22.02.2017**

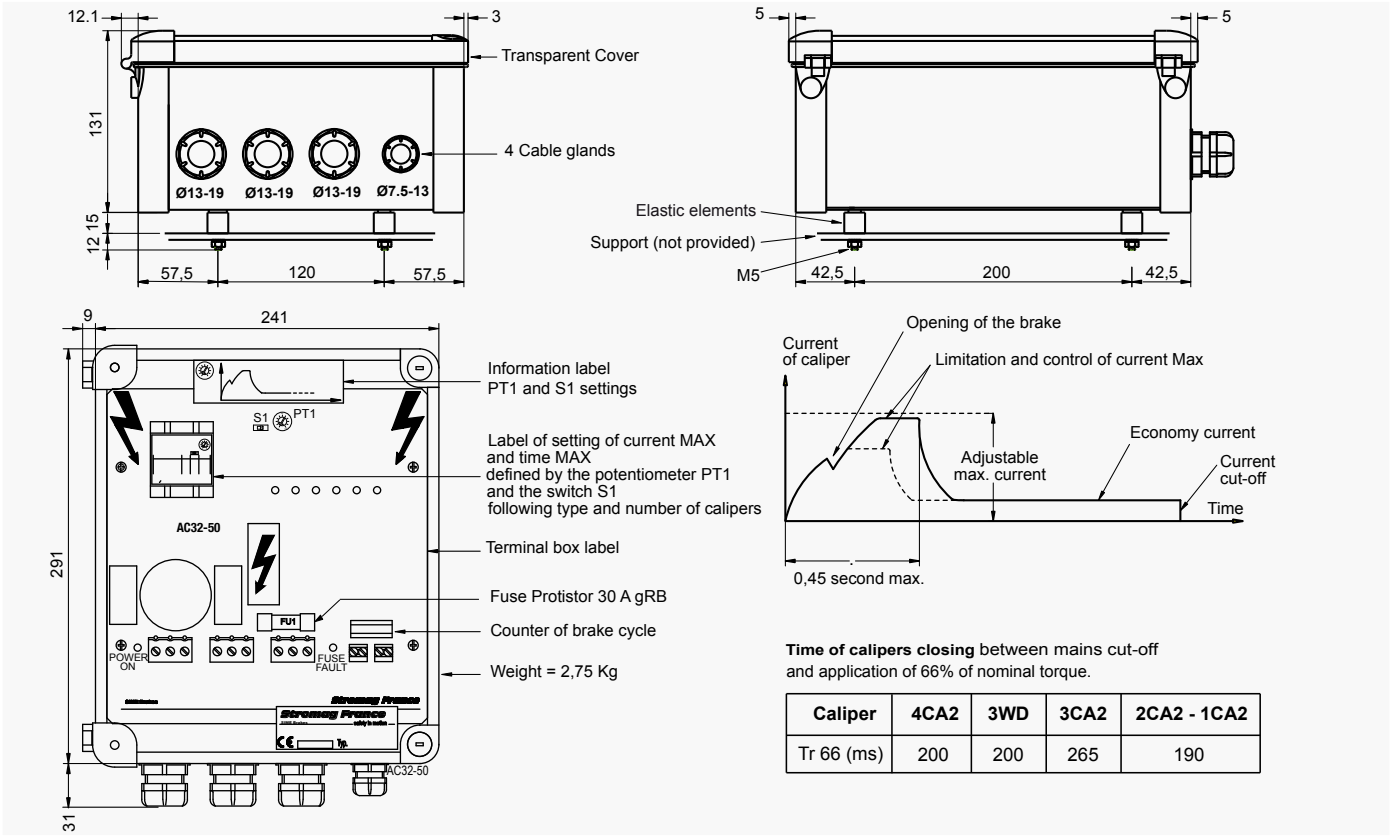
Compact power supply operating on direct mains.
For SIME disc brakes with 50V coil.
type : 4CA2 - 3WD - 3CA2 - 2CA2
Polycarbonate case

**Operating conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical data :**
Mains DC : 110 to 275V DC ± 10%
Possible operation in 115 V AC ± 20%

**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK10




**Time of calipers closing** between mains cut-off and application of 66% of nominal torque.

| Caliper | 4CA2 | 3WD | 3CA2 | 2CA2 - 1CA2 |
|---|---|---|---|---|
| Tr 66 (ms) | 200 | 200 | 265 | 190 |

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage. The power supply must be installed by qualified personnel, used to handle this equipment type and aware of risks inherent in their utilization.

| Caliper | | | 4CA2 | 3WD | 3CA2 | 2CA2 1CA2 | 2CA2 + 20% 1CA2 + 20% |
|---|---|---|---|---|---|---|---|
| Maximum number of calipers | | | 2 | 1 | 1 | 1 | |
| Resistance at 20°C per caliper | | (Ω) | 3.08 | 1.63 | 1.01 | 0.75 | |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤40°C | | 1000 | 60 | 1000 | 1000 | 600 |
| | 40°C<θ ≤60°C | | 600 | 60 | 600 | 600 | 300 |
| Mains current absorbed per caliper | Max | (A) | 9.9 | 18 | 24.1 | 36.9 | |
| | Economy | (A) | 1.5 | 1.6 | 1.8 | 2.3 | |
| Maximum connecting cable return resistance between caliper and supply unit | | (Ω) | 1 | 0.75 | 1 | 0.5 | |
| Max. length of the connecting cable (Power supply/ caliper) for 1 caliper per cable. depending on cable section | 2.5mm² | (m) | 50 | 35 | 50 | 25 | |
| | 4mm² | (m) | 80 | 60 | 80 | 40 | |
| | 6mm² | (m) | 120 | 90 | 120 | 60 | |
| | 10mm² | (m) | 205 | 155 | 205 | 100 | |
| Protection to be provided in head of control contactor on mains input | Fuse aM | (A) | 6 | 6 | 6 | 10 | |
| | Circuit-breaker curve C | (A) | 8 | 8 | 10 | 16 | |

## Electrical Power Units

# DRUM BRAKE - ELECTRICAL POWER UNIT AFM450 CP

**Revision number: T04520-01-D** **Revision date: 21.07.2011**

Compact power supply operating on alternating single or two-phase mains.
For SIME drum brakes with 110V coil.
type : 200 - 250 - 350 - 450
Polycarbonate case

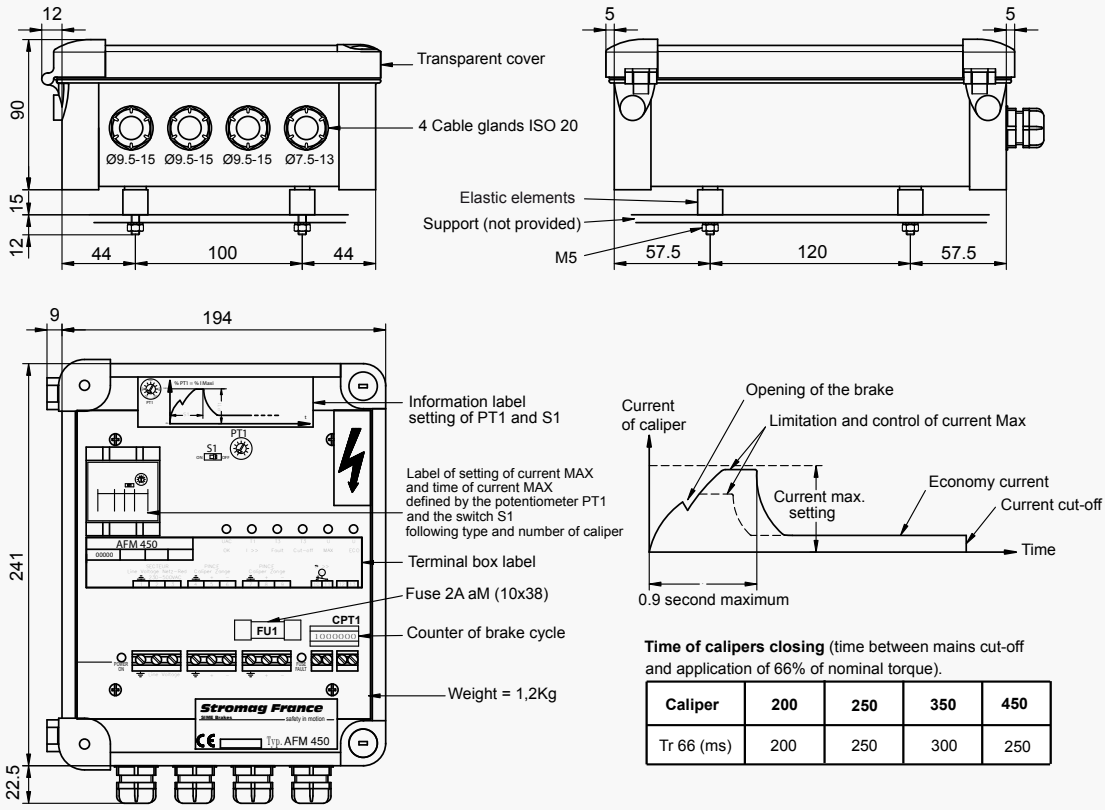
**Operating conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

**EC marking of conformity** :
2006/95/EC directive BT (standard EN60204-1)
2004/108/EC directive CEM
(standards EN61000-6-2 EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK09

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage.




**Time of calipers closing** (time between mains cut-off and application of 66% of nominal torque).

| Caliper | 200 | 250 | 350 | 450 |
|---|---|---|---|---|
| Tr 66 (ms) | 200 | 250 | 300 | 250 |

| FEM type | | | 200 | 250 | 350 | 450 |
|---|---|---|---|---|---|---|
| Maximum number of calipers | | | 1 | 1 | 1 | 1 |
| Resistance at 20°C per caliper | | (Ω) | 88 | 76.3 | 52.8 | 40.9 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤ 60°C | | 700 | 700 | 700 | 600 |
| Mains current absorbed per caliper | Max | (A) | 1.5 | 1.8 | 3 | 3.5 |
| | Economy | (A) | 0.25 | 0.3 | 0.5 | 0.6 |
| Maximum connecting cable return resistance between caliper and supply unit | | (Ω) | 5 | 5 | 5 | 5 |
| Max. length of the connecting cable (Power supply - caliper) for 1 caliper per cable, depending on cable section | 2.5 $mm^2$ | (m) | 250 | 250 | 250 | 250 |
| | 4 $mm^2$ | (m) | 400 | 400 | 400 | 400 |
| Protection to be provided on head control contactor on mains input | Fuse aM | (A) | 1 | 1 | 1 | 1 |
| | Circuit-breaker curve C | (A) | 1 | 1 | 1 | 1 |

# DRUM BRAKE - ELECTRICAL POWER UNIT AFM750 CP

**Revision number: T10009-01-C** **Revision date: 01.12.2014**

Compact power supply operating on alternating single or two-phase mains.
For SIME drum brakes with 110V coil.
type FEM : 530 - 600 - 750
Polycarbonate case

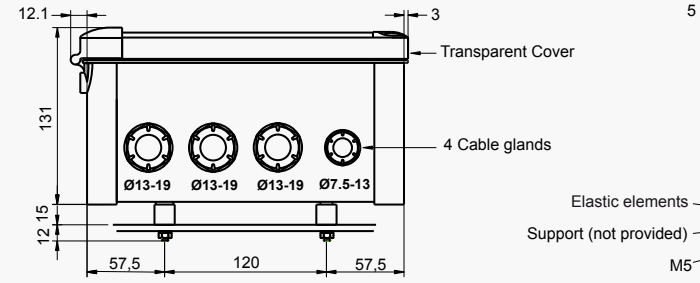
**Operating conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

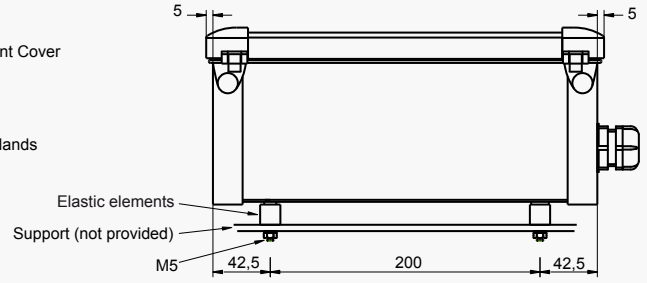
**Electrical data :**
Single or two-phase mains AC
230 to 500V AC ± 10% 50/60Hz

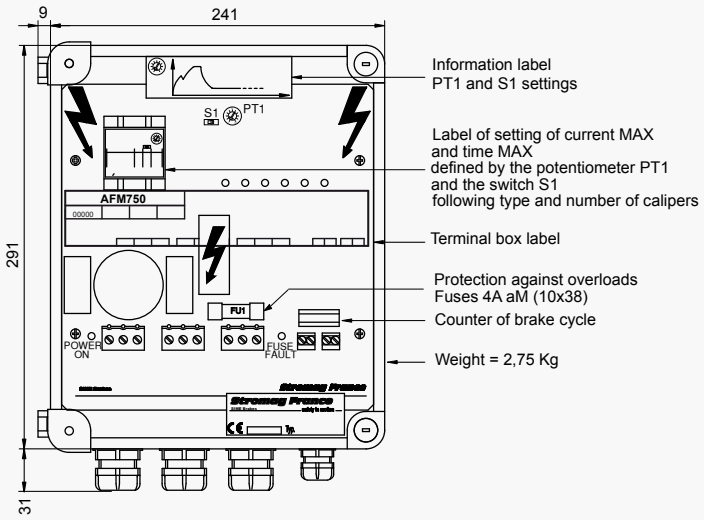
**EC marking of conformity** :
2006/95/EC directive BT (standard EN60204-1)
2004/108/EC directive CEM
(standards EN61000-6-2 EN61000-6-4

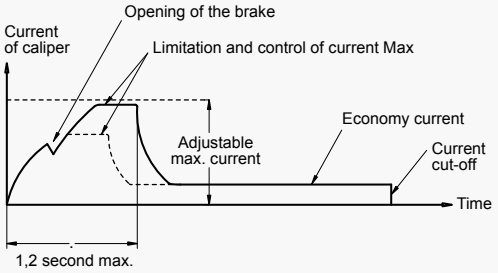
**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK10

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage.




**Time of calipers closing** between mains cut-off and application of 66% of nominal torque.

| Caliper | FEM 530 | FEM 600 | FEM 750 |
|---|---|---|---|
| Tr 66 (ms) | 280 | 280 | 250 |

| FEM type | | | 530 | 600 | 750 |
|---|---|---|---|---|---|
| Maximum number of calipers | | | 1 | 1 | 1 |
| Resistance at 20°C per caliper | | (Ω) | 28.2 | 29.5 | 18.5 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤ 60°C | | 600 | 600 | 600 |
| Mains current absorbed per caliper | Max | (A) | 6 | 6 | 7.2 |
| | Economy | (A) | 0.8 | 0.8 | 1.5 |
| Maximum connecting cable return resistance between caliper and supply unit | | (Ω) | 3 | 3 | 2 |
| Maximum connecting cable length (caliper-input) according to the cable section | 2.5 mm² | (m) | 150 | 150 | 100 |
| | 4 mm² | (m) | 240 | 240 | 160 |
| | 6 mm² | | 355 | 355 | 240 |
| Protection to be provided on head control contactor on mains input | Fuse aM | (A) | 2 | 2 | 2 |
| | Circuit-breaker curve C | (A) | 4 | 4 | 4 |

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT DS100-50 CP

**Revision number: T10037-01-B** **Revision date: 15.11.2016**

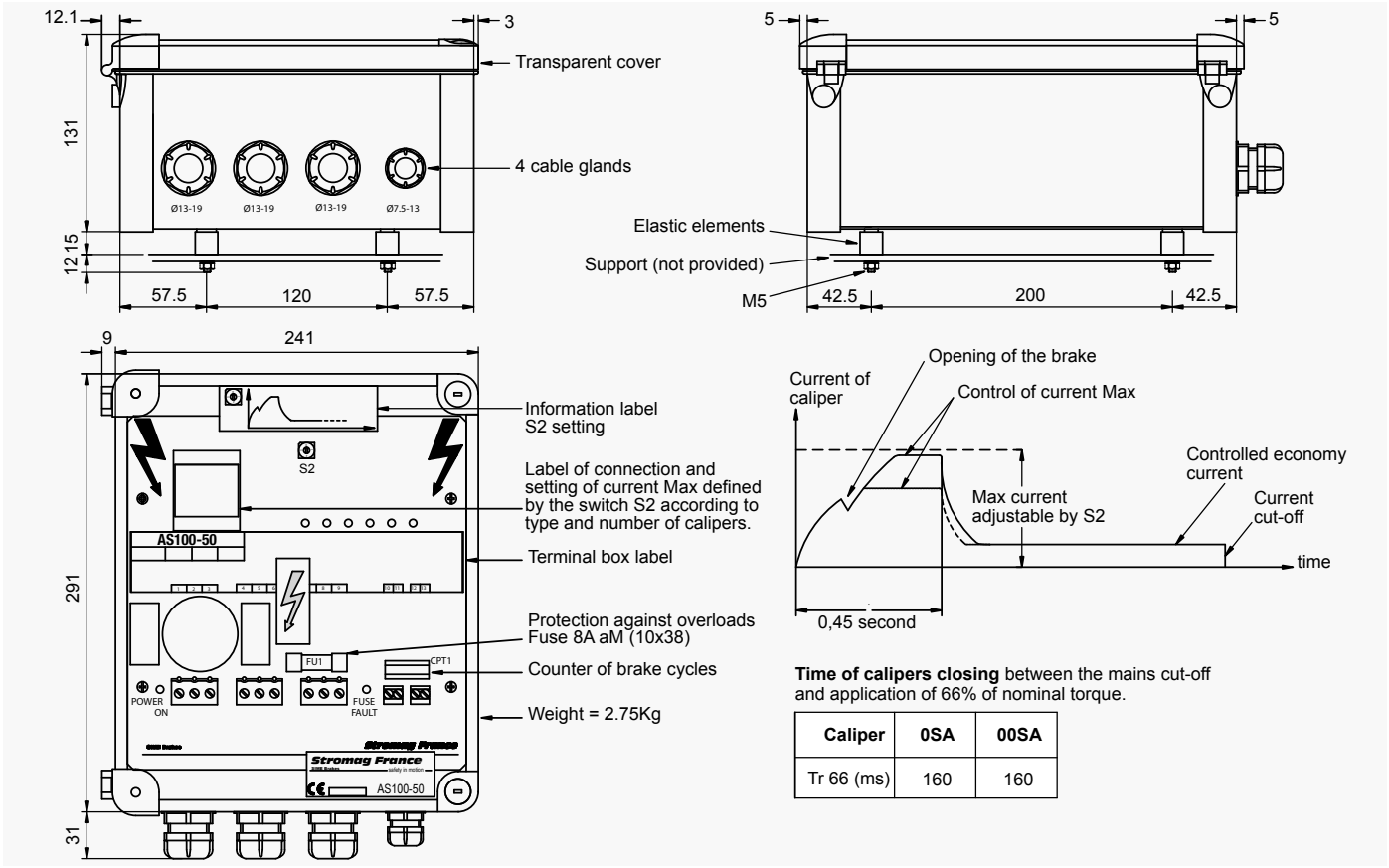
Compact power supply operating on direct mains.
For SIME disc brakes with 50 V coil type : OSA - OOSA
Polycarbonate case

**Operating Conditions:**
- Casing protection standard IP66 IK08
- Ambient temperature : -20°C to +60°C

**Electrical Data :**
Mains DC : 110 to 275V DC ± 10%
Possible operation in 115 V AC ± 20%

**EC marking of conformity** :
- 2006/95/CE directive Low Voltage (standard EN60204-1)
- 2004/108/CE directive EMC (standards EN61000-6-2 and EN61000-6-4)

**Options:**
- Closure delay of the caliper
- Disengageable closure delay of the caliper (cannot be combined with anti-condensation)
- Anti-condensation kit
- Steel case IP66 IK10




**Time of calipers closing** between the mains cut-off and application of 66% of nominal torque.

| Caliper | 0SA | 00SA |
|---|---|---|
| Tr 66 (ms) | 160 | 160 |

**ELECTRICAL DANGER : THIS PRODUCT IS NOT INSULATED**
Control and power electronic of power supply is not insulated and is under mains voltage.
The power supply must be installed by qualified personnel. used to handle this equipment type and aware of risks inherent in their utilization.

| Caliper | | | 0SA | 0SA | 00SA |
|---|---|---|---|---|---|
| Maximum number of calipers | | | 1 | 2 | 1 |
| Resistance at 20°C per electromagnet | | Ω | 1.01 | 1.01 | 1.01 |
| Maximum number of actuations per hour and ambient temperature θ | θ ≤60°C | | 100 | 100 | 100 |
| Mains current absorbed | Max | A | 33 | 38 | 38 |
| | Economy | A | 2.6 | 3.3 | 3.3 |
| Maximum connecting cable return resistance between caliper and supply unit | | Ω | 3.5 | 1 | 1 |
| Maximum connecting cable length (caliper-input) according to the cable section | 2.5 mm² | m | 170 | 50 | 50 |
| | 4 mm² | m | 275 | 80 | 80 |
| | 6 mm² | m | 415 | 120 | 120 |
| | 10 mm² | m | 715 | 205 | 205 |
| Protection to be provided in head of control contactor on mains input | Fuse aM | A | 8 | 8 | 8 |
| | Circuit-breaker curve C | A | 16 | 16 | 16 |

# DISC BRAKE - ELECTRICAL POWER UNIT TYPE 4200

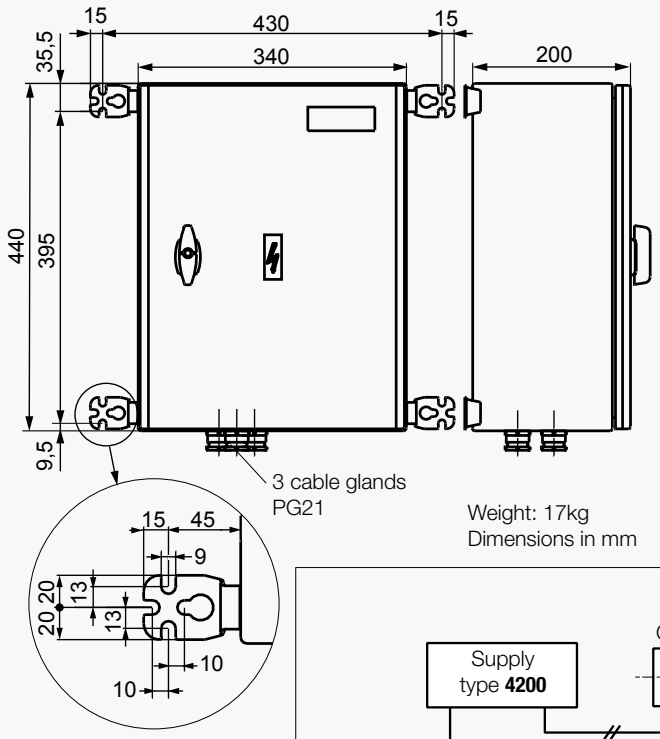
**Revision number: T04800-01-C** **Revision date: 21.10.2015**

2 presentations are available:
- C for casing protected version
- P for plate mounted version

**Note:**
if 2 calipers are driven by the same power supply (or the 2 coils of the caliper OOSA) they must be connected in series (refer to the installation and maintenance leaflet)

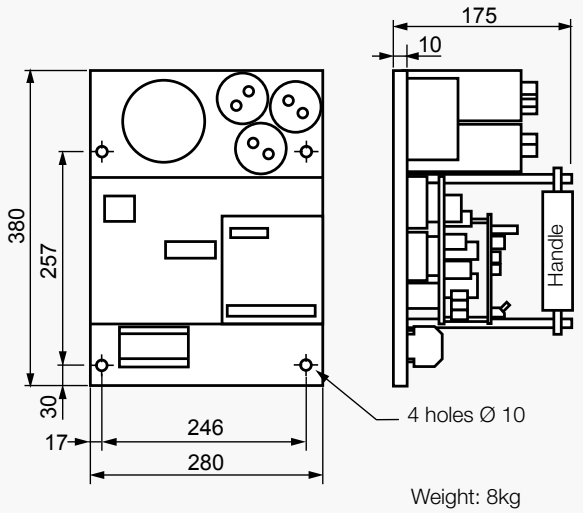
**Operating conditions:**
- Line voltage:
  - direct: 115V to 600VDC ± 10%
  - single or three phases: 115V to 500VAC ± 10% 50/60Hz
- Ambiant temperature: -20°C to +55°C

**Type C4200 casing protected version (casing IP 66 standard EN60529)**

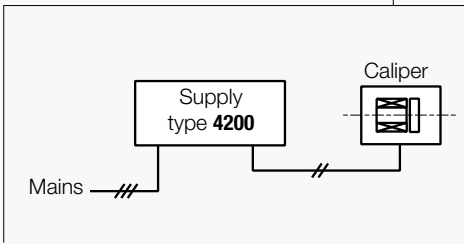


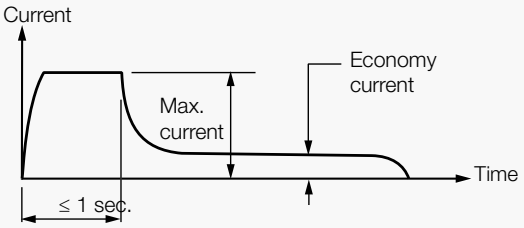

Weight: 17kg
Dimensions in mm

**Type P4200 plate mounted version (for cabinet assembly)**




Weight: 8kg
Dimensions in mm




| CALIPER | Type | | | 4CA | | 3CA | | OSA | | OOSA | 2SA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 |
| Maximum number of actuations per hour at 40°C | | | | 700 | | 1000 | | 100 | | | 100 | |
| Power consumption of the power supply | Maximum | | W | 1695 | 3215 | 1355 | 2480 | 2850 | 5380 | 5380 | 8205 | 15 815 |
| | Economy | | W | 105 | 140 | 130 | 175 | 305 | 480 | 480 | 205 | 300 |
| Max. connecting cable return resistance caliper to supply unit (for 1 coil) | | | Ω | 1 | | 1 | | 1 | | | 1 | 1 |
| Delayed fuse rating to be provided between power supply and mains : | | | | | | | | | | | | |
| | direct : | 115 VDC | A | 25 | | 25 | | 25 | | | | |
| | | 230 VDC | A | 25 | | 25 | | 25 | | | 35 | |
| | | 400 to 600 VDC | A | 25 | | 25 | | 25 | | | 35 | 35 |
| | single phase : | 115 VAC | A | 25 | | 25 | | 25 | | | | |
| | | 230 VAC | A | 25 | | 25 | | 25 | | | 35 | |
| | | 400 VAC | A | 25 | | 25 | | 25 | | | 35 | 35 |
| | | 500 VAC | A | 25 | | 25 | | 25 | | | 25 | 25 |
| | 3 phases : | 230 VAC | A | 25 | | 25 | | 25 | | | 25 | |
| | | 400 VAC | A | 16 | | 16 | | 16 | | | 25 | 25 |
| | | 500 VAC | A | 16 | | 16 | | 16 | | | 16 | 16 |

Forbidden association

## Electrical Power Units

# DISC BRAKE - ELECTRICAL POWER UNIT TYPE 4205

**Revision number: T04810-01-B** **Revision date: 21.10.2015**

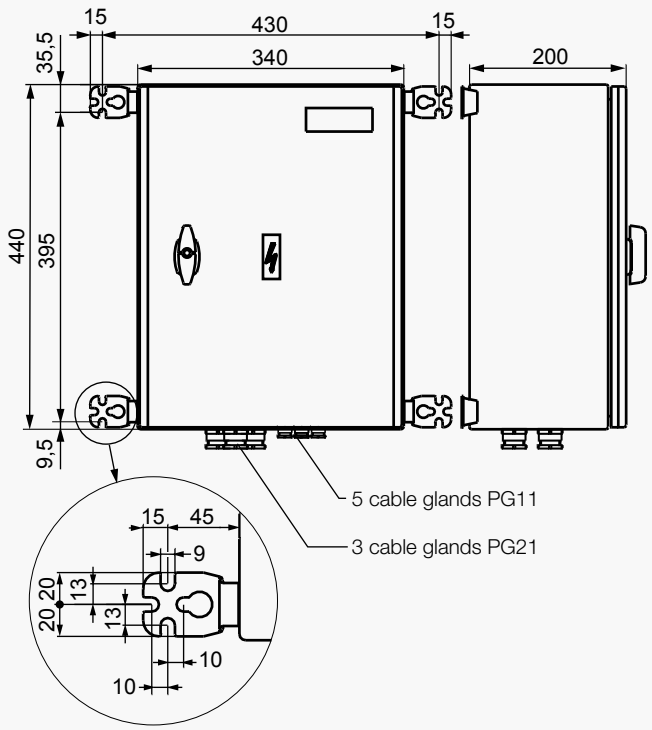
Designed for normal control or progressive release of electrical calipers to perform lowering maneuvers.

2 presentations are available:
- C for casing protected version
- P for plate mounted version

**Operating conditions:**
- Line voltage:
  - direct: 115V to 600VDC ± 10%
  - single or three phases: 115V to 500VAC ± 10% 50/60Hz
- Ambiant temperature: -20°C to +55°C

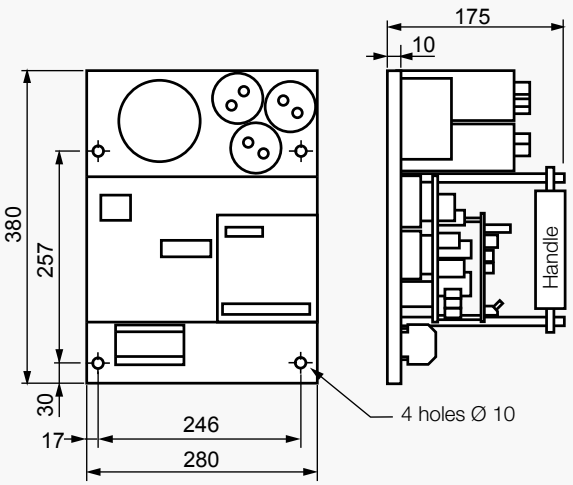
**Type C4205 casing protected version (casing IP 66 EN60529)**

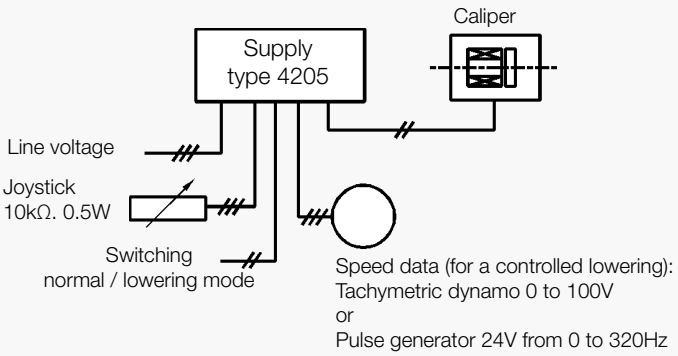
Weight: 17kg

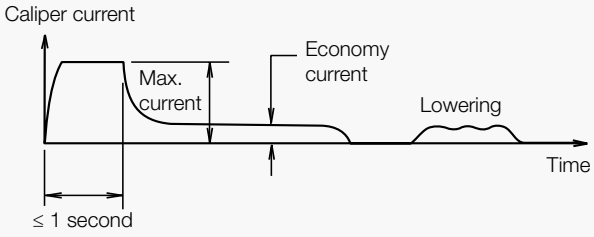



**Type P4205 plate mounted version (for cabinet assembly)**

Weight: 8kg



# DISC BRAKE - ELECTRICAL POWER UNIT TYPE 4205

**Revision number: T04810-01-B** **Revision date: 21.10.2015**

**Notes:**

- Lowering a load is performed manually, with or without vertical speed control, by progressively releasing the calipers (between 100% and 50% of the nominal torque)
- 2 calipers driven by the same power supply (or the 2 coils of the caliper OOSA) must be connected in series (refer to the installation and maintenance leaflet)
- For lowering with calipers 4CA2, contact us.

Note : by insulated kinematics (e.g.: a drum), the lowering command is performed only for one of the **4205** electrical supply units. This unit is called the "master".
One "master" unit can drive up to 5 "slave" units.

| CALIPER | | | Type | 4CA2 | | 3CA2 | | OSA | | OOSA | 2SA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 |
| Maximum number of actuations per hour at 40°C | | | | 700 | | 1000 | | 100 | | | 100 | |
| Power consumption of the power supply | Maximum | W | | 1695 | 3215 | 1355 | 2480 | 2850 | 5380 | 5380 | 8205 | 15 815 |
| | Economy | W | | 105 | 140 | 130 | 175 | 305 | 480 | 480 | 205 | 300 |
| Max. connecting cable return resistance caliper to supply unit (for 1 coil) | | Ω | | 1 | | 1 | | 1 | | | 1 | 1 |
| Delayed fuse rating to be provided between power supply and mains : | | | | | | | | | | | | |
| | direct : | 115 VDC | A | 25 | | 25 | | 25 | | | | |
| | | 230 VDC | A | 25 | | 25 | | 25 | | | 35 | |
| | | 400 to 600 VDC | A | 25 | | 25 | | 25 | | | 35 | 35 |
| | single phase : | 115 VAC | A | 25 | | 25 | | 25 | | | | |
| | | 230 VAC | A | 25 | | 25 | | 25 | | | 35 | |
| | | 400 VAC | A | 25 | | 25 | | 25 | | | 35 | 35 |
| | | 500 VAC | A | 25 | | 25 | | 25 | | | 25 | 25 |
| Forbidden association | 3 phases : | 230 VAC | A | 25 | | 25 | | 25 | | | 25 | |
| | | 400 VAC | A | 16 | | 16 | | 16 | | | 25 | 25 |
| | | 500 VAC | A | 16 | | 16 | | 16 | | | 16 | 16 |

# NOTES

# DISC BRAKE - ELECTRICAL POWER UNIT TYPE AB8

**Revision number: T04400-01-B** **Revision date: 21/07/2016**

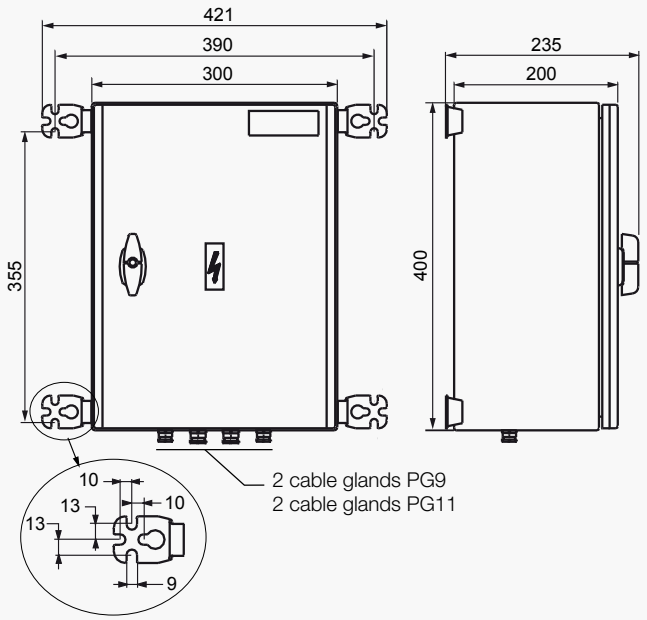
Designed for control of the progressive braking effort by means of a foot pedal.
2 presentations are available:
- casing protected version C
- plate mounted version P

Matching CE markings:
- 73/23/CEE BT directive
- 89/336/CEE CEM directive

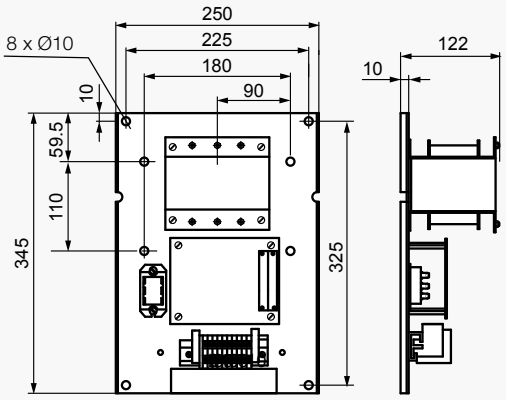
(specifications EN50081-2 EN50082-2 EN6 0204-1)

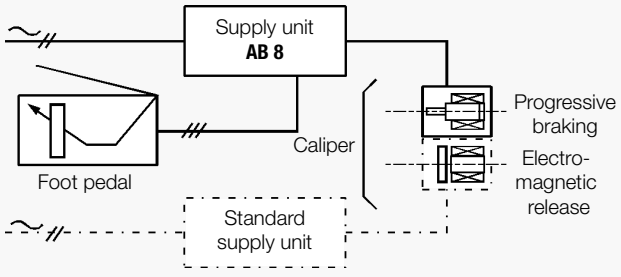
**Working conditions:**
- Voltage(single phase)
  230/400V
  or 400/415V
  or 400/440V ± 10% 50/60Hz
  or 400/460V
  or 400/500V
- Working ambient temperature: -20°C to +60°C

**Type C AB8 protected version (casing IP 669 standard DIN 40050)** Weight: 16 kg



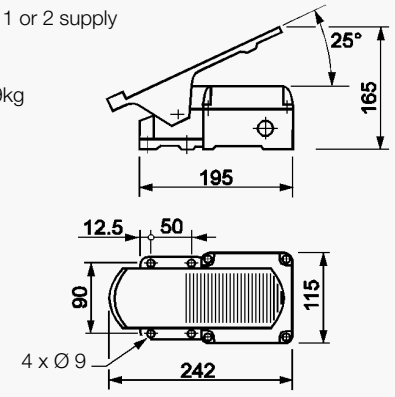

**Type P AB8 plate mounted version (for cabinet assembly)** Weight : 8 kg




**Control pedal**:
it can drive 1 or 2 supply units AB8

Weight: 1.9kg




| Caliper | | 650 E - 5 KE - 5 DE | |
|---|---|---|---|
| **Number of calipers** | | **1** | **2** |
| Power consumption in Watts for an output voltage of 20V DC | | 115 | 230 |
| Voltage | | 3 to 24V DC | |
| Maximum connecting cable return resistance (caliper to supply unit) | Ω | 0.5 | 0.5 |
| Primary fuse DIN "NH" type. "aM" class to be provided | 230 V | 1A | 2A |
| | 400/415 V | 1A | 2A |
| | 440/460/500 V | 1A | 2A |

### Hydraulic Power Packs

# HYDRAULIC POWER PACKS

## Hydraulic Power Packs

| HYDRAULIC POWER PACKS | TANK | MAX. PRESSURE | ASSOCIATED CALIPERS | MAIN CHARACTERISTICS |
|---|---|---|---|---|
| **CE1L**  | 2.5 L | 190 bars | SH1 - SHD1 | • Vertical installation<br>• Options :<br>PAM : Hand pump with manometer<br>OP1 : Enhanced security return circuit<br>Y1-3 : Stepped braking torque application<br>Y2 : Progressive braking torque application<br>Electrical indicators (oil temperature and level) |
| **C3BSH**  | 4 L | 180 bars | SHD2 - SHD5<br>SH5-SH9<br>TH9 | • Vertical installation<br>• Options :<br>MS : Special voltages motor<br>OP1 / Y1-3<br>Z1-Z2 : Delayed braking<br>R : Braking torque adjustment<br>AF : Lowering device |
| **CSH**  | 6 L | 200 bars | SHD5 - SHD9 | • Vertical installation<br>• Customer-fitted solutions :<br>Application of full braking force<br>Adjustable and progressive application fo the braking force with non-application of the full braking force at beginning of the braking<br>• Electrical indicators (clogging, oil temperature and level) |
| **CE8L**  | 8 L | 225 bars | SHD2 - SHD5<br>SH5-SH9<br>SH15 - SH18B<br>SH25<br>TH9 | • Horizontal or vertical installation.<br>• Options :<br>MS / OP1<br>OP2 : Manual lowering with dead man safety device<br>OP3 : Manual lowering with overspeed detection<br>OP4 : Indicator of the valves position<br>CS2EV : Monitoring device of the 2 solenoid valves (OP1)<br>Y5 : Regulated braking or lowering of the load<br>OP6 : Tightness for Iron and steel industry<br>Drip tray for HPP mounted horizontally<br>Electrical power unit integrated to the HPP<br>Electrical indicators : clogging, oil level and temperature... |
| **CE12L**  | 12 L | 225 bars | SH15 - SH18B<br>SH25 - SH32 | |
| **ST210**  | 63 L | 225 bars | SH15 - SH18B<br>SH25 - SH32 | • Vertical installation.<br>• Options :<br>MS / OP1 / OP2 / OP3 / OP4 / OP6<br>OP9 : Output pressure switch<br>Electrical power unit integrated to the HPP<br>Electrical indicators : clogging, oil level and temperature... |

## Hydraulic Power Packs

# DISC BRAKE - CE1L HYDRAULIC POWER PACK

**Revision number: T10107-01-C** **Revision date: 08.06.2016**

Association with 1 or 2 caliper(s) of **SH1** range
Maximal utilization pressure : 190 bars
Reservoir maximum oil volume : 2.5 L
Vertical installation

**Operating conditions**:

- Ambient temperature: -20°C to +70°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm
- C4M anti-corrosive protection level
- IP55 tightness level

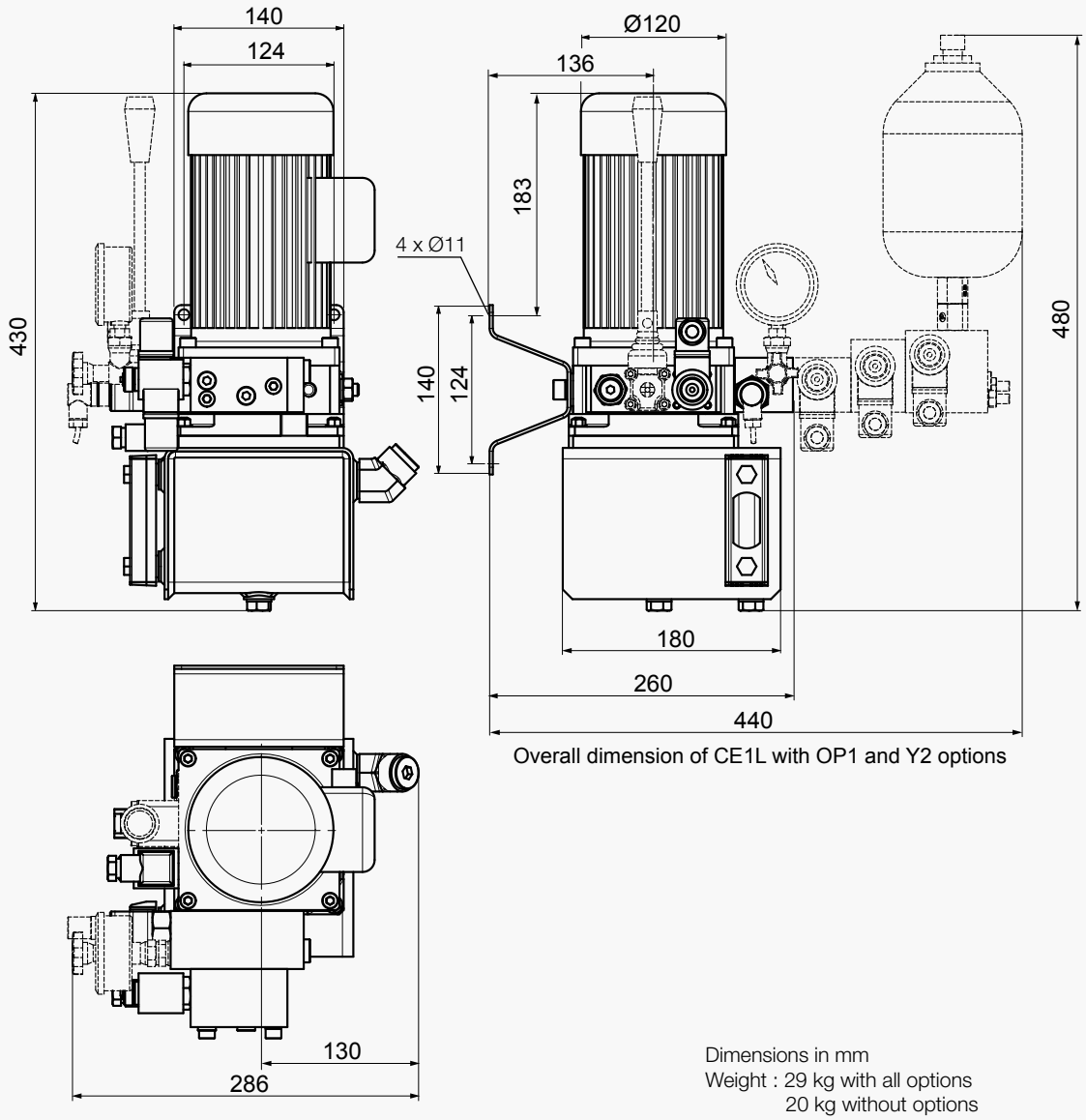
Other conditions: consult us.

**Use:**

- Service life : 200 000 operations minimum
- Frequency of operation : 60 op. / hour maxi.

**Options:**

| | |
|---|---|
| **PAM** | Hand pump with manometer |
| **OP1** | Enhanced security return circuit by 2 solenoid valves |
| **OP7-8** | Electrical indicators of oil temperature and minimum level |
| **Y1-3** | Caliper closing with stepped braking torque application |
| **Y2** | Caliper closing with progressive braking torque application |



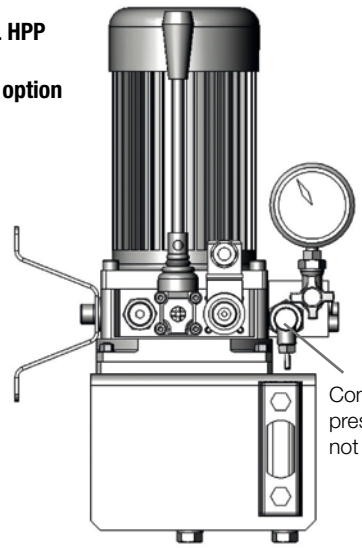

Overall dimension of CE1L with OP1 and Y2 options

Dimensions in mm
Weight : 29 kg with all options
20 kg without options

# DISC BRAKE - CE1L HYDRAULIC POWER PACK

**Revision number: T10107-01-C** **Revision date: 08.06.2016**

**CE1L HPP with PAM option**




**Electrical data:**

**Motor M**

**230/400VAC 50Hz** 0.37 kW
4 poles 1500rpm

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 480VAC ±10% 60Hz |

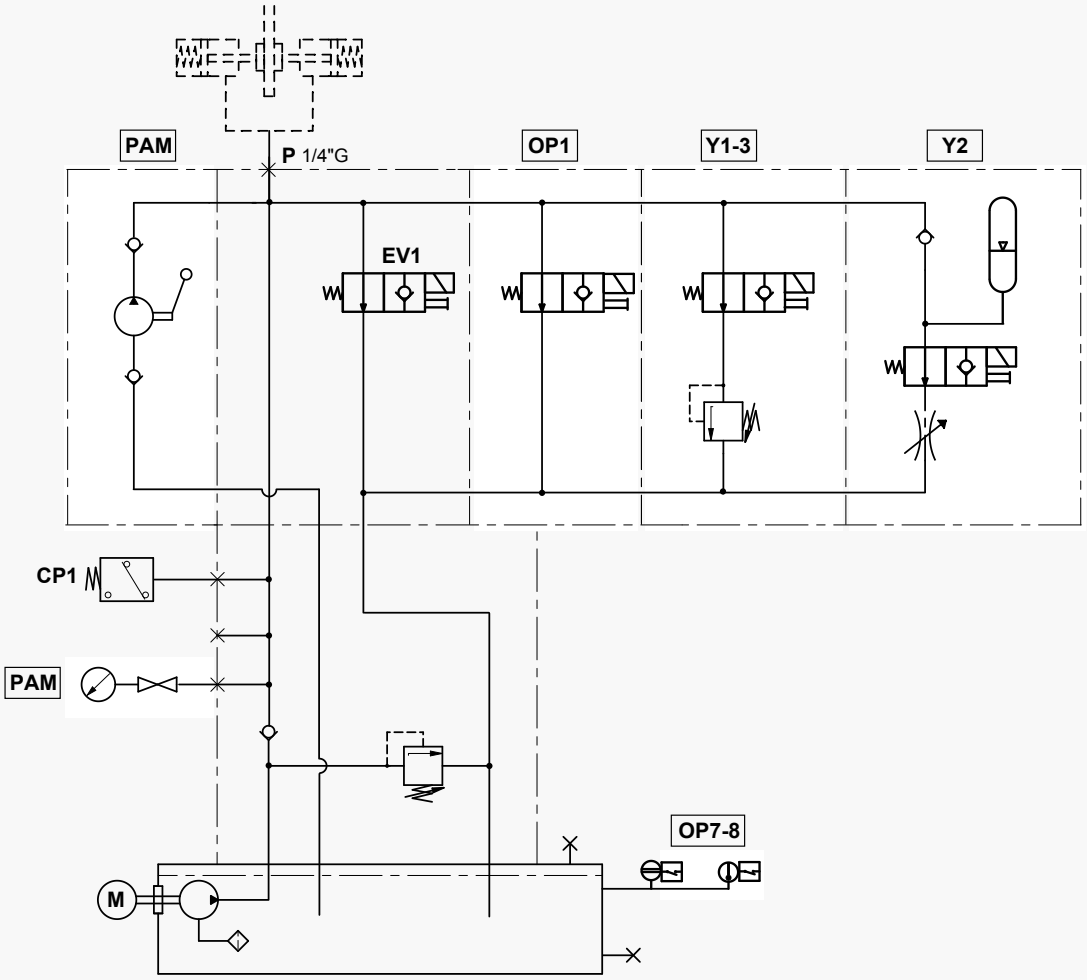
**Solenoid valve EV1**

Coil under 24VDC

**Pressure switch CP1**

- Electrical design : DC PNP
- Operating voltage : 9.6...32 VDC
- Current consumption : < 25 mA
- Insulation resistance : > 100 MΩ
- Current rating : 500 mA
- 2 switching outputs normally open / closed complementary
- Connector M12 / 5 positions in accordance with IEC61076-2-101 standard / code A (not delivered)

**Flow diagram**



## Hydraulic Power Packs

# DISC BRAKE - C3BSH-ATH2 HYDRAULIC POWER PACK

**Revision number: T05226-01-E** **Revision date: 20.02.2014**

Association with 1 caliper of **TH9**. **SH5** or **SH9A** range.
Maximal utilization pressure : 225 bars
Reservoir maximum oil volume : 4 L
Integrated electrical unit

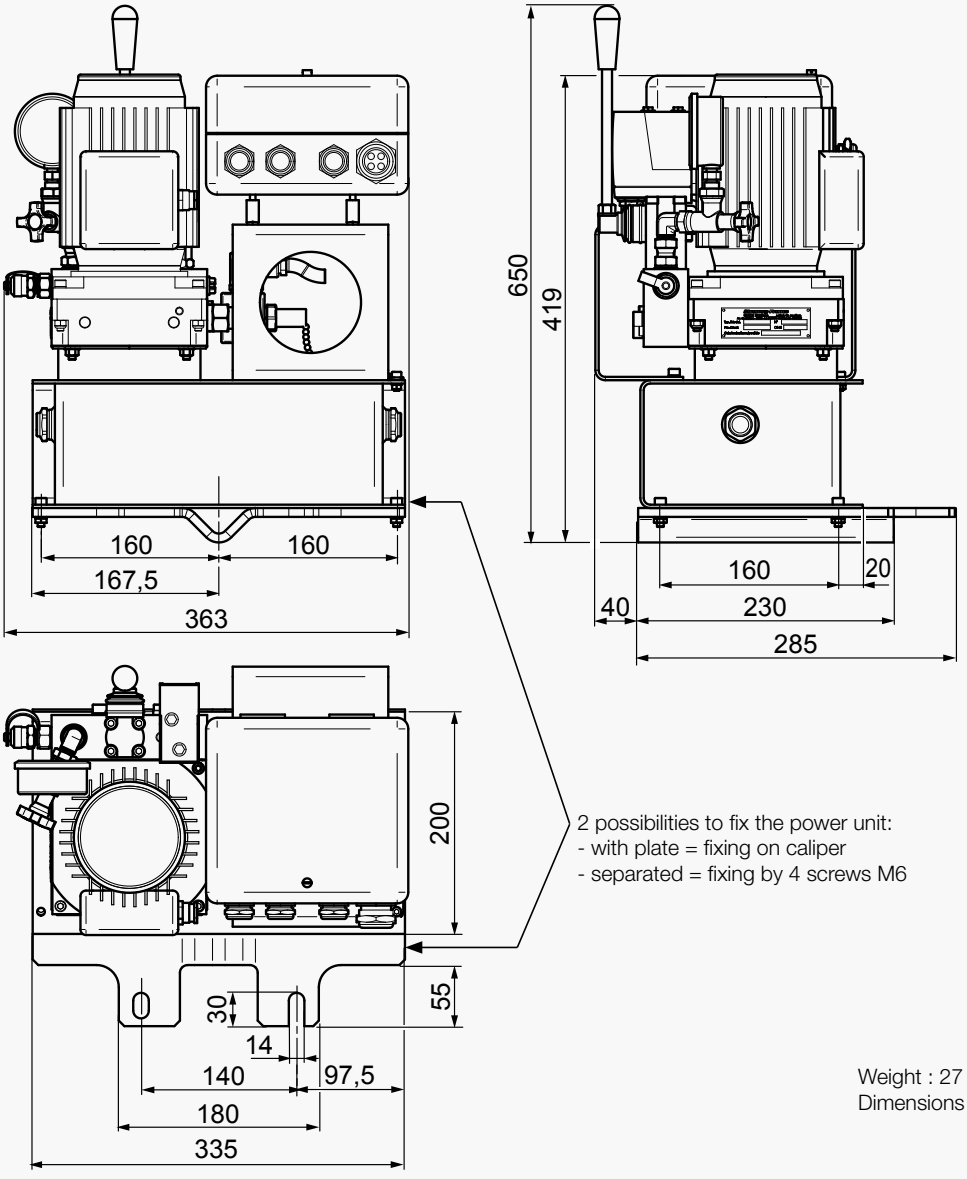
**Operating conditions**:
- Ambient temperature: -10°C to +50°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm
- Protection required against vertically falling water

Other conditions: consult us.

**Use:**
- Frequency of operation : 100 op. / hour maxi. Except for SH5-6 and SH9-3 calipers : frequency of operation : 60 op. /hour maxi.

**Options:**

| | |
|---|---|
| **MS** | Special motor |
| **OP1** | Enhanced security return circuit by 2 solenoid valves |
| **R** | Braking torque adjustment |
| **AF** | Manual lowering with a dead man safety design |
| **OP6** | Tight HPP for iron and steel industry |
| **Y1-3** | Caliper closing with stepped braking torque application |
| **Z1-Z2** | Delayed braking |




Weight : 27 kg without oil
Dimensions in mm

# DISC BRAKE - C3BSH-ATH2 HYDRAULIC POWER PACK

**Revision number: T05226-01-E** **Revision date: 20.02.2014**

**Electrical data**

**Motor M100**

**230/400VAC 50Hz** 0.37 kW
4 poles 1500rpm

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 480VAC ±10% 60Hz |

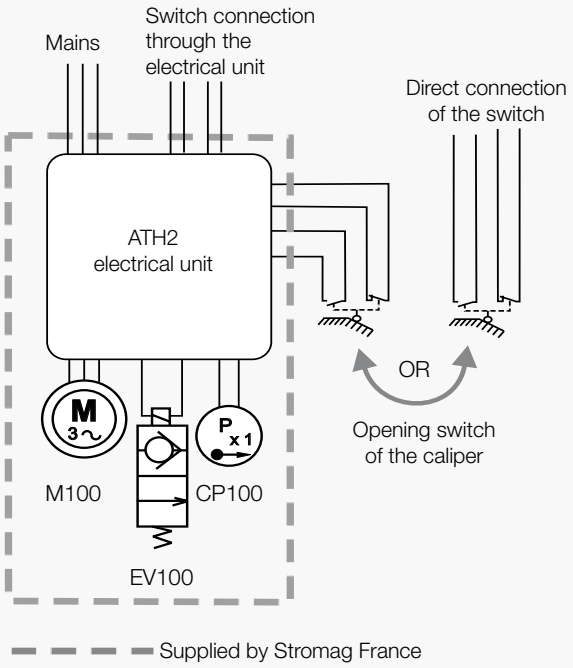
**Solenoid valve EV100**

Coil under 48 VRAC

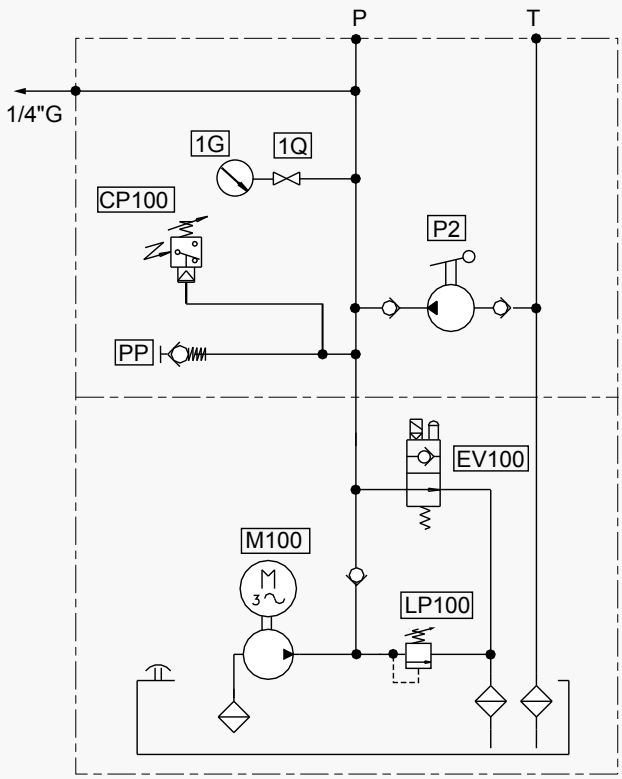
**Pressure switch CP100**

- Protection: IP 65
- 240 V AC. 1.5 A
- 250 V DC - 0.1 A

**Electrical unit connections**




**Flow diagram**



## Hydraulic Power Packs

# DISC BRAKE - CSH-02 HYDRAULIC POWER PACK

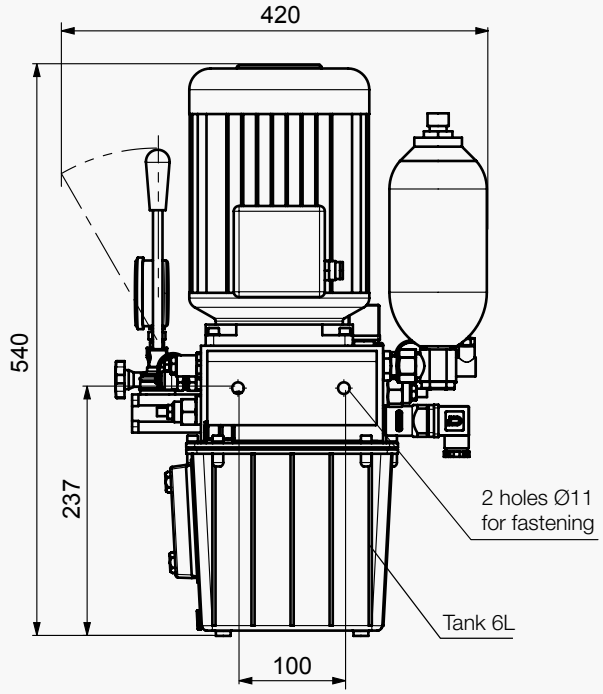
**Revision number: T10123-02-C** **Revision date: 06.07.17**

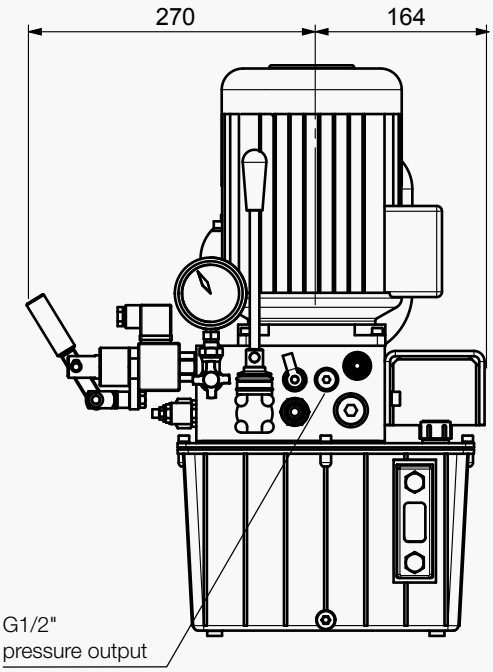
Association with 1 or 2 **SHD9-4-03** caliper(s)
Motor 0.75 kW at 1500 rpm
Maximal utilization pressure : 190 bars
Electrical indicators of oil temperature and level (OP7-8)
Vertical installation

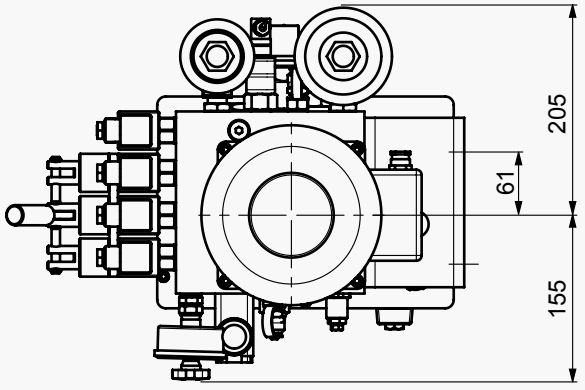
**Operating conditions**:
- Ambient temperature: -10°C to +50°C
- Relative humidity: ≤ 100%
- C4M L anti-corrosive protection level (according to ISO12944 standards)
- IP55 tightness level

Other conditions: consult us.

**Use:**
- Service life : 200 000 operations
- Frequency of operation : 60 op. / hour maxi.



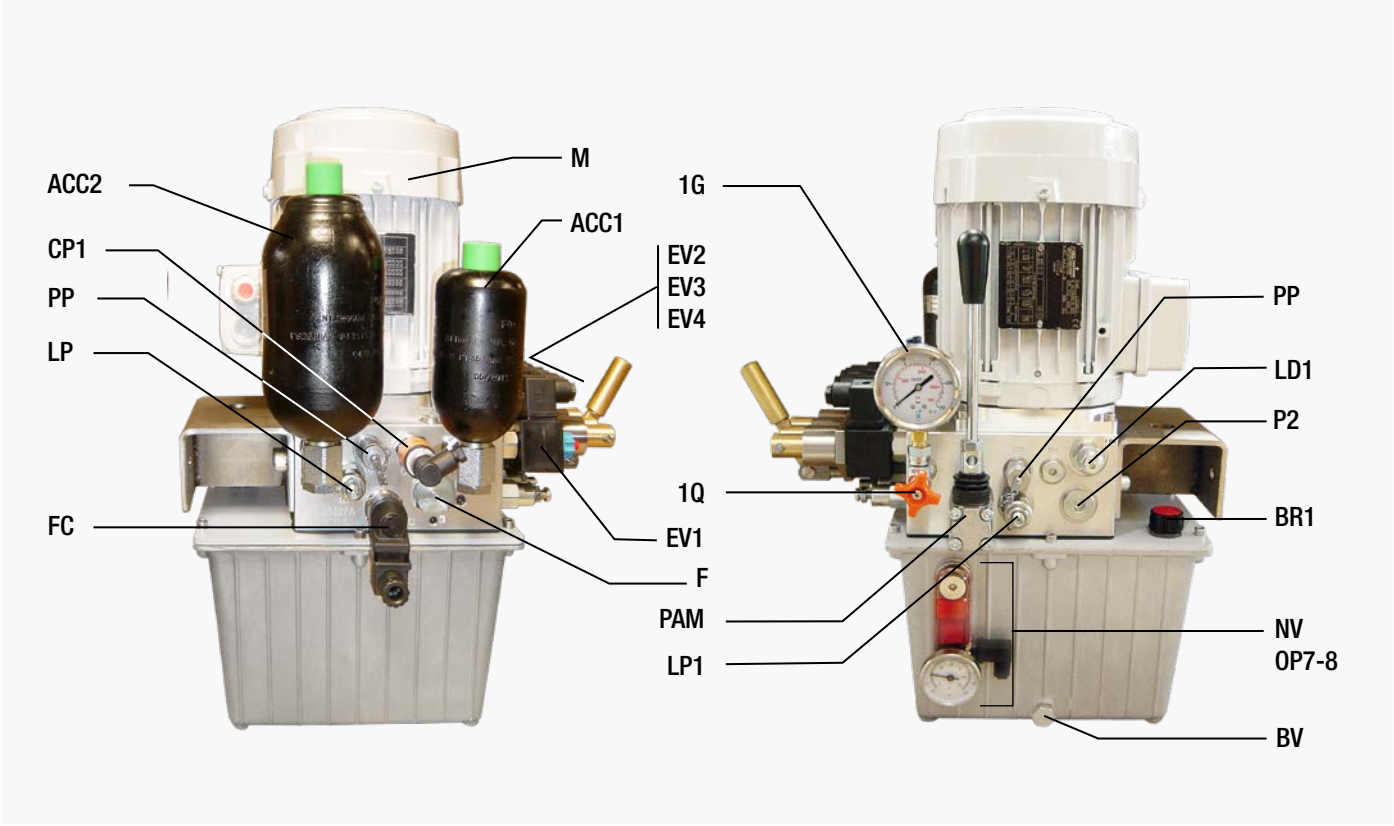




Dimensions in mm
Weight without oil : 43 kg
Tank volume : 6 L

# DISC BRAKE - CSH-02 HYDRAULIC POWER PACK

**Revision number: T10123-02-C** **Revision date: 06.07.17**




**Electrical data:**

**Motor M**

**230/400VAC 50Hz** 0.75 kW
4 poles 1500rpm

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 265-277-290VAC ±10% 60Hz |
| 440-460-480VAC ±10% 60HZ |

**Solenoid valves EV1-EV2-EV3-EV4**

Coil under 24VDC with rectifier

**Pressure switch CP1**

- Electrical design : DC PNP
- Operating voltage : 9.6...32 VDC
- Current consumption : < 25 mA
- Insulation resistance : > 100 MΩ
- Current rating : 500 mA
- 2 switching outputs normally open / closed complementary
- Connector M12 / 5 positions in accordance with IEC61076-2-101 standard / code A (not delivered)

**Clogging indicator FC** (NC)

- Calibration : 5 bars
- Supply voltage : 30 VDC
- Resistive load : 5A / Inductive load : 5A

**Electrical indicators of oil temperature and level OP7-8**

Integrated to the visual oil level. the electrical indicators provide a temperature signal by means of a thermostat (NC) preset at 70°C (OP7) and a minimum oil level electric signal (INV) (OP8).

Electric part is completely separate from oil and insulated.

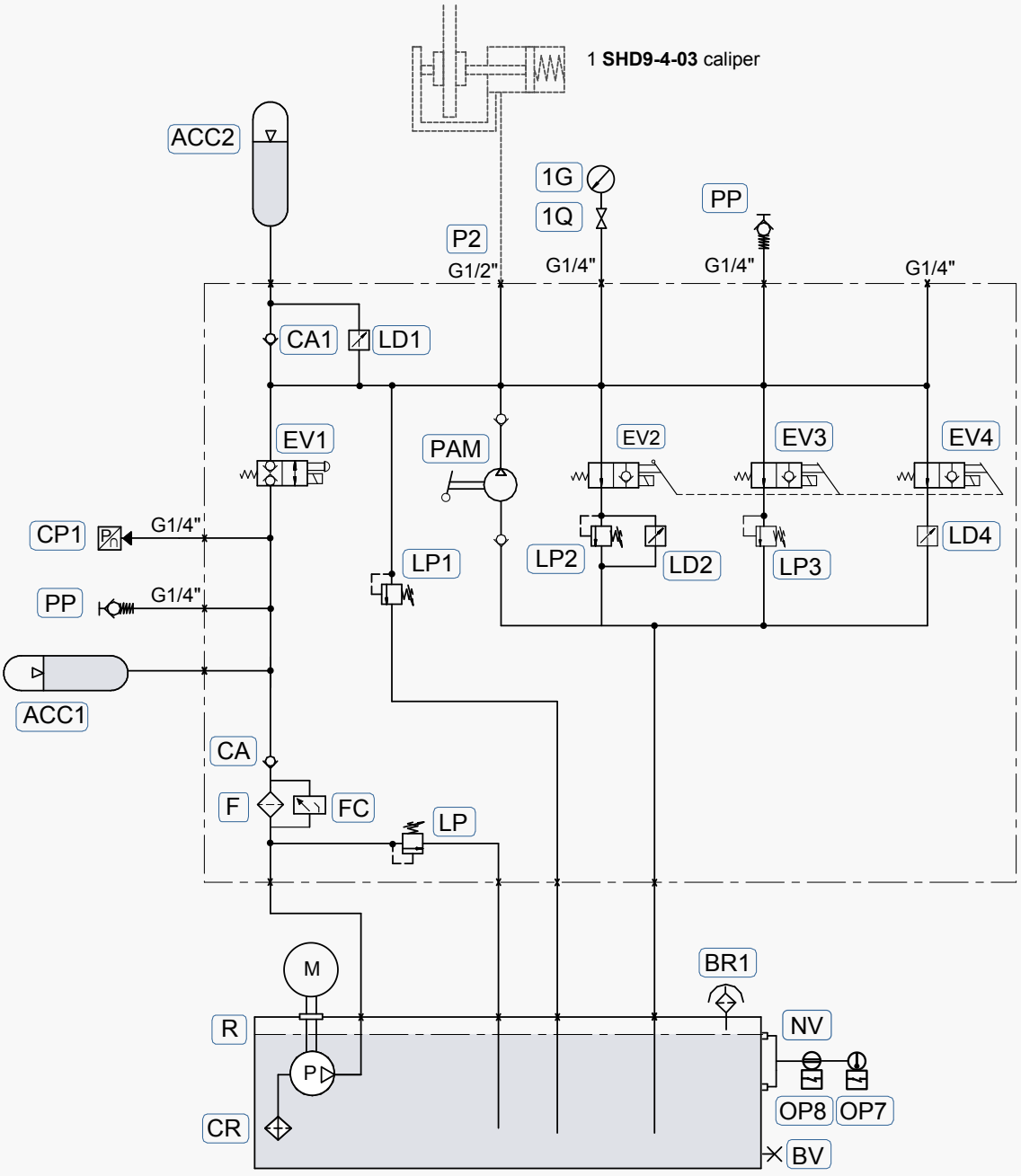
- Power commutable in DC : 40 W
- Power commutable in AC : 40 V.A.
- Current strength in DC - AC : 2 A
- Commutable voltage : 230 VDC/VAC
- Connector provided

## Hydraulic Power Packs

# DISC BRAKE - CSH-02 HYDRAULIC POWER PACK

**Revision number: T10123-02-C** **Revision date: 06.07.17**

**Flow diagram**



# NOTES

## Hydraulic Power Packs

# DISC BRAKE - CE8L HYDRAULIC POWER PACK

**Revision number: T05570-01-D** **Revision date: 26.02.2015**

Maximal utilization pressure : 225 bars
Reservoir maximum oil volume : 8 L
Vertical or horizontal installation

**Operating conditions**:
- Ambient temperature: -10°C to +60°C
- Relative humidity: ≤ 70%
- Dust in atmosphere ≥ 65µm
- Protection required against vertically falling waters

Other conditions: consult us.

**Use:**
- Frequency of operation : 100 op. / hour maxi.

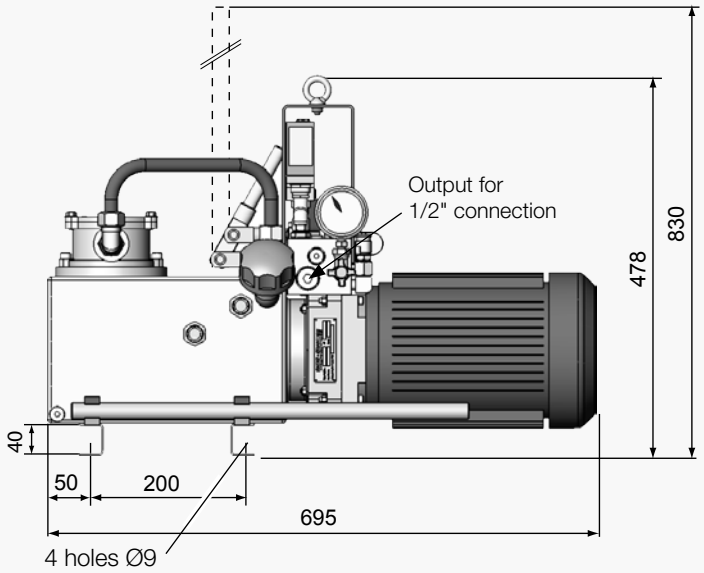
**Association with the calipers :**

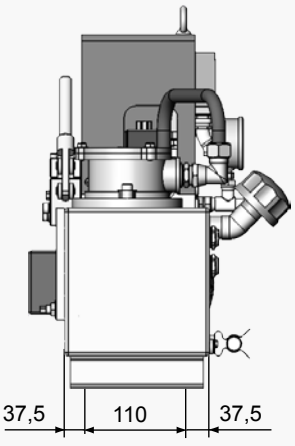
| | |
|---|---|
| **CE8L-20** | SH25-2. SH18B. SH9-3. SH5-6 |
| **CE8L-18** | SH15-3. SH9-2 |
| **CE8L-16** | SH25-1. SH15-2. SH5-5. TH9-3 |
| **CE8L-14** | SH15-1. SH9-1. SH5-4 |
| **CE8L-11** | SH5-3. TH9-2 |

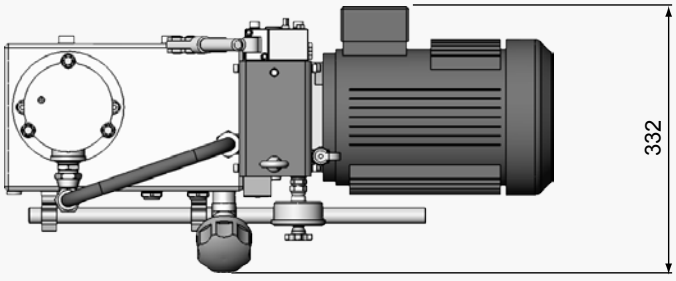
**Options :**

| | |
|---|---|
| **MS** | Motor 290/500VAC 50Hz or Motor 230/400 VAC with PTC sensor |
| **EVS** | EV coils voltage different from the standard |
| **K1 or K2** | Integrated electrical power unit |
| **OP1** | Enhanced security return circuit by 2 solenoid valves |
| **CS2EV** | Monitoring device of the 2 solenoid valves (of OP1) |
| **OP1-OP2** | Manual lowering with a dead man safety device. |

| | |
|---|---|
| **OP1-OP3** | Manual lowering with overspeed safety by solenoid valve 24VDC. |
| **OP4** | Indicator switch of the position of the control valve(s) |
| **OP5** | Visual or electrical clogging Indicator |
| **OP6** | HPP for iron and steel industry |
| **OP8** | Electrical indicator of oil minimum level |
| **OP10** | Drip tray for horizontal HPP |
| **RV** | Drain valve for reservoir |
| **Y5** | Regulated braking |



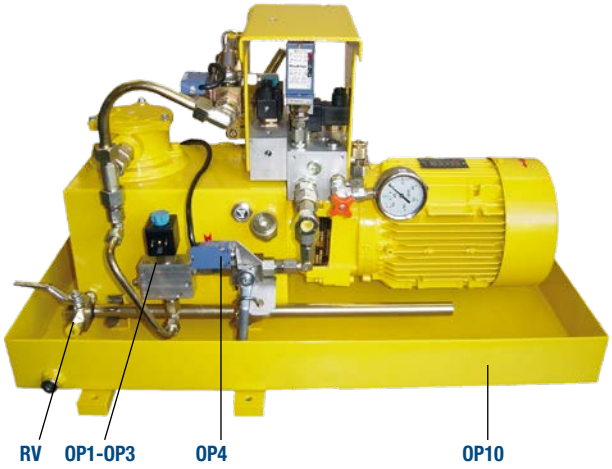




Weight : 54 kg without oil
Representation: CE8L-H
(horizontal position)
Dimensions in mm

# DISC BRAKE - CE8L HYDRAULIC POWER PACK

**Revision number: T05570-01-D** **Revision date: 26.02.2015**




**Electrical data:**

**Motor M**

**230/400VAC 50Hz** 2.2 kW
4 poles 1500rpm

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 480VAC ±10% 60Hz |

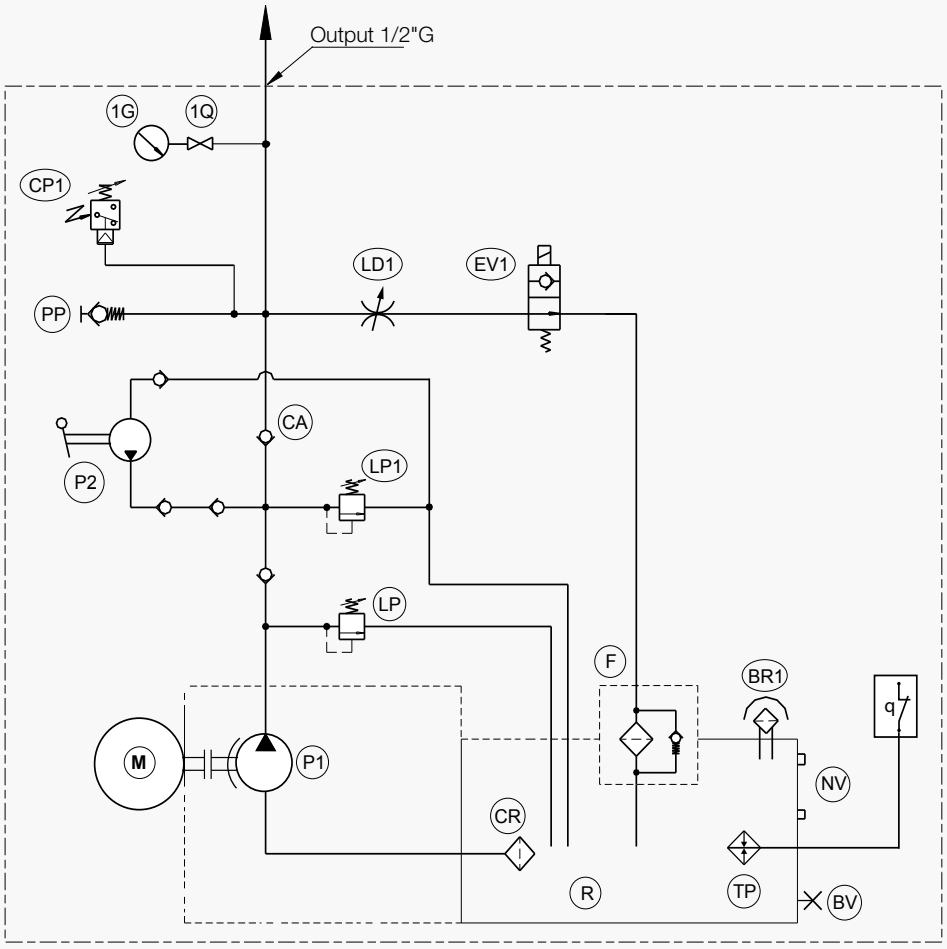
**Solenoid valve EV1**

Coil under 230VRAC 50 or 60 Hz
single phase. 20W
Protection IP55

**Pressure switch CP1**

- Single-pole and snap-acting contact "OC"
- Protection: IP 66
- 240 V AC. 1.5 A
- 250 V DC. 0.1 A

**Flow diagram**



## Hydraulic Power Packs

# DISC BRAKE - CE12L HYDRAULIC POWER PACK

**Revision number: T10001-01-F** **Revision date: 26.02.2015**

Maximal utilization pressure : 225 bars
Reservoir maximum oil volume : 12 L
Vertical or horizontal installation

**Operating conditions**:

- Ambient temperature: -20°C to +60°C
- Relative humidity: ≤ 100%
- Dust in atmosphere ≥ 30µm
- Protection required against vertically falling waters

Other conditions: consult us.

**Use:**

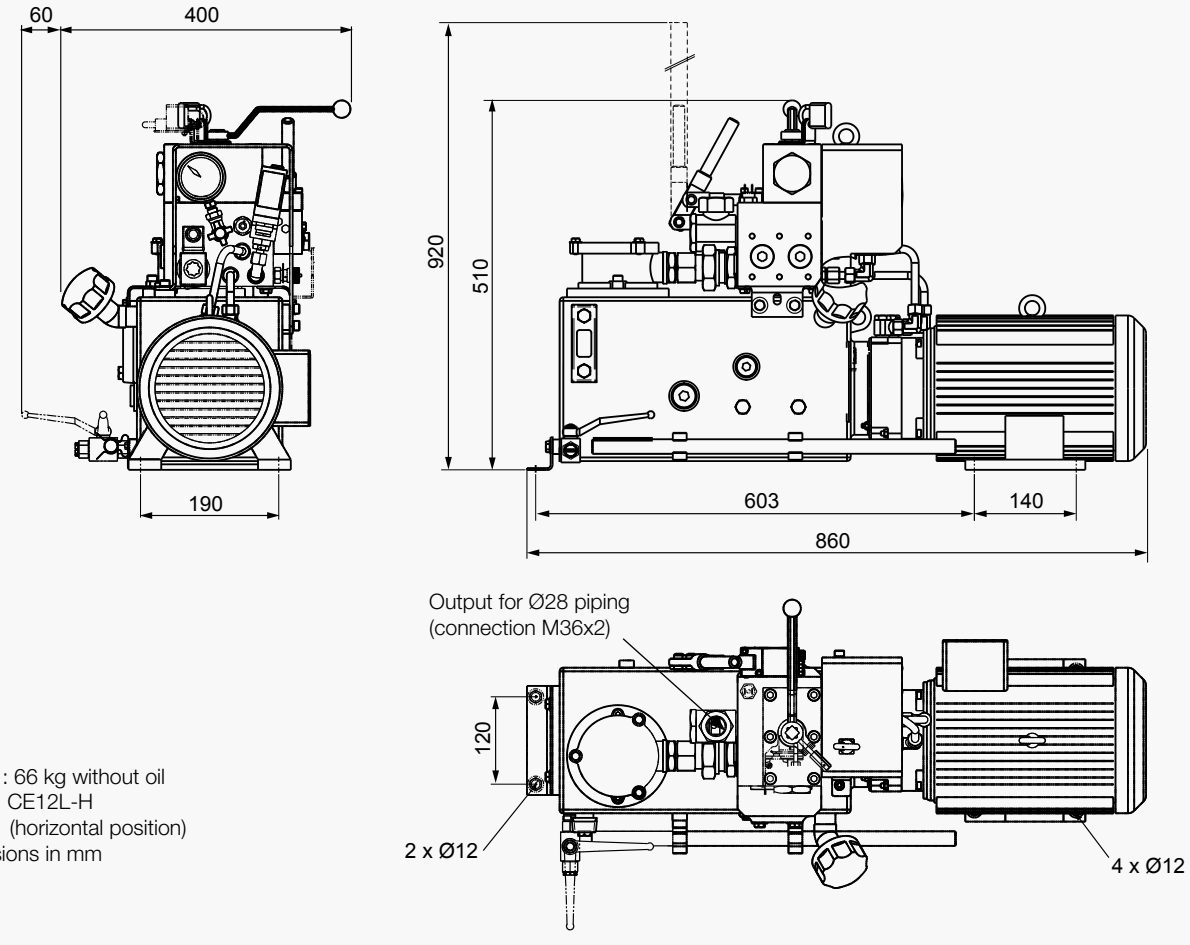
- Frequency of operation : 100 op. / hour maxi.

**Association with the calipers :**

| | |
|---|---|
| **CE12L-20** | SH25-2. SH18B |
| **CE12L-18** | SH15-3 |
| **CE12L-16** | SH25-1. SH15-2 |
| **CE12L-14** | SH15-1 |

**Options :**

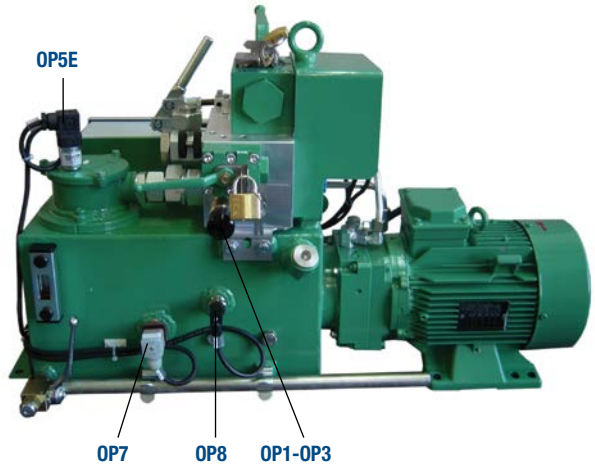
| | |
|---|---|
| **MS** | Motor 500VAC 50Hz or Motor 230/400 VAC with PTC sensor |
| **EVS** | EV coils voltage different from the standard |
| **K4** | Integrated electrical power unit |
| **OP1** | Enhanced security return circuit by 2 solenoid valves |
| **CS2EV** | Monitoring device of the 2 solenoid valves (of OP1) |
| **OP1-OP2** | Manual lowering with a dead man safety device. |
| **OP1-OP3** | Manual lowering with overspeed safety by solenoid valve 24VDC. |
| **OP4** | Indicator switch of the position of the control valve(s) |
| **OP5** | Visual (OP5) or electrical (OP5E) clogging Indicator |
| **OP6** | HPP for iron and steel industry |
| **OP7** | Electrical indicator of oil temperature |
| **OP8** | Electrical indicator of oil minimum level |
| **OP10** | Drip tray for horizontal HPP |
| **Y5** | Regulated braking |




Weight : 66 kg without oil
Model : CE12L-H
(horizontal position)
Dimensions in mm

# DISC BRAKE - CE12L HYDRAULIC POWER PACK

**Revision number: T10001-01-F** **Revision date: 26.02.2015**




**Electrical data:**

**Motor M**

**230/400VAC 50Hz** 4 kW
4 poles 3000rpm

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 220-230-240VAC ±10% 60Hz |
| 440-460-480VAC ±10% 60Hz |

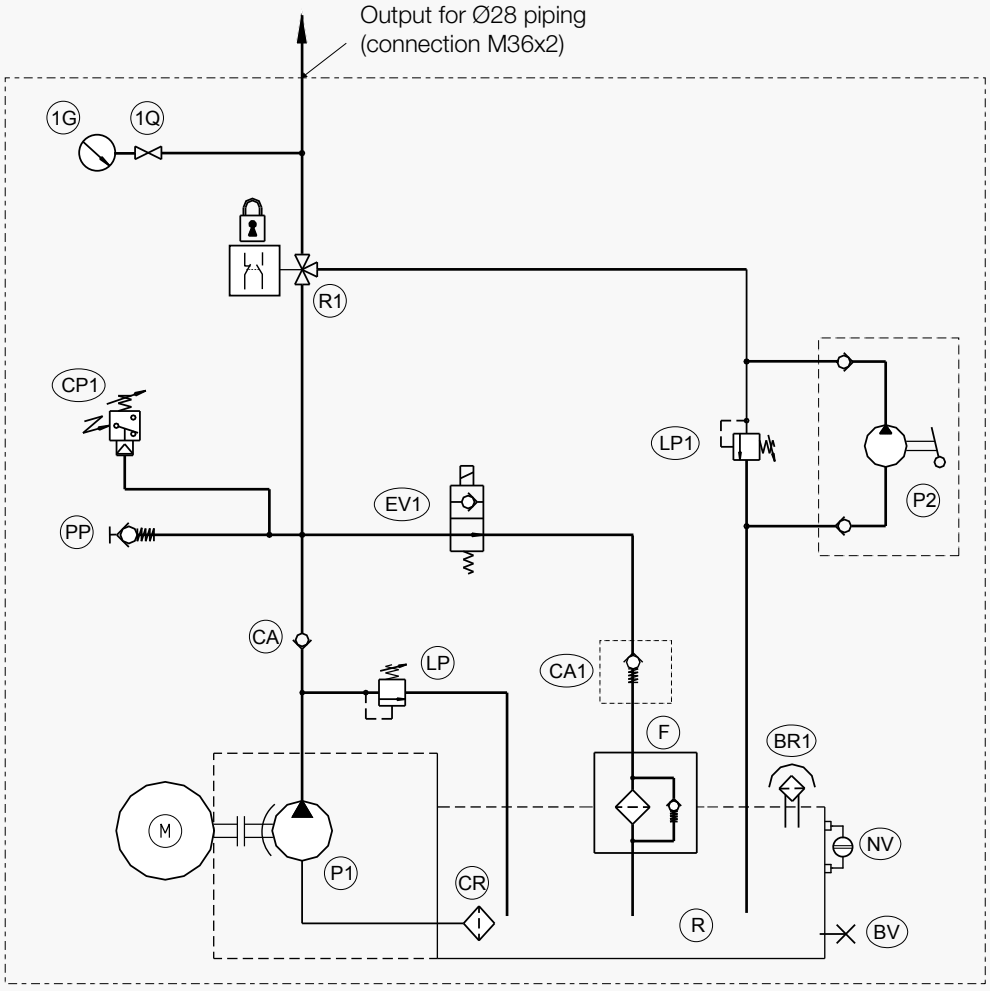
**Solenoid valve EV1**

Coil under 230VRAC 50 or 60 Hz
single phase, 20W
Protection IP55

**Pressure switch CP1**

- Single-pole and snap-acting contact "OC"
- Protection: IP 66
- 240 V AC. 1.5 A
- 250 V DC. 0.1 A

**Flow diagram**



## Hydraulic Power Packs

# DISC BRAKE - ST210 HYDRAULIC POWER PACK

**Revision number: T05100-01-A** **Revision date: 20.04.2002**

Maximal utilization pressure : 225 bars
Reservoir volume : 78 L :
mimimum oil volume = 42 L
maximum oil volume = 63 L

**Operating conditions**:

- Ambient temperature: -10°C to +50°C
- Relative humidity: ≤ 70%
- Particle size ≥ 40µm
- Protection required against direct harm such as vertical falling waters, sea spray or flams.

Other conditions: consult us.

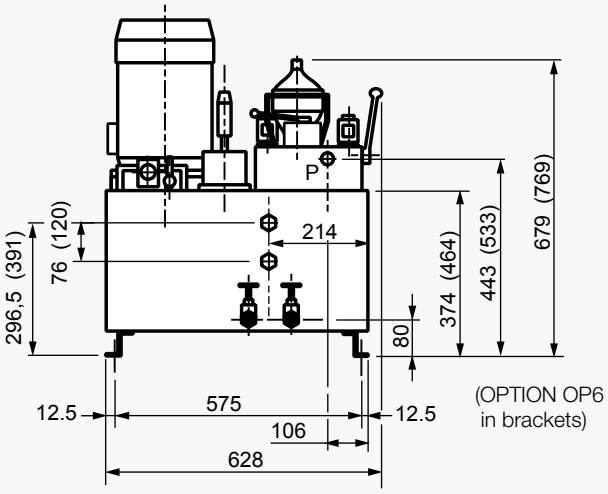
**Association with the calipers :**

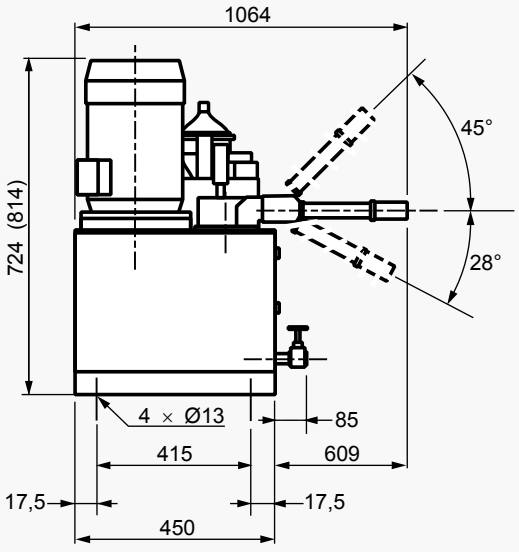
| | |
|---|---|
| **ST210-20** | SH25-2. SH18B |
| **ST210-17** | SH15-3 |
| **ST210-15** | SH25-1 |
| **ST210-13** | SH15-2 |
| **ST210-10** | SH15-1 |

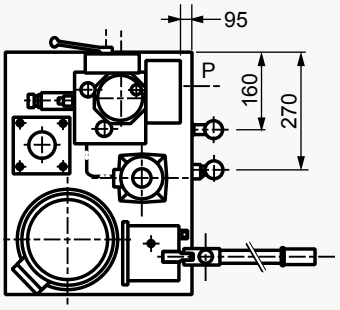
**Options :**

| | |
|---|---|
| **MS** | 50 Hz : 240/415 V - 500 V<br>60 Hz : 260/460 V - 254/440 V |
| **EVS** | EV coils voltage different from the standard |
| **K** | Electrical unit (consult us) |
| **OP1** | Enhanced security return circuit by 2 solenoid valves |
| **OP1-OP2** | Manual lowering with a dead man safety device. |
| **OP1-OP3** | Manual lowering with overspeed safety by solenoid valve 24VDC. |

| | |
|---|---|
| **OP4** | Indicator switch of the position of the control valve(s) |
| **OP5** | Visual (OP5) or electrical (OP5E) clogging Indicator |
| **OP6** | HPP for iron and steel industry |
| **OP7** | Electrical indicator of oil temperature |
| **OP8** | Electrical indicator of oil minimum level |
| **OP9** | Output pressure switch |



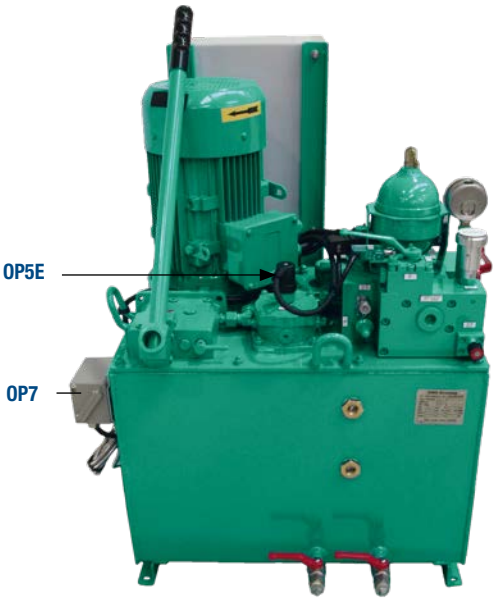




Weight without oil: 125 kg.
Dimensions in mm

# DISC BRAKE - ST210 HYDRAULIC POWER PACK

**Revision number: T05100-01-A** **Revision date: 20.04.2002**




**Electrical data:**

**Motor**

230/400VAC ±5% 50Hz 4 kW
280/480VAC ±5% 60Hz
4 poles 3000 rpm
Protection: IP 55 classe F

| For mains 3 phases |
|---|
| Frequency 50 Hz |
| 220-230-240VAC ±10% 50Hz |
| 380-400-415VAC ±10% 50Hz |
| Frequency 60 Hz |
| 220-230-240VAC ±10% 60Hz |
| 440-460-480VAC ±10% 60Hz |

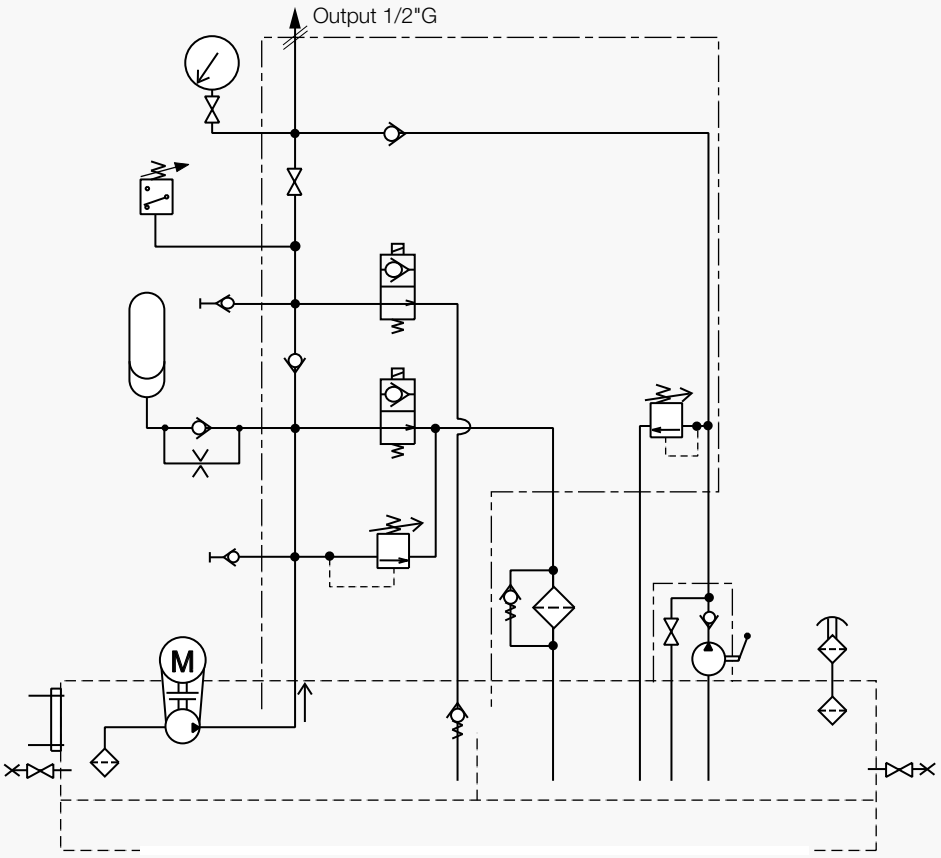
**Solenoid valves**

- Power: 17 W, coil class H.
- 12 and 24 VDC.
- 24VRAC, 110VRAC and 220VRAC

**Pressure switch**

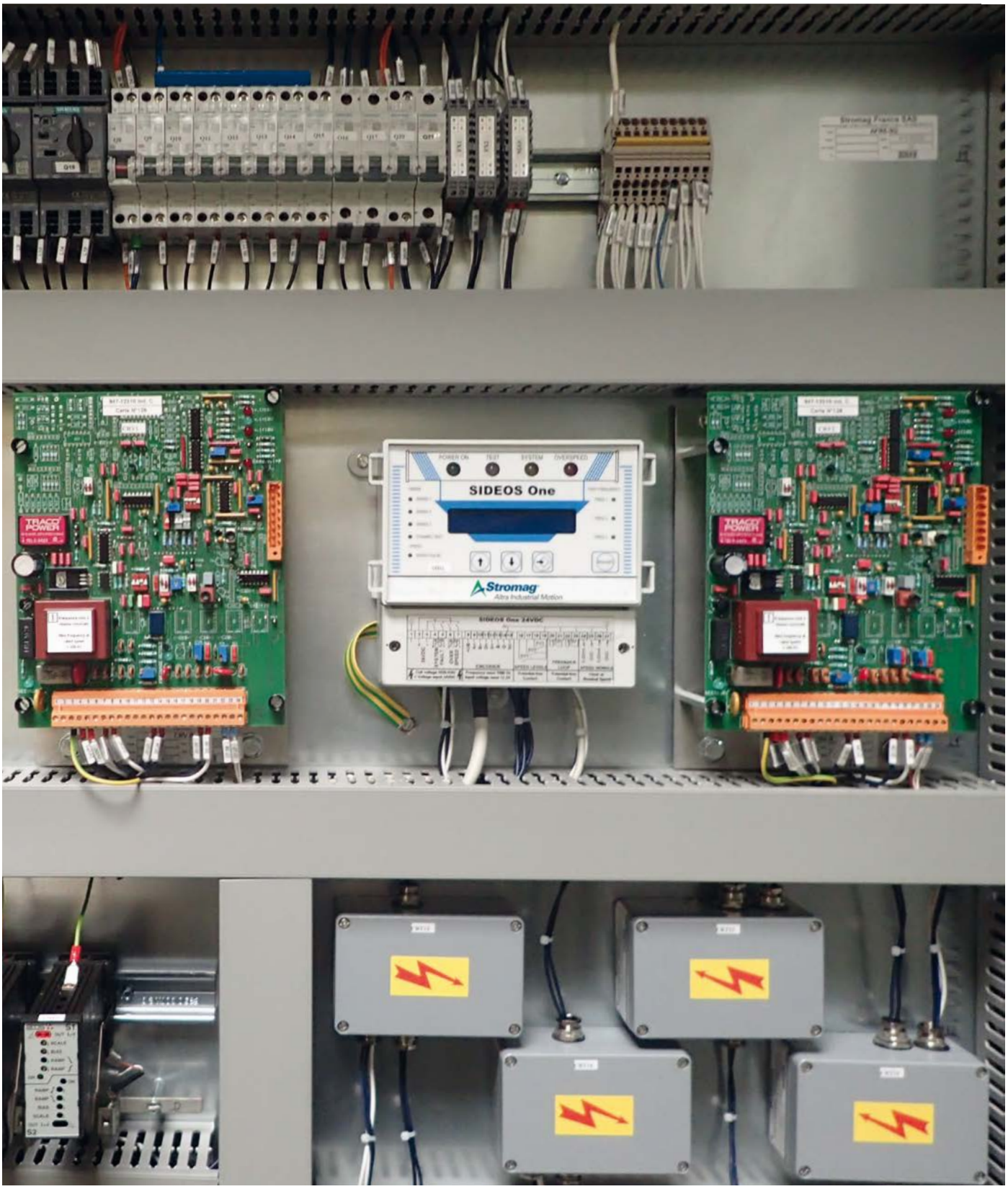
- Cable gland PG11
- Protection: IP 65
- Watertight housing
- Terminal box

**Flow diagram**



### Safety Systems

# CONTROL AND SAFETY SYSTEMS



## Safety Systems

| BRAKING SOLUTIONS FOR | APPLICATIONS |
|---|---|
| • MONITORING THE HOISTING SPEED<br>• REGULATED DECELERATION<br>• SPEED REGULATION CONTROL<br>• CONSTANT DECELERATION<br>• SAFETY PERFORMANCE LEVEL PL d to PL e | • MASS TRANSPORTS :<br>CABLEWAY, PASSENGERS ELEVATORS<br>FUNICULARS, CHAIRLIFTS...<br>• STEEL INDUSTRY LADLE CRANE<br>• BELT CONVEYORS |


### SIDEOS One

- SAFETY SYSTEM
- configurable and secure module for speed monitoring.
- fitted with an efficient auto-control system.

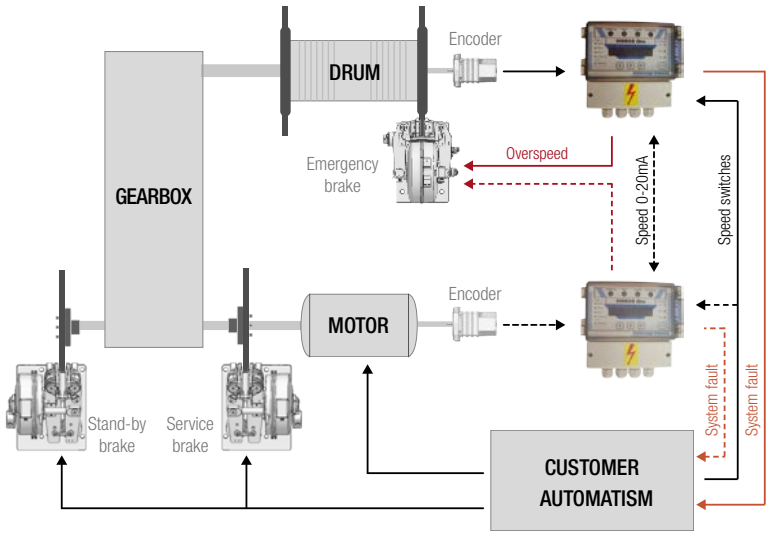
### CRD® / CRV®

- CONTROL SYSTEMS
- speed regulation with **CRV®** module.
- setting of the deceleration rate on the **CRD®** module.

### AFR5

- MONITORING. CONTROL SYSTEMS for regulated braking.
- SAFETY SYSTEMS adapted to the customer installation.
- includes **SIDEOS One** and **CRD®** modules

### ASSOCIATION OF 2 SIDEOS One - Detection of any kinematic linkage break



## Safety Systems

# DISC BRAKE - SIDEOS ONE

**Revision number: T10054-01-E** **Revision date: 12.09.2013**

Programmable and secure module for speed monitoring. fitted with an efficient auto control system (DC>99%) which secures the overall operation of the overspeed detection system.

**Conform to the machine security standards** :
NF EN ISO 13489-1
Performance level PL=d to PL=e
Category : 2 to 4
MTTFd = high DC = high

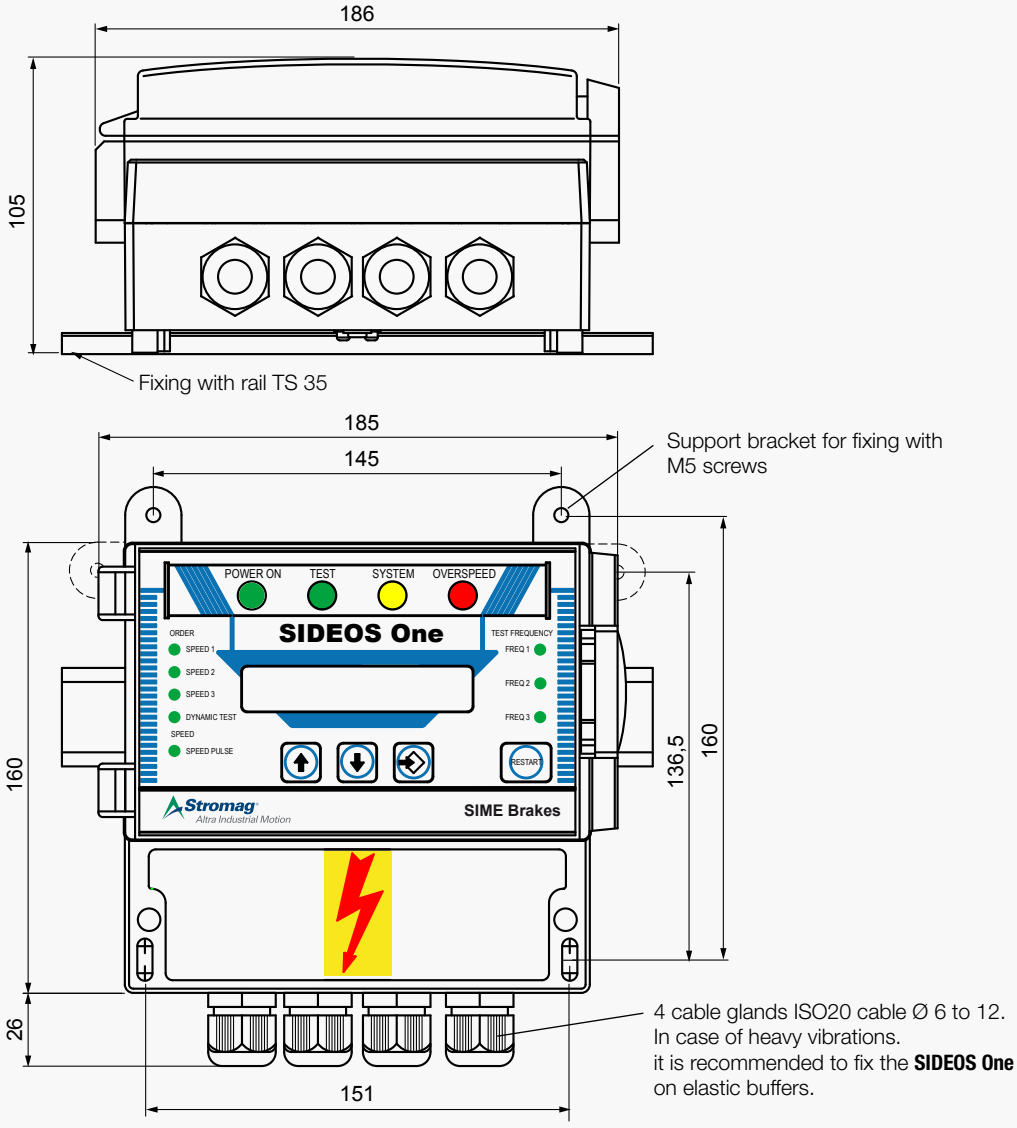
**Operating conditions** :
- Ambient temperature : -20°C to +60°C
- IP65 protected electrical casing

**Electrical data :**
- 1 available version
  AC : 115/230 V AC ± 10% 50/60Hz
- Other voltages : consult us

**EC marking of conformity** :
- 2006/42/EC directive Machine
- 2006/95/EC Low voltage directive (standard NF EN 60204-1)
- 2004/108/EC EMC directive (standards NF EN 61000-6-2. NF EN 61000-6-4)

**Options :**
- Steel casing IP66 IK10
- Anti-condensation kit

The **SIDEOS One** can be installed in a control enclosure on an DIN rail of 35mm, or fixed with M5 screws, see the drawing below.




When required by the application, Stromag France provides steel casing which allows **SIDEOS One** and other functions integration according to your requirements.

# DISC BRAKE - SIDEOS ONE

**Revision number: T10054-01-E** **Revision date: 12.09.2013**

The **SIDEOS One** module is a secure and programmable monitoring system of the speed.


It monitors :
- the speed,
- the stop,
- the rotation direction,
- the kinematic linkage,
- the signals of the incremental encoder,
- the external speed signal 0-20mA,
- the control contacts indicating the speed to monitor,
- the control contacts indicating the rotation direction to monitor,
- the system fault and overspeed outputs,
- the internal signals (Autotest – Dynamic Test – Cross monitoring).

It secures the overall operation of the speed monitoring system by means of :
- a detection of all the external failures (DC≥ 99%),.
- a redundant internal design and a cross-monitoring of the internal system operation,
- a dynamic test of the overspeed function. every 360 tops of the encoder (DYNAMIC TEST),
- a secure cut-off and wiring of the supply of the output contactors,
- an autotest (TEST) allowing the detection of all the internal faults which can occure on the monitoring system (diagnostic coverage > 99%),
- a secure restart control (RESTART).

It allows to obtain, when installation is correct, a speed monitoring system secure up to the category 4 with the performance level of PL= e according to the standard ISO/IEC 13849-1.

It simplifies the intégration of a secure overspeed detection system in the machine control.

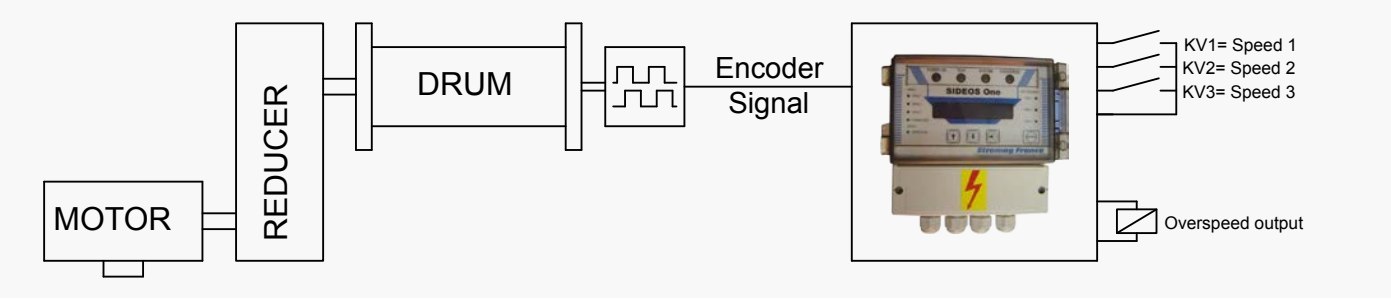
It provides :
- a speed signal (0 - 20mA)
- an alphanumeric display to visualize :
  - the speed,
  - the active overspeed threshold,
  - a diagnosis support,
  - a history of the last faults.

## Safety Systems

# DISC BRAKE - SIDEOS ONE

**Revision number: T10054-01-E** **Revision date: 12.09.2013**

### 1 - Speed monitoring : OVERSPEED

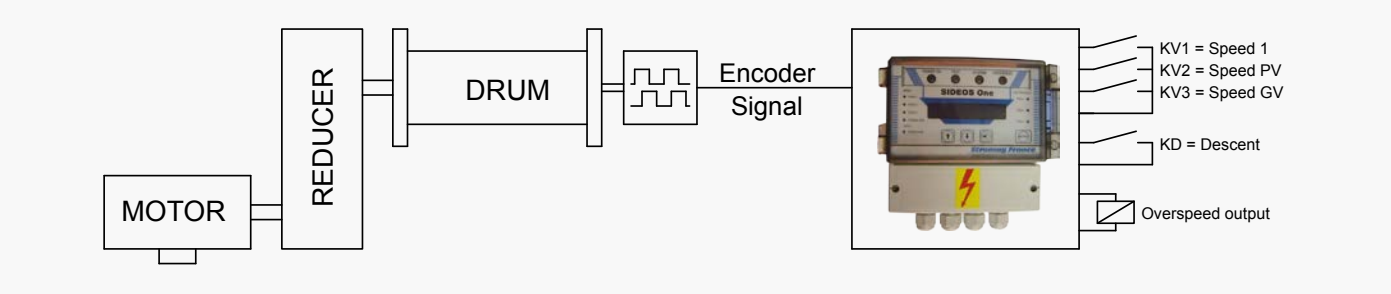



The **SIDEOS One** monitors up to 3 thresholds of installation overspeed and triggers the overpeed output if the speed detected on the encoder input is higher than the active overspeed threshold (speed contact KV closed).

### 2 - Stop monitoring : STATIC SLIPPING

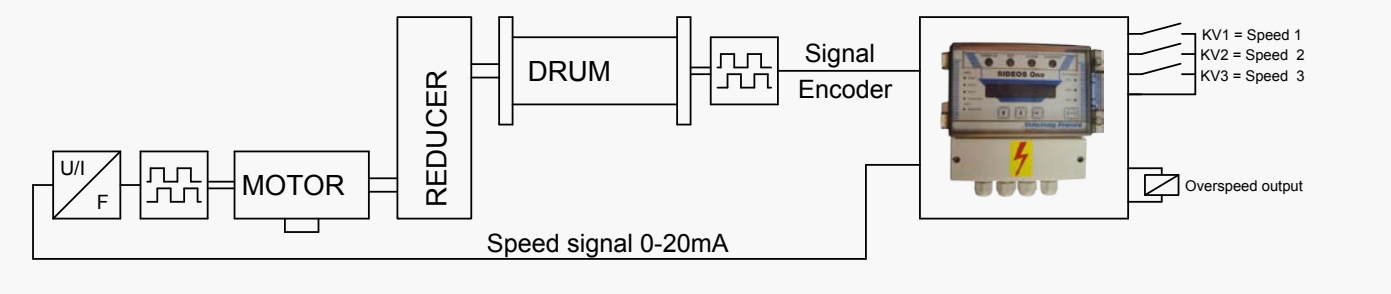
The **SIDEOS One** monitors the stop of the installation and triggers the overspeed output if a speed is detected on the encoder input when the contact KV1 is closed.

### 3 - Monitoring of the rotation direction : DYNAMIC SLIPPING




The **SIDEOS One** monitors the rotation direction of the installation and triggers the overspeed output if the rotation direction detected on the encoder input is different from the rotation direction indicated to the **SIDEOS One**.

### 4 - Monitoring of the kinematic linkage : DIFFERENTIAL SPEED




The **SIDEOS One** monitors the kinematic linkage of the installation and triggers the overspeed output in case of detection of the linkage breaking motor GV / drum PV, if the speed indicated on the speed signal input GV (15mA at nominal speed) is different from the speed signal from the encoder PV (15mA at nominal speed).

# NOTES

## Safety Systems

# DISC BRAKE - CONSTANT DECELERATION WITH CRD MODULE

**Revision number: M08950-01-C** **Revision date: 03.06.2015**

### 1 - PRESENTATION

The **CRD®** module, combined with **5KE. 650E. TY5. TH** and **SH** type brakes allows a constant deceleration regulated braking (fig. 1) whatever the speed, the load and the kind of load, driving or resisting.

Applications: cableways, chairlifts, funiculars, lifts, belt conveyors, transporters ... .

### 2 - PRINCIPLE

**CRD®** system (fig. 2) consists of:

- 1 or more brakes (progressive brakes type **5KE. 650E. TY5. TH** and **SH**).
- 1 hydraulic pack (**STE210Y5. CE8L-RY5**) or 1 electric power supply (AB8. ATP2. ATP24).
- 1 (or more) speed sensors (tachometric dynamo..).
- 1 **CRD®** module, it may be integrated into an **AFR5** enclosure supplied by Stromag France.

Two **CRD®** versions exist:

- **CRD-R**: a deceleration regulation board (fig.8) monitors power units type AB8, ATP2, ATP24 or an electronic amplifier for a proportional pressure limiter of an hydraulic power unit, customer suply the reference speed signal.
- **CRD-RC**: to the regulation board is connected a deceleration control board, fully independant from the regulation board (power suply. speed signal. scale and command).

**Fig. 1**

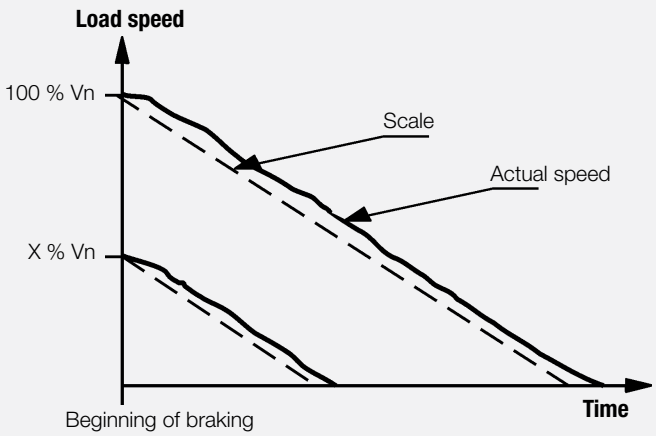
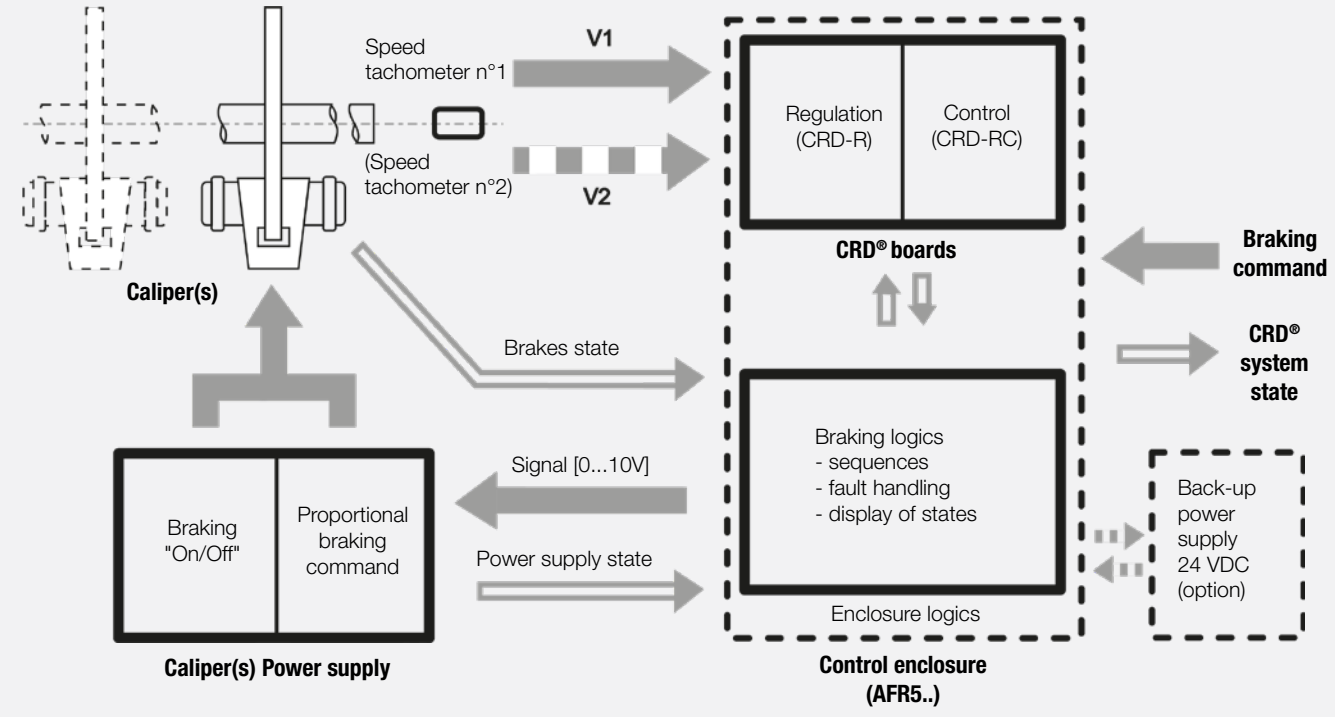



**Fig. 2**



# DISC BRAKE - CONSTANT DECELERATION WITH CRD MODULE

**Revision number: M08950-01-C** **Revision date: 03.06.2015**

## 3 - OPERATION

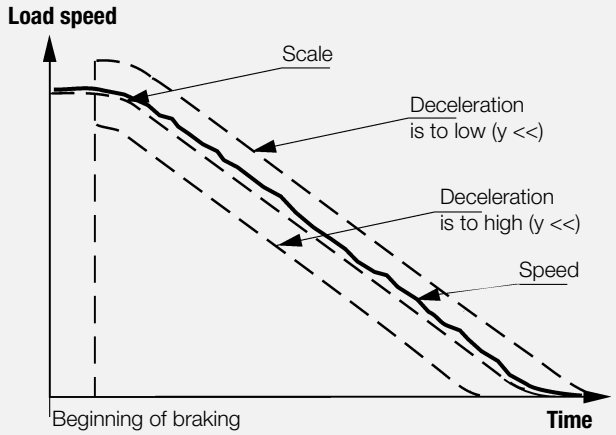
### 3-1 Deceleration regulation

CRD® module allows a deceleration regulation according to a scale at the time of a normal or an emergency braking.

### 3-2 Deceleration control (CRD-RC version only)

Using a second speed sensor connected to "deceleration fault control board" insures that first board operating is correct (detected mis-functioning: braking is too low or too high. mecanical shaft or gear box failure. failure of a speed sensor or damaged wires).

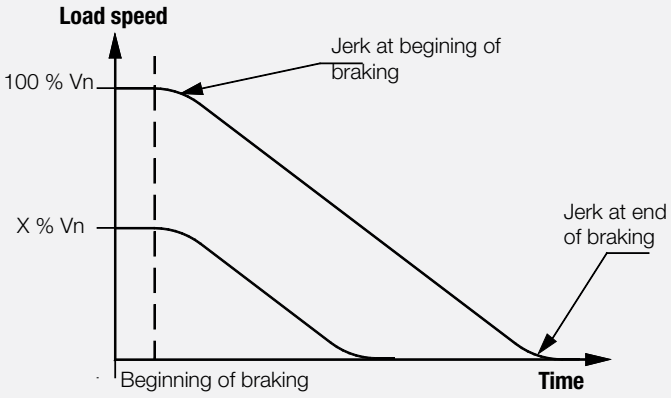
**Fig. 3**




### 3-3 "S" curve deceleration

CRD® module allows user to select JERKS at begining and/or end of braking; duration of these "S" curves may be adjusted.

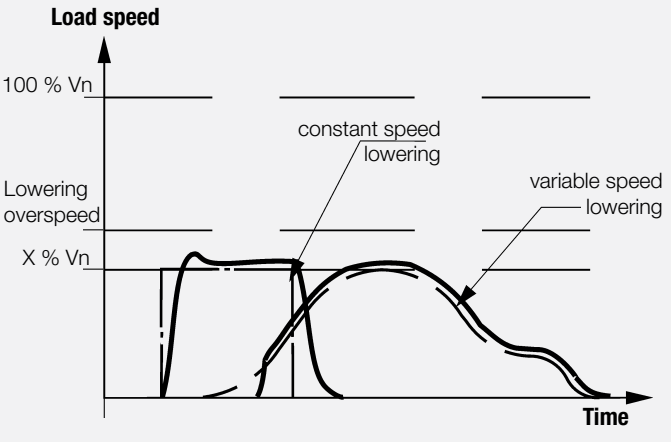
**Fig. 4**




### 3-4 Lowering

CRD® module provides lowering function (load is let down on command after a full successful braking. for security purpose) to X % of nominal speed (setting between 5 and 20%), at constant speed, or at variable speed (operator controlled auto "0" recentering joystick).

**Fig. 5**



# DISC BRAKE - CONSTANT DECELERATION WITH CRD MODULE

**Revision number: M08950-01-C** **Revision date: 03.06.2015**

### 4 - PHYSICAL CARACTERISTICS OF CRD® MODULE

This equipment receives speed signal from the speed sensor(s) and delivers an output signal (0...10V.) while following an internal or external speed scale. board(s) are:

#### 4-1 In separate casing

- **dimensions**: see fig. 6a (**CRD-R**) & fig. 6b (**CRD-RC**); Location - enclosure must be installed onto a vertical support - will allow natural ventilation.
- **Environment**: Ambient temperature: -10°C to +50°C.
- The IP 559 casing is equiped with 5 cable glands PG 11 (**CRD-R**) or 5 cable glands PG 11 and 4 cable glands PG 9 (**CRD-RC**).
- **Mains power suply**: 230V AC ±10% 50/60Hz or 24V DC (20 to 30 V DC). Power consumption: 5W maxi. per board.

#### 4-2 Inside control casing

- **dimensions**: see fig. 7a (**CRD-R**) & fig. 7b (**CRD-RC**);
- **Environment**: Ambiant temperature: -10°C to +50°C.
- **Mains power suply**: 230V AC ±10% 50/60Hz or 24V DC (20 to 30 V DC). Power consumption: 5W maxi. per board.

### 5 - EQUIPMENT

Necessary equipment for braking will include:

#### 5-1 Brakes

1.2. 4.... electrohydraulic calipers (type **TY5**. **TH** or **SH**) or electromagnetic (type **650E**. **5KE**).

#### 5-2 Electric power supply (case of electromagnetic brakes)

Power supply associated to the brake will be capable of braking regulation (type **AC64-50** associated with **AB8** module).

#### 5-3 Hydraulic power pack (hydraulic brakes SH or TH type)

Hydraulic power pack will be capable of regulating deceleration (for exemple: **STE 210 Y5** with proportional pressure limiter). An alternate motor may optionally be added (24 V. DC) to the main motor supplied by Mains, allowing deceleration regulation in case of Mains failure (**M2** option).

#### 5-4 AFR5 Control casing (SH and TH brakes)

Initiate deceleration regulation, controls its logics and faults to keep all electrical components secure.

#### 5-5 Back-up power supply (M2 option)

In case of mains failure, the need for deceleration regulation may involve installing a back-up power supply - Stromag France or customer supplied.

Fig. 6a

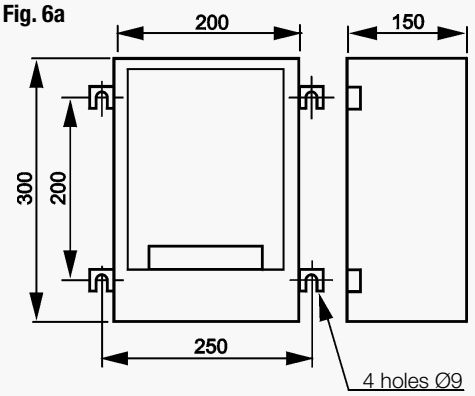



Fig. 6b

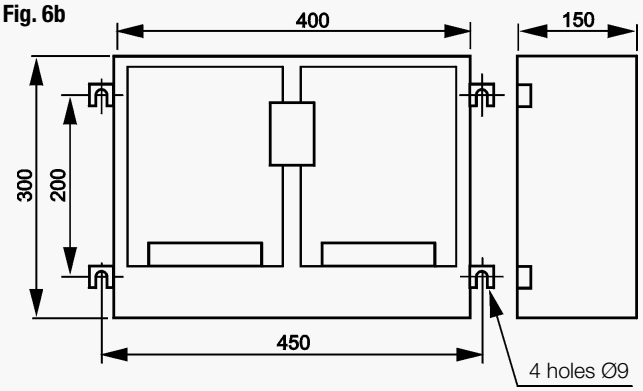



Fig. 7a

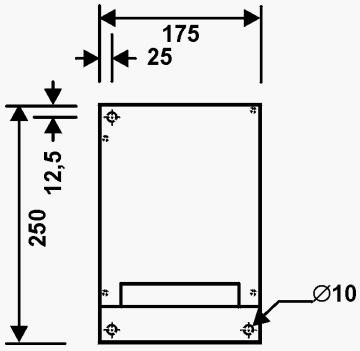
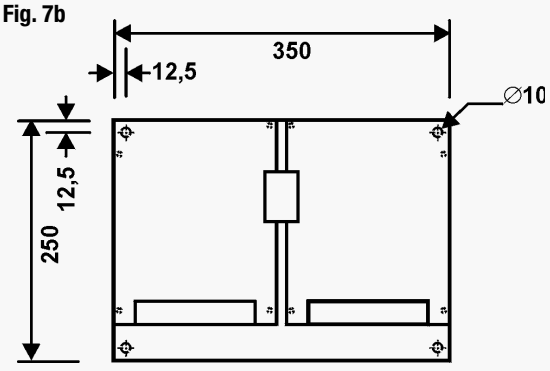


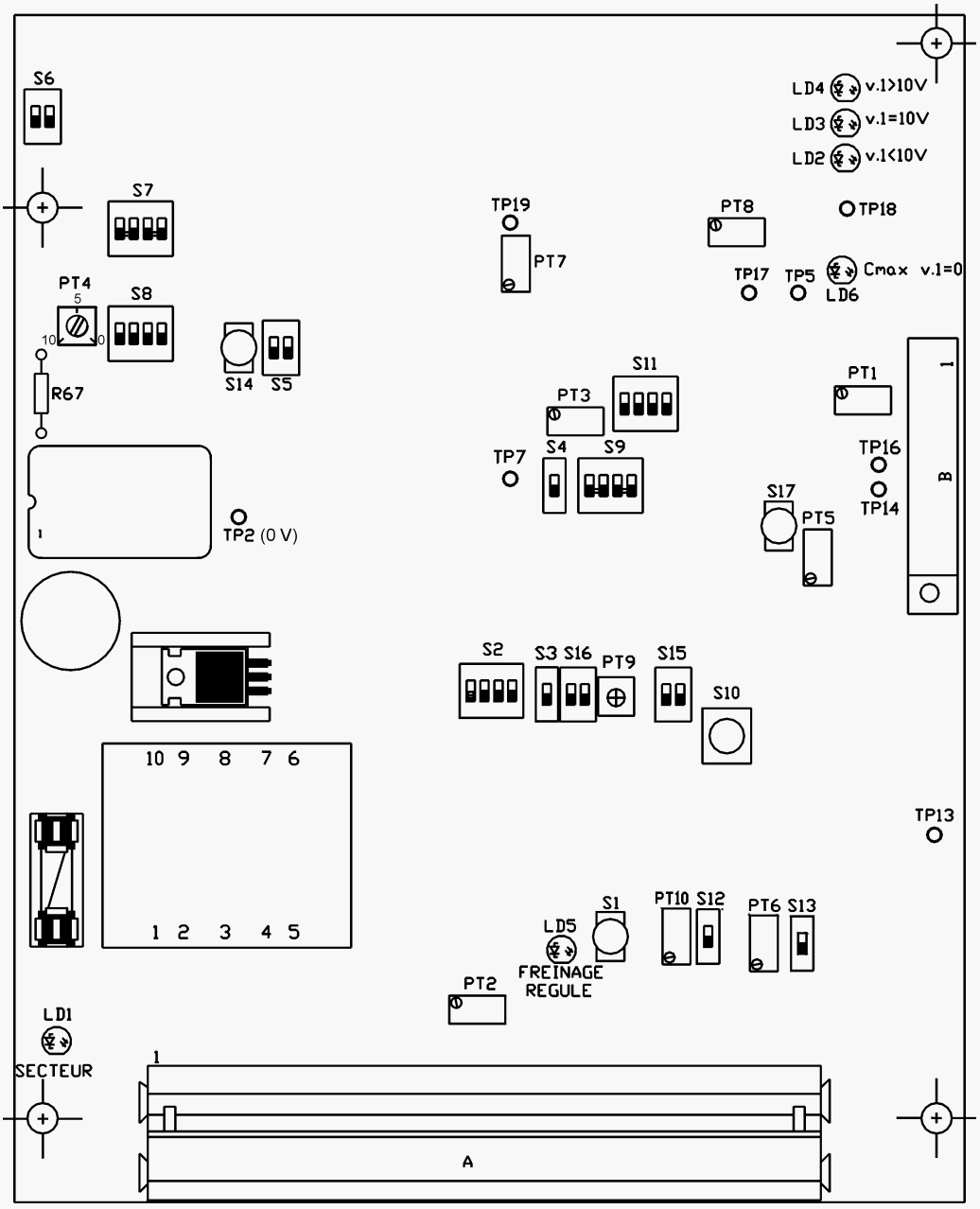

Fig. 7b



# DISC BRAKE - CONSTANT DECELERATION WITH CRD MODULE

**Revision number: M08950-01-C** **Revision date: 03.06.2015**

**Fig. 8** **DECELERATION REGULATION BOARD**




**Switches list**

S1: ramp simulation (green push button)
S2: speed signal frequency range
S3: speed signal selection: voltage or frequency
S4: selection of speed signal amplification
S5: speed signal filtration
S6: "S" curve/jerk at beginning of ramp
S7: "S" curve/jerk at end of ramp
S8: ramp time
S9: regulation amplification = function P
S10: TP16 output manual command to 10V. (black push button)
S11: regulation filtration = function I
S12: AB8 or ATP output selection
S13: internal/external lowering potentiometer selection
S14: fault simulation (red push button)
S15: regulation filtration = function I
S16: regulation derivative : function D
S17: TP16 output manual command to 0.3V (+ action on S10) (black push button)

**Potentiometers list**

PT1: (factory setting)
PT2: speed signal adjustment
PT3: speed signal amplification
PT4: ramp time fine tuning
PT5: "bias" lock
PT6: internal potentiometer for "external scale"
PT7: brake running-up (forecast of hydraulical delay)
PT8: speed is nil setting
PT9: function D ajustment
PT10: ajustment of the maximum value of the external potentiometer

## Safety Systems

# DISC BRAKE - SPEED REGULATION WITH CRV MODULE

**Revision number: M08955-01-B** **Revision date: 03.06.2015**

### 1 - PRESENTATION

Speed regulation with **CRV**, in combination with brakes type **5KE**, **650E**, **TY5**, **TH** and **SH**. provides a regulated speed braking whatever the load quantity and load specificity, pulling or resisting.

Use: lowering, speed regulation.

Applications: cableways, chairlifts, funiculars, lifts, belt conveyors, transporters, cranes, etc...

### 2 - PRINCIPLE

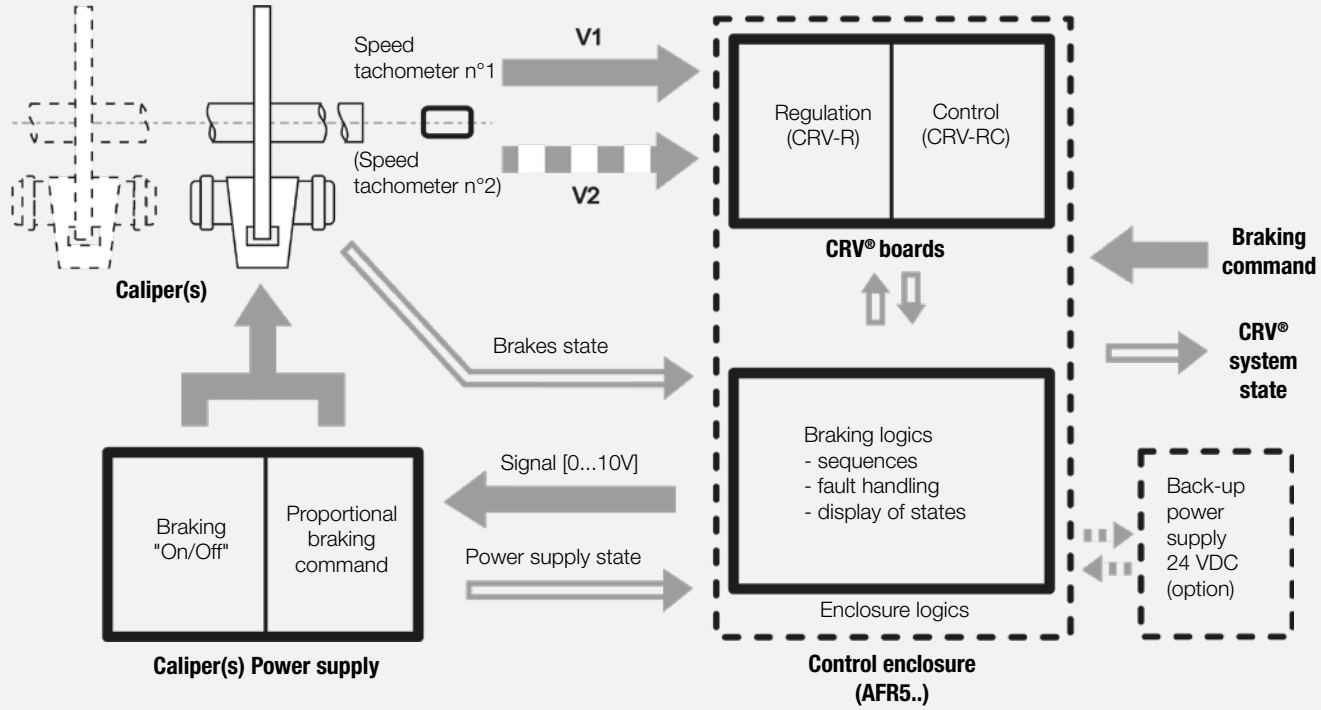
**CRV** system (fig. 1) consists of:

- 1 or more brakes (progressive brakes type **5KE. 650E. TY5. TH** and **SH**);
- 1 hydraulic pack (**STE210Y5. CE8L-RY5**) or 1 electric power supply (AB8. ATP2. ATP24).
- 1 (or more) speed sensors (tachometric dynamo..).
- 1 **CRV** module, it may be integrated into an AFR5 enclosure supplied by Stromag France.

Two **CRV®** versions exist:

- **CRV-R:** a speed regulation board (fig. 8) monitors power units type AB8, ATP2, ATP24 or an electronic amplifier for a proportional pressure limiter of an hydraulic power unit ; customer suply the reference speed signal.
- **CRV-RC:** to the regulation board is connected a speed control board, fully independant from the regulation board (power suply, speed signal, scale and command).

**Fig. 2**



# DISC BRAKE - SPEED REGULATION WITH CRV MODULE

**Revision number: M08955-01-B** **Revision date: 03.06.2015**

## 3 - OPERATION

### 3-1 Lowering - fig.2

**CRV** module allows choosing a lowering (regulated load lowering after stop. for security purpose) at X % of nominal speed, (setting between 5 and 20%), at constant speed, or at variable speed (potentiometer with automatic "0" restoring adjusted by operator).

### 3-2 Speed regulation - fig.3

CRV module allows a speed regulation set at X% of nominal speed (constant speed, factory set between 5 and 100% of nominal speed), failure of a speed sensor or damaged wires).

### 3-3 Speed control (CRV-RC only)

Using an additional speed sensor connected to "speed control" board allows a monitoring of the regulation (detected anomalies: speed too high or too low, mechanical breakdown of shafts or gearbox, speed sensor anomaly or damaged wiring).

**Fig. 2**

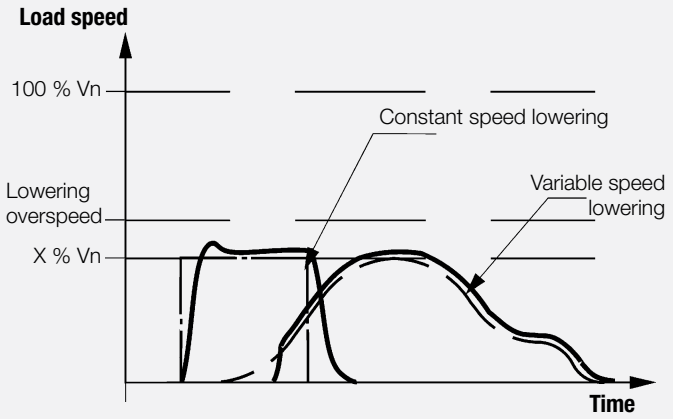
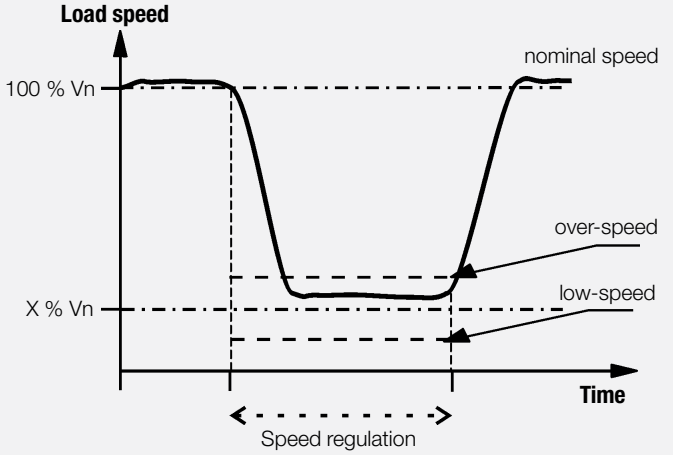
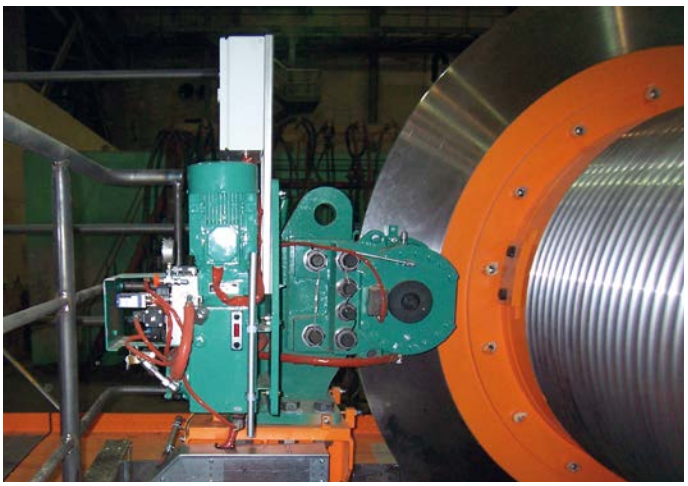



**Fig. 3**



# DISC BRAKE - SPEED REGULATION WITH CRV MODULE

**Revision number: M08955-01-B** **Revision date: 03.06.2015**

## 4 - PHYSICAL CARACTERISTICS OF CRV® MODULE

This equipment receives speed signal from the speed sensor(s) and delivers an output signal (0...10V.) while following an internal or external speed scale. board(s) are:

### 4-1 In separate casing

- **dimensions**: see fig. 4 (**CRV-R**) & fig. 5 (**CRV-RC**); Location - enclosure must be installed onto a vertical support - will allow natural ventilation.
- **Environment**: Ambient temperature: -10°C to +50°C.
- The IP 559 casing is equiped with 5 cable glands PG 11 (**CRV-R**) or 5 cable glands PG 11 and 4 cable glands PG 9 (**CRV-RC**).
- **Mains power suply**: 230V AC ±10% 50/60Hz or 24V DC (20 to 30 V DC). Power consumption: 5W maxi. per board.

### 4-2 Inside control casing

- **dimensions**: see fig. 6 (**CRV-R**) & fig. 7 (**CRV-RC**);
- **Environment**: Ambiant temperature: -10°C to +50°C.
- **Mains power suply**: 230V AC ±10% 50/60Hz or 24V DC (20 to 30 V DC). Power consumption: 5W maxi. per board.

## 5 - EQUIPMENT

Necessary equipment for braking will include:

### 5-1 Brakes

1.2. 4.... electrohydraulic calipers (type **TY5**. **TH** or **SH**) or electromagnetic (type **650E**. **5KE**).

### 5-2 Electric power supply (case of electromagnetic brakes)

Power supply associated to the brake will be capable of braking regulation (type **AC64-50** associated with **AB8** module).

### 5-3 Hydraulic power pack (hydraulic brakes SH or TH type)

Hydraulic power pack will be capable of regulating deceleration (for example: **STE 210 Y5** or **CE8L-Y5** with proportional pressure limiter). On the **STE210Y5**. to the main motor supplied by Mains, an alternate motor may optionally be added (24 V. DC) to the main motor supplied by Mains, allowing speed regulation in case of Mains failure (**M2** option).

### 5-4 AFR5 Control casing (SH and TH brakes)

Initiate speed regulation, controls its logics and faults to keep all electrical components secure.

### 5-5 Back-up power supply (M2 option)

In case of mains failure, the need for speed regulation may involve installing a back-up power supply - Stromag France or customer supplied.

Fig. 4

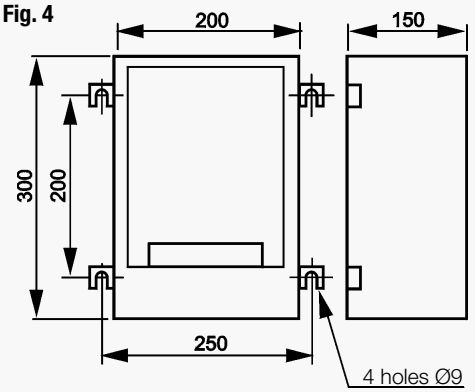



Fig. 5

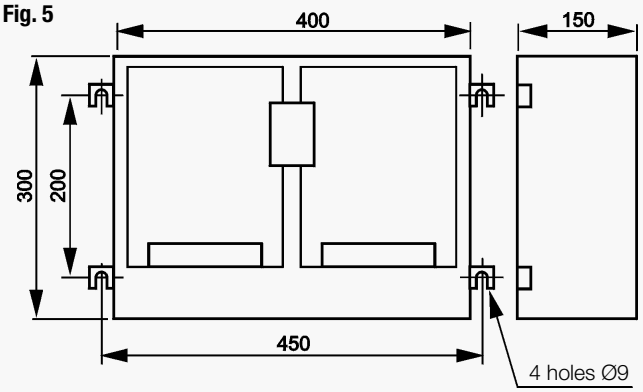



Fig. 6

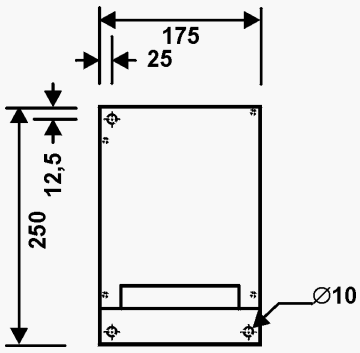
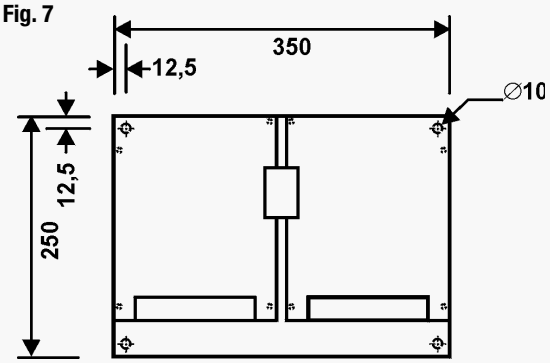


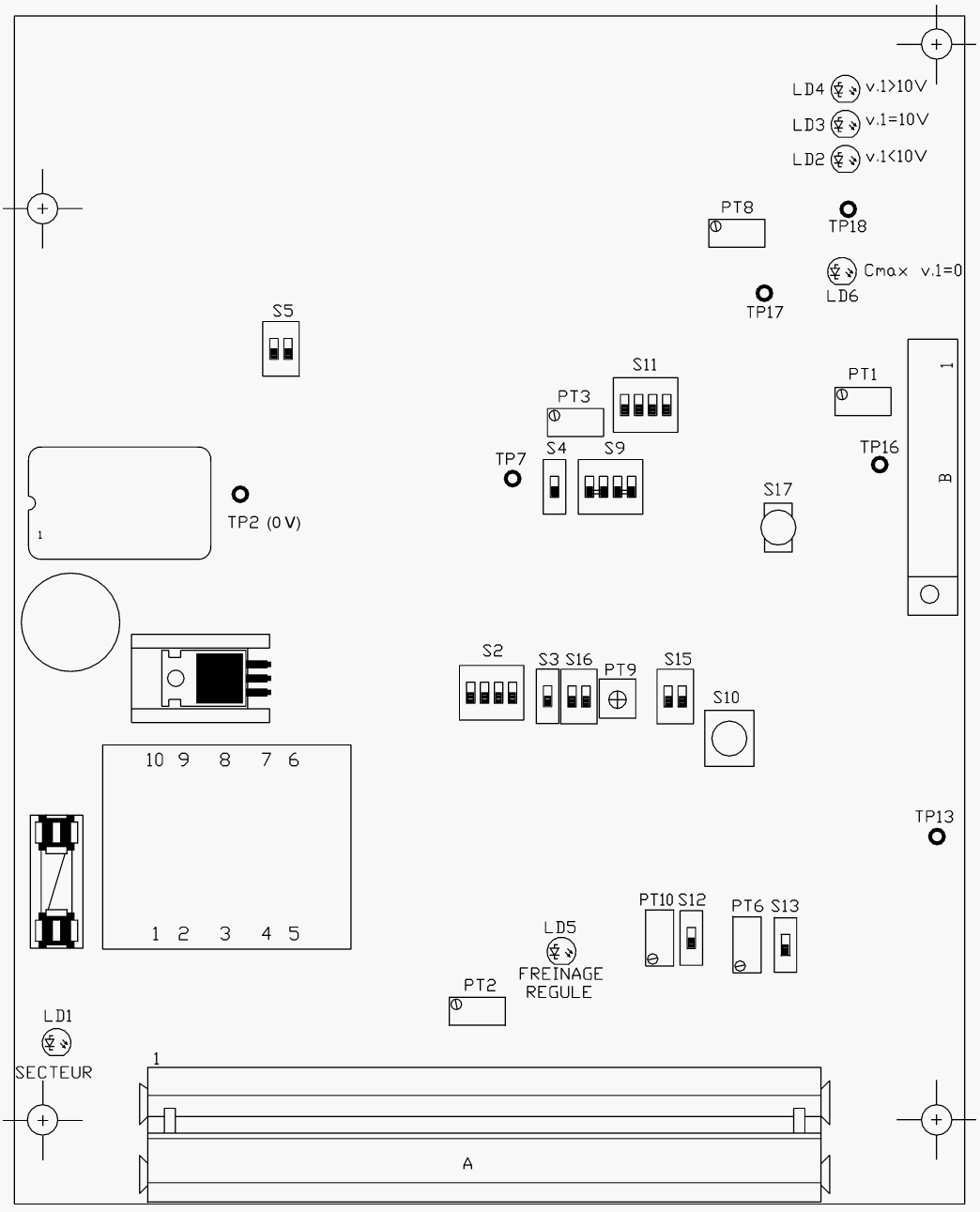

Fig. 7



# DISC BRAKE - SPEED REGULATION WITH CRV MODULE

**Revision number: M08955-01-B** **Revision date: 03.06.2015**

**Fig. 8** **SPEED REGULATION BOARD**




**Switches list**

S2: speed signal frequency range
S3: speed signal selection: voltage or frequency
S4: selection of speed signal amplification
S5: speed signal filtration
S9: regulation amplification = function P
S10: TP16 output manual command to 10V. (black push button)
S11: regulation filtration = fonction I
S12: AB8 or ATP output selection
S13: internal/external lower--ing potentiometer selection
S15: regulation filtration = fonction I
S16: regulation derivative = fonction D
S17: TP16 output manual command to 0.3 V + action on S10 (black pushbutton)

**Potentiometers list**

PT1: (factory setting)
PT2: speed signal adjustment
PT3: speed signal amplification
PT6: internal potentiometer for scale
PT8: speed is nil setting
PT9: Ajustment of function D
PT10: Maximum value adjustment of the external potentiometer

## Safety Systems

# DISC BRAKE - AFR5 CONTROL ENCLOSURES

**Revision number: M10105-01-E** **Revision date: 03.06.2015**

**AFR5** control enclosures are designed for controlling and monitoring regulated braking systems.

They allow different braking modes :

- Constant deceleration (**CRD®** module)
  ex. : Cableway : Pic du Midi (Bagnères de Bigorre)
- Constant deceleration and speed regulation (**CRD®** module)
  ex. : Passengers elevator : Eiffel Tower in Paris
- Normal operation (AoN) and speed regulation for load lowering (**CRV®** module)
  ex. : Steel industry ladle crane : HKM (Deuschland)

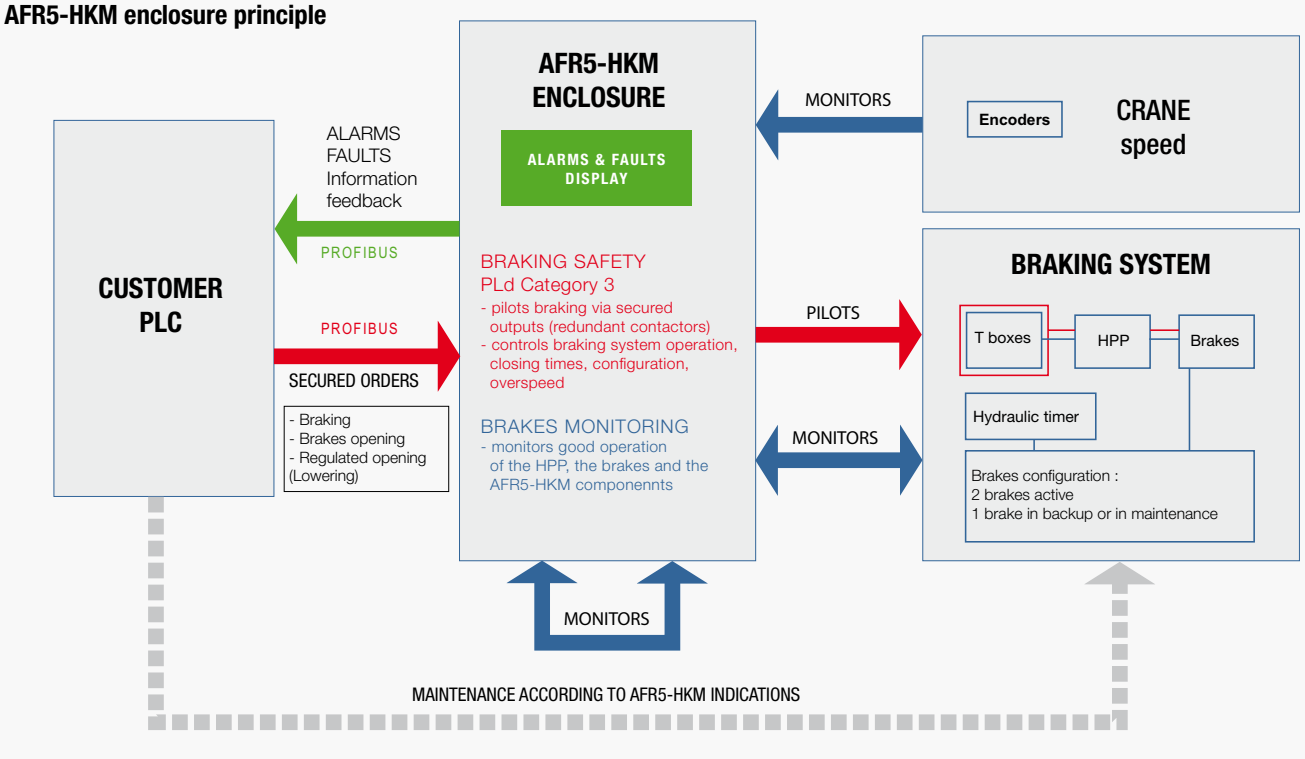
They can be designed to ensure a safety performance level up to PL d to the braking system.

They can includes :

- an Ethernet line towards the customer PLC,
- the braking management in case of power supply loss or regulated braking fault,
- the speed monitoring (**SIDEOS One**),
- the control of standby brakes or/and Hydraulic Power Packs to ensure the operation continuity in case of failure of one part of the braking system,
- a Human Machine Interface or Module.

Here is, for example, the diagram of the AFR5-HKM enclosure :
All or Nothing braking - Load lowering - Performance level PLd - Standby brakes - Data transmission to the customer PLC via ProFibus and secured ProFiBus.

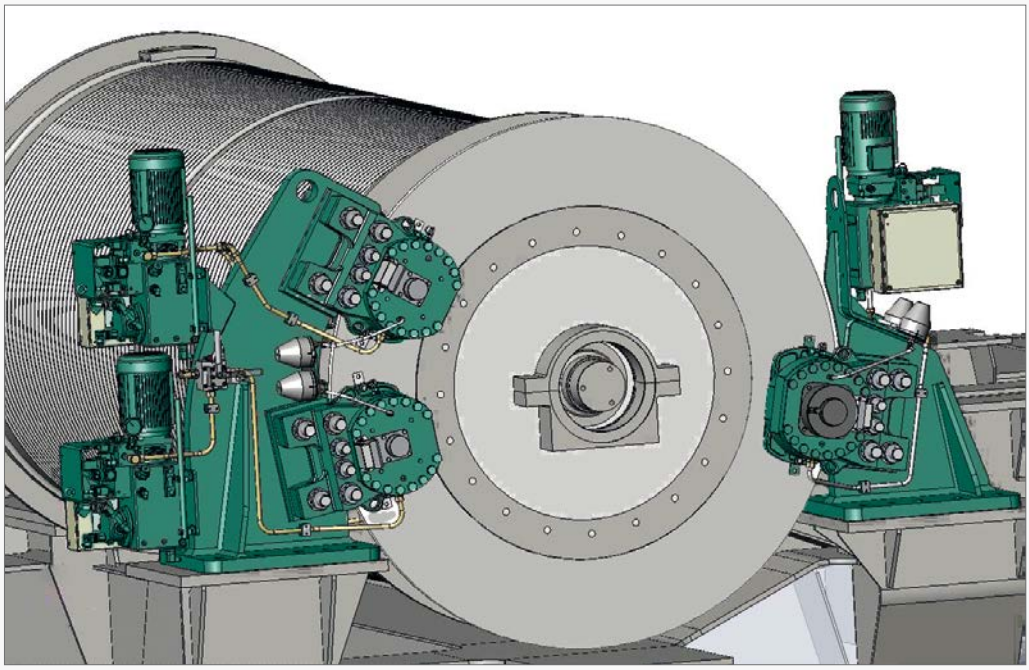
**AFR5-HKM enclosure principle**

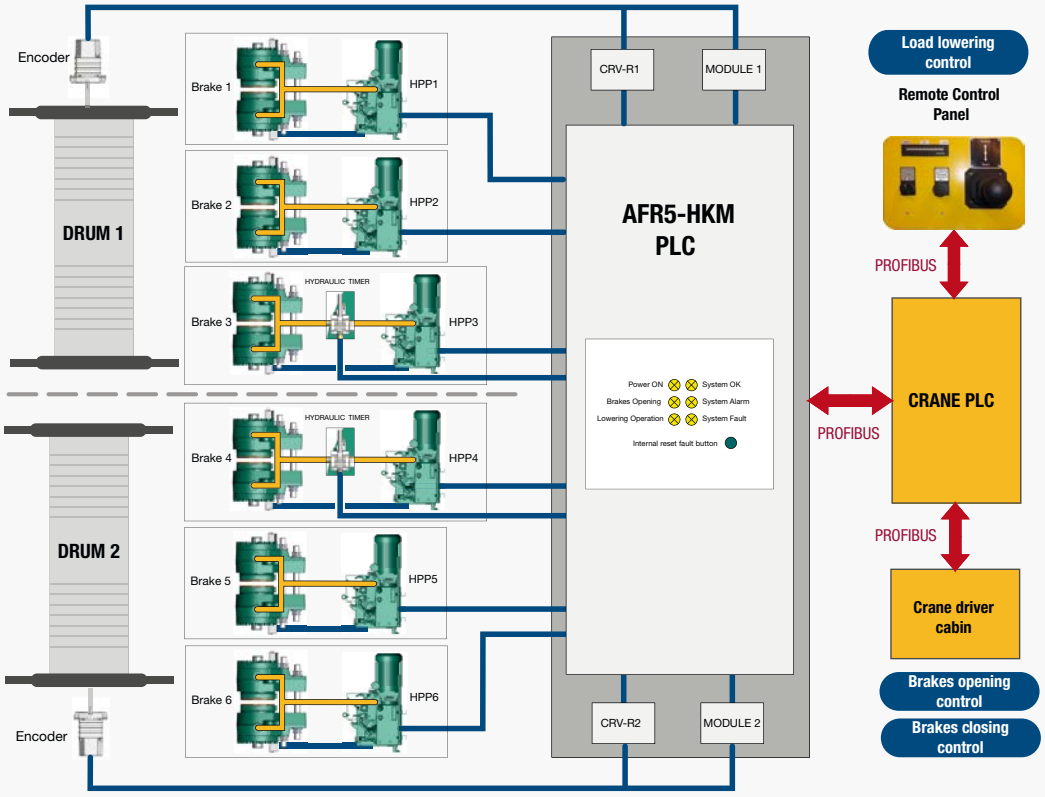


# DISC BRAKE - AFR5 CONTROL ENCLOSURES

**Revision number: M10105-01-E** **Revision date: 03.06.2015**

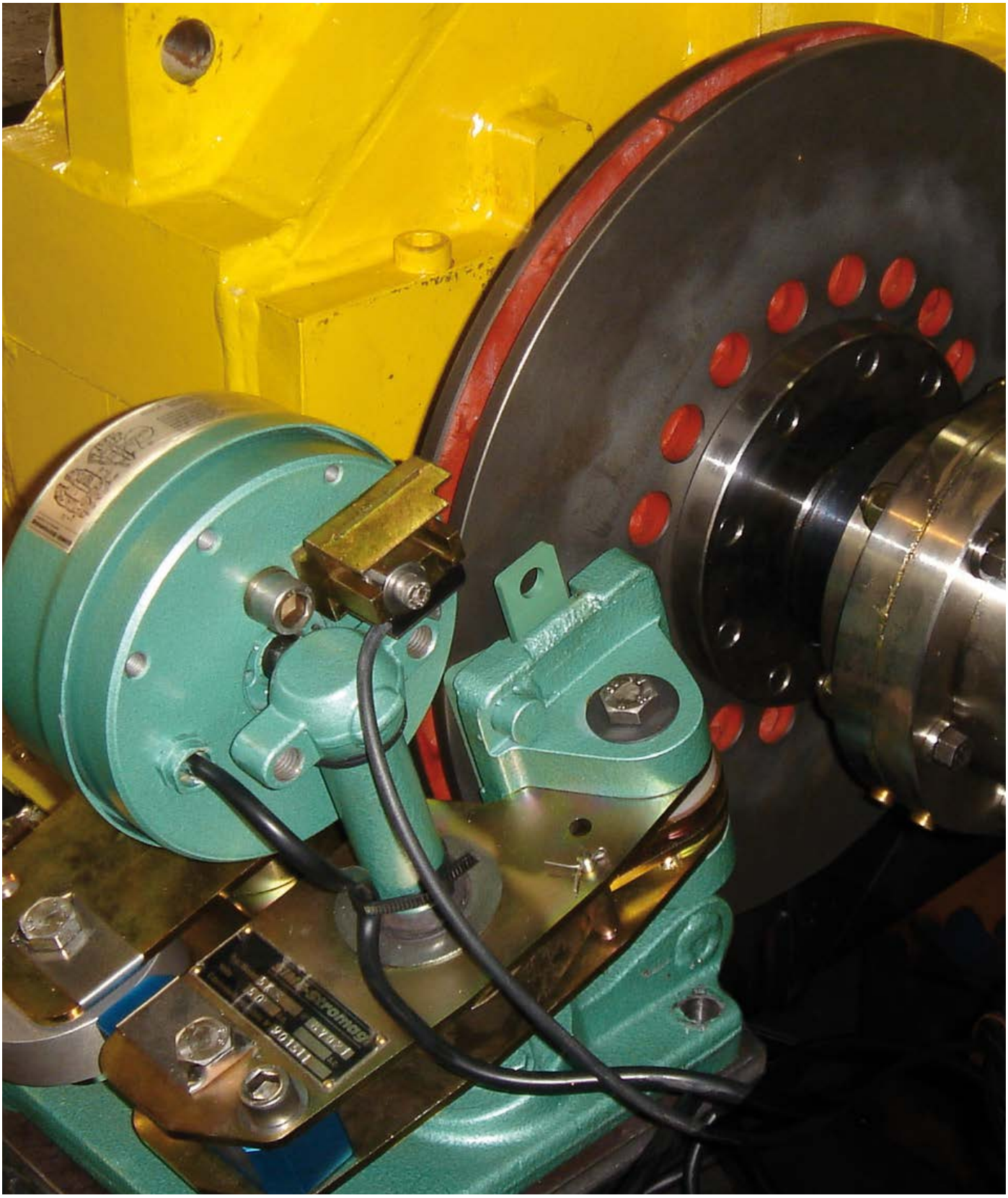
**HKM Braking System monitored and controlled by AFR5-HKM enclosure**





### Discs & Drums

# DISCS & DRUMS



## MAIN CHARACTERISTICS

- DISCS ARE AVAILABLE ALONE OR WITH HUBS
- ALL DISCS CAN BE ASSOCIATED WITH THE DIFFERENT TYPES OF FLEXIBLE COUPLINGS
- DESIGNED TO RUN AT PERMANENT TEMPERATURE OF 200°C

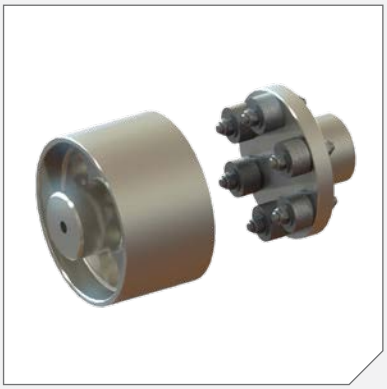
- DRUMS ARE AVAILABLE ALONE OR WITH HUB
- DRUMS ARE ASSOCIATED WITH THE SIME BRAKES TYPES FNS AND SDB STANDARD DIN 15435

### MONOBLOC & SOLID DISCS

- for low energy applications.

### AUTO-VENTILATED DISCS

- comply with NF S 472 B standard.
- for high frequency and heavy duty braking cycles.
- high capacity of energy dissipation.



### DRUMS

- flanged hub fitted with rubber bushes.
- uniform distribution of loads. even in case of misalignement.
- reduction of resonance effects at critical velocity.

**Discs thicknesses and diameters**

| DISCS | Diameter ➔ | Ø 175 | Ø 220 | Ø 260 | Ø 315 | Ø 355 | Ø 395 | Ø 445 | Ø 495 | Ø 550 | Ø 625 | Ø 705 | Ø 795 | Ø 995 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOLID | Th. 15 mm | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | | | |
| MONOBLOC | Th. 30 mm | | ■ | ■ | ■ | | | | | | | | | |
| VENTILATED | Th. 30 mm | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Th. 42 mm | | | | | | | | | | ■ | | ■ | ■ |

**Drums widths and diameters**

| DRUMS | Diameter | Ø 160 | Ø 200 | Ø 250 | Ø 315 | Ø 400 | Ø 500 | Ø 630 | Ø 710 |
|---|---|---|---|---|---|---|---|---|---|
| | Width | 60 | 75 | 95 | 118 | 150 | 190 | 236 | 265 |

# DISC BRAKE - DISCS

**Revision number: T08020-01-F** **Revision date: 27.07.2017**

## DISCS OF BRAKES CHARACTERISTICS

### 1 - Dimensions

Refer to leaflets "Technical data and dimensions" relevant to the type of disc used.
For a new disc. the tolerance of the thickness dimension is :

±0.15

### 2 - Materials

Ventilated discs : Cast iron type EN-GJS-400-18-LT ou EN-GJS-350-22

Solid discs : Steel S355 K2

Hubs : Steel 25/34/42CrMo4

### 3 - Surface quality of the contact zone with lining

(table 1)

Friction surface : Ra 1.6 to 3.2 in all directions
Centring zone : Idem

### 4 - Balancing

Only bare discs (except monoblocs).

Discs are balanced in "static" quality G6.3 :
- at the speed of 1800 rpm for discs Ø ≤ 550 mm.
- at the maximum sped indicated in the "technical data" leaflets for discs Ø > 550 mm

The correction area is placed between the hub and the little diameter of the friction surface (see table 1).
For balancing with hub. with half-coupling or at high speed. consult us.

**Table 1 - Dimensions of the friction surface**

| EXTERNAL DIAMETER | INNER DIAMETER | | | | |
|---|---|---|---|---|---|
| | Thickness 15 | Thickness 30 | | | Thickness 42 |
| | Monobloc disc | Monobloc disc | Ventilated disc | Solid disc | Ventilated disc |
| **175** | 85 | --- | --- | --- | --- |
| **220** | 105 | 90 | --- | --- | --- |
| **260** | 132 | 136 | --- | **---** | --- |
| **315** | 130 | 180 | 165 | 130 | --- |
| **355** | --- | --- | 206 | 155 | --- |
| **395** | 157 | --- | 246 | 246 | --- |
| **445** | 207 | --- | 216 | 185 | --- |
| **495** | 300 | --- | 256 | 256 | --- |
| **550** | 350 | --- | 325 | 314 | --- |
| **625** | 430 | --- | 387 | 387 | 370 |
| **705** | --- | --- | 462 | 462 | --- |
| **795** | --- | --- | 542 | 542 | 542 |
| **995** | --- | --- | --- | 600 | 745 |

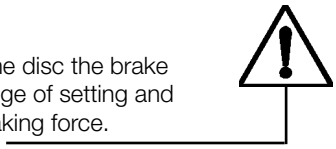
# DISC BRAKE - DISCS

**Revision number: T08020-01-F** **Revision date: 27.07.2017**

**5 - Wear limit before the replacement of the disc**

**DANGER !**

In case of an excessive wear of the disc the brake can operate out of its nominal range of setting and consequently lead to a loss of braking force.



The table 2 sums up the discs minimum thicknesses as before their replacement.

**Table 2**

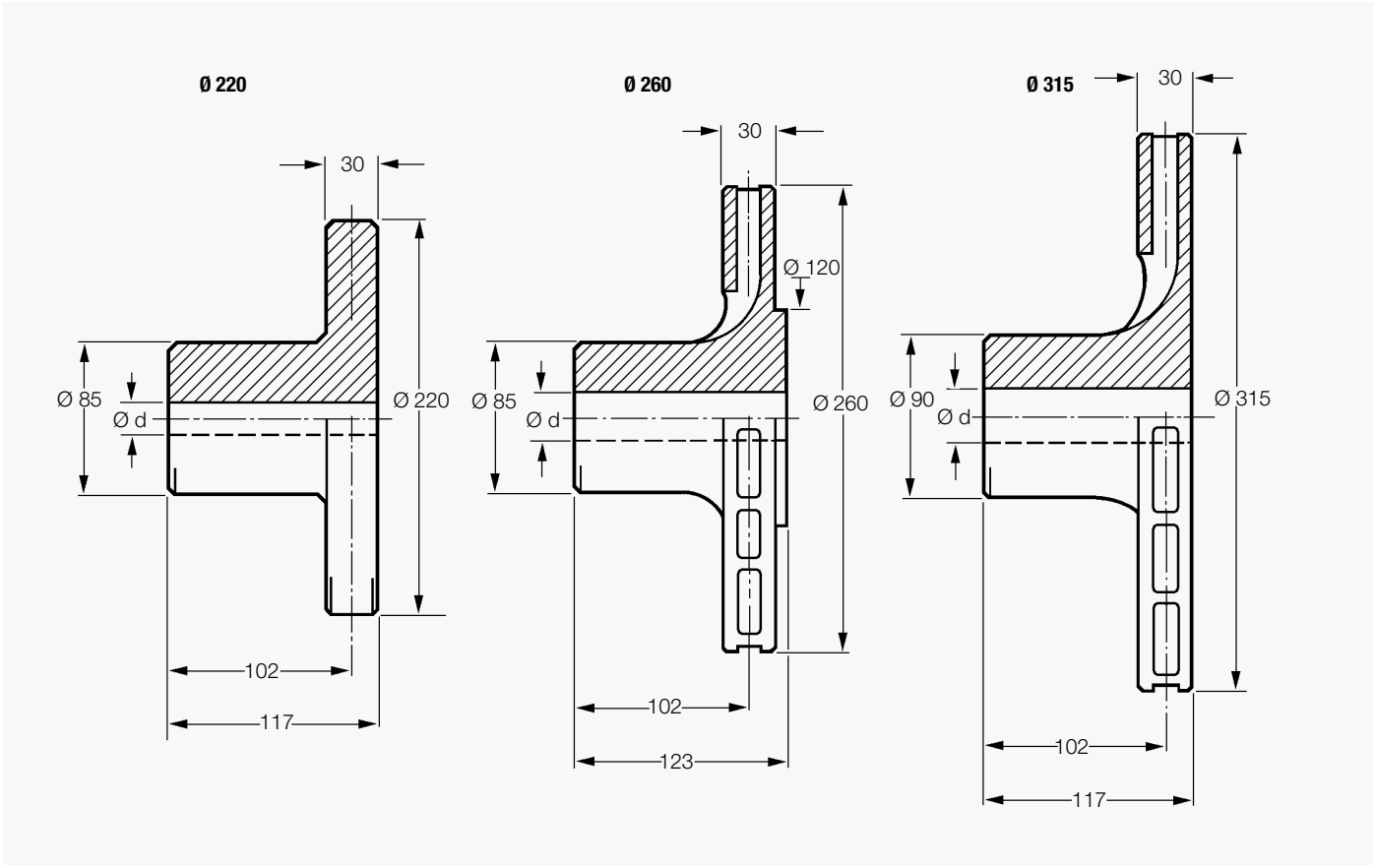
| Type of disc | Thickness unused (± 0.15) mm | Minimum thickness before replacement mm | Minimum web before replacement mm |
|---|---|---|---|
| Monobloc discs | 30 | 27 | 6.5 |
| Ventilated discs | 30 | 27 | 6 |
| | 42 | 39 | with core of 16 : 11<br>with core of 23 : 8 |
| Solid discs | 15 | 13 | |
| | 30 | 27 | |
| | 42 | 39 | |

## Discs & Drums

# DISC BRAKE - MONOBLOC DISCS

**Revision number: T02160-01-A** **Revision date: 02.05.2003**

Diametres: 220. 260 and 315 mm.
Thickness: 30 mm.

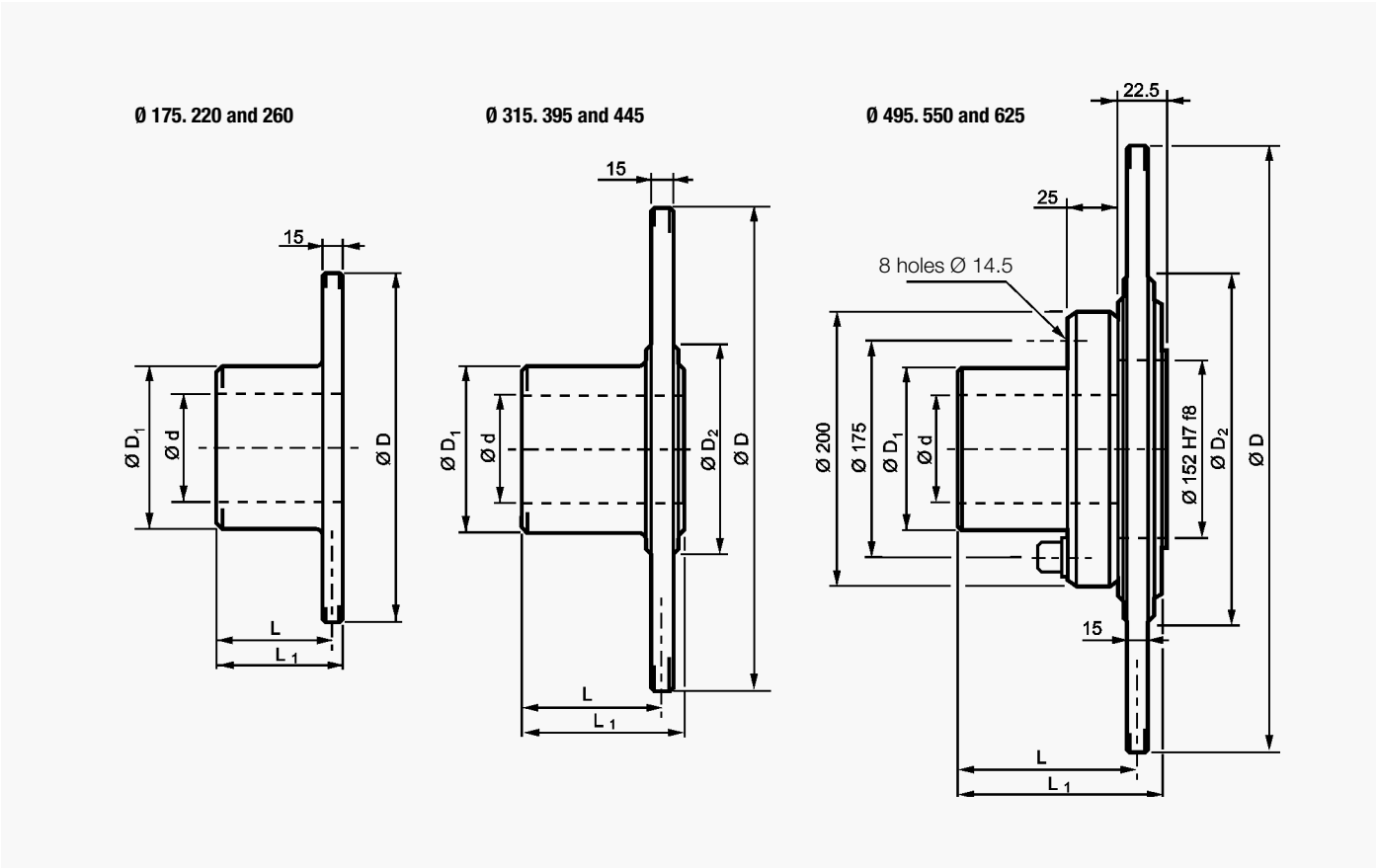



| Designation | | Ø | 220 M 30 | 260 M 30 | 315 M30 |
|---|---|---|---|---|---|
| **J** | | kg/m² | 0.055 | 0.070 | 0.14 |
| Weight | | kg | 11.2 | 10 | 12 |
| Maximum speed | | rpm | 4300 | 3600 | 3000 |
| d max. | keyed | mm | 55 | 55 | 60 |
| | shrink fit | mm | 55 | 55 | 60 |

# DISC BRAKE - SOLID DISCS

**Revision number: T02100-01-A** **Revision date: 01.03.2001**

Thickness: 15 mm




| Designation | | | 175 P 15 | 220 P 15 | 260 P 15 | 315 P 15 | 395 P 15 | 445 P 15 | 495 P 15 | 550 P 15 | 625 P 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **J** | | kg/m² | 0.01 | 0.03 | 0.06 | 0.13 | 0.30 | 0.48 | 0.77 | 1.16 | 1.93 |
| Weight | | kg | 4 | 7.6 | 13 | 18 | 24 | 28 | 43 | 49 | 59 |
| Maximum speed | | tr/mn | 5000 | 4300 | 3600 | 3000 | 2400 | 2100 | 1900 | 1800 | 1500 |
| D | | mm | 175 | 220 | 260 | 315 | 395 | 445 | 495 | 550 | 625 |
| $D_1$ | | mm | 75 | 95 | 120 | 120 | 120 | 120 | 150 | 150 | 150 |
| $D_2$ | | mm | - | - | - | 130 | 200 | 207 | 257 | 312 | 387 |
| L | | mm | 55 | 65 | 85 | 102 | 102 | 102 | 135 | 135 | 135 |
| $L_1$ | | mm | 62.5 | 72.5 | 92.5 | 117 | 117 | 117 | 150 | 150 | 150 |
| d max. | keyed | mm | 0-40 | 0-55 | 0-75 | 0-75 | 0-75 | 0-75 | 0-100 | 0-100 | 0-100 |
| | shrink fit | mm | 40 | 65 | 80 | 80 | 80 | 80 | 100 | 100 | 100 |

## Discs & Drums

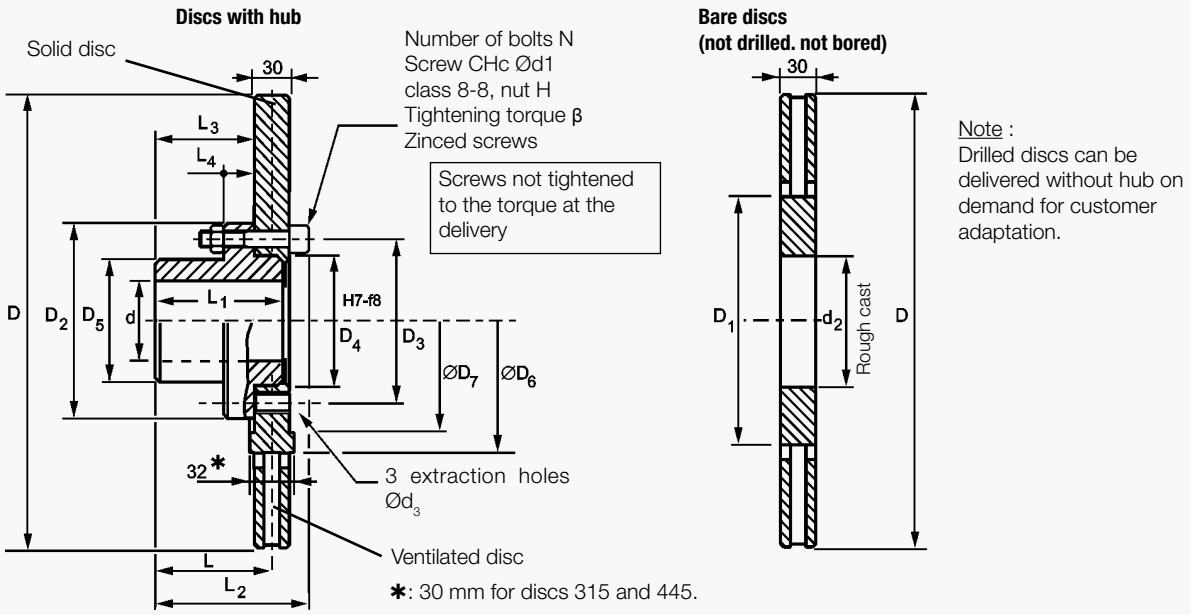
# DISC BRAKE - VENTILATED AND SOLID DISCS

**Revision number: T02220-01-B** **Revision date: 26.11.2010**

Diameter from 315 to 995 mm for solid discs P30
Diameter from 315 to 795 mm for ventilated discs V30
Thickness : 30mm

Material of discs and hubs
Protection of discs
Balancing
see leaflet T08020-01

**Note** : hubs are not balanced.




| Designation | | Type | 315 | | 355 | | 395 | | 445 | | 495 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 |
| J | Disc + hub | kg.m² | 0.234 | 0.148 | 0.379 | 0.243 | 0.588 | 0.352 | 0.94 | 0.581 | 1.492 | 0.968 |
| | Bare disc | kg.m² | 0.225 | 0.139 | 0.362 | 0.226 | 0.56 | 0.324 | 0.896 | 0.537 | 1.367 | 0.843 |
| Weight | Disc + hub | kg | 21.7 | 14.7 | 27.5 | 18.5 | 34 | 23 | 46.5 | 31.5 | 65 | 47 |
| | Bare disc | kg | 17 | 10 | 21 | 12 | 27 | 16 | 34 | 19 | 41 | 23 |
| Maximum speed | | rpm | 3000 | | 2700 | | 2400 | | 2100 | | 1900 | |
| Maximum braking torque ■ | | N.m | 1720 | | 2987 | | 4594 | | 8798 | | 14321 | |
| D | | mm | 315 | | 355 | | 395 | | 445 | | 495 | |
| D1 | | mm | 139 | | 172 | | 177 | | 184 | | 230 | |
| D2 | | mm | 125 | | 145 | | 165 | | 175 | | 220 | |
| D3 | | mm | 105 | | 125 | | 140 | | 146 | | 190 | |
| D4 | | mm | 85 | | 105 | | 115 | | 120 | | 160 | |
| D5 | | mm | 80 | | 95 | | 105 | | 110 | | 150 | |
| D6 | | mm | - | - | - | 173 | - | 246 | - | - | - | 256 |
| D7 | | mm | - | - | - | 151 | - | 171 | - | - | - | 226 |
| L | | mm | 102 | | 102 | | 102 | | 135 | | 135 | |
| L1 | | mm | 107 | | 107 | | 107 | | 140 | | 140 | |
| L2 | | mm | 127 | | 129 | | 131 | | 166 | | 168 | |
| L3 | | mm | 87 | | 87 | | 87 | | 120 | | 120 | |
| L4 | | mm | 28 | | 28 | | 28 | | 30 | | 38 | |
| Bore maxi. d ✱✱ | keyed | mm | 50 | | 60 | | 70 | | 75 | | 100 | |
| | shrink fit | mm | 50 | | 60 | | 70 | | 75 | | 100 | |
| d1 | | mm | M10 | | M12 | | M14 | | M16 | | M18 | |
| d2 | | mm | 76.5 | | 96.5 | | 106.5 | | 111.5 | | 151.5 | |
| d3 | | mm | M10 | | M12 | | M14 | | M16 | | M18 | |
| N | | | 9 | | 9 | | 9 | | 12 | | 12 | |
| Tightening torque β | | N.m | 49 | | 86 | | 135 | | 210 | | 290 | |

■ Maximum braking torque allowed by the bolts of disc and hub assembling.

STOP **ATTENTION !**
The torque transmissible by shaft and keying must be checked.

✱✱ Tolerance on d and keying on Customer demand.

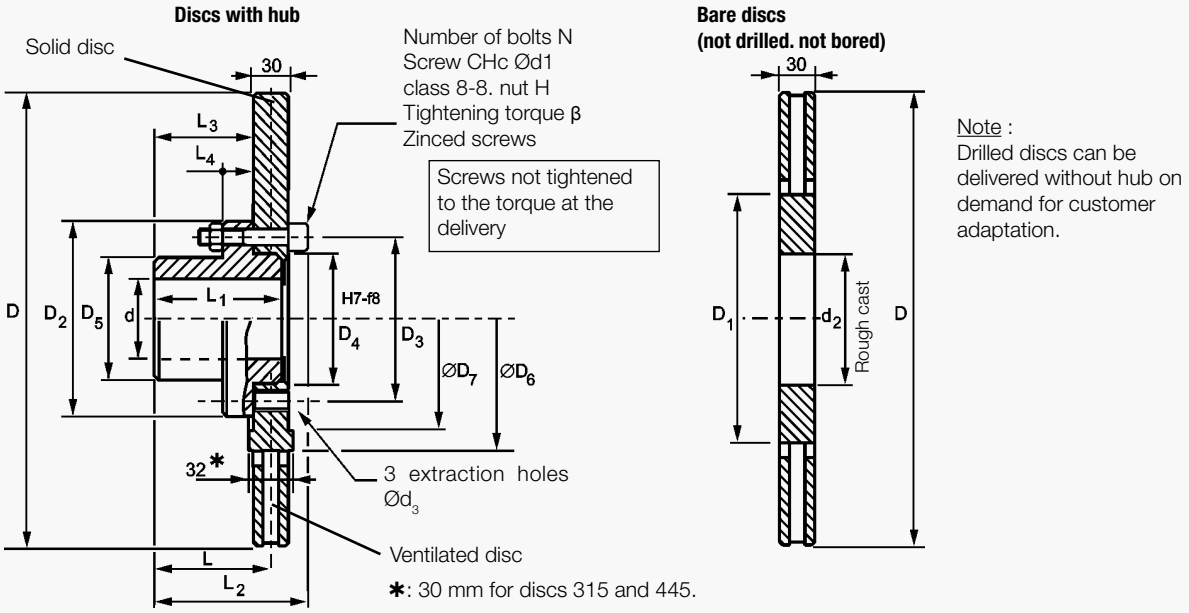
# DISC BRAKE - VENTILATED AND SOLID DISCS

**Revision number: T02220-01-B** **Revision date: 26.11.2010**

Diameter from 315 to 995 mm for solid discs P30
Diameter from 315 to 795 mm for ventilated discs V30
Thickness : 30mm

Material of discs and hubs
Protection of discs
Balancing
see leaflet T08020-01

**Note** : hubs are not balanced.




| Designation | | Type | 550 | | 625 | | 705 | | 795 | | 995 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 |
| J | Disc + hub | kg.m² | 2.22 | 1.28 | 3.676 | 2.23 | 5.99 | 3.76 | 9.72 | 6.14 | 23.86 |
| | Bare disc | kg.m² | 2.09 | 1.15 | 3.506 | 2.06 | 5.69 | 3.46 | 9.23 | 5.65 | 22.51 |
| Weight | Disc + hub | kg | 76 | 53 | 87.5 | 60.5 | 105 | 72 | 175.5 | 135.5 | 243 |
| | Bare disc | kg | 52 | 29 | 68 | 41 | 86 | 53 | 110 | 70 | 170 |
| Maximum speed | | rpm | 1800 | | 1500 | | 1300 | | 1200 | | 900 |
| Maximum braking torque ■ | | N.m | 14321 | | 19915 | | 27905 | | 36384 | | 73897 |
| D | | mm | 550 | | 625 | | 705 | | 795 | | 995 |
| D1 | | mm | 275 | | 343 | | 418 | | 498 | | - |
| D2 | | mm | 220 | | 235 | | 265 | | 300 | | 380 |
| D3 | | mm | 190 | | 205 | | 230 | | 260 | | 330 |
| D4 | | mm | 160 | | 170 | | 195 | | 220 | | 280 |
| D5 | | mm | 150 | | 150 | | 180 | | 210 | | 260 |
| D6 | | mm | - | 314 | - | 387 | - | 462 | - | 542 | - |
| D7 | | mm | - | 226 | - | 246 | - | 271 | - | 310 | - |
| L | | mm | 135 | | 135 | | 135 | | 135 | | 135 |
| L1 | | mm | 140 | | 140 | | 140 | | 140 | | 140 |
| L2 | | mm | 168 | | 170 | | 172 | | 174 | | 174 |
| L3 | | mm | 120 | | 120 | | 120 | | 120 | | 120 |
| L4 | | mm | 38 | | 38 | | 40 | | 40 | | 40 |
| Bore maxi. d ✱✱ | keyed | mm | 100 | | 100 | | 125 | | 140 | | 180 |
| | shrink fit | mm | 100 | | 100 | | 125 | | 140 | | 180 |
| d1 | | mm | M18 | | M20 | | M22 | | M24 | | M30 |
| d2 | | mm | 151.5 | | 161.5 | | 185.5 | | 211.5 | | 211.5 |
| d3 | | mm | M18 | | M20 | | M22 | | M24 | | M30 |
| N | | | 12 | | 12 | | 12 | | 12 | | 12 |
| Tightening torque β | | N.m | 290 | | 410 | | 550 | | 710 | | 1450 |

■ Maximum braking torque allowed by the bolts of disc and hub assembling.

STOP **ATTENTION !** The torque transmissible by shaft and keying must be checked.

✱✱ Tolerance on d and keying on Customer demand.

## Discs & Drums

# DISC BRAKE - VENTILATED AND SOLID DISCS

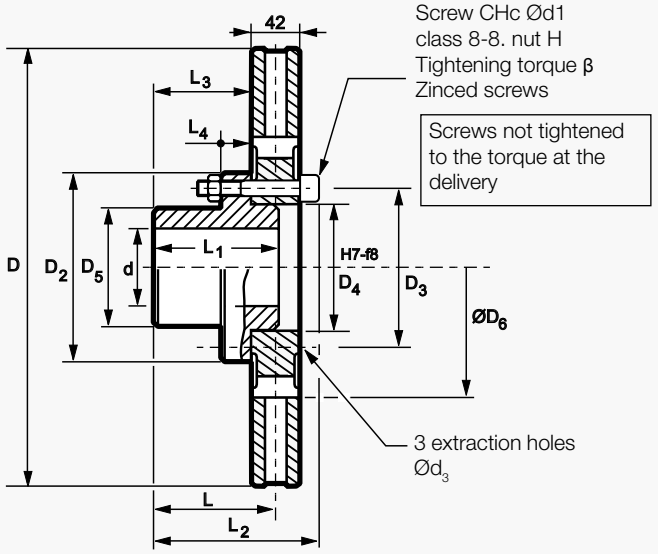
**Revision number: T02220-01-B** **Revision date: 26.11.2010**

Diameter 625 - 795 - 995
Thickness : 42mm

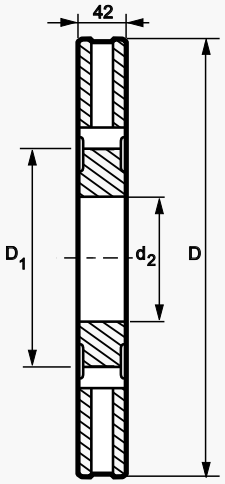
Material of discs and hubs
Protection of discs
Balancing
] see leaflet T08020-01

Note : hubs are not balanced.

**Disc with hub**




**Bare disc (not drilled. not bored)**




| Designation | | Type | 625V42 | 795V42 | 995V42 |
|---|---|---|---|---|---|
| J | Disc + hub | kg.m² | 2.92 | 7.85 | 21.3 |
| | Bare disc | kg.m² | 2,5 | 6,5 | 20 |
| Weight | Disc + hub | kg | 90 | 150 | 250 |
| | Bare disc | kg | 45 | 77 | 177 |
| Maximum speed | | tr/mn | 1500 | 1200 | 900 |
| Maximul braking torque ■ | | N.m | 36 384 | 73 897 | 73 897 |
| D | | mm | 625 | 795 | 995 |
| D1 | | mm | 302 | 486 | 694 |
| D2 | | mm | 300 | 380 | 380 |
| D3 | | mm | 260 | 330 | 330 |
| D4 | | mm | 220 | 280 | 280 |
| D5 | | mm | 210 | 260 | 260 |
| D6 | | mm | 370 | 542 | 745 |
| D7 | | mm | - | - | - |
| L | | mm | 141 | 141 | 141 |
| L1 | | mm | 140 | 140 | 140 |
| L2 | | mm | 186 | 186 | 186 |
| L3 | | mm | 120 | 120 | 120 |
| L4 | | mm | 40 | 40 | 40 |
| Bore maxi. d ** | keyed | mm | 40-140 | 40-180 | 40-180 |
| | shrink fit | mm | 140 | 180 | 180 |
| d1 | | mm | M24 | M30 | M30 |
| d2 | | mm | 211 | 211 | 211 |
| d3 | | mm | M24 | M30 | M30 |
| N | | | 12 | 12 | 12 |
| Tightening torque β | | N.m | 710 | 1450 | 1450 |

■ Maximum braking torque allowed by the bolts of disc and hub assembling.

STOP **ATTENTION !**
The torque transmissible by shaft and keying must be checked.

** Tolerance on d and keying on Customer demand.

# NOTES

## Discs & Drums

# DISC BRAKE - VENTILATED / SOLID DISCS - LONG HUBS

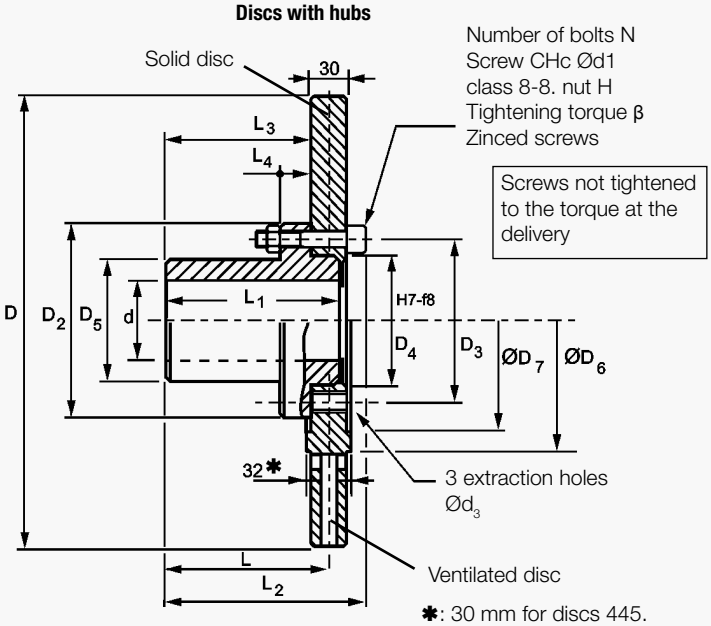
**Revision number: T02222-01-D** **Revision date: 07.01.2014**

**For TDXB and FAV brakes**
MLP - diameter from 355 to 995 mm for solid discs P30
MLV - diameter from 355 to 795 mm for ventilated discs V30
Thickness : 30mm

Material of discs and hubs
Protection of discs
Balancing
see leaflet T08020-01

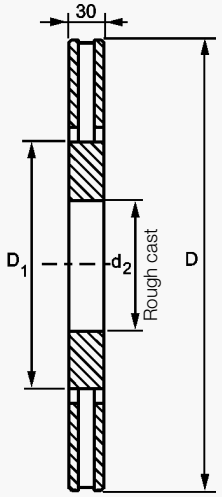
Note : hubs are not balanced.

**Discs with hubs**




✱: 30 mm for discs 445.

**Bare discs (not drilled. not bored)**




Note :
Drilled discs can be delivered without hub on demand for customer adaptation.

| Designation | | Type | 315 | | 355 | | 395 | | 445 | | 495 | | 550 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 |
| J | Disc + hub | kg.m² | 0.245 | 0.159 | 0.382 | 0.246 | 0.593 | 0.357 | 0.946 | 0.587 | 1.515 | 0.991 | 2.243 | 1.303 |
| | Bare disc | kg.m² | 0.225 | 0.139 | 0.362 | 0.226 | 0.56 | 0.324 | 0.896 | 0.537 | 1.367 | 0.843 | 2.09 | 1.15 |
| Weight | Disc + hub | kg | 22.5 | 15.5 | 30.5 | 21.5 | 37.6 | 26.6 | 51 | 36 | 73 | 55 | 84 | 61 |
| | Bare disc | kg | 17 | 10 | 21 | 12 | 27 | 16 | 34 | 19 | 41 | 23 | 52 | 29 |
| Maximum speed | | rpm | 3000 | | 2700 | | 2400 | | 2100 | | 1900 | | 1800 | |
| Maximum braking torque ■ | | N.m | 1720 | | 2987 | | 4594 | | 8798 | | 14321 | | 14321 | |
| D | | mm | 315 | | 355 | | 395 | | 445 | | 495 | | 550 | |
| D1 | | mm | 139 | | 172 | | 177 | | 184 | | 230 | | 275 | |
| D2 | | mm | 125 | | 145 | | 165 | | 175 | | 220 | | 220 | |
| D3 | | mm | 105 | | 125 | | 140 | | 146 | | 190 | | 190 | |
| D4 | | mm | 85 | | 105 | | 115 | | 120 | | 160 | | 160 | |
| D5 | | mm | 80 | | 95 | | 105 | | 110 | | 150 | | 150 | |
| D6 | | mm | - | - | - | 173 | - | 246 | - | - | - | 256 | - | 314 |
| D7 | | mm | - | - | - | 151 | - | 171 | - | - | - | 226 | - | 226 |
| L | | mm | 135 | | 155 | | 155 | | 195 | | 195 | | 195 | |
| L1 | | mm | 140 | | 160 | | 160 | | 200 | | 200 | | 200 | |
| L2 | | mm | 160 | | 182 | | 182 | | 226 | | 228 | | 228 | |
| L3 | | mm | 120 | | 140 | | 140 | | 180 | | 180 | | 180 | |
| L4 | | mm | 28 | | 28 | | 28 | | 30 | | 38 | | 38 | |
| Bore maximum d keyed ✱✱ | | mm | 50 | | 60 | | 70 | | 75 | | 100 | | 100 | |
| d1 | | mm | M10 | | M12 | | M14 | | M16 | | M18 | | M18 | |
| d2 | | mm | 76.5 | | 96.5 | | 106.5 | | 111.5 | | 151.5 | | 151.5 | |
| d3 | | mm | M10 | | M12 | | M14 | | M16 | | M18 | | M18 | |
| N | | | 9 | | 9 | | 9 | | 12 | | 12 | | 12 | |
| Tightening torque β | | N.m | 49 | | 86 | | 135 | | 210 | | 290 | | 290 | |

■ Maximum braking torque allowed by the bolts of disc and hub assembling.

STOP **ATTENTION !**
The torque transmissible by shaft and keying must be checked.

✱✱ Tolerance on d and keying on Customer demand.

# DISC BRAKE - VENTILATED / SOLID DISCS - LONG HUBS

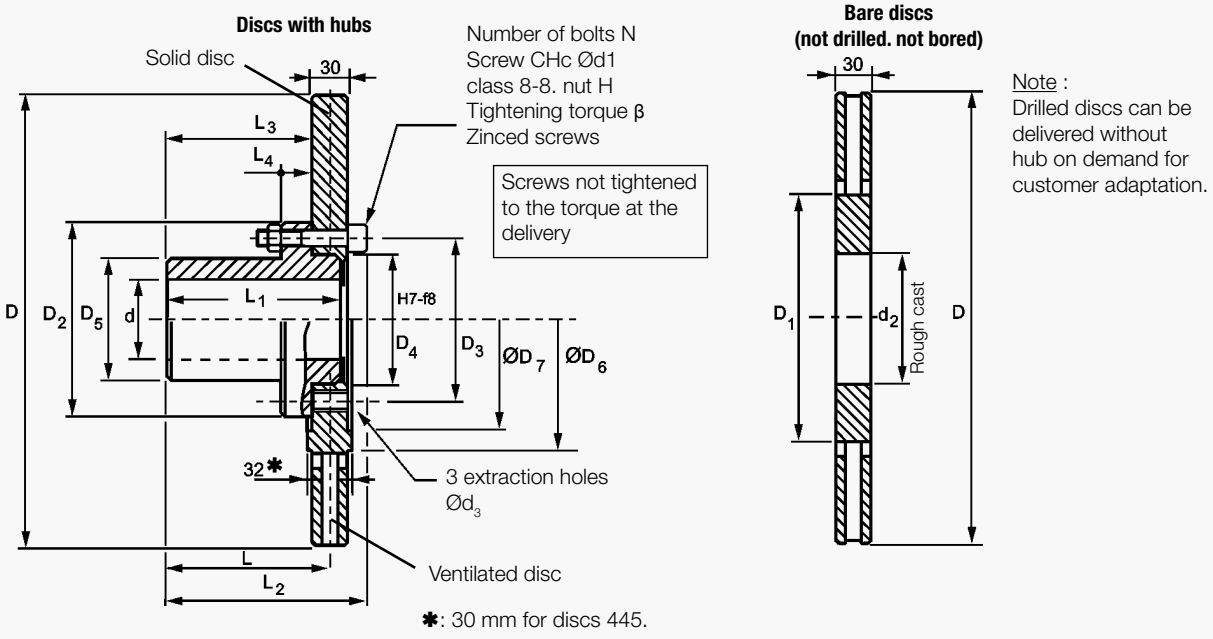
**Revision number: T02222-01-D** **Revision date: 07.01.2014**

**For TDXB and FAV brakes**
MLP - diameter from 355 to 995 mm for solid discs P30
MLV - diameter from 355 to 795 mm for ventilated discs V30
Thickness : 30mm

The discs 625-2 and 705-2 are with the same hub and fixing than 795.

Material of discs and hubs
Protection of discs
Balancing
see leaflet T08020-01

Note : hubs are not balanced.




| Designation | | Type | 625 | | 625-2 | | 705 | | 705-2 | | 795 | | 995 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 | V30 | P30 |
| J | Disc + hub | kg.m² | 3.699 | 2.253 | 4.02 | 2.574 | 6.038 | 3.808 | 6.13 | 3.9 | 9.802 | 6.222 | 23.9 |
| | Bare disc | kg.m² | 3.506 | 2.06 | 3.45 | 2.004 | 5.69 | 3.46 | 5.62 | 3.39 | 9.23 | 5.65 | 22.5 |
| Weight | Disc + hub | kg | 96 | 69 | 116.5 | 89.5 | 117 | 84 | 136 | 103 | 191 | 151 | 271 |
| | Bare disc | kg | 68 | 41 | 63 | 36 | 86 | 53 | 82.5 | 49.5 | 110 | 70 | 170 |
| Maximum speed | | rpm | 1500 | | 1500 | | 1300 | | 1300 | | 1200 | | 900 |
| Maximum braking torque ■ | | N.m | 19915 | | 36384 | | 27905 | | 36384 | | 36384 | | 73897 |
| D | | mm | 625 | | 625 | | 705 | | 705 | | 795 | | 995 |
| D1 | | mm | 343 | | 343 | | 418 | | 418 | | 498 | | - |
| D2 | | mm | 235 | | 300 | | 265 | | 300 | | 300 | | 380 |
| D3 | | mm | 205 | | 260 | | 230 | | 260 | | 260 | | 330 |
| D4 | | mm | 170 | | 220 | | 195 | | 220 | | 220 | | 280 |
| D5 | | mm | 150 | | 210 | | 180 | | 210 | | 210 | | 260 |
| D6 | | mm | - | 387 | - | 387 | - | 462 | - | 462 | - | 542 | - |
| D7 | | mm | - | 246 | - | 305 | - | 271 | - | 440 | - | 310 | - |
| L | | mm | 195 | | 195 | | 195 | | 195 | | 195 | | 235 |
| L1 | | mm | 200 | | 200 | | 200 | | 200 | | 200 | | 244 |
| L2 | | mm | 230 | | 234 | | 232 | | 234 | | 234 | | 280 |
| L3 | | mm | 180 | | 180 | | 180 | | 180 | | 180 | | 220 |
| L4 | | mm | 38 | | 40 | | 40 | | 40 | | 40 | | 50 |
| Bore maximum d keyed ✱✱ | | mm | 100 | | 140 | | 125 | | 140 | | 140 | | 180 |
| d1 | | mm | M20 | | M24 | | M22 | | M24 | | M24 | | M30 |
| d2 | | mm | 161.5 | | 161.5 | | 185.5 | | 185.5 | | 211.5 | | 211.5 |
| d3 | | mm | M20 | | M24 | | M22 | | M24 | | M24 | | M30 |
| N | | | 12 | | 12 | | 12 | | 12 | | 12 | | 12 |
| Tightening torque β | | N.m | 410 | | 710 | | 550 | | 710 | | 710 | | 1450 |

■ Maximum braking torque allowed by the bolts of disc and hub assembling.

STOP **ATTENTION !** The torque transmissible by shaft and keying must be checked.

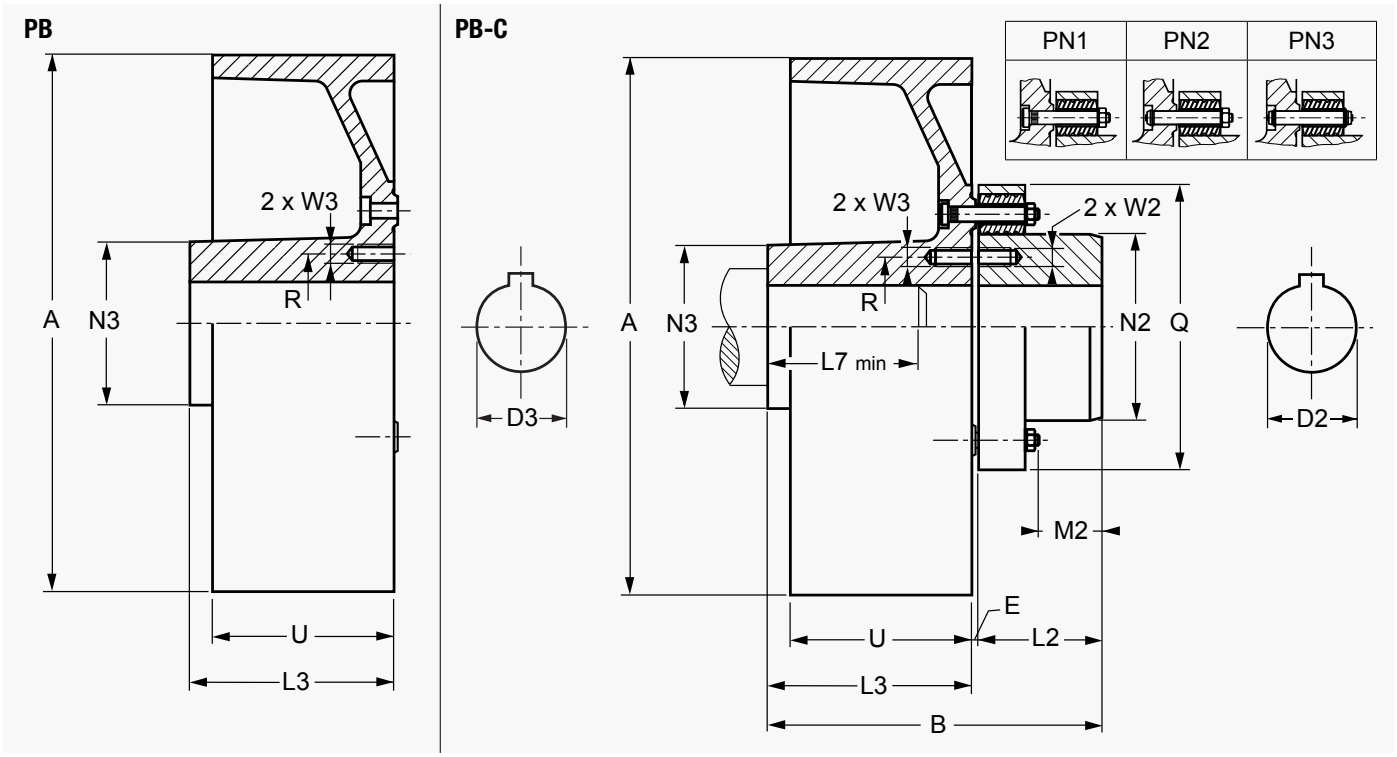
✱✱ Tolerance on d and keying on Customer demand.

## Discs & Drums

# DRUM BRAKE - DRUMS SERIE PB & PB-C

**Revision number: T01350-01-B** **Revision date: 31.05.2016**

**Drums material** :
ØA ≤ 400 mm : EN-GJL-250
ØA > 400 mm : EN-GJS-500-7




| Designation | | PB or PB-C... | 200 | 250 | 315 | 400 | 500 | 630 | 710 |
|---|---|---|---|---|---|---|---|---|---|
| J ⊡ | coupling + drum | kgm² | 0.062 | 0.156 | 0.426 | 1.310 | 4.02 | 10.82 | 21.45 |
| | drum alone | kgm² | 0.052 | 0.137 | 0.393 | 1.229 | 3.718 | 10.518 | 19.958 |
| Weight ⊡ | coupling + drum | kg | 16.1 | 27.7 | 43.5 | 83 | 160 | 235 | 415 |
| | drum alone | kg | 12.5 | 22.6 | 35.9 | 70.1 | 130.5 | 205.5 | 333.4 |
| Nominal torque | | Nm | 400 | 630 | 1000 | 2500 | 6100 | 6100 | 21000 |
| Rotation speed nmax. ✱ | | rpm | 3400 | 2750 | 2200 | 1700 | 2200 | 1800 | 1500 |
| Dimensions in mm | **A** | | 200 | 250 | 315 | 400 | 500 | 630 | 710 |
| | **B** | | 183.5 | 223.5 | 248.5 | 299 | 404 | 429 | 515.5 |
| | **E** | | 3.5 | 3.5 | 3.5 | 4 | 4 | 4 | 5.5 |
| | **L2** | | 60 | 75 | 90 | 110 | 150 | 150 | 220 |
| | **L3** | | 120 | 145 | 155 | 185 | 250 | 275 | 290 |
| | **L7** min | | 72 | 87 | 93 | 110 | 150 | 165 | 175 |
| | **M2** | | 21.5 | 36.5 | 51.5 | 51 | 91 | 91 | 148 |
| | **N2** | | 95 | 116 | 127 | 160 | 202 | 202 | 290 |
| | **N3** | | 95 | 116 | 127 | 160 | 202 | 202 | 195 |
| | **Q** | | **155** | **175** | **200** | **245** | **315** | **315** | **460** |
| | **U** | | 75 | 95 | 118 | 150 | 190 | 236 | 265 |
| | **R2** | | 80 | 95 | 105 | 135 | 165 | 165 | 232 |
| | **R3** | | 80 | 95 | 105 | 135 | 165 | 165 | 165 |
| | **W2** | | M8 | M10 | M10 | M12 | M12 | M12 | M20 |
| | **W3** | | M10 | M12 | M12 | M16 | M20 | M20 | M20 |
| Bores in mm | **D2** | min / max ✪ | 19/60 | 28/75 | 35/80 | 35/100 | 100/125 | 100/125 | 140/200 |
| | **D3** | min / max ✪ | 19/60 | 28/75 | 28/80 | 35/100 | 45/125 | 55/125 | 55/125 |
| Pins | Number / size | | 6 /PN1 | 8 /PN1 | 10 /PN1 | 9 /PN2 | 16/PN2 | 16/PN2 | 18/PN3 |

Without specification on the order, couplings are delivered without boring.

✱ For speeds > nmax.. consult us.

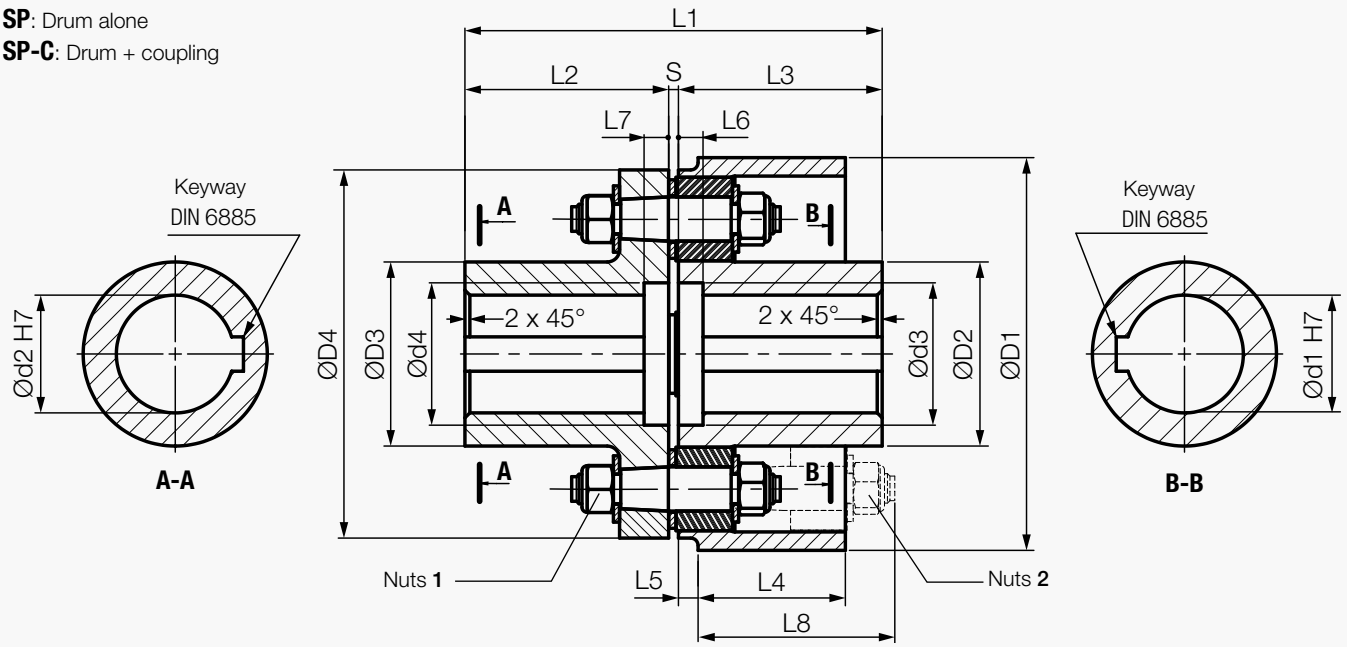
⊡ For maximum bore.

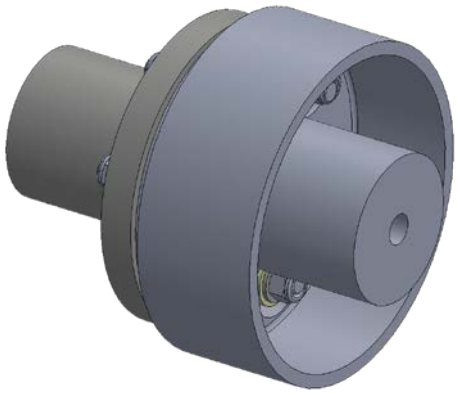
✪ Maximum bores for keyways according to ISO R773.

# DRUM BRAKE - DRUMS SERIE SP & SP-C

**Revision number: T10145-01-B** **Revision date: 24.11.2017**

**SP**: Drum alone
**SP-C**: Drum + coupling



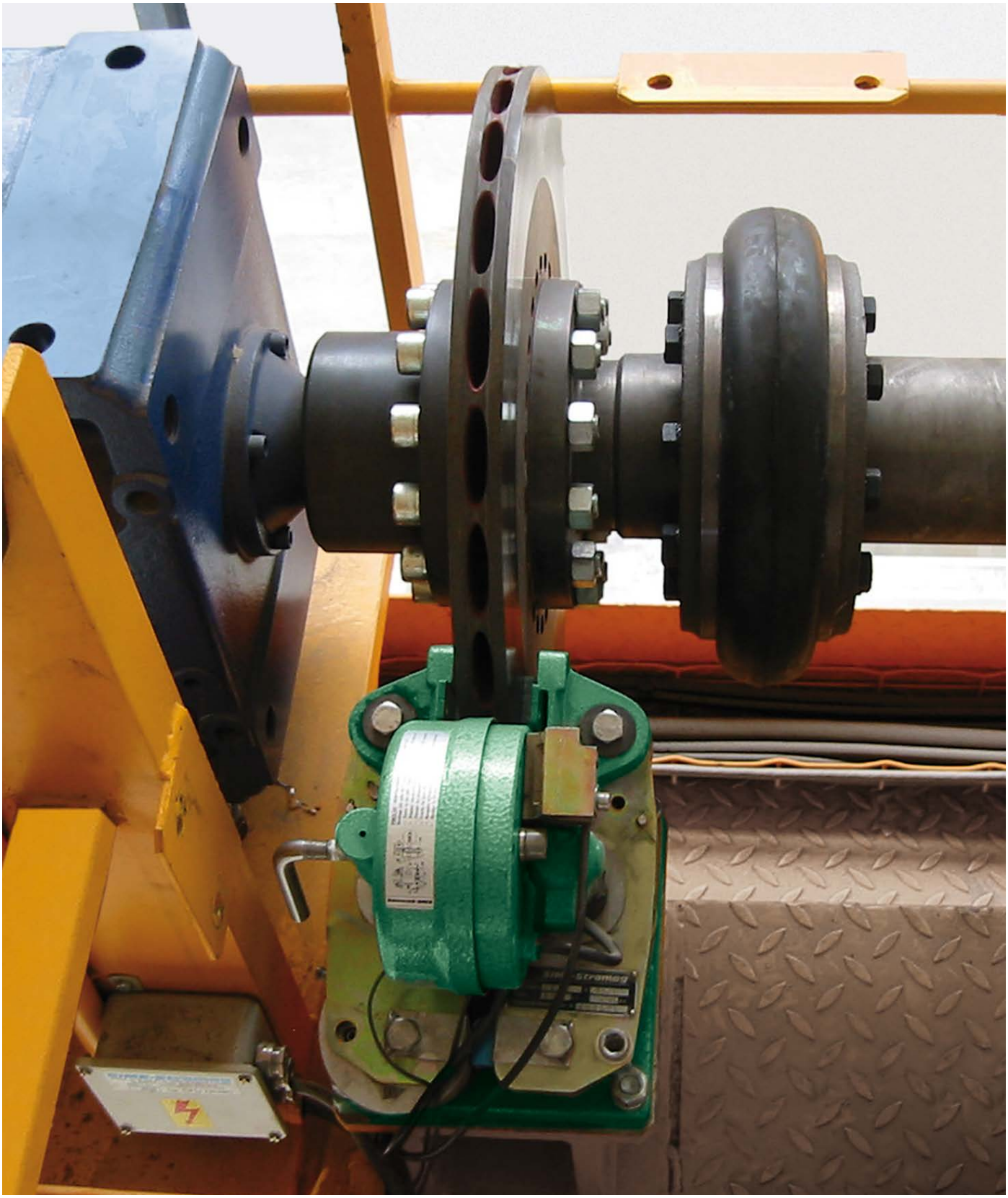



| Designation | SP... or SP-C... | | 160 | 200 | 250 | 315 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|
| **Weight** * | | kg | 10.8 | 20.2 | 36 | 63 | 112 | 189 |
| **Inertia** * | | kgm² | 0,026 | 0,067 | 0,195 | 0,54 | 1,850 | 4,900 |
| **$T_{CN}$** | | Nm | 270 | 550 | 1000 | 2000 | 3500 | 6500 |
| **$T_{Cmax.}$** | | Nm | 540 | 1100 | 2000 | 4000 | 7000 | 13000 |
| **Speed max.** | | rpm | 4800 | 3900 | 3200 | 2500 | 2000 | 1600 |
| **Dimensions** in mm | **ØD1** | | 160 | 200 | 250 | 315 | 400 | 500 |
| | **ØD2** | | 75 | 90 | 110 | 145 | 170 | 200 |
| | **ØD3** | | 75 | 90 | 110 | 145 | 170 | 200 |
| | **ØD4** | | 150 | 185 | 225 | 280 | 335 | 410 |
| | **Ød1** | min. | _ | 25 | 30 | 40 | 50 | 60 |
| | | max. | 48 | 55 | 65 | 90 | 100 | 120 |
| | **Ød2** | min. | _ | 25 | 30 | 40 | 50 | 60 |
| | | max. | 48 | 55 | 65 | 90 | 100 | 120 |
| | **Ød3** | | 58 | 66 | 83 | 104 | 120 | 140 |
| | **Ød4** | | 58 | 66 | 83 | 104 | 120 | 140 |
| | **L1** | | 170 | 224 | 294 | 311 | 355 | 386 |
| | **L2** | | 83 | 110 | 145 | 153 | 175 | 190 |
| | **L3** | | 83 | 110 | 145 | 153 | 175 | 190 |
| | **L4** | | 60 | 75 | 95 | 118 | 150 | 190 |
| | **L5** | | 8 | 10 | 10 | 15 | 0 | 0 |
| | **L6** | | 10 | 15 | 17 | 23 | 30 | 30 |
| | **L7** | | 10 | 15 | 17 | 23 | 30 | 30 |
| | **L8** | | 150 | 165 | 195 | 220 | 250 | 290 |
| | **S** | | 4 | 4 | 4 | 5 | 5 | 6 |
| **Tightening Torque** | Nuts **1** | N.m | 15 | 15 | 40 | 40 | 240 | 240 |
| | Nuts **2** | N.m | 15 | 15 | 40 | 40 | 240 | 240 |

* *drum + coupling*

### Disc Couplings

# DISC COUPLINGS



# Disc Couplings

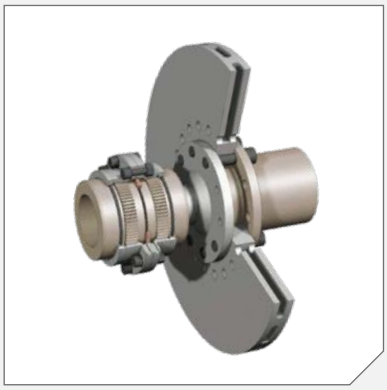
| MAIN CHARACTERISTICS | OPTIONS |
|---|---|
| • IN ASSOCIATION WITH OUR MONOBLOC, SOLID AND VENTILATED DISCS<br>• 3 TYPES OF DISC COUPLINGS FOR A COMPLETE BRAKING SYSTEM SOLUTION | • LONG HUB ON MOTOR SIDE : SDKL .. SVKL .. SMLDF<br>• LONG HUB ON GEAR BOX SIDE : SDF-ML<br>• LONG HUBS ON MOTOR AND GEAR BOX SIDES : SDKL/SVKL-ML .. SMLDF-ML |

## PERIFLEX

- Highly-flexible rubber-fabric couplings
- Precise workmanship
- Monobloc. solid and ventilated discs : th.15 - 30 mm. Ø 175 - 795
- Torque range: 50 to 15.000 Nm
- Ambient temperature: -50°C to +80°C

### Benefits include

- Compensate extremely large offsets in every direction
- Allow radial mounting and dismantling without moving the machines
- Make torque transmission free from backlash
- Absorb torque peaks and damp occuring vibrations

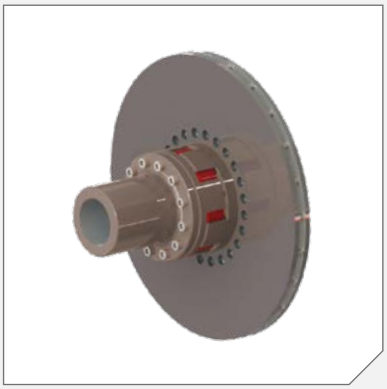


## SDF

- All steel coupling
- Two flanged sleeves with internal spur gear teeth
- Solid and ventilated discs : th. 30 mm. Ø 315 - 995
- Torque range: 1.500 to 36.700 Nm
- High misalignements = 1°30' per gear
- Ambient temperature: -20°C to +100°C

### Benefits include

- Disc mounting and dismounting without moving the machines back
- Closely controlled quality of the gearing profile for minimum end float and best alignment



## E - SVK - SDK

- Highly-Flexible coupling
- Fitted with a cam ring and a flexible element (shore A or shore D).
- Discs : E: th.15 - 30 mm. Ø 175 - 625
  SVK/SDK: th. 30 mm. Ø 315 - 995
- Torque range:
  - E: 200 to 3.100 Nm
  - SVK/SDK: 630 to 40.050 Nm
- Ambient temperatures:
  - E: -40°C to +120°C
  - SVK/SDK: -30°C to +80°C

### Benefits include

- Easy assembly
- Easy dismantling of the complete coupling and cam Ring
- Damping of torsional vibrations
- Noise reduction and shock load accomodation
- No lubrification requirements

## Disc Couplings

# DISC BRAKE - FLEXIBLE DISC COUPLING PNF-PNQ-PND

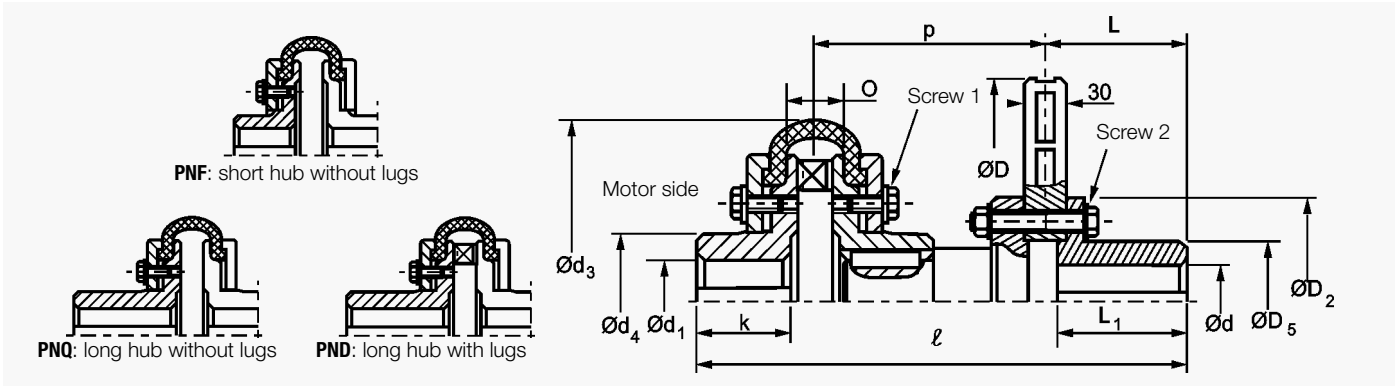
**Revision number: T02805-01-D** **Revision date: 15.05.2012**

Flexible coupling **PNF. PNQ** and **PND** series
Discs thickness: 30mm
Rubber element and disc can be both removed without moving motor or gearbox back.

**Use:**
PNF and PNQ for horizontal motions only.
PND with lugs. compulsory for hoisting.

**Option:**
Solid Disc

Screws 1 and 2 not tightened to the torque at the delivery




| Designation | | | Disc | 315V30 | | 355V30 | | | 395V30 | | | 445V30 | | | | | | 495V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Coupling PNF. PNQ and PND | 25 | 50 | 25 | 50 | 100 | 50 | 100 | 200 | 100-1 | 100-2 | 200-1 | 200-2 | 100-1 | 100-2 | 200-1 | 200-2 | 300-1 | 300-2 |
| Assembly | Nominal torque Cn | N.m | | 300 | 600 | 300 | 600 | 1200 | 600 | 1200 | 2500 | 1200 | 1200 | 2500 | 2500 | 1200 | 1200 | 2500 | 2500 | 4000 | 4000 |
| | Coupling Maximum torque Cmax | N.m | | 900 | 1800 | 900 | 1800 | 3600 | 1800 | 3600 | 7500 | 3600 | 3600 | 7500 | 7500 | 3600 | 3600 | 7500 | 7500 | 12000 | 12000 |
| | For use with calipers type | | | 650-5K | 645-5K | 650 | 5K 650 | 645 | | 645-5K | | 645-5K | 4CA2 | 645-5K | 4CA2 | 645-5K | 4CA2 | 645-5K | 4CA2 | 645-5K | 4CA2 |
| | Maximum speed | tr/mn | | 3000 | 2500 | 2700 | 2500 | 2500 | 2400 | 2400 | 2000 | 2100 | 2100 | 2000 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| | **J**: | | | | | | | | | | | | | | | | | | | | |
| | PNF | kgm² | | 0.180 | 0.240 | 0.283 | 0.333 | 0.456 | 0.370 | 0.589 | 1.08 | 0.776 | 0.656 | 1.475 | 1.545 | 1.266 | 1.272 | 1.655 | 1.68 | 1.60 | 1.62 |
| | PNQ | kgm² | | 0.182 | 0.252 | 0.286 | 0.344 | 0.483 | 0.382 | 0.616 | 1.116 | 0.803 | 0.683 | 1.516 | 1.586 | 1.293 | 1.299 | 1.696 | 1.721 | 1.64 | 1.65 |
| | PND | kgm² | | 0.187 | 0.267 | 0.291 | 0.360 | 0.512 | 0.397 | 0.645 | 1.140 | 0.832 | 0.71 | 1.541 | 1.61 | 1.322 | 1.328 | 1.721 | 1.746 | 1.66 | 1.67 |
| | Weight: | | | | | | | | | | | | | | | | | | | | |
| | PNF | kg | | 29.3 | 35.5 | 34.8 | 43 | 57 | 45.5 | 63 | 93 | 74 | 71 | 94 | 96 | 95 | 98.5 | 118 | 128 | 128.5 | 131 |
| | PNQ | kg | | 31.3 | 38.5 | 36.8 | 46 | 67 | 48.5 | 73 | 103 | 84 | 81 | 104 | 106 | 105 | 108.5 | 128 | 138.5 | 140 | 142.5 |
| | PND | kg | | 32.4 | 40.7 | 37.9 | 48.2 | 68.7 | 50.7 | 74.7 | 107.5 | 85.7 | 82.7 | 108.5 | 110.5 | 106.7 | 110 | 132.5 | 142.5 | 141.5 | 144 |
| | ℓ | | | | | | | | | | | | | | | | | | | | |
| | PNF | mm | | 315 | 350 | 315 | 340 | 380 | 340 | 380 | 402 | 413 | 515 | 435 | 568 | 400 | 443 | 435 | 525 | 562 | 582 |
| | PNQ. PND | mm | | 366 | 393 | 366 | 383 | 445 | 383 | 445 | 467 | 478 | 580 | 500 | 633 | 465 | 508 | 500 | 590 | 622 | 642 |
| Disc | D | mm | | 315 | | 355 | | | 395 | | | 445 | | | | 495 | | | | | |
| | $D_2$ | mm | | 125 | | 145 | | | 165 | | | 175 | | | | 220 | | | | | |
| | $D_5$ | mm | | 80 | | 95 | | | 105 | | | 110 | | | | 150 | | | | | |
| | L | mm | | 102 | | 102 | | | 102 | | | 135 | | | | 135 | | | | | |
| | $L_1$ | mm | | 107 | | 107 | | | 107 | | | 140 | | | | 140 | | | | | |
| | d max. keyed | mm | | 50 | | 60 | | | 70 | | | 70 | | | | 100 | | | | | |
| | d max. for shrink fit | mm | | 50 | | 60 | | | 70 | | | 70 | | | | 100 | | | | | |
| Coupling | $d_3$ | mm | | 210 | 263 | 210 | 263 | 310 | 263 | 310 | 370 | 310 | 310 | 370 | 370 | 310 | 310 | 370 | 370 | 402 | 402 |
| | $d_4$ | mm | | 80 | 95 | 80 | 95 | 125 | 95 | 125 | 150 | 125 | 125 | 150 | 150 | 125 | 125 | 150 | 150 | 160 | 160 |
| | k PNF | mm | | 59 | 67 | 59 | 67 | 75 | 67 | 75 | 85 | 75 | 75 | 85 | 85 | 75 | 75 | 85 | 85 | 95 | 95 |
| | k PNQ. PND | mm | | 110 | 110 | 110 | 110 | 140 | 110 | 140 | 150 | 140 | 140 | 150 | 150 | 140 | 140 | 150 | 150 | 155 | 155 |
| | O | mm | | 38 | 44 | 38 | 44 | 42 | 44 | 42 | 48 | 42 | 42 | 46 | 46 | 42 | 42 | 46 | 46 | 50 | 50 |
| | p | mm | | 138 | 161 | 138 | 151 | 178 | 151 | 178 | 192.5 | 178 | 280 | 192.5 | 325.5 | 165 | 208 | 192.5 | 282.5 | 305 | 325 |
| | $d_1$ max. keyed PNF | mm | | 55 | 65 | 55 | 65 | 90 | 65 | 90 | 100 | 90 | 90 | 100 | 100 | 90 | 90 | 100 | 100 | 110 | 110 |
| | $d_1$ max. keyed PNQ | mm | | 55 | 65 | 55 | 65 | 90 | 65 | 90 | 100 | 90 | 90 | 100 | 100 | 90 | 90 | 100 | 100 | 110 | 110 |
| | $d_1$ max. keyed PND | mm | | 55 | 65 | 55 | 65 | 85 | 65 | 85 | 100 | 85 | 85 | 100 | 100 | 85 | 85 | 100 | 100 | 110 | 110 |
| | $d_1$ max. for shrink fit | mm | | 50 | 60 | 50 | 60 | 80 | 60 | 80 | 90 | 80 | 80 | 90 | 90 | 80 | 80 | 90 | 90 | 100 | 100 |
| Tightening torque on screw 1 | | N.m | | 20 | 25 | 20 | 25 | 45 | 25 | 45 | 55 | 45 | 45 | 55 | 55 | 45 | 45 | 55 | 55 | 60 | 60 |
| Tightening torque on screw 2 | | N.m | | 49 | 49 | 86 | 86 | 86 | 135 | 135 | 135 | 210 | 210 | 210 | 210 | 290 | 290 | 290 | 290 | 290 | 290 |
| Maximum permissible torque Ct and working conditions (ambient temperature ≤ 40°C) | | | | >300 start/h : Ct=Cn/2.5<br>≤300 start/h à 120 start/h : Ct=Cn/2<br>≤120 start/h : Ct=Cn/1.5 | | | | | | | | NOTA : For shrink fit, k and ℓ are modified (consult us)<br>At the delivery, screws 1 and 2 are not tightened to the torque<br>In each case : engine start coupling Cd<Cmax | | | | | | | | | |

# DISC BRAKE - FLEXIBLE DISC COUPLING PNF-PNQ-PND

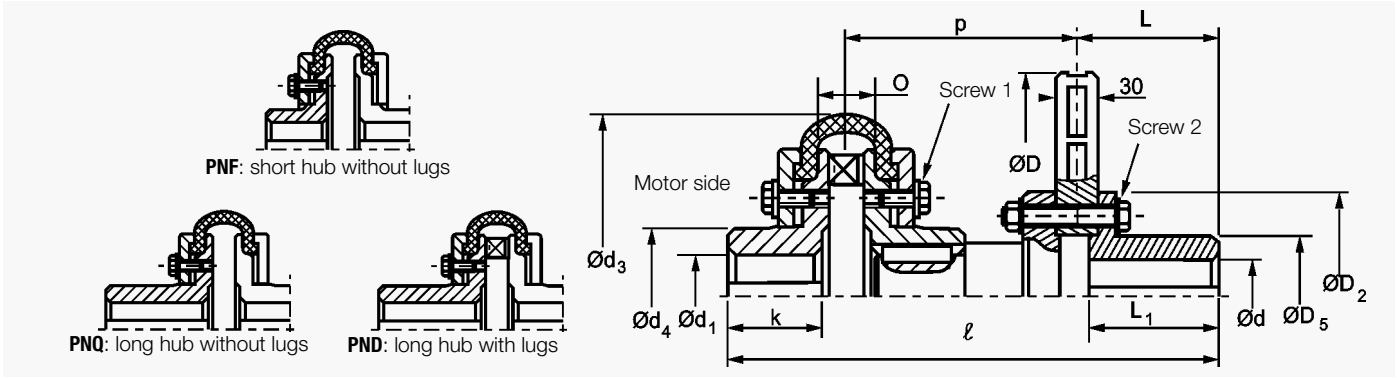
**Revision number: T02805-01-D** **Revision date: 15.05.2012**

Flexible coupling **PNF. PNQ** and **PND** series
Discs thickness: 30mm
Rubber element and disc can be both removed without moving motor or gearbox back.

**Use:**
PNF and PNQ for horizontal motions only.
PND with lugs. compulsory for hoisting.

**Option:**
Solid Disc

Screws 1 and 2 not tightened to the torque at the delivery




| Designation | | | Disc | 550 V 30 | | | | | | 625 V 30 | | | 705 V 30 | | 795 V 30 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coupling PNF. PNQ and PND | | | 100 | 200-1 | 200-2 | 300-1 | 300-2 | 300-3 | 200 | 300 | 400 | 400 | 800 | 400 | 800 | 1500 |
| Assembly | Coupling Nominal torque | Cn | N.m | 1200 | 2500 | 2500 | 4000 | 4000 | 4000 | 2500 | 4000 | 6000 | 6000 | 10000 | 6000 | 10000 | 15000 |
| | Coupling Maximum torque | Cmax | N.m | 3600 | 7500 | 7500 | 12000 | 12000 | 12000 | 7500 | 12000 | 18000 | 18000 | 30000 | 18000 | 30000 | 45000 |
| | For use with calipers type | | | 645 5K | 645 5K | 4CA2 | 645 5K | 4CA2 | 3CA2 | 4CA2 | 3CA2 | | 3CA2 | | 3CA2 | | |
| | Maximum speed | | tr/mn | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1500 | 1500 | 1500 | 1300 | 1250 | 1200 | 1200 | 900 |
| | J: | | | | | | | | | | | | | | | | |
| | PNF | | kgm² | 1.68 | 2.03 | 2.04 | 1.95 | 1.97 | 1.99 | 2.49 | 3.34 | 4.15 | 5.43 | 7.39 | 7.85 | 9.82 | 17.92 |
| | PNQ | | kgm² | 1.70 | 2.07 | 2.08 | 1.98 | 2.00 | 2.03 | 2.53 | 3.38 | 4.25 | 5.52 | 7.54 | 7.95 | 9.96 | 18.17 |
| | PND | | kgm² | 1.73 | 2.10 | 2.11 | 2.00 | 2.03 | 2.06 | 2.56 | 3.40 | 4.33 | 5.61 | 7.81 | 8.05 | 10.24 | 18.42 |
| | Weight: | | | | | | | | | | | | | | | | |
| | PNF | | kg | 101 | 124 | 126 | 123 | 131.5 | 134.5 | 137 | 151 | 182 | 191 | 258 | 207 | 283 | 587 |
| | PNQ | | kg | 111 | 134.5 | 136.5 | 134 | 142.5 | 145.5 | 147.5 | 162.5 | 202 | 211 | 281 | 227 | 305.5 | 623.5 |
| | PND | | kg | 112.7 | 138.5 | 140.5 | 136 | 144.5 | 148.5 | 151.5 | 164 | 206 | 215 | 297.5 | 231 | 322.5 | 641.5 |
| | ℓ | | | | | | | | | | | | | | | | |
| | PNF | | mm | 400 | 435 | 450 | 470 | 535 | 580 | 450 | 470 | 575 | 495 | 635 | 495 | 635 | 810 |
| | PNQ. PND | | mm | 465 | 500 | 515 | 530 | 595 | 640 | 515 | 530 | 655 | 575 | 715 | 575 | 715 | 905 |
| Disc | D | | mm | 550 | | | | | | 625 | | | 705 | | 795 | | |
| | $D_2$ | | mm | 220 | | | | | | 235 | | | 265 | | 300 | | |
| | $D_5$ | | mm | 150 | | | | | | 150 | | | 180 | | 210 | | |
| | L | | mm | 135 | | | | | | 135 | | | 135 | | 135 | | |
| | $L_1$ | | mm | 140 | | | | | | 140 | | | 140 | | 140 | | |
| | d max. keyed | | mm | 100 | | | | | | 100 | | | 120 | | 130 | | |
| | d max. for shrink fit | | mm | 100 | | | | | | 100 | | | 120 | | 130 | | |
| Coupling | $d_3$ | | mm | 310 | 370 | 370 | 402 | 402 | 402 | 370 | 402 | 450 | 450 | 550 | 450 | 550 | 700 |
| | $d_4$ | | mm | 125 | 150 | 150 | 160 | 160 | 160 | 150 | 160 | 180 | 180 | 210 | 180 | 210 | 270 |
| | k PNF | | mm | 75 | 85 | 85 | 95 | 95 | 95 | 85 | 95 | 110 | 110 | 130 | 110 | 130 | 160 |
| | k PNQ. PND | | mm | 140 | 150 | 150 | 155 | 155 | 155 | 150 | 155 | 190 | 190 | 210 | 190 | 210 | 255 |
| | O | | mm | 42 | 46 | 46 | 50 | 50 | 50 | 46 | 50 | 70 | 70 | 120 | 70 | 120 | 150 |
| | p | | mm | 165 | 192.5 | 207.5 | 213 | 278 | 323 | 207.5 | 213 | 300 | 220 | 320 | 220 | 320 | 400 |
| | $d_1$ max. keyed PNF | | mm | 90 | 100 | 100 | 110 | 110 | 110 | 100 | 110 | 110 | 110 | 130 | 110 | 130 | 18 |
| | $d_1$ max. keyed PNQ | | mm | 90 | 100 | 100 | 110 | 110 | 110 | 100 | 110 | 120 | 120 | 120 | 120 | 140 | 180 |
| | $d_1$ max. keyed PND | | mm | 90 | 100 | 100 | 110 | 110 | 110 | 100 | 110 | 120 | 120 | 120 | 120 | 140 | 180 |
| | $d_1$ max. for shrink fit | | mm | 80 | 90 | 90 | 100 | 100 | 100 | 80 | 100 | 105 | 105 | 120 | 105 | 120 | 170 |
| Tightening torque for screw 1 | | | N.m | 45 | 55 | 55 | 60 | 60 | 60 | 55 | 60 | 110 | 110 | 200 | 110 | 200 | 240 |
| Tightening torque for screw 2 | | | N.m | 290 | 290 | 290 | 290 | 290 | 290 | 410 | 410 | 410 | 550 | 550 | 710 | 710 | 710 |
| Maximum permissible torque Ct and working conditions (ambient temperature ≤ 40°C) | | | | >300 start/h : Ct=Cn/2.5<br>≤300 start/h à 120 start/h : Ct=Cn/2<br>≤120 start/h : Ct=Cn/1.5 | | | | | | NOTA : For shrink fit, k and ℓ are modified (consult us)<br>At the delivery, screws 1 and 2 are not tightened to the torque<br>In each case : engine start coupling Cd<Cmax | | | | | | | |

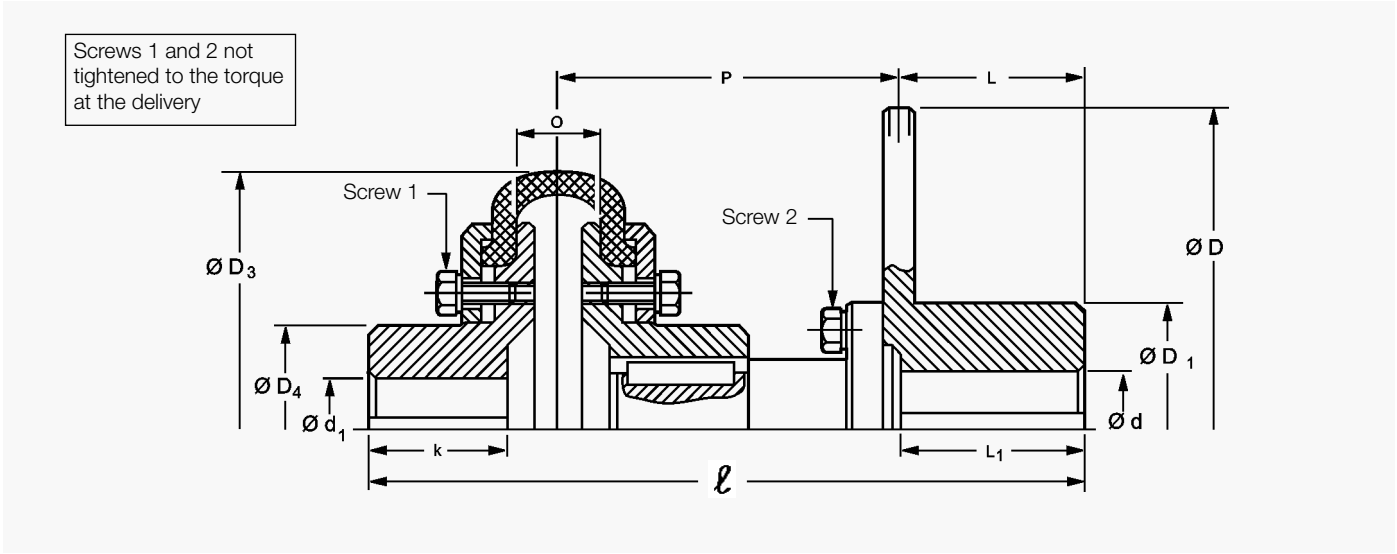
## Disc Couplings

# DISC BRAKE - FLEXIBLE DISC COUPLING PNK

**Revision number: T02561-01-B** **Revision date: 25.11.2010**

Flexible coupling **PNK** series
Solid disc thickness 15 mm
Rubber element and disc can both be removed without disturbing motor or gearbox
Without lug.

**Use:**
For horizontal motions
For hoist motions, please consult us.




| Designation | | Disc | 175P15 | | | 220P15 | | | 260P15 | | 315P15 | | 395P15 | | 445P15 | | 495P15 | 550P15 | 625P15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Flexible coupling PNK | 2 | 6 | 16 | 2 | 6 | 16 | 6 | 16 | 16 | 40 | 40 | 63 | 40 | 63 | 63 | 125 | 125 | 160 |
| Assembly | Coupling Nominal torque Cn Nm / Max. torque Cmax Nm | | 50 / 150 | 100 / 300 | 200 / 600 | 50 / 150 | 100 / 300 | 200 / 600 | 100 / 300 | 200 / 600 | 200 / 600 | 400 / 1200 | 400 / 1 200 | 800 / 2400 | 400 / 1200 | 800 / 2400 | 800 / 2400 | 1600 / 4800 | 1600 / 4800 | 2000 / 6000 |
| | combined caliper | | 660 | | 650 | 660 | | 650 | 660 | 650 | 650 | 645 | 650 | 645 | 650 | 645 | 645 | 645 | 645 | |
| | Maximum speed | tr/mn | 5000 | 5000 | 4000 | 4300 | 4300 | 4000 | 3600 | 3600 | 3000 | 3000 | 2400 | 2400 | 2100 | 2100 | 1900 | 1800 | 1500 | 1500 |
| | **J** kgm² Fl. coupling and disc | | 0.011 | 0.013 | 0.023 | 0.030 | 0.042 | 0.045 | 0.066 | 0.076 | 0.146 | 0.168 | 0.338 | 0.408 | 0.520 | 0.595 | 0.89 | 1.42 | 2.19 | 2.58 |
| | Weight | kg | 6 | 7.4 | 11 | 9.4 | 11.6 | 15.3 | 18 | 21.4 | 26 | 31.5 | 38.5 | 46 | 42 | 51 | 69 | 89 | 100 | 120 |
| | ℓ | mm | 185 | 215 | 250 | 195 | 225 | 250 | 245 | 265 | 295 | 340 | 340 | 370 | 340 | 370 | 410 | 460 | 460 | 435 |
| Disc | D | mm | 175 | | | 220 | | | 260 | | 315 | | 395 | | 445 | | 495 | 550 | 625 | |
| | $D_1$ | mm | 75 | | | 95 | | | 120 | | 120 | | 120 | | 120 | | 150 | 150 | 150 | |
| | L | mm | 55 | | | 65 | | | 85 | | 102 | | 102 | | 102 | | 135 | 135 | 135 | |
| | $L_1$ | mm | 58.5 | | | 68.5 | | | 88.5 | | 112 | | 112 | | 112 | | 145 | 145 | 145 | |
| | Bore d max. keyed | mm | 40 | | | 55 | | | 75 | | 75 | | 75 | | 75 | | 100 | 100 | 100 | |
| | Bore d max. shrink fit ✱ | mm | 35 | | | 50 | | | 65 | | 65 | | 65 | | 65 | | 90 | 90 | 90 | |
| Flexible coupling | $D_3$ | mm | 104 | 136 | 178 | 104 | 136 | 178 | 136 | 178 | 178 | 210 | 210 | 263 | 210 | 263 | 263 | 310 | 310 | 370 |
| | $D_4$ | mm | 40 | 55 | 70 | 40 | 55 | 70 | 55 | 70 | 70 | 92 | 92 | 107 | 92 | 107 | 107 | 140 | 140 | 150 |
| | k | mm | 30 | 45 | 50 | 30 | 45 | 50 | 45 | 50 | 50 | 65 | 65 | 75 | 65 | 75 | 75 | 100 | 100 | 85 |
| | O | mm | 16 | 18 | 35 | 16 | 18 | 35 | 18 | 35 | 35 | 38 | 38 | 44 | 38 | 44 | 44 | 42 | 42 | 46 |
| | P | mm | 95 | 105 | 130 | 95 | 105 | 120 | 105 | 115 | 128 | 158 | 158 | 173 | 158 | 173 | 180 | 205 | 205 | 192.5 |
| | Bore max. $d_1$ keyed | mm | 28 | 38 | 48 | 28 | 38 | 48 | 38 | 48 | 48 | 65 | 65 | 75 | 65 | 75 | 75 | 100 | 100 | 100 |
| | Bore max. $d_1$ shrink fit ✱ | mm | 28 | 38 | 42 | 28 | 38 | 42 | 38 | 42 | 42 | 60 | 60 | 70 | 60 | 70 | 70 | 90 | 90 | 90 |
| Tightening torque in Nm | Screw 1 | mm | 4 | 6 | 15 | 4 | 6 | 15 | 6 | 15 | 15 | 20 | 20 | 25 | 20 | 25 | 25 | 45 | 45 | 55 |
| | Screw 2 | mm | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 49 | 69 | 86 | 120 | 86 | 120 | 210 | 210 | 210 | 295 |

Max. transmissible torque (Ct) and working conditions (ambient temperature ≤ 40°C)

> 300 starts/ hour: Ct = Cn / 2.5
≤ 300 starts/ hour to 120 starts/ hour: Ct = Cn / 2
≤ 120 starts/ hour: Ct = Cn / 1.5

✱ For shrink fit, dimensions k and ℓ are altered (consult us)
In each case, motor starting torque Cd<Cmax

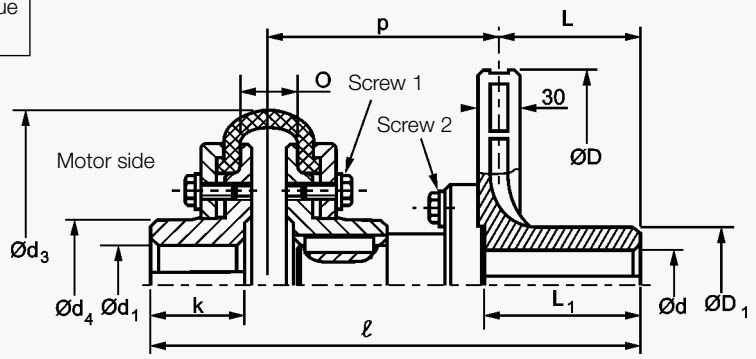
# DISC BRAKE - FLEXIBLE DISC COUPLING PNM

**Revision number: T02661-01-B** **Revision date: 25.11.2010**

Coupling **PNM** series
Monobloc disc with thickness: 30mm
Rubber element and disc can both be removed without moving motor or gearbox back
Without lug

**Use:**
For horizontal motions.
For hoist motions, consult us.

Screws 1 and 2 not tightened to the torque at the delivery




| Designation | | Disc Coupling PNM | 220M30 2 | 220M30 6 | 220M30 16 | 260M30 6 | 260M30 16 | 260M30 40 | 315M30 16 | 315M30 40 | 315M30 63 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Assembly | Nominal coupling torque Cn | Nm | 50 | 100 | 200 | 100 | 200 | 400 | 200 | 400 | 800 |
| | Maximum coupling torque Cmax | Nm | 150 | 300 | 600 | 300 | 600 | 1200 | 600 | 1200 | 2400 |
| | For use with calipers | | 650 - 5D | | | 650 - 5D | | | 650 - 5D - 5K | | |
| | Maximum speed | tr/mn | 4300 | 4300 | 4000 | 3600 | 3600 | 3600 | 3000 | 3000 | 3000 |
| | **J** | kgm² | 0.056 | 0.06 | 0.07 | 0.072 | 0.085 | 0.107 | 0.155 | 0.178 | 0.248 |
| | Weight | kg | 13 | 15.2 | 19 | 15 | 18.4 | 22.5 | 20 | 25.5 | 33.5 |
| | ℓ | mm | 244.5 | 277 | 309.5 | 275.5 | 295.5 | 332 | 295 | 340 | 358 |
| Disc | D | mm | 220 | | | 260 | | | 315 | | |
| | $D_1$ | mm | 85 | | | 85 | | | 90 | | |
| | L | mm | 102 | | | 102 | | | 102 | | |
| | $L_1$ | mm | 112 | | | 112 | | | 112 | | |
| | d min. | mm | 20 | | | 30 | | | 35 | | |
| | d max. keyed | mm | 55 | | | 55 | | | 60 | | |
| Coulping | $d_3$ | mm | 104 | 136 | 178 | 136 | 178 | 210 | 178 | 210 | 263 |
| | $d_4$ | mm | 40 | 55 | 70 | 55 | 70 | 92 | 70 | 92 | 107 |
| | k | mm | 30 | 45 | 50 | 45 | 50 | 65 | 45 | 65 | 75 |
| | O | mm | 16 | 18 | 35 | 18 | 35 | 38 | 35 | 38 | 44 |
| | p | mm | 107.5 | 120 | 142.5 | 118.5 | 128.5 | 150 | 128 | 158 | 161 |
| | $d_1$ max. keyed | mm | 28 | 38 | 48 | 38 | 48 | 65 | 48 | 65 | 75 |
| | Tightening torque of screws 1 | Nm | 4 | 6 | 15 | 6 | 15 | 20 | 20 | 20 | 20 |
| | Tightening torque of screws 2 | Nm | 25 | 25 | 25 | 25 | 25 | 69 | 49 | 69 | 69 |
| Maximum permissible torque Ct and working conditions (ambient temperature ≤ 40°C) | | | >300 start/h : Ct=Cn/2.5<br>≤300 start/h at 120 start/h : Ct=Cn/2<br>≤120 start/h : Ct=Cn/1.5 | | | | | In each case, motor starting torque Cd < Cmax<br>Other versions, consult us. | | | |

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SDF

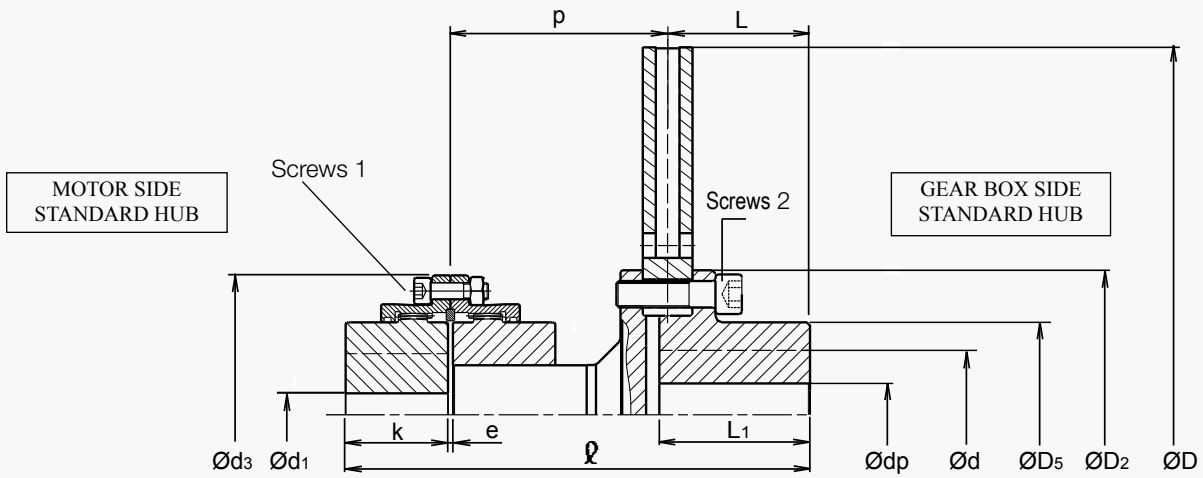
**Revision number: T10004-01-D** **Revision date: 15.09.2017**

Gear coupling type **SDF**
Solid discs (**P**) and ventilated discs (**V**) thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 315 P30/*V30* | | 355 P30/*V30* | | 395 P30/*V30* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 68 | | 68 | | 80 | |
| Assembly | J | P30 | *V30* | kg.m² | 0.246 | 0.16 | 0.391 | 0.255 | 0.604 | 0.368 | 0.622 | 0.386 |
| | Weight | P30 | *V30* | kg | 32 | 25 | 39 | 30 | 47.5 | 36.5 | 53 | 42 |
| | ℓ | | | mm | 274 | | 274 | | 274 | | 286 | |
| | Maximum speed | | | rpm | 3000 | | 2700 | | 2400 | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | |
| Disc | D | | | mm | 315 | | 355 | | 395 | | | |
| | D2 | | | mm | 124 | | 145 | | 165 | | | |
| | D5 | | | mm | 82 | | 100 | | 112 | | | |
| | L | | | mm | 102 | | 102 | | 102 | | | |
| | L1 | | | mm | 107 | | 107 | | 107 | | | |
| | dp | | | mm | -- | | -- | | -- | | | |
| | d maximum keyed | | | mm | 55 | | 70 | | 75 | | | |
| | d max. shrink fit | | | mm | 50 | | 60 | | 70 | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 49 | | 86 | | 135 | | | |
| Coupling | d3 | | | mm | 140 | | 140 | | 140 | | 169 | |
| | e | | | mm | 3 | | 3 | | 3 | | 3 | |
| | k | | | mm | 50 | | 50 | | 50 | | 62 | |
| | p | | | mm | 120.5 | | 120.5 | | 120.5 | | 120.5 | |
| | d1 maximum keyed | | | mm | 68 | | 68 | | 68 | | 80 | |
| | d1 max. shrink fit | | | mm | 63 | | 63 | | 63 | | 75 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 33 | | 33 | | 60 | |
| | Maximum peak torque (Tp) | | | N.m | 1500 | | 2200 | | 2200 | | | |
| | Transmissible torque (Tt) | | | N.m | 750 | | 1100 | | 1100 | | | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SDF

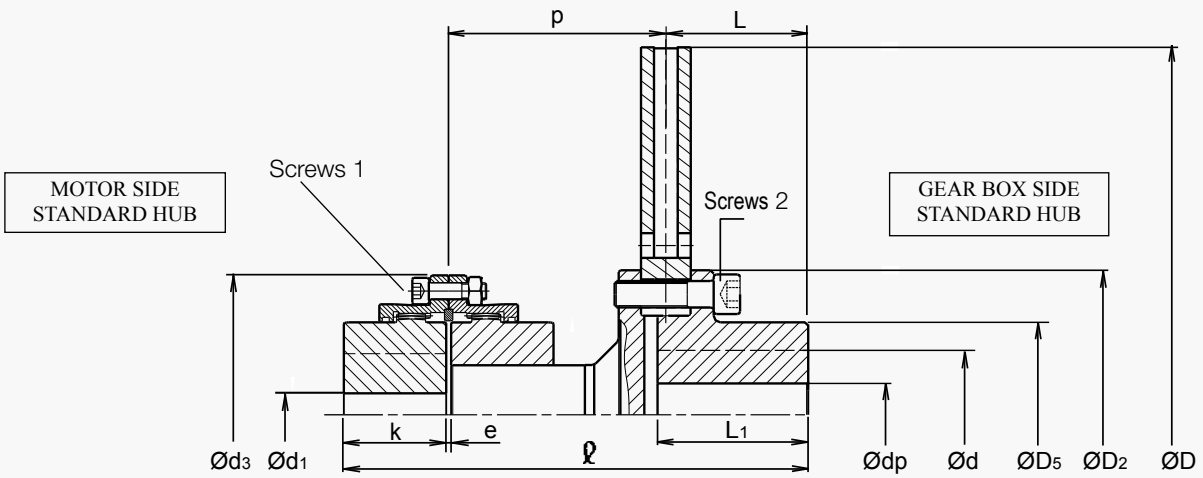
**Revision number: T10004-01-D** **Revision date: 15.09.2017**

Gear coupling type **SDF**
Solid discs (**P**) and ventilated discs (**V**) thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 445 P30/*V30* | | | | | | 495 P30/*V30* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 80 | | 100 | | 80 | | 100 | | 115 | |
| Assembly | J | P30 | *V30* | kg.m² | 0.945 | 0.586 | 0.964 | 0.605 | 1.012 | 0.653 | 1.524 | 1 | 1.574 | 1.05 | 1.664 | 1.14 |
| | Weight | P30 | *V30* | kg | 58 | 43 | 64 | 49 | 74 | 59 | 86 | 68 | 97 | 79 | 112 | 94 |
| | ℓ | | | mm | 307 | | 332 | | 361 | | 347 | | 380 | | 410 | |
| | Maximum speed | | | rpm | 2100 | | | | | | 1900 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | |
| Disc | D | | | mm | 445 | | | | | | 495 | | | | | |
| | D2 | | | mm | 175 | | | | | | 218 | | | | | |
| | D5 | | | mm | 112 | | | | | | 155 | | | | | |
| | L | | | mm | 135 | | | | | | 135 | | | | | |
| | L1 | | | mm | 140 | | | | | | 140 | | | | | |
| | dp | | | mm | -- | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 80 | | | | | | 110 | | | | | |
| | d max. shrink fit | | | mm | 70 | | | | | | 100 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 210 | | | | | | 290 | | | | | |
| Coupling | d3 | | | mm | 140 | | 169 | | 200 | | 169 | | 200 | | 228 | |
| | e | | | mm | 3 | | 3 | | 5 | | 3 | | 5 | | 5 | |
| | k | | | mm | 50 | | 62 | | 76 | | 62 | | 76 | | 90 | |
| | p | | | mm | 120.5 | | 133.5 | | 147.5 | | 148.5 | | 166.5 | | 182.5 | |
| | d1 maximum keyed | | | mm | 68 | | 80 | | 100 | | 80 | | 100 | | 115 | |
| | d1 max. shrink fit | | | mm | 63 | | 75 | | 92 | | 75 | | 92 | | 106 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 60 | | 60 | | 60 | | 60 | | 95 | |
| | Maximum peak torque (Tp) | | | N.m | 2200 | | 3800 | | 6000 | | 3800 | | 6000 | | 9400 | |
| | Transmissible torque (Tt) | | | N.m | 1100 | | 1900 | | 3000 | | 1900 | | 3000 | | 4700 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SDF

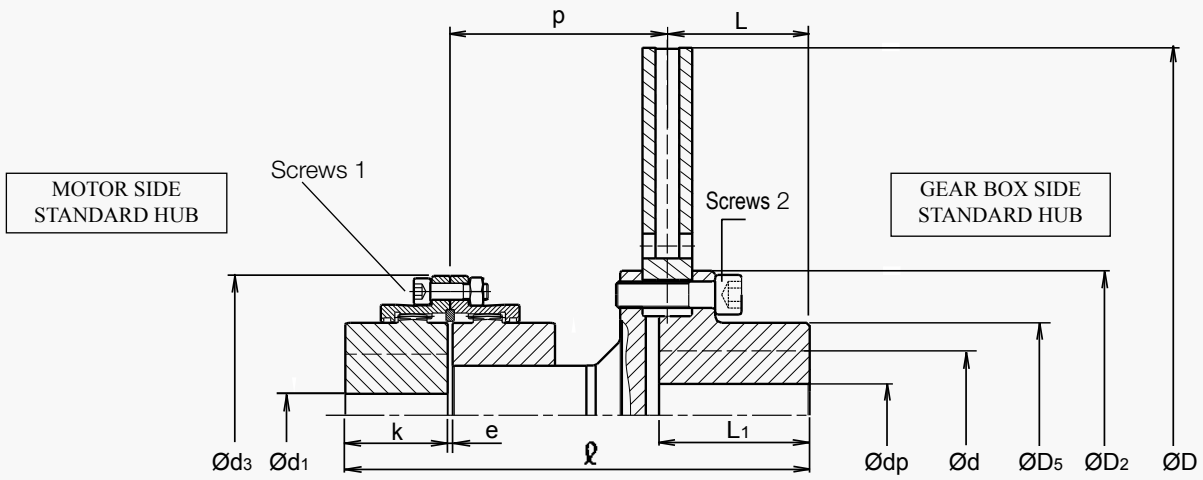
**Revision number: T10004-01-D** **Revision date: 15.09.2017**

Gear coupling type **SDF**
Solid discs (**P**) and ventilated discs (**V**) thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 550 P30/*V30* | | | | | | 625 P30/*V30* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 80 | | 100 | | 115 | | 100 | | 115 | | 135 | | 150 | |
| Assembly | J | P30 | *V30* | kg.m² | 2.247 | 1.307 | 2.297 | 1.357 | 2.387 | 1.447 | 3.775 | 2.329 | 3.863 | 2.417 | 4.065 | 2.619 | 4.352 | 2.906 |
| | Weight | P30 | *V30* | kg | 97 | 74 | 108 | 85 | 123 | 100 | 131 | 104 | 145 | 118 | 167 | 140 | 195 | 168 |
| | ℓ | | | mm | 347 | | 380 | | 410 | | 380 | | 410 | | 441 | | 483 | |
| | Maximum speed | | | rpm | 1800 | | | | | | 1500 | | | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 550 | | | | | | 625 | | | | | | | |
| | D2 | | | mm | 218 | | | | | | 238 | | | | | | | |
| | D5 | | | mm | 155 | | | | | | 168 | | | | | | | |
| | L | | | mm | 135 | | | | | | 135 | | | | | | | |
| | L1 | | | mm | 140 | | | | | | 140 | | | | | | | |
| | dp | | | mm | 30 | | | | | | 30 | | | | | | | |
| | d maximum keyed | | | mm | 110 | | | | | | 120 | | | | | | | |
| | d max. shrink fit | | | mm | 100 | | | | | | 105 | | | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 290 | | | | | | 410 | | | | | | | |
| Coupling | d3 | | | mm | 169 | | 200 | | 228 | | 200 | | 228 | | 266 | | 298 | |
| | e | | | mm | 3 | | 5 | | 5 | | 5 | | 5 | | 6 | | 6 | |
| | k | | | mm | 62 | | 76 | | 90 | | 76 | | 90 | | 105 | | 120 | |
| | p | | | mm | 148.5 | | 166.5 | | 182.5 | | 166.5 | | 182.5 | | 198 | | 225 | |
| | d1 maximum keyed | | | mm | 80 | | 100 | | 115 | | 100 | | 115 | | 135 | | 150 | |
| | d1 max. shrink fit | | | mm | 75 | | 92 | | 106 | | 92 | | 106 | | 125 | | 140 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 60 | | 95 | | 60 | | 95 | | 171 | | 235 | |
| | Maximum peak torque (Tp) | | | N.m | 3800 | | 6000 | | 9400 | | 6000 | | 9400 | | 13800 | | 20700 | |
| | Transmissible torque (Tt) | | | N.m | 1900 | | 3000 | | 4700 | | 3000 | | 4700 | | 6900 | | 10350 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SDF

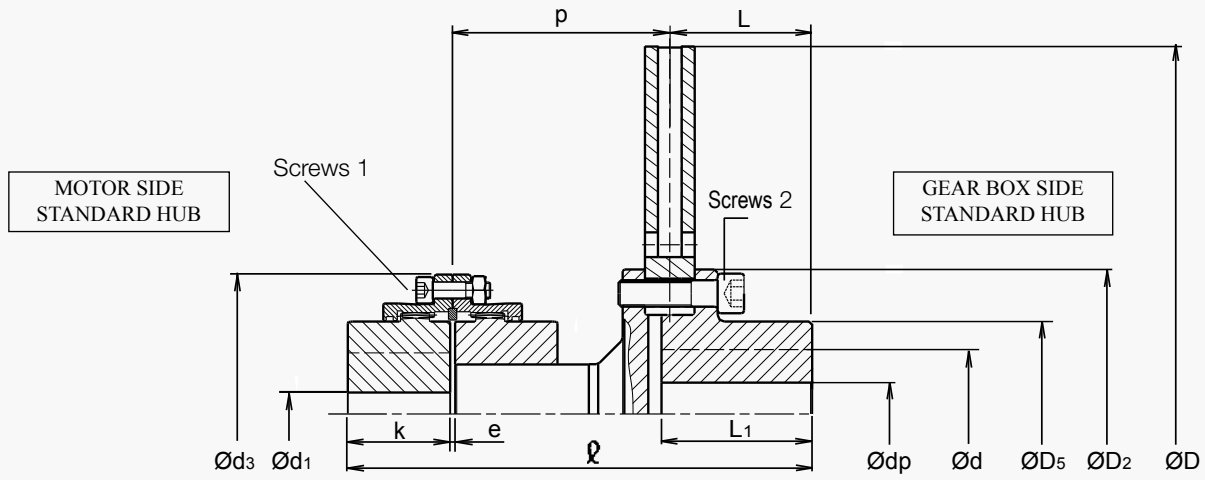
**Revision number: T10004-01-D** **Revision date: 15.09.2017**

Gear coupling type **SDF**
Solid discs (**P**) and ventilated discs (**V**) thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 705 P30/*V30* | | | | | | | | 795 P30/*V30* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 115 | | 135 | | 150 | | 170 | | 135 | | 150 | | 170 | |
| Assembly | J | P30 | *V30* | kg.m² | 6.165 | 3.935 | 6.37 | 4.14 | 6.655 | 4.425 | 7.153 | 4.923 | 10.092 | 6.512 | 10.378 | 6.798 | 10.872 | 7.292 |
| | Weight | P30 | *V30* | kg | 173 | 140 | 196 | 163 | 223 | 190 | 259 | 226 | 233 | 193 | 260 | 220 | 295 | 255 |
| | ℓ | | | mm | 410 | | 441 | | 483 | | 513 | | 441 | | 483 | | 513 | |
| | Maximum speed | | | rpm | 1300 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 705 | | | | | | | | 795 | | | | | |
| | D2 | | | mm | 268 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | 190 | | | | | | | | 216 | | | | | |
| | L | | | mm | 135 | | | | | | | | 135 | | | | | |
| | L1 | | | mm | 140 | | | | | | | | 140 | | | | | |
| | dp | | | mm | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 135 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | 120 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 550 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | 228 | | 266 | | 298 | | 330 | | 266 | | 298 | | 330 | |
| | e | | | mm | 5 | | 6 | | 6 | | 8 | | 6 | | 6 | | 8 | |
| | k | | | mm | 90 | | 105 | | 120 | | 135 | | 105 | | 120 | | 135 | |
| | p | | | mm | 182.5 | | 198 | | 225 | | 239 | | 198 | | 225 | | 239 | |
| | d1 maximum keyed | | | mm | 115 | | 135 | | 150 | | 170 | | 135 | | 150 | | 170 | |
| | d1 max. shrink fit | | | mm | 106 | | 125 | | 140 | | 160 | | 125 | | 140 | | 160 | |
| | Tightening torque screws 1 ✱ | | | N.m | 95 | | 171 | | 235 | | 235 | | 171 | | 235 | | 235 | |
| | Maximum peak torque (Tp) | | | N.m | 9400 | | 13800 | | 25300 | | 29200 | | 13800 | | 25300 | | 36700 | |
| | Transmissible torque (Tt) | | | N.m | 4700 | | 6900 | | 12650 | | 14600 | | 6900 | | 12650 | | 18350 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SMLDF

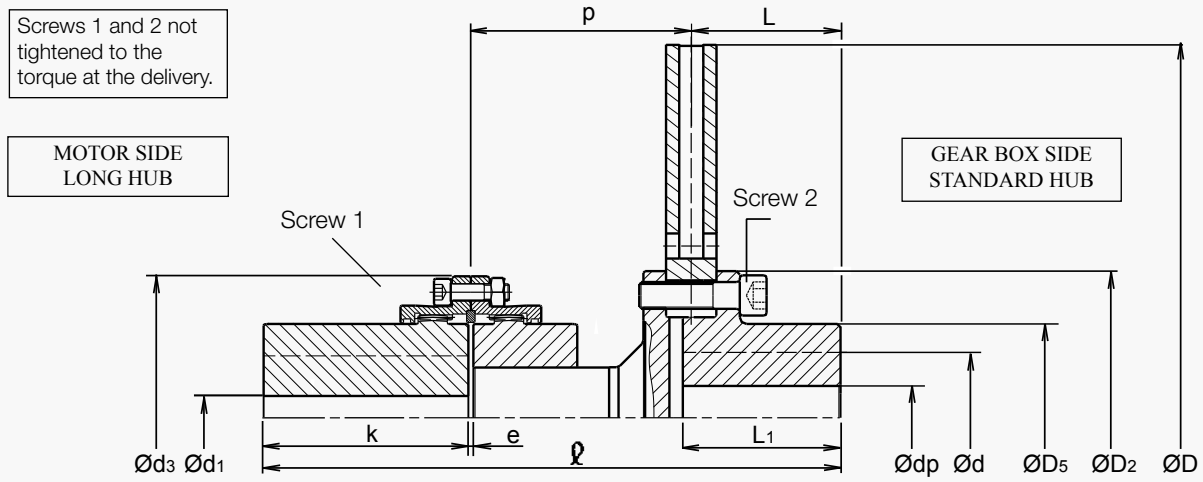
**Revision number: T10004-03-A** **Revision date: 10.03.2010**

Gear coupling type **SMLDF**
Long hub on motor side
Solid discs (**P**) and ventilated discs (**V**)
thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling.

| Designation | | | | Disc | 315 P30/*V30* | | 355 P30/*V30* | | 395 P30/*V30* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 68 | | 68 | | 80 | |
| Assembly | **J** | **P30** | ***V30*** | kg.m² | 0.25 | 0.164 | 0.395 | 0.259 | 0.608 | 0.372 | 0.63 | 0.394 |
| | Weight | **P30** | ***V30*** | kg | 35.5 | 28.5 | 42.5 | 33.5 | 51 | 40 | 58.2 | 47.2 |
| | ℓ | | | mm | 339 | | 339 | | 339 | | 354 | |
| | Maximum speed | | | rpm | 3000 | | 2700 | | 2400 | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | |
| Disc | D | | | mm | 315 | | 355 | | 395 | | | |
| | D2 | | | mm | 124 | | 145 | | 165 | | | |
| | D5 | | | mm | 82 | | 100 | | 112 | | | |
| | L | | | mm | 102 | | 102 | | 102 | | | |
| | L1 | | | mm | 107 | | 107 | | 107 | | | |
| | dp | | | mm | -- | | -- | | -- | | | |
| | d maximum keyed | | | mm | 55 | | 70 | | 75 | | | |
| | d max. shrink fit | | | mm | 50 | | 60 | | 70 | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 49 | | 86 | | 135 | | | |
| Coupling | d3 | | | mm | 140 | | 140 | | 140 | | 169 | |
| | e | | | mm | 3 | | 3 | | 3 | | 3 | |
| | k | | | mm | 115 | | 115 | | 115 | | 130 | |
| | p | | | mm | 120.5 | | 120.5 | | 120.5 | | 120.5 | |
| | d1 maximum keyed | | | mm | 68 | | 68 | | 68 | | 80 | |
| | d1 max. shrink fit | | | mm | 63 | | 63 | | 63 | | 75 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 33 | | 33 | | 60 | |
| | Maximum peak torque (Tp) | | | N.m | 1500 | | 2200 | | 2200 | | | |
| | Transmissible torque (Tt) | | | N.m | 750 | | 1100 | | 1100 | | | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SMLDF

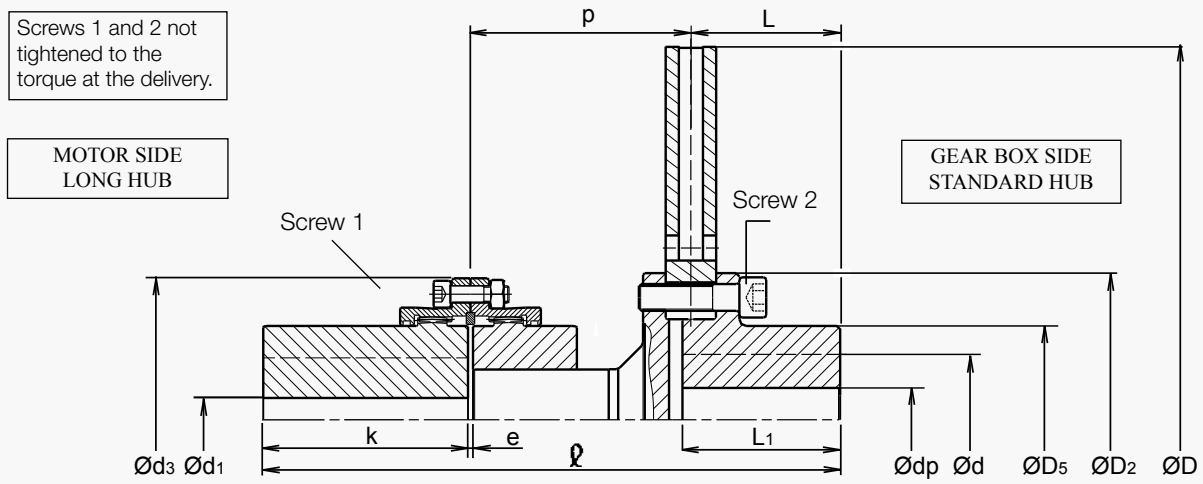
**Revision number: T10004-03-A** **Revision date: 10.03.2010**

Gear coupling type **SMLDF**
Long hub on motor side
Solid discs (**P**) and ventilated discs (**V**)
thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling.

| Designation | | | | Disc | 445 P30/*V30* | | | | | | 495 P30/*V30* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 80 | | 100 | | 80 | | 100 | | 115 | |
| Assembly | **J** | **P30** | ***V30*** | kg.m² | 0.949 | 0.59 | 0.972 | 0.613 | 1.032 | 0.673 | 1.532 | 1.008 | 1.594 | 1.07 | 1.702 | 1.178 |
| | Weight | **P30** | ***V30*** | kg | 61.5 | 46.5 | 69.2 | 54.2 | 82.5 | 67.5 | 91.2 | 73.2 | 105.5 | 87.5 | 124.3 | 106.3 |
| | ℓ | | | mm | 372 | | 400 | | 435 | | 415 | | 454 | | 490 | |
| | Maximum speed | | | rpm | 2100 | | | | | | 1900 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | |
| Disc | D | | | mm | 445 | | | | | | 495 | | | | | |
| | D2 | | | mm | 175 | | | | | | 218 | | | | | |
| | D5 | | | mm | 112 | | | | | | 155 | | | | | |
| | L | | | mm | 135 | | | | | | 135 | | | | | |
| | L1 | | | mm | 140 | | | | | | 140 | | | | | |
| | dp | | | mm | -- | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 80 | | | | | | 110 | | | | | |
| | d max. shrink fit | | | mm | 70 | | | | | | 100 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 210 | | | | | | 290 | | | | | |
| Coupling | d3 | | | mm | 140 | | 169 | | 200 | | 169 | | 200 | | 228 | |
| | e | | | mm | 3 | | 3 | | 5 | | 3 | | 5 | | 5 | |
| | k | | | mm | 115 | | 130 | | 150 | | 130 | | 150 | | 170 | |
| | p | | | mm | 120.5 | | 133.5 | | 147.5 | | 148.5 | | 166.5 | | 182.5 | |
| | d1 maximum keyed | | | mm | 68 | | 80 | | 100 | | 80 | | 100 | | 115 | |
| | d1 max. shrink fit | | | mm | 63 | | 75 | | 92 | | 75 | | 92 | | 106 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 60 | | 60 | | 60 | | 60 | | 95 | |
| | Maximum peak torque (Tp) | | | N.m | 2200 | | 3800 | | 6000 | | 3800 | | 6000 | | 9400 | |
| | Transmissible torque (Tt) | | | N.m | 1100 | | 1900 | | 3000 | | 1900 | | 3000 | | 4700 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SMLDF

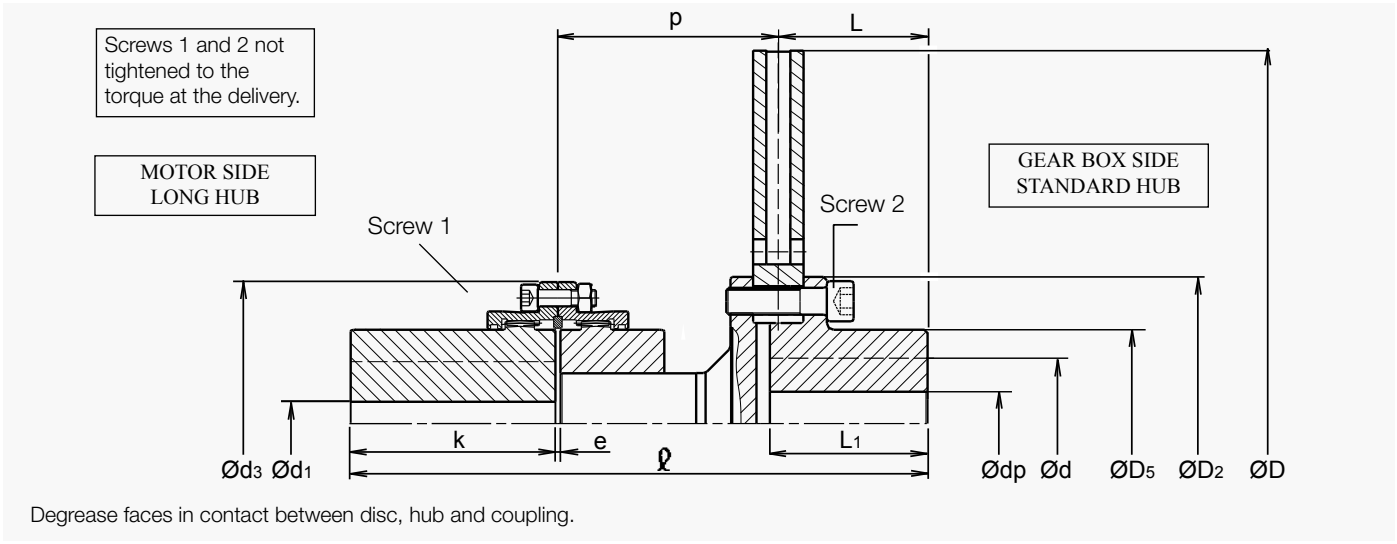
**Revision number: T10004-03-A** **Revision date: 10.03.2010**

Gear coupling type **SMLDF**
Long hub on motor side
Solid discs (**P**) and ventilated discs (**V**) thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet quoted in the bottom of the page.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling.

| Designation | | | | Disc | 550 P30/*V30* | | | | | | 625 P30/*V30* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 80 | | 100 | | 115 | | 100 | | 115 | | 135 | | 150 | |
| Assembly | J | P30 | *V30* | kg.m² | 2.255 | 1.315 | 2.317 | 1.377 | 2.425 | 1.485 | 3.795 | 2.349 | 3.901 | 2.455 | 4.14 | 2.694 | 4.488 | 3.042 |
| | Weight | P30 | *V30* | kg | 102.2 | 79.2 | 116.5 | 93.5 | 135.3 | 112.3 | 139.5 | 112.5 | 157.3 | 130.3 | 185 | 158 | 221 | 194 |
| | ℓ | | | mm | 415 | | 454 | | 490 | | 454 | | 490 | | 521 | | 578 | |
| | Maximum speed | | | rpm | 1800 | | | | | | 1500 | | | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 550 | | | | | | 625 | | | | | | | |
| | D2 | | | mm | 218 | | | | | | 238 | | | | | | | |
| | D5 | | | mm | 155 | | | | | | 168 | | | | | | | |
| | L | | | mm | 135 | | | | | | 135 | | | | | | | |
| | L1 | | | mm | 140 | | | | | | 140 | | | | | | | |
| | dp | | | mm | 30 | | | | | | 30 | | | | | | | |
| | d maximum keyed | | | mm | 110 | | | | | | 120 | | | | | | | |
| | d max. shrink fit | | | mm | 100 | | | | | | 105 | | | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 290 | | | | | | 410 | | | | | | | |
| Coupling | d3 | | | mm | 169 | | 200 | | 228 | | 200 | | 228 | | 266 | | 298 | |
| | e | | | mm | 3 | | 5 | | 5 | | 5 | | 5 | | 6 | | 6 | |
| | k | | | mm | 130 | | 150 | | 170 | | 150 | | 170 | | 185 | | 215 | |
| | p | | | mm | 148.5 | | 166.5 | | 182.5 | | 166.5 | | 182.5 | | 198 | | 225 | |
| | d1 maximum keyed | | | mm | 80 | | 100 | | 115 | | 100 | | 115 | | 135 | | 150 | |
| | d1 max. shrink fit | | | mm | 75 | | 92 | | 106 | | 92 | | 106 | | 125 | | 140 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 60 | | 95 | | 60 | | 95 | | 171 | | 235 | |
| | Maximum peak torque (Tp) | | | N.m | 3800 | | 6000 | | 9400 | | 6000 | | 9400 | | 13800 | | 20700 | |
| | Transmissible torque (Tt) | | | N.m | 1900 | | 3000 | | 4700 | | 3000 | | 4700 | | 6900 | | 10350 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SMLDF

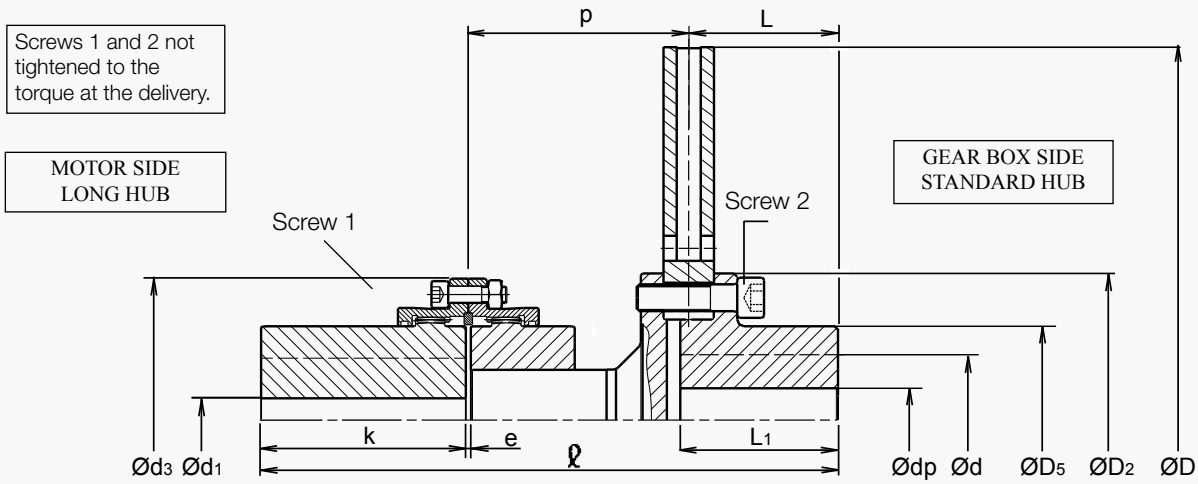
**Revision number: T10004-03-A** **Revision date: 10.03.2010**

Gear coupling type **SMLDF**
Long hub on motor side
Solid discs (**P**) and ventilated discs (**V**)
thickness 30mm
Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs "technical data" leaflet.

Hub and coupling : oiling protection.

In standard. only the disc is balanced.
The assembly is balanced on demand.
(parts angularly matched).




Degrease faces in contact between disc, hub and coupling.

| Designation | | | | Disc | 705 P30/*V30* | | | | | | | | 795 P30/*V30* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 115 | | 135 | | 150 | | 170 | | 135 | | 150 | | 170 | |
| Assembly | J | P30 | *V30* | kg.m² | 6.203 | 3.973 | 6.445 | 4.215 | 6.791 | 4.561 | 7.419 | 5.189 | 10.167 | 6.587 | 10.514 | 6.934 | 11.138 | 7.558 |
| | Weight | P30 | *V30* | kg | 185.3 | 152.3 | 214 | 181 | 249 | 216 | 297 | 264 | 251 | 211 | 286 | 246 | 333 | 293 |
| | ℓ | | | mm | 490 | | 521 | | 578 | | 623 | | 521 | | 578 | | 623 | |
| | Maximum speed | | | rpm | 1300 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 705 | | | | | | | | 795 | | | | | |
| | D2 | | | mm | 268 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | 190 | | | | | | | | 216 | | | | | |
| | L | | | mm | 135 | | | | | | | | 135 | | | | | |
| | L1 | | | mm | 140 | | | | | | | | 140 | | | | | |
| | dp | | | mm | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 135 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | 120 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 550 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | 228 | | 266 | | 298 | | 330 | | 266 | | 298 | | 330 | |
| | e | | | mm | 5 | | 6 | | 6 | | 8 | | 6 | | 6 | | 8 | |
| | k | | | mm | 170 | | 185 | | 215 | | 245 | | 185 | | 215 | | 245 | |
| | p | | | mm | 182.5 | | 198 | | 225 | | 239 | | 198 | | 225 | | 239 | |
| | d1 maximum keyed | | | mm | 115 | | 135 | | 150 | | 170 | | 135 | | 150 | | 170 | |
| | d1 max. shrink fit | | | mm | 106 | | 125 | | 140 | | 160 | | 125 | | 140 | | 160 | |
| | Tightening torque screws 1 ✱ | | | N.m | 95 | | 171 | | 235 | | 235 | | 171 | | 235 | | 235 | |
| | Maximum peak torque (Tp) | | | N.m | 9400 | | 13800 | | 25300 | | 29200 | | 13800 | | 25300 | | 36700 | |
| | Transmissible torque (Tt) | | | N.m | 4700 | | 6900 | | 12650 | | 14600 | | 6900 | | 12650 | | 18350 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SDF-ML

**Revision number: T10004-02-F** **Revision date: 07.01.2014**

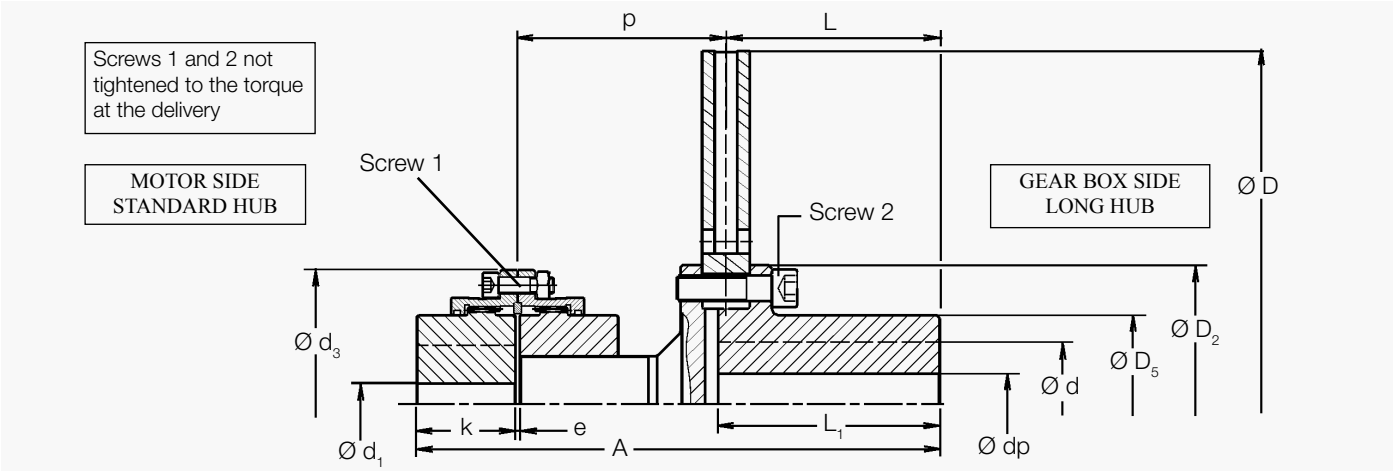
Gear coupling type **SDF-MLP** for solid discs (**P**) diameter : 315 to 995 mm
Gear coupling type **SDF-MLV** for ventilated discs (**V**) diameter : 315 to 795 mm.
Long hub on disc side / Discs thickness 30 mm.

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 315 P30/V30 | | 355 P30/V30 | | 395 P30/V30 | | | | 445 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 68 | | 68 | | 80 | | 68 | | 80 | | 100 | |
| Assembly | J | P30 | V30 | kg.m² | 0.245 | 0.159 | 0.396 | 0.26 | 0.606 | 0.37 | 0.624 | 0.388 | 0.95 | 0.591 | 0.969 | 0.61 | 1.019 | 0.66 |
| | Weight | P30 | V30 | kg | 34.2 | 27.2 | 43 | 34 | 52.5 | 41.5 | 59.1 | 48.1 | 62.1 | 47.1 | 69.2 | 54.2 | 79.8 | 64.8 |
| | A | | | mm | 307 | | 327 | | 327 | | 339 | | 367 | | 392 | | 421 | |
| | Maximum speed | | | rpm | 3000 | | 2700 | | 2400 | | | | 2100 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 315 | | 355 | | 395 | | | | 445 | | | | | |
| | D2 | | | mm | 125 | | 145 | | 165 | | | | 175 | | | | | |
| | D5 | | | mm | 80 | | 100 | | 112 | | | | 112 | | | | | |
| | L | | | mm | 135 | | 155 | | 155 | | | | 195 | | | | | |
| | L1 | | | mm | 140 | | 160 | | 160 | | | | 200 | | | | | |
| | dp | | | mm | -- | | -- | | -- | | | | -- | | | | | |
| | d maximum keyed | | | mm | 55 | | 70 | | 75 | | | | 80 | | | | | |
| | d max. shrink fit | | | mm | 50 | | 60 | | 70 | | | | 70 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 49 | | 86 | | 135 | | | | 210 | | | | | |
| Coupling | d3 | | | mm | 140 | | 140 | | 140 | | 169 | | 140 | | 169 | | 200 | |
| | e | | | mm | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 5 | |
| | k | | | mm | 50 | | 50 | | 50 | | 62 | | 50 | | 62 | | 76 | |
| | p | | | mm | 120.5 | | 120.5 | | 120.5 | | 120.5 | | 120.5 | | 133.5 | | 147.5 | |
| | d1 maximum keyed | | | mm | 68 | | 68 | | 68 | | 80 | | 68 | | 80 | | 100 | |
| | d1 max. shrink fit | | | mm | 63 | | 63 | | 63 | | 75 | | 63 | | 75 | | 92 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 33 | | 33 | | 60 | | 33 | | 60 | | 60 | |
| | Maximum peak torque (Tp) | | | N.m | 1500 | | 2200 | | 2200 | | | | 2200 | | 3800 | | 6000 | |
| | Transmissible torque (Tt) | | | N.m | 750 | | 1100 | | 1100 | | | | 1100 | | 1900 | | 3000 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque)) | | | | | | | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SDF-ML

**Revision number: T10004-02-F** **Revision date: 07.01.2014**

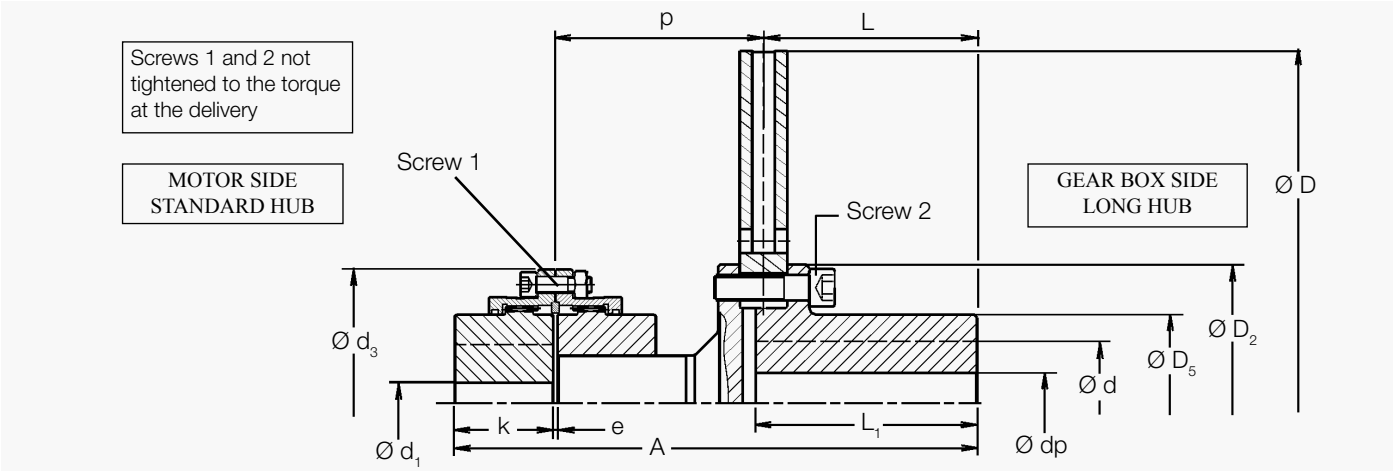
Gear coupling type **SDF-MLP** for solid discs (**P**) diameter : 315 to 995 mm
Gear coupling type **SDF-MLV** for ventilated discs (**V**) diameter : 315 to 795 mm.
Long hub on disc side / Discs thickness 30 mm.

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 495 P30/V30 | | | | | | 550 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 80 | | 100 | | 115 | | 80 | | 100 | | 115 | |
| Assembly | J | P30 | V30 | kg.m² | 1.547 | 1.023 | 1.599 | 1.075 | 1.688 | 1.164 | 2.27 | 1.33 | 2.322 | 1.382 | 2.411 | 1.471 |
| | Weight | P30 | V30 | kg | 96.1 | 78.1 | 108.1 | 90.1 | 122.2 | 104.2 | 107.1 | 84.1 | 119.1 | 96.1 | 133.2 | 110.2 |
| | A | | | mm | 407 | | 440 | | 470 | | 407 | | 440 | | 470 | |
| | Maximum speed | | | rpm | 1900 | | | | | | 1800 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | |
| Disc | D | | | mm | 495 | | | | | | 550 | | | | | |
| | D2 | | | mm | 218 | | | | | | 218 | | | | | |
| | D5 | | | mm | 155 | | | | | | 155 | | | | | |
| | L | | | mm | 195 | | | | | | 195 | | | | | |
| | L1 | | | mm | 200 | | | | | | 200 | | | | | |
| | dp | | | mm | 30 | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 110 | | | | | | 110 | | | | | |
| | d max. shrink fit | | | mm | 100 | | | | | | 100 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 290 | | | | | | 290 | | | | | |
| Coupling | d3 | | | mm | 169 | | 200 | | 228 | | 169 | | 200 | | 228 | |
| | e | | | mm | 3 | | 5 | | 5 | | 3 | | 5 | | 5 | |
| | k | | | mm | 62 | | 76 | | 90 | | 62 | | 76 | | 90 | |
| | p | | | mm | 148.5 | | 166.5 | | 182.5 | | 148.5 | | 166.5 | | 182.5 | |
| | d1 maximum keyed | | | mm | 80 | | 100 | | 115 | | 80 | | 100 | | 115 | |
| | d1 max. shrink fit | | | mm | 75 | | 92 | | 106 | | 75 | | 92 | | 106 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 60 | | 95 | | 60 | | 60 | | 95 | |
| | Maximum peak torque (Tp) | | | N.m | 3800 | | 6000 | | 9400 | | 3800 | | 6000 | | 9400 | |
| | Transmissible torque (Tt) | | | N.m | 1900 | | 3000 | | 4700 | | 1900 | | 3000 | | 4700 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque)) | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SDF-ML

**Revision number: T10004-02-F** **Revision date: 07.01.2014**

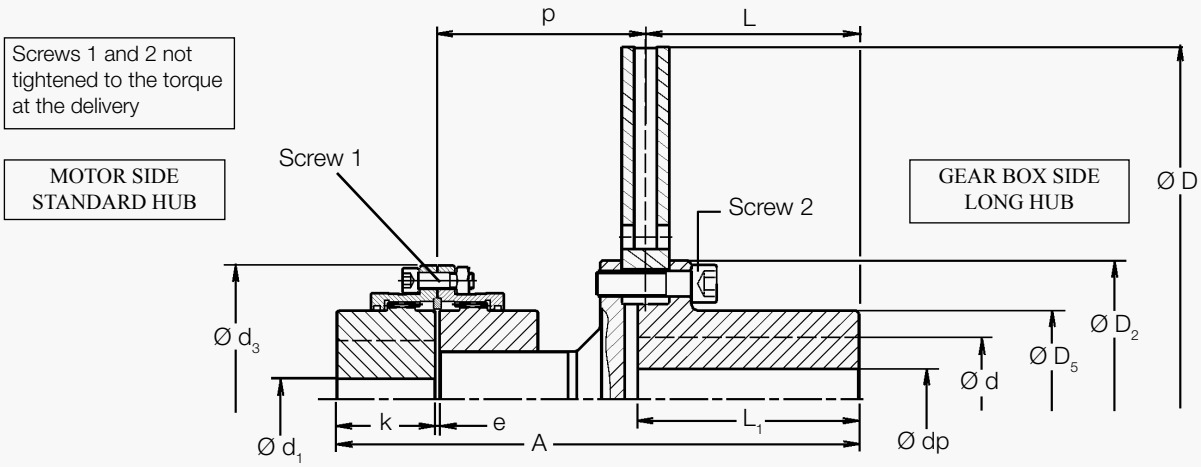
Gear coupling type **SDF-MLP** for solid discs (**P**) diameter : 315 to 995 mm
Gear coupling type **SDF-MLV** for ventilated discs (**V**) diameter : 315 to 795 mm.
Long hub on disc side / Discs thickness 30 mm.

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 625 P30/V30 | | | | | | | | 625-2 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 100 | | 115 | | 135 | | 150 | | 150 | | 170 | | 190 | |
| Assembly | J | P30 | V30 | kg.m² | 3.806 | 2.36 | 3.843 | 2.397 | 4.11 | 2.664 | 4.431 | 2.985 | 4.735 | 3.289 | 5.286 | 3.84 | 6.028 | 4.582 |
| | Weight | P30 | V30 | kg | 142.5 | 115.5 | 157 | 130 | 186.1 | 159.1 | 219.3 | 192.3 | 245.2 | 218.2 | 290.6 | 263.6 | 307.5 | 280.5 |
| | A | | | mm | 440 | | 470 | | 501 | | 543 | | 543 | | 573 | | 585 | |
| | Maximum speed | | | rpm | 1500 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 625 | | | | | | | | 625 | | | | | |
| | D2 | | | mm | 238 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | 168 | | | | | | | | 216 | | | | | |
| | L | | | mm | 195 | | | | | | | | 195 | | | | | |
| | L1 | | | mm | 200 | | | | | | | | 200 | | | | | |
| | dp | | | mm | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 120 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | 105 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 410 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | 200 | | 228 | | 266 | | 298 | | 298 | | 330 | | 368 | |
| | e | | | mm | 5 | | 5 | | 6 | | 6 | | 6 | | 8 | | 8 | |
| | k | | | mm | 76 | | 90 | | 105 | | 120 | | 120 | | 135 | | 150 | |
| | p | | | mm | 166.5 | | 182.5 | | 198 | | 225 | | 225 | | 239 | | 236 | |
| | d1 maximum keyed | | | mm | 100 | | 115 | | 135 | | 150 | | 150 | | 170 | | 190 | |
| | d1 max. shrink fit | | | mm | 92 | | 106 | | 125 | | 140 | | 140 | | 160 | | 175 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 95 | | 171 | | 235 | | 235 | | 235 | | 370 | |
| | Maximum peak torque (Tp) | | | N.m | 6000 | | 9400 | | 13800 | | 20700 | | 25300 | | 36700 | | 52500 | |
| | Transmissible torque (Tt) | | | N.m | 3000 | | 4700 | | 6900 | | 10350 | | 12650 | | 18350 | | 26250 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

# DISC BRAKE - GEAR DISC COUPLING SDF-ML

**Revision number: T10004-02-F** **Revision date: 07.01.2014**

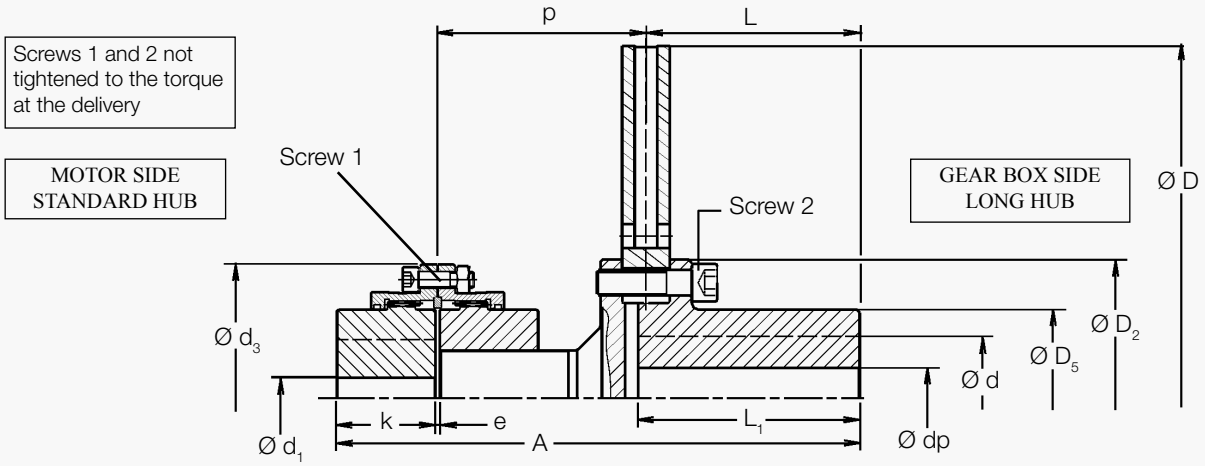
Gear coupling type **SDF-MLP** for solid discs (**P**) diameter : 315 to 995 mm
Gear coupling type **SDF-MLV** for ventilated discs (**V**) diameter : 315 to 795 mm.
Long hub on disc side / Discs thickness 30 mm.

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 705 P30/V30 | | | | | | | | 705-2 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 115 | | 135 | | 150 | | 170 | | 150 | | 170 | | 190 | |
| Assembly | J | P30 | V30 | kg.m² | 6.151 | 3.921 | 6.448 | 4.218 | 6.739 | 4.509 | 7.271 | 5.041 | 6.905 | 4.675 | 7.456 | 5.226 | 8.198 | 5.968 |
| | Weight | P30 | V30 | kg | 191.1 | 158.1 | 220.4 | 187.4 | 250.6 | 217.6 | 292.4 | 259.4 | 264.7 | 231.7 | 310.1 | 277.1 | 327 | 294 |
| | A | | | mm | 470 | | 501 | | 543 | | 573 | | 543 | | 573 | | 585 | |
| | Maximum speed | | | rpm | 1300 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 705 | | | | | | | | 705 | | | | | |
| | D2 | | | mm | 268 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | 190 | | | | | | | | 216 | | | | | |
| | L | | | mm | 195 | | | | | | | | 195 | | | | | |
| | L1 | | | mm | 200 | | | | | | | | 200 | | | | | |
| | dp | | | mm | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 135 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | 120 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 550 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | 228 | | 266 | | 298 | | 330 | | 298 | | 330 | | 368 | |
| | e | | | mm | 5 | | 6 | | 6 | | 8 | | 6 | | 8 | | 8 | |
| | k | | | mm | 90 | | 105 | | 120 | | 135 | | 120 | | 135 | | 150 | |
| | p | | | mm | 182.5 | | 198 | | 225 | | 239 | | 225 | | 239 | | 236 | |
| | d1 maximum keyed | | | mm | 115 | | 135 | | 150 | | 170 | | 150 | | 170 | | 190 | |
| | d1 max. shrink fit | | | mm | 106 | | 125 | | 140 | | 160 | | 140 | | 160 | | 175 | |
| | Tightening torque screws 1 ✱ | | | N.m | 95 | | 171 | | 235 | | 235 | | 235 | | 235 | | 370 | |
| | Maximum peak torque (Tp) | | | N.m | 9400 | | 13800 | | 25300 | | 29200 | | 25300 | | 36700 | | 52500 | |
| | Transmissible torque (Tt) | | | N.m | 4700 | | 6900 | | 12650 | | 14600 | | 12650 | | 18350 | | 26250 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque)) | | | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

# DISC BRAKE - GEAR DISC COUPLING SDF-ML

**Revision number: T10004-02-F** **Revision date: 07.01.2014**

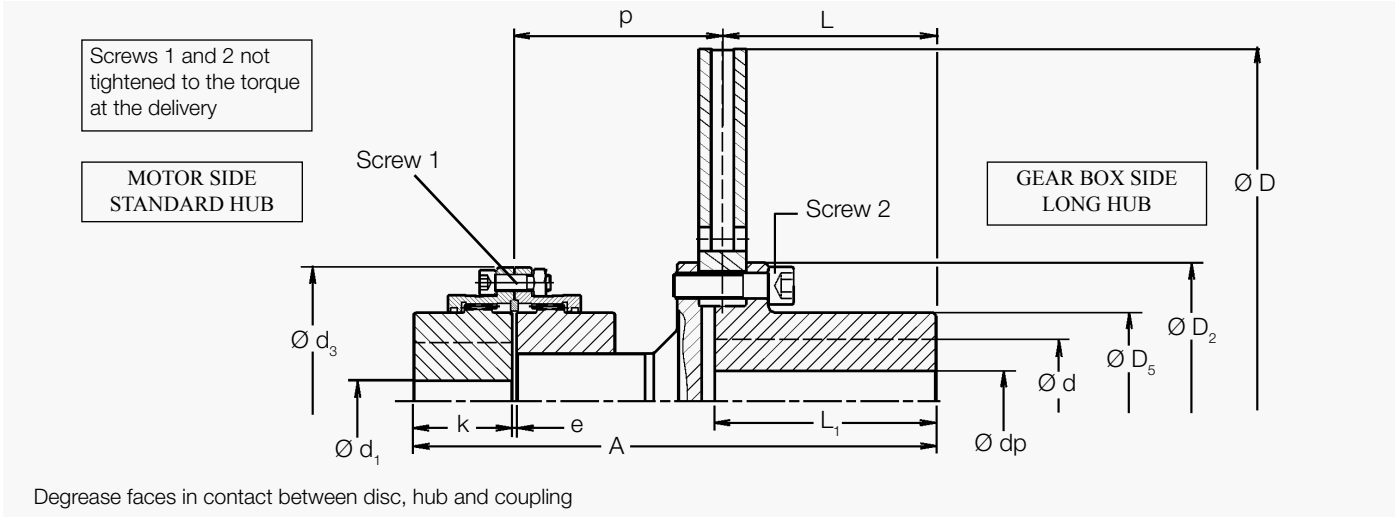
Gear coupling type **SDF-MLP** for solid discs (**P**) diameter : 315 to 995 mm
Gear coupling type **SDF-MLV** for ventilated discs (**V**) diameter : 315 to 795 mm.
Long hub on disc side / Discs thickness 30 mm.

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.

Hub and coupling : oiling protection.

In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | | Disc | 795 P30/V30 | | | | | | | | 995P30 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SDF | 135 | | 150 | | 170 | | 190 | | 150 | 170 | 190 |
| Assembly | J | P30 | V30 | kg.m² | | 10.213 | 6.633 | 10.515 | 6.935 | 11.066 | 7.486 | 11.808 | 8.228 | 25.08 | 25.623 | 26.54 |
| | Weight | P30 | V30 | kg | | 261.6 | 221.6 | 292.2 | 252.2 | 337.6 | 297.6 | 354.5 | 314.5 | 424.7 | 451.1 | 505.2 |
| | A | | | mm | | 501 | | 543 | | 573 | | 585 | | 595 | 610 | 650 |
| | Maximum speed | | | rpm | | 1200 | | | | | | | | 900 | | |
| | Maximum braking torque | | | N.m | | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | |
| | For use with calipers | | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | |
| Disc | D | | | mm | | 795 | | | | | | | | 995 | | |
| | D2 | | | mm | | 300 | | | | | | | | 388 | | |
| | D5 | | | mm | | 216 | | | | | | | | 276 | | |
| | L | | | mm | | 195 | | | | | | | | 235 | | |
| | L1 | | | mm | | 200 | | | | | | | | 240 | | |
| | dp | | | mm | | 30 | | | | | | | | 58 | | |
| | d maximum keyed | | | mm | | 150 | | | | | | | | 190 | | |
| | d max. shrink fit | | | mm | | 135 | | | | | | | | 180 | | |
| | Tightening torque screw 2 ✱ | | | N.m | | 710 | | | | | | | | 1450 | | |
| Coupling | d3 | | | mm | | 266 | | 298 | | 330 | | 368 | | 298 | 330 | 368 |
| | e | | | mm | | 6 | | 6 | | 8 | | 8 | | 6 | 8 | 8 |
| | k | | | mm | | 105 | | 120 | | 135 | | 150 | | 120 | 135 | 150 |
| | p | | | mm | | 198 | | 225 | | 239 | | 236 | | 237 | 236 | 261 |
| | d1 maximum keyed | | | mm | | 135 | | 150 | | 170 | | 190 | | 150 | 170 | 190 |
| | d1 max. shrink fit | | | mm | | 125 | | 140 | | 160 | | 175 | | 140 | 160 | 175 |
| | Tightening torque screws 1 ✱ | | | N.m | | 171 | | 235 | | 235 | | 370 | | 235 | 235 | 370 |
| | Maximum peak torque (Tp) | | | N.m | | 13800 | | 25300 | | 36700 | | 52500 | | 29200 | 38000 | 52500 |
| | Transmissible torque (Tt) | | | N.m | | 6900 | | 12650 | | 18350 | | 26250 | | 14600 | 19000 | 26250 |
| | | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | |

✱: greased under head and on thread

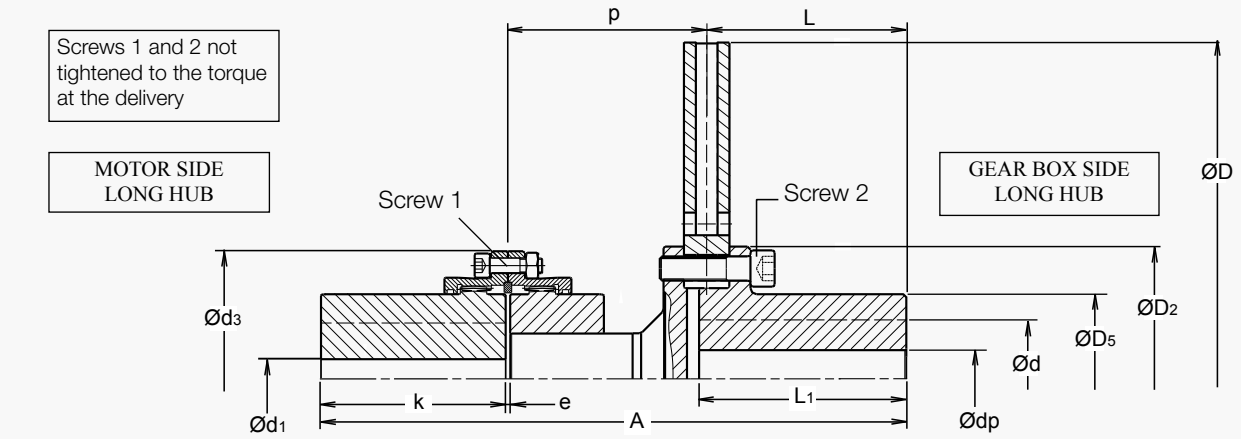
# DISC BRAKE - GEAR DISC COUPLING SMLDF-ML

**Revision number: T10004-04-B** **Revision date: 07.01.2014**

Gear coupling type **SMLDF-MLP** for solid discs (**P**) Ø 315 to 995 mm
Gear coupling type **SMLDF-MLV** for ventilated discs (**V**) Ø 315 to 795 mm.
Long hubs on gear box side and motor side
Discs thickness 30 mm

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.
Hub and coupling : oiling protection.
In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 315 P30/V30 | | 355 P30/V30 | | 395 P30/V30 | | | | 445 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 68 | | 68 | | 68 | | 80 | | 68 | | 80 | | 100 | |
| Assembly | J | P30 | V30 | kg.m² | 0.249 | 0.163 | 0.4 | 0.264 | 0.61 | 0.374 | 0.632 | 0.396 | 0.954 | 0.595 | 0.977 | 0.618 | 1.039 | 0.68 |
| | Weight | P30 | V30 | kg | 37.7 | 30.7 | 46.5 | 37.5 | 56 | 45 | 64.3 | 53.3 | 65.6 | 50.6 | 74.4 | 59.4 | 88.3 | 73.3 |
| | A | | | mm | 372 | | 392 | | 392 | | 407 | | 432 | | 460 | | 495 | |
| | Maximum speed | | | rpm | 3000 | | 2700 | | 2400 | | | | 2100 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 315 | | 355 | | 395 | | | | 445 | | | | | |
| | D2 | | | mm | 124 | | 145 | | 165 | | | | 175 | | | | | |
| | D5 | | | mm | 82 | | 100 | | 112 | | | | 112 | | | | | |
| | L | | | mm | 135 | | 155 | | 155 | | | | 195 | | | | | |
| | L1 | | | mm | 140 | | 160 | | 160 | | | | 200 | | | | | |
| | dp | | | mm | -- | | -- | | -- | | | | -- | | | | | |
| | d maximum keyed | | | mm | 55 | | 70 | | 75 | | | | 80 | | | | | |
| | d max. shrink fit | | | mm | 50 | | 60 | | 70 | | | | 70 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 49 | | 86 | | 135 | | | | 210 | | | | | |
| Coupling | d3 | | | mm | 140 | | 140 | | 140 | | 169 | | 140 | | 169 | | 200 | |
| | e | | | mm | 3 | | 3 | | 3 | | 3 | | 3 | | 3 | | 5 | |
| | k | | | mm | 115 | | 115 | | 115 | | 130 | | 115 | | 130 | | 150 | |
| | p | | | mm | 120.5 | | 120.5 | | 120.5 | | 120.5 | | 120.5 | | 133.5 | | 147.5 | |
| | d1 maximum keyed | | | mm | 68 | | 68 | | 68 | | 80 | | 68 | | 80 | | 100 | |
| | d1 max. shrink fit | | | mm | 63 | | 63 | | 63 | | 75 | | 63 | | 75 | | 92 | |
| | Tightening torque screws 1 ✱ | | | N.m | 33 | | 33 | | 33 | | 60 | | 33 | | 60 | | 60 | |
| | Maximum peak torque (Tp) | | | N.m | 1500 | | 2200 | | 2200 | | | | 2200 | | 3800 | | 6000 | |
| | Transmissible torque (Tt) | | | N.m | 750 | | 1100 | | 1100 | | | | 1100 | | 1900 | | 3000 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

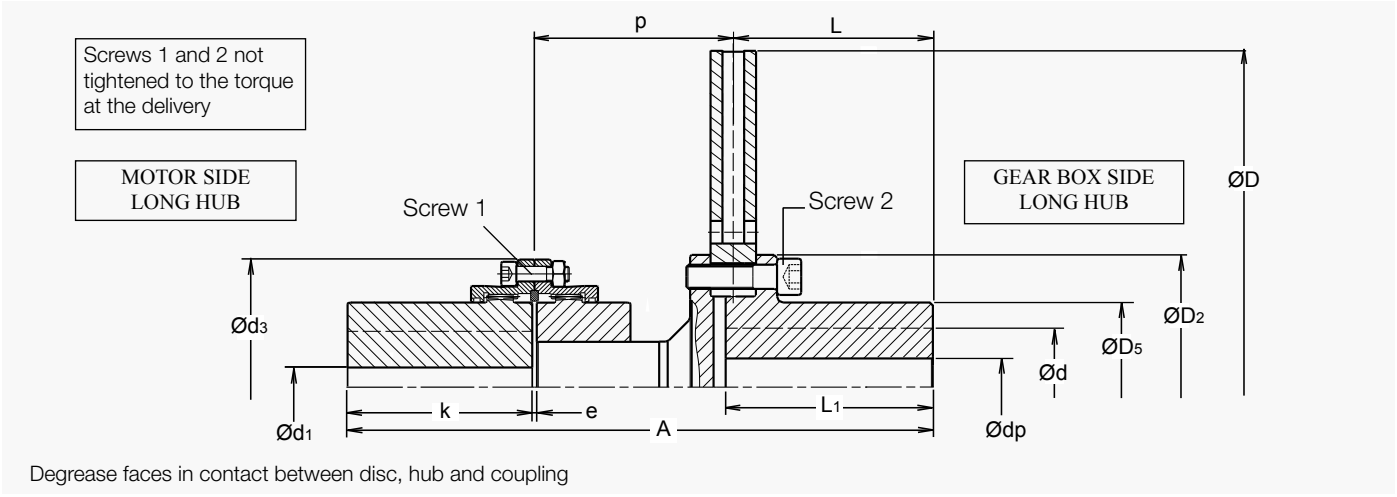
# DISC BRAKE - GEAR DISC COUPLING SMLDF-ML

**Revision number: T10004-04-B** **Revision date: 07.01.2014**

Gear coupling type **SMLDF-MLP** for solid discs (**P**) Ø 315 to 995 mm
Gear coupling type **SMLDF-MLV** for ventilated discs (**V**) Ø 315 to 795 mm.
Long hubs on gear box side and motor side
Discs thickness 30 mm

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.
Hub and coupling : oiling protection.
In standard. only the disc is balanced.
The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc | 495 P30/V30 | | | | | | 550 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SDF | 80 | | 100 | | 115 | | 80 | | 100 | | 115 | |
| Assembly | J | P30 | V30 | kg.m² | 1.555 | 1.031 | 1.619 | 1.095 | 1.726 | 1.202 | 2.278 | 1.338 | 2.342 | 1.402 | 2.449 | 1.509 |
| | Weight | P30 | V30 | kg | 101.3 | 83.3 | 116.6 | 98.6 | 134.5 | 116.5 | 112.3 | 89.3 | 127.6 | 104.6 | 145.5 | 122.5 |
| | A | | | mm | 475 | | 514 | | 550 | | 475 | | 514 | | 550 | |
| | Maximum speed | | | rpm | 1900 | | | | | | 1800 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | |
| Disc | D | | | mm | 495 | | | | | | 550 | | | | | |
| | D2 | | | mm | 218 | | | | | | 218 | | | | | |
| | D5 | | | mm | 155 | | | | | | 155 | | | | | |
| | L | | | mm | 195 | | | | | | 195 | | | | | |
| | L1 | | | mm | 200 | | | | | | 200 | | | | | |
| | dp | | | mm | 30 | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 110 | | | | | | 110 | | | | | |
| | d max. shrink fit | | | mm | 100 | | | | | | 100 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 290 | | | | | | 290 | | | | | |
| Coupling | d3 | | | mm | 169 | | 200 | | 228 | | 169 | | 200 | | 228 | |
| | e | | | mm | 3 | | 5 | | 5 | | 3 | | 5 | | 5 | |
| | k | | | mm | 130 | | 150 | | 170 | | 130 | | 150 | | 170 | |
| | p | | | mm | 148.5 | | 166.5 | | 182.5 | | 148.5 | | 166.5 | | 182.5 | |
| | d1 maximum keyed | | | mm | 80 | | 100 | | 115 | | 80 | | 100 | | 115 | |
| | d1 max. shrink fit | | | mm | 75 | | 92 | | 106 | | 75 | | 92 | | 106 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 60 | | 95 | | 60 | | 60 | | 95 | |
| | Maximum peak torque (Tp) | | | N.m | 3800 | | 6000 | | 9400 | | 3800 | | 6000 | | 9400 | |
| | Transmissible torque (Tt) | | | N.m | 1900 | | 3000 | | 4700 | | 1900 | | 3000 | | 4700 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque)) | | | | | | | | | | | |

✱: greased under head and on thread

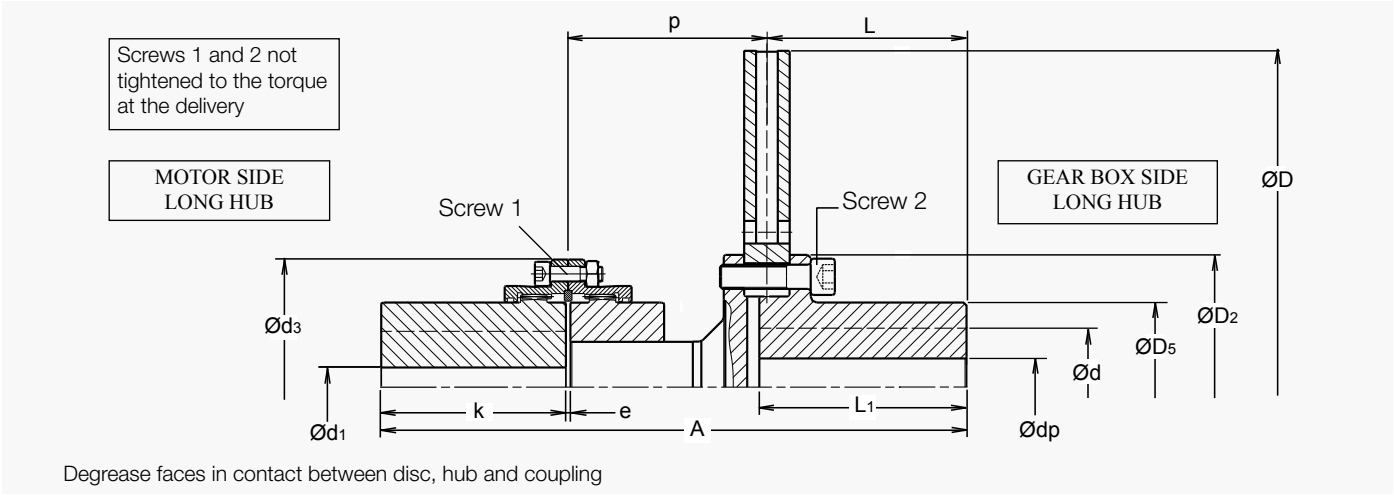
# DISC BRAKE - GEAR DISC COUPLING SMLDF-ML

**Revision number: T10004-04-B** **Revision date: 07.01.2014**

Gear coupling type **SMLDF-MLP** for solid discs (**P**) Ø 315 to 995 mm
Gear coupling type **SMLDF-MLV** for ventilated discs (**V**) Ø 315 to 795 mm.
Long hubs on gear box side and motor side
Discs thickness 30 mm

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.
Hub and coupling : oiling protection.
In standard. only the disc is balanced.
The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | Disc SDF | 625 P30/V30 | | | | | | | | 625-2 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 100 | | 115 | | 135 | | 150 | | 150 | | 170 | | 190 | |
| Assembly | J | P30 | V30 | kg.m² | 3.826 | 2.38 | 3.881 | 2.435 | 4.185 | 2.739 | 4.567 | 3.121 | 4.871 | 3.425 | 5.552 | 4.106 | 6.552 | 5.106 |
| | Weight | P30 | V30 | kg | 151 | 124 | 169.3 | 142.3 | 204.1 | 177.1 | 245.3 | 218.3 | 271.2 | 244.2 | 328.6 | 301.6 | 360.6 | 333.7 |
| | A | | | mm | 514 | | 550 | | 581 | | 638 | | 638 | | 683 | | 730 | |
| | Maximum speed | | | rpm | 1500 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | 625 | | | | | | | | 625 | | | | | |
| | D2 | | | mm | 238 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | 168 | | | | | | | | 216 | | | | | |
| | L | | | mm | 195 | | | | | | | | 195 | | | | | |
| | L1 | | | mm | 200 | | | | | | | | 200 | | | | | |
| | dp | | | mm | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | 120 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | 105 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | 410 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | 200 | | 228 | | 266 | | 298 | | 298 | | 330 | | 368 | |
| | e | | | mm | 5 | | 5 | | 6 | | 6 | | 6 | | 8 | | 8 | |
| | k | | | mm | 150 | | 170 | | 185 | | 215 | | 215 | | 245 | | 295 | |
| | p | | | mm | 166.5 | | 182.5 | | 198 | | 225 | | 225 | | 239 | | 236 | |
| | d1 maximum keyed | | | mm | 100 | | 115 | | 135 | | 150 | | 150 | | 170 | | 190 | |
| | d1 max. shrink fit | | | mm | 92 | | 106 | | 125 | | 140 | | 140 | | 160 | | 175 | |
| | Tightening torque screws 1 ✱ | | | N.m | 60 | | 95 | | 171 | | 235 | | 235 | | 235 | | 370 | |
| | Maximum peak torque (Tp) | | | N.m | 6000 | | 9400 | | 13800 | | 20700 | | 25300 | | 36700 | | 52500 | |
| | Transmissible torque (Tt) | | | N.m | 3000 | | 4700 | | 6900 | | 10350 | | 12650 | | 18350 | | 26250 | |
| | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

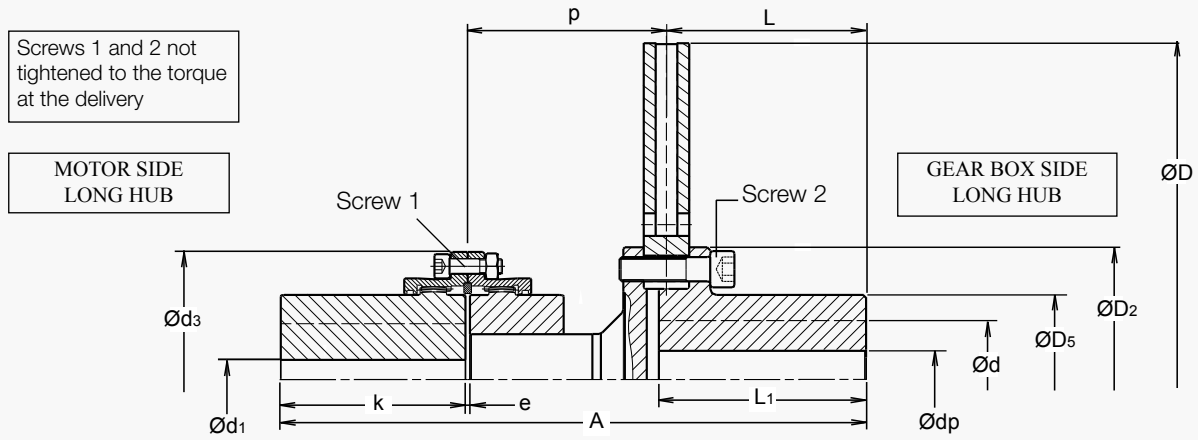
# DISC BRAKE - GEAR DISC COUPLING SMLDF-ML

**Revision number: T10004-04-B** **Revision date: 07.01.2014**

Gear coupling type **SMLDF-MLP** for solid discs (**P**) Ø 315 to 995 mm
Gear coupling type **SMLDF-MLV** for ventilated discs (**V**) Ø 315 to 795 mm.
Long hubs on gear box side and motor side
Discs thickness 30 mm

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.
Hub and coupling : oiling protection.
In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | | Disc | 705 P30/V30 | | | | | | | | 705-2 P30/V30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SDF | 115 | | 135 | | 150 | | 170 | | 150 | | 170 | | 190 | |
| Assembly | J | P30 | V30 | kg.m² | | 6.189 | 3.959 | 6.523 | 4.293 | 6.875 | 4.645 | 7.537 | 5.307 | 7.041 | 4.811 | 7.722 | 5.492 | 8.722 | 6.492 |
| | Weight | P30 | V30 | kg | | 203.4 | 170.4 | 238.4 | 205.4 | 276.6 | 243.6 | 330.4 | 297.4 | 290.7 | 257.7 | 348.1 | 315.1 | 380.2 | 347.2 |
| | A | | | mm | | 550 | | 581 | | 638 | | 683 | | 638 | | 683 | | 730 | |
| | Maximum speed | | | rpm | | 1300 | | | | | | | | 1200 | | | | | |
| | Maximum braking torque | | | N.m | | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | | | | |
| | For use with calipers | | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | | | | |
| Disc | D | | | mm | | 705 | | | | | | | | 705 | | | | | |
| | D2 | | | mm | | 268 | | | | | | | | 300 | | | | | |
| | D5 | | | mm | | 190 | | | | | | | | 216 | | | | | |
| | L | | | mm | | 195 | | | | | | | | 195 | | | | | |
| | L1 | | | mm | | 200 | | | | | | | | 200 | | | | | |
| | dp | | | mm | | 30 | | | | | | | | 30 | | | | | |
| | d maximum keyed | | | mm | | 135 | | | | | | | | 150 | | | | | |
| | d max. shrink fit | | | mm | | 120 | | | | | | | | 135 | | | | | |
| | Tightening torque screw 2 ✱ | | | N.m | | 550 | | | | | | | | 710 | | | | | |
| Coupling | d3 | | | mm | | 228 | | 266 | | 298 | | 330 | | 298 | | 330 | | 368 | |
| | e | | | mm | | 5 | | 6 | | 6 | | 8 | | 6 | | 8 | | 8 | |
| | k | | | mm | | 170 | | 185 | | 215 | | 245 | | 215 | | 245 | | 295 | |
| | p | | | mm | | 182.5 | | 198 | | 225 | | 239 | | 225 | | 239 | | 236 | |
| | d1 maximum keyed | | | mm | | 115 | | 135 | | 150 | | 170 | | 150 | | 170 | | 190 | |
| | d1 max. shrink fit | | | mm | | 106 | | 125 | | 140 | | 160 | | 140 | | 160 | | 175 | |
| | Tightening torque screws 1 ✱ | | | N.m | | 95 | | 171 | | 235 | | 235 | | 235 | | 235 | | 370 | |
| | Maximum peak torque (Tp) | | | N.m | | 9400 | | 13800 | | 25300 | | 29200 | | 25300 | | 36700 | | 52500 | |
| | Transmissible torque (Tt) | | | N.m | | 4700 | | 6900 | | 12650 | | 14600 | | 12650 | | 18350 | | 26250 | |
| | | | | | | In every case : Ts < Tp (Ts : motor starting torque)) | | | | | | | | | | | | | |

✱: greased under head and on thread

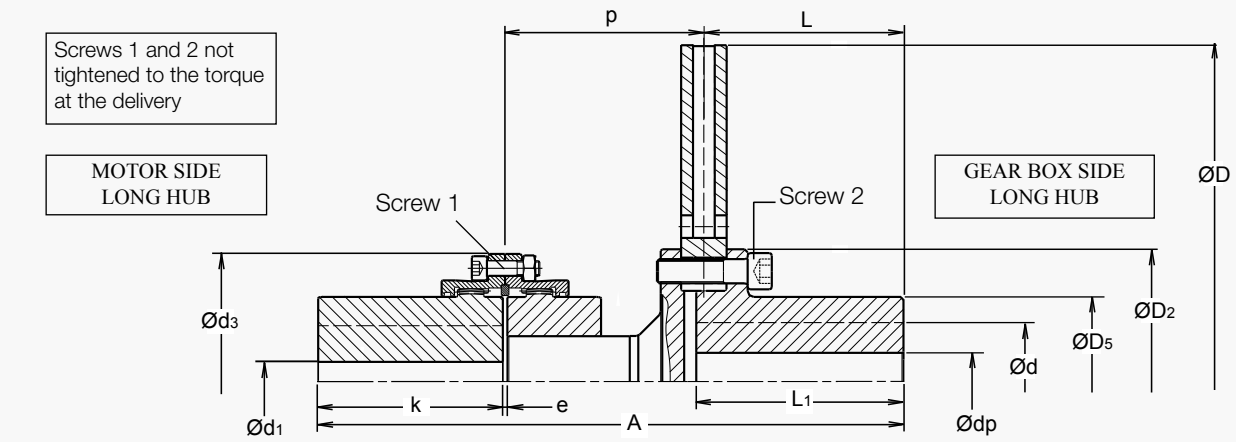
# DISC BRAKE - GEAR DISC COUPLING SMLDF-ML

**Revision number: T10004-04-B** **Revision date: 07.01.2014**

Gear coupling type **SMLDF-MLP** for solid discs (**P**) Ø 315 to 995 mm
Gear coupling type **SMLDF-MLV** for ventilated discs (**V**) Ø 315 to 795 mm.
Long hubs on gear box side and motor side
Discs thickness 30 mm

Disc mounting and dismounting without moving the machines back.

Material and balancing of the discs : see the discs leaflet T08020-01.
Hub and coupling : oiling protection.
In standard. only the disc is balanced. The assembly is balanced on demand. (parts angularly matched).




Degrease faces in contact between disc, hub and coupling

| Designation | | | | | Disc | 795 P30/V30 | | | | | | | | 995P30 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | SDF | 135 | | 150 | | 170 | | 190 | | 150 | 170 | 190 |
| Assembly | J | P30 | V30 | kg.m² | | 10.288 | 6.708 | 10.651 | 7.071 | 11.332 | 7.752 | 12.332 | 8.752 | 25.22 | 25.89 | 26.807 |
| | Weight | P30 | V30 | kg | | 279.6 | 239.6 | 318.2 | 278.2 | 375.6 | 335.6 | 407.7 | 367.7 | 447.6 | 484.8 | 539 |
| | A | | | mm | | 581 | | 638 | | 683 | | 730 | | 690 | 720 | 795 |
| | Maximum speed | | | rpm | | 1200 | | | | | | | | 900 | | |
| | Maximum braking torque | | | N.m | | Tb ≤ Tp (Tb = maximum braking torque. Tp = maximum peak torque) | | | | | | | | | | |
| | For use with calipers | | | | | Check that D – D2 > width of the caliper braking surface (ex.: 4CA2 and 3CA2 not associated to discs D < 445)<br>Check that the caliper nominal braking torque is ≤ Tp | | | | | | | | | | |
| Disc | D | | | mm | | 795 | | | | | | | | 995 | | |
| | D2 | | | mm | | 300 | | | | | | | | 388 | | |
| | D5 | | | mm | | 216 | | | | | | | | 276 | | |
| | L | | | mm | | 195 | | | | | | | | 235 | | |
| | L1 | | | mm | | 200 | | | | | | | | 240 | | |
| | dp | | | mm | | 30 | | | | | | | | 58 | | |
| | d maximum keyed | | | mm | | 150 | | | | | | | | 190 | | |
| | d max. shrink fit | | | mm | | 135 | | | | | | | | 180 | | |
| | Tightening torque screw 2 ✱ | | | N.m | | 710 | | | | | | | | 1450 | | |
| Coupling | d3 | | | mm | | 266 | | 298 | | 330 | | 368 | | 298 | 330 | 368 |
| | e | | | mm | | 6 | | 6 | | 8 | | 8 | | 6 | 8 | 8 |
| | k | | | mm | | 185 | | 215 | | 245 | | 295 | | 215 | 245 | 295 |
| | p | | | mm | | 198 | | 225 | | 239 | | 236 | | 237 | 236 | 261 |
| | d1 maximum keyed | | | mm | | 135 | | 150 | | 170 | | 190 | | 150 | 170 | 190 |
| | d1 max. shrink fit | | | mm | | 125 | | 140 | | 160 | | 175 | | 140 | 160 | 175 |
| | Tightening torque screws 1 ✱ | | | N.m | | 171 | | 235 | | 235 | | 370 | | 235 | 235 | 370 |
| | Maximum peak torque (Tp) | | | N.m | | 13800 | | 25300 | | 36700 | | 52500 | | 29200 | 38000 | 52500 |
| | Transmissible torque (Tt) | | | N.m | | 6900 | | 12650 | | 18350 | | 26250 | | 14600 | 19000 | 26250 |
| | | | | | | In every case : Ts < Tp (Ts : motor starting torque) | | | | | | | | | | |

✱: greased under head and on thread

## Disc Couplings

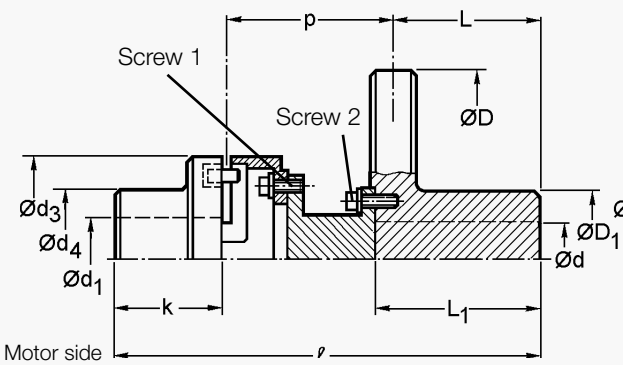
# DISC BRAKE - FLEXIBLE DISC COUPLING E

**Revision number: T02580-01-B** **Revision date: 25.11.2010**

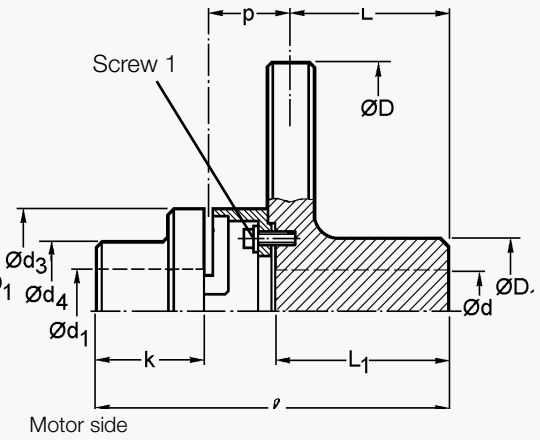
Flexible coupling "NORMEX" E series
**Solid discs Ø 175** to **395**
Disc thickness: 15 mm

Screws 1 and 2 not tightened to the torque at the delivery

**175 P 15 - 220 P 15**




**260 P 15 - 315 P 15 - 395 P 15**




Degrease faces in contact between disc and coupling.

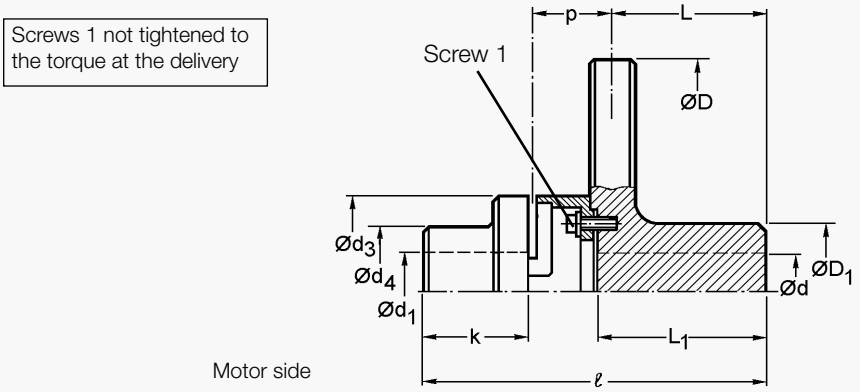
| Designation | | Disc type | 175 P 15 | | 220 P 15 | | 260 P 15 | | 315 P 15 | | | 395 P 15 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Coupling | 97 | 112 | 112 | 128 | 112 | 128 | 112 | 128 | 148 | 128 | 148 | 168 |
| Assembly | **J** | kgm² | 0.017 | 0.019 | 0.038 | 0.042 | 0.065 | 0.070 | 0.13 | 0.135 | 0.14 | 0.31 | 0.315 | 0.335 |
| | Weight | kg | 8 | 9.5 | 12.5 | 15.5 | 18 | 21 | 22 | 24 | 28 | 30 | 34 | 39 |
| | For use with caliper | Type | 660-650 | | 660-650 | | 660-650 | | 660-650 | | | 660-650 | | |
| | Maximum speed | t/mn | 5000 | | 4 300 | | 3 600 | | 3 000 | | | 2 400 | | |
| | ℓ | mm | 183 | 244 | 211 | 244 | 190 | 201 | 214.5 | 225.5 | 230 | 225.5 | 230 | 245 |
| Disc | D | mm | 175 | 175 | 220 | 220 | 260 | 260 | 315 | 315 | 315 | 395 | 395 | 395 |
| | $D_1$ | mm | 75 | 75 | 95 | 95 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| | L | mm | 55 | 55 | 65 | 65 | 85 | 85 | 102 | 102 | 102 | 102 | 102 | 102 |
| | $L_1$ | mm | 58.5 | 58.5 | 68.5 | 68.5 | 88.5 | 88.5 | 113 | 113 | 112 | 112 | 112 | 112 |
| | d max. keyed | mm | 44 | | 55 | | 55 | | 60 | | 65 | 60 | 65 | |
| | d max. for shrink fit | mm | 40 | | 55 | | 55 | | 60 | | 65 | 60 | 65 | |
| Coupling | $d_3$ | mm | 97 | 112 | 112 | 128 | 112 | 128 | 112 | 128 | 148 | 128 | 148 | 168 |
| | $d_4$ | mm | 69 | 79 | 79 | 90 | 79 | 90 | 79 | 90 | 107 | 90 | 107 | 124 |
| | k | mm | 50 | 60 | 60 | 70 | 60 | 70 | 60 | 70 | 80 | 70 | 80 | 90 |
| | p | mm | 76.5 | 127.25 | 84.25 | 107.25 | 43.25 | 44.25 | 50.75 | 51.75 | 46.25 | 51.75 | 46.25 | 51.25 |
| | $d_1$ max. keyed | mm | 42 | 48 | 48 | 55 | 48 | 55 | 48 | 55 | 65 | 55 | 65 | 75 |
| | Peak max. torque (Cp) | Nm | 200 | 310 | 310 | 500 | 310 | 500 | 310 | 500 | 800 | 500 | 800 | 1300 |
| | Max. permissible torque (Ct) and working conditions (Ambient temperature ≤ 40 °C) | | 150 starts/ hour 8 h/24 h - Ct ≤ Cp/2.5<br>300 starts/ hour 8 h/24 h - Ct ≤ Cp/3.2<br>600 starts/ hour 8 h/24 h - Ct ≤ Cp/4 | | | | | | In every case: Cd < Cp<br>(Cd motor starting torque)<br>(Ct: motor nominal torque) | | | | | |
| | Tightening torque on screws (1) and (2) ✱ | Nm | 10 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 49 | 25 | 49 | 86 |

✱: stopped with normal glue

# DISC BRAKE - FLEXIBLE DISC COUPLING E

**Revision number: T02580-01-B** **Revision date: 25.11.2010**

Flexible coupling "NORMEX" E series
**Solid discs Ø 445 to 625**
Disc thickness: 15 mm




Degrease faces in contact between disc and coupling.

| Designation | | Disc type | 445 P 15 | | | | 495 P 15 | | | 550 P 15 | | | | 625 P 15 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Coupling | 128 | 148 | 168 | 194 | 148 | 168 | 194 | 148 | 168 | 194 | 214 | 168 | 194 | 214 |
| Assembly | J | kgm² | 0.49 | 0.495 | 0.515 | 0.55 | 0.785 | 0.815 | 0.84 | 1.175 | 1.205 | 1.23 | 1.30 | 1.975 | 2 | 2.07 |
| | Weight | kg | 33 | 37 | 43 | 51 | 52 | 58 | 66 | 58 | 64 | 72 | 80 | 74 | 82 | 90 |
| | For use with caliper | Type | 660-650-645 | | | | 660-650-645 | | | 660-650-645 | | | | 660-650-645 | | |
| | ℓ | mm | 225.5 | 230 | 245 | 260 | 263 | 278 | 293 | 263 | 278 | 293 | 308 | 278 | 293 | 308 |
| Disc | D | mm | 445 | 445 | 445 | 445 | 495 | 495 | 495 | 550 | 550 | 550 | 550 | 625 | 625 | 625 |
| | $D_1$ | mm | 120 | 120 | 120 | 120 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | L | mm | 102 | 102 | 102 | 102 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | $L_1$ | mm | 112 | 112 | 112 | 112 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 |
| | d max. keyed | mm | 60 | 65 | 65 | | 65 | 70 | 70 | 65 | 70 | 70 | 90 | 70 | 70 | 90 |
| | d max. for shrink fit | mm | 60 | 65 | 65 | | 65 | 70 | 70 | 65 | 70 | 70 | 90 | 70 | 70 | 90 |
| Coupling | $d_3$ | mm | 128 | 148 | 168 | 194 | 148 | 168 | 194 | 148 | 168 | 194 | 214 | 168 | 194 | 214 |
| | $d_4$ | mm | 90 | 107 | 124 | 140 | 107 | 124 | 140 | 107 | 124 | 140 | 157 | 124 | 140 | 157 |
| | K | mm | 70 | 80 | 90 | 100 | 80 | 90 | 100 | 80 | 90 | 100 | 110 | 90 | 100 | 110 |
| | p | mm | 51.75 | 46.25 | 51.25 | 56.25 | 46.25 | 51.25 | 56.25 | 46.25 | 51.25 | 56.25 | 61 | 51.25 | 56.25 | 61 |
| | $d_1$ max. keyed | mm | 55 | 65 | 75 | 85 | 65 | 75 | 85 | 65 | 75 | 85 | 95 | 75 | 85 | 95 |
| | Peak max. torque (Cp) | Nm | 500 | 800 | 1300 | 2000 | 800 | 800 | 2000 | 2000 | 1300 | 2000 | 3100 | 1300 | 2000 | 3100 |
| | Max. permissible torque (Ct) and working conditions (Ambient temperature ≤ 40 °C) | | 150 starts / hour 8 h/24 h - Ct ≤ Cp/2.5<br>300 starts / hour 8 h/24 h - Ct ≤ Cp/3.2<br>600 starts / hour 8 h/24 h - Ct ≤ Cp/4 | | | | | | | In every case: Cd < Cp<br>(Cd motor starting torque)<br>(Ct: motor nominal torque) | | | | | | |
| | Tightening torque on screw (1) ✱ | Nm | 25 | 49 | 86 | 86 | 49 | 86 | 86 | 49 | 86 | 86 | 135 | 86 | 86 | 135 |

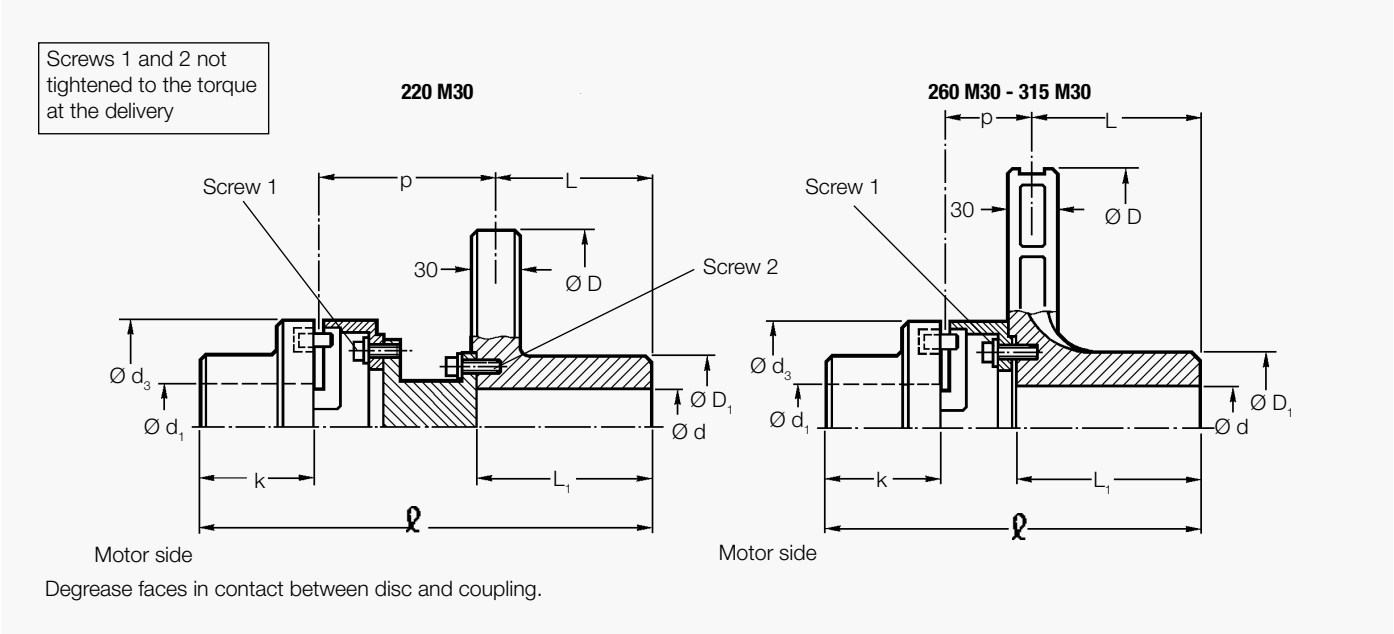
✱: stopped with normal glue

## Disc Couplings

# DISC BRAKE - FLEXIBLE DISC COUPLING E

**Revision number: T02680-01-B** **Revision date: 25.11.2010**

Flexible coupling E series
**Monobloc discs Ø 220 - 260 - 315**
Disc thickness: 30 mm




Degrease faces in contact between disc and coupling.

| Designation | | | 220 M 30 | | 260 M 30 | | 315 M 30 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Disc | | 112 | 128 | 112 | 128 | 112 | 128 | 148 |
| | Flexible coupling | | | | | | | | |
| Assembly | J | kgm² | 0.063 | 0.067 | 0.078 | 0.09 | 0.145 | 0.155 | 0.160 |
| | Weight | kg | 16.2 | 19.2 | 15 | 18 | 17 | 20 | 24.5 |
| | For use with calipers | Type | 650-5D | | 650-5D | | 650-5D-5K | | 650-5D |
| | Maximum speed | r.p.m. | 4 300 | | 3 600 | | 3 000 | | |
| | ℓ | mm | 313.5 | 323.5 | 220.5 | 231.5 | 231.5 | 225.5 | 230 |
| Disc | D | mm | 220 | | 260 | | 315 | | |
| | $D_1$ | mm | 85 | | 85 | | 90 | | |
| | L | mm | 102 | | 102 | | 102 | | |
| | $L_1$ | mm | 113 | | 120 | | 113 | | |
| | d (pilot bore) | mm | 20 | | 30 | | 35 | | |
| | d maxi keyed | mm | 55 | | 55 | | 60 | | |
| | d maxi shrink fitted | mm | 55 | | 55 | | 60 | | |
| Coupling Pb75 | k | mm | 60 | 70 | 60 | 70 | 60 | 70 | 80 |
| | p | mm | 149.75 | 149.75 | 56.75 | 57.75 | 50.75 | 51.75 | 46.25 |
| | $d_3$ | mm | 112 | 128 | 112 | 128 | 112 | 128 | 148 |
| | $d_1$ maxi keyed | mm | 48 | 55 | 48 | 55 | 48 | 55 | 65 |
| | $d_1$ maxi shrink fitted | mm | - | - | - | - | - | - | - |
| | Peak maxi. torque (Cp) | N.m | 310 | 500 | 310 | 500 | 310 | 500 | 800 |
| | Transmissible torque (Ct) and working conditions (ambient temperature ≤ 40°C) (Ct: motor nominal torque) | | 150 starts/hour: 8 h/24 h - Ct ≤ Cp/2.5<br>300 starts/hour: 8 h/24 h - Ct ≤ Cp/3.2<br>600 starts/hour: 8 h/24 h - Ct ≤ Cp/4<br>(in every case: Cd < Cp) (Cd: motor starting torque) | | | | | | |
| | Tightening torque of screws (1) and (2) ✱ | Nm | 20 | 20 | 20 | 20 | 20 | 20 | 44 |

✱: stopped with normal glue

# DISC BRAKE - FLEXIBLE DISC COUPLING SVK AND SDK

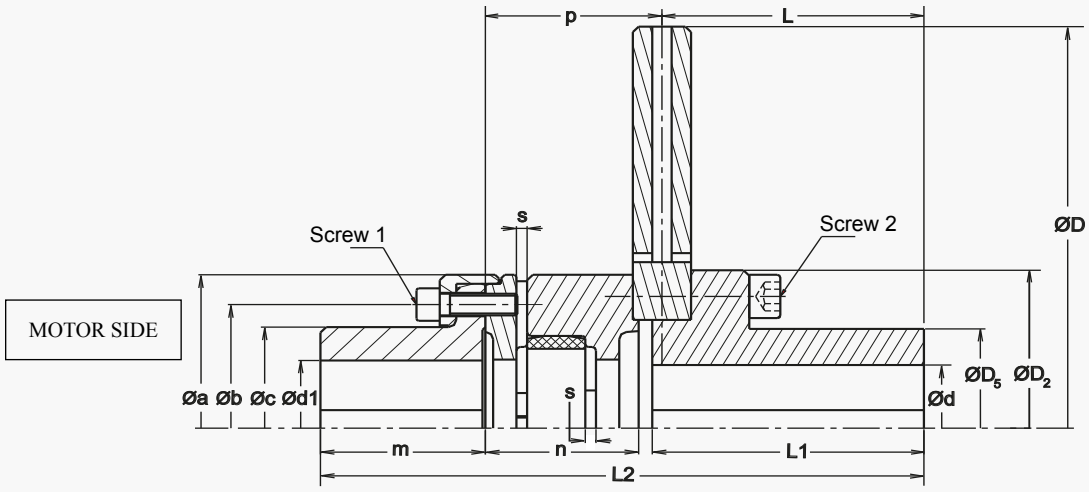
**Revision number: T02810-01-A** **Revision date: 15.01.2004**

Flexible couplings series SVK and SDK
Ventilated Discs thickness : 30 mm
Disc mounting and dismounting without moving the machines back

- Rubber element V
- Rubber element D

(specify type of rubber element with order)

**Option:**
- Solid disc




Degrease faces in contact between disc and coupling.

| | Disc Ø V30 | | | 315 | 315 | 355 | 395 | 445 | 445 | 495 | 550 | 550 | 625 | 705 | 705 | 795 | 705 | 795 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Flexible coupling SVK/SDK | | | 125 | 145 | | 170 | | 200 | 230 | | 260 | | | 300 | | 400 | |
| Assembly | J | | kg.m² | 0.159 | 0.174 | 0.26 | 0.404 | 0.633 | 0.704 | 1.183 | 1.495 | 1.713 | 2.663 | 4.193 | 4.53 | 6.91 | 6.524 | 8.904 |
| | Weight | | kg | 20 | 24 | 28 | 36 | 45 | 53 | 77 | 83 | 109 | 117 | 128 | 147 | 210 | 222 | 286 |
| | For use with calipers | | | 650-5 | 650-5 | 650-5<br>645 | 650-5<br>645 | 650-5<br>645 | 650-5<br>645 | 650-5<br>645-4 | 650-5<br>645-4-3 | 650-5<br>645-4-3 | 650-5<br>645-4-3 | 4-3 | 4-3<br>2TB | 4-3 | 2TB<br>1TSA | 2TB<br>1TSA |
| | Maximum speed | | r.p.m. | 3000 | 3000 | 2700 | 2400 | 2100 | 2100 | 1800 | 1800 | 1800 | 1500 | 1300 | 1300 | 1200 | 1300 | 1200 |
| | L2 | | | 244 | 264.5 | 264.5 | 278 | 311 | 336 | 350 | 350 | 386.5 | 386.5 | 386.5 | 417.5 | 417.5 | 464 | 464 |
| Disc | ØD | | mm | 315 | 315 | 355 | 395 | 445 | 445 | 495 | 550 | 550 | 625 | 705 | 705 | 795 | 705 | 795 |
| | $ØD_2$ | | mm | 125 | 125 | 145 | 165 | 175 | 175 | 220 | 220 | 220 | 235 | 265 | 265 | 300 | 265 | 300 |
| | $ØD_5$ | | mm | 80 | 80 | 95 | 105 | 110 | 110 | 150 | 150 | 150 | 150 | 180 | 180 | 210 | 180 | 210 |
| | Ød max keyed or shrink fit | | mm | 50 | 50 | 60 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 120 | 120 | 130 | 120 | 130 |
| | L | | mm | 102 | 102 | 102 | 102 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | L1 | | mm | 107 | 107 | 107 | 107 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Coupling | Øa | | mm | 129 | 153 | 153 | 170 | 170 | 210 | 230 | 230 | 260 | 260 | 260 | 300 | 300 | 400 | 400 |
| | Øb | | mm | 100 | 121 | 121 | 137 | 137 | 161 | 184 | 184 | 212 | 212 | 212 | 248 | 248 | 328 | 328 |
| | Øc | | mm | 80 | 100 | 100 | 112 | 112 | 126 | 140 | 140 | 168 | 168 | 168 | 190 | 190 | 240 | 240 |
| | Ød1 max keyed | | mm | 55 | 70 | 70 | 80 | 80 | 90 | 100 | 100 | 120 | 120 | 120 | 125 | 125 | 150 | 150 |
| | m | | mm | 66 | 75 | 75 | 85 | 85 | 100 | 105 | 105 | 125 | 125 | 125 | 145 | 145 | 175 | 175 |
| | n | | mm | 63 | 74.5 | 74.5 | 78 | 78 | 88 | 97 | 97 | 113.5 | 113.5 | 113.5 | 124.5 | 124.5 | 141 | 141 |
| | p | | mm | 76 | 87.5 | 87.5 | 91 | 91 | 101 | 110 | 110 | 126.5 | 126.5 | 126.5 | 137.5 | 137.5 | 154 | 154 |
| | s | | mm | 6 | 6.5 | 6.5 | 7.5 | 7.5 | 8.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 10 | 10 | 10.5 | 10.5 |
| | Max. torque Cmax in Nm | Rubber element | V | 630 | 1050 | | 1660 | | 2880 | 4500 | | 7200 | | | 10400 | | 23400 | |
| | | | D | 1110 | 1800 | | 2850 | | 4950 | 7740 | | 11940 | | | 17550 | | 40050 | |
| Transmissible torque (Ct) (Ct: motor nominal torque) | | | | Ct ≤ Cmax/k<br>Cd < Cmax | | | k min.temperature: rate: | | | k=3 | < 40°c<br>≤ 120starts/h | | | k=4 | < 80°c<br>≤ 240starts/h | | k=6 | ≤ 80°C<br>≤ 600starts/h | |
| Tightening torque ✱ | Screw 1 | | Nm | 45 | 45 | 45 | 75 | 75 | 185 | 185 | 185 | 370 | 370 | 370 | 370 | 370 | 640 | 640 |
| | Screw 2 | | Nm | 49 | 49 | 86 | 135 | 210 | 210 | 290 | 290 | 290 | 410 | 550 | 550 | 710 | 550 | 710 |

✱ Screws greased under head and on thread.

Cd: motor starting torque. In all cases. Cd < Cmax

## Disc Couplings

# DISC BRAKE - FLEXIBLE DISC COUPLING SVKL AND SDKL

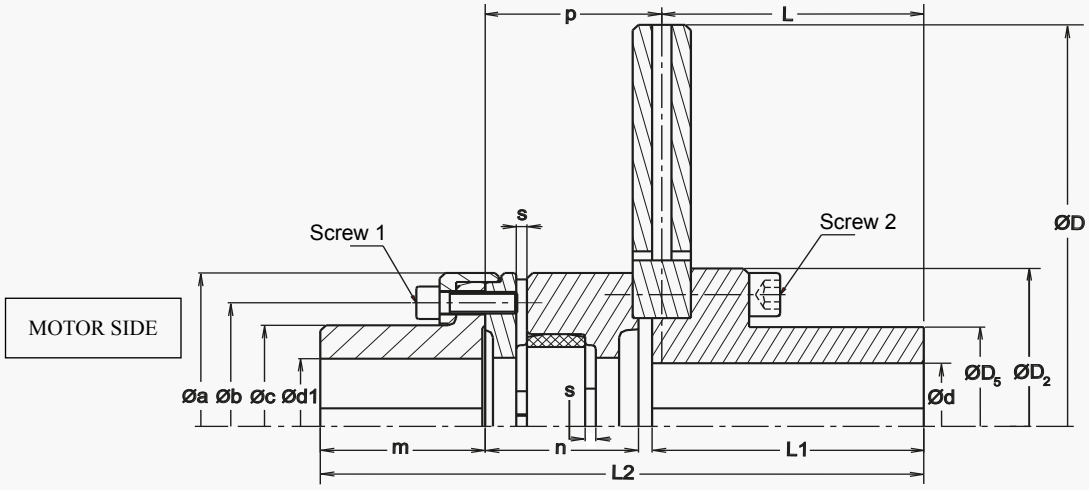
**Revision number: T02815-01-A** **Revision date: 15.01.2004**

Flexible couplings series SVKL and SDKL
Ventilated Discs thickness : 30 mm
Disc mounting and dismounting without moving the machines back

- Rubber element V
- Rubber element D

(specify type of rubber element with order)

**Option:**
- Solid disc




Degrease faces in contact between disc and coupling.

| | Disc Ø V30 | | | 315 | 315 | 355 | 395 | 445 | 445 | 495 | 550 | 550 | 625 | 705 | 705 | 795 | 705 | 795 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Flexible coupling SVKL/SDKL | | | 125 | 145 | | 170 | | 200 | 230 | | 260 | | | 300 | | 400 | |
| Assembly | J | | kg.m² | 0.161 | 0.177 | 0.26 | 0.41 | 0.64 | 0.709 | 1.2 | 1.512 | 1.76 | 2.71 | 4.24 | 4.59 | 6.97 | 6.788 | 9.168 |
| | Weight | | kg | 21.5 | 26 | 30 | 40 | 49 | 55.5 | 84 | 90 | 122 | 130 | 141 | 160 | 223 | 259 | 323 |
| | For use with calipers | | | 650-5 | 650-5 | 650-5 645 | 650-5 645 | 650-5 645 | 650-5 645 | 650-5 645-4 | 650-5 645-4-3 | 650-5 645-4-3 | 650-5 645-4-3 | 4-3 | 4-3 2TB | 4-3 | 2TB 1TSA | 2TB 1TSA |
| | Maximum speed | | r.p.m. | 3000 | 3000 | 2700 | 2400 | 2100 | 2100 | 1800 | 1800 | 1800 | 1500 | 1300 | 1300 | 1200 | 1300 | 1200 |
| | L2 | | | 286.5 | 298 | 298 | 331.5 | 364.5 | 364.5 | 412.5 | 412.5 | 469 | 469 | 469 | 480 | 480 | 576.5 | 576.5 |
| Disc | ØD | | mm | 315 | 315 | 355 | 395 | 445 | 445 | 495 | 550 | 550 | 625 | 705 | 705 | 795 | 705 | 795 |
| | $ØD_2$ | | mm | 125 | 125 | 145 | 165 | 175 | 175 | 220 | 220 | 220 | 235 | 265 | 265 | 300 | 265 | 300 |
| | $ØD_5$ | | mm | 80 | 80 | 95 | 105 | 110 | 110 | 150 | 150 | 150 | 150 | 180 | 180 | 210 | 180 | 210 |
| | Ød max keyed or shrink fit | | mm | 50 | 50 | 60 | 70 | 70 | 70 | 100 | 100 | 100 | 100 | 120 | 120 | 130 | 120 | 130 |
| | L | | mm | 102 | 102 | 102 | 102 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | L1 | | mm | 107 | 107 | 107 | 107 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Coupling | Øa | | mm | 129 | 153 | 153 | 170 | 170 | 210 | 230 | 230 | 260 | 260 | 260 | 300 | 300 | 400 | 400 |
| | Øb | | mm | 100 | 121 | 121 | 137 | 137 | 161 | 184 | 184 | 212 | 212 | 212 | 248 | 248 | 328 | 328 |
| | Øc | | mm | 80 | 100 | 100 | 112 | 112 | 126 | 140 | 140 | 168 | 168 | 168 | 190 | 190 | 240 | 240 |
| | Ød1 max keyed | | mm | 55 | 70 | 70 | 80 | 80 | 90 | 100 | 100 | 120 | 120 | 120 | 125 | 125 | 150 | 150 |
| | m | | mm | 108.5 | 108.5 | 108.5 | 138.5 | 138.5 | 128.5 | 167.5 | 167.5 | 207.5 | 207.5 | 207.5 | 207.5 | 207.5 | 287.5 | 287.5 |
| | n | | mm | 63 | 74.5 | 74.5 | 78 | 78 | 88 | 97 | 97 | 113.5 | 113.5 | 113.5 | 124.5 | 124.5 | 141 | 141 |
| | p | | mm | 76 | 87.5 | 87.5 | 91 | 91 | 101 | 110 | 110 | 126.5 | 126.5 | 126.5 | 137.5 | 137.5 | 154 | 154 |
| | s | | mm | 6 | 6.5 | 6.5 | 7.5 | 7.5 | 8.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 10 | 10 | 10.5 | 10.5 |
| | Max. torque Cmax in Nm | Rubber element | V | 630 | 1050 | | 1660 | | 2880 | 4500 | | 7200 | | | 10400 | | 23400 | |
| | | | D | 1110 | 1800 | | 2850 | | 4950 | 7740 | | 11940 | | | 17550 | | 40050 | |
| Transmissible torque (Ct) (Ct: motor nominal torque) | | | | Ct ≤ Cmax/k Cd < Cmax | | | k min.temperature: rate: | | | k=3 | < 40°c ≤ 120starts/h | | k=4 | < 80°c ≤ 240starts/h | | k=6 | ≤ 80°C ≤ 600starts/h | |
| Tightening torque ✱ | Screw 1 | | Nm | 45 | 45 | 45 | 75 | 75 | 185 | 185 | 185 | 370 | 370 | 370 | 370 | 370 | 640 | 640 |
| | Screw 2 | | Nm | 49 | 49 | 86 | 135 | 210 | 210 | 290 | 290 | 290 | 410 | 550 | 550 | 710 | 550 | 710 |

✱ Screws greased under head and on thread.

Cd: motor starting torque. In all cases, Cd < Cmax

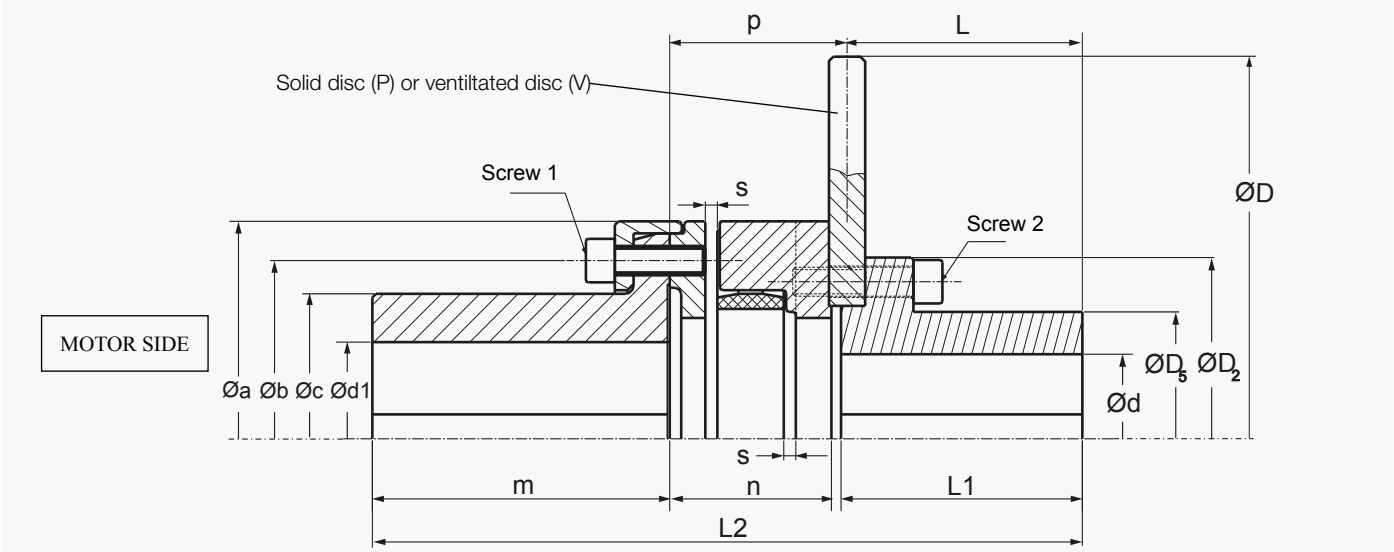
# DISC BRAKE - FLEXIBLE DISC COUPLING SDKL/SVKL-ML

**Revision number: T02827-01-A** **Revision date: 15.01.2004**

Flexible couplings serie **SDKL / SVKL-MLP** for solid disc (P) diameter 355 to 995 mm
Flexible couplings serie **SDKL / SVKL-MLV** for ventilated (V) diameter 355 to 795 mm
For **TDXB** and **FAV** brakes

Discs thickness 30 mm
Disc mounting and dismounting without moving the machines back

- Rubber element V
- Rubber element D
  (specify the type of element with order)




Degrease faces in contact between disc, hub and coupling.

| | Disc Ø ... P30/V30 | | | 355 | | 395 | | 445 | | 495 | | 550 | | 550 | | 625...-1 | | 625...-2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SDKL/SVKL-ML | | | 145 | | 170 | | 170 | | 230 | | 230 | | 260 | | 260 | | 300 | |
| Assembly | J P30 \| V30 | | kg.m² | **0.396** | 0.26 | **0.646** | 0.41 | **0.999** | 0.64 | **1.724** | 1.2 | **2.447** | 1.507 | **2.7** | 1.76 | **4.116** | 2.67 | **4.41** | 2.964 |
| | Weight P30 \| V30 | | kg | **42** | 33 | **57** | 46 | **68.5** | 53.5 | **110** | 92 | **121** | 98 | **157** | 134 | **173** | 146 | **187** | 160 |
| | Maximum speed | | r.p.m. | 2 700 | | 2 400 | | 2 100 | | 1 800 | | 1 800 | | 1 800 | | 1 500 | | 1 500 | |
| | L2 | | | 351 | | 384.5 | | 424.5 | | 472.5 | | 472.5 | | 529 | | 529 | | 540 | |
| Disc | ØD | | mm | 355 | | 395 | | 445 | | 495 | | 550 | | 550 | | 625 | | 625 | |
| | $ØD_2$ | | mm | 145 | | 165 | | 175 | | 220 | | 220 | | 220 | | 235 | | 300 | |
| | $ØD_5$ | | mm | 95 | | 105 | | 110 | | 150 | | 150 | | 150 | | 150 | | 210 | |
| | Ød max keyed or shrink fit | | mm | 60 | | 70 | | 75 | | 110 | | 110 | | 110 | | 110 | | 140 | |
| | L | | mm | 155 | | 155 | | 195 | | 195 | | 195 | | 195 | | 195 | | 195 | |
| | L1 | | mm | 160 | | 160 | | 200 | | 200 | | 200 | | 200 | | 200 | | 200 | |
| Coupling | Øa | | mm | 153 | | 170 | | 170 | | 230 | | 230 | | 260 | | 260 | | 300 | |
| | Øb | | mm | 121 | | 137 | | 137 | | 184 | | 184 | | 212 | | 212 | | 248 | |
| | Øc | | mm | 100 | | 112 | | 112 | | 140 | | 140 | | 168 | | 168 | | 190 | |
| | Ød1 max keyed | | mm | 70 | | 80 | | 80 | | 100 | | 100 | | 120 | | 120 | | 125 | |
| | m | | mm | 108.5 | | 138.5 | | 138.5 | | 167.5 | | 167.5 | | 207.5 | | 207.5 | | 207.5 | |
| | n | | mm | 74.5 | | 78 | | 78 | | 97 | | 97 | | 113.5 | | 113.5 | | 124.5 | |
| | p | | mm | 87.5 | | 91 | | 91 | | 110 | | 110 | | 126.5 | | 126.5 | | 137.5 | |
| | s | | mm | 6.5 | | 7.5 | | 7.5 | | 9.5 | | 9.5 | | 9.5 | | 9.5 | | 10 | |
| | Max. torque Cmax in Nm | Rubber element | V | 1 050 | | 1 660 | | 1 660 | | 4 500 | | 4 500 | | 7 200 | | 7 200 | | 10 400 | |
| | | | D | 1 800 | | 2 850 | | 2 850 | | 7 740 | | 7 740 | | 11 940 | | 11 940 | | 17 550 | |
| Transmissible torque (Ct) (Ct: motor nominal torque) | | | | Ct ≤ Cmax/k Cd < Cmax | | | | k min.temperature: rate: | | k=3 < 40°c ≤ 120starts/h | | k=4 < 80°c ≤ 240starts/h | | k=6 ≤ 80°C ≤ 600starts/h | | | | | |
| Tightening torque ✱ | | Screw 1 | Nm | 45 | | 75 | | 75 | | 185 | | 185 | | 370 | | 370 | | 370 | |
| | | Screw 2 | Nm | 86 | | 135 | | 210 | | 290 | | 290 | | 290 | | 410 | | 710 | |

✱ Screws greased under head and on thread.

Cd: motor starting torque. In all cases, Cd < Cmax

## Disc Couplings

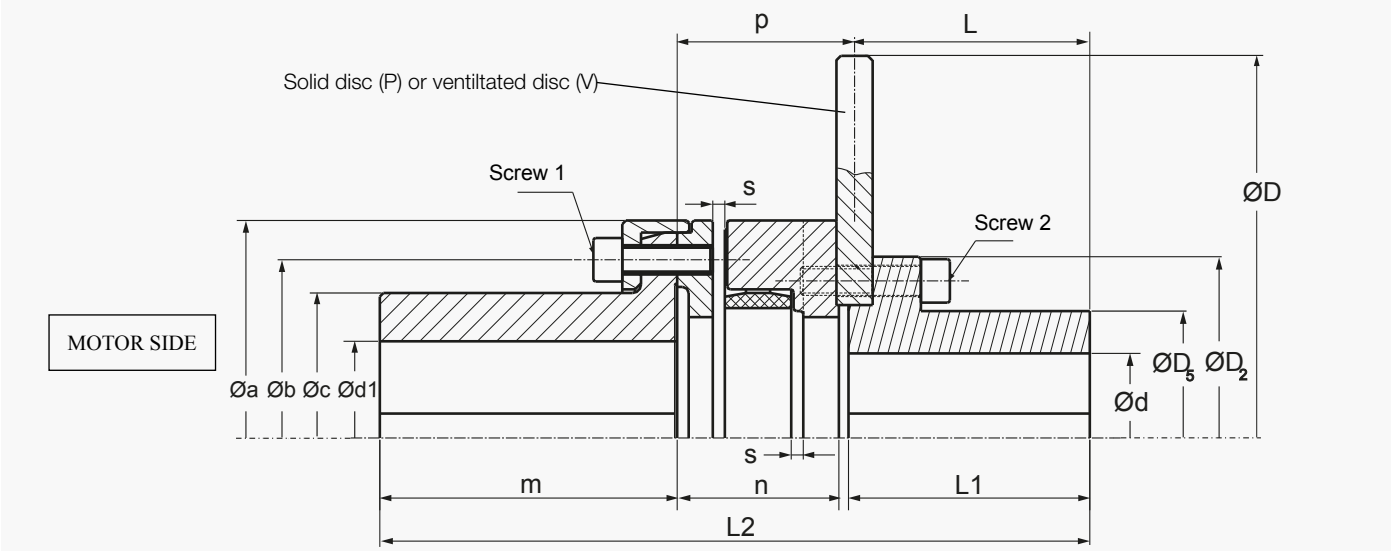
# DISC BRAKE - FLEXIBLE DISC COUPLING SDKL/SVKL-ML

**Revision number: T02827-01-A** **Revision date: 15.01.2004**

Flexible couplings serie **SDKL / SVKL-MLP** for solid disc (P) diameter 355 to 995 mm
Flexible couplings serie **SDKL / SVKL-MLV** for ventilated (V) diameter 355 to 795 mm
For **TDXB** and **FAV** brakes

Discs thickness 30 mm
Disc mounting and dismounting without moving the machines back

- Rubber element V
- Rubber element D
  (specify the type of element with order)




Degrease faces in contact between disc, hub and coupling.

| | Disc Ø ... P30/V30 | | 705...-1 | | 705...-2 | | 705...-2 | | 795 | | 795 | | 995 P30 | | 995 P30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SDKL / SVKL | | 260 | | 300 | | 360 | | 300 | | 360 | | 360 | | 400 | |
| Assembly | J P30 \| V30 | kg.m² | **6.3** | 4.07 | **6.58** | 4.35 | **8.354** | 6.124 | **10.19** | 6.61 | **11.964** | 8.384 | **26.14** | | **26.58** | |
| | Weight P30 \| V30 | kg | **191** | 158 | **206.5** | 173.5 | **281.2** | 248.2 | **234** | 194 | **308.7** | 268.7 | **412** | | **442** | |
| | Maximum speed | r.p.m. | 1 300 | | 1 300 | | 1 300 | | 1 200 | | 1 200 | | 900 | | 900 | |
| | L2 | | 529 | | 540 | | 588.5 | | 540 | | 588.5 | | 628.5 | | 636.5 | |
| Disc | ØD | mm | 705 | | 705 | | 705 | | 795 | | 795 | | 995 | | 995 | |
| | $ØD_2$ | mm | 265 | | 300 | | 300 | | 300 | | 300 | | 380 | | 380 | |
| | $ØD_5$ | mm | 180 | | 210 | | 210 | | 210 | | 210 | | 260 | | 260 | |
| | Ød max keyed or shrink fit | mm | 125 | | 140 | | 140 | | 140 | | 140 | | 140 | | 140 | |
| | L | mm | 195 | | 195 | | 195 | | 195 | | 195 | | 235 | | 235 | |
| | L1 | mm | 200 | | 200 | | 200 | | 200 | | 200 | | 240 | | 240 | |
| Coupling | Øa | mm | 260 | | 300 | | 360 | | 300 | | 360 | | 360 | | 400 | |
| | Øb | mm | 212 | | 248 | | 295 | | 248 | | 295 | | 295 | | 328 | |
| | Øc | mm | 168 | | 190 | | 240 | | 190 | | 240 | | 240 | | 240 | |
| | Ød1 max keyed | mm | 120 | | 125 | | 160 | | 125 | | 160 | | 160 | | 150 | |
| | m | mm | 207.5 | | 207.5 | | 246.5 | | 207.5 | | 246.5 | | 246..5 | | 247.5 | |
| | n | mm | 113.5 | | 124.5 | | 134 | | 124.5 | | 134 | | 134 | | 141 | |
| | p | mm | 126.5 | | 137.5 | | 147 | | 137.5 | | 147 | | 147 | | 154 | |
| | s | mm | 9.5 | | 10 | | 10 | | 10 | | 10 | | 10 | | 10.5 | |
| | Max. torque Cmax in Nm — Rubber element | V | 7 200 | | 10 400 | | 19 500 | | 10 400 | | 19 500 | | 19 500 | | 23 400 | |
| | | D | 11 940 | | 17 550 | | 29 100 | | 17 550 | | 29 100 | | 29 100 | | 40 050 | |
| Transmissible torque (Ct) (Ct: motor nominal torque) | | | Ct ≤ Cmax/k Cd < Cmax | | k min.temperature: rate: | | k=3 < 40°c ≤ 120starts/h | | | | k=4 < 80°c ≤ 240starts/h | | | | k=6 ≤ 80°C ≤ 600starts/h | |
| Tightening torque ✱ | Screw 1 | Nm | 370 | | 370 | | 640 | | 370 | | 640 | | 640 | | 640 | |
| | Screw 2 | Nm | 550 | | 710 | | 710 | | 710 | | 710 | | 1450 | | 1450 | |

✱ Screws greased under head and on thread.

Cd: motor starting torque. In all cases, Cd < Cmax

# NOTES

### Barrel-Roller Couplings

# BARREL-ROLLER COUPLINGS

# Barrel-Roller Couplings

## APPLICATIONS

- HOISTING DEVICE OF CRANES AND CONVEYORS INSTALLATIONS
- STEEL INDUSTRY
- HOISTING, GANTRY, STACKER AND CONTAINERS CRANES

## MAIN CHARACTERISTICS

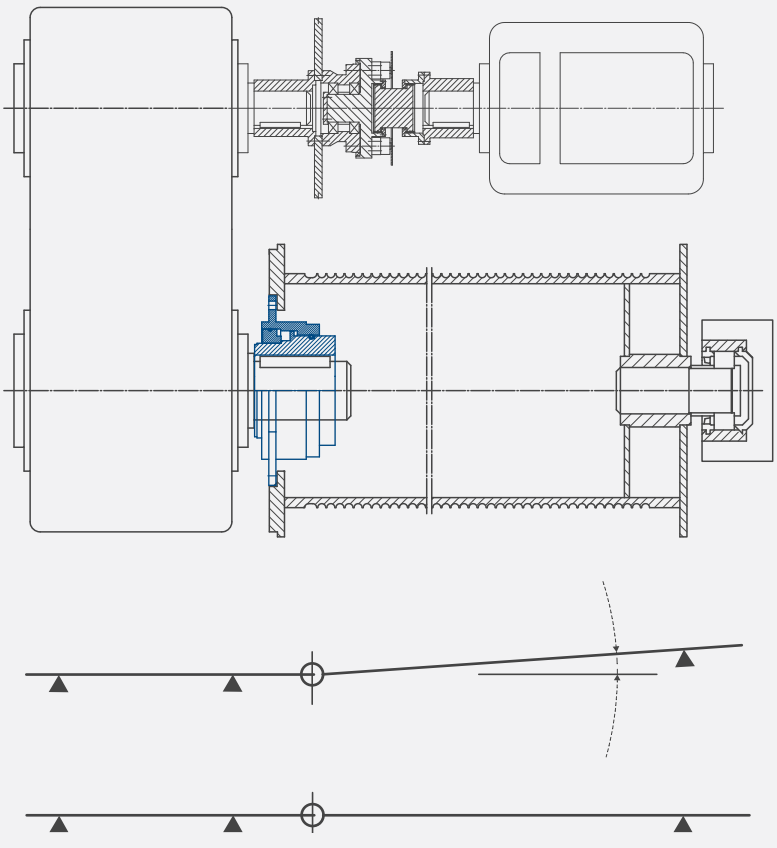
- CONNECT THE SLOW ROTATING SHAFT OF A GEARBOX TO THE ROPE DRUM OF HOISTING INSTALLATIONS
- CANCEL ALL THE CONSEQUENTIAL DISADVANTAGE OF A RIGID CONNECTION
- COMPENSATION OF ANGULAR AND AXIAL MISALIGNEMENT

## BCS COUPLINGS

- All-steel design
- Connection between hub and sleeve performed by barrel rollers
- Possibility to disassemble the hub from the sleeve
- Roller seats, inside the sleeve, are precisely machined and hardened

## Benefits include

- Consent elevated radial loads proper to the rope drum of a hoisting crane
- Easy mounting :
  - hub fitted on the shaft of the gearbox
  - sleeve bolted directly on the rope drum
  - the 2 parts of the coupling are separately assembled in their axial working position
- Wear minimized

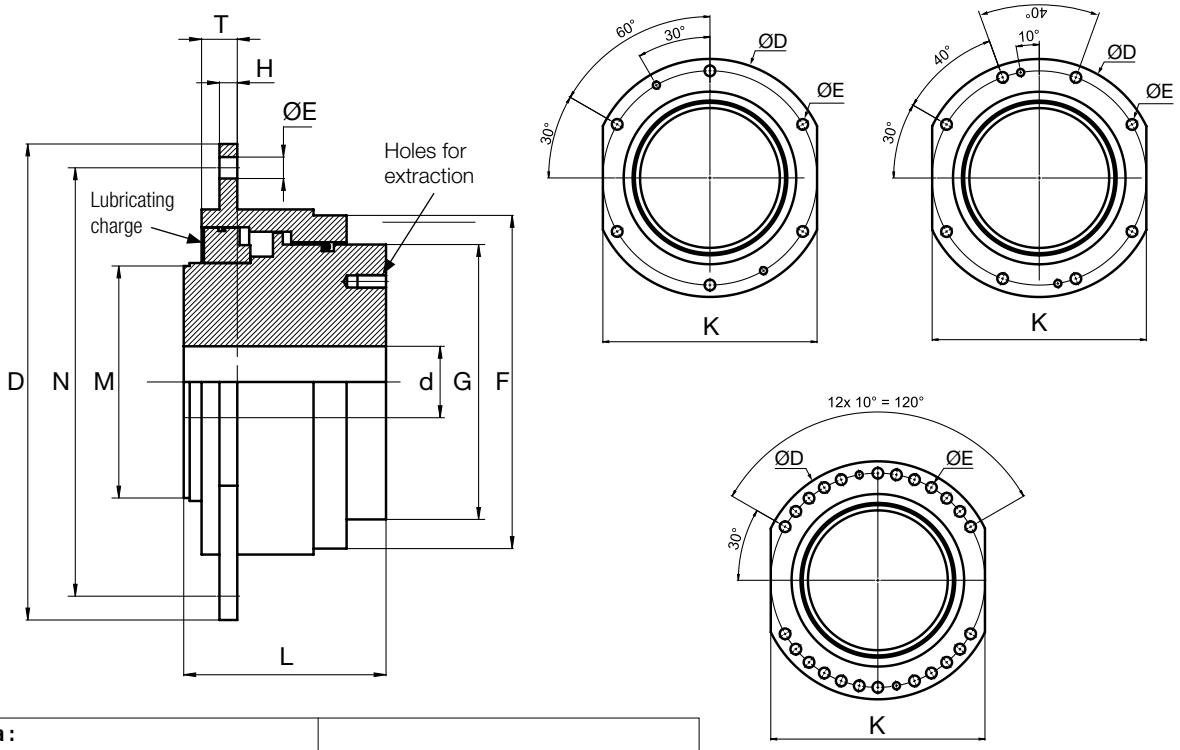


## Barrel-Roller Couplings

# DRUMS - BARREL-ROLLER COUPLINGS TYPE BCS

**Revision number: T10144-01-B** **Revision date: 23.11.17**

Steel coupling designed to connect the slow rotating shaft of a gearbox to the rope drum of hoisting equipment.




| **Nota :** | |
|---|---|
| For bore finishing, reference centering diameter is concentric to barrel rollers pitch circle. | The dimensions **L** are the standard length of the couplings type **BCS**. For different lengths, conult us. |

| **COUPLING type BCS...** | | **140** | **160** | **180** | **200** | **220** | **240** | **260** | **280** | **310** | **340** | **400** | **420** | **450** | **530** | **560** | **600** | **670** | **730** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bore **d** (mm) | pilot | 30 | 30 | 30 | 50 | 50 | 60 | 60 | 60 | 70 | 70 | 90 | 90 | 100 | 100 | 120 | 120 | 140 | 140 |
| | max | 65 | 80 | 85 | 95 | 105 | 115 | 130 | 140 | 160 | 175 | 210 | 220 | 235 | 290 | 310 | 330 | 375 | 410 |
| Dimensions (mm) | **D** | 230 | 250 | 280 | 320 | 340 | 360 | 380 | 400 | 420 | 450 | 510 | 550 | 580 | 650 | 680 | 710 | 780 | 850 |
| | **M** | 90 | 110 | 120 | 135 | 145 | 163 | 183 | 195 | 225 | 255 | 310 | 325 | 350 | 425 | 455 | 490 | 555 | 615 |
| | **F h6** | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 310 | 340 | 400 | 420 | 450 | 530 | 560 | 600 | 670 | 730 |
| | **T** | 42 | 42 | 42 | 45 | 45 | 45 | 45 | 45 | 45 | 60 | 60 | 60 | 60 | 65 | 65 | 81 | 81 | 81 |
| | **L** | 90 | 95 | 100 | 110 | 125 | 130 | 145 | 170 | 175 | 185 | 220 | 240 | 260 | 315 | 350 | 380 | 410 | 450 |
| | **H** | 12 | 12 | 12 | 15 | 15 | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 |
| | **N** | 200 | 220 | 250 | 280 | 300 | 320 | 340 | 360 | 380 | 400 | 460 | 500 | 530 | 600 | 630 | 660 | 730 | 800 |
| | **G** | 110 | 130 | 142 | 157 | 175 | 195 | 215 | 231 | 261 | 286 | 346 | 361 | 386 | 461 | 491 | 526 | 591 | 651 |
| | Ø **E** H8 | 14 | 14 | 14 | 18 | 18 | 18 | 18 | 18 | 18 | 24 | 24 | 24 | 24 | 24 | 24 | 28 | 28 | 28 |
| | N° holes | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 8 | 8 | 24 | 24 | 24 | 24 |
| | **K** h9 | 200 | 220 | 250 | 280 | 300 | 320 | 340 | 360 | 380 | 400 | 460 | 500 | 530 | 580 | 600 | 640 | 700 | 760 |
| Weight (kg) | | 13 | 16 | 24 | 29 | 35 | 42 | 54 | 67 | 90 | 108 | 150 | 190 | 230 | 395 | 460 | 520 | 740 | 890 |
| Nominal torque max. (daNm) | | 50 | 400 | 780 | 1350 | 1600 | 1850 | 2200 | 3200 | 4000 | 5100 | 7700 | 11250 | 13000 | 19000 | 31000 | 42000 | 54000 | 75000 |
| Radial force (daN) | | 1200 | 1400 | 1800 | 2500 | 3100 | 3700 | 4200 | 5200 | 6300 | 7950 | 11250 | 12300 | 14500 | 20200 | 25000 | 30000 | 34000 | 39000 |

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