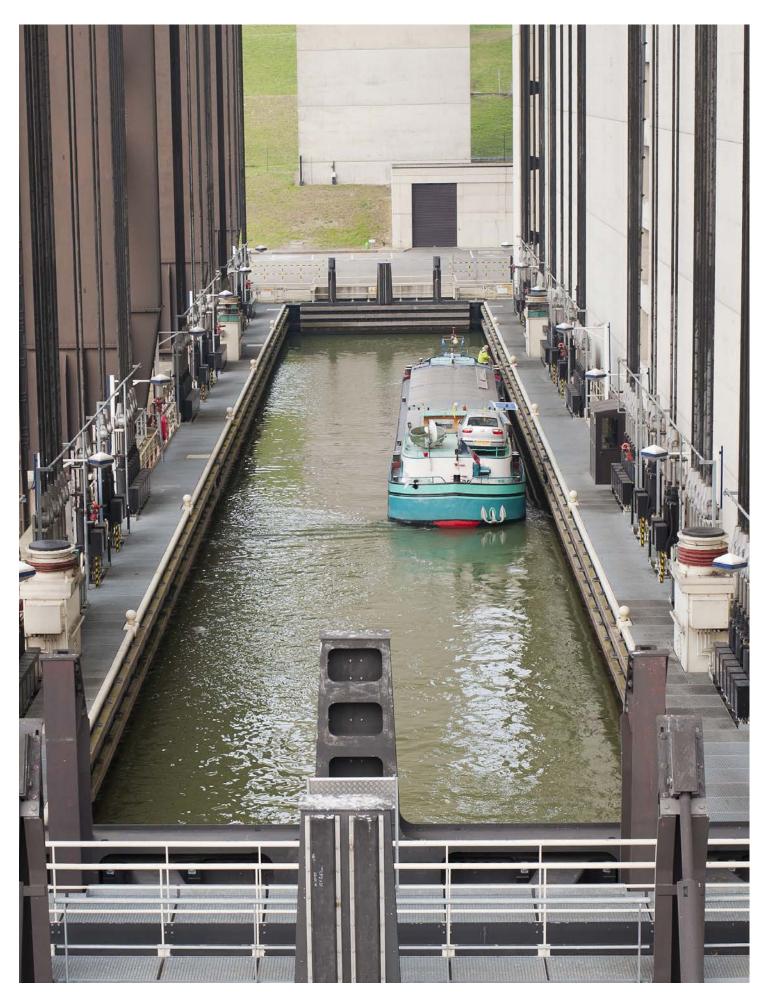


SIME Brakes
Diagnosis
and
Intervention









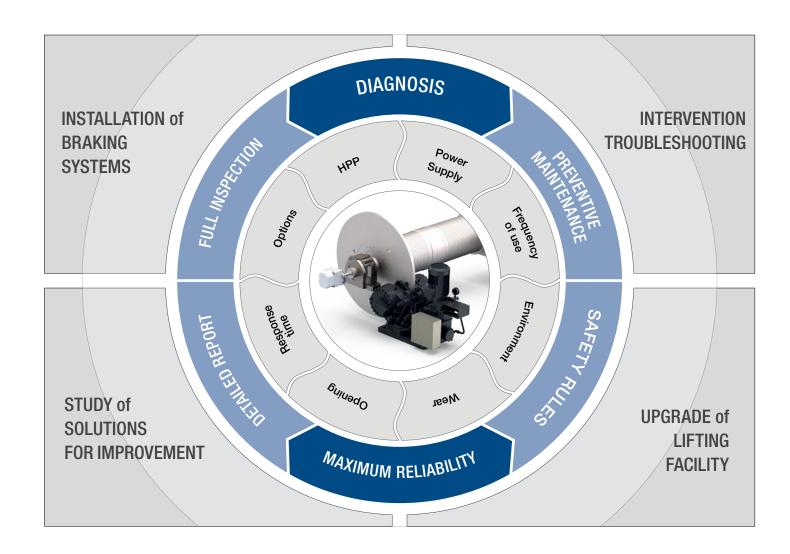
# WHY A DIAGNOSIS?

# Stromag puts our know-how and expertise at your service to maintain maximum reliability of your braking systems.

Our diagnostic team is made up of experts and technicians who work on all lifting applications: Steel industry, Port, Nuclear, Cable cars, etc.. in France and around the world.

Our team can carry out:

- the installation of your braking system,
- a complete diagnosis,
- a repair in case of failure.
- a study of your system and its upgrading.









# **OUR EXPERIENCE**

# Stromag sets up and monitors your braking systems.

Stromag has been designing, manufacturing and installing braking systems for over 60 years.

The quality of our products, standard or fully adapted to your installation, is a guarantee of reliability and performance for your installations whatever the application.

Our company offers a wide range of services to optimize your installation in the long term: studies of specific solutions, training, diagnostics, troubleshooting, renovations, but also solutions such as intelligent control and/or monitoring systems, tools (clamping force sensors, disc cleaners).

| OUR TEAM OF DIAGNOSTICIANS |                        |                        |                        |                                |  |  |  |
|----------------------------|------------------------|------------------------|------------------------|--------------------------------|--|--|--|
| MICHAEL                    | GERARDO                | CHRISTOPHE             | EKREM                  | RICHARD                        |  |  |  |
| Manager                    | After-Sales Technician | After-Sales Technician | After-Sales Technician | Test and<br>Quality Technician |  |  |  |

# TECHNICAL SKILLS

**EXPERIENCE:** Testing - Service - Training Languages: French - English - Spanish - German

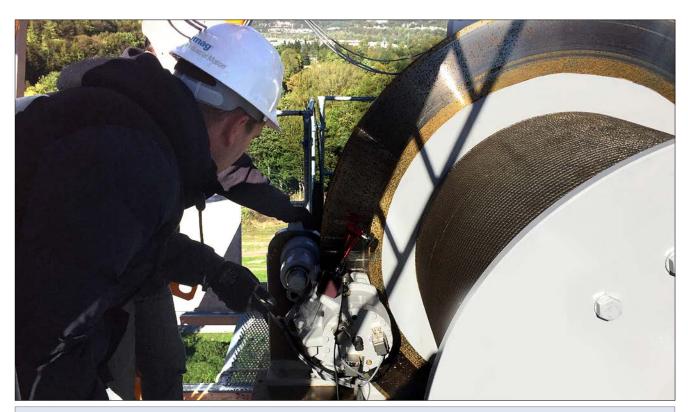
## AFTER-SALES SERVICE

- Interventions on all your installations **Troubleshooting** Commissioning
- Diagnosis Complete on-site examination with detailed report Preventive maintenance

Advice on the application of safety rules

# **TRAINING**

- Within our production center and on site
- Theoretical or practical training Knowledge of the equipment and its options Maintenance level 1 and 2 Real-life situation and breakdown simulations



# Example of DIAGNOSIS REPORT

Date: 29/07/2008 Location: MONTATAIRE Customer: ARCELOR Crane N°: Galvanization line N°3 Brake N°: CAS Identification Sime: 55576 Order N°: 404 956

|                          |                                      |                        | Before setting | After setting | Recommended action                          | Urgen         |
|--------------------------|--------------------------------------|------------------------|----------------|---------------|---|---------------|
|                          |                                      | Centering              | G:0 D:2        | G: D:         | review implementation                       | 1             |
| IMPLEMENTATION /<br>DISC | Pe                                   | erpendicularity        | OK             |               | •   |               |
|                          |                                      | // vertical            | OK             |               |   |               |
|                          |                                      | Forward position       | OK             |               |   |               |
|                          |                                      | Value                  | 1.96           | 3.9           |   | $\overline{}$ |
| AIR GAP                  | Operating limit + T°C electro        |                        |                |               |   | $\overline{}$ |
| MANUAL WEAR              |                                      |                        |                | <del> </del>  |   | $\overline{}$ |
| COMPENSATION             | l                                    | Setting                |                |               |   |               |
| AUTOMATIC                | Free gap with spring                 |                        | OK             |               |   | $\overline{}$ |
|                          | Left arm                             | Opening force F2       | Free           |               | Renovation                                  | 1             |
|                          |                                      | Closing force: F1      | OK             |               | renovation                                  | <del>-</del>  |
| WEAR                     | Right arm                            | Force op / closing: F3 | HS             |               |   | +             |
| COMPENSATION             | Rotating cam                         |                        | Yes            |               |   | +             |
|                          | return                               | Spring drives the cam  | Yes            |               |   | +-            |
|                          |                                      | on of torque nut       | Nominal        |               |   | -             |
| CLAMPING FORCE           |                                      | pin presence           | Yes            |               |   | _             |
|                          |                                      | clamping at e = 3 mm   | 4200 for 3,05  | _             | Weak spring, change the caliper             | 1             |
|                          |                                      | ning type              | WS1-3          | _             | weak spring, change the camper              | 1             |
|                          |                                      |                        | run-in greasy  |               | Change the gods often elemine the ecombly   | 0             |
|                          | Remaining lining thickness           |                        | run-in greasy  |               | Change the pads after cleaning the assembly | - 0           |
|                          | Front supports length                |                        |                |               |   | -             |
| BRAKE LINING PADS        | Material of the pads guiding pin     |                        | Steel<br>OK    |               |   | -             |
|                          | State of the pads guiding pin        |                        | 0.4.4          |               |   | -             |
|                          | Presence of return spring            |                        | No             |               |   | _             |
|                          | Presence of clip (vertical mounting) |                        | N/A            |               |   | -             |
|                          | Right opening                        |                        | OK             |               |   | -             |
|                          | Left opening                         |                        | OK             |               |   |               |
| RELEASE WRENCH           | Position                             |                        | Yes            |               |   | -             |
| RELEASE SCREW            | Position                             |                        | N/A            |               |   | _             |
| OPENING                  | Generation                           |                        | Direct         |               |   |               |
| SWITCH                   | Triggering value                     |                        |                |               |   |               |
| SWITCH                   | Connection                           |                        | Yes            |               |   |               |
| DISC                     | Vertical / horizontal axis           |                        | H              |               |   |               |
|                          | Solid / Ventilated                   |                        | P              |               |   |               |
|                          | Diameter                             |                        | 495            |               |   |               |
|                          | Deformation                          |                        |                |               |   |               |
|                          | Surface condition                    |                        | OK but greasy  |               | Clean the disc                              | 0             |
|                          | Wear (Disc thickness)                |                        | 30             |               |   |               |
| PROTECTION               | TION Arm bellow state                |                        | OK             |               |   |               |
| GROUNDING                | Hole presence for grounding          |                        | No             |               |   |               |
|                          | Ground donnection                    |                        | N/A            |               |   |               |
| ELECTRICAL<br>POWER UNIT | Type                                 |                        | C12600         |               |   | $\neg$        |
|                          | Serial number                        |                        | 3190           |               |   |               |
|                          | Counter                              |                        | N/A            |               |   |               |
|                          | U caliper operation                  |                        | 59             |               |   |               |
|                          | U caliper economy                    |                        | 12,3           |               |   |               |
|                          | U caliper cut off                    |                        | OK             |               |   |               |
|                          | I of release                         |                        |                | _             |   | +             |
|                          |                                      | of release             |                |               |   |               |
| COIL                     |                                      | r(+ Temperature)       | 4,6            | _             |   | _             |

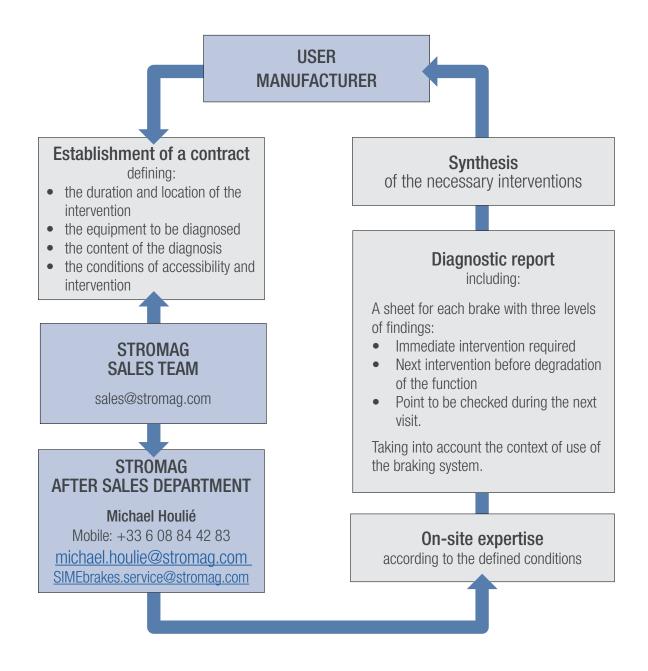
# HOW A DIAGNOSIS IS CARRIED OUT

# **Quality - Expertise - Adaptability**

The diagnostics are carried out in two stages:

- a complete on-site examination of the various devices,
- a detailed report with a synthesis for a global visibility.

The diagnosis is an analysis of different control points that can go up to 45 checks for a system including the brake, its power supply or its hydraulic power unit, the disc, the coupling and all the related elements provided by Stromag (limit switch, buffers, cardan shafts, etc.).



### **Stromag Facilities**

#### **Europe**

#### Germany

Hansastraße 120 59425 Unna - Germany +49 (0) 23 03 102 0

Clutches & Brakes, Couplings, Geared Cam Limit Switches, Discs, Wind Brakes

Dessauer Str. 10 06844 Dessau-Roßlau - Germany +49 (0) 340 2190 0

# Electromagnetic Clutches & Brakes

France

Avenue de l'Europe 18150 La Guerche sur L'Aubois - France +33 (0)2 48 80 72 72

Disc Brakes & Drum Brakes

#### **Great Britain**

Ampthill Road Bedford, MK42 9RD - UK +44 (0)1234 324347

Electromagnetic Clutches & Brakes, Industrial Caliper Brakes

#### **North America**

31 Industrial Park Road New Hartford, CT 06057 - USA 860-238-4783

Electromagnetic Clutches & Brakes

300 Indiana Highway 212 Michigan City, IN 46360 - USA 219-874-5248 Couplings

2800 Fisher Rd. Wichita Falls, TX 76302 - USA 940-723-3400 Geared Cam Limit Switches.

Industrial Caliper & Drum Brakes

#### **South America**

#### Brasil

Avenida João Paulo Ablas, 2970 Jardim da Glória, Cotia - SP, 06711-250 - Brasil +55 (11) 4615-6300

Flexible Couplings, Bearing Isolators, and Coupling Guards

#### **Asia Pacific**

#### China

T40B -5, No. 1765 Chuan Qiao Road Pudong 201206, Shanghai - China Tel +86 21-60580600

Clutches & Brakes, Electromagnetic Clutches & Brakes, Couplings, Industrial Caliper & Drum Brakes, Discs, Geared Cam Limit Switches, Wind Brakes

Gat No.: 448/14, Shinde Vasti, Nighoje Tal Khed, Pune- 410 501 +91 2135 622100

Clutches & Brakes, Electromagnetic Clutches & Brakes, Couplings, Industrial Caliper & Drum Brakes, Discs, Geared Cam Limit Switches. Wind Brakes

### The Brands of Altra Motion

#### Couplings

Ameridrives www.ameridrives.com

Bibby Turboflex www.bibbyturboflex.com

**Guardian Couplings** www.guardiancouplings.com

www.huco.com

**Lamiflex Couplings** www.lamiflexcouplings.com

**Stromag** 

www.stromag.com

TB Wood's www.tbwoods.com

### **Linear Systems**

Thomson

www.thomsonlinear.com

#### **Geared Cam Limit Switches**

Stromag

www.stromag.com

### **Engineered Bearing Assemblies**

www.kilianbearings.com

#### **Electric Clutches & Brakes**

Matrix

www.matrix-international.com

**Stromag** www.stromag.com

Warner Electric www.warnerelectric.com

#### **Belted Drives**

TB Wood's

www.tbwoods.com

### **Heavy Duty Clutches & Brakes**

Twiflex www.twiflex.com

**Stromag** www.stromag.com

Svendborg Brakes www.svendborg-brakes.com

Wichita Clutch

www.wichitaclutch.com

### **Gearing & Specialty Components**

**Bauer Gear Motor** 

www.bauergears.com

**Boston Gear** www.bostongear.com

Delevan

www.delevan.com

**Delroyd Worm Gear** 

**Nuttall Gear** www.nuttallgear.com

### **Engine Braking Systems**

Jacobs Vehicle Systems www.jacobsvehiclesystems.com

## **Precision Motors & Automation**

Kollmorgen

www.kollmorgen.com

### **Miniature Motors**

Portescap

www.portescap.com

#### **Overrunning Clutches**

**Formsprag Clutch** 

**Marland Clutch** 

Stieber www.stieberclutch.com

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