



HighService  
Service

**A&CA**

Drive and Automatic  
Control Management



English Version





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**Drive and Automatic Control Management (A&CA)** was born in 2000 in order to provide assistance and technical services of high specialization on ring motor technologies with application on SAG mills and industrial processes automation.

This business area considers two specialties: **Automatic Control and Electrical Drive**, providing the specialized technical assistances required to maintain a high level of availability and reliability on the operation of SAG mills ring motors. For this purposes, a Technical Support/Hotline phone is available for the customer **allowing continuous 24/7 assistance**. Additionally, and if it's required, the **Emergency Support Service** is activated, which implies our specialists traveling by private jet, with the purpose of providing a rapid and direct attention in the plant.

Furthermore, preventive and corrective maintenance services for ring motors and synchronous motors used in **SAG Mills** and **Ball Mills** are provided, as well for low voltage motors.

A comprehensive solution to all requirements in electric drives and automation plants is added to this high specialization services. We have an expertise in all matters relating to medium and low voltage electrical control systems among which are: frequency inverters, vector control systems and soft starters, and everything related to Distributed Control Systems (DCS) or more localized such as PLC Control Systems and all remote monitoring network via HMI systems which are part of the interface between the process and the final users.



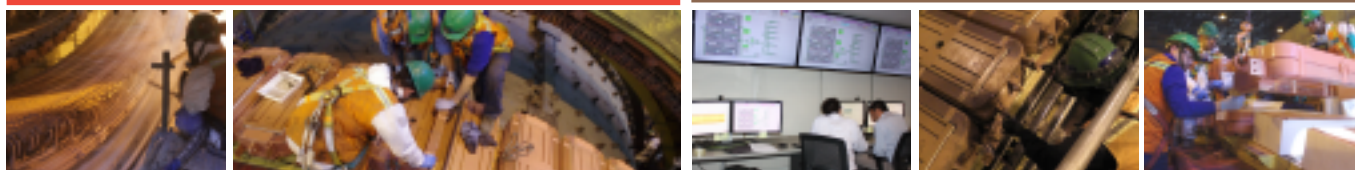
## Details of services:

### Technical Assistance

- Comprehensive, Preventive and Corrective Maintenance.
- Launching Services, Regular Inspections of the System.
- Cryogenic cleaning.
- Overhaul.
- Specialized Support in Emergency Field.
- Internal Certification Process.
- Training Programs.

### Online Monitoring

- 24/7 support line (emergency phone assistance with fast and reliable access to the know-how of the experts).
- Remote Monitoring and Diagnosis.
- Deviation and Failure Detection.



### Project Implementation

- Launching of Great Power Engines.
- Integration and Pre-Operational testing in Factory.
- Control System Upgrade.
- Control System Optimization.

### Product Integration

- Monitor and Diagnosis Products.
- Remote Control Systems with Wi-Fi connection.

## Most Important hired Services:

CUSTOMER	Cía. Minera Candelaria S.C.M.
TYPE OF SERVICE	Electronic Maintenance / Control and specialized technical Assistance SAG Mills Ring Motors.
YEARS	Jan-2004 - Active
CUSTOMER	Cía. Minera Alumbreira Ltda. (Argentina)
TYPE OF SERVICE	Electronic Maintenance / Control and specialized technical Assistance SAG Mills Ring Motors.
YEARS	Jan-2004 - Active
CUSTOMER	Codelco, División El Teniente
TYPE OF SERVICE	Technical Assistance Service SAG Mill Ring Motor.
YEARS	Apr-2009 - Active
CUSTOMER	Codelco, División Andina
TYPE OF SERVICE	Ball Mills Motors Maintenance - Concentrating Plants Specialized Service.
YEARS	Apr-2005 - Active
CUSTOMER	Codelco, División Andina
TYPE OF SERVICE	Electric Maintenance / Control and specialized technical Assistance SAG Mills Ring Motors.
YEARS	Aug-2004 - Active
CUSTOMER	Codelco, División Norte - Concentrating Plant A2
TYPE OF SERVICE	Electric Maintenance / Control and specialized technical Assistance SAG Mills Ring Motors.
YEARS	Jan-2004 to Nov-2009

## Most important Projects:

CUSTOMER	<b>Codelco, División Chuquicamata</b>
TYPE OF SERVICE	Maintenance and technical assistance service to Ring Mill.
YEARS	2011 - Active
CUSTOMER	<b>KBM Kinross (Brazil)</b>
TYPE OF SERVICE	Specialized assistance and maintenance service for SAG mill Ring motor drive.
YEARS	2011 - 2012
CUSTOMER	<b>Antamina (PerU)</b>
TYPE OF SERVICE	Commissioning and launching of SAG Mill.
YEARS	2011 - 2012
CUSTOMER	<b>Los Bronces - Anglo American</b>
TYPE OF SERVICE	Electric Support Service and Instrumentation in launching of Mill Plant Confluence Area.
YEARS	2011 - 2012
CUSTOMER	<b>Siemens AG - I&amp;S IP PEP PM (Germany, Australia and Chile)</b>
TYPE OF SERVICE	Upgrade Services with pre-commissioning in factory, Commissioning and launching of Control Systems (E-House) and Ring Motors in ground facilities. Projects: Kalgoorlie Consolidate Gold Mine, Chuquicamata, El Teniente SAG 1, Codelco Andina.
YEARS	Jan-2004 - Mar-2010
CUSTOMER	<b>Siemens AG - (SS IP PEP PM (Germany, Australia, Bolivia, Mexico, Zambia and Chile)</b>
TYPE OF SERVICE	Pre-commissioning in factory services and commissioning and launching of Control Systems (E-House) and Ring Motors in ground facilities. Projects: San Cristóbal, Peñasquito, Zinifex, Cowald Gold Mine, Lumwana, El Teniente Expansion, Los Pelambres Mining Expansion.
YEARS	Jan-2004 to Dec-2009
CUSTOMER	<b>Peñasquito (Mexico)</b>
TYPE OF SERVICE	Commissioning and launching of SAG1 Ring Motor.
YEARS	2009
CUSTOMER	<b>Codelco, División Chuquicamata</b>
TYPE OF SERVICE	Overhaul project SAG 16 and 17 Ring motors.
YEARS	2014
CUSTOMER	<b>Codelco, División Andina</b>
TYPE OF SERVICE	Change of rotor pole segment of Siemens Ring motor. Change of rotor pole segment of ABB ring motor.
YEARS	2014
CUSTOMER	<b>Minera Candelaria</b>
TYPE OF SERVICE	Complete change rotor pole Siemens Ring motor SAG
YEARS	2012
CUSTOMER	<b>Minera Alumbrera</b>
TYPE OF SERVICE	Stator Alignment, SAG2 Ring Motor.
YEARS	2014
CUSTOMER	<b>Codelco, División El Teniente</b>
TYPE OF SERVICE	Stator Alignment, SAG1 Ring Motor.
YEARS	2015