Equipment Section

Pine

An Ingeteam brand

Pine Equipos Eléctricos has the required resources to undertake large-size electrical projects and to comply with the most demanding manufacturing deadlines. Pine's premises are distributed as follows: 6,000 m² of workshop and 900 m² of office space, with a production capacity of 250,000 hours/year and an engineering design office with a capacity of 35,000 hours/year.

OUR COMPANY

Solutions adapted to the most challenging projects since 1969

Pine Equipos Eléctricos, **a company of the Ingeteam Group**, has built an outstanding track record since its beginnings, consolidating as a leading company in its sector with an extraordinary global presence.

Strong experience in designing electric panels

Pine designs and manufactures of all types of electrical panels, **medium and low voltage equipment** with a wide range of voltages, currents and breaking capacities.

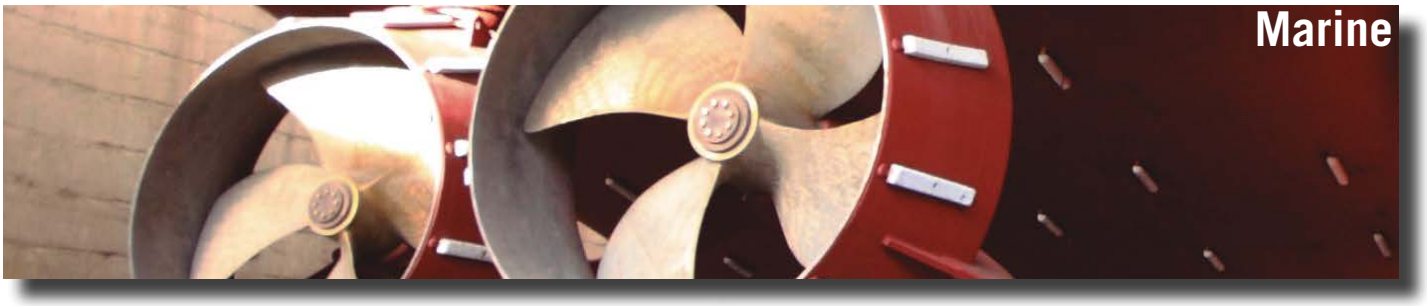
Excellent reputation and highly guaranteed quality of our equipments

The quality of our products and services is backed by the careful design and construction of equipment, tests carried out and certifications obtained, as well as the **design of its own metal sheet, which stands out for its robustness and adaptability to the most demanding project requirements.**

REFERENCES

ACCIONA · AENA · ARCELOR-MITTAL · BEFESA · BRIDGESTONE · IBERDROLA
CNN (LA NAVAL) · INDAR · ISOLUX · DRAGADOS · METRO BILBAO · NAVANTIA · SENER
GERDAU · TUBOS REUNIDOS · CIEMAT · ELECNOR · ACTEMIUN · DIANCA
PDVSA · SONELGAZ · JAN DE NUL · KEPPEL · CMI · EDP · HITACHI · DESY · ABB
ECOVIX · MASEN · SENERMEX · BOMBARDIER · TALGO · SUEZ · SCHNEIDER

APPLICATION AREAS



ELECTRICAL PANELS

Engineering

Our technical department carries out the integral design of each electric switchboard relying on the most advanced electric design softwares, enabling us to adjust to the cabling needs of our customers.

We develop our electrical drawings with **EPLAN Software & Service** and model in 2D and 3D thanks to **Autocad software.**

Pine has developed its own sheet metal design, which stands out for its robustness and adaptability to the most demanding project requirements.

Furthermore, Pine has large experience in PLC programming, SCADAS and engineering development.

- **LV distribution systems up to 690V**
- **MV distribution systems up to 36kV**
- **Switchgear in container execution**
- **Electric special equipment**
- **Industrial Process Automation**

High quality

Our panels meet the most demanding electrical and mechanical requirements. **We develop Motor Control Centres (MCCs) in withdrawable-units partnering with Cubic.**

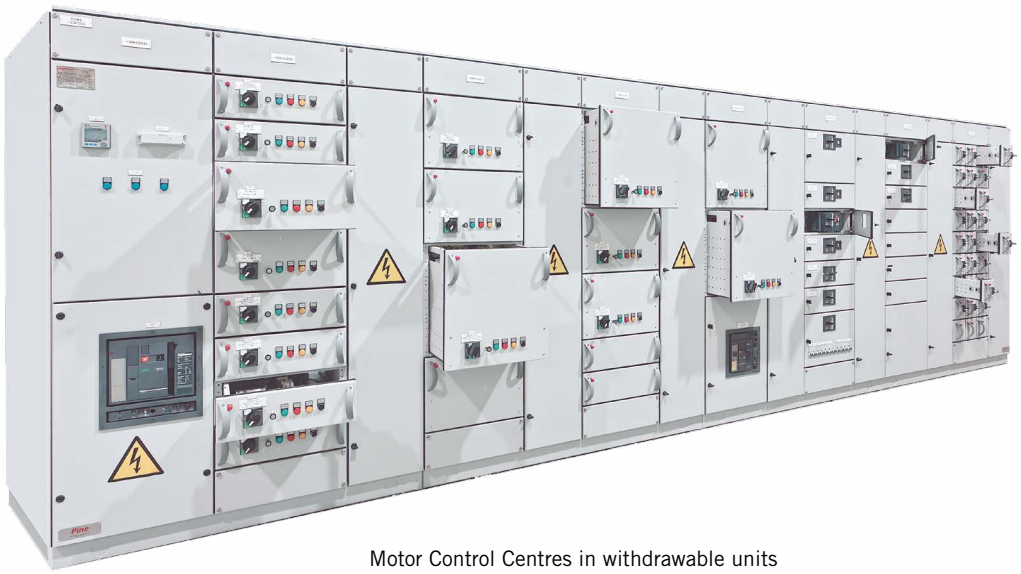
Our switchgears have been tested to validate the different mechanical and electrical designs. **These tests are performed in independent laboratories such as Labein or DNV.**

- ISO 9001/14001
- OHSAS 18001
- IEC/ANSI/UL Certifications
- Internal arc
- Seismic tests

We design and manufacture low and medium voltage electric equipment of any degree of complexity, including independent electrical enclosures and special equipment. In addition, we carry out commissioning of installations and electromechanical tests, in order to achieve the maximum quality of our equipment meeting the necessities of each customer.

TECHNICAL INFORMATION

Low Voltage	Max. Rated current.	Rated voltage	Rated admissible short-time current	Protection Class	Rated frequency	Standard	Constructive structure
PINE LV-DS400 Low Voltage panel 400V	6000 A	220/380/440 V	100 kA	IP42	50/60Hz	IEC 61439	
PINE LV-DS690 Low Voltage panel 690V	6000 A	690 V	100 kA	IP42	50/60Hz	IEC 61439	
PINE LV-MCC400 Motor Control Centres 400V	3150 A	220/380/440 V	70 kA	IP54	50/60Hz	IEC 61439	3b / 4b
PINE LV-MCC690 Motor Control Centres 690V	3150 A	690 V	70 kA	IP54	50/60Hz	IEC 61439	3b / 4b



Motor Control Centres in withdrawable units

Low voltage Distribution Panel

Medium Voltage

	Max. Rated current.	Rated voltage	Rated admissible short-time current	Protection Class	Rated frequency	Standard	Constructive structure
IEC							
PINE MV-FS12 M.V. switchgear in fixed units 12kV	4000 A	7,2/12 kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 1
PINE MV-FS17 M.V. switchgear in fixed units 17,5kV	4000 A	17,5 kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 1
PINE MV-FS24 M.V. switchgear in fixed units 24kV	4000 A	24 kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 1
PINE MV-FS36 M.V. switchgear in fixed units 36kV	4000 A	36 kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 1
PINE MV-WS12 M.V. switchgear in withdrawable units 12kV	4000 A	7,2/12kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 2B
PINE MV-WS17 M.V. switchgear in withdrawable units 17kV	3150 A	17 kV	50 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 2B
PINE MV-WS24 M.V. switchgear in withdrawable units 24kV	2500 A	24 kV	40 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 2B
PINE MV-WS36 M.V. switchgear in withdrawable units 36kV	2000 A	36 kV	31,5 kA 3s	IP42 (certified)	50/60Hz	IEC 62271-200	LSC 2B
ANSI							
PINE MV-WS4 M.V. switchgear ANSI Std	4000 A	4.76 kV	50 kA 2s	NEMA 1	60Hz	ANSI C37.20.2	
PINE MV-WS15 M.V. switchgear ANSI Std	4000 A	15 kV	50 kA 2s	NEMA 1	60Hz	ANSI C37.20.2	

Medium voltage switchgear in withdrawable units

Medium voltage Ansi Switchgear

Medium voltage switchgear in fixed units

Pine Equipos Eléctricos carries out the management, preparation and execution of the routine / type tests for all kind of projects within every sector and discipline, electricity, instrumentation, mechanical, HVAC, etc. It begins with a thorough study of the project's engineering and with an integral implementation plan of each project's phase.

TESTS

Expediting

IteamPCS stars on Packages and equipment that shall be inspected and tested to the maximum extent in the factory or workshop prior to their departure to the worksite or site. The **Tests Sheet (Check List)** are created to be filled during the performance in the factory or workshop.

All sheets are often followed by an overall package test called Factory Acceptance Tests (FAT) and shall demonstrate the correct design, manufacture, operation and performance of the equipment in accordance with the project specifications. If something is not conforms a **Punch List Sheet** can be open.

Mechanical Completion

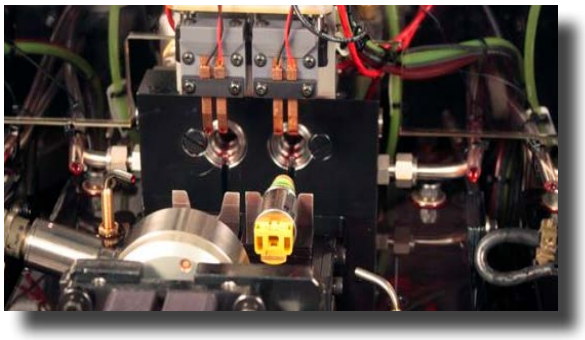
Mechanical Completion phase shall **verify the correct final installation of the Construction Team according to the engineering specifications and respecting quality standards.**

The end of this phase is the transfer of the installation from the Construction Team to the Commissioning Team.

Pre-Commissioning

Pre-commissioning consists in a comprehensive series of Static and De-energized Checks and Tests to be carried out on each item of the plant in order to ensure that the Facilities have been constructed in compliance with Project Documents, Specifications and Standards.

- Machinery alignments, termographies y video-inspections, cables insulation and continuity tests
- Calibration and settings of instruments and setting of safety valves. We have our own calibration´s workshop
- Hydrotest to 2.500 bars, flushing, retrojetting, leaktesting, torquing and tensioning



Commissioning

On this phase all functional tests shall be **carry out for all the equipments included on the Systems** to confirm that everything is ready to operate on the safe way and according to the specifications and standards of the Project.

During the operation, Set Point's optimization shall be done as a whole of the installation.

COMPLETION MANAGEMENT SOFTW

iteamPCS

Making your project easier

IteamPCS is a reliable and professional tool adaptable to the necessities of each project and client following the methodology of each Company. **Keeps control over planning and progress of the installation. Minimizes paper work and chance of error. Minimizes time to operations, cost and failures. Maximizes safety on site and technical integrity. Guarantees total access and follow-up of the Project anywhere around the world.**

Completion Management

On each phase of the Project ITeamPCS manages the punch items to achieve the maximum of the quality terms and high exigency of the client.

After milestone completion and turnover/acceptance, IteamPCS can be used by the final client for the Maintenance Engineering during the installation´s exploitation.

EXPEDITING → **MECHANICAL COMPLETION** → **PRE-COMMISSIONING** → **COMMISSIONING**

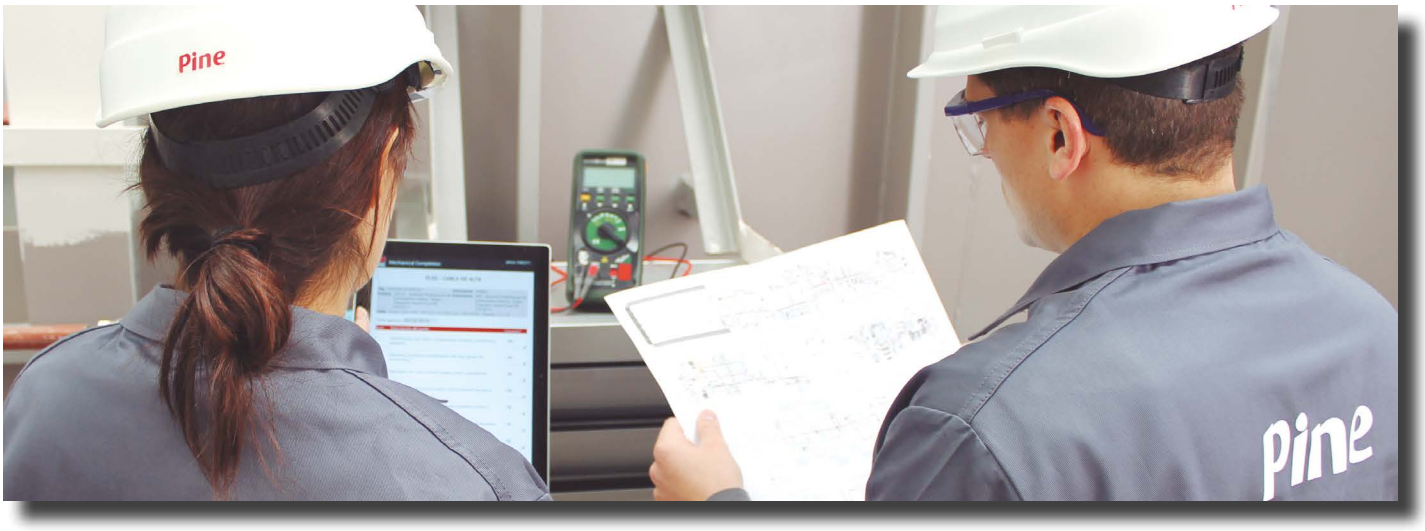
iteamPCS

ARE

Technical Team

A technical specialist team is available to start and support any Project, during execution or during the paper work. It includes integration of drawings, datasheet, certificates, manuals, vendor's drawings, etc.

Our technical and experienced team is qualified to initiate and support any Project, either in execution or at documentary management stage. Our team is highly trained in the software methodology and application guarantying the success of the Project.



Access on real time

IteamPCS makes easy to our clients the access to the information during all execution phases on real time, monitoring the progress and quality requirements, saving time and minimizing costs.

Our system allows work **on real time all around the world**, even if not internet connection is available. Clients can be connected at each moment via Web to our Cloud.

Application areas

ITeamPCS can be used on the majority of the industrial Projects during the construction and commissioning phases. Pine Equipos Eléctricos has a large experience to implement the ITeamPCS on multitudes of Project on **Shipbuilding, Industry, Energy, Oil & Gas etc.**

More information about IteamPCS

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Pine

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