

SIVA

www.sivainc.com



360° Instrumentation
Solutions Provider



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Introduction

Siva was created in 1993 and has built an enviable reputation as an Engineering, Supplier and Service provider of process and laboratory instruments over the years. Siva has added a global presence to its customer orientation. Excellent service combined with technically compatible, cost effective solutions and delivers a powerful supply chain solution to meet customer demands.

Our relationships with our suppliers are a key strength in allowing us to maintain the high standards of product availability for our customers. The breadth of our product offering means that we are able to provide product solutions to a wide range of customers from all areas of industry.

We maintain six branches across the globe, head office and service center in Canada. We are able to offer technical expertise to our customers. Customers can choose from a variety of ways to work with Siva to suit their preferred method of doing business. Our web site, www.sivainc.com, offers over 10,000 products online along with product data and is a powerful tool for any engineer or purchaser. Our business distributes catalogs at no cost to any customer who prefers to use both print and the web.

Main Activities

Siva is the global specialist in Oil & gas, Energy, Pulp & paper, Utilities and transport infrastructure. The company serves these industries through its activities in the fields of power generation and service contracts and marine.

Siva offers its customers a complete range of innovative components, systems and services covering design and supply as well as commissioning and long-term maintenance and has unique expertise in systems integration, and application of advanced technologies.

Following the full integration of the activities, Siva today has annual sales in excess of six million Canadian dollars and employs more than 28 people in over 8 countries.

Services in Oil & Gas Industries

Siva provides engineering, procurement, supply and contracting services dedicated to utilities and process control techniques required by the oil and gas industries.

Since 1995 Siva has gained a wealth of experience in the oil and gas processing industries. We are active in any kind of industrial instrument & electrical installations for oil & gas processing, from the design and construction of new on-shore or off-shore production or treatment facilities, revamping of oil refining and petrochemical plants, production, transportation and storage of oil & gas (pipelines, terminals, tank farms).

Our company has already been working with more than 500 oil and gas and EPC companies around the world.

The in house teams of engineers & designers master the technologies involved in process control and utilities projects:

- Control and safety systems, instrumentation, PLC, DCS, SCADA
- Electrical power generation and distribution
- Laboratory and Telecommunication equipments
- Gas metering station, analysers, metering pump skids, on line blenders, oil depots and loading systems, automation and products movements (like Tank gauging systems for tanks).

New plants

Within the scope of its expertise, Siva is capable of taking the responsibility of its equipments engineering, procurement up to commissioning and startup, maintenance and training.

Furthermore, this global approach in our domain of expertise allows the identification of a homogeneous and clearly identified part of the work which can be associated with a specific financing arrangement from those in place for the project.

However should the final Client or the general contractor prefer to enquire for some specific tasks of the whole scope of work of the project, we offer this flexibility and we are available to perform these tasks at any stage of the project from equipment specification, procurement, up to erection, commissioning and start-up on site.

Siva is a Canadian company providing cost-effective solutions and services in Process Control Instrumentation, Industrial Automation, Information Technology and Gas Analysis Solutions. We have associated companies in the USA, Australia, Europe and Asia.



Instrumentation and process control

Product quality, productivity and plant flexibility, reliability and safety, environment concerns, are the challenges of the Refining and Petrochemical Industries in the today's competitive world.

Modern Process Control and Information System technologies can provide the key solutions. But as these technologies are rapidly expanding to plant wide control, the complexity and the number of product choices continues to grow. We have developed unique skills for handling the numerous systems from different manufacturers and making them work together on a common operating platform. Systems cover all ranges of possible control and safety applications in the following fields:

- Process control and safety systems
- DCS architecture and configuration techniques
- Cutting edge solutions in advanced process control (APC)
- Hot cut-over procedures
- Ergonomic expertise in control room refurbishment
- New technologies such as field bus and smart instruments

Siva and its Partners support wide range of system hardware and PLC. Our excellent long standing relation-ship with respectable third party manufacturers help us to meet our Clients various requirements while remaining independent from hardware manufacturers.

Siva acted recently as a system integrator for the Marine ship Ballast tank modernization project in Canada. The monitoring and control systems including PLC, HMI, electrical control system, Logic and field instruments were designed, procured, installed and commissioned by Siva

Electrical distribution

Continuous availability on electricity is a major concern in an oil refinery. Indeed an electrical shutdown caused by a wrong design of a protection may lead to huge financial losses for the operational company.

Siva offer the experience of its teams and manufacturing specialists to provide its clients with the most suitable products for trouble free installation and their operational requirements.

Offshore

Siva has acquired, within the past 10 years, extensive experience in the design and supplying the electrical, instrumentation and control systems for hydrocarbon field development. This has been achieved on numerous projects for both oil and gas fields throughout the world. Reliability is of paramount importance when operating in an offshore environment, with the stringent conditions and severe constraints imposed by the specificity of this type of work.

In an industry which is primarily concerned with process and production quality, production maximisation, production cost minimisation and the improvement of safety, Siva provides a single source of responsibility covering the design and procurement of the electrical, control and instrumentation systems and thereby, a complete engineering systems service in order to meet with the requirements of the offshore industry.

All offshore projects must be engineered from the very outset by taking into account the problems concerning operation and, thereby, the automation which best allows for the optimising of production and safety systems. For this reason, many operators and companies call upon Siva, at the pre-planning stage, to assist them in determining a fully integrated system that best suit to their needs. Our capabilities extend from this systems engineering phase through the specification of all instrumentation, valves and electrical equipment and includes also the design and manufacture of wellhead control panels and the supply of all equipment specified.

The quality of materials and equipment is of the greatest importance to combat the harsh off-shore environment and, consequently, to reduce maintenance costs. Based on long experience in the industry, participation in site and laboratory tests and a stringent Quality Assurance Programme with suppliers and manufacturers, Siva assures the use of equipment which has proved to be reliable and predictable, easy to maintain, and with the potential to adapt to the development of new concepts. We can supply and assist the customers in following offshore equipments:

- Test Separator Skid with Drum & Flow / Pressure / Temp Instruments
- Chemical injection Skids (Metering pumps, Tanks, level & Pressure instruments)
- Wellhead pipeline Manifolds
- Navigation lights
- CO2 discharge system with Fire & Gas System

- Shelter with control equipments. inside Shelter will have, Process Shutdown system, Fire & Gas system, UPS system, HVAC system, Navigation system panel,
- Electrical MCC, Cables
- Field instruments
- Valves & Safety Valves
- Wellhead Valves
- Wellhead Hydraulic & Pneumatic panels
- Fusible system
- Transformer
- Tele-communication system
- KO Drum Skid
- Flare panel & equipments
- Electrical motors, lights

The success of all projects depends also on the professional ability and workforce and this is an area where Siva shows its strength. Our Technical Staffs make available to each project specialist tradesmen, technicians and engineers all trained to meet the stringent off-shore survival requirements of the industry.

Oil and gas terminals

Siva can supply and assist:

- Tank farms: centralised gauging systems with level and temperature measurements, product movement automation by means of programmable logic controllers through positioning of motor operated valves and pump start or stop.
- Loading or unloading facilities equipped with preset metering systems, product analysis, safety devices, badge readers and automatic ticketing.
- Control room equipment (control desks, mimic panels, distributed control systems), telecommunication equipment (cable, fibre optics, radio, microwaves), shutdown system, fire and gas detection.
- Electrical distribution and back-up (UPS) supply.

Pipelines

Siva can supply and assist:

- Pumping and compression station equipment, instrumentation and control.
- Custody transfer metering skids according to international norms (ISO-API) based on differential pressure measurement, turbine or positive displacement meters, with pressure, temperature and density correction.
- Control of line block valves.
- Pig receiver and launcher instrumentation.
- Pipeline control centre, calculation, leak detection, batch tracking, modelling and archiving software's. Remote terminal units (RTU's).

Measuring stations and analysers

Analysers Siva has over 10 years of experience in analyser packages with more than 50 analysers and gas detectors integrated and installed world-wide.

Siva has large capabilities and resources in engineering, integration & testing, commissioning & start-up.

Gas metering systems Siva supply gas metering stations on a turnkey basis. Our usual scope of work includes:

- Metering basic design (sizing, performances and redundancy studies)
- Mechanical and piping arrangement design
- Control instrumentation, analysers and sampling systems
- Supervisory computers
- SCADA interfacing
- Performance data sheets
- Operating manuals
- Workshop assembly and testing
- Site validation and authority approval
- Site training of operators

Siva has performed the Gas metering system for Trans-Canada pipeline project in Canada.

Technical Services

In addition to its project supply activities, Siva can provide technical support to its client's staff within the field of its activities. This support can consist in skilled specialists for commissioning or installation supervision, trainers for operators or maintenance specialists.

Siva is using the capabilities in the field of instrument specifications and purchase, installation design and control systems integration. The company is capable to integrate any process control, safety system or electrical control system.

a) Commissioning

Siva offers its knowledge and experience of equipment commissioning to the oil and gas companies. In this instance our specialists will act on behalf of the Client to carry out the test on the process control equipment. The Siva teams carry out efficiently and without loss of time the performance tests (trial run) of the installed equipment with three main criteria: reliability, maintainability and availability. Concerning start-up, Siva specialists know how to expedite and facilitate the "bringing on-stream" phase, thus allowing an earlier return on investment.

b) Training

Siva believes that professional training is an ongoing need and should enable staff to become adapted on-the-job to new developments in work methods and technology that is why our staff offers Client's engineers training in the field of instrumentation, analysers, automation and process control. Other training courses are available to plant operators and maintenance engineers from third party companies who will benefit technological experience. Specific training can be developed and made available for the trainees who can attend the courses either in our venue or at customer premises.

Siva organisation for a competitive offer

A privileged access to Siva products engineering and procurement companies usually add overhead fee to the equipment they purchase directly. This fee is linked to a transfer or responsibility and performance toward the final Client and is linked to the costs relative to the supervision checking and inspection of the equipment. Siva propose any equipment without such supervision fee and/or overhead fee.



Instrumentation for Oil & Gas

CALIBRATION

- Dry Blocks & Liquid Baths
- Reference Sensors
- Thermocouple Referencing Equipment
- Infrared Calibrators
- Portable Pressure Calibration
- Pressure & Vacuum Pumps
- Dead Weight Testers
- Pressure Comparators
- Test & Measurement
- Single & Multi Function Calibrators
- Metrology Lab Services
- Calibration Stations

DATA ACQUISITION PRODUCTS

- Temperature & Humidity Data loggers
- Process Data loggers
- A/D & D/A Computer Interface Modules
- Video graphic/Paperless Recorders DISPLAYS
- Loop Powered Process Indicators
- Digital Universal Panel Meters

FLOW

- Vortex/Mag/Mass/Turbine Meters
- Oval/Target/Guilflo/Pitot Tube Meters
- Portable Flow meters
- Integrators/Totalizers/Indicators
- Rota meters/Variable Area Meters/ Armored Meters
- Orifice Plates/Venturis
- Flow Provers/Meter Runs

GAS ANALYZERS

- O₂, SO_x, NO_x, CO, H₂S Analyzers
- C.E.M.S.

- Trace NDIR Analyzers
- Explosion Proof Analyzers
- Ambient Air Quality Analyzers
- Portable Gas Analyzers
- Gas Dividers
- Opacity Monitors

LIQUID ANALYZERS

- pH, Conductivity, DO

HUMIDITY/DEW POINT

- pH/Temperature Transmitters
- Water Activity Systems
- Portable Humidity/Temperature Meters
- Dew Point Analyzer

LEVEL

- Ultrasonic/Capacitance/Radar Liquid Laser/RF Level Transmitters
- Density Measurement
- Float/Level/Flow/Vibration/Thermal Buoyancy/ Paddle Switches
- Level Gauges/Transmitters
- Submersible Transmitters
- Magnetic Level Gauges
- Magnetostrictive Level Transmitters
- Plumb Bob Device
- Specialty Level Instruments

PRESSURE

- Gage/Absolute/Differential Smart Transmitters
- Pneumatic Transmitters
- Barometric Transducers/Transmitters
- Submersible Transmitters
- Cryogenic Transmitters
- Sanitary Transmitters
- Pressure Gauges
- 2, 3 & 5 Valve Manifolds

- I/P & P/I Converters
- Pressure Switches

SIGNAL CONDITIONERS

- Transmitters – 2 & 4 Wire (T/C, RTD, V, I)
- Loop Powered Signal Isolators
- Alarms – 2 & 4 Wire (T/C, RTD, V, I)
- I/P or P/I Converters
- Trip Amplifiers
- Frequency Pulse Modules
- Analogue Ex Interfaces
- Power Supplies
- Power Transducers (V, I, W, PF, F)
- Universal Bus Transmitters

TEMPERATURE

- Thermocouple/RTD/Sensors
- Thermo wells
- Heating elements
- Strip Chart/Circular/Paperless Recorders
- Pyrometers
- Universal Controllers

CONTROL VALVES

- Pneumatic
- Electric
- Hydraulic
- Ball/Gate/Butterfly/Knife/Plug/V-Ball/Lined
- Regulators

OTHERS

- Wireless Transmitters
- Seal & Condensate Pots
- Settling Chambers & Air Headers
- Wobbe/BTU Analyzers
- Vibration Monitors
- Hart Modems

Lab instruments for Oil and Gas

Wax Deposition: Wax Flow Loop

Small size flow loop for the lab

- Examine wax inhibitor and dissolver
- Shear dependent deposition tests
- Fully automated with real-time charts
- Low sample volumes
- Exchangeable test pipeline



Hydrate: Sapphire Rocking Cell

Research at deepwater conditions

- Test of AA and KHI at deepwater conditions
- Multi-phase flow testing
- Full view polished cells
- Ball run-time measurement
- Up to 200 bar (2.900 psi)
- Sour gas testing
- 3 types (up to 2, 6, 20 cells)



Wax Deposition: Cold Finger

Convincing improved handling

- Tests wax content and WAT
- 15 measuring places
- Samples separately removable during test
- Weight-calibrated cold finger caps
- Software for easy documentation



Fluid Flow: Pour Point Tester

Modernize your pour point measurements

- Rotational method - acc. ASTM D 5985
- Up to 30x more accurate results than D 97
- Portable for field application - 10 kg (22 lb) only
- Available as stand-alone device or for use with PC



Scale Formation: Differential Scale Loop

Fully automated scale tests

- Tube system for scale deposition and blocking
- Decreases automatically inhibitor concentration
- Easy to maintain and automatic cleaning
- Up to +250 °C (482 °F) and 400 bar (5.800 psi)



Asphaltene: Flocculation Titrimeter

Optical detection of asphaltene and solids

- Tube system for scale deposition and blocking
- Decreases automatically inhibitor concentration
- Easy to maintain and automatic cleaning
- Up to +250 °C (482 °F) and 400 bar (5.800 psi)



Hydrate: Gas Hydrate Autoclave

See inside with borescope camera

- Tests gas hydrates and KHI
- Simulates pipeline conditions
- Up to 350 bar (5.000 psi)
- Captures photo and video
- Up to 3 cameras for views at different levels
- Torque measurement for AA testing



Stress Test: Dynamic Stability Loop

Multi-loop tests for umbilical line

- Tests long time stability of oilfield chemicals
- Filter blocking test and emulsion testing
- Up to 6 pressurized open or closed loops
- Easy handling with open and closed loop



Hydrate: Rocking Cell

Simulates the most stringent test conditions

- Screening tests of hydrate inhibitors
- Turbulent mixing and high shear forces
- Easy to handle, computer controlled
- Provides up to 10 chambers for fast testing
- Sour gas testing



Viscosity: Viscosity Measuring Site

Unique portable rotational viscometer

- Measures absolute viscosity
- DIN 53019/ISO 3219
- Wide temperature range only tap water needed -45...+150 °C (-49...+302 °F)
- Stress and shear testing
- Vane sensor for yield point testing



Thermal Conductivity: Lambda System

Handles liquids, gels and nano-fluids

- Instationary hot wire method - ASTM D 2717
- Minimized convection
- Temperature ranges -50...+190 °C (-58...+374 °F), ambient ... +300 °C (572 °F)
- Pressure range up to 200 bar (2.900 psi)



Drag Reduction: Turbulence Rheometer

Reduce test times by 90 %

- Tests DRA efficiency
- Complete tests in 90 seconds
- Reynolds no.s of 6.000 to 80.000 in 1 test
- Small sample volumes
- Minimized shear forces, no edges, constant acceleration



Analytical Instruments:

Chromatograph
Spectrometer
Thermal Analyzer
Oil in Water Analyzer
Laboratory Centrifuge
Titration Instrument
Conductivity meter
C-H-N-O-S Analyzer

Fume Hood
Auto Titration Instrument
Laboratory Mixer
Laboratory Oven
Laboratory Grinder
Pipettes and Tip
Centrifuge

General Laboratory Equipments:

Stirrers
Glassware
Hot Water Bath
Cold Water Bath
Recalculating Water Bath
Refrigerated Water Bath
Evaporators
Water Purification System
Ultrasonic Cleaner
Carts
Furnaces
Ovens
Laboratory Thermometers
Syringes and Needles

Environmental Testing Equipments:

Air Quality Instruments
Air Velocity Meter

Temperature Monitors
Stack Monitor Analyzer
Particulate Monitor Analyzer
Weather Station
Flue Gas Analyzer
Particle Size Analyzer
Microscopes:
Stereo Microscope
Student Microscope
Biological Microscope
Digital Microscope
Video Microscope
Microscope Camera
Goose Light
Microscope Accessories
Petroleum Testing Equipments:
Cloud Point Tester
Pour Point Tester
Flash Point Tester
Viscosity Apparatus
Salt in Crude Analyzer
Karl Fischer Titrator
Reid Vapor Pressure Bath

Moisture Balance
Hanging Scales
Standard Weights

Water Testing Equipments:

pH Meters
ISE Electrodes
TDS Meter
Turbidity Meter
Conductivity Meter
Dissolved Oxygen Meter
Multi- parameter Meter
TOC Analyzer
Oil in water Analyzer
Mercury Analyzer
Photometers
Colorimeter
Water Samplers

Sterile Lab Equipments:

Laminar Air Flow
Biological Safety Cabinet
Sampling / Dispensing
Garment Cabinets
Pass Thru

Chromatography:

Gas Chromatograph
GC Columns
GC Detector
HPLC
HPLC Column
HPLC Detector
Vials

Clinical Lab ware:

Autoclave
Sterilizer
Circulator
Water Bath
Hot Plat
Hot Plate Stirrer
Shaker
Homogenizer
Incubator



Valve Center

Capabilities

Our in-house resources:

We have a fully equipped machine shop, use certified welders and quality valve technicians to ensure stringent customer specifications are met.

Knowledge of Valve Design:

Valve performance characteristics, applications, industry codes and standards coupled with our knowledge of valve capabilities make us well suited to be your valve or actuator supplier and repair facility.

Knowledge of Valve Design:

We stock of all sizes and types of new or reconditioned valves including Gate, Globe, Check, Plug, Ball, Control, Pressure Reducing, etc. We also have the ability to obtain reconditioned or new valves not in our stock at very competitive prices.

Economical Repair and Reconditioning:

Safety Relief, Control, Ball, Butterfly, Plug, Check, Gate, Globe, Relief, AWWA, Dampers Knife Gate, Diaphragm, Pressure & Temperature Regulators, Shippside or special design valves.

Valve Actuation and Actuation Repair:

Repair or recondition to all hydraulic, pneumatic and electric actuators. Electric, Rack & Pinion, Diaphragm, Scotch Yoke, Failsafe, Manual Overrides, Gear Operators, Accessories.

Custom Design and Modifications:

Design and build service for customer special applications needs.

Other Services:

Sandblasting or shot blasting, epoxy coating on special valves.





Terminal & Pipeline Equipment

Specializing in liquid flow measurement

Smith Meters	Filtration Equipment	Flow Control Valves
Smith Replacement Parts	Filters & Coalesors	Blending Skids
Brooks/Brodie Meters	Strainers & Strainer Baskets	Prover Skids
Daniel Turbine Meters		

Liquid & Vapour Handling Equipment

Conceptual Design:

Siva provides specialized design and engineering services for the integration of equipment into total system needs.

Equipment Supply:

Fully staffed inside and outside sales personnel are ready to provide correct sizing of equipment against specific duty requirements.

Technical Support:

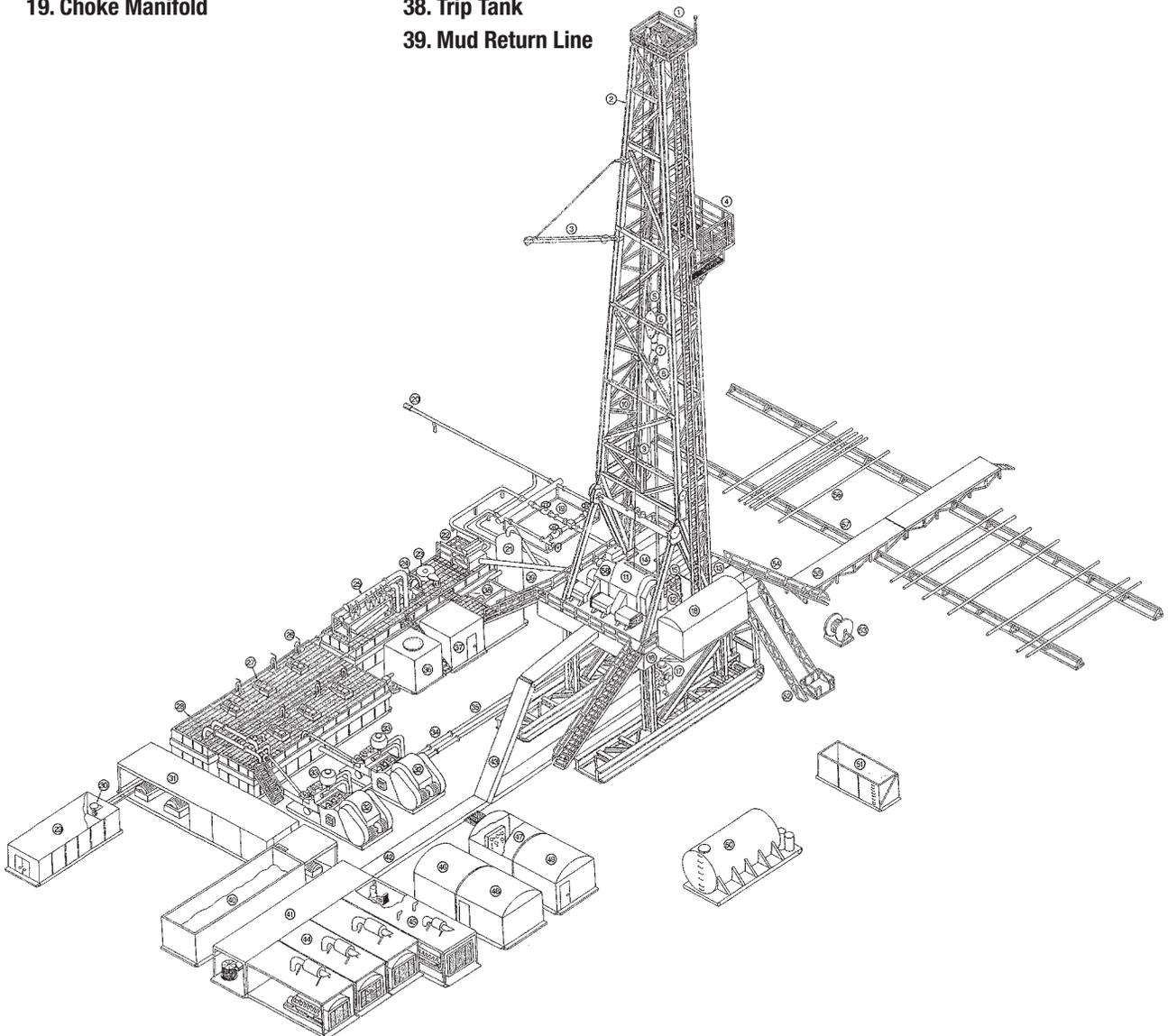
Whether your facility requires preliminary studies, current construction support or past sales start-up and instruction, Siva can provide the experience and personnel to assure a coordinated presence when needed.

Products available

Additive Injection	Foam Systems	Pumps
Air Elimination	Grounding Systems Filters	Safety Access Systems
Blend Systems	Level Control Valves	Strainers
Compact Provers	Loading Arms	Surge Cushions
Conservation Vents	Loading Racks	Surge Suppressors
Flame Arresters	Marine Valves	Swing Joints
Floating Suction	Oil/Water Separators	Tank Gauges
Flow Meters	Pressure Transmitters	Terminal Automation
Flow Switches	Pulse Dampeners	

Drilling Equipment

- | | | |
|-------------------------------|----------------------------|--------------------------|
| 1. Crown | 20. Gas Flare | 40. Drilling Water Tank |
| 2. Mast | 21. Mud Gas Separator | 41. S.C.R. House |
| 3. Catline Boom | 22. Shale Shaker | 42. Cable Tray |
| 4. Racking Platform | 23. Degasser | 43. Cable Elevator |
| 5. Drill Line | 24. Desander | 44. Engines & Generators |
| 6. Traveling Block | 25. Mud Cleaner | 46. Parts Storage |
| 7. Hook | 26. Mud Guns (Bottom Type) | 47. B.O.P. Closing Unit |
| 8. Swivel | 27. Mud Agitatore | 48. Work Shop |
| 9. Rotary Hose | 28. Mud Tanks (3) | 49. Pump Parts Storage |
| 10. Standpipe | 29. Mud Sack storage | 50. Fuel Tank |
| 11. Drawworks | 30. Mud Mixing Hopper | 51. Junk Bin |
| 12. Drillers Console | 31. Mud Mixing Pumps | 52. Personnel Elevator |
| 13. Pipe Serback | 32. Mud Pumps (2) | 53. Wire Line Stand |
| 14. Drill Floor | 33. Pulsion Dampeners | 54. Stairway w/Pipe Ramp |
| 15. Rotary Table | 34. Shock Hoses | 55. Catwalks |
| 16. Substructure | 35. Mud Discharge Lines | 56. Drill Pipe |
| 17. Blow Out Prebventer Stack | 36. Brake Water Tank | 57. Pipe Rack |
| 18. Dog House | 37. Mud Lab | 58. Auxiliary Brake |
| 19. Choke Manifold | 38. Trip Tank | |
| | 39. Mud Return Line | |



DRILLING EQUIPMENT

- Mud Pumps
- Top Drives
- Drawworks
- Rotary Tables
- Travelling Blocks
- Mud Pump Spares
- Drawworks Spares
- Rotary Table Spares
- Trav. Block Spares
- Hydraulic Power Units
- BOPs

DRILLING POWER SYSTEMS

- SCR Systems
- AC Drives
- AC Motors
- DC Motors
- Switchgear
- Engine / Generator Sets

JACK UP DRILLING RIGS

- Leg Structure Components
- Spud Cans
- Cantilever Skidding Systems
- Elevating Systems
- Pedestal Cranes
- Anchor Winches

MUD / SOLIDS CONTROL EQUIPMENT

- Shakers
- Mud Cleaners (Conditioners)
- Desanders
- Desilters
- Hydrocyclones
- Cutting Driers
- Degassers
- Centrifuges
- Centrifugal Pumps
- Cuttings Vacuum & Screw Conveyors
- Agitators & Mud Guns
- Screen Washing Machines
- Mud/Gas Separators

DRILLING RIG PACKAGES

- Land Rigs
- Modular Rigs
- Platforms
- Drillships
- Semi-submersibles

DERRICKS & PIPE HANDLING EQUIPMENT

- Masts (250T-1000T)
- Derricks (250T-1000T)
- Substructures
- Bridge crane Pipe handling Systems
- Fingerboards
- Casing Stabbing Boards
- Standpipe Assemblies
- Air Winches
- Deadline Anchors
- Hydraulic Catheads

OFFSHORE / SITE SERVICES

- PLC Engineers
- Drilling Systems Engineers
- Mechanical Service Engineers
- Project Managers
- Drilling Equipment Engineers

DRILLING INSTRUMENTATION & CONTROL

- Driller Consoles & Stations
- Operator Cabins
- Local Equipment Rooms

- Mud Handling & Process Systems
- Analogue Instrumentation
- Auto drillers
- Drilling Information & Reporting Systems
- Drilling Recorders
- Remote Data

INTEGRATION & ENGINEERING SERVICES

- System Integration
- Engineering & Safety Studies
- Advanced 3D Visualisation & Modelling
- Integration of drilling equipment
- Integration of pipe handling
- Onshore Technical Support
- Offshore Technical Support
- Equipment Repair
- Customer Training
- Driller Consoles & Stations
- Operator Cabins
- Local Equipment Rooms
- Mud Handling & Process Systems
- Analogue Instrumentation
- Auto drillers





Wellhead Control Panel

Wellhead Control Panel is a combination of electric, pneumatic, hydraulic and/or PLC based logic for either Single well or Multiple well control for both onshore and offshore applications.

Siva can supply Wellhead Control panels with various control options ranging from simple Pneumatic based control to completely automated solution with RTU PLC based (SIL2 or SIL3 rated) Safety Instrumented systems which can be monitored & operated from DCS remote locations.

Wellhead Control Panels along with Hydraulic Power Units, accumulators and Remote Terminal Units are all Engineered, Manufactured and Tested to meet stringent customer requirements & delivered as a single unit to worldwide customer sites.

All electrical and electronic controls are designed to meet Explosion proof, Flame proof or intrinsically safe hazardous area requirements as per international standards like FM, CSA BASEEFA etc., All instruments are certified by International authorities such as ATEX Directive, CENELEC, BASEEFA, U.L., C.S.A., and various others as per European & American standards suitable for offshore oil fields.

Chemical Injection Skid

Chemical Injection Systems supplied are independent of pump manufacturers therefore Siva is able to integrate any preferred pump supplier into the overall integrated system. Siva has worked closely with our Supply Chain to ensure that components proposed have been specifically designed and tested to meet the exacting standards our customers require for a reliable and efficient system.

Systems supplied by Siva are suitable to the Petrochemical and Process industries. Siva has designed and manufactured systems for a number of chemical injection applications such as,

- Corrosion Inhibitors
- Scale Inhibitors
- Demulsifiers
- Glycol
- Wax Inhibitors
- MEG Injection

Chemical Injection Pump Systems

Pump systems can be single injection outputs or multiple outlets including multi-chemical systems. We provide a complete system design and fabrication service and typically each system will contain:

- Chemical Dosing/Injection Pump, typically designed with a double diaphragm for increased reliability and safety. Siva is fully independent from any Chemical Injection Pump suppliers and therefore are able to integrate the most suitable pump for the application.
- Chemical Storage Tanks, fabricated from 316 Stainless Steel or similar, designed in accordance with client requirements and/or internal design calculations.
- Pulsation Dampening
- Injection Rate Control Devices (IRCD's)
- Injection Rate/Flow Meter
- Isolation Valves, either remote or local
- Pressure Monitoring Instrumentation, either remote or local
- Safety Devices to protect against over pressurization

Manufacturers we provide

3M	DEWALT	KARCHER	ROSS-HILL
AEROQUIP	DRAKE	KELLY	RS COMPONENTS
ALEMITE	DRAWWORKS	KEMPER	SIEMENS
ALFA LAVAL	DRECO	KEM-TRON	SMFI
ALLISON	DRILLING CONTROLS/	KMC	SMITH INTERNATION
ANSON	KELLY	LAMB	SPEEDQUEEN
AOI	DRIVES INTERNATIONAL	LANDA	SPM
APPLETON	DWYER	LETOURNEAU	STEWART & STEVENS
AQUA-CHEM	DXP	LINK-BELT	STOCKHAM
ATLAS COPCO	EATON/AIRFLEX	LK OILFIELD	STOCKTON VALVE
BAKER HUGHES	EATON/OILSTATES	LOADCRAFT	SULLAIR
BAKER SPD	ECKEL	LOVEJOY	SULZER
BALDWIN	EMD	LUFKIN	SWACO
BAYLOR	EMERSON	M/D TOTCO	SWAGELOK
BESTOLIFE	FANN	MAKO	SYLVANIA
BILLY PUGH	FANN	MARATHON	THOMAS & BETTS
BITZER	FISHER	MATHEY	TIMKIN
BJ VARCO	FLOWLINE	MID-CONTINENT	TITAN
BOP PRODUCTS	FMC	MIDWEST HOSE	TOWNSEND
BRANDT	GAITRONICS	MISSION	TRI-FLO
CAMERON	GARDNER DENVER	MSA	TRIPLE S STEEL
CAMERON	GATES	NATIONAL OILWELL	TRIUMPH
CANRIG	GE	VARCO	TUBE SUPPLY
CARDWELL	GEARENCH	NUFLO	US ELECTRIC
CARRIER	GLOBAL OIL TOOLS	OMC	UVEX
CATERPILLAR	GOTCO INTERNATIONAL	OMC	VERSA
CAVINS	GOULD	OMSCO	VIGIL
CONTINENTAL EMSCO	GOVERNOR	OTECO	VTECH
COOPER	GRACO	PACKARD	WAGNER
COPELAND	GRAINGER	PARKER	WCBOP
CPI	GRIFFITH	PILECO	WEATHERFORD
CRANECO	GRIFFITH	PROTO	WECO
CROMPTON	HACKER	PARTLOW	WELCH ALLYN
CROSBY	HAGEMEYERHAMWORTHY	PYLE	WESTINGHOUSE
CROSSOVER	HANKINSON	QUINCY	WHEATLEY
CROUSE-HINDS	HASKEL	RACOR	WICHITA
CUMMINS	HAWK	REAMCO	WILDEN
DANFOOS	HAWS	RETSCO	WILSON
...VIS INSTRUMENTS	HONEYWELL	REXROTH	WIRE ROPE INDUSTRY
...BI SALADELMAG	IDECO	RIDGID	WOMACK
DEMCO	INGERSOLL RAND	RIG-A-LITE	WOODWARD
DERRICK	INNOVATIVE ELECTRONICS	ROCKWELL AUTOMATION/	WUENSCH
DETCON	JOHNSON	ALLEN BRADLEY	ZERO FAST
DETROIT		ROKBIT	
DEUTZ		ROSS	

Electrical Equipment

Siva & Associates Inc. is an electrical distributor stocking ABB, Siemens, Square-D, Modicon, Telemecanique, Danfoss, products. Specifically, AC/DC Drives and motors, variable speed drives, UPS Systems, Cables, Transformers, Surge Protection Devices, Circuit Breakers, Power Metering products, Bus ways, Panel boards, other Power products & Control Gear, Relays, Soft starts, Fuses, Voltage Regulators, Arrestors.

Motor Controls (IEC or ANSI/NEMA)

We realize that most motor installations involve lower horsepower motors with simple control requirements. From single application motor starters to complete Motor Control Centers, we can provide the motor control options to meet the customer's needs. We can provide everything from simple pushbutton controls to complex automation interfaces.

- Low & Medium Voltage
- Motor Control Centers (MCC's)
- Motor Starters
- Full voltage across the line starters (FVNR & FVR)
- Two (2) speed starters
- Wye-Delta starters
- Capacitor starters
- Reduced voltage starters
- Reduced Voltage Autotransformer Starters (RVAT)
- Reduced Voltage Solid State Starters
- Soft Starters
- Synchronous Motor controls

MOTORS – WESTINGHOUSE/SIEMENS/BALDOR/WEG/ABB/GEC

Motors for all systems are available from us, thanks to our close ties with several motor vendors. We can provide new or re-manufactured* motors

of any size to complete your system. These relationships also provide us the ability to built and test large horsepower systems as well as medium voltage gear.

Power Factor Correction & Harmonic Filtration

We know that, especially for generated power systems, a lousy power factor means the system is operating inefficiently. We also know that excessive harmonic distortion can actually cause improper operation and/or equipment damage. We supply Power Factor Correction and Harmonic Filtration equipment, which can be a critical part of a power system. These systems can be fixed stage or automated switching type, depending on the system requirements. The automated switching type monitors the Power Factor (PF) or harmonic loads and automatically switches the correct stages on or off. This keeps the PF above the required levels or total harmonic distortion below acceptable levels.

- Power Factor Correction equipment (PFC) up to 34 kV
- Harmonic Filters for the 5th, 7th, 11th, 13th, 17th and the 19th harmonics up to 34 kV

Drives

Drives are the cornerstone for Siva We provide both AC and DC variable speed drives for all applications. Our approach uses standard products and customizes the packaging and control aspects to fit the customer's needs. This approach allows us to supply special AC & DC drive configurations. Custom cabinet designs allow us to supply a smaller, more dense, drive package if size constraints are an issue. We can also meet special environmental constraints, such as water cooled, air conditioned, dust tight, etc., so that the equipment will operate properly under the installed conditions.

- Low Voltage AC variable speed drives 690 volt AC and below
- Medium Voltage AC variable speed drives up to 6600 volt AC
- DC variable speed drives 750 volt DC and below



**Automation & Control –
ALLEN BRADLEY/MODICON/GE FANUC/SIEMENS**

We can supply all of your control requirements. From pushbutton control panels to total plant automation utilizing PLC's and Touch screen displays, we have the experience to provide the best controls for the customer's needs.

Today's technological advancements have created almost unlimited possibilities for plant automation. With redundant and fault tolerant PLC's utilizing the latest in industrial communications, it is possible greatly minimize downtime while maximizing access to the processes. Internet options even allow control and diagnostic options via the internet. If desired, the customer can even get an e-mail should a problem occur.

- Motion Control Automation and Total Plant Automation Programmable Logic Controllers (PLC's)
- Control Stations
- Human Machine Interfaces (HMI)
- SCADA systems

Motors - AC

Aggregate Duty
Brake Motors
EPACT
Explosion Proof
Farm Duty
General Purpose
IEC
Inverter Duty
Kiln Duty
NEMA
Premium Efficiency
Pressure Washer

Pump

Servo
Severe Duty
Two Speed
Vector
Wash down
Induction Motors
Wound Rotor
Induction Motors
Synchronous Motors
AISE Mill Motors
Gear Motors
Brake Motors

Motors - DC

Brake Motors
Brushless
Explosion Proof
General Purpose
Integral Tachometer
Metric
Motor Brushes
Permanent Magnet
Servo
Washdown

TOOLS

Alignment Tools
Bearing Heaters
Bearing Installation/Removal Tools
Bearing Pullers
Bearing, Bushing, and Seal Drivers
Calipers
Chain Cutters
Chain Hoists/Trolleys
Complete Crane Systems
Crane Components
Electric Chain Hoists/Trolleys
Gear Pullers
Hydraulic Pullers
Hydraulic Pumps
Hydraulic Rams
Hydraulic Tools
Induction Heaters
Jacks
Lubrication Equipment
Maintenance Kits
Mobile Floor Cranes
Pry Bars
Shim Stock
Shop Presses
Slide Hammers

Torque Wrench
Vibration Monitoring Equipment

CABLES

Flexible Cables (Portable Cords)
Multi-Conductor Cable
Instrumentation Cable
Multi-Paired Cable
Armor Cable
Coaxial Cable
High Temperature Cable
Fiber Optics
Plenum Cables
Cable Assemblies
Traffic Signal Cable
Connectors
Medium Voltage Power Cable
Building Wire
Voice/Data Connectivity Products & Cable
Tray Cable
Cable Management Products
Building Automation/HVAC Control
Hook-Up Wire
Fire, Security, & Card Access

LIST OF PUMP MANUFACTURERS AND TYPES THAT WE MOST COMMONLY DEAL WITH.

Pump Manufacturers:

GRUNDFOS®
Yamada®
PACO®
IMO®
WAUKESHA®
GOULDS®
TOYO®
VIKING®
ALMA®
BUSCH®
HITACHI®
ALPHINE®
GoldStar®
WILDEN®
PEERLESS®
CRANE®
ALMA®
BARNES®
MILTON ROY®
SULZER®
Bornemann®
Gardner Denver®
NASH®
Aurora®
Blackmer®
ALLWEILER®
Sundane®

Pump Types:

Centrifugal Pumps
Magnet Drive Pumps
Metering Pumps
Progressive Cavity Pumps
Piston & Plunger Pumps
Abrasive and Corrosive Pumps
Regenerative Pumps
Rotary Gear Pumps
Diaphragm Pumps
Sump Pumps
Chemical Pumps
Turbine Pumps

**NOBODY REPAIRS
AS MANY PLC'S AS
WE DO!!!**

ALLEN BRADLEY

1791 Series I/O
1770-SA
1770-SB
2700 Series
2755 Barcode Family
2803 Vision System
All Starlinks
Advisor
Advisor 2
Advisor 2+
Intelligent Antenna
Intelligent Panel System
Micrologix 1000
M-10 Mass Storage
M-11 Mass Storage
M-12 Mass Storage
PLC1
PLC2
PLC2 Mini
PLC-2/05
PLC-2/15
PLC-2/16
PLC-2/17
PLC-2/20
PLC-2/30
PLC-3
PLC-3/10
PLC4
PLC5 - 5/10, 5/11, 5/12,
5/15, 5/20, 5/25, 5/30,
5/40, 5/40L, 5/60,
5/60L, 5/80
PLC-5/250 Pyramid System
SLC-100 Family
SLC-150 Family
SLC-500 Family

AUTOMATE

15 Series
20 Series
40 Series

AUTOMAX

AMX 6010, 6011, 7010
Dcs 5000

BARBER COLMAN

Edac
Maco IV
Maco V
Maco VI
Maco 8000

CINCINNATI - MILACRON

Apc - 1
Apc - 500

**R CUTLER
HAMMER**

D-100
D-200
D-500

**GENERAL
ELECTRIC**

90/30
90/70
90/20
Genius I/O
Series One
Series One Junior
Series Three
Series Six
Series Six Plus

HONEYWELL

620-10
620-15
620-16
620-20
620-25
620-30
620-35
621 Series I/O System

IDEC/McMAHON

FA-1

ISSC/IPC

90 Series
300 Series

MITSUBISHI

F1 Series & F2 Series
Series "A"
Series "Ann"

MODICON

184
384
484
584
884
984
Compact 984
Micro 84
Mirco 984
PC0984
Quantum

OMRON

S6 Series
Sysmac C20
Sysmac C40K
Sysmac C200H
Sysmac C210

SHARP

W51
W100

SIEMENS

525 Series
535 Series
545 Series
555 Series
S5-110
S5-115
S5-150

SQUARE D

100
300
400
500
700
8881 Series

STRUTHERS DUNN

Director 4001

TEXAS

INSTRUMENTS

100 Series
500 Series
505 Series
510 Series
520 Series
530 Series
545 Series
560 Series
5Ti
PM-550

TOSHIBA

Ex-20 Plus

WESTINGHOUSE

PC 700
PC 900
PC 1100
PC 1200

YASKAWA

Memocon
SC684
SCR84

SCU84
General Electric
Hewlett Packard
Lambda
LH Research
NCR
PMC
Powermate
Powertec
Slo-syn
Sola
Sorenson
Standard
Unimate

PRINTERS

DEC
Texas Instruments
Outdata
Epson
Abco
Cannon

SIGNAL

CONDITIONING

Daytronics
DPC 322
Eaton-Cutler/Hammer
Himmelstein
TEST INSTRUMENTS
Capacitor Checkers
Curve Tracers
Digital Voltmeters
Frequency Counters
Function Generators
Indicators
Oscilloscopes
Oscillographs
Signal Generators
Strain Gage
Strip Chart Recorders
X-Y Recorders

TRANSDUCERS

Differential Pressure:
Viatron
Rosemount
Ingersoll/Rand
Pressure:
Viatron
Rosemont
Bell & Howell
Himmelstein
Torque:
Atlas Copco

VACUUM GAUGES

Leybold Hereaus
Televac

DRIVES

ABB/BBC
 AC Technologies
 Adia
 Aeg
 Allen Bradley
 Alstom Parvex
 Altivar
 Automation
 Baldor
 Barber Colman
 Barmag
 R Barrett/Demag AGV
 Benslew
 Bess
 Bosa
 Bosch
 Boston Gear
 Briketon
 Camco
 Chicago Pneumatics
 CMC
 Compumotor
 Contraves
 Ceronics
 Cutler Hammer
 Danfoss
 Dart
 Denso
 Devilbiss
 Digital
 Eaton/Dynamic
 Elec. Cyclinder
 Electro-Craft
 Emerson
 Extron
 Fata AGV
 Fenner
 Fincor
 Fuji
 Furnas
 General Electric
 Getty's
 Glentek
 Gould/Modicon/LCC
 GSE
 Halmar/Robicon
 Hauser Electronic
 Hitachi/Dynamic
 Horyu
 Hydepark
 Ibec
 Indramat
 Industrial Drives
 Ingersoll Rand
 Inland
 KB Electronics
 Kuka
 Lovejoy
 Louis Allis
 Magentek
 Mektron
 Minark
 Mitsubishi
 Moog
 Motion Control
 Movitrac
 NEC
 New England
 Nikki Denso
 NSK
 Nordic
 Pacific Scientific/SPS
 Parajust
 Parametrics
 Parker
 Payne
 PMI
 Power Tec
 Ramsey
 Ransburg Corporation
 Reliance
 Reta
 Sanyo Denki
 Seco
 Servo Dynamics
 Siemens
 Simovert
 Slaughterback
 Slo-Syn
 Southern
 Square-D
 Stephens
 Superior Electric
 SWF
 Sweo
 Texas Instruments
 Toei Electric Co.
 Toshiba
 Ubod
 Unico
 Universal Voltromics
 Valentine
 Valtron
 Vectrol
 Vee-Arc
 Velconic
 Vickers
 Waco
 Warner
 Westinghouse
 Westamp
 WER
 Whedco
 Woods
 Yaskawa

FULLY EQUIPPED SERVO MOTOR REPAIR DEPARTMENT

ABB
 Aeg/Gould/Getty's
 Allen Bradley
 Alstom Parvex
 BBC
 Bosch
 Cincinnati Milacron
 CMC/Contraves
 Cyclo Reducer
 EG&G
 Electro-Craft
 Emerson
 Fanuc
 Indramat
 Industrial Drives
 Inland Kollmorgen
 Infranor/Klika
 Mavilor
 Moog
 Nachi
 Nikki Denso
 NSK
 Pacific Scientific
 Panasonic
 Siemens
 Westamp
 Yaskawa

ENCODER

Absolut
 Accu-Coder
 Aerospace
 Allen-Bradley
 Anicam
 Auto Tech
 Baldwin
 Balluff
 BEI
 Branson
 CMC
 Computer Optical
 Products
 Data Metrics
 Data Tech
 Data Technology
 Disc Inst
 Durant
 Dynamics
 Dynamics Research
 Corp.
 Dynapar
 Electronic Counter &



Control
 Emerson
 Encoder Products
 Fanuc
 Gemco
 Guhley Precision
 Heidenhain
 Hensster
 Hercules
 Hohner
 Horner Electric
 Ledex
 Leine & Linde
 Litton Industries
 Lucas Ledex
 Micron
 Motion Control
 Namco
 Neotech
 Opal
 Phillips
 Prab
 PSI
 Reliance
 RSF
 RSF Elektronik
 Sansei



Sequential
 Sumtak
 T&R Electronics
 Tamagawa Seiki
 Tekel
 Unico
 Vernitech
 WPC
 Yaskawa

Inspection & Expediting

Siva offers inspection and expediting services to valued customers worldwide. These services involve equipment such as Electric Motors, Generators, Switchgears, Gas Turbines, Pressure Vessels, Process Analyzers, Distributed Control Systems, Compressors, Pumps, etc.

In general, we provide inspection and maintenance services to all kinds of equipment used in Oil and Gas, Power Stations, Mining Industries and other heavy industrial projects. We have expertise in the Field of Vendor Surveys, Inspections, Order Follow-Up and Expediting. Witnessing of factory test, supervising packing and shipments. Currently, our expertise is utilized within Canada and the USA.

PHASE ONE (Inspection Activities)

- Components, parts and enclosure assembly
- Sub-supplied materials
- Review of vendor documentation, drawings, internal unwitnessed test results and other data
- Other activities / survey as per customer requirements

PHASE TWO (Expediting)

The key aspect in ensuring timely completion of an order is implementation of effective expediting.

Siva provides the following services:

- Review of sub-orders and monitoring of sub-supplied materials to principal manufacturers
- Monitoring of continual production progress
- Reports on finality of overall project progress

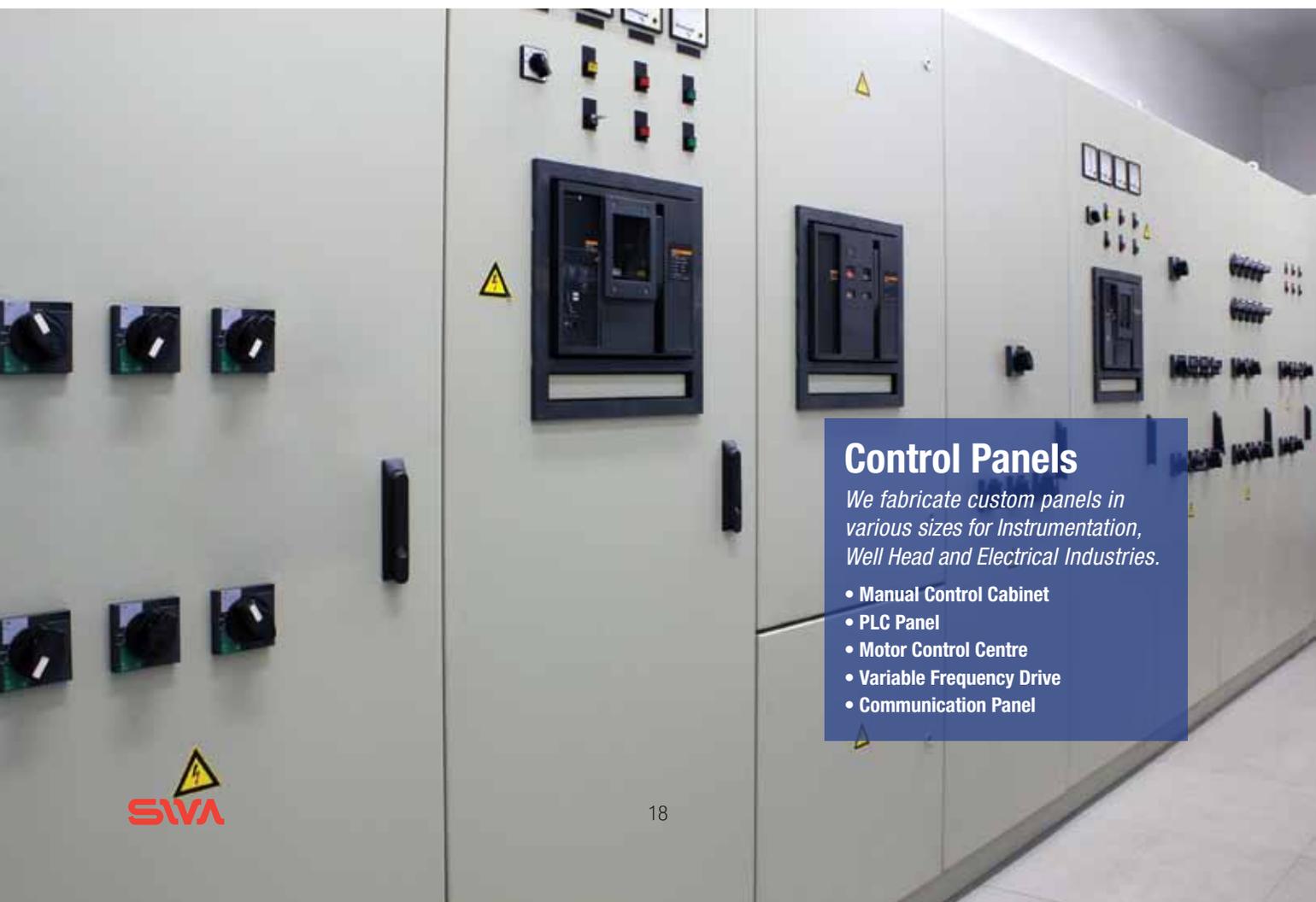
PHASE THREE (Witnessing of tests)

- Functional tests on consoles and electrical panels
- No / Full load and heat-run tests
- Vibration tests and performance monitoring

- Temperature rise, field and bearing tests
- Safety tests
- Pressure tests and gas seal leak tests
- Pressure and safety tests of pipes, valves and manifold engine, generator, rotor balancing and run outs
- Generator stator immersion and performance tests
- Calibration of instruments including repeatability, hysteresis and accuracy
- Control system functional tests including interlocks, alarms and other functions
- Other tests and test runs as required by the end user

PHASE FOUR (Packing inspection and shipment)

- Final inspection of the packing of major equipment and spare parts
- Verification of items and quantities as per purchase orders
- Crafting and the shipping marks, packing list and shipping documents



Control Panels

We fabricate custom panels in various sizes for Instrumentation, Well Head and Electrical Industries.

- Manual Control Cabinet
- PLC Panel
- Motor Control Centre
- Variable Frequency Drive
- Communication Panel

SIVA INSTRUMENTS & ELECTRONICS CENTRE FOR CALIBRATION

TRAINING PROGRAM ON CALIBRATION PRINCIPLES & TECHNIQUES

About the Training Program ...

Instrumentation & Electronic/Control Graduates from other discipline – fresh from Engineering Colleges / Technical Institutions – aspiring for a career in the field of Instrumentation, need to equip themselves adequately on the practical aspects of Instrumentation – to enable them to face the challenges with confidence as they enter the field / start their career.

Practicing Engineers in the field of Instrumentation – more particularly in the field of Calibration - also need to avail opportunities for getting adequately trained (& updated) in the modern concepts of Calibration Techniques, Calibration Lab Management Techniques & the diverse requirements of ISO/IEC 17025:2005 (for obtaining Accreditation of Calibration Labs etc.)

Siva's Centre for Calibration have drawn out a four fixed Modules & well structure Training Program, duly considering the needs of the above professionals vis-à-vis the industry / institutions they serve / aspire to serve!

The Training Modules include an Intro / Basic Module on Instrumentation – Test & Measuring, Calibration & Process Monitoring and Control Instrumentation & Equipments is followed by 3 tiered Modules on Calibration – Basics, ISO/IEC 17025 & Lab Management.

Training facilities at Siva, include ...

- Excellent learning ambience : Air-conditioned hall with Audio System, Laptop Computer & LCD Projector
- A variety of Process Monitoring / Control (Field) Instruments & Equipments & Calibration Instruments for hands-on practical training.
- Specially designed Calibration Test Benches with Master Standard Modules for wide ranging Parameters & other utilities, all integrated by Calibration Management Software for enabling practice Manual, Semi-automatic, Calibration Techniques.
- A unique integrated Software for actively participating & interacting during training.
- Modular, well structured & tiered to suit Training Courses

Module 1: Calibration Principles & Techniques

This Module offers an introduction to basic concepts of Calibration. Deals in brief the overall concept of Calibration, Terminology used and Principle of Traceability. Calibration Techniques and a note on Accuracy are touched upon. The concept of Uncertainty in Measurement is introduced along with Proficiency Testing. A brief note on pre-requisite for Certification is added. This Module is to be attended by Technicians, Calibration Engineers and persons responsible for Laboratory Management at various levels.

Topics covered - in detail **Uncertainty of Measurement (UOM)**

The process of Measurement involves various Elements & Parameters – characteristics & behaviour of Master Instrument, environ-

mental parameters, operating conditions, variations in resources performances, competency of personnel. All these introduce an element called "Uncertainty" in the process of Measurement resulting in "certain amount of Uncertainty" in the "observed value of Measurement". This Module goes into the depth of identifying and quantifying each of the parameters and estimating the combined effect of all those parameters on the measured parameter. It is suggested that Calibration Engineers make it a point to attend the Module, a basic technical requirement of ISO/IEC 17025:2005.

Traceability

Concept gives total confidence in the measurement taken which ensures the validity of measurement during Calibration to an Internationally / Nationally accepted reference, through an unbroken chain. A better understanding of Traceability makes the Calibration Engineers and the functional management staff to ensure and keep the chain of Masters used for Calibration properly calibrated – an important criteria for Accreditation.

Best Measurement Capability (BMC)

BMC is the minimum amount of Uncertainty, a Calibration Laboratory will introduce in the process of Measurement of a parameter an instrument is intended to measure generally. It depends upon the capability of a laboratory's resources – human, infrastructure facility, equipment, environment etc. Scope of Accreditation of a Laboratory is based on BMC with regard to the particular parameters. Understanding the concept and estimation of BMC require thorough knowledge of estimation of UOM. The Best Measurement Capability of the Laboratory to a great extent depends upon the technical competency of the Calibration Engineers. Laboratory Functional In-charges therefore need to understand the concept as the Laboratory has to be technically assessed for its BMC to consider the same for scope of Accreditation.

Practical Training *

The practical training covers imparting Standard Calibration Procedures to carry out Calibration in Mechanical, Electro-Technical & Thermal Measurements.

This includes Calibration of DMMs, Multi-function Calibrators, Electronic Controllers, Voltmeters, Ammeter to name a few in the field of Electro-Technical Measurement.

In Thermal Measurements Calibration Techniques for RTD, TC, Temperature Gauges, Temperature Switches, Temperature Transmitters are included.

Calibration of Pressure Gauges, Pressure Calibrators, Pressure Transmitters, Dead Weight Testers, Pressure Switches etc. are covered in Mechanical Measurements.

* The proposed Practical Training will cover the following Instruments / Equipments:

Mechanical Measurements

- ✓ Pressure Dead Weight Testers (Hydraulic & Pneumatic)
- ✓ Vacuum Gauges / Switches Transducers
 Transmitters Manometers
- ✓ Indicators / Controllers Calibrators
- ✓ Balance
- ✓ Standard Weights

Electro-Technical Measurements

- ✓ Voltmeter / Ammeter
- ✓ Power / Energy Meter
- ✓ Voltage / Current Calibrator
- ✓ Multi-function Calibrator
- ✓ Digital Multimeter
- ✓ Decade Resistance Box

Thermal Measurements

- ✓ Ovens / Furnace / Incubators / Autoclaves
- ✓ RTD, TC, Thermistor, Vapour Pressure
- ✓ Gas / Hg in Glass, Bimetal Thermometers
- ✓ Temperature Transmitter
- ✓ Temperature Gauges
- ✓ Temperature Indicator / Controllers
- ✓ Temperature Switches
- ✓ Temperature Sources / Calibrators

Miscellaneous

- ✓ RH Meter
- ✓ pH Meter
- ✓ Conductivity Meter

Duration: 4 days (Monday to Thursday)

Module 2 : An Introduction to ISO/IEC 17025:2005

This Module – discusses the various clauses of the standard to give an exposure to all the Laboratory personnel regarding the salient features of the standard to ensure quality of Calibration results.

A detailed program on ISO/IEC 17025:2005

Discusses - in depth – each clause of the standard – 15 clauses in Management and 10 clauses in Technical requirements. This Module enables the Engineers & Senior Personnel to have a thorough understanding of the requirement of the standard for effective implementation of ISO/IEC 17025:2005. Sample exercise, notes & questions help the process of understanding.

Proficiency Testing

(Inter-Laboratory Comparison – ILC)

This is one of the QC Techniques for monitoring the validity of Calibrations undertaken. Each Laboratory is to participate once in 4 years for the parameters it has to be accredited. This Module which needs to be attended by Senior Personnel, deals with the PT techniques and the method of analyzing PT results. NABL organizes the PT Program. Concepts to organize self initiated Inter-Laboratory Comparison.

Internal Audit

It is a Monitoring Tool used by the system to assess the effectiveness and compliance of the system. This Module is exclusively meant for the Top Management of the Laboratory covers the philosophy of Audit and the Techniques of conducting an effective Audit. Lot of exercises and mock Audits prepare competent International Auditors for system effectiveness.

Duration: 4 days (Monday to Thursday)Note:

A trained Calibration Engineer with 2/3 years experience should attend the course.

Module 3: Calibration Laboratory Management Program - covers following aspects:

An overview of Calibration

(This is to give a total picture about Calibration – from need and definition of Calibration to getting Accreditation to the Calibration Laboratory)

- Need for Calibration & basics in Calibration
- About ISO/IEC 17025:2005
- About Documentation
- Internal Audit
- Management Review
- Tips on Laboratory Management
- Process of Laboratory Accreditation

Awareness about ISO/IEC 17025:2005

This Module – in brief – discusses the various clauses of the standard to give an exposure to all the Laboratory personnel regarding the salient features of the standard to ensure quality of Calibration results.

Documentation

Module gives hint to the preparation documentation system of ISO/IEC 17025:2005 like Quality Manual, System Procedure, Work Instructions etc. List of reference documents of NABL, EAL, OIML are included for a better understanding to effectively implement ISO/IEC 17025:2005 System pertaining to Management & Technical requirements. Senior personnel of the Laboratory Management are to attend the Module.

Laboratory Management & Management Review

This Module prepares the Senior Laboratory Personnel to understand the nuances of managing effectively an Accredited Laboratory.

QC Techniques

Discusses QC Techniques – ILC, Testing of retained items, Re-testing, PT etc.

The process of getting Accreditation

This Module is a must for all Laboratory Personnel as it educates the Personnel regarding the steps involved in Accreditation. This will enable all to participate in Accreditation as a whole team.

Duration : 2 Days

For Modules 1, 2 & 3 – Training Method & Evaluation will be as follows :

All theoretical aspects will be presented on Laptop Computer to Projector and the detailed discussion with interactive.

Exercises will be supplied to the individual in the specified formats to the trainees and the steps are to be worked out by the trainees (using scientific calculators) and results are submitted for assessment and evaluation by the Siva Trainer.

Regarding actual Calibration, detailed Calibration Principle / Methods / Procedures will be discussed for each type of Calibration in the Training Hall and the Calibration of maximum number of possible instruments will be arranged as per the availability of instruments dividing into batches of 2 or 3 (after finalization of the list of instruments / system). Each Trainee is to enter the details of recording and calculate errors in percentage of reading or full scale and preparing the Calibration Certificate. A sample case of Uncertainty may also have to be worked out.

Though the assessment is continuous, a final examination covering all aspects of theory & practical will be conducted for overall assessment and issue of Certificate.

NOTE :

1. At the completion of Process Monitoring and Control Instruments Module & Module 1 – the Trained Engineers will have acquired the competency to work in an Accredited Calibration Laboratory as a Calibration Engineer.

2. An experienced Calibration Engineer after completing Module 2 will have the competency to conduct Internal Audit – a mandatory requirement for an Accredited Laboratory.

3. An experienced Calibration Engineer having attended Modules 1,2 & 3 over a period of time will have acquired both Technical & Management competency to organize and manage an Accredited Calibration Laboratory.

Note :

1. The above Training Programs are conducted at regular intervals at Siva's facility, Chennai – during the middle of the month.
2. If sufficient number of candidates are sponsored by any organization, one or more of these Training Programs can also be conducted on dates convenient to the organization.
3. These Training programs can also be organized at customers' premises – if the number of candidates warrant this.
4. Combination of Modules can also be organized as per customer request.

Calibration Engineers of a Calibration Laboratory attending the course will enhance their technical capability and competency to meet the technical requirements as per ISO/IEC 17025:2005.

Module 2 : An Introduction to ISO/IEC 17025:2005

This Module – discusses the various clauses of the standard to give an exposure to all the Laboratory personnel regarding the salient features of the standard to ensure quality of Calibration results.

A detailed program on ISO/IEC 17025:2005

Discusses - in depth – each clause of the standard – 15 clauses in Management and 10 clauses in Technical requirements. This Module enables the Engineers & Senior Personnel to have a thorough understanding of the requirement of the standard for effective implementation of ISO/IEC 17025:2005. Sample exercise, notes & questions help the process of understanding.

Proficiency Testing (Inter-Laboratory Comparison – ILC)

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Internal Audit

It is a Monitoring Tool used by the system to assess the effectiveness and compliance of the system. This Module is exclusively meant for the Top Management of the Laboratory covers the philosophy of Audit and the Techniques of conducting an effective Audit. Lot of exercises and mock Audits prepare competent International Auditors for system effectiveness.

Duration: 4 days (Monday to Thursday)

NOTE: A trained Calibration Engineer with 2/3 years experience should attend the course.

Module 3: Calibration Laboratory Management Program - covers following aspects:

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- Tips on Laboratory Management
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Documentation

Module gives hint to the preparation documentation system of ISO/IEC 17025:2005 like Quality Manual, System Procedure, Work Instructions etc. List of reference documents of NABL, EAL, OIML are included for a better understanding to effectively implement ISO/IEC 17025:2005 System pertaining to Management & Technical requirements. Senior personnel of the Laboratory Management are to attend the Module.

Diesel Engines & Compressors

Siva is a specialist company Group offering a cost effective and comprehensive professional service throughout the world. Our team of highly trained staff and engineers are experienced in all types of diesel machinery and associated plant including pumps, compressors, reduction gearing, clutches and turbochargers.

We can offer the best solutions and prices for almost types of Ships built in Shipyards such as Mathias Thesen Werft, Warnowerft, Stralsund, Krasnoye Sormovo; Nizhny Novgorod and others built France, Russia, Germany & Poland. Operating from our head office and stocks in France, Germany and Portugal, we serve and supply the seagoing vessel, river ships, and fishing fleets with diesel engine spare parts and technical marine equipment. Well-Known ship owners, ship management companies and shipyards on all continents have built up their confidence in us and become our regular customers.

The ship builders and dockyards as well as the heavy industry in Europe and overseas enjoy our service as general supplier of ferrous and non-ferrous metals, pipes, fittings, flanges etc.

Due to the long-standing experience and good co-operation with leading manufacturers worldwide, Part Yard Lda as a qualified supplier range. Consignments are of original spare parts from our highly qualified and certified manufacturers and OEM suppliers what we can prove and guarantee.

Our committed and experienced team guarantees you a thorough handling of each enquiry.

Company's Marine Activities:

Deliveries of diesel engine spare parts and their components, complete deck and engine equipments, electrical stores, from East and West European manufacturers to ship owners and ship management companies, fishing fleets, shipbuilding yards and ship repair yards as well as trading companies.

Cost Effective Power Solutions

For every power challenge there's a solution that fits exactly. So, rather than 'shoe-horn' a ready-made offering to try and meet your needs, we'll do everything necessary to engineer a solution to suit you and your business.

For example, we not only analyse your current needs, we also look into the likely future of your business and energy consumption, to give you the best possible solution.

Another example: if transportability is vital to get the power you

Distributor, repair, service & spare parts

Marine & Industrial Steam Boilers / Thermal Oil , Heaters Industrial Oil & Gas burners.

Engineering / Consulting

Boiler Installations, Heating Systems, Combustion Systems & Energy Saving / Energy Management.

Company's Metal Activities:

Our export department has been set up to serve the worldwide demands from shipbuilding yards, ship repair yards as well as heavy industry such as steel work plants, aluminium and nickel works, industrial cement works, power stations, onshore and offshore plants, railway plants. We deliver high-quality ferrous and non-ferrous metals, profiles, sheet metals, tubes, fittings, flanges, valves, according to all national quality standards and classification of acceptance.

Company's Industrial Activities:

Efficient supplier of Industrial equipment

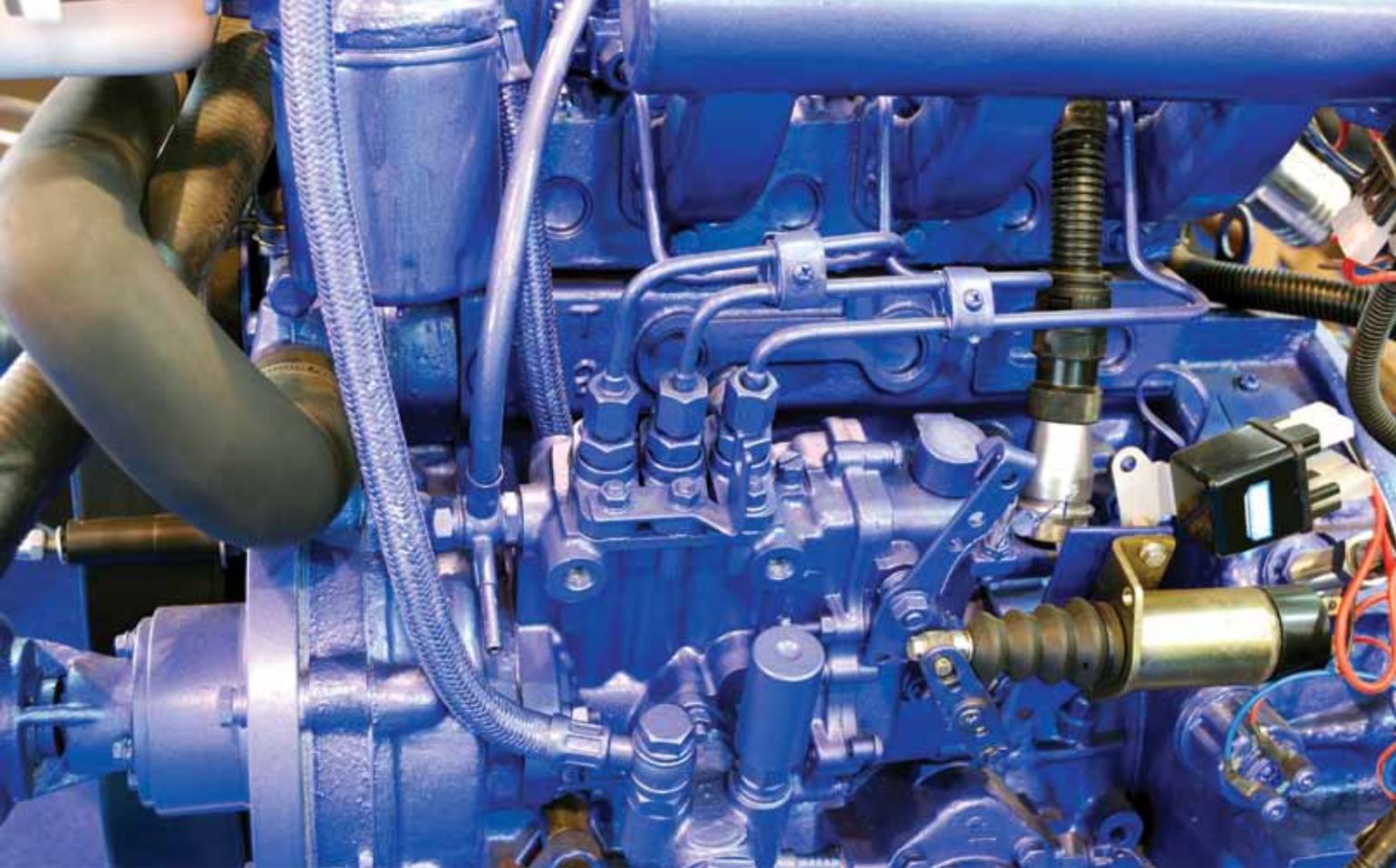
Due to our multiple contacts world-wide, PartYard also offers the supply of all kind of industrial equipment, industrial spare parts, including engineering support. Export of investment goods and industrial spare parts from East and West European manufacturers. We have already carried out successfully a wide range of industrial projects. Here is our short scope of industries, which we have supplied in the latest past:

- Heavy-metal industry
- Onshore industry
- Offshore industry
- Power Plants
- Public institutes
- Printing Industry
- Shoe industry
- Other industrial operating trading companies.

need in a difficult location, we'll make sure the solution has built-in ease of movement and shipping to solve the challenge.

And to make things clear, we'll create a full feasibility study to show you exactly how the solution we propose for you will provide the exact fit you're looking for.

- Full GT plant design, supply, delivery, installation
- Re-engineering previously-owned equipment
- Short delivery periods and fast-track commissioning



- Significant cost savings over new plant purchase
- All equipment engineered to meet environmental legislation
- Modular design capability
- Re-engineering to suit a range of fuels

Gas Turbine Maintenance and Repair

Maintenance and repair is the mainstay of our business. Our service engineers are leading professionals in the industry, with many years of previous experience. This means you benefit from valuable experience without paying over-the-odds prices.

Our capabilities cover the entire life-cycle of the gas turbine with the main objectives:

Helping you save unnecessary costs through precision repairs

Maximising your turbine up-times

Improving performance to give you the best possible efficiency

One way we help to save costs is in our Failure Mode and Effects Analysis (FMEA) approach to maintenance. This allows us to prioritise crucial maintenance tasks over those which are not essential. For a typical 'A' service this can mean significant savings on typical

material costs. Over a six-year contract this could represent savings of £100,000 or more in material costs alone.

Turbine Efficiency's own repair solutions

We provide many innovative repair solutions, many of which are unique to Turbine Efficiency. In doing so, we can extend the life of core engine, combustion systems, rotors and blades at a fraction of the cost of using new replacement parts.

We can often create big savings on the cost of new replacement parts – with all repaired parts fully guaranteed and running as efficiently as if they were new.

Working with specialist partners

So committed are we to bringing you cost-effective, efficient and safe repair and maintenance solutions, we also search the global industry for the latest in materials and repair process technology. Our partners in the industry complement our own offering to bring you complete engine repair and maintenance solutions.

This includes the use of specialist high-technology welding, advanced thermal barrier coatings and metallurgical rejuvenation techniques to bring components back to their original 'as built' condition.

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SIVA

360° Instrumentation Solutions Provider

