

INDOWMAX



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OUR COMPANY



We specialize in following products & services:

- Instrumentation/ Electrical/ Marine Cables & Wires
- Control Valves - New and Refurbishment
- Metering Skids
- Petroleum Terminal Automation
- Analyzer Systems
- Environment Monitoring System
- Level Gauges
- Steam Engineering - Control Valve
- Rotameter
- PRDS & Desuperheater
- High Efficiency AC & DC Power Solutions
- Level Sensors
- Instrumentation, Flow Sensors & Control System
- Industrial Filters
- Cooling Towers
- Industrial Fans & Dampers
- Maintenance Contracts
- Pipes & Fittings
- CNC Machines Upgrade
- Transformer Explosion Protection
- Arc Protection
- Oil Drilling & Cementing Aids
- Plant Inspections & NDT Certification
- Training
- IT - Microsoft Share Point
- Fabrication of Steel Structure
- Diesel Generating Sets
- Constructions EPCC
- Sleeved, Lined & 'V' Notch Valves
- Cathodic Protection Systems

Few industries we serve:

- Oil & Gas Offshore
- Oil & Gas Onshore
- Power Plant
- Paper & Pulp
- Steel Industries
- Cement Plant
- Automotive Industries
- Marine Industries
- Microsoft Share Point

Our Vision

Is to be the leading international partner of engineering organizations offering solutions & services for various industries.

Our Mission

- Be the industry benchmark based engineering company
- Deliver latest technologies and innovative solutions
- Attract, develop and recognize talent
- Promote a culture of performance creating long-term value

Our Value

“Our focus is to have satisfied customers in terms of product, services and solutions”

Quality Policy

Indowmax (M) Sdn Bhd is fully committed to working in partnership with our suppliers and clients to achieve the vision of being the international leading partner in engineering field. We make a relentless effort to continually improve our products, services and solutions;

- Exceeding our customers' expectations
- Meeting or exceeding our turn around commitments
- Delivering superior operational and financial results

To achieve this result we commit to the following;

- Strong Line Management Leadership
- Clear Targets and Objectives
- Exceptional Talents and Technology
- Motivated and Involved Staff
- Mutually Beneficial Supplier Relationships
- Optimized Business Processes

INSTRUMENTATION/ELECTRICAL/MARINE CABLES & WIRES



Indowmax (M) Sdn Bhd represents in Asia pacific 40 years renowned **KEI Industries Limited** with an ambitious plan to become a world renowned manufacturer and exporter of wires and cables. Located in New Delhi, India, KEI Industries Limited is an established player in the power cable segment and among the largest cable manufacturing companies in India. The company manufactures high and low tension cables (EHT, HT & LT), control and instrumentation cables, marine cables, house wires and stainless steel wires. The company also is one of the few companies to manufacture specialty cables including braided cables, fire survival and Zero halogen cables.

Electrical Cables

• **MV XLPE Insulated Armoured Cables**



Application

Power cables for medium voltage (up to 33kV) are used in Outdoor cable ducts, Cable trays, Conduits or underground locations under mechanical stresses in power and switching stations, Local distribution systems and Industrial plants.

Standards

- BS 6622
- IEC 60502-2

• PVC Insulated Armoured Cables

Application

- Indoors or outdoors in cable ducts, cable trays, conduits or underground locations under mechanical stresses in power and switching stations.
- Local distribution systems, Industrial and Commercial units for basic power and lighting purpose.

Standards

- BS 6346
- IEC 60502-1
- VDE 0271



• XLPE Insulated Armoured Cables



Application

- Indoors or outdoors in cable ducts, cable trays, conduits or underground locations under mechanical stresses in power and switching stations.
- Local distribution systems, Industrial and Commercial units for basic power and lighting purpose.

Standards

- BS 5467
- IEC 60502-1
- VDE 0276

• Aerial Bunched Cables



Application

- Outdoor distribution in Rural or residential area offers cost effective safer and reliable cable for reticulation.

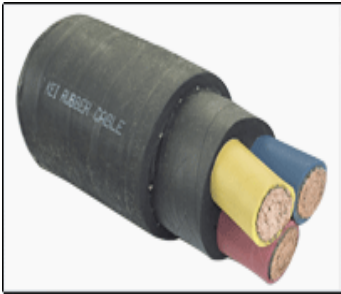
Range

- LV Cables with XLPE, PVC or PE insulation MV cables with XLPE

Standards

- IS 14255, BS 7870-5, BS 625 HD 626, VDE 00276 P 626, IEC 60502 NF-C33-209 , VDE 0276

• Rubber Cables



Application

- In keeping with the company's commitment to technological advancement, elastomer materials such as Ethylene Propylene Rubber "EPR", Polychloroprene "PCP", Chloro Sulphonated Polyethylene "CSP" Nitrile Rubber / PVC Blends, Ethylene Vivyl Acetate "EVA" and Silicone Rubber have been specially compounded to meet numerous heat oil and Fire Survival Cables for power, control and instrumentation wiring.

Standards

- BS 6899, IEC 60502 and IEC 60092

General Construction "Conforming to IS 9968 Part 1"

Conductor: Annealed tinned Copper wires Solid "class 1", Stranded "Class 2 "flexible "Class 5" complying with the requirement BS 6360 / LE 60228

Separator Tape: Suitable Material Separator Tape may be applied over the conductor

Insulation: General Service elastomer compound/ Heat Resisting elastomer compound / Silicone rubber as per IEC 60092 "351", BS-7655, vDE-0207Pt.-20

Core Identification: Coloured insulation, Nos. Polyester tape, Coloured proofed tape, Nos. Printing

Fillers: Natural or synthetic fibers or elastomer suitable for the operating temperature and compatible with the insulating material

Sheath: General Service elastometric compound / Heavy Duty elastomeric compound as per IEC 60092 "359", BS-7655, VDE 0207Pt.-20

Cables for Instrumentation

We manufacture a wide variety of cables suitable for process instrumentation, which plays a vital role in measurement, supervision and control of the process. Introduction of microprocessor based / computerized instrumentation has demanded stringent quality requirements along with special electrical parameters for instrumentation cables.

The cables used for instrumentation are designed and manufactured very meticulously. We maintain high standards and follow stringent in-process quality control during manufacturing of instrumentation cables, meeting the design parameters of the customer.



• **Thermocouple Extension / Compensating Cables**



Thermocouple extension and compensating cables are designed for interconnection between thermocouple probes and control instrumentation. They are generally available in the following types:

Type (1) Unarmoured cables with conductors insulated with PVC and twisted together in pairs, sheathed overall with PVC.

Type (2) Armoured cables with conductors insulated with PVC and twisted together in pairs, PVC bedding, Galvanised steel wire armoured and sheathed overall with PVC.

All of the above types of cables can be supplied unscreened or screened (individually, collectively or both) with an Aluminium Polyester tape screen incorporating tinned copper drain wire.

The construction is similar to paired instrumentation cable but the conductor material is different. Thermocouple is used in processes to sense temperature and is connected to the pyrometers for indication and control. The thermocouple and pyrometers are electrically connected by thermocouple extension / compensating cables. The conductors used for these cables are required to have similar thermo-electric (emf) properties as that of the thermocouple used for sensing the temperature.

• **Insulated Fixed / Flexible Cords & Wires**

Application

- Installation in surface mounted or embedded conduits or similar closed systems. Indoors, building wires, power cords and domestic electrical wiring purpose.

Standards

- BS 6004
- BS 6500
- BS 6007
- <HAR>
- BS 7919
- BS 7211
- BS 6231
- IEC 60227-3
- BS 6141
- BS 4737



• **Single / Multi Core Fire Resistant Cables**



Conductor – Plain annealed copper stranded (class 2) conductor for ease of handling.

Tape Insulation – Mica fire resistant tape.

Insulation - 90°C cross-linked insulation.

Bedding – Extruded LSOH bedding compound.

Armour – Single layer of galvanized steel wires.

Sheath – Robust LSOH sheath, Colour Black. Other colours as per specification of the Customer.

Marine Cables

We offer industry's most comprehensive line of advanced IEC and Communication Offshore and Marine Shipboard Cables.

The Offshore Drilling and production sector requires high performance specialty wire and cable for utmost safety, productivity and resistance to harsh environmental condition.



Our cables are suitable for Floating Production Storage and Offloading platforms to jack-up rigs, mobile offshore drilling units and land-base drilling rigs.

KEI offer a complete range of Marine Cables which includes Power, Control Instrumentation, Fire Resistant, Mud Resistant and High Temperature Cables.

Construction

- **Conductor**

- ✚ Tinned or untinned copper with stranding class 2 or class 5 from 0.5 to 1000 sqmm or 22-19 AWG to 2000Kcmil
- ✚ Solid single strand for communication cables as required
- ✚ Standards IEC 60228, BS 6360 or UL

- **Thermocouple Cables**

- ✚ KX, JX, EX, TX, KX/VX, SX/RX

- **Insulations**

- ✚ EPDM, XLPE, Halogen free EVA based, Silicon Rubber Glass Braided and Varnished, PE, PVC
- ✚ Dual layer EPDM + HF or PVC + Polyamide (Nylon)
- ✚ Fibreglass tape insulation as per NES standard

- **Fire resistant cable**

- ✚ Heat barrier of glass mica tape lapped in double layer shall be provided over the conductor, before the insulation

- **Sheath**

- ✚ Thermoplastic Halogen free Type SHF1, Cross Linked thermo set Type SHF2 or EVA, Silicon, FR PVC, HDPE, MUD RESISTANT SHF2
- ✚ PCP, CPE or CSP sheaths for EDPM or Silicon insulated cables
- ✚ TPR sheath
- ✚ Oil resistant sheath also available in SHF2 or SW4 grade

- **Braiding/ Armour**

- ✚ ATC wire, plain copper, bronze, stainless steel, Aluminium alloy wire
- ✚ Copper braid of desired conductivity can be designed as required to meet installation specific requirement or to serve as Earth continuity conductor

- **Instrumentation Cables**

- ✚ Cores twisted in pairs, Triads or Quod to form an element
- Screen provision:
 - ✚ Each element can have individual screen or shielding of Aluminium Mylar backed tape or copper Mylar backed tape
 - ✚ Each unit has ATC drain wire
 - ✚ Multi element cable can have overall screen or shielding of Aluminium Mylar backed tape or copper Mylar backed tape, with a ATC drain wire
 - ✚ ATC wire braiding can be offered as alternative to tape screen for an individual element or overall screen

- **Special Protection**

- ✚ Cables can be supplied with special sheath like Lead alloy sheath or Polyamide(Nylon) sheath as a proven moisture barrier in highly contaminated areas

- **Core Identification & Sheath Color**

- ✚ Standard color coding as per CENELEC for cores and Black or Grey for the sheath
- ✚ However, we can provide any customized color coding as per project requirement

- **Current Ratings**

- ✚ Cables meet the respective current rating requirement as specified by the specifications under different installation and operating conditions
- ✚ In general commercial ships and offshore cables rating are as per IEC 60092-352
- ✚ Ratings of Cables as per Naval Standards are as specified in these standards

- **ROHS**

- ✚ Cables not having a lead sheath are ROHS compliant

CONTROL VALVES



Indowmax (M) sdn Bhd has a strategic partnership with **Hi-Tec Valves** to manufacture and supply any type of valve for various industries. We also specialize in providing services for refurbishment of old valves by Reverse Engineering of existing faulty valves both manual as well as control valves. We will fabricate the spare parts on our own using reverse engineering, without the need (to go to OEMS).

We have the expertise in reconditioning/ services of valves. Valve reconditioning improves both safety and efficiency and also extend the life of the valves with equal life guarantee as provided for new valves, thus it saves time, money and avoid large investments.

HI-TEC VALVES

Hi-Tec Valves were designed to solve the problems in the design of various manufacturers of the world and adopts suitable modifications in the valves and assures the Customers (the End Users) of its flawless operations and ensures such problems do not recur. Hi-Tec Valves are fully equipped with all kinds of testing facilities to satisfy our client's requirements. We undertake Reconditioning of valves of any make, type, size and all Class valves in all sizes-wherever you are-both 'in-situ', at site or at our factory and restore with full guarantee. 'In-situ' valves servicing is our specialty. We also provide services for In-situ service, Shop service, Onsite service & Annual Maintenance Contracts (AMC). We provide re-engineered valve components like Trim parts, Packing materials, Gaskets, Actuator parts, Power Cylinder etc. to suit valves of other makes. We supply pneumatic and electric actuators, Electropneumatic valve positioners & Smart valve positioners, Position indicator, Position Transmitter, Limit switches, I/P Converter etc.

NEW VALVES

We supply new valves:

- With BS Standard
- Of any type
- Of any size
- Of any Material
- Manual
- Pneumatic Actuated
- Hydraulic Actuated
- Electric Actuated



REFURBISHMENT OF OLD VALVES

Don't throw away old valves; we refurbish to:

- Extend valve life
- Save Cost



We don't depend on availability of OEM spares.

We do Reverse Engineering & Fabricate spare parts for:

- Valve of any make
- Valve of any type
- Valve for any size
- Valve for any material



Our objective is to have satisfied customers in terms of product or system functionality at a competitive price and timely delivery with lasting relationship.

SOME OF THE VALVES MANUFACTURED BY US

• Cast Steel Check Valves

Compliance	BS 1868 / DIN 3356
Size	15 NB to 600 NB
Rating	DIN ND 40 /class 150 / 300 /600
Design	Swing / Piston Life Type
Ends	Flanged and drilled ANSIB 16.5
Material	ASTM A216 Gr.WCB / ASTM A 217 Gr.WC6 / WC9 / WC1 /WC5 ASTM A 351 Gr. CF8 / CF8M /CF3 / CF3M



• Forged Steel Ball Valves

Compliance	BS 5351
Size	15 NB to 50 NB
Rating	Class 800
Design	Three Piece
Port	Full / Regular Port
Ends	Screwed to BSP (F) / NPT / Socket weld to ANSI B 16.11
Material	ASTM A 105 / F304 / f316



• Cast Steel Screwed / Socket Weld End Ball Valves

Compliance	BS 5351
Size	15 NB to 50 NB
Rating	Class 600
Design	Three Piece
Port	Full / Regular Port
Ends	Screwed to BSP (F) / NPT / Socket weld to ANSI B 16.11
Material	ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M /CF3 / CF3M



• Cast Steel Flanged End Ball Valves

Compliance	BS 5351
Size	15 NB to 50 NB
Rating	Class 150 / 300 /600
Design	Three Piece
Port	Full / Regular Port
Ends	Flanged and drilled to ANSI B 16.5
Material	ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M /CF3 / CF3M



• Concentric Disc Butterfly Valves

Compliance	BS 5155
Size	50 NB to 600 NB
Rating	PN 10 / PN 16
Ends	Wafer / Flanged
Material	ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M



• High Performance Butterfly Valves

Compliance	BS 5155
Size	50 NB to 600 NB
Rating	Class 150 / 300
Design	Soft seated (zero leakage) / Metal seated (class IV leakage)
Ends	Wafer
Material	ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M



• Forged Steel Gate Valves

Compliance	BS 5352 / API 602
Size	15 NB to 50 NB
Rating	Class 800
Design	Bolted Bonnet, OS & Y
Ends	Screwed to BSP (F) / NPT Socket Weld / Butt Weld
Material	ASTM A 105 / f304 / F316



• Forged Steel Globe Valves

Compliance	BS 5352
Size	15 NB to 50 NB
Rating	Class 800
Design	Bolted Bonnet, OS & Y
Port	Screwed to BSP (F) / NPT
Ends	Socket Weld / Butt Weld
Material	ASTM A 105 / f304 / F316



• Forged Steel Check Valves

Compliance	BS 5352
Size	15 NB to 50 NB
Rating	Class 800
Design	Piston Lift Type & Bolted Cover
Ends	Screwed to BSP (F) / NPT Socket Weld / Butt Weld
Material	ASTM A 105 / f304 / F316



• **Cast Steel Gate Valves**

Compliance	BS 1414 / API 600
Size	15 NB to 600 NB
Rating	Class 150 / 300 / 600
Design	Bolted bonnet, OS & Y
Ends	Flanged and drilled to ANSIB 16.5
Material	ASTM A216 Gr.WCB / ASTM A 217 Gr.Wc6 / WC9 / WC1 /WC5 ASTM A 351 Gr. CF8 / CF3 / CF3M



• **Cast Steel Globe Valves**

Compliance	BS 1873
Size	15 NB to 600 NB
Rating	DIN ND 40 /class 150 / 300 /600
Design	Bolted bonnet, OS & Y
Ends	Flanged and ANSIB 16.5
Material	ASTM A216 Gr.WCB / ASTM A 217 Gr.WC6 / WC9 / WC1 /WC5 ASTM A 351 Gr. CF8 / CF8M /CF3 / CF3M



MORE VALVES MANUFACTURED BY US

• **Uni-Directional Knife Edge Gate Valves**

Compliance	MSS-SP 81
Size	50 NB to 600 NB
Rating	Class 150
Seat Design	Metal to metal (Class IV leakage)/ Resilient Seat(Bobble tight shut-off)
Ends	Wafer
Material	Cast Iron to IS 210 Gr. FG 200 / ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M

• **Bi-Directional Knife Edge Gate Valves**

Compliance	MSS-SP 81
Size	50 NB to 600 NB
Rating	Class 150
Seat Design	Rubber Seated (Bobble tight shut-off)
Ends	Wafer
Material	Cast Iron to IS 210 Gr. FG 200 / ASTM A 216 Gr. WCB / ASTM A 351 Gr. CF8 / CF8M

• **Diaphragm Valves**

Compliance	BS 5156
Size	15 NB to 300 NB
Rating	Class 125 / 150
Ends	Flanged & drilled to ANSI B 16.5/BS 10 Table 'D'
Material	ASTM A 216 Gr. WCB/A 351 Gr. CF8 / CF8M

HIGH TEMPERATURE & HIGH PRESSURE VALVES # 900/#1500/#2500

- **Forged Steel Gate Valves**

Compliance	BS 5352 / API 600
Size	15 NB to 200 NB
Rating	Class 900 / 1500 / 2500
Seat Design	Bolted Bonnet, OS & Y
Ends	Butt Weld End
Material	ASTMA 105 / A 182 F22 / F304/ F316

- **Forged Steel Globe Valves**

Compliance	BS 5352 / BS 1873
Size	15 NB to 200 NB
Rating	Class 900 / 1500 / 2500
Seat Design	Bolted Bonnet, OS & Y
Ends	Butt Weld End
Material	ASTMA 105 / A 182 F22 / F304/ F316

- **Forged Steel Check Valves**

Compliance	BS 5352/ BS 1868
Size	15 NB to 200 NB
Rating	Class 900 / 1500 / 2500
Seat Design	Piston Lift Type & Bolted Cover
Ends	Butt Weld End
Material	ASTMA 105 / F304/ F316

**SPECIAL PURPOSE
STEEL PLANT & POWER PLANT VALVES MANUFACTURED BY US**

- Hot Blast Valve
- Single / Double Disc Gate Valve
- Goggle Valve
- Chimney Valve
- Double Eccentric Butterfly Valve
- Triple Eccentric Butterfly Valve
- Two / Three Lever Butterfly Valve
- Push Lever Valve
- Snort Valve
- Non-Contacting Type Butterfly Valve
- Contacting Type Butterfly Valve
- Septem Valve
- Coffee Pot Valve
- Bleeder Valve
- Dust Catcher Cut-Off Valve
- Rubber Ring Type Valve
- Penstock Protection Valve
- Guillotine Valve

ALL VALVES CAN BE SUPPLIED WITH MANUAL /
PNEUMATIC / HYDRAULIC AND ELECTRIC ACTUATOR



MANUFACTURING AND TESTING STANDARDS FOLLOWED

TYPE OF VALVE

STANDARDS FOLLOWED

Ball Valve

BS 5351

Butterfly Valve

BS 5155 / AWWA 504

Gate Valve

API 600 / BS 5352

Globe Valve

BS 5352 / BS 1873

Check Valve

BS 5352 / BS 1868

Knife Edge Gate Valve

MSS-SP 81

Diaphragm Valve

BS 5156

Gate/Ball/Plug/Check Valve

API 6D

Flanges Butt

ANSI B 16.5 / 16.47 (for higher sizes) DIN Standards

Weld Face to Face

ANSI B 16.25

ANSI B 16.34

Testing

BS 6755 Part I & II / API 598



WE DO...

- IN-SITU SERVICE
- SHOP SERVICE
- ON SITE SERVICE
- ANNUAL MAINTENANCE CONTRACT

NO OEM SPARES NEEDED ANYMORE!

WE FABRICATE SPARES FOR

VALVES OF
ANY MAKE
ANY TYPE
ANY SIZE
ALL CLASS VALVES IN ALL SIZES

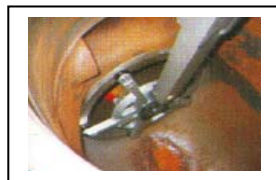
WE REFURBISH...

VALVES OF
ANY MAKE
ANY TYPE
ANY SIZE
ALL CLASS VALVES IN ALL SIZE

GEAR BOX
ELECTRIC ACTUATORS
PNEUMATIC ACTUATORS
HYDRAULIC ACTUATORS

FEW NAMES WE DO SERVICING

OUR INFRASTRUCTURE



GENERAL SCOPE OF SERVICE

- Sand Blasting
- Dismantling
- DP/MP Testing if required
- Cleaning
- Analyzing component status and recording
- Trim parts renovation / Replacement
 - a) Depositing (CS / SS / Stellite 6)
 - b) Machining
 - c) Grinding
 - d) Lapping
- Blue Matching
- Assembling
- Testing as per API 598/ BS 6755/ DIN 3230
- Painting with relevant painting standard
- Packing & Despatching



INDUSTRIES WE SERVE...

- Refineries
- Petroleum, Petrochemical Industries
- Fertilizer Industries
- Thermal Power Plants
- Atomic Power Plants
- Integrated Steel Plants
- Marine Industry
- Paper & Pulp Industries
- Cement Industries
- Sugar Industries
- Other Process Industries



QUALITY POLICY

HI-TEC VALVES IS COMMITTED TO ENHANCE CUSTOMER SATISFACTION THROUGH PRODUCTS STANDARDS FOR MANUFACTURING, SERVICING OF INDUSTRIAL VALVES AND MACHINING OF COMPONENTS THROUGH QUALITY, TIMELY DELIVERY AND RELIABILITY WITH CONTINUAL IMPROVEMENT.



HEAD OFFICE:

HI-TEC VALVES

No.3, Part - 1, TASS Industrial Estate, Ambattur,
Chennai - 600 098.

BRANCH OFFICE:

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Taman daya
81100 Johor Bahru
Johor, Malaysia

INDOWMAX

Joint Venture:

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Web:www.indowmax.com

METERING SKIDS

Metering Skids



As a specialized service provider for Metering Skids, we cater to various industries like Oil & Gas, Power, Cement, Steel, Fertilizer, Chemicals & Petrochemicals etc. For this we represent **Chemtrols Industries Ltd** in Asia pacific Region.

Chemtrols manufactures Custody Transfer Flow Metering Skids for Gas and Liquid applications. These skids are manufactured in line with the latest international relevant standards and with the most reliable design. Their well-experienced execution team ensures the highest and consistent level of Quality standards. The complete system design and detailed engineering complimented by proper sub vendor selection ensures a high level of measurement accuracy, which is the primary requirement of Custody Transfer Flow Metering Systems.

Our metering skids comprise of filtration, pressure reduction, metering section and also enjoy the flexibility to be interfaced with external systems like flow computers, gas chromatographs etc. All are sourced from the best makes available globally.

Flow Metering Custody Transfer

- Gas Metering Systems
- Liquid Metering Systems

Gas Metering Systems

- Our Gas Metering Skids are manufactured using Ultrasonic, Senior Orifice Plate, Turbine Meters, RPD Meters, Coriolis Mass Flow Meters as Primary Flow elements, conforming to relevant AGA Standards. *
- State-of-the-Art PTB gas Chromatographs using MEMS Technology are utilized for BTU measurements
- Our Range also includes Let Down Skids, Odorizing Skids for Mercaptan dosing, Preheating systems, etc.

Liquid Metering Systems

- Our Liquid Metering Skids are manufactured using PD Meters, Coriolis Mass FlowMeters, Turbine Meters, Orifice Plate, and Ultrasonic as primary flow elements. *
- The skids also include other critical components like Strainers, Flow computers, Control Valves conforming to relevant API regulations.
- Our factory-trained engineers are ably equipped to support customer requirements

*All Meters are from our Partners worldwide, whom we exclusively represent in India



PETROLEUM TERMINAL AUTOMATION

Petroleum Terminal Automation

Terminal Automation Systems from Chemtrols find application primarily in Trucks / Wagon fuel loading. Fuels include: Motor Spirit (MS), Diesel, Aviation Turbine Fuel (ATF), Naphtha, Superior Kerosene Oil (SKO), Furnace Oil, (Diesel High Pour Point) DHPP, Liquefied Petroleum Gas (LPG) etc. For this we represent **Chemtrols Industries Ltd.** in Asia Pacific Region.

Terminal Automation System comprises

- Tank Farm Management System
- Barrier Gate
- Control room equipments
- TA software
- PLC system for tank truck loading facility
- Mass Flow Meter based Ethanol blending / Dosing system in header line

The Flowmeters used are generally PD Meters or Coriolis Mass Flowmeters. The Batch Controllers supplied conform to OIML R117 capable of simultaneous Additive Injection and Ethanol Blending with Ratio Control and Our AMC includes hassle-free service at all times leading to enhanced performance and higher productivity.

Metering Systems

- PD Meters, Batch Controllers, Digital Valves, Card Readers from our collaborator M/s FMC TECHNOLOGIES MEASUREMENT SOLUTIONS, USA Main product loading with simultaneous additive and blending facility
- Single point responsibility including tank farm management system, PLC sub system and other peripherals
- Proven TA Software since 1992 with SAP connectivity
- Well-trained manpower for Project execution and AMC

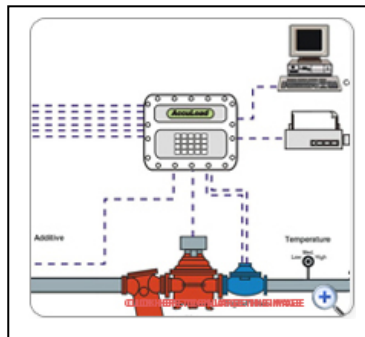
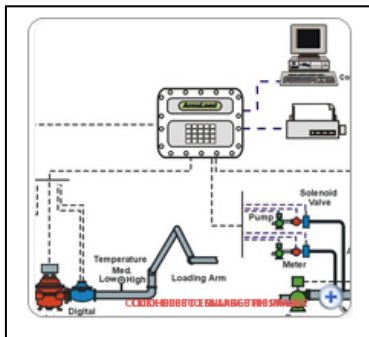
Major Components as part of TA system

- Strainer and Air Eliminator
- Top Loading Arm with arm position switch
- Earthing Relay
- Tanks Farms management systems, Radar level gauges
- MOV's, MOV power station
- UPS
- Density meters
- Additive Block
- Metered Additive system linked with batch controller
- Metered Ethanol blending system linked with Batch controller
- Servers, Network switches, Printers
- Piping, cabling, accessories
- 2 Years Warranty + 5 Years CAMC

Applications

- Transportation of
- Crude oil
- Refined products
- Product receipts
- Marketing and Distribution
- Terminal loading
- Fuel oil delivery
- Distribution of Aviation fuels

Each of the applications are unique and the meters, accessories, and electronics are customized for individual application.



ANALYZER SYSTEMS

Process Analyzers

A) Process Analyzer Systems

Our Analytics division develops solutions for Process, Stack and Ambient analysis. Chemtrols is one of the few companies in India to have developed an in-house expertise in Analytics, offering totally integrated systems under single point responsibility. For this system we represent **Chemtrols Industries Ltd.** in Asia Pacific Region.

Scope of activity

- Application data review and engineering
- Front-end engineering and construction of:
 - Fast loop systems
 - Sample transportation
 - Analyzer house and HVAC
 - Utility supply and distribution
 - Calibration facilities
 - Failure diagnostic system
- Procurement of analyzers as per client specification
- Installation of analyzers in Analyzer house
- Adherence to rules concerning explosion protection
- Single point responsibility under one vendor helps in:
 - Better planning
- Single point of contact for co-ordination for all disciplines
- Single tie—point for all utilities including power, signals, air, N2 testing, etc.
- Factory Acceptance Test (FAT) - Testing and Inspection of complete system at Chemtrols facility before delivery to customer site
- Minimum time for start-up and commissioning after delivery at site
- Training and AMC / CAMC facility from Chemtrols

Components of a Typical Analyzer System

- Sample Probe
- Sample Lines (heated / non-heated)
- Primary Pressure reducing station
- Sample Handling System
- Enclosures with / without AC or Vortex cooler
- Sample Disposal & Return philosophy
- Calibration system
- Analyzer

Process Analyzers

- NDIR based Gas Analyzers
- Zirconium Oxide, Paramagnetic & Electro Chemical O2 Analyzers
- Thermal Conductivity H2 Analyzers
- Calorific Value Analyzers
- UV based analyzers
- Mass Spectrometers
- Process Gas Chromatographs
- SRU Analyzers (Tail Gas, Feed gas, H2, Stack SO2)
- Moisture & HC Dewpoint
- H2S & UV based Sulfur analyzers
- Density, Specific Gravity Analyzer
- Near Infra Red Analyzers, Color analyzers
- Flash point, Pour point, Distillation Point, Viscosity
- pH, ORP, Conductivity, Dissolved Oxygen, TOC

B) Analyzer Shelter

In order to achieve high availability and precise measurements, it is a common practice to install analyzer systems within protection shelters / houses.

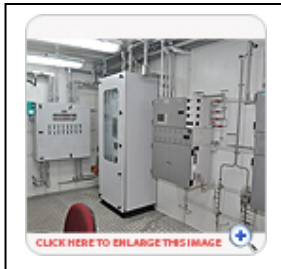
Chemtrols offers two types of Analyzer shelters / houses

- Cabinet type – for individual analyzers
- Walk-in type – when several analyzers are clubbed together to form a system

These come with special accessories like: HVAC, Flame Arrestor, Gas detectors, calibration tank, drain tank, etc. All Shelters / houses are completely factory piped, tube wired, installed with analyzers, and tested prior to shipment.

Features

- Manufactured in SS 304 & 316
- Sizes vary from 3 x 3 meters up to 3 x 12 meters
- Manufactured for Safe & Hazardous Areas
- Shelter is designed as a pressured and ventilated enclosure as per NFPA 496 standards & IEC 61285
- Also supplied for Housing of Remote IOs, PLCs & DCS
- Designed based on Uniform Building Code with design loads
 - Roof: 20 lb / sq ft live load.
 - Wind: 35 lb / sq ft at 0-30 ft above grade elevation.
 - Seismic Zone: No. 1



C) HVAC

Features

- Suitable for Zone 1 Ex d
- Gas Groups IIA, IIB, IIC
- Temp. Class T3
- 3ph 415 VAC, 50 Hz
- Continuous Duty
- CMRI & CCOE Certified
- Under ATEX Certification testing
- NFPA 496 Compliant
- Casing of CRCA Sheet
- Capacity options:
 - 3 TON
 - 5 TON
 - 7.5 TON
 - 10 TON

Benefits at a glance of Chemtrols HVACs

- Over 12 years experience in HVAC for Process Industry
- Dedicated HVAC team at Factory
- Uses reputed components
- Field proven product and local support availability
- Design allows enough Maintenance access from all sides
- Available with multiple combinations

Applications of Process Analyzers

- Physical property analysis of Motor Fuels (MS and HSD) detecting Flash Point, Pour Point, Viscosity, Density using ASTM analyzers
- Total Sulphur Analysis of Motor Fuels, Natural Gas, Kerosene, Naphtha, Reformer, Isomerisation plant, and LPG
- Analyzer Packages for Blending of Motor Fuels (MS and HSD) with NIR, Total Sulphur, Physical Property, Viscosity & Density analyzers complete with Sample Probes, Fast Loop Skids, Sample Conditioning System, Validation and Sample Recovery System
- Steam and Water Analysis for Ph conductivity, dissolved Oxygen, ORP analyzer and complete SWAS packages
- Moisture Measurement with different techniques for Liquid, Gases, and Coke
- Stack Monitoring System using in-situ, in-situ dilution, and hot extraction measurement techniques
- Ambient Air quality systems including Meteorological Instruments and data logging as fixed instruments
- Process Gas and liquid Analyzers, including Mass Spectrometer and Gas Chromatograph
- Analyzer Package for Heater and Furnaces
- Analyzer Shelter and HVAC system customized for Safe and Hazardous areas

ENVIRONMENT MONITORING

A) Ambient Air Quality Station

Ambient Air Quality Monitoring Systems or AQMS from Chemtrols monitors the level of pollutants – SO₂, NO_x, CO, Suspended Particulate Matter (SPM), Hydro Carbon (HC), Ozone, etc. in the ambient atmosphere. From a single analyzer to complete turnkey systems (Both Mobile and Fixed), Indowmax (M) Sdn Bhd represents **Chemtrols Industries Ltd.** in Asia Pacific Region to provides a wide range of solutions to meet much of the Ambient Air Quality Monitoring demands.

Features

- Conventional Analyzers – SO₂, H₂S, NO_x, NH₃, CO, CO₂, O₃, and HC
- BTX Analyzer – Benzene, Toluene, and Xylene
- Particulate Monitoring – TSP, Pm10, Pm2.5
- Sampling System
- Calibration System
- Meteorological Sensors
- Data Acquisition and Management Systems
- Analyzers are designed to according to US EPA regulations / equivalent regulations
- Ethernet connectivity for efficient remote access
- User-friendly interface with single button programming and large display screen
- Well thought of layout design for easy accessibility to components
- Report generation on an hourly / daily / weekly / monthly / yearly basis

Industries / Applications

- Pollution Control Boards
- Municipal Corporations
- Process Industries
- Research Institutes
- Science Laboratories

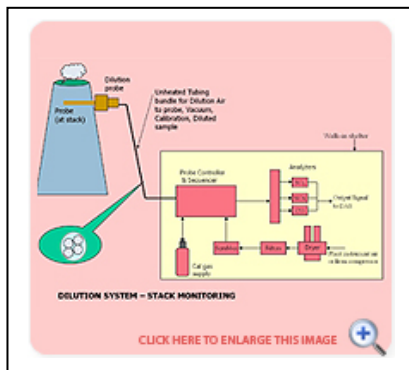


B) Continuous Emission Monitoring Systems

Indowmax (M) Sdn Bhd represents **Chemtrols Industries Ltd.** in Asia Pacific Region. Optimum solutions for measurement of atmospheric pollutants like SO₂, NO_x, CO, HCl, HF, CO₂ etc., based on various types of measurement techniques enumerated below:

Features

Dilution System

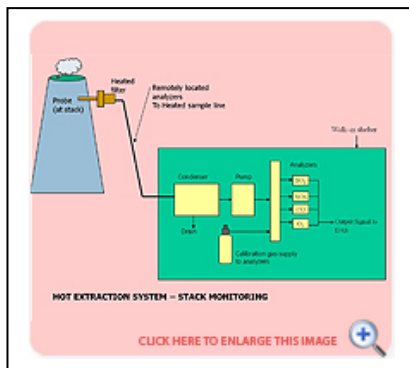


- Sample is extracted and diluted under zero air conditions in the probe.
- Since dilution takes place within the probe, there is no need for a heat-traced Sample Transportation line
- Sophisticated gas analyzers measure the gases accurately
- Diagrammatic representation of Typical System

Benefits at a glance

- No effect of moisture
- No leakage effect
- Multiplexing of stacks possible

Hot Extraction System

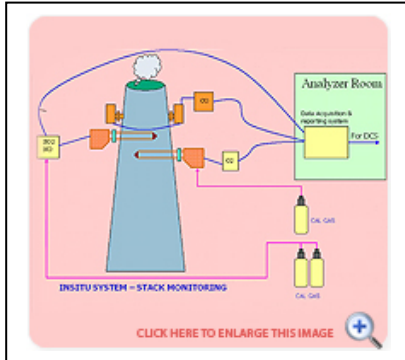


- Sample is extracted from stack / duct through a heated filter
- Blow back arrangement provided for cases where there is high dust load
- Extracted sample is transported using heat-traced line to a sampling system
- The moisture sample is given to a multi component analyzer for measurement
- Diagrammatic representation of Typical System

Benefits at a glance

- Dry Measurement
- Multi component Analyzers
- Calibration Cuvettes

In-Situ Instruments



- An in-situ gas analyzer sits directly at the measurement point on the stack / duct.
- Both, cross duct and probe measurement techniques are available
- The instruments generally operate on UV DOAS or TDLS principle along with GFC technique
- Diagrammatic representation of Typical System

Benefits at a glance

- No sampling components
- Fast Response
- For high moisture / dust applications

Industry / Applications

- Process Industries
- Cement & Steel

LEVEL GAUGES

Level Gauge

Indowmax (M) Sdn Bhd represents **Chemtrols Industries Ltd.** in Asia Pacific Region to supply any type of level gauges.

A) Magnetic Level Gauge

A float-containing magnet follows liquid level in the liquid chamber, which corresponds to the level in the tank. Position of the float inside the chamber is indicated outside by bi-colored flapper embedded with magnet by 180o rotation and setting into uniform color along the traverse of the float.

Specifications

- CC or Level Range: Up to 3 meters. Longer sizes available on request
- Material for wet parts: Stainless Steel as standard. Others on request
- Float: Stainless steel, Titanium, PTFE. Others on need basis to meet process conditions
- Flange rating: 150 lbs to 2500 lbs
- Scale: Stainless Steel or Acrylic
- Operating Temperature: Up to 200oC
- Operating Pressure: Up to 200 bar
- Specific Gravities: 0.4 and above
- Options: Magnetic Alarm switches for low / high level or signaling the level at one or more points



Applications

- Can be used across practically all liquids including inflammable, corrosive, and hazardous liquids
- Inter-phase detection
- Liquids at high temperature and pressure
- Underground tanks

B) Reflex Level Gauge

The principle of Reflex Level Gauges is based on the difference in the refractive indices of liquid and vapor. The liquid column is contained within the recess of the liquid chamber behind the sight glass, which is clamped to the gauge body. The sight glass has prismatic right-angled grooves on the side facing the liquid and vapor space. Light rays entering from outside the gauge are either absorbed or reflected depending upon whether they enter the liquid or vapor space. When the ray of light encounters the surface of one of the grooves in the vapor space, it is reflected to the opposite surface of the grooves and from there, totally reflected back to the direction of observation.

Thus, vapor space appears as silvery white. When the light ray encounters the surface of the grooves in the liquid space, it is totally absorbed, thereby making the liquid behind the glass appear black. These gauges are used for measuring the level in a vessel. Maximum pressure of up to 400 bar and a maximum temperature of 4000 C.

Specifications

- Constructional features include, three-meter single piece construction with multiple glasses between process connections.
C/C Distance: Up to 3000mm, single piece liquid chamber
- Materials: Carbon Steel or Stainless Steel; Monel - 400, Hastelloy 'C', Polypropylene, HDPE, PTFE / Rubber lined as optional
- Glass: Toughened borosilicate
- Connections: Flanged, screwed or socket weld.
- Gauge Valve: Auto-shut-off ball check, offset pattern, bolted or screwed bonnet.
- Drain Valve: Gate or Needle type
- Packing: Grafoil*/ PTFE
- Fasteners: ASTM A-193 Gr. B7 / A-194 Gr. 2H.
- Options:
 - Anti-frost extension for low temperature service
 - Heating / Cooling arrangements.
- Media:
 - Saturated steam: Up to 464 psig (32 bar)
 - Other media: Up to 3190 psig (220 bar) at 752° F (4000 ° C)



C) Transparent Level Gauge

Transparent Level Gauges employ two transparent glasses fitted with a liquid chamber on either side. The liquid level is indicated as a result of difference in the transparent properties of the two media. For water / steam applications, an illuminator is mounted on the rear side of the gauge with its light rays deflected upward into the water column. This enables the observer to see illuminated surface of the water as the light rays impinging on the surface of separation between water and steam are reflected back to the eye of the observer.

Specifications

- C/C Distance: Up to 3000mm; single piece liquid chamber
- Materials: Carbon steel and stainless steel as standard. Others on request
- Glass: Toughened Borosilicate
- Connections: Flanged, screwed, or socket welded
- Gauge Valve: Auto-Shut off ball check, off-set pattern, bolted or screwed bonnet
- Drain Valve: Gate or Needle type
- Packing: Grafoil / PTFE
- Fasteners: ASTM A-193 Gr B7 / A-194 Gr 2H
- Illuminator: 110 / 220VAC, 50/60 Hz, 25/40 watts either with deflector or diffuser
- Options: Anti-frost extension for low temperature service
 - Heating / cooling arrangements
 - KEL-F or Mica as glass protector for corrosive liquids



Applications

- Saturated steam: Up to 1740 psig (120bar)
- Other media: Up to 2610 psig (180bar) at 752oF (400oC)
- Observation of interface
- Observation of color and clarity of liquid
- Observation of corrosive liquids, which attack glass

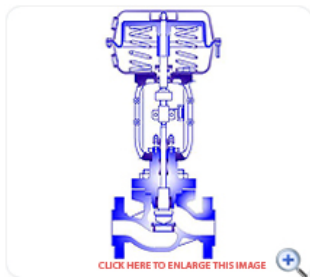
STEAM ENGINEERING - CONTROL VALVE

Control Valve

The CGV Series general-purpose control valves from Chemtrols are suitable for handling a variety of process fluids, both liquids and gases. The valve body has been designed for smooth flow profile, which minimizes pressure loss and provides better Cv and rangeability. For this we represent **Chemtrols Industries Ltd.** in Asia Pacific Region.

Features

- Body : Inline Globe style
- Bonnet : Plain & Extension
- Sizes : 25NB, 40NB, 50NB, 80NB, 100NB & 150NB
- Rating : ANSI 150, 300 & 600
- End Con. : Flanged (RF, RJ, etc.) , BW & SW
- Packing : PTFE , Graphite
- Actuator : Diaphragm, Piston Cylinder



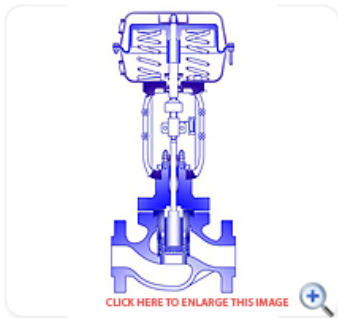
CGV 1000 Series: Top Guided Single Seated Valves

- General Service Valves
- Solid & Sturdy Top Guiding
- Single Seat
- Contoured Trim
- Equal %, Linear & QO Characteristics
- Class IV or Class V Leakage
- Soft seating
- Class VI Leakage
- Large Actuator Force



CGV 2000 Series

- Plug Guides inside the Cage
- Pressure Balanced Trim
- Low Actuator Force
- Equal %, Linear & QO Characteristics
- Single Seated : Model 2100
- Double Seated : Model 2200
- Class IV & V (Single Seated) Class III & IV (Double Seated)
- Soft seating



CGV 3000 Series

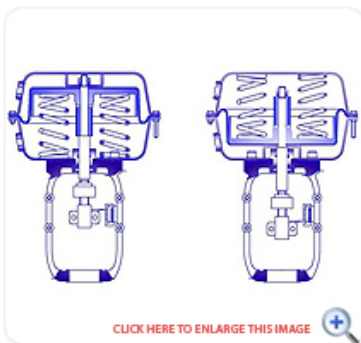
- Plug Guides inside the Cage
- Perforated Trim
- Pressure Balanced Trim
- Equal %, Linear
- Single Seated : Model 3100
- Double Seated : Model 3200
- Class IV & V (Single Seated) Class III & IV (Double Seated)
- Soft seating

Specifications

- Body & Bonnet: ASTM A 216 WCB, ASTM A 217 Gr. WC9, ASTM A 351 Gr. CF3 / CF3M / CF8 / CF8M
- Trim: SS Type 304, 316, 316L, 410, 420, 440C, 17-4 PH etc. & HASTELLOY, MONEL etc. SS Type 304, 316, 316L with STELLITE hard facing.
- Packing: PTFE, Graphite, Graphite Impregnated Asbestos Yarn, PTFE, Impregnated Asbestos Yarn.
- Gaskets: Metal (SS) gasket with graphite sheathing Spiral Wound with Graphite or PTFE Filler.

Actuator

Series CDA – Single Acting Diaphragm Type



- Pneumatic Actuator with Multiple Spring Design
- Compact and Light
- Direct and Reverse Action Models
- Action can be changed without any additional parts

ROTAMETER

Rotameter

Indowmax (M) Sdn Bhd represents **Chemtrols Industries Ltd.** in Asia Pacific Region to supply the Variable Area Flow Meters/ Rotameters

Variable Area Measuring Principle

The substance flows through the meter vertically from bottom to top. Between the inner diameter of a measuring ring and the outer diameter of a float tapering towards the bottom, a measuring gap is formed through which the substance flows; the measuring gap is formed by the weight of the float (less buoyant force) being in balance to the flowing force. Height adjustment of the float is a measure for the flow quantity.



Features

- Ranges: 0.5 to 5 l/h, 8000 to 80,000 l/h of water
- 4 – 20 mA with HART
- Pulse Output
- Communication: PROFIBUS PA, PROFIBUS DPV1

Applications

- Suitable for flow measurement of liquid or gaseous products in pipes
- Shows the current flow quantity in volume or mass per unit in time
- The meter's design makes it ideal for processes under difficult and adverse operating conditions

Benefits at a glance

- Can be used in Hazardous Areas
- High-grade steel indicator unit available as option
- Degree of protection: IP 65

PRDS & DESUPERHEATER

PRDS & DeSuperheaters

PRDS is acronym for Pressure Reducing and Desuperheating System. Steam PRDS is used for Steam Conditioning Services for reduction of pressure and temperature of steam. It is a combination of Control Valve for the pressure reduction purpose and atomizing nozzles through which water is sprayed into steam for reducing the temperature. PRDS can be of two types:

- **Combined PRDS:** Both PRV and DeSuperheater in a compact single unit
- **Split PRDS:** separate PRV (Pressure Reducing valve) and DeSuperheater

Combined PRDS will help to save the space and also cost of piping, as the unit is single and compact. For PRDS control system, there will be one Pressure loop and one temperature loop. Pressure control system includes pressure sensor, pressure transmitter, controller, I/P Converter, Pressure gauges, etc. Temperature control system includes temperature sensor, temperature transmitter, controller, I/P Converter, Temperature gauges, etc. Spray water quantity required for the temperature reduction of the steam is controlled by separate spray water valve. There are two features for PRDS:

A. CSBV

Features

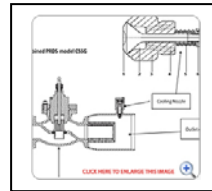
- Angle Design
- Variable orifice nozzle is specially designed to avoid flashing inside the nozzle
- Advanced seat design for tight shut off
- Pressure class up to ANSI 2500#
- Body material available in F 11 / F22
- Inlet size up to 20" & outlet size up to 32"
- Valve body designed for minimum thermal stress.
- Leakage class up to class V
- The steam flow is throttled through a cage type plug with multiple drilled holes, which provide optimum characteristics for control of the steam pressure.
- All internal parts of the valve can be removed without the valve having to be dismantled from the pipe.
- The spray water is injected into the steam where steam velocity and turbulence are at their highest, which gives quick and efficient cooling



B. CSSG

Features

- Single Seated Globe Valve
- Multistage Pressure reduction with low noise plug and outlet diffuser / silencer
- For low pressure (up to ANSI 600#), turbine bypass, Auxiliary steam PRDS)
- Bonnet is bolted to body
- Variable orifice nozzle is specially designed to avoid flashing inside the nozzle.
- Advanced seat design for tight shut off
- High rangeability



HIGH EFFICIENCY AC & DC POWER SOLUTIONS



Indowmax (M) Sdn Bhd represents **EV Industrial Pte Ltd** which is set up as an independent unit to focus on Eltek's Range of power conversion products for the industrial market. Located in Singapore at the heart of the vibrant Asia Pasific, EV industrial provides High Efficiency AC and DC power solutions using the latest switch mode technology.

Our products and system solutions are designed for the applications suitable for power generations and transmission, Oil & Gas extraction, Marine & Offshore and other industrial applications.

High Efficiency Industrial Power Solutions

ELTEK / EV Industrial power systems offer significant advantages over current technology in both cost and performance. The modular architecture, industry-leading efficiency, compact size, innovative design and comprehensive monitoring and control features provide significant benefits over the current industry standard.

Product Range

- Rectifiers
- Inverters
- DC/Dc Converters
- Modular Battery Charger
- Modular AC UPS
- Batteries
 - Nickel Cadmium (vented/ Low Maintenance)
 - Lead Acid (Vented/ Sealed)

Applications

Power utilities

- ❖ Low 7 High Voltage switchgears
- ❖ Transformer & Substations
- ❖ Power Generation & Distribution
- ❖ Control & Protection
- ❖ SCADA Communication
- ❖ Emergency lighting

Offshore and Process industry

- ❖ Safety and Automation Systems
- ❖ Control & protection
- ❖ Communication systems

Airport, Railway & Metro infrastructure

- ❖ Control & Protection
- ❖ Power conversion
- ❖ Signalling
- ❖ Safety Systems
- ❖ GSM-R & Communication systems

Marine

- ❖ MV Switchgear
- ❖ Fog Horn and Emergency Lighting
- ❖ PAGA Communication systems

Power Solutions

Key Features

- Compact design and easy installation
- Industry-leading efficiency; less power consumption and heat dissipation
- Modular Hot-pluggable architecture allows;
 - Redundancy; n+1, n+2 configuration
 - High MTBF > 350.000 hrs
 - Very low MTTR < 5 mins
- Extensive control & alarm functions with remote control capabilities
- Pre-engineered and tested systems and building blocks
- Overall size and footprint; 50% less than Thyristor systems
- Graphical 3.2" TFT high contrast, high resolution colour display for easy navigation in user menu



Flatpack 2 Rectifier

Key features

- **Highest efficiency in minimum space** Outstanding conversion efficiency of up to 96.5% and resonant topology makes the module industry leading with ultra compact dimensions.
- **Digital controllers** Primary and secondary controls are digitalized, enabling excellent monitoring and control characteristic. Also, the number of components has been reduced by 40% compared to previous rectifier generation-for highly reliable, long life, trouble free DC power systems.
- **Heat management** Front-to-back and back-to-front air flow modules, with chassis-integrated heat sinks, give the module the most suitable working environment and no limitations in the scalability of the desired system solution.
- **CAN bus networked** The Flatpack2 rectifier is connected in a CAN bus network for communication with the controller and other rectifiers.
- **Unique connection** A true plug-and-plug connection system; reducing time-to-install related cost.



Smartpack2 Controller

Key Features

- Graphical TFT high contrast, high resolution colour display for easy navigation user menu
- LEDs for local visual alarms (Major, Minor Power ON)
- Ethernet port with HP Auto MDI/MDI- X for detection and correction for straight-through and crossover cables
- SNMP protocol with TRAP, SET and GET on Ethernet. Email of TRAP alarms
- 6 programmable relay outputs for "traditional" remote monitoring. Expandable with I/O Monitor CAN Nodes
- 6 programmable multipurpose inputs ("digital inputs" or analogue signals). Expandable with I/O Monitor CAN Nodes
- Compressive logging
- Backup of critical control features in Basic unit
- Automatic battery monitoring and test
- Battery lifetime indication
- Battery used and remaining capacity (Ah or %) monitoring
- User defined alarm grouping(Boolean logic for grouped alarms)
- Uploading & Downloading of configuration files with SD Card or PowerSuite (Window™ application)

Standard System

The Flatpack2 power systems have been pre-configured with the most commonly requested features built-in as standards. With the wide range of rectifiers and converters products, system level can be configured and customized with different options to meet most demanding industrial requirements. Standard systems include:

- **Standard electrical / electronic components**
 - ✚ Input terminals blocks & Input protection (Fuses or Breakers)
 - ✚ Digital Controller
 - ✚ Modular Flatpack2 Rectifier
 - ✚ Galvanic isolation between input and output

- **Standard mechanical components**
 - ✚ Floor-standing cabinet
 - ✚ Cabinet Ingress Protection-IP20
 - ✚ Colour RAL 7035-powdered textured painting (other colours available as option)
 - ✚ Cabinet with natural cooling
 - ✚ All the panel can be removed (sides, rear, top, door)
 - ✚ Swing door 180 degrees opening with three key locks
 - ✚ Bottom cable entry (top, side cable entry as optional)
 - ✚ Standard labelling nameplate & cable marking
 - ✚ Standard PVC cable (FR grade as option)
 - ✚ Copper earth bar



Options

The standard system can be enhanced by the additional of some basic and engineering options. System specific drawing packages and user documentation will be automatically generated to reflect the actual options configuration. Options include:

- **Mechanical**

- ✚ Interior light
- ✚ Cabinet heater for anti-condensation purpose
- ✚ Analogue meters in front panel
- ✚ Ingress Protection up to IP54
- ✚ Customized cabinet - Floor-standing or Wall-mount
- ✚ Interior single phase outlet
- ✚ Special colour vermin proof plates
- ✚ Low smoke wiring (halogen free)
- ✚ Special markings
- ✚ Door mounted on/off switch
- ✚ Top/Bottom cable entry
- ✚ Air filters
- ✚ Ventilation 100% redundant

- **Input, battery & load options**

- ✚ Special mains input voltages
- ✚ Input MCB/MCCB with high short circuit current
- ✚ Battery MCB/MCCB
- ✚ Load MCB/MCCB
- ✚ Blocking diode for parallel redundancy
- ✚ Battery temperature compensation
- ✚ Mains current and voltage measurement
- ✚ Low voltage battery disconnect (End of discharge)
- ✚ Battery room fan control during fast charge
- ✚ Battery isolation fuse box
- ✚ Diode dropper or DC/DC converter for regulated output
- ✚ DC distribution (Stand-alone or integrated)
- ✚ Battery monitoring system (Symmetry)

To provide exact solutions for each application, our systems offer a wide range of customisable options:

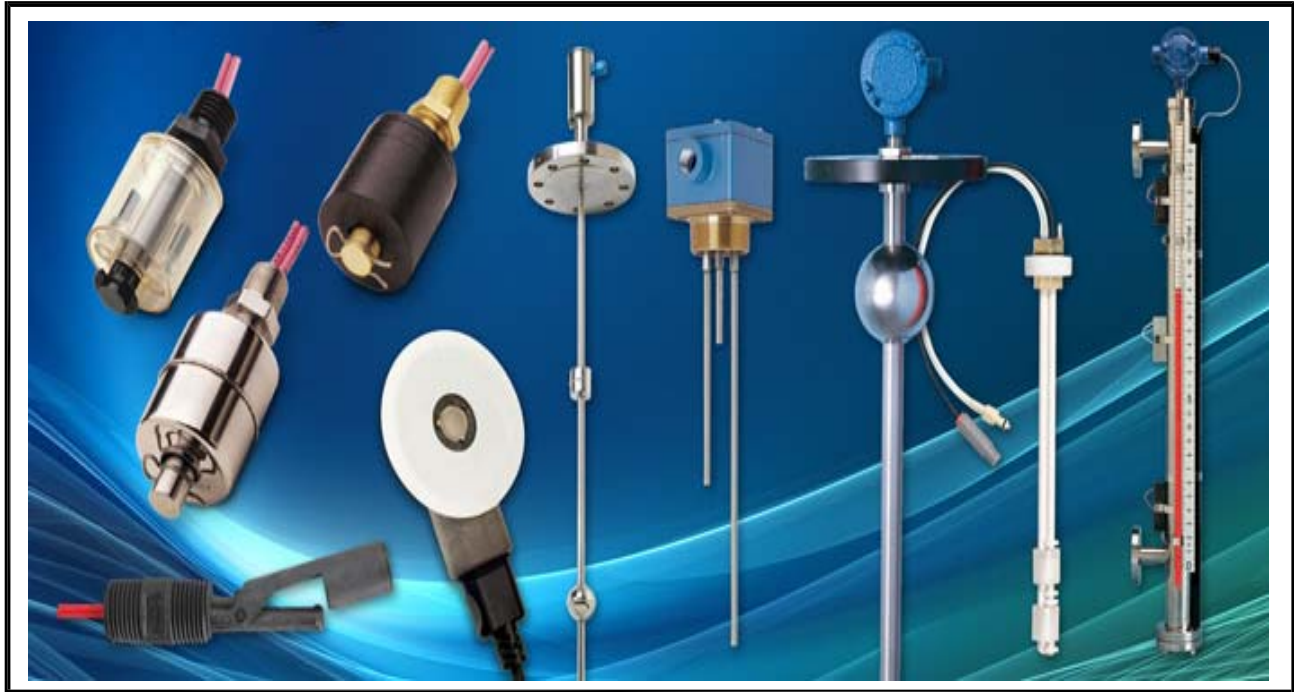
- Different LED's indicator in front panel from the standard
- Up to 18 free voltage contact for alarms and signalling
- SNMP / Modbus
- Analogue meters
- High temperature alarm

With our representation now in Malaysia we would be able to provide fast and efficient service to the Customers in the whole Asia Pacific Region.

Technical Specifications

INPUT	
Input Voltage	230 VAC, 1-Phase or 380V/400V/415V AC, 3-Phase +N
Input Range	+/- 15%
Input Frequency	45-66HZ
THD	<5% @ Nominal input @ Full Load
OUTPUT	
Output Voltage	24VDC,30VDC,48VDC,60VDC,110VDC,125VDC & 220VDC
Output Capacity	Up to 96KW
Static Voltage Regulation	+/-0.5 % from 10% to 100% Load
Ripple Voltage	0.5%
Efficiency	Up to 96.5%
OPERATING ENVIRONMENT	
Temperature	0-50 °C
Humidity	5% to 95% RH Non-Condensing
Altitude	<1500m above Sea Level
Audible Noise	<65 dBA (At 1 M)
PROTECTION & CONFIGURATION	
Degree of Protection	IP 20 (Optional up to IP54)
Color Code	Colour RAL 7035-powdered textured painting
Cable Entry	Bottom (Top Entry as Optional)
Mounting	Floor Standing
Short Circuit	Yes
Surge Protection	Yes
Galvanic Isolation	Between Input & Output
INDICATORS & ALARMS	
LCD Display and meter reading	Yes
Remote Monitoring (Web/SNMP)	Yes
Remote Monitoring (Modbus)	Optional
Dry Contact	Yes (6 Relays O/P)

LEVEL SENSORS



Today, Gems designs and manufactures a broad portfolio of liquid level, flow switches and pressure switches, miniature solenoid valves, and pre-assembled fluidic systems. Gems is a division of Danaher Corporation, a fortune 500 company with a presence around the globe. Gems Sensors & Controls has manufacturing facilities in North America, Europe, and Asia and supports sales, engineering and service offices around the world. Gems has the resources to support your design and manufacturing requirements anywhere you call home.

We have a strategic partnership with **Gems Sensors & Controls** to market the following products:

Gems Liquid Level Sensors

- Single Point Level Switches
- Multi Point Level Switches
- Continuous Level Transmitters
- Visual Liquid Level Indicators

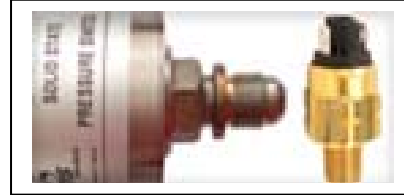


Gems Pressure Sensors

- Pressure Transducers



- Pressure Switches



Gems Proximity Switches

- Proximity Switches



Gems Temperature Switches

- Temperature Switches



Gems Solenoid Valves

- Miniature Solenoid Valves



Gems Relays and Barriers

- Solid-State Relays and Zener Barriers

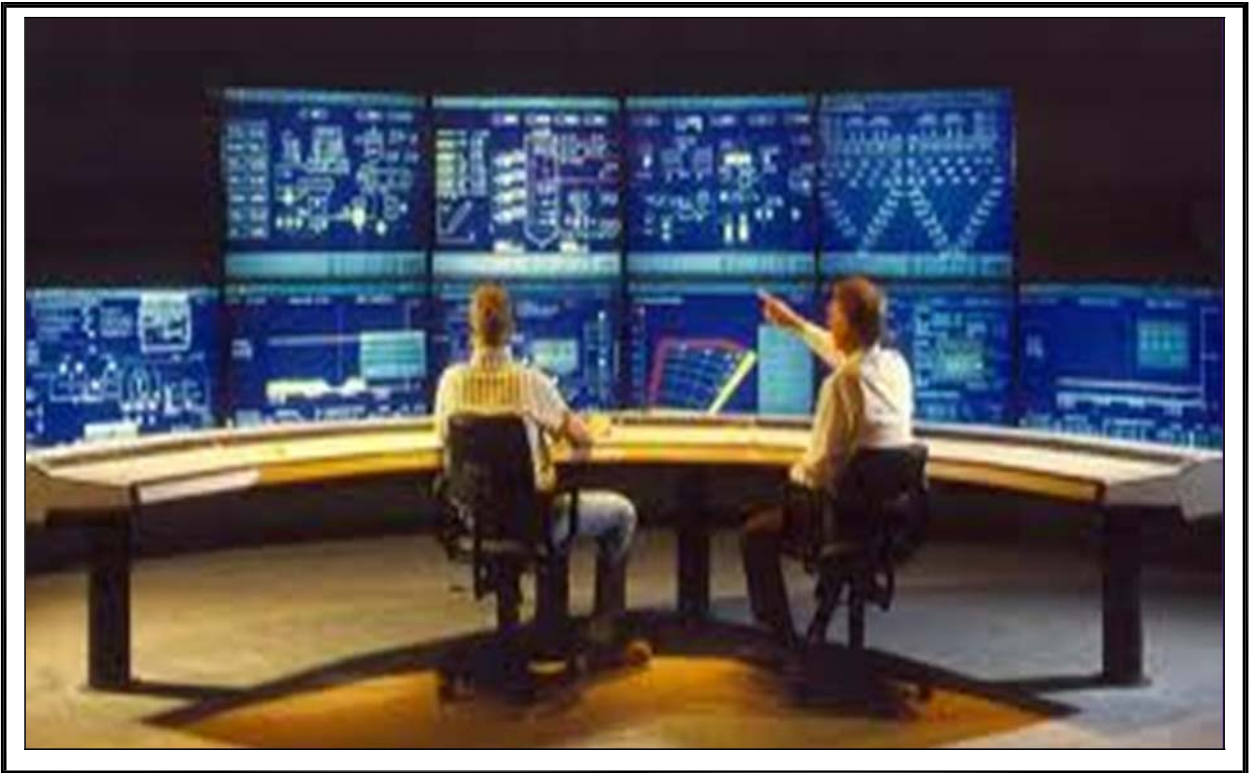


Gems Fluid Flow Sensors

- Flow switches
- Continuous Flow Sensors
- Visual Flow Indicators



INSTRUMENTATION & CONTROLS



We are a leading Engineering Organization offering Instrumentation and Control Systems for various industries.

MALEMA SENSORS

We represent **Malema Sensors USA** who is a world leader in flow metering and is covering a wide range of flow sensors using various principles for applications in liquids, gases and steam. Malema also offers Excess Flow valves & Globe type Control valves. We also specialize in Level Gauges and Level Switches.

Established in 1981, Malema partners with top class component manufacturers to offer integrated solutions for fluid delivery and control systems.

Offering reliability, performance and quick response time, we deliver innovative solutions of process control.

We support these endeavors with a large engineering multi-faceted team with specialties in every aspect of fluid delivery. We customized these solutions to match with Client's specific requirements.

Our goal is to have satisfied customers in terms of product or system functionality at a competitive price and timely delivery with lasting relationship.



MALEMA PRODUCT RANGE

- **Flow Meters**

Our range of flow meters includes:



MAM-2000

MX-52D

Metal Tube Variable Area



Acrylic and Glass
Tube Purge Meter



Pitot Tube



MHDT-1000
Orifice



M-10000
Paddle Wheel



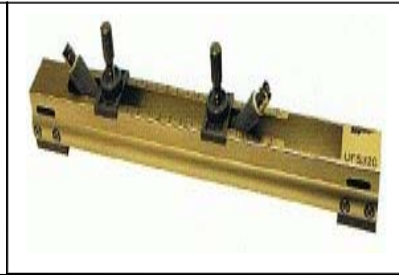
Coriolis Mass



Oval Gear



MUL-320
Ultrasonic



Electromagnetic

• **Flow Switches**



M-100
Adjustable



M-200



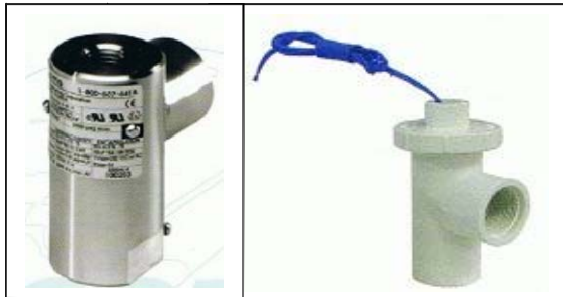
M-50X/55X



M-64
Fixed Set Point



M-80



Fixed Set Point

M-60X

M-701



Paddle Flow for Liquids

MFS 25

• Thermal Flow Meter



MTHF

MTLFC

MTMF



MTF-1000



MTF-1000 series (in-line)



MTF-4000



MTF-2000

• Excess Flow Valves

Malema offers a range of excess flow valves as follows that prevent fluid spillage in case of pipe line breaks:

- ~ Large size Excess Flow valves (Spring Return)
- ~ Small size Excess Flow valves (Velocity Fuse)



M-XF

Spring Return



M-VF

Velocity Fuses

• Control Valves

Our globe type Control Valves are designed for harsh media and applications that demand precise flow, pressure and temperature control. Our Control Valves ranges are as follows:

- ~ Globe Control Valves – Modulating types
- ~ Pressure Controlling / Pressure reducing Valves
- ~ Pressure Reducing and Desuperheating Valves
- ~ Desuperheating Valves
- ~ Globe Control Valves – On / Off type
- ~ 3-way Mixing / Diverting Valves



Series 100



Series 140/160



Malema 3

Control Valves

Three Way Valve



Model 902
Pressure Controlling /
Reducing Valves



Pressure Reducing
& Desuperheating
Valves



Model VND
Desuperheating
Valves

• **Level gauges / Level Switches**

Malema's range of Level Gauges and Level Switches and Level Transmitters cover a wide spectrum as follows:

- ~ Spring balanced Tank Gauges
- ~ Servo operated Tank Gauges
- ~ Transmitters for Tank Gauges
- ~ Displacement type Level Transmitters
- ~ Float type Level Transmitters
- ~ Micro Pulse guided Radar
- ~ Receiving indicators for Tank Gauging System
- ~ Supporting indicators for Tank Gauging systems
- ~ Level Switches
- ~ Ultrasonic Level Meters
- ~ Microwave Level Radar
- ~ Pressure type Level gauges
- ~ Metal Tube Level Gauges



MFB-5000
Float Type



MFS
Displacement Level
Indicator

- **Temperature Elements**

To complete the systems we also offer various bought-out items like Temperature Sensors like RTD, Thermocouples and Temperature gauges including thermo-wells.



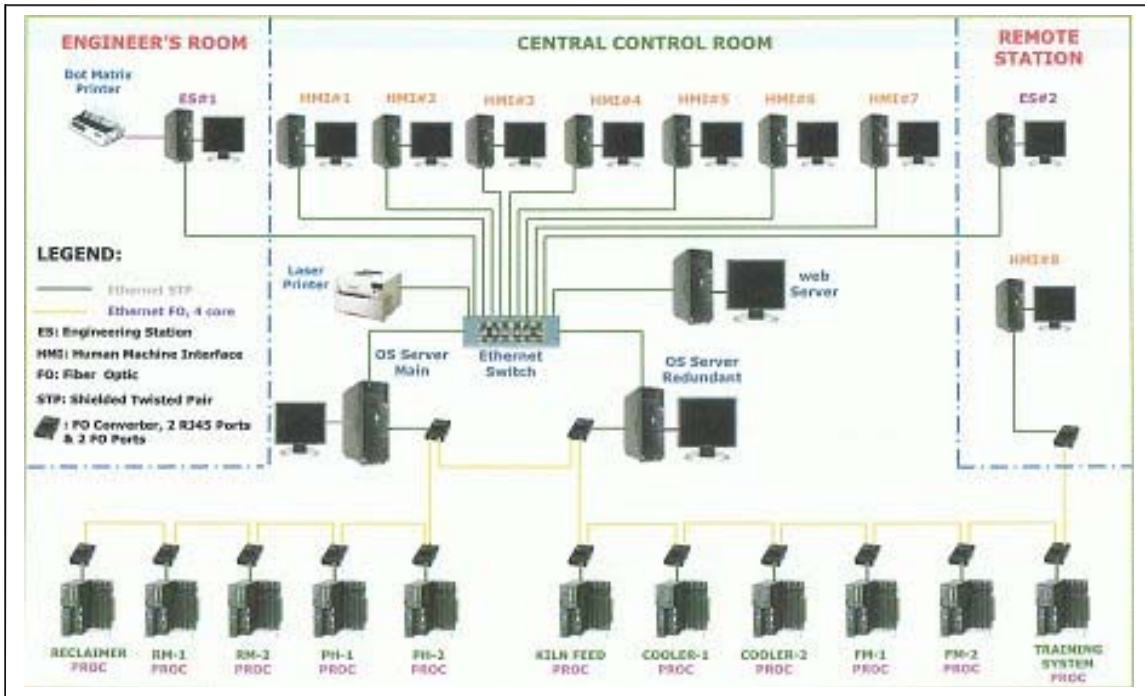
- **Pressure / differential Pressure / Flow Transmitters**

Pressure and Flow Transmitters and other special instruments for specific needs are also supplied by us as bought-out items to complete the systems.



PLC, SCADA and Automation Systems

We offer systems design, engineering, supply as well as Installation & Commissioning of **PLC, SCADA Systems and Automation Systems** for various industries



We cover as a package complete range of Instrumentation equipment starting from field sensors to transmitters to controllers to final control elements for all parameters like flow, level, pressure, temperature, density, etc,

Upgrading and Retrofitting

We execute PLC and Automation Systems upgrading in various industries irrespective of any make or type to help the customers to overcome obsolescence, non-availability of spares, etc.

Spare Parts

We offer spare parts for various PLCs of different makes and types at an economical price. Sometimes due to obsolescence spare parts are not available from OEMs. In many instances we can supply them from our associate companies who stock such spares.

INDUSTRIAL FILTERS

Industrial Filters

Indowmax represents Filter Concept in this Asia Pacific Region which is one of the leading manufacturer and exporter of industrial filters. Their core business is micron & macron filtration of Air, Gas & Liquid for industrial applications. We have tied-up with Filter Concept in providing product, services & solutions for Industrial Filters.

We offer complete filtration technology solutions for various filtration requirements of all industries. Our products adhere to highest international quality standards of manufacturing and meet ISO 9001 standards and the international design standards like ASME, DIN, and BS Standards.

The products/segments covered are as follows:

1) Process Filtration - Filter Housing

A - Cartridge Filter System:



Cartridge Filter Housing

Cartridge filter system offers wide range of flow capacities & contaminant holding capacities. Cartridge filter housing diameters can accommodate around 1 to 500 cartridges.



PVC Cartridge Filter Housing

Filter Concept PVC Filter Housings combine design simplicity with high filtering quality. PVC Filter Housings offers wide range of flow capacities & contaminant holding capacities.



Hygienic Filter Housing

Hygienic filter housing is manufactured from 316 stainless steel of the highest quality. These are suitable for a variety of liquid filtration applications designed to fit standard 222 & 226 O' Ring cartridges.

B – Catalyst Recovery Systems



Catalyst recovery systems

Catalyst recovery systems are normally used to recover the precious catalyst where in system required to recover fine particles of catalyst [such as platinum, palladium, rhenium and rhodium, Raney nickel, rhodium] after it is used. These systems used in almost all industries like petrochemicals, pharmaceuticals, Refineries, Edible oil etc.

C – Bag Filter Systems



Bag Filter Housing

Bag filter system is designed for optimum filtration performance. Its range provides filtration solution for a broad variety of fluid applications in the process industry. They are particularly useful for filtering large volumes of high viscosity liquids. Bag filter is constructed of filter housing, filter bags, internal cage to support bags, positive sealing arrangement, & choice of end connections. The internal support ensures bags will not burst as high differential pressures build up during operation.



Plastic Liner Bag Filter Housing

Plastic Bag Housing is made of 100% pure German made Polypropylene resin, by integrated one-piece injection molding technologies, featuring excellent resistance to pressure, corrosion and ultraviolet light attack. It is designed to use industrial standard Size two filter bags (Ø 7" X 32"long); Filter Housing has broad applications, and is ideal for high flow, corrosive and outdoor applications.



Bag Vessel Assemblies

Bag vessel assembly keeps the filter system on stream by reducing bag filter change time. The single large acme thread closure ensures quick opening and positive sealing. Bag Vessel assemblies are light and portable. The bag vessel's economical price allows installing a preferred duplex system for totally uninterrupted flow rates. It is made of light weight corrosion resistant polypropylene to give all the strength without bulk. It has Fixed-head mounting and is compact enough to attach to any machine.



PVC Bag Filter Housing

PVC bag filter housings provide an economical alternative to stainless steel. Bag filter systems are designed for high flow rates and high sediment holding capacity. Its range provides filtration solution for a broad variety of fluid applications in the process industry. They are particularly useful for filtering large volumes of high viscosity liquids.

D – FRP/GRP Filter Housing



FRP/GRP Filter Housing

Filter Concept Offers Corrosion resistant Fiber Reinforced Plastic (FRP) Filter housing to meet the demanding needs of industry to Filter corrosive and non-corrosive fluids for various applications including Chemicals, Oil and Gas, Petrochemical, Power Generation, Desalination, Potable Water, Municipal and many more Industries.

E – Basket Filter & Strainers



Basket Filter & Strainers

Basket filters & strainers will permit the straining & filtering of a wide variety of fluids, to retain solids of almost any size. All baskets are easily removable & cleanable. Basket strainer elements can be offered in single cylinder, double cylinder, multi cylinder & pleated design depending upon requirement of application. They are constructed of filter housing, filter element supported with perforated cage, positive sealing arrangement to avoid any bypass & choice of end connections.

F – Self Cleaning Filters



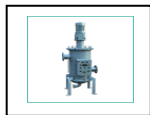
Auto Back Wash Type (Patent Pending)

Auto back wash Self Cleaning Filter is very useful for applications where suspended solid load is comparatively high & highly viscous material and slurry based filtration applications. It was constructed of filter housings, filter elements, drain valve, auto back wash valve and PLC controller. Filter housings can be offered in various materials of construction such as various grades of stainless steel, carbon steel and alloy metal. Filter elements can be offered with wedge wire, sintered multi-layer wire mesh, plain wire mesh and sintered metal powder configuration.



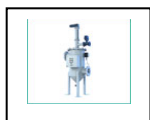
Disc Type Filter (Patent Pending)

Disc Type Self Cleaning Filter is used for highly viscous material filtration like Grease, Lube Oil, Edible Oil, Toothpaste & many more. Here, we don't require any backwashing media to clean the Filter Element. It is working under principle of differential pressure parameters for uninterrupted filtration requirement. Disc type self-cleaning filter is constructed of filter housings, filter elements, and drain valve. It also has a pneumatic cylinder and timer-based drain valve. Filter housings can be offered in various materials of construction such as various grades of stainless steel, carbon steel and alloy metal. Filter elements can be offered with wedge wire, sintered multi-layer wire mesh, plain wire mesh and sintered metal powder configuration.



Scrapper Mechanism filter (Patent Pending)

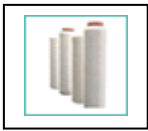
Scrapper Mechanism Self Cleaning Filters are widely used for continuous filtration requirement without any replacement of Filter Consumables and without Exposure of operators. Like auto backwash filter, Scrapper Mechanism Self Cleaning is used for preliminary filtration following the same principle of differential pressure; the only difference is that it is used for applications where back washing medium is not available. In other words, Scrapper Mechanism Self Cleaning Filter is used where in one cannot introduce any additional substance for back washing.



Auto BackFlush Filter (Patent Pending)

Self cleaning filter is constructed of filter housing, filter element, back flushing valve, differential pressure gauge, differential pressure switch, Dust Extraction assembly, Geared motor with Sensor and Control Panel. Filter housing can be offered in various material of construction such as various grades of stainless steel, carbon steel and alloy metal. Filter element can be offered in wedge wire, multi layered wiremesh, and plain wiremesh configuration, depending upon process requirement. These filters can offer filtration level starting from 1 micron to 2000 micron. They are designed to deliver flow rate up to 2000 m³/hr or even more than that with parallel configuration.

2) Process Filtration – Consumables – Filter Cartridges



Spun Bonded Filter Cartridge

Spun bonded filter cartridges are made up of 100% polypropylene fibers. The fibers have been carefully spun together to form a true gradient density from outer to inner surface. Filter cartridges are available with core & without core version. The superior structure remains integral even under severe operating conditions and there is no media migration. Polypropylene fibers are blown continuously on central molded core, without any binders, resins or lubricants.



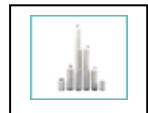
Wound Filter Cartridge

Wound cartridges are designed to meet the most demanding filtration duties. They offer an economic, compact, easily installed and maintained filtration system for removal of particulates from liquid. Wound cartridges are manufactured from a variety of carefully selected raw materials. These are processed into fibers of specific grades using the latest technology. After carding & spinning into roving they are wound into cartridges with carefully controlled micron rating. From raw materials to finished products we are in control of the quality and filtration characteristics. They are appreciated due to high dirt holding capacity and its rugged construction which allows facing different applications in liquid and gas filtration.



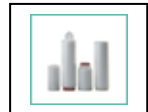
Polypropylene Pleated Cartridge

Polypropylene filter cartridges are precisely manufactured for use in critical filtration applications within food, pharmaceuticals, biotech, dairy, beverages, brewing, semiconductor, water treatment & other demanding process industries. Polypropylene pleated cartridges use the very latest gradient density micro fiber media technology to provide a combination of excellent micron ratings, high flow rates and high contaminant holding capacities. A special combination of polypropylene media with variation in the fiber diameter creates a gradient density matrix, ranging from open on the outside to finer on the inside, thereby providing a filter with in filter, which considerably increases contamination holding capacity & throughputs.



PTFE Cartridge (Poly Tetra Fluoro Ethylene)

PTFE Cartridges are made up of poly tetrafluoroethylene. PTFE is characterized by high chemical inertness. These are specifically designed for sterile filtration applications of liquid, air & gas streams. They are certified bio safe, non pyrogenic & fully validated to pharmaceutical standards. PTFE and polypropylene, the unique two materials used in cartridge manufacturing are chemically inert, not shedding and biologically safe according to F.D.A., USP and EEC requirements for pharmaceutical and food contact use. PTFE cartridge membrane is used in filtering the highly corrosive solutions such as strong acids, base solution and solvents. The membrane has about 80 – 95 % porosity & uniform pore size distribution. Moreover, the filtration area of each cartridge is as high as 0.7 m². Therefore it offers high flow rate, low pressure drop & long service life. These can be steam sterilized directly or reverse as per standard operating data.



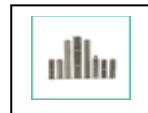
PES (Poly Ether Sulphone)

PES Cartridges are made of poly ether Sulphone with uniform pore distribution to ensure maximum performance in bacterial retentions. It's upstream & down stream polyester support ensures resistance to pressure shocks. Polyethersulphone membrane is hydrophilic in nature, it allows easy integrity testing for all applications where daily controls are required. The membrane possesses broad chemical compatibilities & contains no surfactants. PES Cartridges are produced in controlled environments & under stringent production conditions that ensure filter quality & cleanliness. These are assembled integrally by thermowelding. This process minimizes the presence of oxidization of substance & yield a durable filter cartridges suitable for extended use. This can be sanitized by chemical agents or by inline steaming. PES and polypropylene, the unique two materials used in cartridge manufacturing are chemically inert, not shedding and biologically safe according to F.D.A., USP and EEC requirements for pharmaceutical and food contact use. The filtration area of each cartridge is as high as 0.7 m². Therefore it offers high flow rate, low pressure drop & long service life.



Sintered Filter Cartridge

Sintering is a process for making articles from its base material in powder .They are made by mixing elemental or alloy powders and compacting the mixture in a die, the resultant shapes are then sintered or heated in a controlled atmosphere furnace to bond the particles. Sintering is traditionally used for manufacturing ceramic objects and after that it is used for filtration application. Due to sintering process, particles join with each other and form a porous structure which allow any fluid , air or gas to pass through without disturbing its structure. This structure is robust in nature to handle particle above stipulated micron rating. Such elements are back washed some time for cleaning purpose to remove deposited particle load. These sintered solid filters are able to withstand very high differential pressure across the filters.



Stainless Steel Cartridge

Stainless steel cartridges are designed to overcome the temperature and chemical compatibility limitations of fabric or synthetic fiber media. This will offer very high temperature resistance & can withstand high differential pressure. Stainless steel cartridges are offered in SS 304, SS 316, & SS 316 L materials. These elements can be plain cylindrical or in pleated configuration to increase filtration area. Normally all stainless steel pleated & cylindrical filters are supported with coarser filter media to ensure no direct damages to main filtering media under process upsets. A bubble point test can be done to certify that no opening larger than the specified pore size exist in product joints or seams. No media migration occurs due to stainless steel material. These elements can be back washed & reused.



Carbon Filter Cartridge

Carbon block cartridges are designed for high effective filtration of water for certain VOC'S, pesticides, chlorine, odor & test & sediment reduction down to 5 micron. These cartridges are manufactured entirely from FDA compliance materials. They are suitable for potable water filtration, as well as many industrial, commercial & food service applications. Its nominal filtration rating makes it excellent for polishing filters of pre filters in applications which require very fine filtration. These cartridges are effective at filtering giardia & cryptosporidium cysts from potable drinking water.



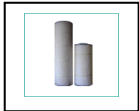
Oil Adsorbing Cartridge

Oil adsorption filter cartridges have been specifically developed and manufactured for the high efficiency removal of dissolved & dispersed oils from water within the gas & oil production industries, marine bilge and ballast water treatment systems, contaminated surface water run off & other industrial process industries. Filter media of this cartridge is material containing modified cellulose. This filter media will remove upto 95% of total hydrocarbons from water in a single pass. Dissolved oil, emulsions & dispersed droplets are adsorbed and retained from water by filter media.



Resin – Bonded Filter Cartridge

RB (Resin-Bonded) Cartridge is produced from cellulose fibers, which have been intrinsically bonded together by a melamine resin, to create a solid highly durable & porous structure. By treating the fibers in this fashion we can ensure a stronger cartridge that is less likely to collapse than a wound or pleated cartridge.



Jumbo Pleated Cartridge

Jumbo pleated cartridges are made up of of pleated polyester filter media with Polypropylene core inside and moulded end caps. Filter cartridges are designed for high flow rate and low pressure drop, due to its high filtration area. It is very popular for RO pre filtration & Pool water filtration applications.



PP Pleated and Glass Fiber Cartridges

PP Pleated and glass fiber cartridges are designed for higher filtration area & high throughput .It has 6 inch/152mm large diameter, and is coreless, single open-ended structure with an inside to outside flow pattern. Due to its large diameter with big filter area, it requires lesser elements for a given flow rate than standard cartridges diameter, due to lesser elements Filter vessels 's size workout smaller, resulting in lower capital investment and installation costs, as well as reduced operating costs.

3) Filter Bags – Liquid



Filter Bags – Liquid

Filter bags are manufactured for optimum filtration performance. They are made from carefully selected media, according to the specifications of the process industry. Various types of media are used such as needle felt, monofilament and multi-filament. They are effective in removing solid particulate from liquids where large volumes of contamination are present or where highly viscous fluids are required to be filtered. They offer an effective solution to many filtration problems.



Felt Filter Bags

Easy for Installation : Its SDS Seal easily fits within the cage.
Double Seal : Double seals to prevent liquid bypass.



Mesh Bags

Easy for Installation : Its SDS Seal easily fits within the cage.
Double Seal : Double seals to prevent liquid bypass,
Pressure Seal : Much advanced than traditional design



Monofilament Mesh Filter Bags

Collapse Free : Thick wall design to resist deformation under excessive pressure.
Double Seal : Double seals to prevent liquid bypass.
Pressure Seal : Much advanced than traditional design



Extended Life Felt Bags

The primary filter layer is made up of non-singed media, leaving all pore openings on the felt unblocked, which slows down the premature formation of filter cakes.



Extended Life Mesh Bags

Universal Compatibility : Fits and seals in most brands of standard bag housings.
Collapse Free : Thick wall design to resist deformation under excessive pressure



Durable Felt Bags

Design effort focuses on extending filter's service life. The inner pre-filter layer is coarser than the final filter layer to form graded pore depth structure. Coarse contaminant particles



Oil Adsorbing Bags

Heavy duty oil adsorbing capability, adsorbs trace oil up to twenty-three times of adsorbents dry weight.



Absolute Bags

Exclusively FDA compliant Polypropylene microfiber matrix, Silicon free. Non-foaming. Low TOC content.



Pleated Felt Bags

Consist of a series of pleated micron felts with depth graded pore opening structure. The filter surface area is 2.5 times larger than industrial standards & its filter media depth.



Pleated Absolute Efficiency Bags

Increased filter surface area by 250% compared to industrial standards, Significantly improved flow rate and reduced pressure drop.



Dual Flow Bags

Our Hi-efficiency Bi-directional Flow bags feature 85% more filter surface area, dual directional flow, and improved flow rates. This line of product consist of an outer bag and an inner bag. The total filter surface area increases by 85% compared to conventional single profile bags. During operation, both bags participate in filtration simultaneously, so that flow rate can be easily doubled.



Carbon Bags

Effective removal of chlorine, odor, asbestos, mercury, lead & other types of heavy metals and toxic organic chemicals.



Water Absorbent Bags

Superior water absorbing capability: Absorb and retain water upto 50 times of its own dry weight.



Antistatic Bags

Anti-static Polyester filter bags, Filter Code "FCIEASY", feature their static conductivity which allows the continuous static discharge during operation.



PP Pleated Oil Absorbent Bags

Polypropylene Oil Adsorbent Bags, Pleated Oil Adsorbent Pleated Bags (OAP) consist of two primary composite layers.



PP Pleated Hardshell Bags

PP Pleated Hardshell Bags are designed for higher filtration area & high throughput .It has 6 inch/152mm large diameter, and is coreless, single open-ended structure with an inside to outside flow pattern. Due to its large diameter with big filter area, it requires lesser elements for a given flow rate than standard cartridges diameter, due to lesser elements Filter vessels 's size workout smaller, resulting in lower capital Investment and installation costs, as well as reduced operating costs.

4) Air Filtration



Pulse Jet dust Collection Systems

Filter Concept is manufacturer of Pulse Jet Dust Collection system for various Industries requirement for air quality improvement and enhancing the quality of air released by collecting dust and other impurities from air or gas by removing particulate matter from the air and environment. We are a manufacturer of highly customized units to accurately match your Application requirements with customized ducting solutions along with our dust collectors for your specific dust collection requirements.



Air Intake Filter Systems

Turbines, Engines, Centrifugal Fans, Blowers, & Compressors are common equipment for Industrial utility. They intake atmospheric air for its further operations. If moisture, dust, and varieties of solid particulate are present in the intake air, such contaminants can build up on the internal components such as valves, impellers, rotors, and vanes of the compressor, Turbines, Engines, Centrifugal Fans, Blowers . Such build-up can cause premature wear and reduce the efficiency. Therefore, it is recommended to install AIR Intake filters to avoid atmospheric dust particles coming with Air.



Pleated Dust Collection Bag

Pleated dust collection bags are now widely used in the field of dust collection system. These are made up of 100 % Spun Bonded polyester media with different coatings on it, as per requirement of applications. This spun bonded media are pleated in different pleated depths & heights to accommodate desired filtration area. Spun bonded filter media offers surface filtration, due to which pleated bags offer very high throughput & lower pressure drop across the filter compared to any conventional tube type filter bags. Pleated configuration offers almost 3 – 4 times higher filtration area compared to conventional bags.



PU Moulded Bags

Filter Concept is keen to deliver highest level of quality product to their customer & with Endeavour to that FCPL has introduced polyurethane pleated bags to cater demanding application of air pollution control segment. Moulded design of pleated bag is suitable for retrofit to various reputed name in similar segment. Spun bonded filter media offers surface filtration, due to which pleated bags offer very high throughput & lower pressure drop across the filter compared to any conventional tube type filter bags.



Gas Turbine Air Intake Filter

Gas Turbine Air Intake Filter cartridges are modern and reliable for air intake applications. They ensure high efficient filtration of dust and other contaminants even in the most polluted environments. Normally these are made of mixture of polyester & cellulose and some time 100% polyester media. These media have much better pleat ability & dimensional stability. Pleated filter media offer high filtration efficiency, very fine retention level, easy clean ability & aesthetically good product than other normal filter media.



Pleated Nomex Media Bags

Pleated nomex bags are the latest Innovation by Filter Concept for high Temp. upto 220°C. Pleated Nomex bags are now widely used in the field of dust collection system for high temperature application. This Nomex media are pleated in different pleates and depths & heights to accommodate desired filtration area. Nomex filter media offers surface filtration, due to which pleated bags offer very high throughput & lower pressure drop across the filter compared to any conventional tube type filter bags. Pleated configuration offers almost 3 – 4 times higher filtration area compared to conventional bags.



Pleated Dust Collection Cartridges

Pleated dust collection cartridges are made up of 100 % spun bonded polyester media, like pleated dust collection bags media with different coatings on it, as per the requirement of applications. Construction wise Pleated dust collection bags & cartridges are one & the same, they are differentiated just for variation of filtration area. Dust collectors manufacturers / OEMs can replace conventional tube bags with pleated dust collection bags & cartridges with minor changes in the present equipment design. This polyester media is made up of high tenacity filament yarn without using any binding agent. Thus hard finished material is very stable against hot gas attack & structurally durable.



Dust Collection Non - Woven Bags

Filter bags are manufactured for achieving optimum filtration performance. They are made from carefully selected media. Various types of media are used such as needle felt, monofilament and multi-filament. They are effective in reducing dust emission levels as per requirement of industries. These bags are placed in dust collector with supporting filter cages. Contaminated air takes path of outside to inside filtration. All solid contaminants get deposited at outer surface & clean air / gas passes through top chamber. Particles retained at the outer surface of media get collected at the bottom of dust collector with the help of shaking mechanism or reverse pulse jetting mechanism.



Sintered Multilayer Wire Mesh

Sintered multilayer wire mesh bags are designed for high temp Application of Industries. It can be used for high temperature up to 480°C. It has one standard combination of 5 Layers sintered wire mesh made from stainless steel which is brought together through vacuum sinter, compression and rolling and made into a kind of porous material.



Pocket Filter

Pocket filter are made of non woven synthetic, fiber media to ensure retention of solid particles up to stipulated micron rating.

5) Compressor OEM Filters



Compressor Filters

Air Filter, Oil Filter, Air Oil Separator, Retrofit equivalent to Atlas Copco, IR, ELGI, Kirloskar, K G Khosla etc.



Hepa Filters

Hepa filters are designed to meet requirement of very fine filtration up to 0.3 micron at high efficiency of 99.99 %. We have added a new feature in hepa by using spun bonded polyester media.



Panel Filters

Panel filters are used in industries to retain particles range from 1 micron to 50 micron. These filters are basically air intake filters which is working with negative pressure of systems.

6) Hydraulic & Lube Oil Filtration



Hydraulic & Lube Oil Filter

Hydraulic filters are used in demanding applications of filtration of oil at any operating conditions. Irrespective of operating conditions like high pressure, low pressure, highly viscous oil, or highly contaminated oil, we have best adequate solution for these applications. We have filters which can remove moisture contents from oil.

7) Compressed Air Filtrations



Compressed Air Filters

Compressed air is a very common source of energy. For effective utilization of compressed air, it has to be clean. Filter Concept offers a range of compressed air filters for removal of dirt, dust, rust, condensates, moisture contents, oil impurities & exhaust fumes.

8) Gas Filtration



Gas Filter

We offer a range of gas filtration systems for removal of dirt, dust, rust, condensates, moisture contents, oil impurities & exhaust fumes. Filtered gas results low down time & reduces the production loss.

Industrial Applications

- Water Treatment
- Oil & Gas
- Automobiles
- Cement
- Ceramics
- Refineries
- Textiles
- Petro Chemicals
- Power Plant
- Pharma & Biotech
- Steel industries
- Dyes & Intermediates
- Paints & Inks
- Dairy, Food & Beverages
- Electronics
- Mining
- Edible Oil
- Aeronautics
- Fertilizers
- Pipe
- Pulp & Paper
- Electroplating
- Aerospace, Defence & Marine
- Sugar Industry
- Chemicals

COOLING TOWERS & SPARES



Indowmax (M) Sdn Bhd has a collaboration with already renowned **SV Cooling Towers Private Limited** with an objective to be recognized as one of the suppliers of quality cooling towers in the world. Located in Ghaziabad (Uttar Pradesh), the premises house production facilities which include those for timber fabrication and treatment, FRP moulding, mechanical manufacturing & assembly and various balancing/testing fixtures.

Our manufacturing capabilities are built upon automated specialized equipment. By having a modern plant, the standardized manufacturing techniques provide short lead times for production requirements.

The manufacturing unit comprises of the latest advanced machinery and equipment, highly skilled team and dedicated diligent workforce.

About Us

Our approach focuses on new ways of combining innovation and adoption of new generation technologies to provide our customers with applications that are environmentally responsible and making us an organization with positive environmental reputation.

Leader in Cooling Tower Technology

We offer integrated solutions, application development and product engineering services through a combination of processes and enabling technologies.

References

Our strong references range from:

- | | | |
|-----------------------------|------------------------------|-------------------------|
| ▪ Gas Based Power Plants | ▪ Oil Refineries | ▪ Vanaspati Plants |
| ▪ Thermal Power Plants | ▪ Steel Plants | ▪ Paper Industry |
| ▪ Nuclear Power Plants | ▪ Cement Plants | ▪ Sugar plants |
| ▪ DG Power Plants | ▪ Chemical Plants | ▪ Pharmaceutical Plants |
| ▪ Fertilizer Plants | ▪ Oxygen Plants | ▪ Tyre Plants |
| ▪ Petrochemical Plants | ▪ Synthetic Polyester Plants | ▪ Dairies |
| ▪ Solvent Extraction Plants | ▪ Distilleries | ▪ Breweries |

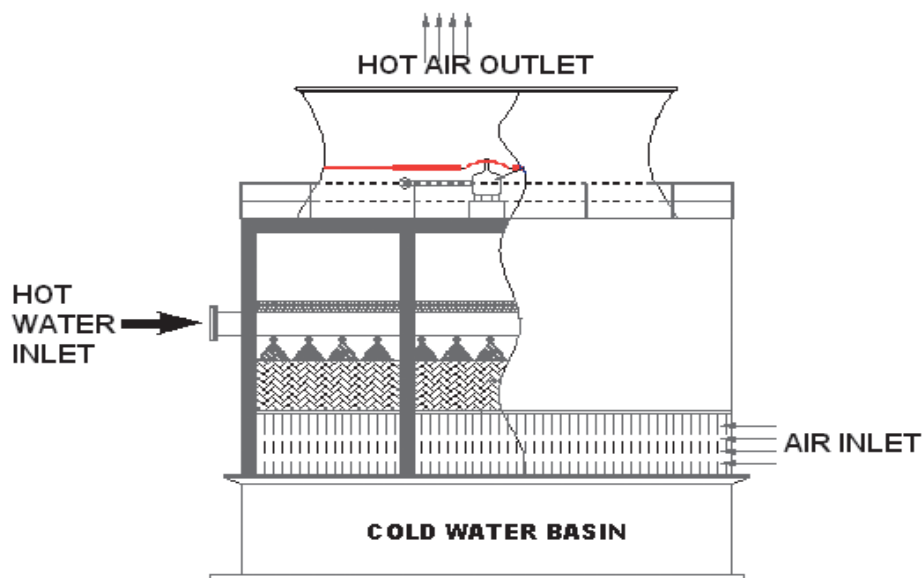
Which bear testimony to our capabilities.

Cooling Towers

Both Counter Flow type and Cross Flow type of Cooling Towers are offered by us:

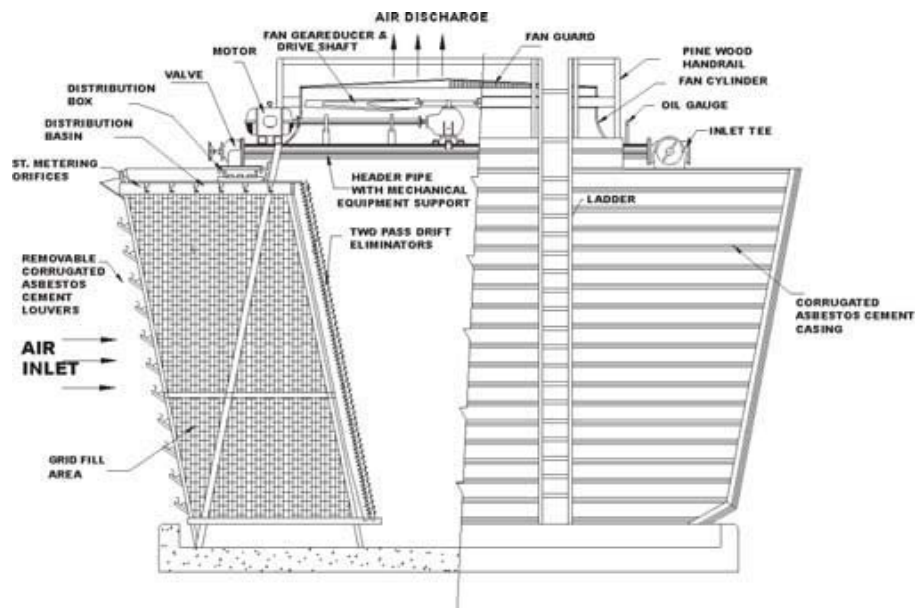
• **Counter Flow Cooling Towers**

In **counter flow cooling tower** the air moves vertically upwards through the fill while water falls vertically downwards. Film type fill is used and is suitable for all cooling load applications, however, it is more suitable for the application where cold water temperature is critical and water quality is good. These cooling towers are made of RCC construction. Film type fill is made of PVC for normal water applications. These cooling towers are fitted with the fills of wider flute so that it can withstand most of the industrial water. The film type fill should be avoided for the applications where water has traces of oil and contaminated water. In the case of contaminated water PVC 'V' bar and grid can be used. Cooling towers are fitted with high efficiency mechanicals such as axial flow fans, gear boxes and drive shafts.



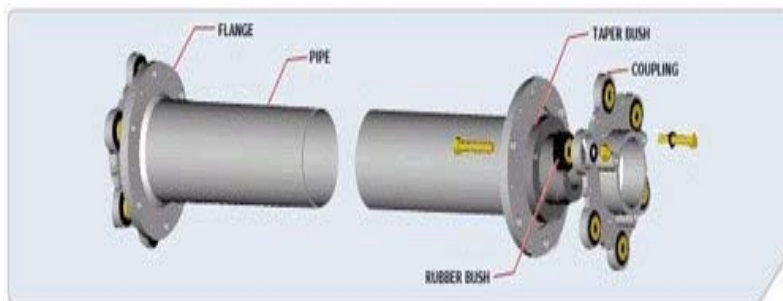
• Cross Flow Cooling Towers

In a **cross flow cooling tower** air moves through the fill horizontally and water falls vertically. The fill used is splash type fill and is suitable for cooling all load applications; however, it is more suitable for the application where water has higher suspended solids which can be a problem for film fill cooling tower operation. These cooling towers are made of RCC. For high temperature applications the splash fill is made of chemically treated timber whereas for normal temperature applications it is made of PVC. It can be of rectangular or 'V' bar shape. The fill is supported on a SS-304 grid. Cooling towers are fitted with high efficiency mechanical parts such as axial flow fans, gear boxes and drive shafts.



Drive Shafts / Couplings

We provide cost-effective & quality range of drive shafts. The type of drive shaft to be used depends upon the horse-power of the motor. The length of the drive shaft is tailor-made as per site requirement and given specifications. These are dynamically balanced before dispatch within the specified limits of permitted un-balance. Flexible elements are used at both the ends to absorb minor mis-alignment. This ensures smooth running of the equipment.



Components of drive shaft are fabricated from specified material only as per Customer requirement. Drive shaft is a very precision item. Our quality control ensures that casting, machining and fabrication are closely and skillfully monitored for long and smooth running. We manufacture Drive Shafts / Couplings for Engines of 10 to 150 Horse Power.



Gear Boxes

Our durable and reliable ranges of gear boxes are suitable for high speed and high loads. We manufacture and service Industrial heavy duty Spiral Bevel Reduction Gear Boxes for fan rpm 530, 440, 350, 351, 261 and 100. These gear boxes are known for robust designing, sturdy and durable gear assembly. It operates with low noise and vibration with full reliability.



Other Spares

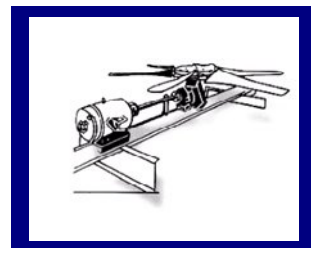
We also offer a variety of durable and reliable range of quality spares. Besides complete valves, spares like valve body, gasket, locking bar, stem guide with grease fitting handle and set screw, valve disc and other accessories and hardware are also available. These pieces are known for sturdy designing, efficiency and reliability. The design is to maintain constant control of pressure and temperature. The make is using finest quality material for smooth operation.



Helical Gear Set



Spiral Bevel Gear Set



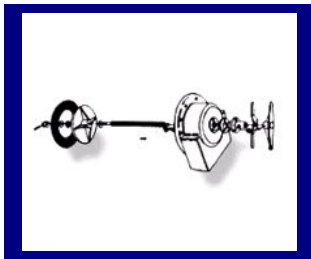
Mechanical Assembly



PVC V Bar Fill with Accessories



Spray Nozzle



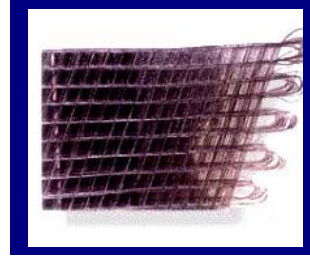
Flow Regulating Valve



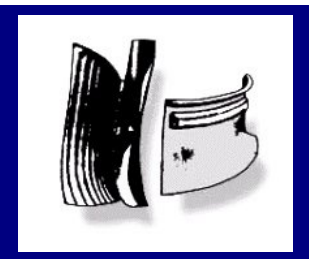
Flow Control Valve



Fan / Ventilator



SS Grids & Splash Bars



FRP Fan Cylinder assemblies & segment



Aluminum Fan assembly



Couplings & Bush

With our representation now in Malaysia we would be able to provide fast and efficient service to the Customers in the whole Asia Pacific Region.

INDUSTRIAL FANS & DAMPERS

Industrial Fans, Dampers & Dust Collectors



IndowMax (M) Sdn Bhd represents well renowned **Industrial Fans (India) Pvt Ltd.**, to manufacture and supply industrial fans and dampers as well as pollution control equipments for industries like Cement, Paper & Pulp, Sugar, Power, Palm Oil, Steel, etc.

We offer a wide range of products and services for the collecting, handling and filtering of air, vapours, gases, dust and airborne solids.

The manufacturing program includes Ventilators, Industrial fans and Recycling Systems and Dust collection plants for the recovery of reusable materials, work place protection booths, welding fume exhaust systems, oil vapour separators, exhaust air cleaning plants, etc. The "Dust collection plant" includes the capture, handling and filtering of dusts and solid particles out of air and process gases.

We undertake projects including planning, manufacture, assembly and commissioning of air handling plants, using filtering systems which are tailor-made to the customer's requirement.

MAINTENANCE CONTRACTS

Maintenance Contracts for Industrial Plants



We have a tie-up with specialized service providers for undertaking large service and Maintenance Contracts in running plants. We also undertake the following services:

- Integrated Asset Management Services
- Performance based Maintenance Contract Services
- Shutdown support services
- Relocation and Refurbishment of Used plants
- Support for Pre-commissioning, Erection and Commissioning
- Utility Management Services
- Secondment of specialists.

PIPES & FITTINGS

Pipes & Fittings ...



Indowmax (M) Sdn Bhd represents Technofit Middle East FZCO in Asia Pacific Region to supply pipes & fittings. Technofit are acknowledged throughout the Middle East Region and in oil field industry as the most reliable supplier of pipes, fittings, flanges, valves and other oil field industry related products.

Range 1/2" to 72" in various schedules
Execution Seamless % welded Pipes, ERW, HFW, SAW, DSAW
Standards API, ASTM/ASME, BS
Materials & Grades Carbon steel, alloys, stainless steel
 API 5LB, A106 GrB, API 5L GR x-42 TO x-70
 A333 Gr6. A312 Gr 316/316L, 304/304L
 A790M UNS-S 31803, S 32750
Specials Finned tubes, heat exchanger tubes, casing & tubing duplex st.st.



Range 1/2" to 72" wide range of thickness & spec.
Ends BW, SW, PE, Threaded, Flanged

Standards ANSI/ASME, MSS SP 75
Materials & Grades Carbon steel, stainless steel duplex st.st. wpb, WPL6, 304/304L, 316/316L, UNS-S31803, S32750

Specials Barred & barrel flow tees, duplex st.st. large radius bends, 3D, 5D, 7D, 20D



CNC MACHINE UPGRADE**CNC Machine Upgrade**

With collaboration with M/s Sharpline, which was promoted in 1995 in India to retrofit and rejuvenate the old CNC machines through value addition. We are able to provide total solution to enhance the machine uptime and productivity. We use the best of CNC systems & components so that the machines retrofitted are as good as new not only in looks, but also in performance. And in the past 11 years our principals have retrofitted more than 800 machines successfully.

All these machines are of different type and make from the world over. These include Borers, Cutting Machines, Drilling Centers, Flame Cutting Machines, Gantry Machines, Fear Finishing Machines, Injection Moulding Machines, Gem Polishing Machines, Grinders, Honing Machines, Machining Centers, Milling Machines, Packing lines, Hydraulic Presses, Profilers, Tuning Lathes, Swaging Machine, Thread whiling Machines, Turret Lathes and so on

TRANSFORMER EXPLOSION PROTECTION

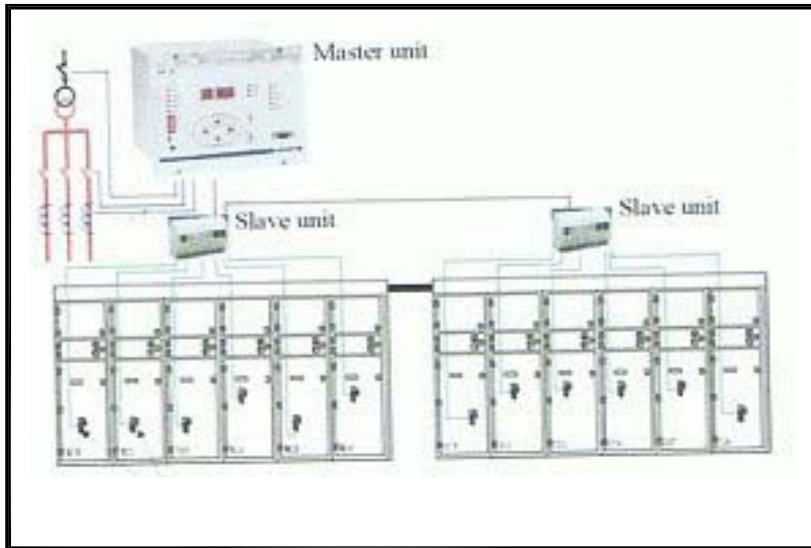
Transformer Explosion Protection



We offer specialized Transformer Protection with the support from **SERGI**. Our Transformer Protection System is designed to protect the transformer tank from rapid increase in pressure due to low impedance faults. We install a mechanical protection device such as a Pressure relief Valve (PRV) in order to prevent damage to the Rupture Disc during slow static pressure increase

ARC PROTECTION

Arc Protection in Switchgear using Protection Relays



An electric arc short-circuit is a frequent switchgear fault where an explosion – like heat and pressure-effect may cause large material damage and jeopardize the job-safety of the operating staff. The goal of the arc-protection is to detect the arc and minimize its burning time thus protecting people and property.

Cutting off the current path feeding the arc usually minimizes the burning time. Over-current relays with integrated arc sensor inputs can be used to build short-circuit and arc protection of one feeder in a switchgear.

The arc protection can be in-built into the new switchgear and also retrofitted into the existing switchgear. The arc protection system operates as a complement to the traditional relay protection scheme ensuring rapid operation in faults where traditional protection scheme is not able to operate fast enough due to operation delays for selectivity requirement and high impedance types of arc-

OIL DRILLING & CEMENTING AIDS



Indowmax(M) Sdn Bhd enters into strategic partnership with world renowned **Laxmi Udyog** with an objective to supply the most innovative products of Cementing Aids and various Production items.

Our Principals are a leading manufacturer and supplier of Oil Well Drilling Rig Equipments, Spares Components and Accessories from last more than 35 years. They are in fact, the pioneers in India to manufacture various Spares and Components, which are being regularly supplied to all the Projects of Oil and Natural Gas Corporation Limited and Oil India Ltd., both of which are our Government's undertakings. These products are also supplied to other Oil & Gas Companies engaged in Exploration and Drilling activities, such as Reliance Industries Limited, (CBM Project), Cairn Energy India Pty Ltd., Oil & Gas Drilling "NAFTA" Limited M/s. PLN Construction, M/s. Dalma Energy LLC, to mention a few. These products are also exported to foreign countries like Kuwait, Oman, Philippines, Malaysia, Indonesia, Singapore, Bangladesh and Turkey.

All the manufacturing, Inspection and testing facilities are available at our works under one roof. They have necessary qualified Engineers and Trained Technical staffs. Laxmi Udyog is an ISO 9001:2000 certified Company. They are also holders of API License to mark their products with **API Monogram for API Specification 7, 7-1, 7-K, 10-D & 11-B.**

Range of Products

The following of their products are marketed by us from Malaysia:

• Cementing Aids as per API Spec. 10D

1. Non-weld/weld Hinge type straight bow Casing Centralizers.
2. Rigid/Positive Bow Centralizers.
3. Turbolizers with Single & Double Turbine Blades.
4. Stop Collars.
5. Solid Centralizers.
6. Cement Basket & Metal Patel Basket.
7. Centralizer assembling machine.

• Production Items

1. Sucker Rods, Pony Rods, Couplings, Sub-Couplings.
2. Sinkar Bars.
3. Polished Rods.
4. Polished Rod Clamps.
5. Pumping Tee.
6. Stuffing Box.
7. Sucker Rod Elevators.
8. Sucker Rod Wrenches.
9. Wheeled Guide Sucker Rods.
10. Rubber Guides for Sucker Rod & Pony Rods.

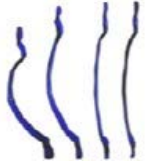
Cementing Aids

• Straight Casing Centralizer



In order to centre the casing pre-selected points and to obtain a more uniform, annular cementing space in the Oil well, Straight Casing Centralizers are one of the important cementing aids used. Besides, this helps in minimizing the hazards of channeling and ensures installation of the casing pipe in the well. Our Centralizers are non-weld hinges and lips kept integral with the collars. These are best designed to have their versatile applications.

The construction of the Centralizers assures that hinges will not open while casing is being run regardless of holes direction or irregularities in formations. The Centralizers will effective centering down the hole. Centralizers can be installed very conveniently and quickly on the casing pipe by merely wrapping the pre-assembled two halves on the pipe and inserting pins in the collar hinges. All Centralizers bear A.P.I. Monogram on account of their consistent product quality.



The Spring Bows, the critical parts of the Centralizer, are made of high quality special steel strips. These are sheared to size and normalized to have the proper grain structure. Bows are forged in four different unique designs to have varied heights. These are then hardened and tempered to ensure optimum mechanical properties to meet or exceed the Starting and Restoring Force criteria specified in A.P.I Standard 10D. Bows are then flattened several times on a special machine to get permanent setting.

- **Positive Casing Centralizer**

Positive Casing Centralizers are provided with rigid bows of U-profile design instead of sprig bows to ensure maximum fluid passage. These are also non-weld and rugged in construction. The positive centralizers are used where casing inside a cased well is lowered. It keeps the casing centered in the cased well enable proper positioning of packer and other installations in the casing and facilitates stage and surface cementing. It also protects previously run cemented casing from shocks and vibrations caused by drilling.



- **Turbolizer**



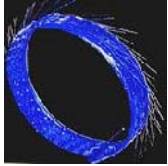
Turbolizers are similar to straight casing centralizer except that these are having turbulence vanes fitted on each bow. The vanes are scientifically shaped into multi direction design to give the fluid an outward and spirally direction against the walls of the well hole and around the casing. To give them maximum strength, the vanes are made of spring steel material and heat-treated to meet the required mechanical propriety. The vanes are oriented for left and right hand deflection.

- **Scratchers**

Successful primary cementing requires centering of the casing, casing movement, and a properly conditioned hole. Our Scratchers condition the hole by removing mud cake from the face of formation to ensure a good cementing bound and to prevent channeling. They also contribute to the even distribution of the cement slurry and the achievement of a complete fill.

Reciprocating Scratchers - These are constructed to withstand any treatment from the casing rack to the bottom of the well without impairing their effectiveness. The highest strength wire fingers and cable loops disintegrates the toughest filter cake and their working diameter enables them to reach into enlarged scale sections to agitate gelled mud and to make possible a complete cement fill.





Specification of Rotating Scratchers - These consists of a split collar which houses double coiled external and internal bristles. The external bristle system is inclined 200 and is shielded by slight elevations in the collar. The inclination of these bristles reduces the abrasive action when casing is run into the hole. The bristles are placed in a new position relative to the bore holes wall at each change of direction while moving pipe, thus assuring the cleaning of the entire circumference of the casing and the well bore. The internal bristles serve to remove mill scale and other foreign matter from the casing, improving the bounding of cement to the casing.

- **Stop Collar**



Stop Collar deices are used to limit the travel of centralizers, turbolizers, positive centralizers and scratchers on the casing pipe. These are made in 2 designs that are (1) Non-Hinged Stop Collar (a ring with internal groove duly slotted for inserting spiral locking pin) and (2) Hinged & Bolted Stop Collar.

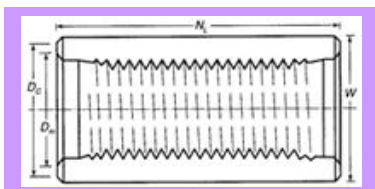
Well Production Components

- **Sucker / Pony Rod**



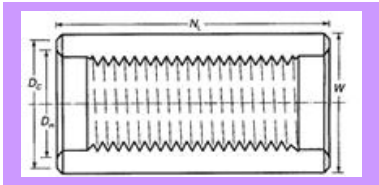
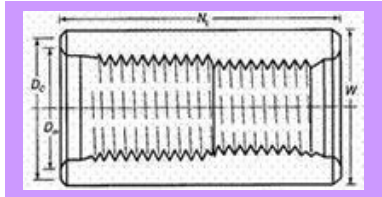
Sucker/Pony Rods are manufactured from hot rolled carbon or alloy steel. Rolled Rods are machine straightened and cold drawn to the required size. Both ends are hot upset forged to API designed shape. The rods are heat treated over the full length by Induction Process. As per requirement of mechanical properties, the rods are normalized or normalized and tempered to the specified level or quenched and tempered to the required hardness and strength. Care is taken to obtain refined grain structure with no residual stresses in the rod. A sample specimen is cut from the heat treated material and is tested for ultimate tensile strength, yield strength and elongation. The rod is then again checked for straightness. The forged ends are properly aligned with its body. Rods are decaled and cleaned. The upset forged ends are machined on C.N.C. Lathe machines as per API dimensions. Threads on both ends are cold formed on Thread Rolling Machine and checked with API approved gauges.

- **Coupling**



Sucker Rod Coupling: - Sucker Rod coupling have the same box thread size in each end and are used for connecting Sucker Rods.

Sub Couplings (Cross over coupling): - Sub Coupling have different box thread in each end and are used for connecting two sizes of Sucker Rods or a Polished Rod to a Sucker Rod string.



Polished Rod Coupling: - Polished Rod couplings have the same box thread size in each end and used for connecting the Polished Rod to the Sucker Rod string.

• **Sucker Rod Elevator**



Our Rod Elevators are for ease of operation and safety. Elevators are made by heat treated alloy steel bodies and forged steel bails. Ease of operation is assured by convenient location of operation latches and replaceable feature of both spring and plates. Safety is assured by two latches, either of which will hold the rod. Rear levers are also conveniently located for ease of operation and do not protrude to become caught on any object. Interchangeable and plates one of hardened steel and give adapting the elevator for 1/2", 5/8, 3/4 and 7/8 and 1" rods. All parts of these elevators are of high grade Alloy Steel, properly heat treated, carefully machined and inspected and guaranteed to size to give long life.

• **Pumping Tees**

Specification of Pumping Tees: Our Tees are available in two basic materials, Malleable and Ductile Iron. Every Tee is precision machined to assure proper center alignment of tubing, stuffing box, and outlet and bleeder hole. Our malleable iron Tees are best suited for economical, medium duty hook-ups and in size



• **Sucker Rod Wrench**



Specification of Sucker Rod Wrench: Our snap action Rod Buster Sucker Rod wrench is made of high grade alloy steel, hardened to resist wear. The lightweight rugged tool is excellent for manual makeup and break out of Sucker Rod joints. It features a counter balanced grip to reduce fatigue. The cross section of the handle is oval which provides a natural resistance to the wrench spinning when gripped. The head is spring loaded and a hardened steel bushing is provided between the wrench head and handle. Three sizes are available for sucker Rod of 5/8", 3/4" 7/8 & 1".

• Polished Rod Clamps



← Double Bolts Clamp Recommended for maximum working Load - 40,000 lbs

Double Bolts Clamp Recommended for maximum working Load - 40,000 lbs



Specification of Double Bolts Clamp and Single Bolts Clamp: "LAXMI" brand Clamp body is made from high tensile heat treated AISI 1040 steel and is designed and machined to provide greater holding power. AISI 4140 Alloy steel hinge pins are heat treated for reater strength and easy opening. The bolts, nuts and washers are made from high tensile heat treated steel and are cadmium plated for maximum corrosion resistance. The clamping surface is bored and reamed to exact polished rod size for better clamping at 90 degree to the polished hole. "Laxmi Clamp" is manufactured in size 1.1/8" double bolts design clamp. Single bolt clamp for maximum 25,000 PSI working load and double bolts for maximum 40,000 PSI working load.

• Wheeled Rod Guide Coupling



Specification of Wheeled Rod Guide Coupling: This coupling is equipped with rolling wheels, these wheels centralize the sucker rod string and reduces the friction while stroking.

Coupling Body: The sucker rod wheeled guide coupling body made out from SAE 4340 heat treated alloy steel. For high corrosive 416 stainless steel used. In the Coupling body there is provision to set the four wheel vertically at 45⁰ angle with each other so that the entire 360⁰ angle may be guided in the tube. These wheels can be easily replaced by new one after wear out.

Wheels: The wheels are manufactured from Alloy steel, Stainless Steel, Polyethylene & Nylon etc. as per the requirement of the customer & field conditions. There is a metallic journal in each wheel so that it rolls on a Roller Pin with no friction. These wheels can be easily replace by opening of a nut of the pin.

• Casing Scrapes

Specification of Casing Scrapes: Laxmi Casing Scraper is used to clean cement, mud, rust, scathe, perforation burrs and other substances from the inside wall of casing. Casing Scraper is manufactured from forged heat treated alloy steel. The Scraper blades fit into machined recesses & are held by stopper & spacer. The Scraper Blade feature left hand helical grooves and are hard faced for maximum service. There are sufficient blades in the body to completely scrape the casing surface without rotating the tool. The scraper has to be installed in the drilling string between the bit and the bit sub. The bit is run below the scraper to serve as a guide and prevent plugging the circulation hole through the scraper.



PLANT INSPECTIONS & NDT CERTIFICATION

Plant Inspections & NDT Certification

Indowmax (M) Sdn Bhd provide the inspections & certifications services under a tie-up with **Aruntech**. Aruntech is a leading provider of inspection and certification services to industry. We serve to industries like Engineering, Oil & Gas, Petrochemical, Offshore Assets, Power Plants, Manufacturing, Shipbuilding and Construction.

We the represent of Aruntech we can provide its services around the world with qualified staff of professionals who acquired a considerable and consolidated experience in the respective industrial fields, working with the most important engineering companies and oil companies worldwide.

We will provide specialized manpower and facilities; we can manage shutdowns and turnarounds for all plants and sites. Moreover through our different kinds of materials and equipment of latest technology, we guarantee the quality of services both for large and small scales of work. We focus on satisfaction of our clients which is our ultimate goal based on their requirements.

Inspection activities provided:

- Plant Inspection (On Stream Off Stream)
- Shutdown Inspection
- Pre-Shutdown Survey
- Asset Integrity Management Inspection
- Pressure Vessel Inspection
- Piping Inspection
- Storage Tank Inspection
- Pipeline Inspection
- QA/QC Service for Mechanical, Electrical and Civil
- Welding Inspections
- Painting & Coating Inspection
- Non Destructive Tests (UT-MT-RT-PT-VT-ET-LT and including advanced NDT Methodologies)
- Visual and Dimensional Examination
- Execution of initial, intermediate and final inspection
- Identification and traceability of the materials
- PMI-Positive Material Identifications
- Review of the technical and manufacturing data books



TRAINING

Training



We organize specialized training for our customers on various products and services. Our trainers are well experienced and keep abreast of the latest trends and developments

- **PLCs, especially Siemens make on Simatic S5 products**

~ Still some customers continue to use Simatic S5 and hence we cater to Step 5 programming.

~ We offer training for PCS 7 and cater to Step 7 Programming. We keep track of the latest versions and developments and hence the customers get to know the latest information.

~ Some customers need specialized training for their applications. Hence we tailor make the training programs to suit the customer needs.

- **Motors**

~We organize training programs for the service and maintenance of electric motors and rotating equipment. This can be done for all makes of motors.

- **Relays and Meters**

~Based on specific requirements we conduct training programs for various Protection relays, meter calibration, etc.

- **Electric Switchgears**

~It will be easy to maintain to the Plant once the basic electric design concepts are understood. We organize training programs for both theory and practical needs of customers on the Low voltage and Medium Voltage Switchgear.

- **Control Valves**

~Old valve in the plant need not been thrown away just because the OEMs do not supply spare parts due to obsolescence. We can do Reverse Engineering to fabricate the parts overdues and refurbish the valves to extend their lifetime. Our training module gives in depth knowledge on the design and functionality.

- **Plant Inspection and Certification**

~Our training module provides the steps for survey and inspections of various equipment in the plant and review of the technical and manufacturing data books.

INFORMATION TECHNOLOGY/MICROSOFT SHAREPOINT

Information Technology (IT) / Microsoft SharePoint

Indowmax (M) Sdn Bhd is a leading Engineering Organization offering Services & Solutions for Information Technology (IT) / Microsoft SharePoint by collaboration with **Forefront Solutions & Consultancies (P) Ltd.**

Forefront Solutions & Consultancies (P) Ltd. is a consortium of thorough bred IT Professionals with abundant man year's experience in managing and executing IT projects world wide, and the leading Saudi entrepreneurs. The synergy in the consortium has enabled Forefront to serve organizations world wide and gain exposure in varied fields of business and venture into Information Technology. This experience, Program / Project Management, Process Management, out-of-the-box services has enabled Forefront to have registered as one of the approved vendors, for its IT services, at various middle east based companies. The prime focus of Forefront is to provide corporate and business houses with world class IT solutions and therefore be the one-stop shop for anyone looking to expand in their e-environment.

Our vast experience has enabled us to adhere to strict processes at all levels, be it designing a requirement, implementing a service, or requesting for information. This adherence to processes has enabled us to serve the Customers to the requirements, and more importantly in a timely manner, which is evident in our day-to-day activities like documentation, design, coding, quality control, version control, et. al.

Our Services

This area covers wider ranges of activities and highly potential and most of the companies are currently doing the same, it covers:-

- Medical Transcription
- Business Transcription
- Insurance/Billing Back office processing works
- Medical Portal Management Services
- Engineering Designing Works



FABRICATION OF STEEL STRUCTURE

Fabrication of Steel Structure

Services we offer:

- In-site Repair of Pipelines & fittings
- Technical Specifications, Data Sheets
- Non-destructive testing (NDT)
- Onsite Fabrication
- Design Engineering
- Hydrostatic,Pneumatic, Leak Testing
- Replacing Materials
- Site Evaluation
- Mechanical Design, Detailed Engineering, Auto CAD Drawings
- Pickling and passivation
- Welding of Exotic Metals
- Shop Fabrication
- Stress Relieving, Normalizing
- Material Procurement
- Code Stamping (U,U2,S,PP,NB,R,CE)
- Erection & Commisioning
- Export Documentation
- Blasting, Painting & Spray Metalizing

DIESEL GENERATING SETS



For over six decades, Ashok Leyland has been moving people and goods, touching millions across 50 countries worldwide. Today, Ashok Leyland the flagship of the Hinduja Group, one of the largest commercial vehicle manufacturers in India with a turnover of US \$ 2.3 billion in 2012-13 having consistently delivered profits to our stake-holders since inception.

LEYPOWER Power Solutions is the fastest growing genset provider in India. With state-of-the-art technology in engine, alternator and controllers, LEYPOWER provides a fully integrated power system at par with global standards at a very competitive overall cost of ownership.

LEYPOWER ready-to-use diesel generating sets meet with the latest CPCB norms in India and built to comfortably meeting international norms. These sets are powered by the compact 4, 6, 8 and 12 cylinder series of diesel engines. Aesthetically designed, these DC sets are silent, environment-friendly require minimum maintenance and are low on operating costs.

LEYPOWER diesel generating sets are manufactured in the state-of-the-art plants located across 6 units in the country using the latest machinery and skill sets to roll out well engineered DG sets. The present range extends from 10-2250 kVA with generating sets manufactured to operate under arduous conditions. Indowmax (M) Sdn Bhd represents in Asia Pacific region **Ashok Leyland's** power solution business with an ambitious plan to become a world renowned manufacturer and exporter of Diesel Generating Sets.

Product Range

- **LP (10-30KVA)**

- ✚ LP 10, LP 15, LP 20, LP 25 & LP 30

- **LP (35-82.5KVA)**

- ✚ LP 35, LP 40, LP 45, LP 50, LP 63, LP 75 & LP 83

- **LP (100-160KVA)**

- ✚ LP 100, LP 125, LP 140 & LP 160

- **LP (180-500KVA)**

- ✚ LP 180, LP 200, LP 250, LP 320, LP 400 & LP 500

- **LP (600-2250KVA)**

- ✚ LP 750, LP 1010, LP 1250, LP 1500, LP 2000 & LP 2250

Standard Scope

- **Engine**

Liquid Cooled 4-stroke Genset Engines (1500/1800 RPM) conforming to ISO 8528-1:2005(E) Specification

- **Scope of supply**

- ✚ Base Engine - Fan to Flywheel with mounting legs
 - ✚ Heavy Duty Spin - on fuel, Lube & Air Filters
 - ✚ Turbo-Charger & intercoolers - depending on models
 - ✚ Tropical Radiator with fan guards & stone guards
 - ✚ Charging Alternator & Starter Motor
 - ✚ Stop Solenoid – For manual Shutdown
 - ✚ Sensors - Lube Oil Pressure & Water Temperature

- **Alternator**

- ✚ Stamford/Leypower make 1PH / 3PH, 50PH /60PH Hz Alternators
 - ✚ Brushless, Single Bearing
 - ✚ IP23 Protection and Class H Insulated
 - ✚ Voltage Regulation +/- 0.5%, 0.8 PF Lag

• Canopy

- ✚ Open base Skid & Soundproof Enclosure options
- ✚ Acoustic enclosure mad of steel sheets and structural metal base frame
- ✚ Pre-treated & Powder-Coated
- ✚ Metal / Plastic Fuel Tank option
- ✚ External Fuel Filling option
- ✚ Optimally designed for lifting options
- ✚ Emergency stop button mounted on canopy exterior
- ✚ The canopy is insulated to limit noise levls to 75 dBA at 1 mtr as per per CPCB Norms

• Controller

The unique Integrated Digital Microprocessor based Controller incorporates engine and alternator parameters in a single console. It provides the most exhaustive display of critical engine and alternator performance parameters with alarm and safety features.

- ✚ Option of Engine Control Unit, Manual Controller, & Auto Mains Failure Controller
- ✚ User-friendly set-up for ease of use
- ✚ Fully configurable via the fascia or PC using USB communication
- ✚ Provision for Remote monitoring & Control through GPRS (optional) / WLAN (optional)

Features

Display Parameters		Audio-Visual Warnings	Shut-down with Audio-Visual indicators
Engine (RPM)	Speed	Low Oil Pressure	Low Oil Pressure
Voltage	(Phase-neutral and Phase-Phase)	High coolant Temperature	High Coolant Temperature
Current (Amps)		Low Battery Voltage	Engine Over Speed
Power Factor		High Battery Voltage	Engine Under Speed
Hours of Operation		Charging Alternator Failure	Under Voltage
KwHr		Low fuel Level	Over Voltage
Engine Oil pressure			Over/Under Frequency
Coolant Temperature			Emergency OFF
Fuel Level			Low Fuel Level
Battery Voltage			Overload

Power Solution Business

Ashok Leyland's Power Solution Business (PSB) group offers complete solutions for power generation under the Leypower brand and various other applications like Industrial, Agricultural & Marine.

- + **Industrial Engines**
 Engines for earth moving, air compressor, cranes, pavers, road sweepers, concreting pumps and agriculture equipments
- + **Leypower Portable Series**
 5 kVA – 7.5 kVA portable diesel generators
- + **Automotive Engines**
 Euro III / IV engines for commercial vehicles
- + **Leypower Oceans43**
 Fully built marine boats
- + **Leygas**
 Gas engines & generators
- + **Leymarine**
 Marine engines & aggregates



Leypower Gensets are fully built solution assembled and tested by Ashok Leyland, as per customers' requirement.

- + Reliable, Robust & Rugged engines designed to deliver continuously in arduous environment
- + Better Block Loading Capability
- + Compact engine-Engineered for Optimized Power Solutions
- + Low Ownership Cost
- + Low oil & fuel consumption
- + Continuous duty Power rating
- + Minimal vibrations and lower noise levels
- + Easy Serviceability & Repairability
- + Standardized Design for complete range
- + Wide after-sales & parts support

CONSTRUCTIONS EPCC



Indowmax (M) Sdn Bhd is a joint business associate and facilitator of **Fernas group**. Fernas group acts in many different fields of sectors such as infrastructure and superstructure construction, construction of industrial facilities, natural gas distribution, energy, mining, tourism and production of cement and gypsum.

Fernas Group developed strategically important projects such as the biggest natural gas storage project of Turkey and energy projects has been successfully completed. Our group is continuously growing in its businesses internationally. The Group which carries its own qualified resources and services both domestic & abroad, acts with the principle of maximum productivity and competence.

Completed Projects

-  Industrial Plant
-  Pipeline
-  Energy
-  Hydraulic work
-  Road Construction
-  Stripping & Mining
-  Telecommunication
-  Building

Fernas Construction Company

• **Personnel Status**

Work Location	Skilled	Semi-Skilled	Unskilled	Total
Turkey	738	1093	1441	3273
India	377	522	600	1499
Qatar	98	196	254	548
Bangladesh	12	26	15	53
Oman	2	1	2	5
Total	1223	1824	2331	5378

• **Machinery and Equipment**

1. Pipeline
2. Heavy Construction
3. Concrete & Asphalt Production
4. Transportation

• **Industrial Projects**

1. Dahej Petrochemical Complex Project / INDIA

Scope of Work: Integrated Utilities & Offsite Packages & Tanks for Dahej Petrochemical Complex. (EPIC) The planned complex will comprise an ethylene cracker and associated units and polymer plants to manufacture 1.1 million tones of ethylene, 400,000 tones of propylene, 150,000 tones of benzene, and 115,000 tones of butadiene per year.

2. LSTK Contract for Gas Compressor Station Project at Location, Gana / INDIA

Scope of Work: EPCC for Gas Compressor System, at Gana - Anand District, Gujarat, India.

3. North Marmara & Degirmenkoy Underground Natural Gas Storage Surface Facilities Project / TURKEY

Scope of Work: This was the first UGS (Underground Gas Storage) Project in Turkey for the storage of 1.6 billion m³ of natural gas in the existing North Marmara and Degirmenkoy Gas Reservoirs.

4. Build & Operate of BATMAN 100 MW Power Plant

Scope of Work: Construction of the complete Power Plant was undertaken by FERNAS Construction Company as EPIC Contractor. To operate mobil power plant through leasing for 5 years and produce 4.257.254.605 kWh electricity

• Oil & Gas Pipeline Projects

1. Dahej - Vijaipour Pipeline Up-gradation(DVPL-II) Project (Spreads No: 3, 4 and 5) / INDIA

Scope of Work: Procurement (except free issued line pipes and materials), construction, installation, pre-commissioning and commissioning of 48" high pressure natural gas pipeline with the length of 341.8 km. and 4 no's of Pig Stations and 11 no's of Block Valve Stations.

2. EPIC for Consolidated Gas Supply To Mesaieed, Ras Laffan and Umbab Areas / QATAR

Scope of Work: The scope of works included the detail engineering, procurement (except free issued line pipes), construction, installation, pre-commissioning and commissioning of 36"-30km & 12"-12 km natural gas pipeline and RMS stations and also for modification, up-gradation and expansion of the existing Pressure Reduction & Metering Stations. The Stations were equipped with slugcatchers, filter separators, custody flow metering units, pressure reduction units, HIPPS, ESDV systems, vent systems, UPS, PLC-SCADA systems, CCTV, Fire & Gas systems, telecommunication and telemetry systems and piping

3. Hubara-Sahmah & Sahmah-KP-114 MOLs Replacement Project / OMAN

Scope of Work: Engineering, procurement (except free issued line pipes and valves), construction, installation, pre-commissioning and assistance in commissioning of 30"-100km and 28"-115km high pressure crude oil pipeline and 4 no of Pig Stations. Scope of works also included 3 no of hot-tap operations and 1 no. of hot-tap / stopple operation on the existing 28" crude oil pipeline.

Fernas Quality Policy

• For all works we undertake , our quality policy is:

1. To monitor the technological developments with a professional team work.
2. To minimize the complaints of the customers
3. To become a leading company in the global market by the efficient use and improvement of our resources
4. To become a demanded and preferred establishment with our high quality standards
5. To implement the quality system requirements and improve the efficiency constantly.

• Fernas Certificates

1. FERNAS QUALITY CERTIFICATE (ISO 9001:2008)
2. FERNAS ENVIRONMENTAL CERTIFICATE (ISO 14001: 2009)
3. FERNAS OCCUPATIONAL HEALTH & SAFETY CERTIFICATE (OHSAS 18001:2007)
4. THE SAFETY AWARD FOR COMPLETING 1.5 MILLION MAN-HOURS WITHOUT LOST TIME INJURY
5. THE SAFETY AWARD FOR COMPLETING 3 MILLION MAN-HOURS & 2 YEARS WITHOUT LOST TIME INJURY

SLEEVED, LINED & 'V' NOTCH VALVES



Indowmax represents Rasaii Flow Lines Pvt. Ltd. (RFL) established 1980 manufacturing Sleeved Plug Valves (Non lubricated). Lined Plug Valves, Line Ball Valves, Line Check Valves with PFA, FEP procures from EI DUPONT and 'V' Notch Control Ball Valves.

Material of construction

For the construction, RFL uses different material like WCB, WCC, LCV, CF8, CF8M, CF3M, CF3, CD4MCu, super alloy like Duplex. St. St. family-4A, 5A, Alloy 20, Hastalloy B, Hastalloy C, CZ100, Inconel, 904L to suit different acid and chemical and highly corrosive & erosive applications.

Standard

RFL manufactures the valves with ANSI, DIN, JIS & BS Table and also tailor made Valve-Face & Drilling standard / non standard Valves to satisfy the end user.

Application

Fertilizers, Petrochemical, Refineries, Paper & Pulp, Pharma, Heavy Water Plant, Nuclear application, Atomic Energy, Oil & Gas, any processing industry...etc.

Pressure class

Pressure class 125#, 150#, 300#, 600#, 800#, & 1500#, DIN PN 16, PN40 & above as per PED (CE) norms.

Special design

Provided for CAGE type, 3 way, 4 way and fully jacketed & partially jacketed not only for Sleeved Plug Valves but also for Lined Plug Valves.

Regarding Lined Ball Valve

We introduce Super seat which give cushion effect to the ball which results in longer life, the check valve with the unique design working Horizontal as well vertical by puppet-the slope (taper) which will not lose the shape like valve type.

Product Range

- | | |
|---|---|
| <ul style="list-style-type: none">  Sleeved plug Valves  Lined Plug Valves  Lined Ball Valves | <ul style="list-style-type: none">  Lined Check Valves  Lined Sight Glass  'V' Notch Control Ball Valves 600# |
|---|---|

Sleeved Plug Valves

- Size
 - From DN15 TO DN400,
 - 150# and 300#
- Types
 - 2 Way Valve
 - 3 Way Valve
 - 4 Way Valve
 - Partially Jacketed 2 Way, 3 Way Valve
 - Fully Jacketed 2 Way, 3 Way Valve



Lined Plug Valves

- Size
 - From DN15 TO DN 200, 150#,300#
 - Upto 4",wrench operation
 - 6" and above, gear operation
 - Lining- FEP/PFA
- Types
 - 2 Way Valve
 - 3 Way Valve
 - Partially Jacketed Valve
 - Fully Jacketed Valve



Lined Ball Valves

- Size
 - DN15 TO DN200
 - 150#, 300#, PN10
 - UP TO 4", Hand Lever Operated
 - 4" and above, Gear Operated
 - Lining- FEP/PFA
- Types
 - 2 Piece Design
 - 3 Piece Design
 - Full Port
 - Reduced Port



Lined Check Valves

Innovative, Vertical & Horizontal type Check Valve for Slurry, Solvent, Pure Chemicals, and Highly Corrosive Acids etc.

- SIZE
 - 1/2" TO 4"
 - 150#, 300#



Type A



Type B

Lined Sight Glass

Safe and shatterproof, each window consists of two toughened glasses. Fluid flow can be viewed side ways. The integrated drip lip provides visual flow indication even at low velocity.

Highly Corrosion Resistant Liners and Moulded Fluoro Carbon Liners like PFA or FEP, depending upon application, offer both long service life and high corrosion resistance due to the thick, uniform blowhole free liner. The inherent properties of the liner itself provide non-stick and ideal for highly viscose and high purity applications.



'V' Notch Control Ball Valve 600#

- Size
 - 1" TO 8"
 - 600#
 - SS317 Ball(CG8M)
 - Used for Slurry Application
 - Provided with automation



CATHODIC PROTECTION SYSTEMS



Indowmax (M) Sdn Bhd represents GOLCONDA Corrosion Control (P) Ltd. in Asia Pacific region. GOLCONDA formerly Golconda Enterprises, is an ISO 9001:2000 Certified and professionally managed Engineering concern for manufacturing all types of Cathodic Protection Materials of International Standards.

The Engineering team of GOLCONDA Corrosion Control (P) Ltd. is headed by a Senior Engineer whose track record runs through almost two decades of Cathodic Protection Engineering experience.

The Professionals of GOLCONDA Corrosion Control (P) Ltd. are experienced and well equipped to undertake special Engineering projects of Cathodic Protection including installation, supervision, testing and commissioning

Product Range

- **Transformer Rectifiers**
- **Reference electrodes**
- **Anodes**
- **Test Station**
- **Junction Box**

Transformer Rectifiers

- Manual Tap Change
- Silicon Controlled Rectifier
- Electronic Automatic Potential Controlled
- IR Free Automatic Potential Controlled
- IR Free Automatic with built-in Remote Monitoring System



Reference Electrodes

Reference Electrodes are used for monitoring structure electrolyte potentials to check that structure is receiving adequate protection. Electrodes can be portable or fixed depending upon the type of structure and maintenance requirements. GOLCONDA Corrosion Control (P) Ltd. offers the following range in both portable and permanent.

- Copper / Copper Sulphate
- Zinc / Zinc Sulphate
- Silver / Silver Chloride

Special construction is available on request.



Anodes

- Silicon Iron Anode
- Soft Iron Anode
- Aluminium Anode
- Zinc Anode
- Magnesium Anode
- Mixed Metal Oxide coated Titanium
- Platinised Titanium

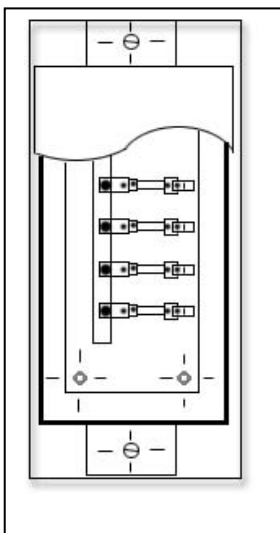
Test Station



GOLCONDA Corrosion Control (P) Ltd. manufactures a range of standard monitoring Test Station to suit all general requirements.

Custom-built Test Station can also be designed to meet customer's individual requirements.

Junction Box



GOLCONDA Corrosion Control (P) Ltd. offers a range of custom designed Junction Box and Monitoring Panels for specified applications. Typical application for which GOLCONDA Corrosion Control (P) Ltd. supply control equipment include: -

- Anode Output Control.
- Resistive Bonding Between Structures.
- Negative Control - for control of protective current flowing from several structures.

Anode Junction Box may require combination of terminals, shunts, variable resistors and switches.

ENCLOSURES : Enclosure for use in marine and desert environments are generally supplied to NEMA 4 and 4X. Material of construction for normal use is aluminum or carbon steel. Enclosures can be supplied for wall mounting or with self supporting heavy duty frame.

Services

- **Site Survey**

- **GOLCONDA Corrosion Control (P) Ltd. Engineers are well qualified to carry out a variety of surveys comprising:**

- Soil Resistivity Survey
- Cathodic Protection Monitoring
- Close Interval Potential Surveys (CIPS)
- Direct Current Voltage Gradient Survey
- Current Drainage Survey
- AC Interference Testing

- **Engineering, Design, Consultancy, Installation, Supervision of Installation and Commissioning:**

GOLCONDA Corrosion Control (P) Ltd. is also able to offer installation/supervision of installation depending on the nature of work to be executed and the resources available. Commissioning support and Consultancy services are also available.

PRINCIPALS / ASSOCIATES / STRATEGIC PARTNERS



FEW BENEFICIAL CLIENTS

