Manufacturers of:
- EOT, Goliath and Jib Cranes
- Crane Capacity Upgradation
- Transfer Cars and Material Handling Equipment
- Special Purpose Machines
- Fabrication of Technological Structures
Panacea Engineers is an ISO 9001:2008 accredited company. We specialize in providing design, engineering, and site services for cranes and steel plant handling equipments. We offer lasting solutions to your chronic problems in these equipments. Mr. Hemant Kshire - CEO has over 33 years of Indian and International experience in design, manufacturing, and servicing of cranes & steel plant equipments. Our committed design and service engineers have professional experience and are trained to provide respective services.

Our Services
- Crane Design & Engineering
- Crane Health Check up / Safety Audit
- Gantry Rail Survey and Repairs
- Crane Upgradation
- Crane Repair & Maintenance
- Crane Site Services
- Steel Plant Equipment Design & Special Purpose Machines (SPM)
- Crane Failure Analysis
- Crane Consultancy Services

Our Products
- Crane Spares
- Crane Cabin
- Enclosed Festoon Cable System
- Fall Arrest System
- Offshore Products
- Innovative Products

Our team includes Engineers with over 30 years of professional experience in:
- Design of Heavy Engineering Equipments with specialization in Industrial Cranes and Steel Plant Handling Equipments.
- Crane Manufacturing
- Inspection Services

We are supported by a team of highly skilled technicians. Panacea Engineer™ is promoted by Hemant Kshire who has over 33 years of professional experience in Design, Marketing, Projects and Operations. He had previously held senior positions like Head of Design and Head of Operations. Hemant Kshire has had a long association with India’s premier engineering company Mukand Ltd, Mumbai and Eastern Morris Cranes, Dammam, Saudi Arabia.

Mr. F B Kulkarni is Head of Design and has over 44 years of experience in Crane Design. He has hands on experience of designing more than 2,000.
Crane Design and Engineering

With over 75 years of cumulative experience of our design team in designing Industrial Cranes and Steel Plant Equipments, we are well placed to serve the industry.

We supply designs for all types of industrial cranes. Be it High Capacity (500 MT); Extra Heavy Duty (M7/ M8) duty; Special purpose cranes such as Rotating Trolley/ Rotating Beam/ Ladle Handling/ Slab Handling/ Magnet/ Grab Bucket Cranes or Standard medium capacity work shop duty single or double girder Cranes. We have design packages available for wide range of application and to suit your needs and budget.

Cranes are designed to Indian Standard (IS: 3177 & 4137); European Norms (FEM 1.001); British Standard (BS: 466 & 2579); American Standards (CMAA & AISE 6); and German Standard (DIN 15018 & 15020)

Why risk your crane safety, when a professional design service is available at affordable price! Attractively priced design packages are available for medium capacity workshop duty single and double girder cranes.

Crane Health Check up / Safety Audit

We specialize in Health Check Up / Safety Audit of EOT, Goliath and Jib Cranes. Our team has carried out Health Check Up of more than 500 cranes. Periodic Inspection of Cranes is to be carried out as stipulated in International Standard ISO 9927-1. Bureau of Indian Standards has adopted this standard. Depending on duration of operation and the factory operating conditions, the cranes need to be inspected by an experienced technician or an Expert Engineer as and when necessary but at least once in a year.

Expert Engineers are experienced in the design, construction or maintenance of cranes with sufficient knowledge of the regulations and standards. The expert Engineers should be in a position to judge the safe condition of the crane and to decide which measures shall be taken in order to ensure further safe operation.

However, when the crane approaches the design constraints (boundary parameters used for assessment and identified in accordance with ISO 4301 for intended usage), a special assessment needs to be made to monitor the condition of the crane.

We, at Panacea Engineers carry out basic inspection (health check up) as well as condition monitoring of Cranes. With over 75 years of cumulative experience in design and construction of Cranes, we are ideally placed to provide these services to the crane users.

The Health Check up of Cranes include checking of Crane Span, Diagonal, LT & CT Wheel Verticality & Skew, Wear and deformation of wheel flanges, Inspection of Hook, Wire Rope, Gearboxes, Couplings, Drive alignment, Condition of Brake and Brake Drum, Condition of Motors, limit switches, Contactors, Overload Relays, Cables and load bearing structures. The health check up also include checking alignment and level difference of trolley rails for double girder cranes.

Periodic Health Check up of Cranes highlights the shortcomings in the existing system and the need for repair/ replacement of parts. It also helps in planning for spare parts as well as the repairs can be done during planned shutdown rather than attending to breakdowns.

Our Services

Panacea Engineers has supplied Basic and Detailed design for:

- 450/50/2 T x 27 M Span EOT Crane
- 225/60/12.5T x 25 M Span Ladle Handling Crane
- 175/25T x 21 M Span EOT Crane
- 120T x 22 M Span Goliath Crane
- 100/20T x 20 M Mill duty Crane
- 80/20T x 28 M Span Ladle Handling Crane
- 70/10T x 10 M Span Semi Goliath Converter Scrap Box Charging Crane
- 60/30T x 32 M Span Ladle Handling Crane with provision for adjusting hook to hook distance
- 80T x 30 M Span Magnet Crane
- 15T x 21 M Span Grab Bucket Crane
- 30T x 28 M Span Rotating Beam Crane for Steel Mill duty
- 65/10T x 17 M Span Power house duty crane
- 45/10T x 18 M Span Workshop duty Crane
- Standard workshop duty Single Girder and Double Girder Cranes
- Free Standing and Wall Mounted Jib Cranes
- Monobox Cranes
- 100T Capacity Transfer Car
- 25T Capacity Battery Operated Transfer car moving on curved track in closed circuit
- 10T Capacity Spring loaded Transfer Cars

Health Check up of Cranes:

- Health Check Up of Cranes.
- Health Check and Condition Monitoring of Industrial Cranes
- Checking of Span, Diagonal, Wheel Alignment, Wheel Skew, Girder Camber, Rail Alignment and Level Difference and Girder Deflection, Drive Alignment, Brake Condition etc.
- Checking of Electrical System
Gantry Rail Survey and Repairs
Panacea Engineers have developed special techniques for quick and accurate survey of Gantry Rails without need for long shutdowns. We use lasers for gantry survey and we have carried out surveys of more than 10,000 meters of Gantry Rails at Steel Plants, Cement Plants, Sea Port and Engineering companies.

Proper alignment of Gantry Rails is essential for safe and trouble free operation of Crane. Improperly aligned gantries lead to abnormal wear of wheel flanges and gantry rails, extra load on LT drive mechanism leading to failure of Gearbox, Wheel Axle, Wheel bearing, couplings and floating shafts, structural cracks and failure of end carriages as well as need for frequent replacement of wheels. However the biggest threat comes from derailment of crane and excessive load on crane supporting building. The loads due to misaligned gantry as well as mismatch between crane span and gantry span are so large that this leads to bending of wheel flanges specially in high speed cranes that is responsible for crane derailment.

Gantry Rail Survey includes measurement of Gantry Rail span, Gantry Rail alignment – Straightness, Gantry Rail level undulation, difference between two gantry rails at same location and observation on condition of gantry rail & clamps including gaps/ misalignment at rail joints and wear. The measurements are made predetermined intervals and the reading are plotted on graph for ease of understanding. When so requested by customer, we also undertake survey of gantry girders and its alignment.

The gantry rail survey is carried out for shops where the cranes are already in operation. We also provide services for checking of gantry girder span, alignment and level for buildings under construction. This greatly benefits in eliminating the future problems related to gantry rail alignments.

We undertake turnkey repairs of Gantry Rail alignment based on gantry rail survey report if so desired by customer. The scope includes supply of Gantry Rail & Rail Clamps, Removal of existing rail and replacement of the same with new, rectification of alignment & levels of gantry rails, repair of damaged rail and strengthening of gantry girders if required from design consideration to avoid horizontal deflection of girder beyond permissible limits.

Crane Upgradation
Crane capacity upgradation can save over 50% of cost as compared to replacement of existing crane by new. However, Crane upgradation needs high degree of understanding of crane design and analytical ability to carry out accurate reverse engineering. In most of the cases manufacturing drawings of existing crane are not available with the crane user and in such a situation detailed study of existing crane is essential to determine its suitability for capacity/ span upgradation.

Study of Crane Operation to determine duty cycle, Crane audit, Visual observation, dimensional verification, NDT testing of plates to determine residual thickness of load bearing structures, measurement of speeds of Hoist, CT and LT motions, measurement of motor currents, measurement of crane girder deflection under load and analysis of structures using computerised software such as STAAD & ANSYS are some of the technique that we employ to determine whether the crane is suitable for upgradation.

We also undertake upgradation of complete electrical system of crane. This may include replacement of slipping motors by Sq Cage motors with VVF Control, provision of compact festoon cable system/ drag chain in place of open wire system for trolley power supply, replacement of Angle Type DSL/ open wire DSL by Shrouded Bus bars, Changing of Electrical Cables and Installation of Electronic Load weighing system/ Overload limiter on Crane.

Our design team has hands on experience of designing cranes for wide range of application ranging from Workshop duty, Power Plant, Cement Plant, General Engineering to Steel Mill duty. Our team has designed Ladle Handling Cranes, Magnet Cranes, Grab Bucket Cranes, Tong Cranes, Rotating Beam Crane up to 500 MT Capacity. Our head of Design has more than 40 years of experience in Design of EOT and Gantry Cranes.

Our Services

Gantry Rail Repair
Rail Damaged due to rubbing of Wheel Flanges
Gantry Rail Level checking using laser
Gantry Rail Repair at Port
Gap at Rail Joint
End Carriage damaged due Wheel flanges rubbing with Rail

Backed by our engineering strength and skilled service team, we provide following services

- Crane Up-gradations studies
- Crane Capacity Upgradation
- Crane Span Modification
- Crane Electrical System Upgradation
- Solutions for Girder de-cambering

We have Upgradated following Cranes:

- 75MT Crane to 100 MT
- 40 MT Crane to 50 MT
- 25 MT Crane to 35 MT
- 15 MT Crane to 25 MT
- 15 MT Crane to 20 MT
- 10MT Crane to 15 MT
- 5 MT Crane to 10 MT
Crane Repair and Maintenance
We offer Crane Repair and Maintenance Services for the host of industries. Our effective maintenance services allow our users the easy and hassle free usage of Cranes. Supported by highly skilled technicians, our services are acclaimed for accuracy and speediness. When it comes to maintenance services, our technician and service engineers are not afraid of getting their hands dirty. Repair and maintenance services include – Breakdown maintenance, Periodic Preventive Maintenance, Annual Maintenance Contracts or AMC and Predictive maintenance.

We also undertake replacement of worn out parts, improvement in existing design to reduce need for frequent change of parts, LT wheel replacement, LT wheel alignment including its verticality and skew, Drive alignment, Replacement of Brake Drum and Brake liners, refurbishment of motors and gearboxes, replacement of wire rope and rope sheaves, replacement of hooks, rectification of CT rail level difference, Gantry Rail alignment and Gantry Rail replacement.

Maintenance Services for Electrical System include replacement of motor slip rings and carbon brushes, refurbishment of panel and replacement of worn out parts such as contactors, cleaning of panels and resistance boxes, replacement of damaged cables and cable dressing, replacement of current collector/ shoe and setting of overload relays and limit switches.

Crane Site Services
We undertake
• On site fabrication of Gantry Girders, Crane Box Girders, Fixed Leg and Hinged Leg for Goliath Cranes.
• Dismantling and shifting of Cranes/ Equipments.
• Erection of Cranes, Gantry Rails and DSL/ Shrouded Bus Bars
• Strengthening of Steel Building columns and gantry girders

Crane Consultancy Services
Panacea Engineers provides Engineering Consultancy Services that includes :
• Debottlenecking to improve material flow and identification of balancing of equipment
• Assistance in Plant Layout for improved material flow
• Hazard Identification (HAZID)
• Assistance in preparation of technical specification and vendor evaluation
• Evaluation & Approval of drawings and Design Reviews
• Third party Inspection Service as a part of project activity

Our Design Office
Weak Monorail joint modified in Saudi Arabia
Kiln Burner Trolley wheel not touching rail in Egypt

Roller Table
Latching mechanism for Transfer System

Our Services
www.panaceaengineers.in

Steel Plant Equipment Design & Special Purpose Machines (SPM)

Ladle and Ladle Stand
Ladle Transfer Car
Scrap Box and Transfer Car

Gantry Girder Fabrication
Ladle and Ladle Stand
Ladle Transfer Car
Scrap Box and Transfer Car

Crane Girder Fabrication
Gantry Girder Fabrication
Goliath Crane with 51 M Long Girders

Crane Structural Assembly
Crane Erection
Crane Erection

We also supply basic & detail design for Steel plant Equipments including:
• Iron Ladles and Steel Ladles
• Scrap boxes
• Slag Pot
• Transfer Cars for Ladle/ Scrap Bucket/ Slag Pot
• Coil Transfer Car
• Transfer cars moving on standard railway tracks
• Hydraulic Upender
• Roller tables

Coil Transfer Car
Transfer cars moving on standard railway tracks
Hydraulic Upender
Roller tables

Monorail Hoist Transfer System for S Shaped Galvanizing Plant in Saudi Arabia
Our Services

Crane Failure Analysis
Industrial accidents often lead to injury/loss of human life and disruption of production. With our in-depth knowledge of crane design and our vast experience in design and servicing, we are able to offer specialised services for Failure Analysis.

Based on the requirement, the service comprises of visiting the site of accident/failure, collecting information after interacting with personnel connected with operation and maintenance of crane/equipment, study of repair & replacement history, collection of samples, laboratory analysis, design calculations, and finite element analysis.

The report enlists the possible root cause and recommendations on actions needed to avoid similar failure.

Crane Spares
Spur, Helical and Worm Gearboxes and Internals

Our Products

Crane Spares
Helical Gear Boxes
Helical And Worm Gears
Planetary Gears
100 MT Hook Block
Crane Spares Sheaves
Sheave (Pulley) and Sheave Assembly
Coupling
Brakes
Bail Arm for Ladle
Electrical Panel With VVVF Drive
Bus Bars
Pendent
Light Weight Enclosed Festoon Cable System & Components

www.panaceaengineers.in
Our Products

We supply spare parts such as:

- **Forged Hook with C shank and Ramshron Type**
- **Sheave made from Cast Steel with grooves machined accurately for wire rope support. Sheaves with hardened groove are also available**
- **Hook Block Assembly comprising of Hook, Sheave Assembly, Side plates and rope guard. The is supported on thrust bearing and can swivel easily. Hook Block are supplied with Load locking finger and mechanism to stop hook rotation when requested by customer.**
- **Steel Wire Ropes with IWRC (Steel Core) as well as Fibre Core. Special features such as anti rotation, galvanized and Stainless steel ropes are also available**
- **Rope Drums are made from seamless pipe or MS rolled plates. Rope drums are supplied with or without flanges as per customer requirement. Butt welded joints in rope drum shell made from MS plates are tested radiographically. Rope drums are thermally stress relieved when made from MS plates. Left hand and right hand grooves are machined on rope drum for proper support to wire rope. Connection between hoist gearbox and rope drum can be made through splined joint, flexible in built geared joint or Barrel coupling/ Malmedie coupling. Rope drums are supported at non drive end in drum pedestal that houses antifriction ball/ spherical roller bearing.**
- **Rope Band & Guide are made from Cast Iron. Rope band and guide can also be supplied based on your sample**
- **Hoist Gearboxes – Two, Three and Four Stage gearboxes are supplied from Crane Hoisting application. The gearbox casing is made from MS fabricated plates. The casing is thermally stress relieved after welding. The casing is accurately machined on horizontal boring machine. The helical gears and pinions are made from rolled/ forged steel of En9/ En19/ Cast Steel material as per design requirement. Gears and pinions are oil quenched and tempered to achieve toughness as well as surface harness. Gear tee are machined hob cut. Case hardened gear teeth are supplied as required. Shafts are supported on antifriction ball and roller bearings. Oil seal on shaft are have ground finish. Gears and pinions are Splash lubricated.**
- **CT Gearbox – Two and Three Stage Gearboxes are supplied for Crane CT and LT motion. The construction of CT gearbox is similar to hoist gearbox except that these are provided with inverted T split in housing. The Output shaft can project on both side if so required. For Three stage vertical gearbox forced lubrication arrangement is provided through pump and hoses. Other gearboxes are splash lubricated.**
- **Brake Drums and couplings with brake drums – Brake drums are made from rolled bar or cast steel. The brake drums are fully machined to eliminate vibration. Brake drums are dynamically balanced after machining when required by customer. The drum surface is treated to achieve high hardness for longer life.**
- **Wheels and Wheel Assembly – Wheels are supported in L type bearing blocks. Wheels are made from forged steel/ cast steel and machined accurately. Wheels are suitably heat treated to achieve hardness of 250 – 300 BHN with volume hardening or 450 – 500 BHN with Induction hardening as per customer requirement. Tram wheels with either non ferrous bush bearing or antifriction bearing and open gear attached are also supplied as required by customer.**
- **Compact Enclosed Festoon Cable System – made from enclosed GI track the compact festoon cable system is lightweight and no need to be supported against girder diaphragms. The system is ideally suited for flatiron cables are single core cables. The compact nature of cable trolley means better hook approach and the system can be placed at crane girder level. The system is of modular design and can be assembled very easily. Components are available ex stock including PVC flatiron cables**
- **Pendent Cable with built in steel wire is available ex stock.**
- **Shrouded Bus Bar – Insulated bus bars are available from 60 Amperes to 1250 Amps rating. These are modular in construction and compact in size. Spring loaded current collectors are supplied that ensure positive contact with current transmitting surface. Conductors are available in GI, Aluminium, Copper and Stainless steel material. Bus bars with expansion joint, hospital bay and suitable for curved track are also available.**
- **Other spare parts - Electro Hydraulic Thrustor Brakes, Brake Shoe and Lining, AC and DC Brakes, Brake Hub & Rotor, Brake Coll, Brake Armature, Pin Bush Couplings, Geared Couplings, Slip Ring Motors, Sq Cage Motors, Induction motors, dual speed motors, foot and flange mounted motors, Pendent Push button station.**

Crane Cabin

Panacea Engineers is regularly exporting Double Walled Air Conditioned Cabins for Crane Operation. We also supply Open type and closed type cabins.

The double walled cabin is made of steel tubes & sheet metal. The Cabin is built with 50 mm glass wool insulation on side walls and 100 mm insulation at bottom. The cabins are ergonomically designed for clear view and are equipped with 5 mm thick toughened tinted glasses for all around view. Two side glasses are mounted on hinged frame to facilitate cleaning. The cabin has opening for cable entry and for the entry of AC piping. Cabin Air Conditioner and Equipment inside the cabin are part of customer’s scope of supply.

When required by customer, the cabin are blast cleaned after fabrication. For blast cleaned cabins the painting scheme include two coats of epoxy red oxide zinc chromate primer, one coat of MIO followed by two coats of epoxy finish paint – Golden Yellow RAL 1004 shade.
Our Products

Enclosed Festoon Cable System
We represent Metreel company of UK in India. We are stocking enclosed festoon cable system components and flatform cables procured from Metreel – UK.

The Compact Enclosed Festoon Cable System comprise of GI track of 6 meters in length, splice joints for track, ceiling support brackets, steel/polyamide cable trolleys, end clamp, and toeing trolley.

The compact festoon cable system is lightweight and there is no need for it to be supported against girder diaphragms. The system is ideally suited for flatform cables are single core cables. The compact nature of cable trolley means better hook approach and the system can be placed at crane girder level.

The system is of modular design and can be assembled very easily. Components are available ex stock including PVC flatform cables and pendent cables with built in steel cable that support the weight of pendent.

Innovative Products
We supply safety net for double girder cranes. The retractable safety nets are fixed to crane end carriage at one end and crane trolley on the other side.

As the crane trolley moves the safety net on one side expands to fill up the gap between two girder and the safety net on the other side of trolley collapses.

The steel hook clips are attached to safety nets at regular intervals along the length of the net. These hook clips slide over the wire rope that runs along the length of crane span thus provide support to safety net on all four side.

Provision is made to tightening of wire rope to provide adequate tension.

Fall Arrest System
We supply Fall Arrest System from Metreel - UK,

Vertical Fall Arrest and Safety Access
Manufactured and tested in accordance with BS EN353-1, Metreel's Fallguard®, and Invisirung TM ladder system have been developed to provide the ultimate vertical fall system.

Safewire Horizontal Fall Arrest System
The safewire lifeline offers an economic solution for straight line applications utilising a semi automatic passage over intermediate supports.

• CE Certified and conforms to the European Standard EN 795 Class C.
• Maximum length : 200 meters
• All components are manufactured from stainless steel.
• Simple passage through intermediate brackets.
• Fall Indicator
• Shock Absorber reduces end loads to under 8kN.

Safetrack® Personnel Access / Safety
The Safetrack® system in a horizontal fall arrest / fall restraint system that comprises of a permanently installed track and a free running trolley housed within its enclosed profile.