

Mini Refinery

Introduction:

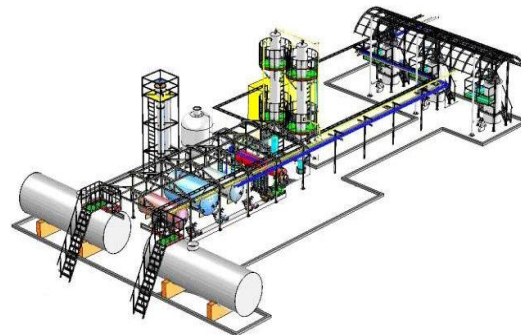
A mini-refinery typically is a small refinery that fractionates small capacity of hydrocarbon & raw materials such as gas condensate, crude oil and other mixtures by atmospheric and vacuum distillation in one batch wise column. Remote or inhospitable inland locations will tend to provide favorable conditions for mini-refinery fuel production as distances and/or road conditions results in high transportation costs for imported fuels. This process is intended for separation of crude oil, gas condensate and their mixtures into:

- Naphtha fractions,
- Kerosene fraction,
- Diesel fraction,
- Heavy residual stock (black oil, fuel oil)

Mini Refinery general Elements:

Block-modular mini oil refinery for processing of hydrocarbon raw materials consists of:

- Block of preparation;
- Block of distillation (processing plant);
- Feed & Product Tanks;
- Objects of production-auxiliaries such as:
 - Hot Oil Package
 - Cooling water system
 - Flare & Blowdown Package
 - Portable laboratory and control building



Distillation Block includes:

- Columnar equipment;
- Heat-exchange equipment;
- Pumps;
- Vacuum Pump (if any)
- Interblock pipelines with shutoff valves;
- Drainage and emergency capabilities;
- Switchboard room;
- Automatic control system for technological processes (controlled by the customer)

MEHRAZ provides a turn-key or completely engineered refinery solutions package.

MEHRAZ performs development, manufacture and delivery of mini oil refineries.

Mini Refinery

Some optional features may be needed for a mini refinery; can be provided from MEHRAZ:

- Special alloys may be included in the plant design
- Desalter packages for removing salt from the crude
- Naphtha, jet fuel, and diesel treaters (MEROX)
- Gasoline stabilizers for reducing the Reid vapor pressure of motor fuels

Having a sufficient experience MEHRAZ will execute the following kinds of works under contract:

- *Designing of mini refinery plant;*
- *Designing of automatic control system for technological processes (at will of the customer);*
- *Participation in designing of a platform for placing of the refinery plant and a stock of raw materials;*
- *Manufacture of the complete set of the plant with equipment, materials and other accessories;*
- *Delivery of the refinery plant to the prepared platform of the Customer in block-modular execution;*
- *Installation of the plant at a place of operation and performance of tests for commissioning;*
- *Preparation and training of the personnel for the plant operation;*
- *Delivery of analytical devices for laboratory and training of the personnel to techniques of quality control of mineral oil;*
- *Preparation of the necessary documentation for operation of mini oil refinery plant;*
- *Carrying out of starting-up and adjustment works and launching of the refinery plant to constant commercial operation*

Also Basic and Detail Design, Procurement, Construction and Commissioning of Mini Refinery Package scope of work would be divided, but not limited to following items:

Electrical	Power supply feeder, cabling, lighting, earthing, lightning, MCC, UPS.
Instrument	Cabling, DCS, PSVs, control valves, on-off valves, ESD.
Safety	Fire fighting, HAZOP, HAZID, fire and gas detectors, blast protection, HSE.
Mechanic	Heat Exchangers, Reboiler, Pumps, packages, loading/unloading auxiliaries
Piping	All process and utility lines, valves, vent & drain system, insulation
Civil & Structure	Steel work, foundation, supports, control room, ditch, trench, road and paving