Lube Oil Blending Plants
By

Arslan Engineering Pvt. Ltd.

Turn Key Plants for Manufacturing Industrial & Automotive Lubricants
ARSLAN ENGINEERING offers complete Turnkey Project on EPC basis for the production of a wide range of lubricants oil. The services offered by us includes plant design, detailed engineering services, tank farm design, equipment manufacture and supply, erection and commissioning, lab set up, training formulations, raw material sourcing, supply and marketing help across MENA & globally.

Arslan Enginery provides number of application for base lube oil as below source:
1. Used waste lube Oil Plant
2. Virgin crude Oil Plant
3. Oil blending Equipment to Make a perfect grade.
4. Final Filling and labeling Machine

PROCESS INTRO -
Various lubricating base oils are charged into blending vessel through flow indicator cum controller in fixed proportions depending on finished product desired. This is then dehydrated at atmospheric pressure followed by addition of various additives. Subsequently the blended product is filtered through centrifugal filter which retains any particle of size above 2 micron. This may then be filled in packs varying from ½ lit to 210 lit. Material Balance / Yields Since the process involved is that of mixing technic hence losses are minimal, yields being about 99%
The Base oil is the basic raw material 90% required for manufacturing of different grade of lube oils. The second important materials is additives 10%. Then the blending process start both base oil and accurate quantity of staider additive are mixed into blending vessel on descent temperature & time period. The different process use in lube oil blending are –

1. **AUTOMATIC BATCH BLENDING ( ABB )**

   In a SMB a small quantity of the base oil is metered along with the small components as per the recipe into the homogenization tank after dosing all components in the final base oil added and the blend is homogenized. It is possible to correct the blend by dosing small quantities of the balancing material. The finished product is then filtered and transferred to the filling station. The entire process is PLC controlled and provided with a recipe management system.
2. In line blending (ILB)

An ILB is a pipeline blending system using computer controlled values and flow meters to introduce blend components into a line or header in a proportional manner. 5-6 components are simultaneously heated and mixed and transferred to the finished product tank. Small quantities of additives can be automatically dosed into the blender during this process. This type of blender is capable of delivering homogeneous, on-test product directly to a finished product tank with no requirement for additional mixing.

3. Simultaneous metering blending (SMB)
After blending process the oil are transferred to filtration cooling vessels and then the feeling & storage part begins. Usually, plant operators refer to in-house feeling and labeling machines. Packing is done in 500 ml, 1 Liters, 5 Liters bottles, and 250 Liters of drums. Lube oil is produced in various types with different grades, properties, and colors.

1. Different Grade of Engine oil (10w-40, 5w-30, 15w-40)
2. Synthetic Oil
3. Transmission / Gear oil
4. Brake oil
5. Hydraulic oil
6. Industrial oils
7. Transformer oil
8. White oil
9. Other Process oils

{EQUIPMENTS & UTILITIES UNDER SCOPE OF ARSLAN FOR LOB PLANT}

- Thermic Fluid Heater
- Air compressor
- Cooling tower
- Blending vessel with heating coil/jacket duly insulated
- Dissolution vessel similar to above for making polymer solution
- Charging pump with motor provided with suction stainer
- Circulation pump with motor provided with suction stainer
- Barrel filling arrangement with conveyor
- Automatic/semi-automatic filling machine for filling drum’s/tins
- Basket/bag type filter with heating jacket
- Screw pump with motor for charging polymer solution.

{PLANT BY ARSLAN}

- Blenders (ABB, ILB, SMB)
- Pigging units
- Drum decanters
- Filling lines
- Filters
- Thermic fluid heaters
- Coolers/heat exchangers
- Testing equipments
- Automation and scada
- Piping and instrumentation
- Laboratory plants
- Skids and platform mounted plants.
Drum decanting units (DDU)

These units are designed for emptying of additives from drums and small containers. The additives in containers are handled by fork lifts and placed on conveyors which moves into the heating oven. Containers are then placed under the discharge head of the decanter and transferred to the blender. The system comprises of a heating oven, weighing platform, conveyor and decanting station.

Advantages:
- Capacity up to 3m³/hr
- Viscosity up to 5000cst
- Skid mounted units to integrate with existing plant.

Lube filling line

Arslan offers automatic and semi-automatic filling lines to meet the requirement of large as well as medium to small lubricant manufacturers. The filling lines are available from 1 head to 8 head filling stations. Containers ranging from 250ml to 25 liters can be filled in our lines with capacities ranging from 900-7200 Ltrs/Hrs. The filling lines are complimented by capping and induction sealers. Optional attachments we offer are labeling, leak detection and bar code printing machines to complete the filling line.

For small operations we offer gravity filling stations which requires no power and are suitable for filling containers from 2 to 25 Ltrs to an output of 1350Ltrs/Hrs.
Autolube has been designed for controlling flows of lube oils and additives into the processing Blender and Kettles. Every project is designed to meet specific customer requirements and budgets we offer distributed software solution for basic application as well as for complex plant wide control up to product dispatch. Autolube helps the user to achieve total production control of the plant from raw material reception and storage right up to product dispatch. PLC and SCADA based systems using hardware from reputed firms such as siemens /Allen Bradley or Equivalent are incorporated in the package.
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