



**ensymm Project Abstract
Turnkey Plant
for
Production of Infusion Bags or Bottle**



Description:

As one of the most important and basic medical items, I.V. Solution has a lot of demands whole through the world. In general, I.V. solution is used for the care of nurture, before and after surgical operation, improvement of circulation of blood and care for burn etc.

Especially, I.V. Solution requires extremely high purity because it is directly injected into human blood. In this reason, the production know-how and reliability of production line is essential one which can guarantee the safety of the final product. Our offer is specialized in Project management of I.V.

Solution manufacturing plant and willing to set up production line with interested partners in prospective markets. The production of I.V. Solution production line consists of 5 phases i.e., water purifying, distillation, solution filling, sterilization and packing. The general production flow of I.V Solution is given below.



Process Options:

There are two different options for investment of I.V. bag production line in general. It could make sense for capturing and checking the market to start with a semi automatic, small investment production line. A worker has to operate within this connection a semi automatic machine by filling purchased empty bags.

The larger investment option is the full automatic production line including the productions process, the manufacturing and the bag filling. All steps are done complete automatically. Investors can increase the profitability of the project throughout including all parts of the I.V. bag value chain.

The following subsections are describing the processes of the above mentioned options.

I.V. bag semi automatic manufacturing process:

The desktop stand-alone unit beside is designed for semi automatic filling and sealing of I.V. bags in one process step in compliance with GMP and FDA standards.

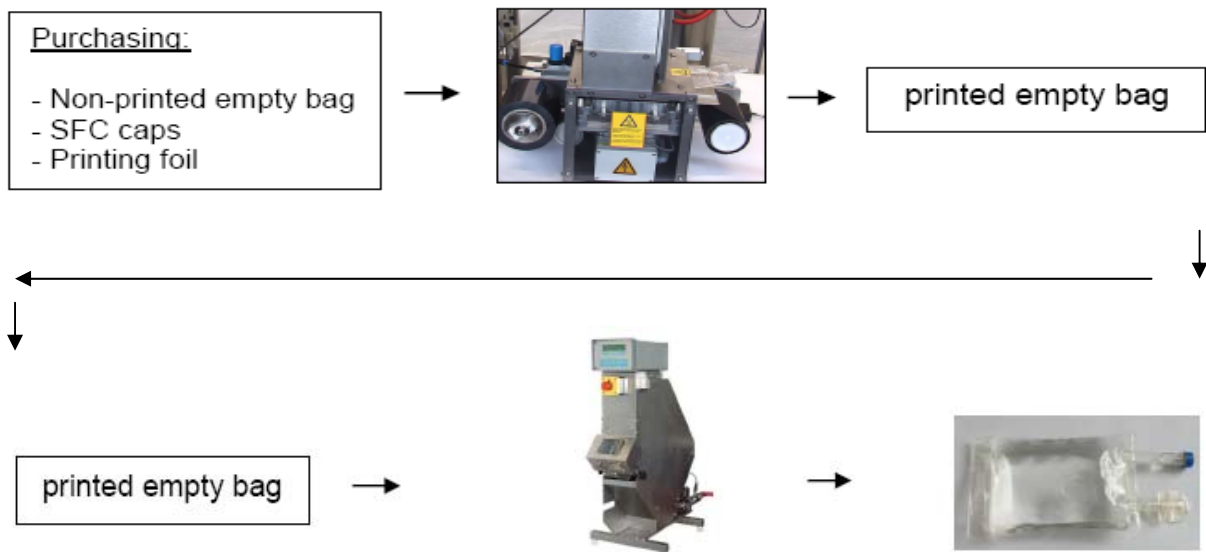
The module is including a vacuum, filling system and one needle insertion device.

An operator has to put each bag manually under the filling nozzle. Filling, sealing and drop out are an automatic process. Sealing is done by inserting the needle into the tube.

This device is equipped with a gripper system. The gripper is especially designed for used stopper type. This enables an exchange of the gripper and makes the device



flexible regarding other stoppers to be used for different bag designs. Each gripper has to be designed in acc. to customers application.



As you can see on the above scheme it is possible to add a printing machine to your production. Here the producer has the possibility to print the purchased empty bags flexible by himself.

I.V. bag full automatic manufacturing process:

This production line is a fully automatic linear single lane system suitable for the sterile bag making, filling and sealing of e.g. IV bags under pharmaceutical requirements. The machine is constructed in compliance with cGMP and FDA



regulations.

The production line processes Double wound PP- Multilayer material for bag making. The film is caught by several grippers and passed through the machine. Separate Modules fulfill the steps: Printing, bag making, filling and sealing. At the end of the process the filled and sealed bags are carried out on a conveyor belt. Two bags are produced in each station per cycle.

Main common production line features:



Machine output: 2500bph / 500ml bags

Bag volumes: mainly 500, 1000ml (others on request)

Sealing method: SFC port system

Processed film: Polyolefin film, double wound PP-multilayer flat film

Sterilization temp.: 121°C

CIP/SIP: included

Printing: machine is equipped with hot foil printing device

Time of operation: Start – Stop – Start procedure at any time

Power supply: Lowest Power supply requirements

Operation: One operator permanently, second temporary

Bag format

Exchange: less than one hour, by the operator

Flexibility: Highest flexibility regarding

- Various bag volumes
- Bag designs
- Machine output
- Time of operation
- Exchange tools for bag layout
- Processing of various pharmaceutical fluids

Options:

- welding devices as exchange parts to go for different bag volumes such as 100ml, 250ml
- exchange parts to go for single port bags or double port bags included in this machine!

Furthermore you have also the option to produce full automatically I.V. bottles.



Ensymm service concerning I.V. bag production plants:

Ensymm can help you to plan and realize your I.V. bag production line project. Referring to this look at the ensymm profile, ensymm benefits and ensymm project roadmap as follows.

Profile:

Ensymm is a consulting company based in Duesseldorf/Germany. Our company offers Technology Transfer, Project Management and Consulting for companies, governmental organization and universities. We have a strong network of more than 30 suppliers in the EU, Iran and India and 15 cooperation offices worldwide. Beside our expertise for managing your project puzzle, we are specialist for Turnkey Plants (Transfer of Technology and Equipment) and Outsourcing. The transfer of technology contains the areas:

- Biotech processing
- Pharmaceutical processing
- Chemical processing
- Food processing

So we have the pleasure to provide you with new and fresh ideas for preparing your company for future challenges and developing its marketing and sales strategy for the global competition.



Benefits:

- Client design offer
- Local support
- State of art Technology

- Feasible production capacity
- Offers designed for the budget of investors
- Competence team for:
 1. Business and scientific issues
 2. Supervising for engineering, installation and production
 3. Inspection and guarantee for used plants
 4. Coordination of the Project from A-Z
 5. Quality control
 6. Advisory related to the project
 7. After sales services
- Project coordination from A-Z
- Support for raw material and technical services
- Support for formulation and compounding
- Support for certification and validation for approvals



Roadmap:

1. Our email with a short introduction along with an abstract and general budget plan
2. Signing a MOU
3. Delivery of a detail proposal with list of equipment, machinery, raw material, general feasibility calculation and references.
4. Meeting between client and our supplying/technology team.
5. Further decision for signing a project contract



Could we intrigue you?

