

ULTIMATE MIXING EFFICIENCY WITH VARIOUS OPTIONS

# HIGH PRESSURE FOAMING MACHINE





**DUT KOREA is a specialist of PU machine and offers high pressure mixing head, metering pump, foaming machine and all kinds of PU solutions.**

## **DUT KOREA**

DUT was established in 1992 and became a leading company as manufacturer & specialist in the field of high-pressure PU solutions including foaming machine, mixing head, metering pump and all kinds of PU applications in Korea.

DUT started as a PU business with a high-quality mixing head, which is the core of PU technology, then the business expanded to various kinds of PU applications.

DUT's market share of this field is increasing rapidly and customer satisfaction for DUT's quality and service have been making strong brand power.

## **Solutions for Polyurethane**

DUT's slogan is "Solutions for Polyurethane". It means we do not just sell products but care for products until customer satisfaction has been reached.

Our technology of polyurethane starts with the needs of customers and finishes with their satisfactions.

## **Foaming Machine**

DUT's foaming machine has ultimate stability.

Essential parts including mixing head, metering pump and S/D valve for the foaming machine has been designed organically. (DUT is the only company which manufactures all these products in the same place)

The simple and stable design help the operator maintain and make repairs to the machine easily. The self-developing PLC allows the operator to control the foaming machine conveniently.

## **Huge Sales Network**

The sales department has a large international network over 57 countries including USA, Germany, Italy, UK, Poland, Hungary, Egypt, China, Mexico, Japan, India, Iran, Thailand, New Zealand, and Brazil so our customers can contact us easily in their regions.



## DUT KOREA introduces premium foaming machine

DUT KOREA's products are focused on operators and offer optimized machine. In addition, innovative technologies on an accumulation of experiences are supplied to customer's entire line.

### **Compatibility**

DUT's foaming machine has ultimate stability.  
It gives you perfect compatibility with your previous models.

### **Convenience**

'MAMIX' offers various types of options depending on customer's needs.  
Also, its simple design makes it easy and convenient for operators.

### **Cost efficiency**

Customers are able to assemble through various options so  
unnecessary parts can be excluded to make an economical machine.

# INTRODUCTION OF 'MAMIX'

## INDEX

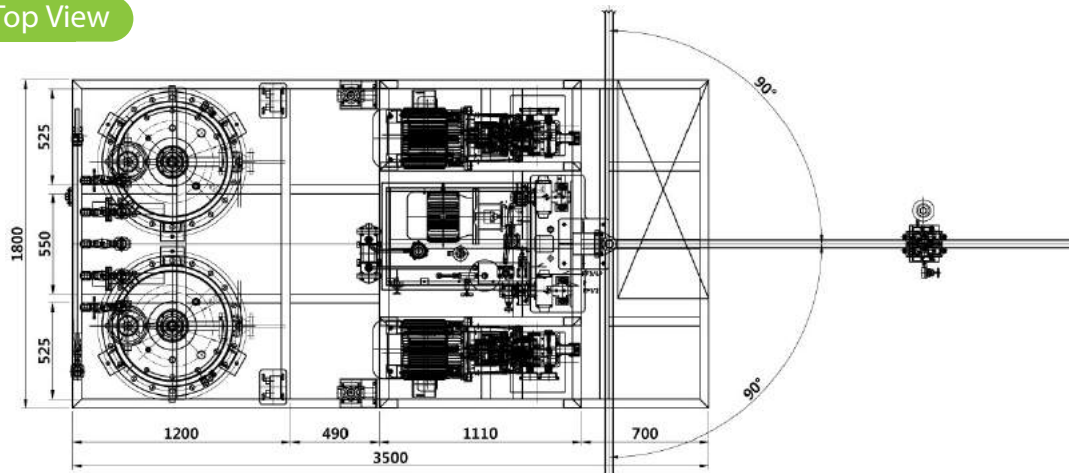
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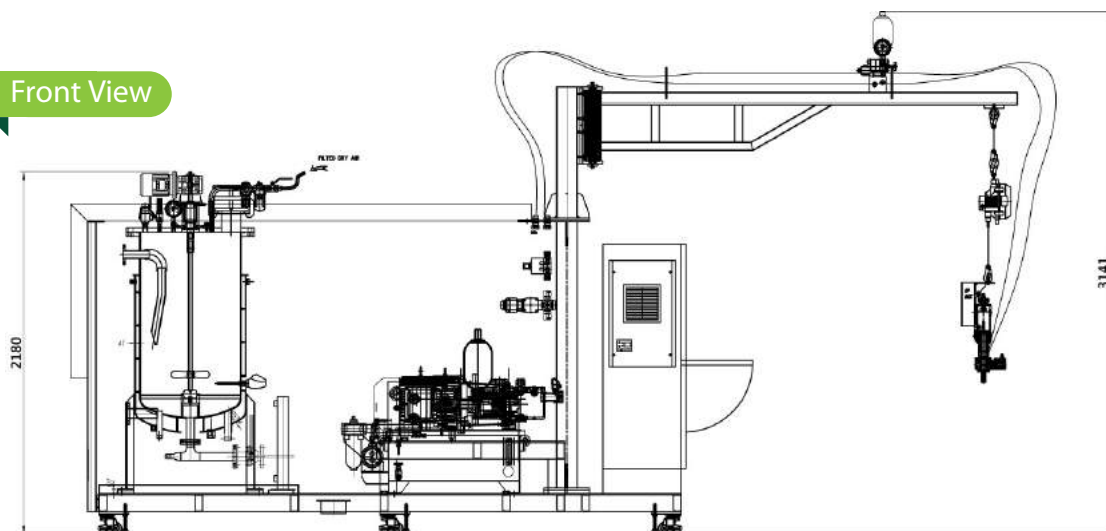
## INTRODUCTION OF 'MAMIX'

DUT's foaming machine has qualified stability and efficiency. Core parts including mixing head, metering pump and S/D valve for foaming machine has been designed organically and DUT is only a company which manufactures all these parts together in the world. The simple and stable design helps operator's easily maintenance and repair. Furthermore, self-developing PLC allows operator to customize program on their convenience.

Top View



Front View

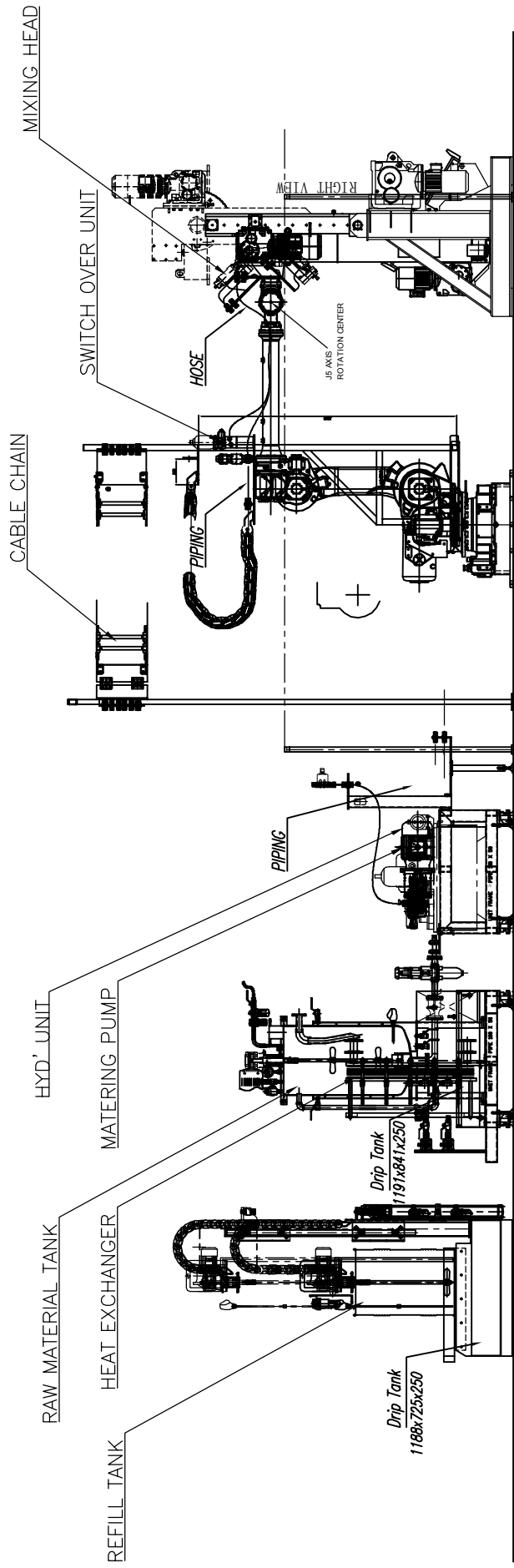


## FEATURES

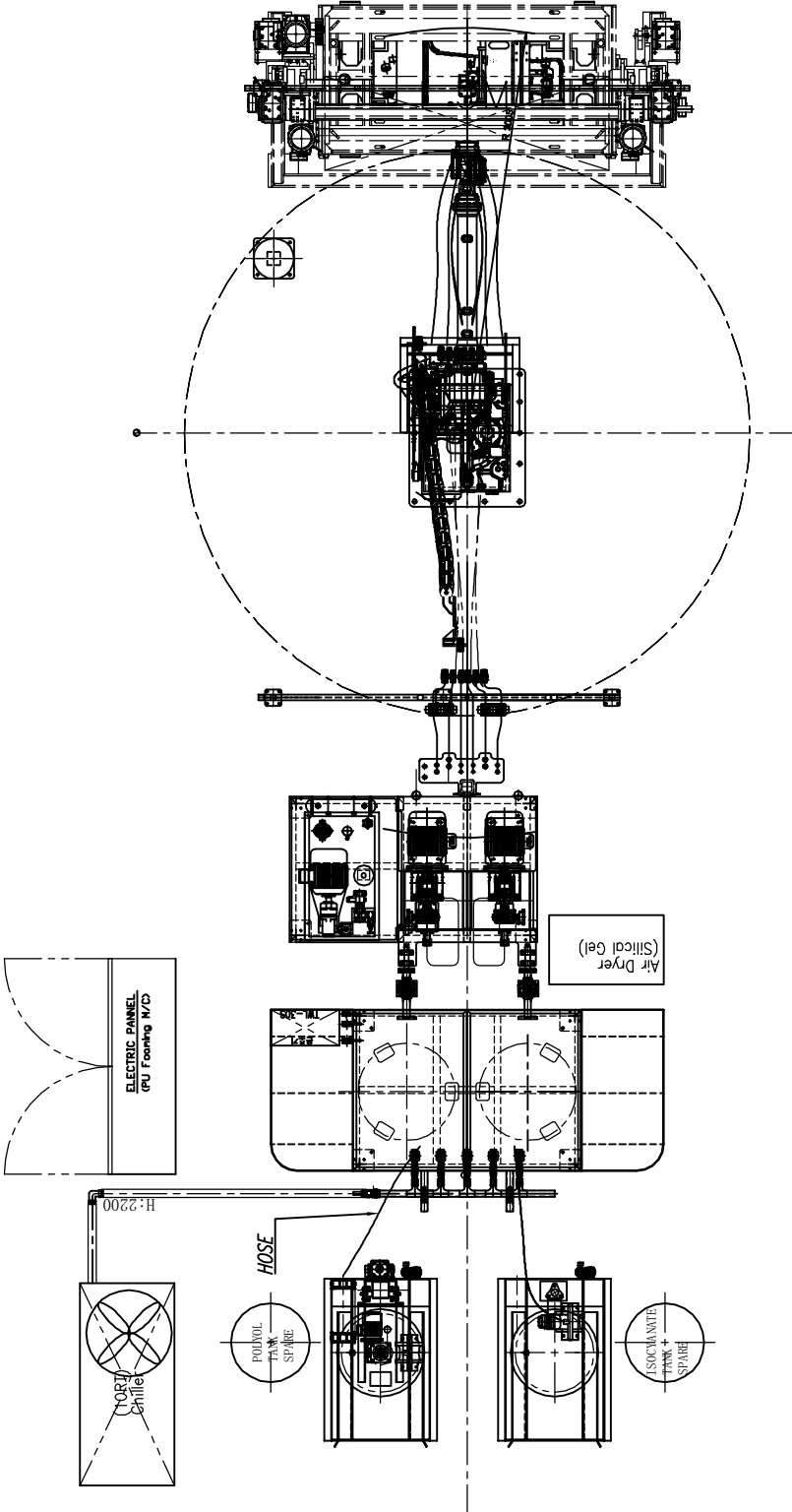
- Various options depending on customer's requirement
- High level of compatibility & Stable operating
- Fine control for mixing ratio and auto processing
- Wide range of mixing ratio
- Accurate foaming time
- High level of metering accuracy and Easy operating
- High level of durability and Easy to maintain and repair
- Efficient operation with Economical cost

# IP FOAMING LINE

Side View

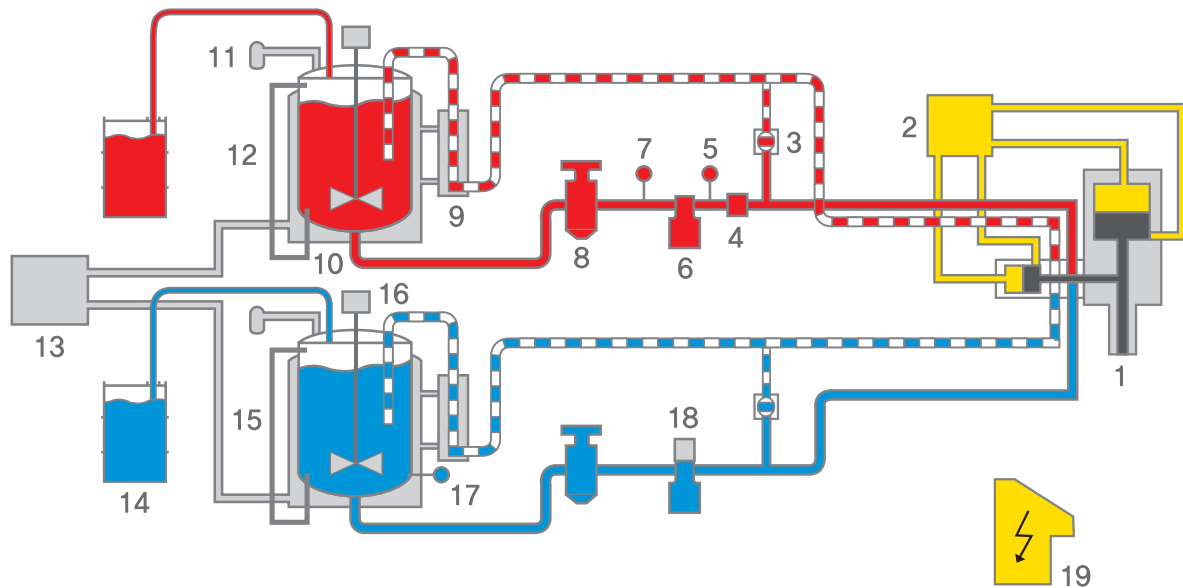


Top View



# CONSTRUCTION OF 'MAMIX' & ADJUSTING

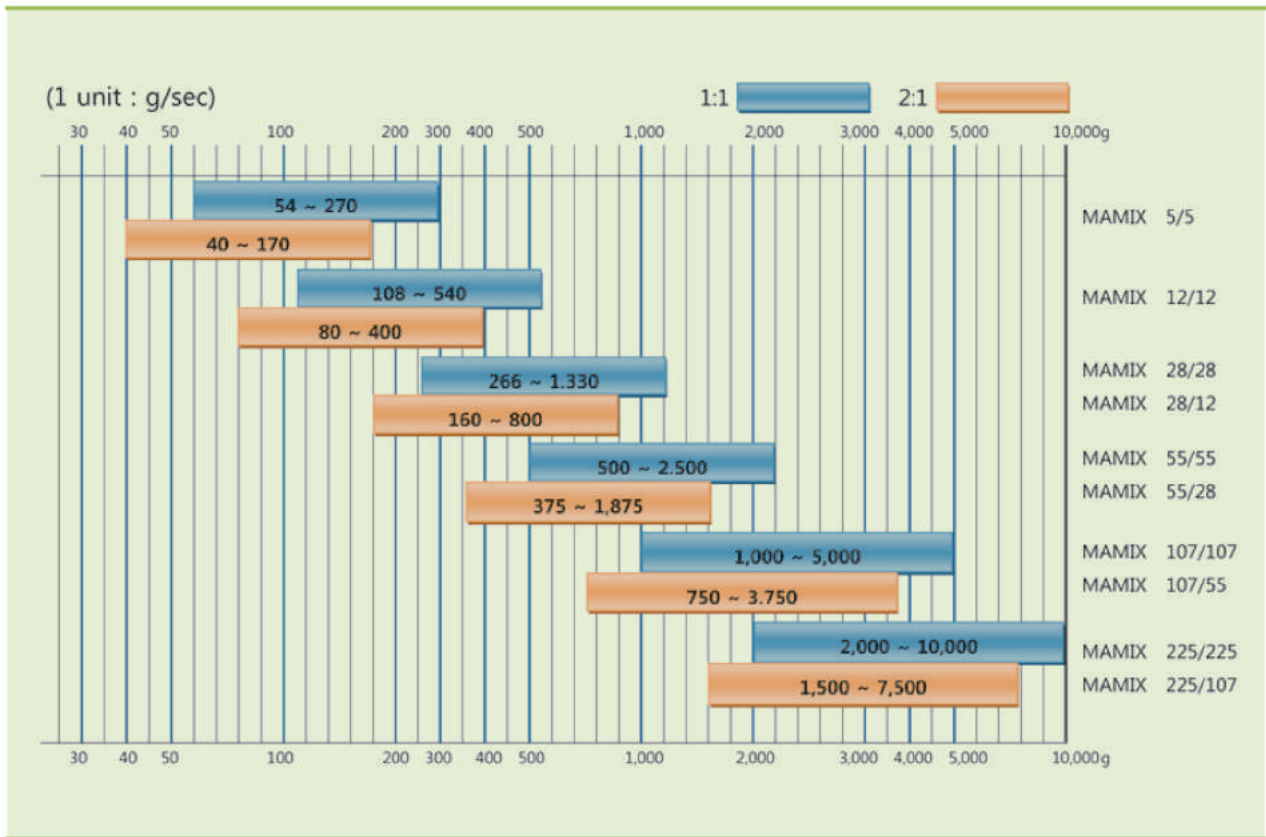
## CONSTRUCTION OF 'MAMIX'



- |                       |                            |                   |
|-----------------------|----------------------------|-------------------|
| 1. Mixing Head        | 8. Filters                 | 15. Level Gage    |
| 2. Hydraulic Unit     | 9. Heat Exchange           | 16. Agitators     |
| 3. SD Valves          | 10. Tanks                  | 17. Temp.Sensor   |
| 4. Flow Gage          | 11. N2 Gas or Dry Air Unit | 18. Relief Valve  |
| 5. High Pressure Gage | 12. Level Gage             | 19. Control Panel |
| 6. Metering Pump      | 13. Chiller                |                   |
| 7. Low Pressure Gage  | 14. Auto Filling from Drum |                   |

- Mixing Head : Core part of PU Foaming system. It mixes raw materials.
- Hydraulic Unit: It supplies all kinds of operating powers for Mixing Head.
- Control Panel : Operator adjusts data values on the touch screen.
- Metering Pump : It generates high pressure.
- SD Valves : High pressure switching valve. It is worked by air pressure. (open/closed)
- Filter : It filters unnecessary substance.
- Tanks : It normally contains POL and ISO.
- Heat Exchanger : For rapid cooling from recirculation, heat exchanger has equipped.
- Chiller : To maintain optimal temperature, each tank has connected to chiller.
- N2 Gas or Dry Air Unit : To apply stable raw material from each tank. It is necessary to make optimal pressure.
- Auto Filling from Drum : It applies raw material to tank automatically.
- Agitators : To keep optimal condition of raw material agitator has installed in each of tank.

## ADJUSTING RANGE



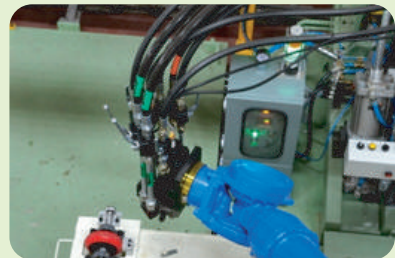
## PRODUCT PICTURES



TANKS



CONTROL PANEL



MIXING HEAD



METERING PUMP(DMP)



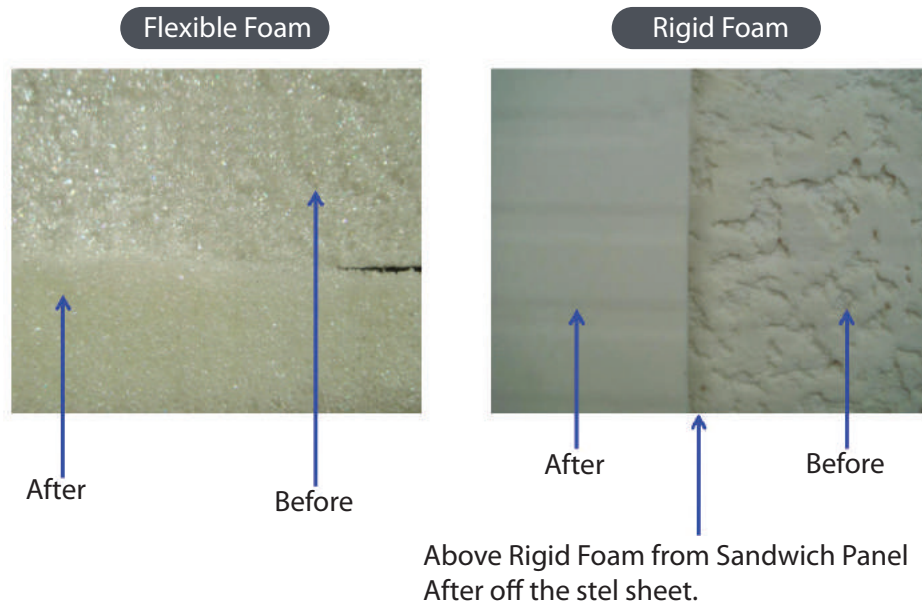
FILTER



CHILLER

# DUT'S NEW NUCLEATION & AIR LOADING

## DUT Version With & Without

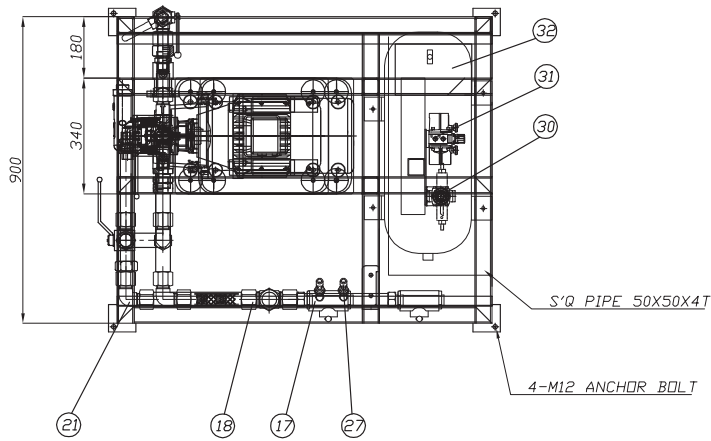


## Performance

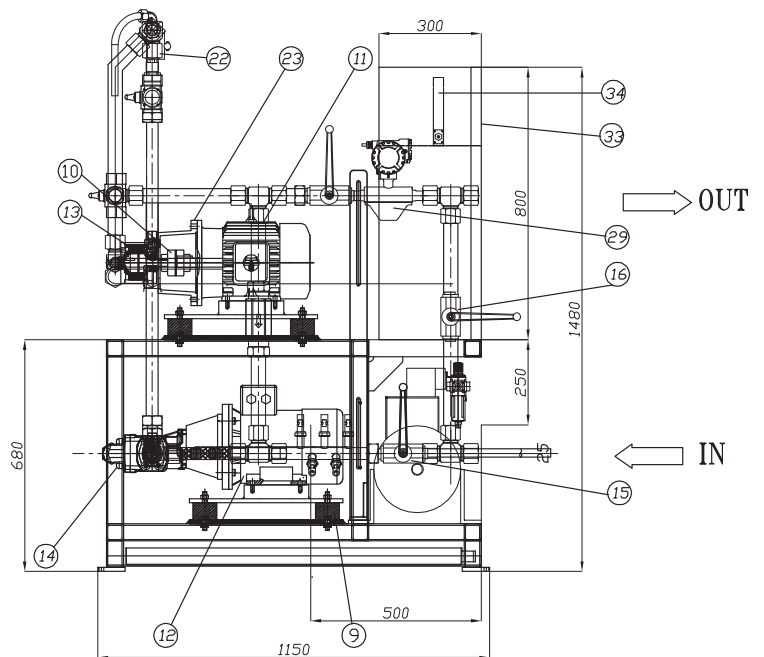
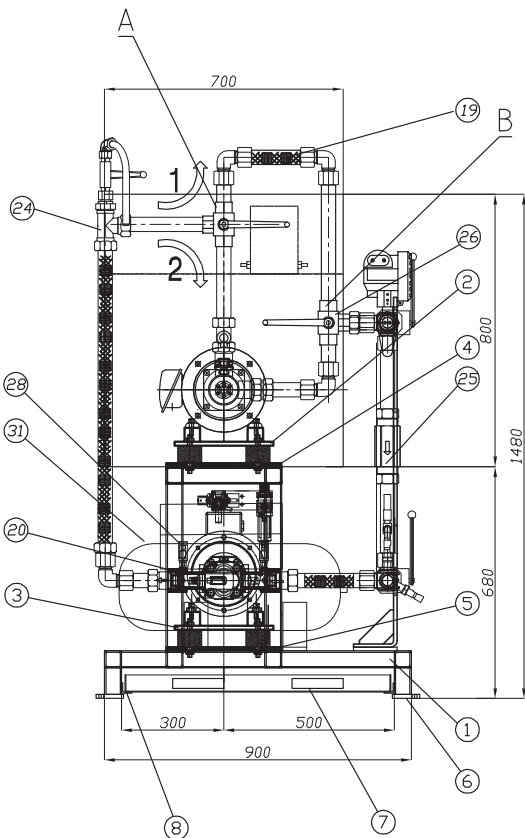
- Reduce Part Weight & Material Usage Up To 20%.
- Improve Acoustical - Sound Absorption Properties.
- Improve mechanical – Insulation Properties

A sensor of DUT's Nucleation system continuously monitors and updates the level of gas in Polyol, so gas loading is corrected automatically.

The gas is introduced automatically based on control presets. Polyol is circulated from the material day tank through the sensor by a recirculation pump.



NO.	DESCRIPTION	NO.	DESCRIPTION
1	FRAME	18	Tee 40A L
2	MOTOR BASE PLATE	19	Static mixer
3	MOTOR BASE PLATE	20	Gear pump flange
4	DY'M BASE PLATE	21	ELBOW 40A L
5	GEAR PUMP BASE PLATE	22	Ball valve 20S
6	ANCHOR PLATE	23	Dynamic mixer flange
7	OIL FAN	24	Swivel Tee 40A L
8	SUB TANK SUPPORT RAIL	25	Non Return valve1.25"
9	Silentblock	26	3way bell valve
10	NYLON COUPLING	27	Fitting adaptor 1/4"
11	MOTOR 2.2KW-6P	28	Pressure gauge 1/4"
12	MOTOR 3.7KW-4P	29	CORIOLIS MASS FLOW METER
13	DYNAMIC MIXER	30	AIR REGULATOR
14	GEAR PUMP KF16	31	AIR BOOSTER
15	BALL VALVE 35-SR	32	AIR TANK
16	BALL VALVE 35-SR	33	ELECTRIC PANEL
17	Activator Entry pipe	34	MASS FLOW METER



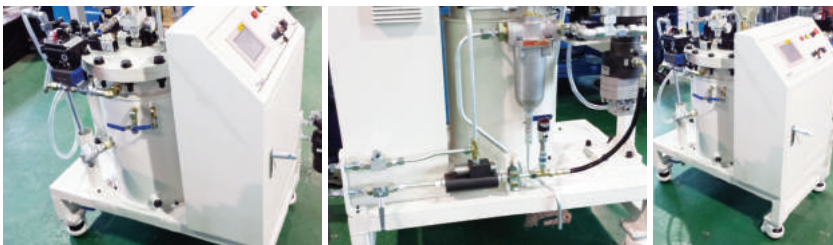
# DUT'S COLOR DOSING UNIT

## Description

- 5.1cc/rev External gear pump with components hardens to accommodate pigments.
- Magnetic Coupling: 3Kw (4H.P) Nord gearbox motor external gear pump hardens to accommodate the abrasive properties of carbon black. (All components manufactured in Germany)
- Pressure Relief Valve.
- Variable Frequency Drive Motor to adjust Colorant throughput.
- Volumetric Flow Meter.
- Calibration Station.
- Digital Readout that displays the throughput in g/sec.
- 50 liter (11 gallon) Stainless Steel Holding Tank.
- Agitator – Fixed Speed (Approximately 60rpm).
- Level Sensor.
- Emersion Heater will be programmable at the HMI Screen, PLC Controlled.
- Drum or Gear Pump to load Colorant into the Holding Tank. (Optional)

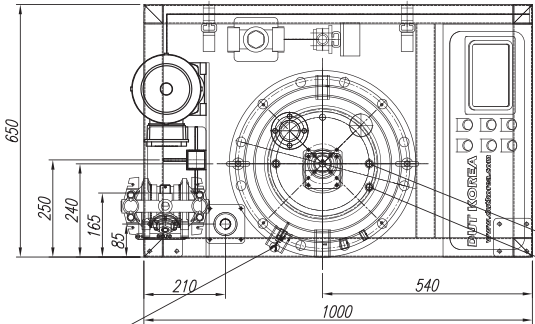
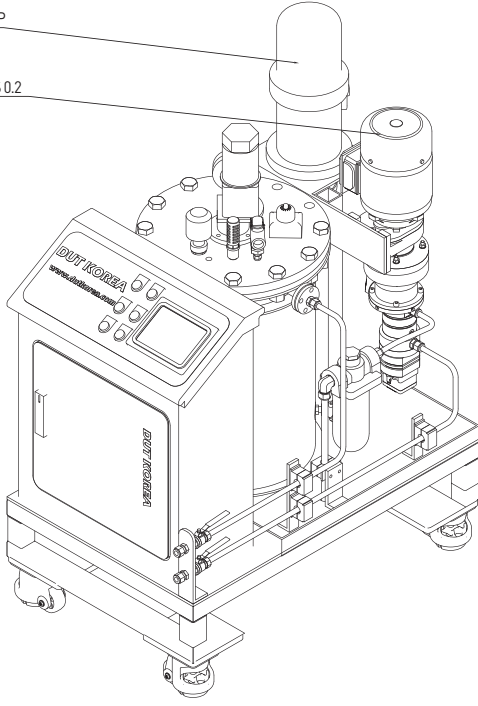
## Specifications

- 4-12 g/sec throughput
- Maximum Pressure 200 Bar (2900 psi)
- Minimum Throughput : 51 cc/min (0.85cc/sec)
- Maximum Throughput : 8900cc/min (148cc/sec)
- Maximum Carbon Black 40 % by volume
- Maximum Particle Size < 30 $\mu$  particle size
- Maximum hardness <4 MOH



④ DRUM PUMP

③ ZPD1-5, 1-VS 0.2



SAFE VV ⑨

SILENCER ⑪

⑬ TEMPSENSOR

⑤ LEVEL SENSOR

⑩ AGITATOR UNIT

⑧ PRESSURE GAGE

⑥ HEATER

② 40L TANK

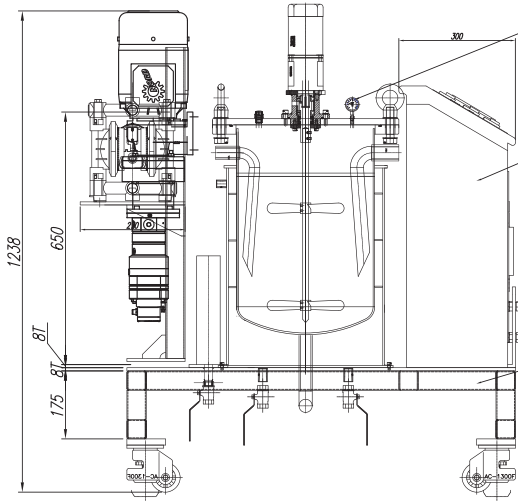
ELEC. PANEL ⑭

EDGE FILTER ⑦

⑥ HEATER

FRAME ①

⑫ FOOT MASTER



⑧ PRESSURE GAGE

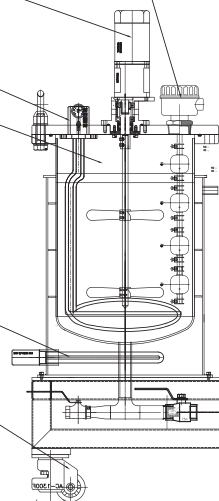
⑥ HEATER

② 40L TANK

ELEC. PANEL ⑭

FRAME ①

⑫ FOOT MASTER



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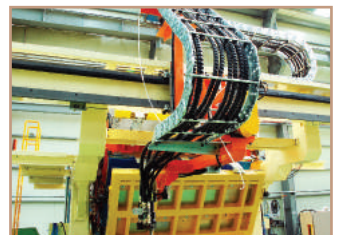
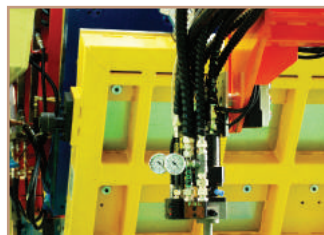


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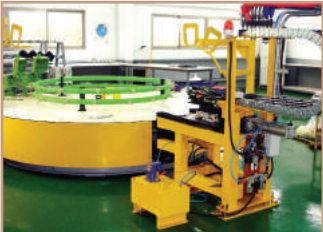
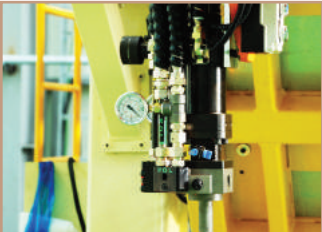
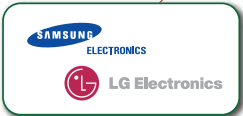
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ULTIMATE MIXING EFFICIENCY WITH VARIOUS OPTIONS

# HIGH PRESSURE FOAMING MACHINE

## R&D

DUT's R&D Team consists of PU specialists. Their considerations are always to solve the customer's difficulties and DUT's innovative technology is created from the customer's requirement. DUT's R&D center is totally set by customers.

## Q/A

To offer reliable products, Q/A team has been working to control product's quality. The technical data and troubleshooting are stored in a DUT's Q/A database, and it helps to produce DUT's better products.

## PRODUCTION

The Production team has organized by skilled engineers and they manufacture DUT's innovative products by reliable equipment.

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