

A Seminar On Practical Training

At

Piaggio vehicles private limited., Pune.



Piaggio vehicles private limited BARAMATI, PUNE



INTRODUCTION

The “PIAGGIO” VEHICLE PRIVATE LIMITED BARAMATI is the **World no. 1** light transportation vehicle Manufacturer Company. It is achieved by operational excellence, customer focus, total quality, fast response, high resources productivity, good maintenance and an empowered work environment.

- Piaggio would have a capacity of one lakh units in place before the end of 2004 and 1.36 lakh units before the end of next year.
- From a "few thousand vehicles" exported last year, Piaggio Vehicles hopes to increase exports to 20 per cent of total sales in the next couple of years. Its turnover is expected to grow from Rs 450 crore in 2003 to Rs 600 crore this year and the target is to increase it to Rs 1,000 crore by the end of 2005. Its profit before tax was "12 per cent to 13 per cent."
- The Italian parent is also keen to make its Indian subsidiary a worldwide manufacturing hub for three-wheeler products. Piaggio Vehicles had seeded the market in 18 countries and hoped to begin exports to these countries shortly.
- The markets include Africa, Latin America, South East Asia and South Asia.

PIAGGIO PRODUCTS AND PROCESSES

- Ape Auto-rickshaw / delivery van / pick-up van rolls out every two minutes.
- 20 different manufacturing processes are used during production.
- 250 work stages are manned with special tools and fixtures.
- 1200 parts used every three 3 minutes to roll out the vehicle.
- 40 workstations have daily run chart for process control.
- 125 checks carried out during the manufacturer of every vehicle.
- 35 trucks are despatched with vehicles everyday to 200 dealers.
- 12 export containers can be stuffed and dispatched every week.

PIAGGIO JOURNEY SO FOR.....

- 1998: PIAGGIO & GREAVES formed JV.
- 1999: PGVL rolls out 1st ape 501.
- 2000: 80 vehicles/day establish.
- 2001: PVPL becomes 100% subsidiary.
- 2002: new assembly shop commissioned.
- 2003: new CED(CATHODE ELECTRO DEPOSITION) shop started, 100,000th rolls out.
- 2004: new chassis shop commissioned.
- 300: vehicles per day established.
- 2,00,000th ape rolls out on 7th November.

FABRICATION SHOP

- In the fabrication shop the chassis joints with other parts by resistance spot welding. In the fabrication shop, Resistance spot welding and MIG CO2 welding is mostly used. Brazing joints the parts. The hydraulic pressing machine is used to press the corners of door.
- Following Machines and tools are used in fabrication shop.
- 1.CO2 welding machine.
- 2.Resistance spot welding machine
- 3.brazing set.
- 4.chain hoisting tool.
- 5.fixtures
- 6 hydraulic press machine.

CO2 WELDING MACHINE:

- MIG WIRE FEEDER
- WELDING TORCH
- MIG POWER SOURCE

2.RESISTANCE WELDING

**SPOT WELDING CONSIST FOLLOWING
EQUIPMENT**

- CONTROLLER**
- ELECTRONICS WELD MONITOR**
- DETACHABLE PROGRAMMER**

BRAZING SET

In the "Brazing" process the parts to be joined are not brought to melting point. The filler material is used in form of welded joint. Brazing is like soldering but at higher temperature. Soldering is at lower temperature and has lower strength. Brazing having filler metal, torch gas cylinder (O₂ & acetylene) & pressure Regulator. The brazing is used in industries in wide area. The neutral flame having 1:1 ratio of O₂ & acetylene gas. The filler metal is a mostly brass alloy. The borax is used as coating.

CHAIN HOISTING TOOL

The chain hoist indef-HC is compact in its construction. It is suitable for a great variety of application. The hoists HC1, HC2, HC3, HC4, HC5 and HC5 are practically identical as regards construction and method of functioning. They differ only with regard to the permissible lifting capacities.

PAIN T SHOP

INTRODUCTION

After the fabrication shop the vehicle body_or chassis_come into paint shop through conveyor system. The paint shop is divided in two processes.

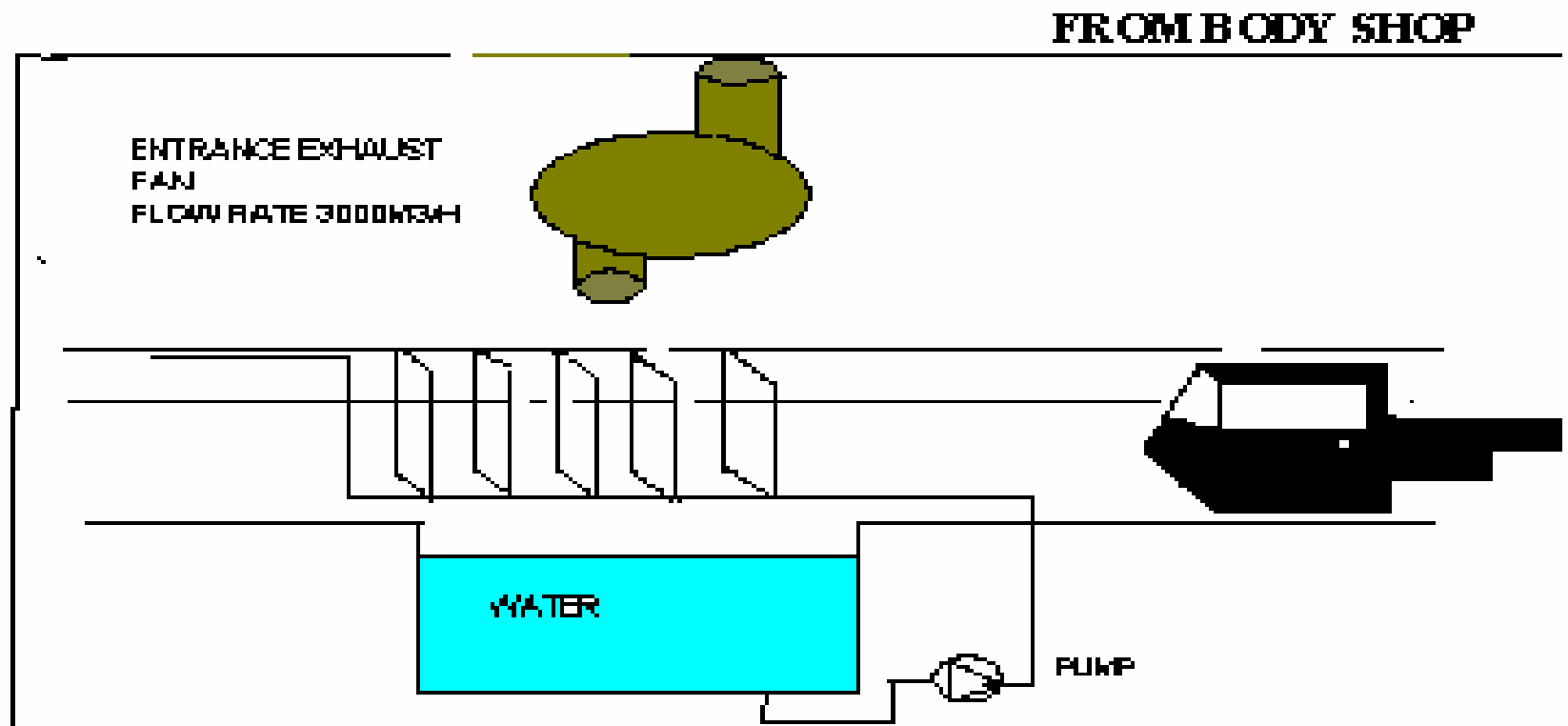
1.PRE TREATMENT LINE

2.CED PAINT LINE

CED paint provided us:

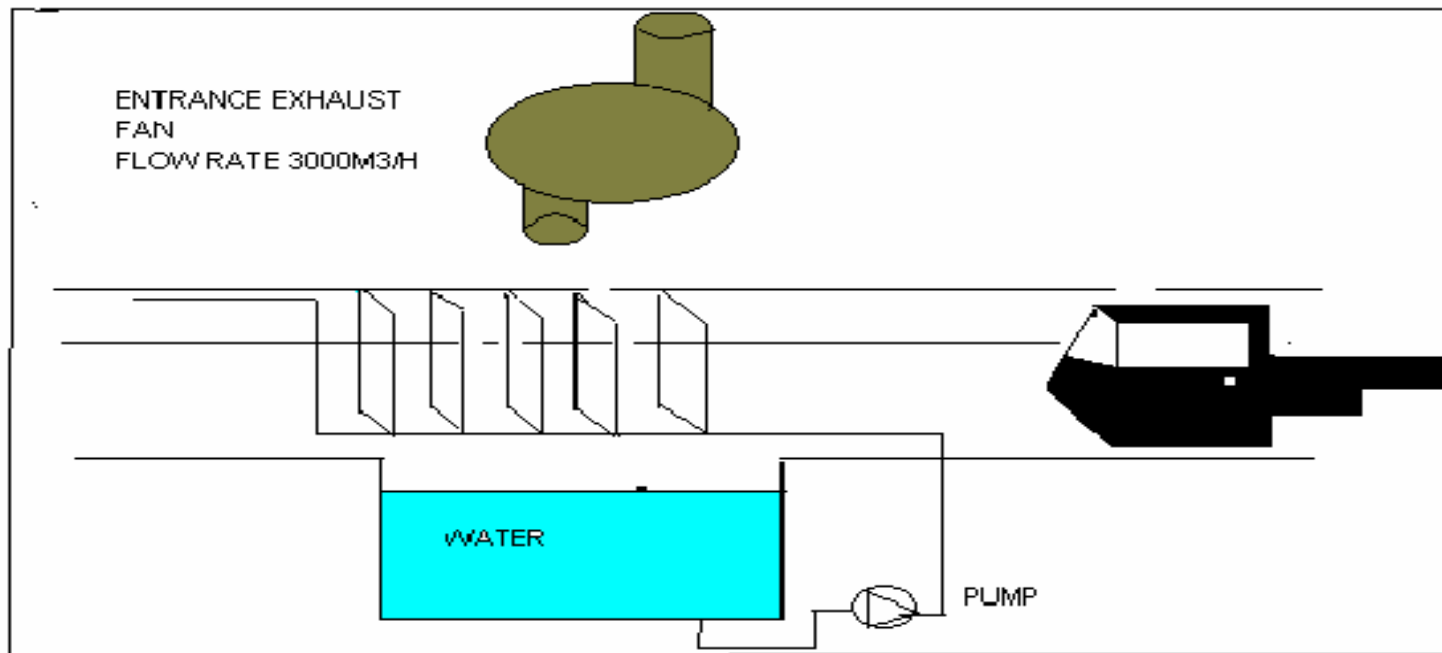
- **WORLD CLASS QUALITY**
- **ENVIRONMENTAL FRIENDLY TECHNOLOGY.**
- **SHARED VISION AND**
 - **TEAM WORK.**
 - **TO DELIGHT THE CUSTOMER**

PRE TREATMENT LINE STAGE-1 HOT WATER SPRAY PROCESS FLOW PARAMETERS



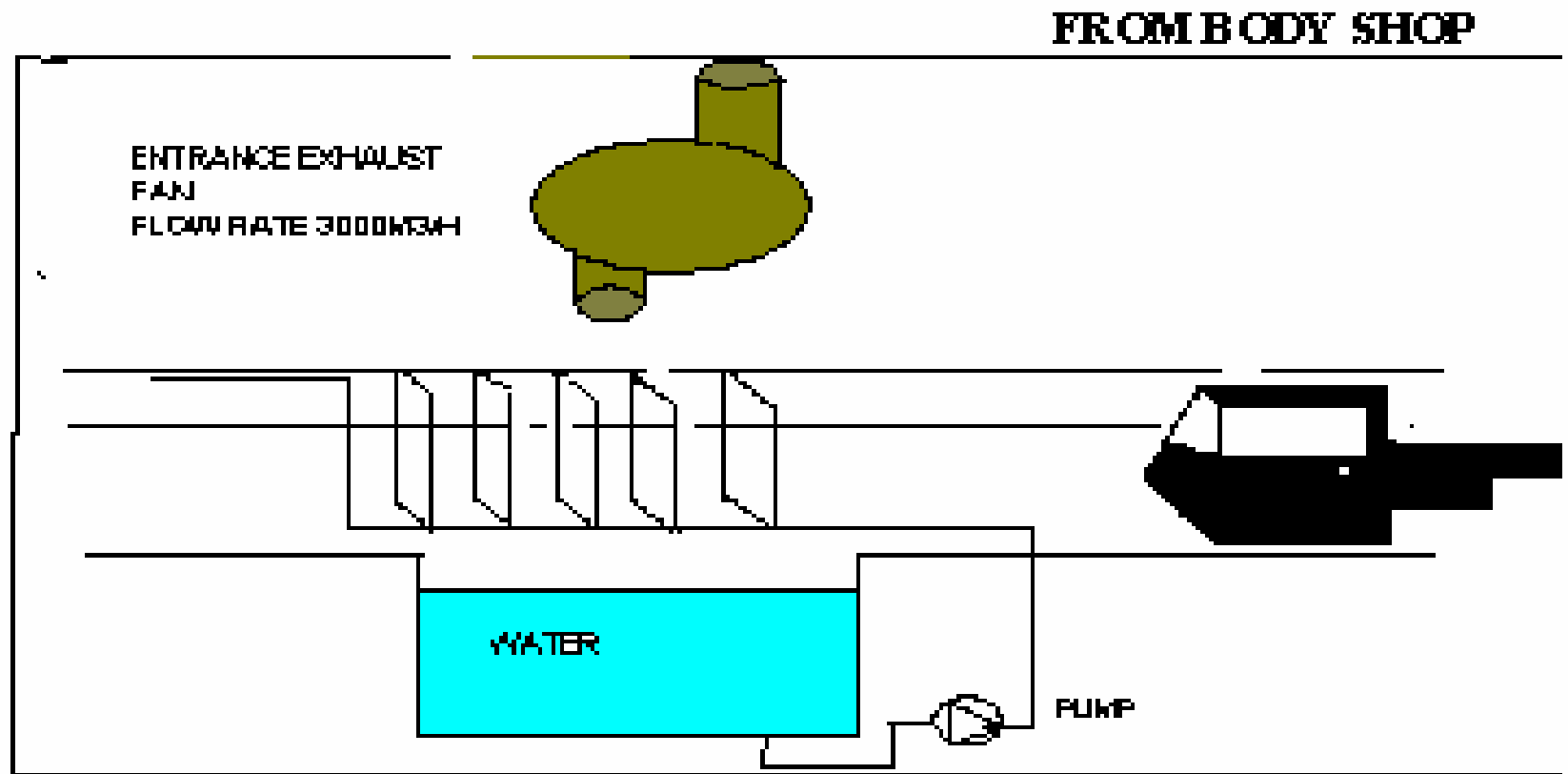
PRE TREATMENT LINE STAGE-2 PRE DEGREASING

IMPURITIES AND OIL GREASEAS REMOVING



STAGE-3 DEGREASING

STAGE-4 SPRAY WATER RINSE



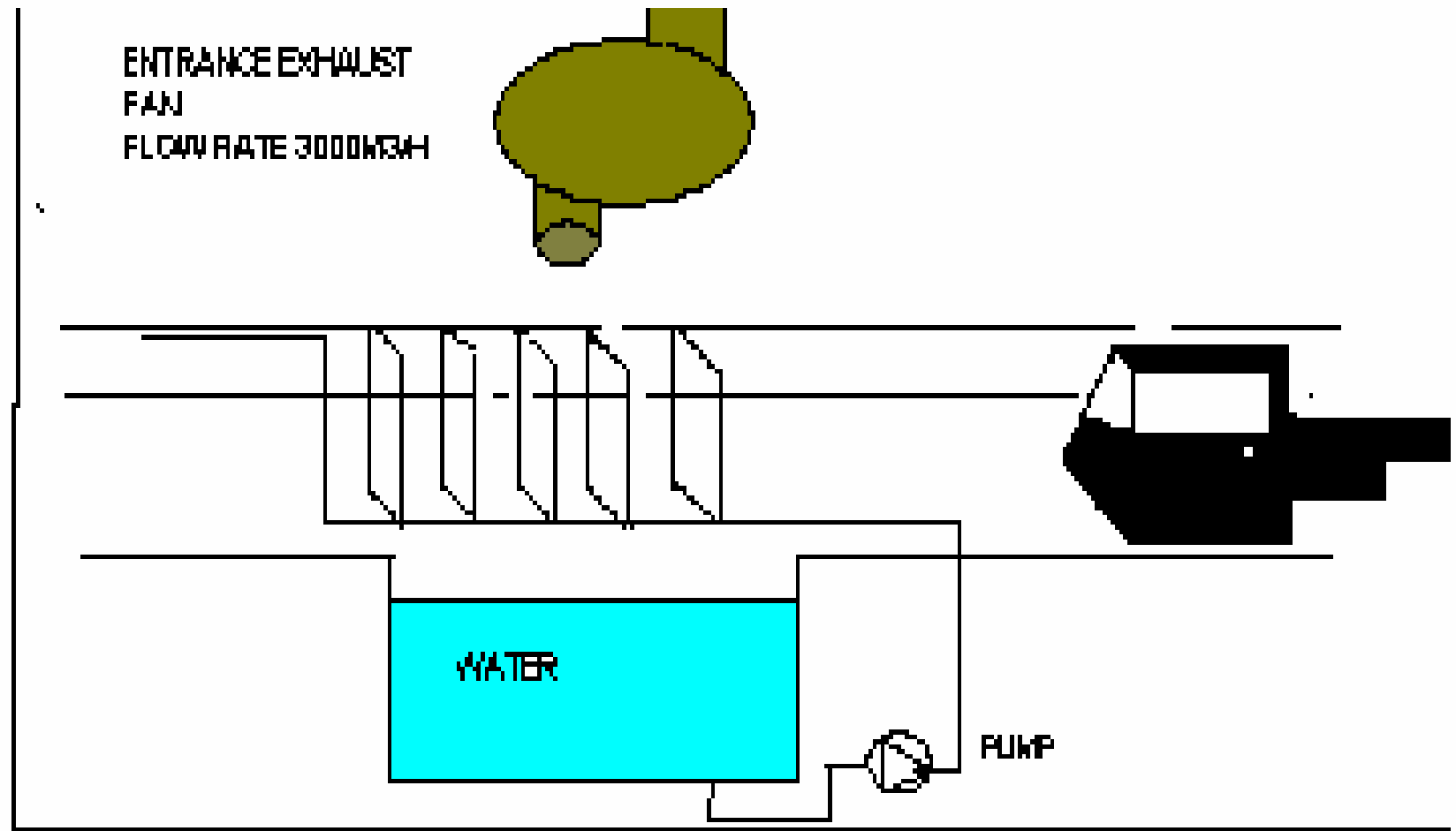
STAGE-5
DIP WATER RINSE

PRE TREATMENT LINE

STAGE-6

- ACTIVATION

STAGE-7 PHOSPHATING



STAGE-8 DIP WATER RINSE

**PHOSPHATING RESIDUAL
REMOVING**

STAGE-9 PASSIVATION

**STAGE-10 DM WATER
RINSE**

2.CED LINE

- STAGE-1 CATHODIC ELECTRO DEPOSITION
- STAGE-2 UF RINSE SPRAY
- STAGE-3 UF RINSE DIP
- STAGE-4 UF RINSE SPRAY
- STAGE-5 DM WATER SPRAY

2.2 PUMP

The basic parts of a centrifugal pump are:

- 1.casing.
- 2.impeller.
- The impeller rotates and creates centrifugal flow of water. The casing directs the water flow towards the outlet. The water may towards the outlet by the centrifugal action. The shape of the casing is an in volute.
- The pump & motor when properly aligned will ensure minimum vibration, long life of flexible coupling lower noise, better transmission efficiency.

2.3 CONVEYOR

OVERHEAD POWER AND FREE CONVEYOR

- LOAD STATION
- PT ZONE
- ED OVEN
- STRIP OUT
- SEALER LINE
- PAINT BOOTH
- TOPCOATOVEN
- SCADA

3.ASSEMBLY SHOP

DESCRIPTION OF VARIOUS MACHINES OF ASSEMBLY SHOP

- 1.BRAKE FLUID FILLING MACHINE
- 2.DYNAMOMETER

1. BRAKE FLUID FILLING MACHINE

INTRODUCTION

- The machine provides a fast and precise method of filling oil in brake system through the master cylinder reservoir. The system is enhanced with a vacuum trap, vacuum pump & oil tank and pneumatic/ hydraulic valves and filling gun.

DYNAMOMETER

INTRODUCTION

The chassis dynamometer is a comparator stand & is specifically designed to provide a compact arrangement, low maintenance requirements with high degree of operational reliability suitable for end of production line testing of 3 wheelers coming of the assembly line.

The design is suitable for pit installation. The equipment layout is such that, when the drive axle (rear) of the vehicle is located centrally onto the rear roller module & front wheel on to the front roller module ensuring the wheelbase is selected correctly, the vehicles remains in vertical position.

Some of the tests, which can be carried out on this chassis dynamometer are:

- Maximum speed
- Acceleration (comparative measurement)
- Power /torque (comparative measurement)
- Brake performance (by distance measurement method)
- Noise/leakage if any (observation or with specific instrumentation)
- Drivability (gear shift ability)
- Functioning of vehicle speed measuring system.
- Functioning of vehicle accessories & indicating system.

4.CNC MACHINE

- INTRODUCTION

VTC-800 IS A VERTICAL MACHINING CENTER , WHICH CAN PERFORM MILLING, DRILLING, TAPPING, BOARING & REAMING OPERATION.

5.UTILITY

- COMPRESSOR
- DIESEL GENERATER SET

ANY QUERIES....

THANKS... ..