OmniOx (HFT 500)

Jan. 2013. Prepared by MEKICS

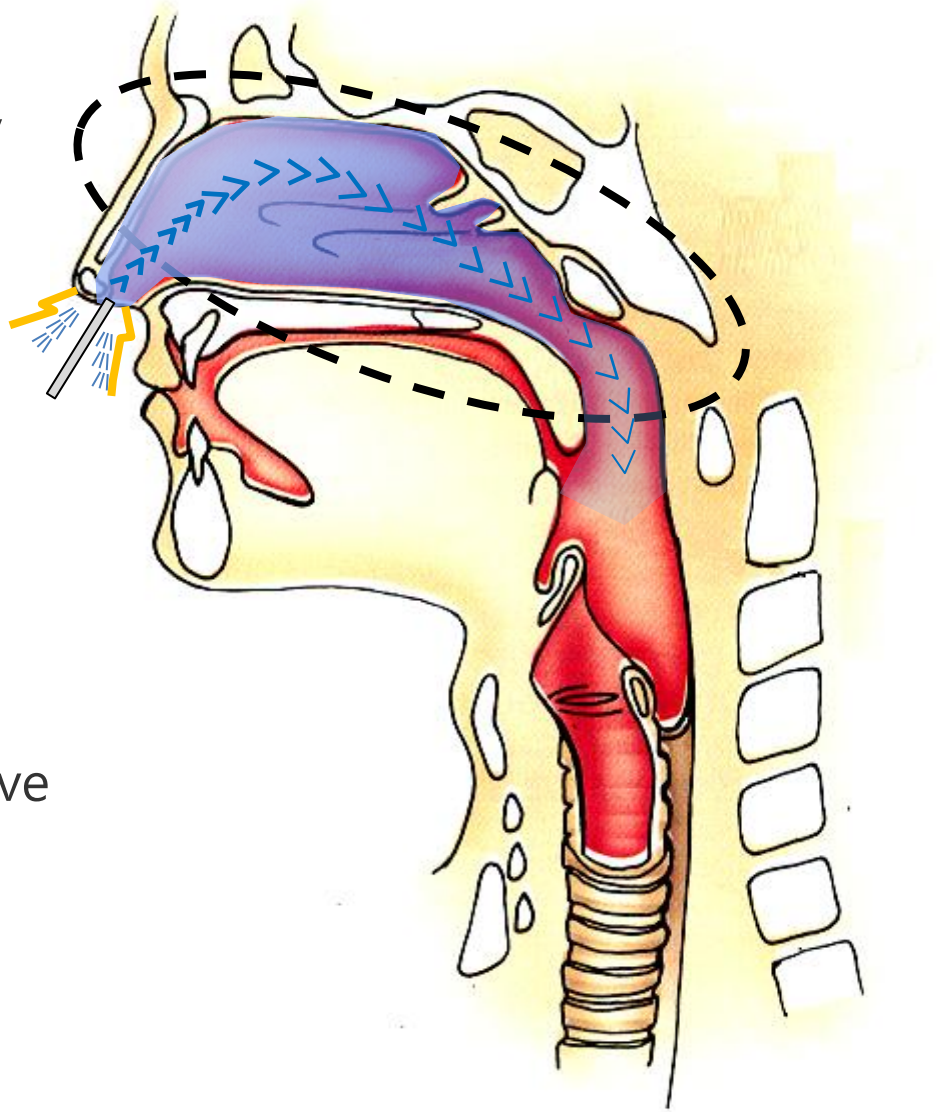
0. Index

1. **What is High Flow Therapy's Definition?**
   - ✓ Flows that exceed patient demands at various minute volumes

2. **How does HFT impact breathing?**
   - ➢ CO2 Ventilation
     - ✓ Washout of the nasopharyngeal dead space
   - ➢ Efficient Oxygenation
   - ➢ Work of Breathing
     - ✓ Reduction in inspiratory resistance associated with gas flow through the nasopharynx
   - ➢ Energy Cost of Gas Conditioning
     - ✓ Improvement in respiratory mechanical parameters associated with gas temperature and state of humidification
     - ✓ Reduction in metabolic work associated with gas conditioning
   - ➢ Provision of mild distending pressure

3. Must reduce the dead space of Upper Airway (the nasal cavity)

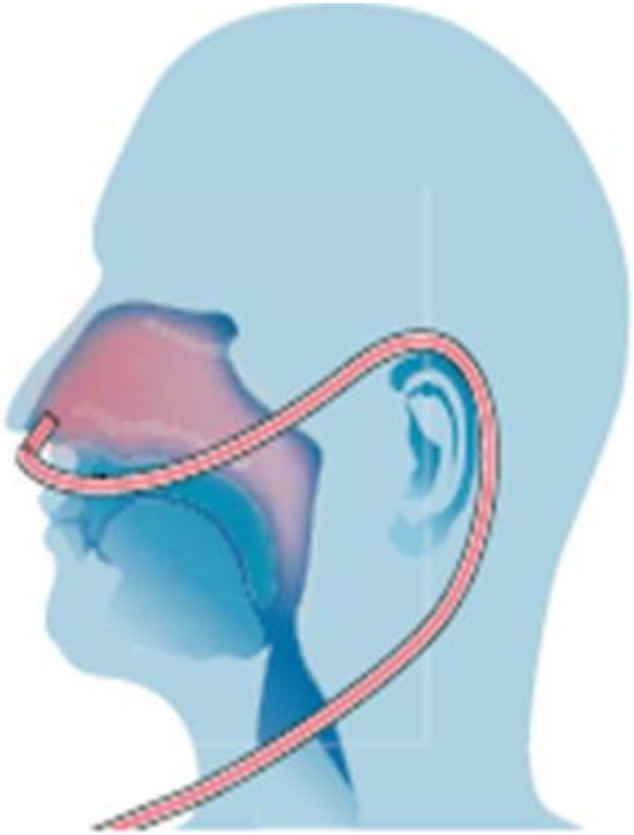
- ✓ Circulation and Maintain of fresh air (minimized dead space)
- ✓ Appropriated PEEP (airway security)
- ✓ Minimized resistance of exhalation (efficiency of CO2 deflation and optimized positive pressure)



→ The best solution is "**JET FLOW EFFECT**"

4. CO2 Ventilation

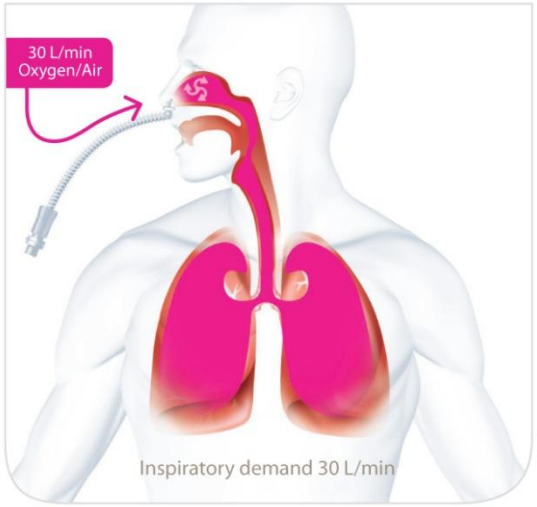
- ✓Washout of nasopharyngeal dead space
- ✓Improved fractions of alveolar gases with respect to carbon dioxide
- ✓Low flow nasal cannula therapy is only thought to facilitate oxygenation
- ✓HFT impacts CO2 elimination

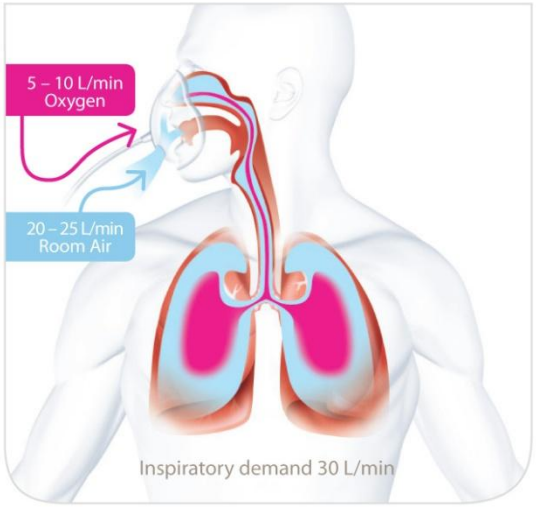


Flushing of dead space in the Nasopharyngeal cavity helps Enhance alveolar ventilation

5. Efficient Oxygenation

- ✓ High inspired oxygen fractions by eliminating room air entrainment during inspiration
- ✓ Improve alveolar oxygen fractions beyond mask therapy based on the equation for alveolar ventilation
- ✓ Patients can often maintain better oxygenation or require a lower FiO2 compared to conventional mask or cannula therapies





6. Work of Breathing(WOB)

- ✓ HFT provides enough flow to match or exceed a patient's inspiratory flow
- ✓ HFT most likely minimizes the inspiratory resistance associated with the nasopharynx
- ✓ Adequate warming and humidification of the conducting airways by delivery of warm, humid gas is associated with improved conductance and pulmonary compliance compared to dry, cooler gas
- ✓ Delivery of breathing gases at body temperature and saturation promotes an ideal respiratory mechanical response

7. Energy Cost of Gas Conditioning

- ✓ The nasal air passages expend energy to warm inspiratory air from ambient to 37 ℃ and vaporize water to humidify the incoming air to 100% relative humidity

- ✓ Alleviated when gas is delivered at body temperature and saturated

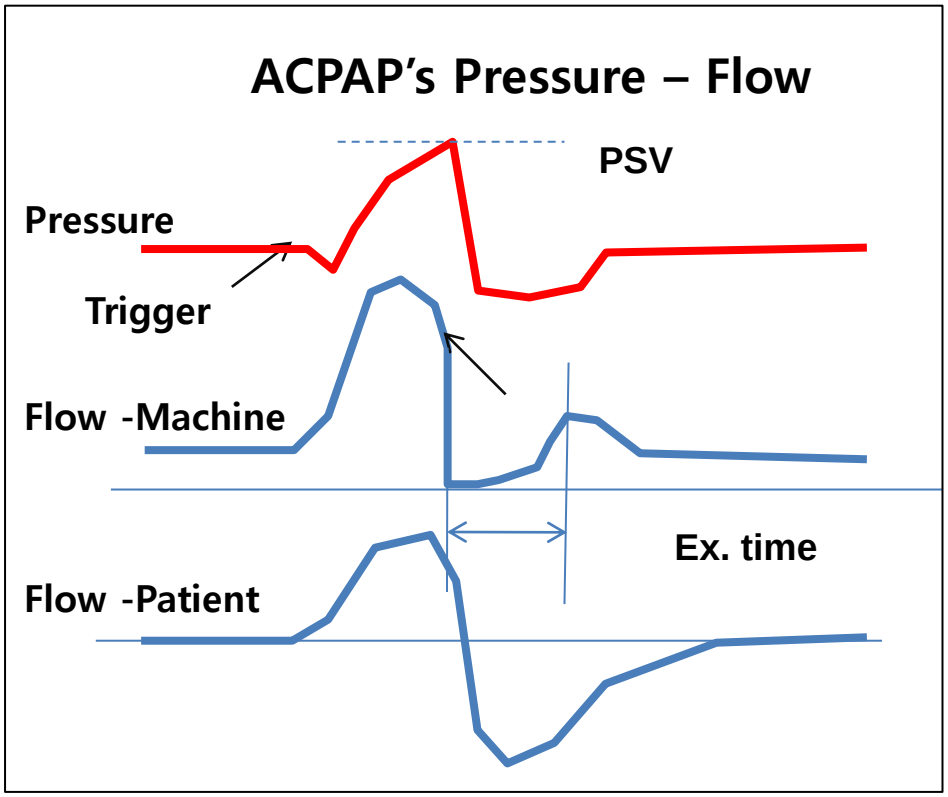
8. ACPAP+ ?

- Unique technology for the first time by MEKICS in the World
  - ✓ New concept of positive pressure support for easy exhalation that support inspiration in inhalation of breath and interrupt the flow quickly in exhalation
  - ✓ Same effect but more comfortable to inhale and exhale both together so it is basically big different with CPAP.

- Clinical effect of comfortable breathing
  - ✓ Most of case of CPAP patient needs to have adaptation period due to uncomfortable
  - ✓ Increase of WOB, and disturb of stable sleeping
  - ✓ Clinical effect beside the ventilation only.

ACPAP+® (Adaptive CPAP & PSV)

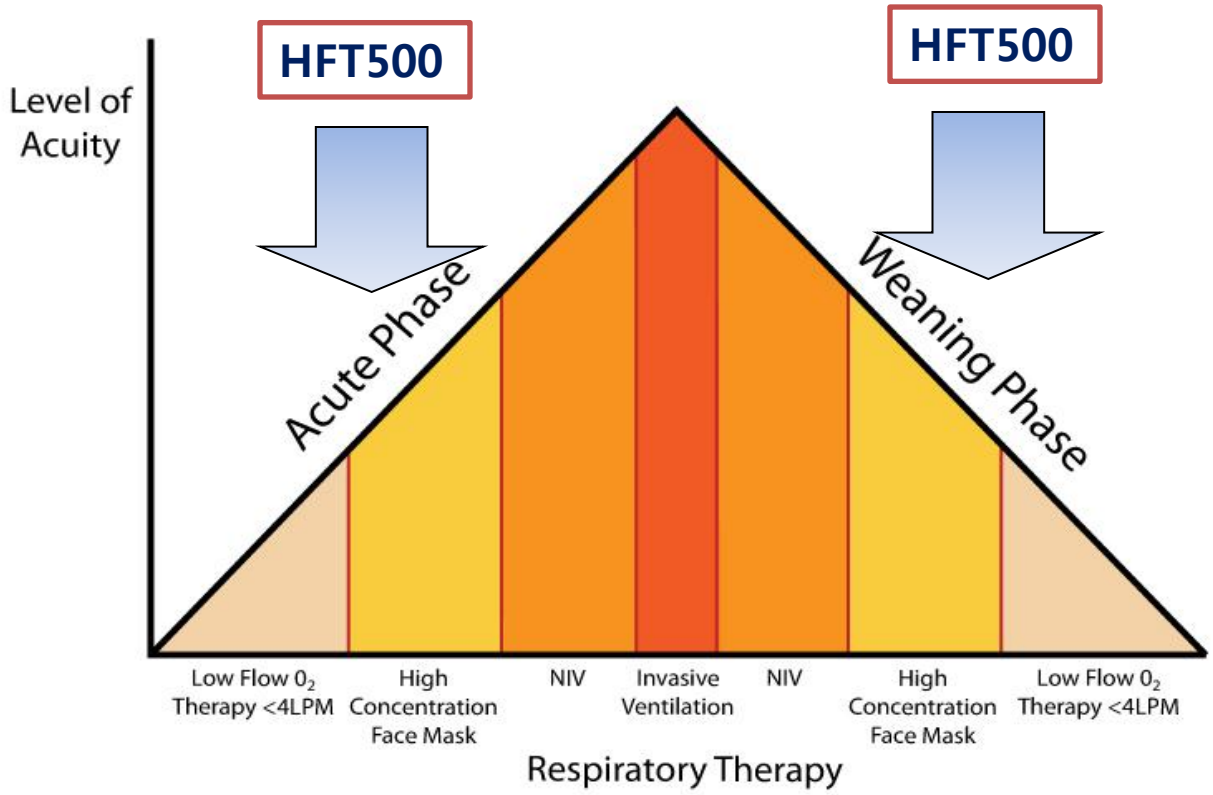
- **Positive Pressure Support, Lower expiration resistance as support of inspiration**
- **Maintain of airway and comfortable breathing**



✓ **Easy to breathing?**
= Possible to support of inspiration and low of expiration resistance

✓ **Support of Inspiration: PSV Trg**
✓ **Expiration Resistance : Ex_Sen, ExTime**

HFT500 Target Market

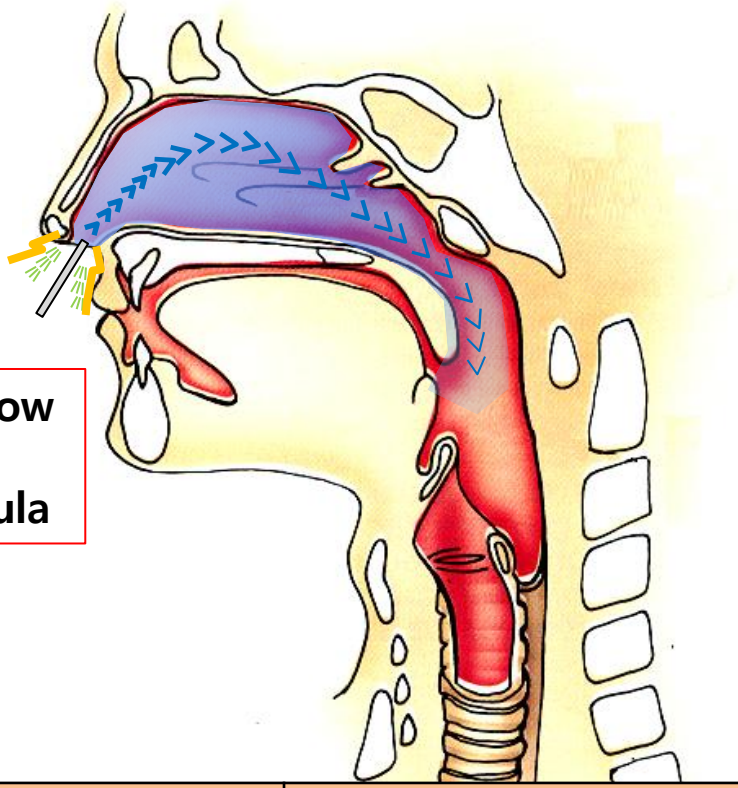


2. Specification

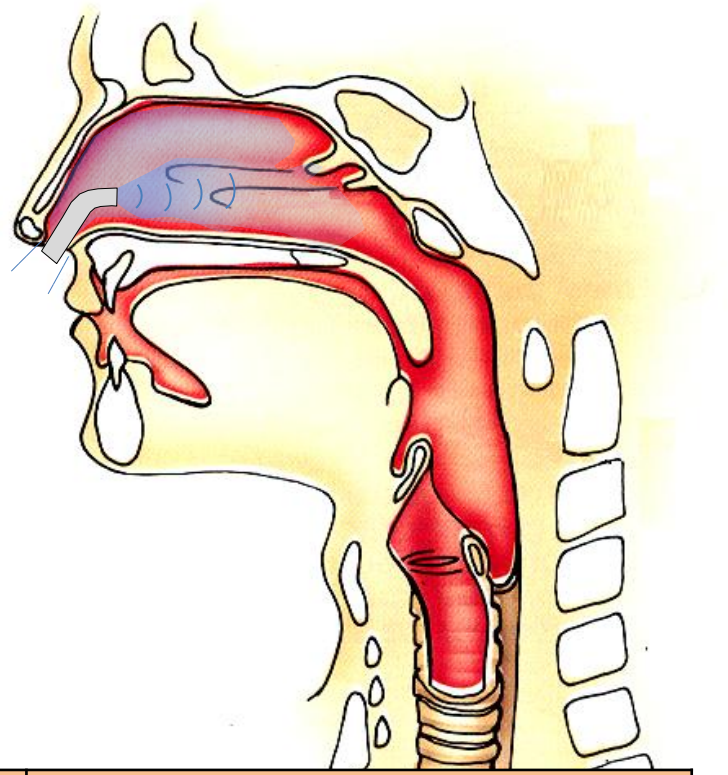
- **Functions**
  - General
    - ✓ 4.3" Color TFT, Touch Screen, Knob
    - ✓ Mode : HF/CPAP, PS/CPAP
    - ✓ O2 Mixer
    - ✓ **FiO2, Respiration, SpO2 Monitoring**
    - ✓ Built in Humidifier
  - HF/CPAP : Flow(Lpm), O2(%)
  - PS/CPAP : PSV, PAP, Trigger, ExTime, Ex_Sense, O2(%), Wake-up

- **Performance**
  - Pressure : Up to 100cmH2O
  - Flow : Up to 160 Lpm / 60 Lpm (HFT)
  - O2 : 21 ~ 100%

3. The World Best Features (HF/CPAP)

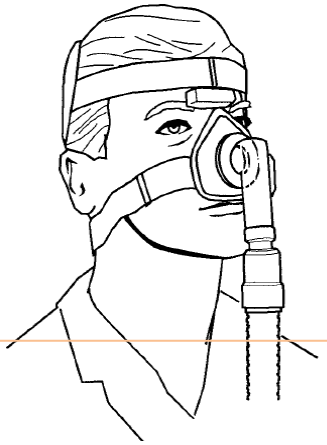


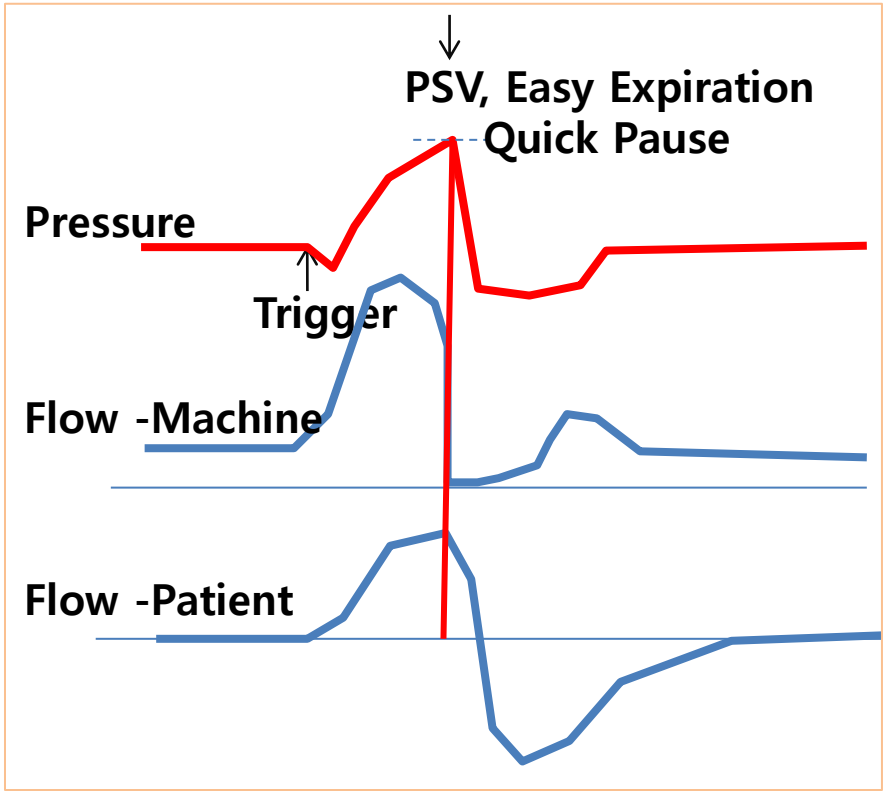
Jet Flow
Nasal
Cannula



	MEKICS	Competitors
Flow /Pressure Drive Power	10~ 60 lpm Up to 100cmH2O	10 ~ 40 lpm(60lpm) Up to 40cmH2O
Effect	Available Jet Flow Low Expiratory Resistance	Not Jet-Flow High Expiratory Resistance

ACPAP+®
PSV *at Ins. Phase*
Quick Pause *in Exp. Phase*





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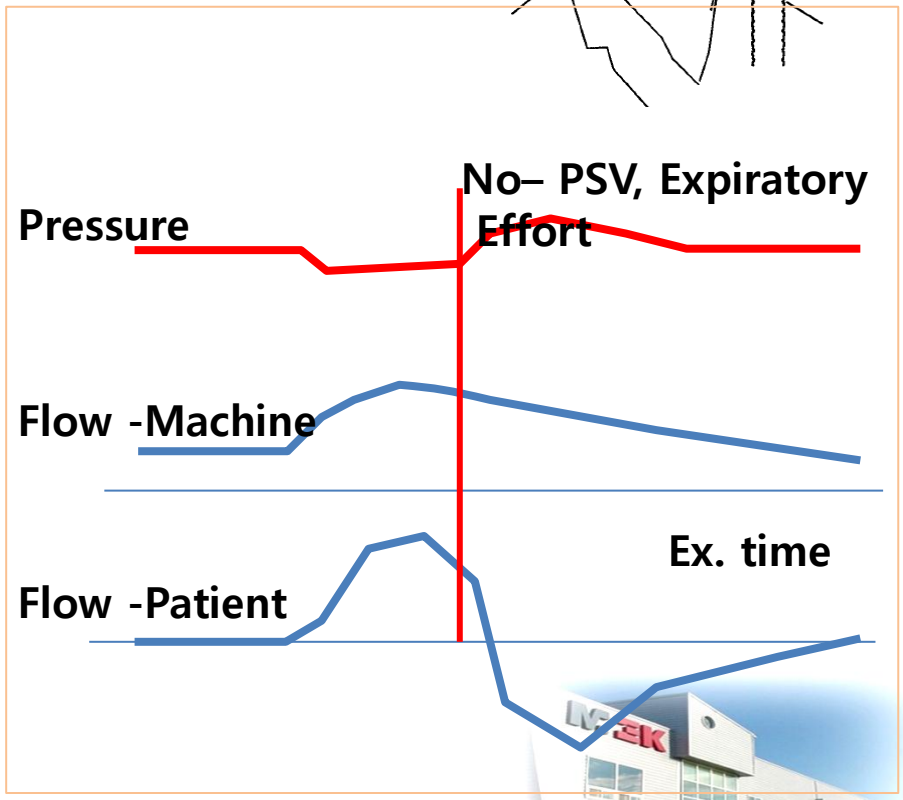

<Competitors>

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Thanks for your attention