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# INDUSTRIAL “Fluklean”® CLEANING SYSTEM LEADER

## YJSTECH CO., LTD.


YJS TECH
INDUSTRIAL FLUIDIZED CLEANING SYSTEM

# INDUSTRIAL “FluSonic”® CLEANING SYSTEM LEADER


YJSTECH

President: Shin Hyung Lee | Location: 64-4 Pulmugol-ro Paju-si, Gyeonggi-do (310-2 Yadong-dong)

Business License No: 128-81-27456 | TEL : 031-958-5848 | FAX : 031-943-6718 | E-mail : yjs@yjstech.com

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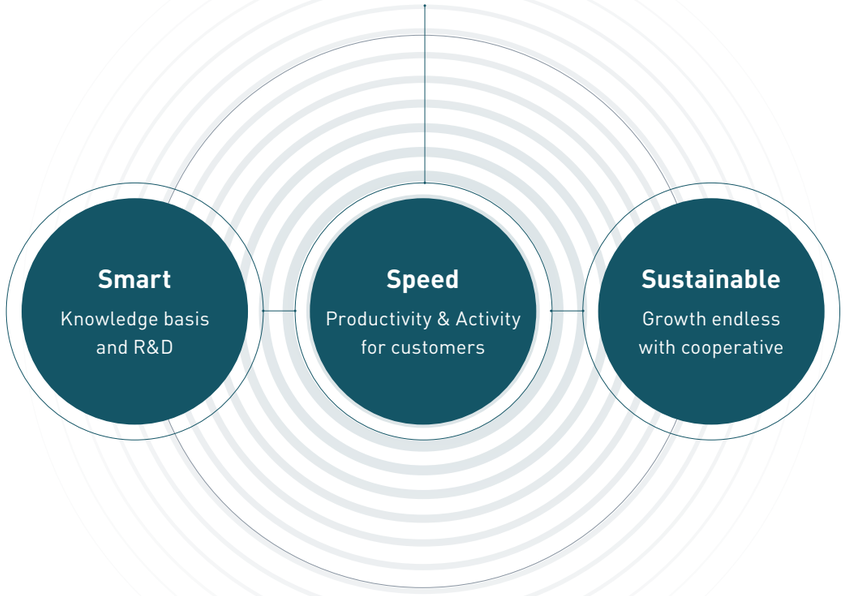
INDUSTRIAL FLUIDIZED CLEANING SYSTEM

# VISION

**Smart**(Thinking) · **Speed**(Action) · **Sustainable**(Growth)

Based on **Communication**




# MAJOR CLIENTS

- Samsung, Suwon
- Samsung, Hungary, etc.
- Jeil Woolen Fabric
- Jeil Chemical Fiber R&D
- Kolon ,Gumi
- Kolon-, Daegu
- Kolon Industry
- Hyosung T&C, Jincheon
- Hyosung T&C, China
- Hyosung T&C, Yonghyeon
- Hyosung T&C, Ulsan
- Hyosung T&C, Daejeon
- Hyosung T&C, Anyang
- Hyosung T&C, R&D
- SK
- LG Chemical
- LS Cable, Gumi
- LS Cable, R&D
- Hanwha Chemical
- Taekwang
- KITECH
- KAIST
- Daehan Cable, Siheung
- Daehan Cable, Anyang
- Segngyukwan University
- Korea University
- Iljin Industrial Electronics
- Hwseung Industry
- Dongseo Food, Incheon
- Dongseo Food, Changwon
- Dongseon Chemical Fiber, Yongin
- Dongseon Chemical Fiber, Singal
- Dongseon Mono
- Hankook YKK
- KIMM
- Sungjin
- Joyan,
- Samhong
- Youngbo Chemical, Daejeon
- Youngbo Chemical, Ansan
- Daeyoun
- Tongil Engineering
- Hankook Engineering
- Plastic,
- Ulsan / Anyang
- M&G Co.
- Mode Tech
- Poli Tech
- Sewon Corp.
- Gaon Cable,
- Nano Hitech
- Pooncheon etc.
- Kolon plastics
- Anylon co., LTD.
- Unotech
- Hyea sung Fiber
- Basf Korea
- Namyang(coffee)
- Kepco
- Mil. National Defense



# ABOUT YJSTECH CO., LTD.

Plastic products are widely used in everyday life and throughout the industries. Therefore, plastic makers are in need of more complicated and precise parts compared to the past. However, they have much difficulty cleaning the precise parts that are essential for the plastic making process, such as dies, molds, and spinnerets. Also, the existing cleaning method requires much effort and time and causes the parts to wear or corrode and the environmental pollution.

To solve these problems, YJSTECH has developed 'Fluklean,' the eco-friendly industrial mold cleaner using the principle of fluidized bed. Our "Fluklean" has been used by Korea's leading large companies and many companies abroad for the last 30 years.

As the leader of eco-friendly industrial cleaners, YJSTECH promises to realize customer satisfaction and stay ahead of competition with exceptional quality and prompt customer service.

# PRODUCTS

## FLUKLEAN

**Fluklean is the system that uses the principle of fluidized bed to clean the residues on the parts more efficiently. The organic contaminants on the surface and inside of molds and dies or the high-molecular inorganic compounds are cleaned in the dry way to decompose and discharge the contaminants perfectly without generating any wastewater.**

## Fluklean Using the Principle of Fluidized Bed

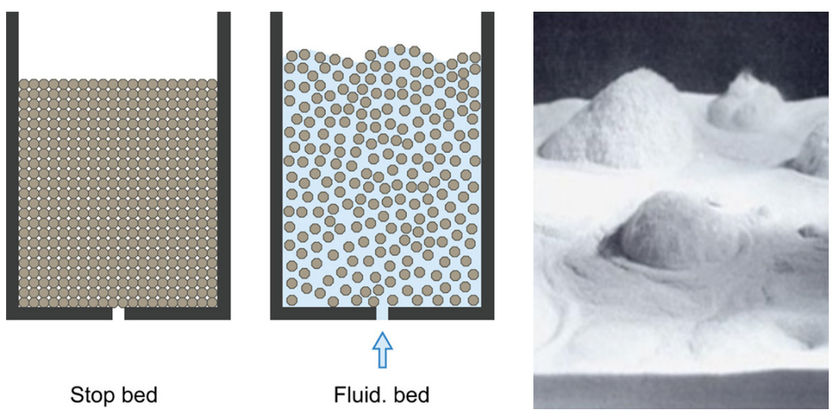
- **Fluidized Bed**

  The bed that keeps the Thermal Medium suspending in the space by pushing compressed air from the bottom of the cleaning equipment.

- **The Strengths of Fluidized Bed**

  The fluidized Thermal Medium moves as liquid and gas, so you can use it on all surfaces of particles. Therefore, it closely and evenly attaches to all surfaces of the precise parts to clean. Also, the fluidized bed is great for thermal exchange for convenient temperature control.

  * Thermal Medium : It is the best fluidized medium in terms of heat conductivity, temperature stability, consistency, and environmental friendliness. It is also very safe as it is inert.

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## How to Use Fluklean

I.F.C (Industrial Fluid Cleaning system) uses the principle of fluidized bed to clean the carbonized resins on the precise parts, such as Dies, Nozzles, Screws, Breaker plate or Molds, more efficiently when they are hard to reach by hands.

① Before running I.F.C, check the level of Thermal Medium inside.
② When the medium is heated to the set temperature (400~500) and becomes fluidized like boiling liquid, put the basket containing the items to clean into the fluidized bed.
③ When cleaning is done (generally takes 30~60 minutes), the suspending materials are sent to the dust collector and the exhaust gas can be discharged through the scrubber or the recombustion system.

## Characteristics of Fluklean

| | |
|---|---|
| No loss of parts | There is no processing required before or after cleaning and the Thermal Medium is in powder format and not a chemical material for cleaning in the dry state without causing the products to corrode, wear, or deform. |
| Flawless cleaning | The Thermal Medium is in the dry state and moves evenly to clean the unreachable surfaces. |
| Highly economical | The fluidized Thermal Medium can always be reused in room temperature and does not combine with the impurities, so it can be used for a long time (6 months or longer). |
| Short cleaning time | The cleaning is done in about 30 minutes~1 hour. (※ The cleaning time may vary according to the size and weight of target items.) |
| Exceptional safety | There is no risk of burn or fire due to explosion as it is heated indirectly and does not react with water or other chemical materials. |
| Space-efficient | It does not require a large space to install. |
| Easy to operate | Anyone can easily operate and use Fluklean. |
| Eco-friendly | It does not need chemical matters at all and the gas from the operation is thoroughly purified and discharged through recombustion. Also, there are no other secondary wastes to treat. |

## Problems with the Existing Cleaning Methods

- **Chemical Treatment**

  Causes environmental pollution and exposes workers to hazards. Only dissolvable plastic materials can be cleaned and requires much time to clean. ex)SOLVENT, TCE, CFC

- **Hot Furnace**

  Takes a long time to incinerate due to low heat conductivity. The mechanical parts can be distorted, so it cannot be used for precise molds.

- **Tools, Oxygen Welding, Wire Brush**

  This is the oldest cleaning method that requires the longest time and wears or damages the mold most severely.

- **Hot Salt Bath**

  Requires pricy Salt Medium and ongoing power supply to prevent coagulation to consume high maintenance cost. There is the risk of burn due to explosion or the cleaning water can cause corrosion or deformation due to heat.

- **Vacuum, TEG**

  Costly to install the equipment and has the risk of explosion.

- **Ultrasound**

  The most widely used method that cannot remove the residual polymers.

- **Dry Ice**

  The surface buildups can be cleaned, but the precise molds and inside of surfaces cannot be cleaned.

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| Item | Fluidized Cleaning | Ultrasound Cleaning | Dry Ice | Water Cleaning | Electric Furnace Cleaning |
|---|---|---|---|---|---|
| **Principle** | Fluidized Bed Technology | Ultrasound | Dry Ice | Heat, Chemicals, Hand Tools | High Heat |
| **Application** | Plastic, rubber, combined contamination. | Not applicable to solids, mucus or oily contamination. | Suitable for large parts that are hard to separate. | All parts reachable to human hands. | All areas dissolved by heat. |
| **Cleaning Medium** | Powder(T/M) | B.T.X | Dry ice & Crusher | Torch, Brush, Hand Tools | X |
| **Effect** | Both surface and inside. | Surface only, not inside. | 60-70% of surface, not inside of molds. | Surface wearing. | Cannot clean inside. |
| **Cleaning Process** | No treatment before/after | Requires treatment before and after | Requires treatment before and after | Requires treatment before and after | Requires treatment after |
| **Amount Cleaned** | 100% | 50~60% | 70% | 90% | 80% |
| **Operator** | 1 person | 1 person | 2-3 people | 3-4 people | 2 people or more |
| **Labor Cost** | 1 person with more than 1 job | 1 person with more than 1 job | 1 or more people with no other job | 1 or more people with no other job | 1 or more people with no other job |
| **Maintenance Cost** | Small T/M recharged. | Requires consumable chemicals. | Dry ice recharged. | Requires consumable supplies, including chemicals, gas, and tools. | Secondary cost due to risks. |
| **Input Factors** | Electricity/ low-pressure air | Electricity/ chemicals/water | Electricity/ice/ high-pressure air | Electricity/high-pressure air, etc. | Electricity |
| **Wastes** | Small amount of fume | Wastewater | Secondary waste | Secondary waste | Secondary waste |
| **Environment** | Eco-friendly | Chemicals | Dry ice | Contaminants disposed | Toxic gas |
| **Risk** | Safe | Safe | Dangerous | Dangerous | Dangerous |

## Application of I.F.C

(Industria Fluid Cleaning System)

| Area | Parts |
|---|---|
| **Textile** | Distributor plates, Filter elements, Mixers, Spinning Gear pumps, Spin packs, Spinnerets, etc. |
| **Extruded Polymer** | Housings, Extrusion heads, Die plates, Melt pumps, Breakerplates, etc. |
| **Film** | Die plates, Distributors, Filters, Mixers, Screws, Screwelements, etc. |
| **Injection Molding** | Dies, Hot runners, Needle valve nozzles, etc. |

## Incineration Temperature

| Incineration Temperature | Removable Polymer |
|---|---|
| 350℃ | Rubber, Polycarbonate |
| 400℃~450℃ | Polyethylene, PVC, Organic matter/oil/grease |
| 425℃~450℃ | Polypropylene, PE |
| 440℃~450℃ | Polyurethane, ABS |
| 450℃ | Nylon, 6/66, Polystyrene, Styrene, Fluor polymers |
| 450℃~480℃ | Ethylene methacrylic, Epoxy, Urethan |
| 450℃~500℃ | Paint, Teflon, Eng/plastics, EMC, EPS, MEK |
| 500℃ | Silicone rubber |

## Specification

- **Fluklean**

| | LFC-2030 | IFC-3137 | IFC-3645 | IFC-36110 | IFC-4675 | IFC-5175 | IFC-5675 | IFC-6175 | IFC-7175 |
|---|---|---|---|---|---|---|---|---|---|
| Temperature Range(℃) | 실온 + 10℃ to 500℃ | | | | | | | | |
| 적재용량(ℓ) | 5 | 11 | 16 | 38 | 45 | 60 | 85 | 95 | 110 |
| 소비용량(KW) | 3 | 7 | 9 | 15 | 14 | 18 | 22 | 27 | 35 |
| Air Con-sumption (liters/min) | 10 ~ 30 | 60 ~ 130 | 60 ~ 150 | 160 ~ 300 | 150 ~ 300 | 150 ~ 450 | 220 ~ 500 | up to 650 | up to 850 |
| Air Pressure (Bar) | 3 ~ 4 Bar | | | | | | | | |
| Dimensions (mm) | 360x360 x555 | 625x650 x900 | 690x890 x900 | 690x890 x1650 | 790x1050 x1350 | 860x1250 x1400 | 950x1250 x1500 | - | - |
| Power Sup-ply Options | 220V, 1PH, 50/60Hz | 220V/380V/440V, 3PH, 50/60Hz | | | | | | | |
| Weight of I.F.C(kg) | 30 | 98 | 180 | 240 | 450 | 580 | - | - | - |

- **Flusonic**

  **FS-50A : Full auto touch Ct'L sys.**

- **Basic Supplies**

  Equipment, Basket, Medium, Cyclone/Recovery Bin, Adapter Damper.

- **Optional**

  Safety 3step, Hoist Crane, Working Table, Cooled Filter, Smoke Collector, Scrubber.
  The above supplies are subject to change without notice for improvement purposes.
  Various models available for desired purposes and custom models are also available.

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## Typical Fluid Cleaning System

- **Cleaning Furnace**

  Equipment used to put and clean contaminated parts.

- **Cyclone**

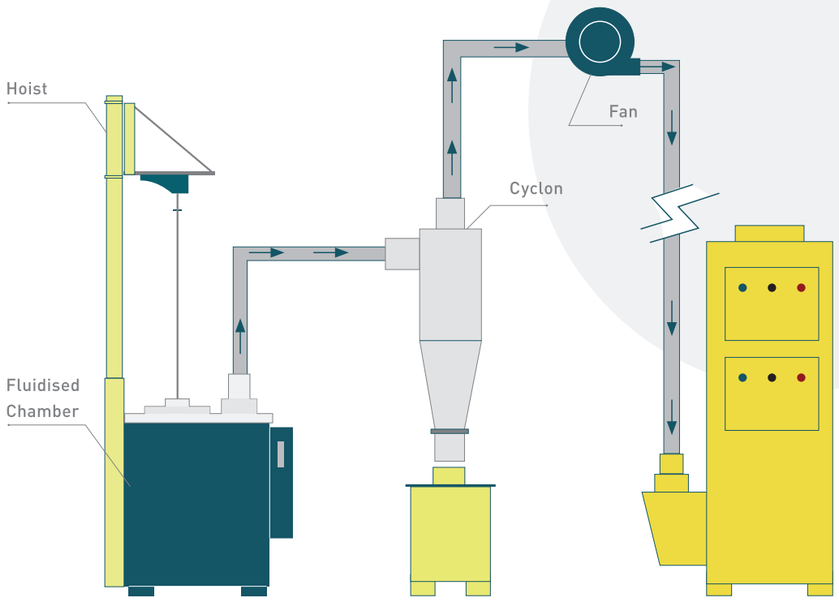
  The suspending matters at the exhaust are collected using centrifugal force.

- **Wet/Dry Scrubber**

  Harmful exhaust gas is liquefied and neutralized to discharge.

- **Smog Collector**

  Reduces electric smog and fume.



# CLEANSING EFFECT

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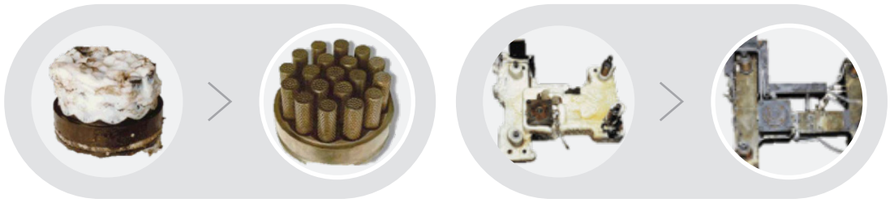





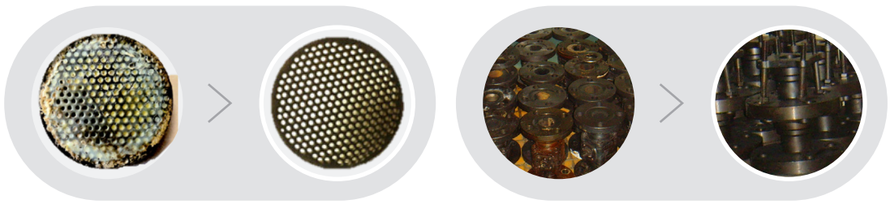





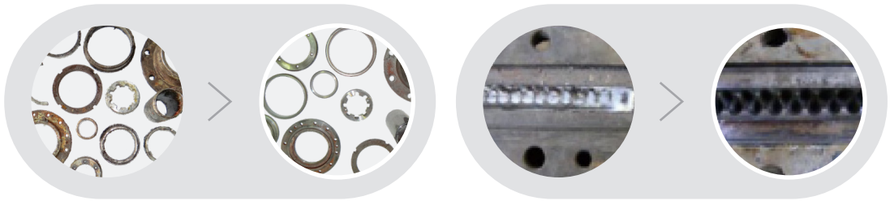



CLEANSING EFFECT
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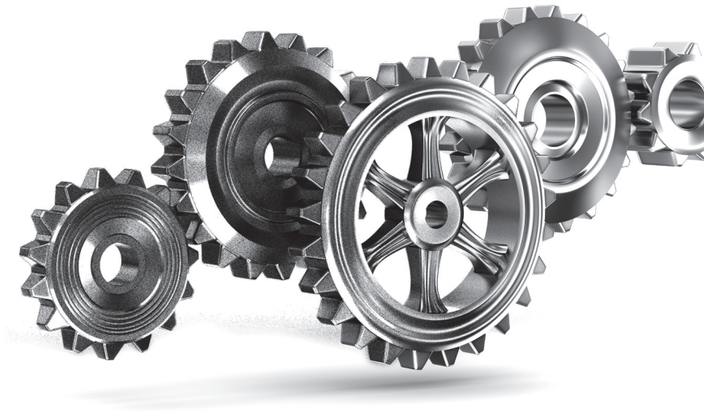

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