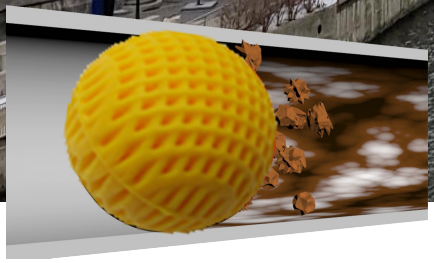
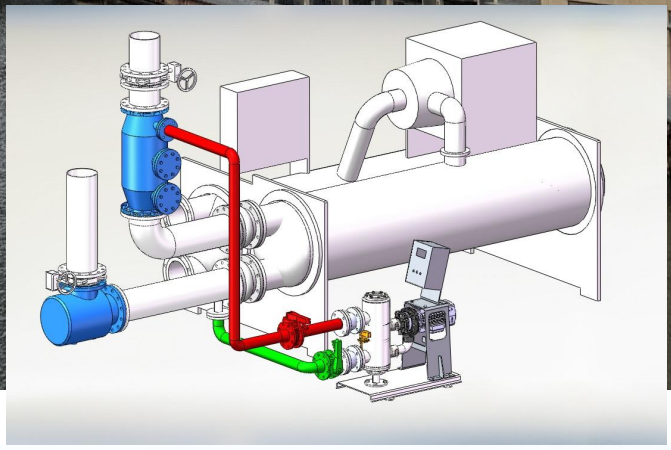
YK Automatic Condenser Tube Cleaning System





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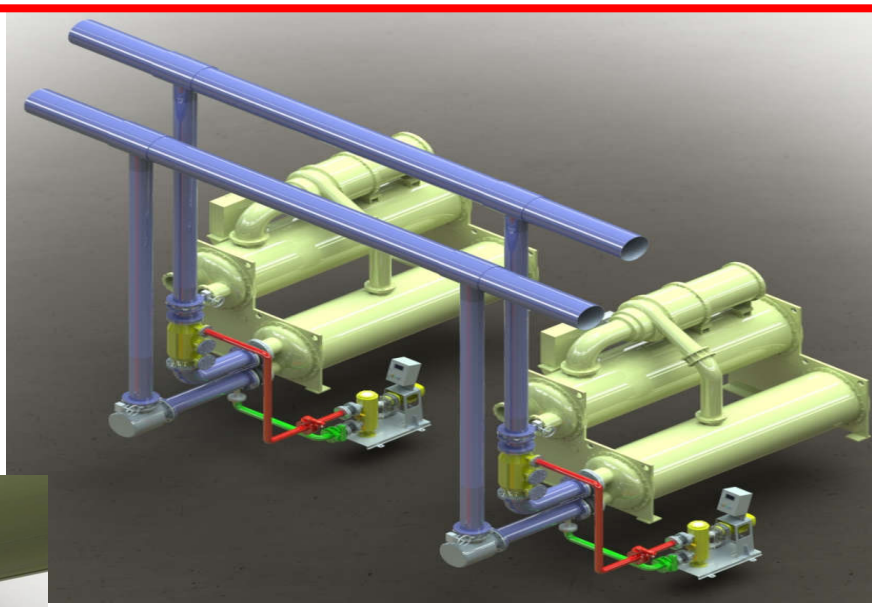
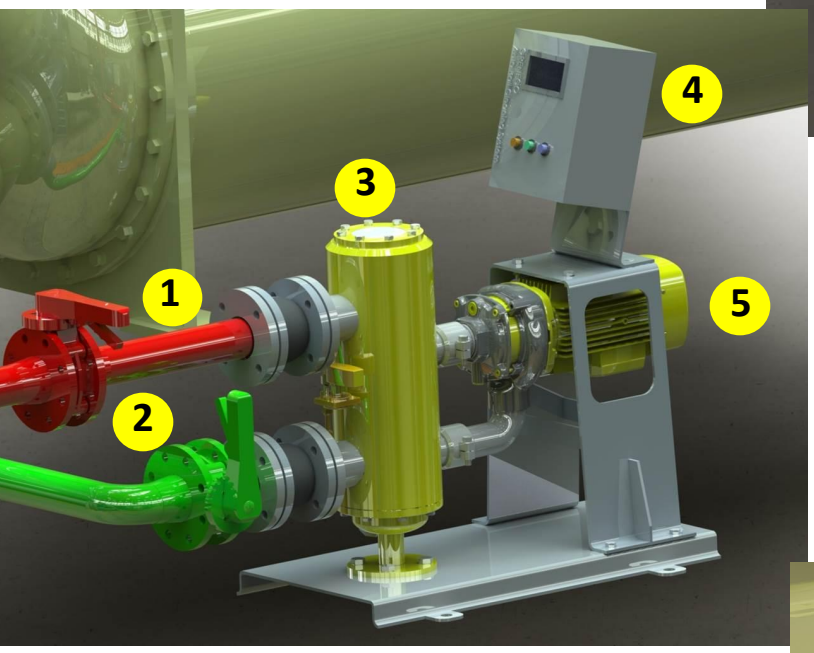
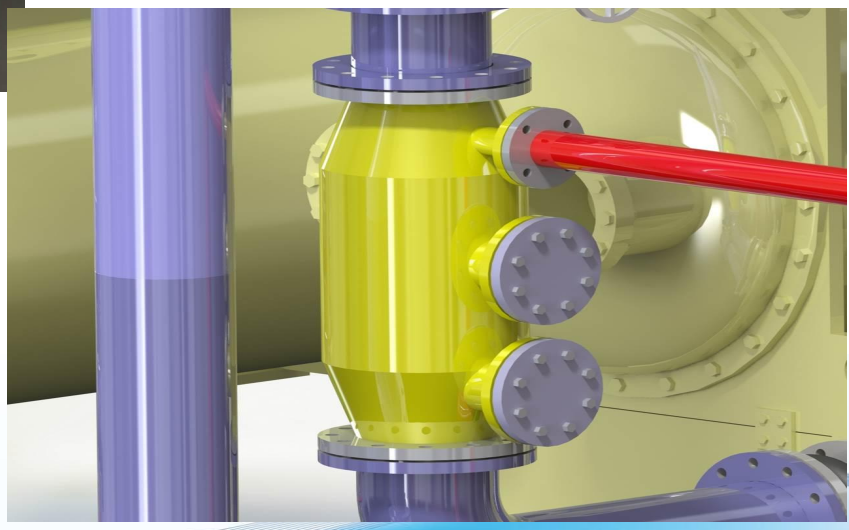




1. Return Line
2. Ball Injector Line
3. Injector
4. Controller
5. Injector Pump

Ball Collector / Trap



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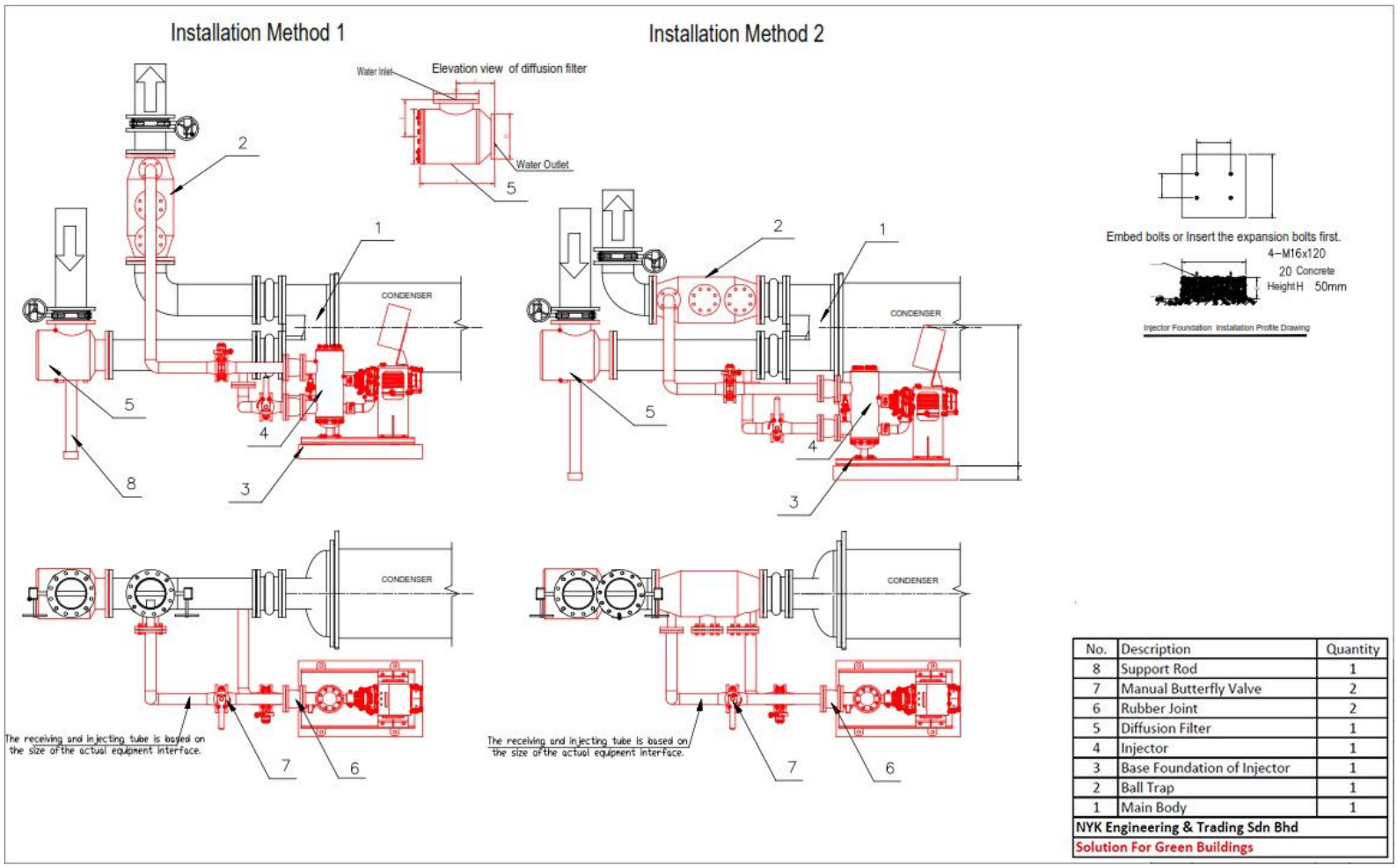

No.	Description	Quantity
8	Support Rod	1
7	Manual Butterfly Valve	2
6	Rubber Joint	2
5	Diffusion Filter	1
4	Injector	1
3	Base Foundation of Injector	1
2	Ball Trap	1
1	Main Body	1
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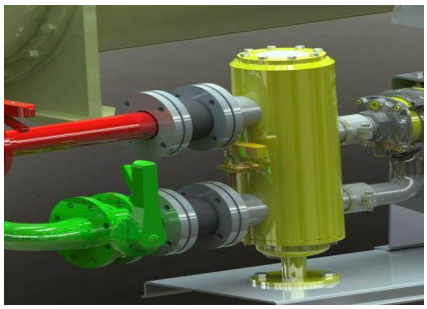
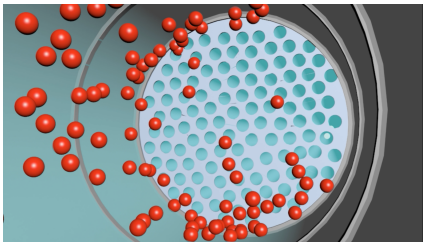
YK Automatic Tube Cleaning process



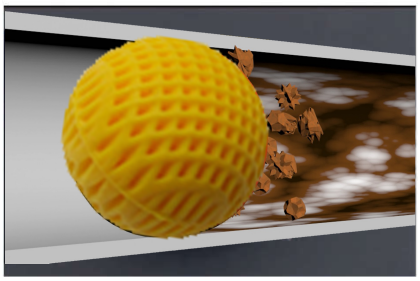
The cleaning process commence from ball injector units which is connect to the chilled condenser through the condenser chiller inlet pipe .The system can be monitor through the window of ball collector at the injector units.

The system is complete with PLC controller for the scheduling of the cleaning system. During cleaning cycle, the circulation pump and valve will be activated. Water pressure will force through the collector / injector vessel which carry the cleaning ball into the condenser inlet pipe and chiller condenser.

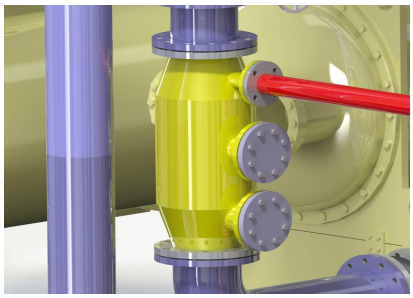


The Nano Silicone ball is strategically distributed at the inlet of the condenser tubes end plate with high number of Nano Silicone ball.

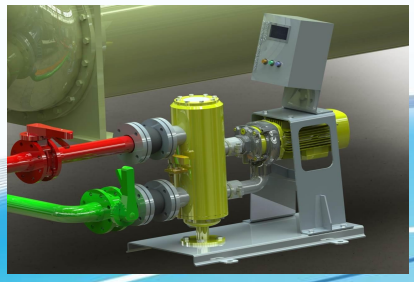
The Nano silicone balls flow through the condenser copper tubes which are carried by the condenser water flow.
As the ball flow through the heat exchanger tubes, the balls clean off residue, deposit and build up before any fouling result.



As the Nono Silicone ball leave the condenser, the balls are collected at the system ball trap.



Once the ball collected at the ball trap, the controller will activate the ball return valve, the ball will be carried back to the injector collector where the ball is rinse clean by the circulation water. The injector collector will hold the ball for the next cleaning cycle.



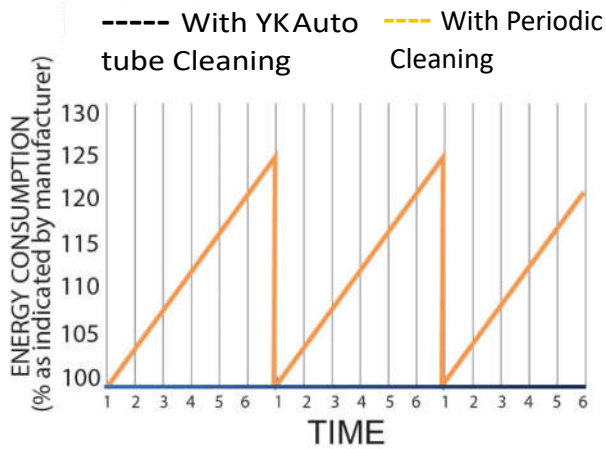
THE PROBLEM OF FOULING IN HEAT EXCHANGERS

Condenser Tube fouling has big impact on the chiller performance, energy consumption and chiller reliability. It is important to ensure the chiller tube fouling is keep to minimum and optimized the thermal efficiency of the heat exchanger to conserve energy usage.

Physical tube cleaning involve long shut down, chemical usage and ongoing operating expenses.

With YK on line ball cleaning system, the recycle cleaning balls are flushed through via condenser circulation flow, ensuring unwanted deposits and residue are clean before fouling occurs.

SYSTEM PERFORMANCE WITH AUTOMATIC TUBE CLEANING SYSTEM



The area bounded by the orange line represents the potential power conservation (up to 15 %). This is a significant savings considering that HVAC accounts for approximately 60% of the total electrical consumption of a large building.

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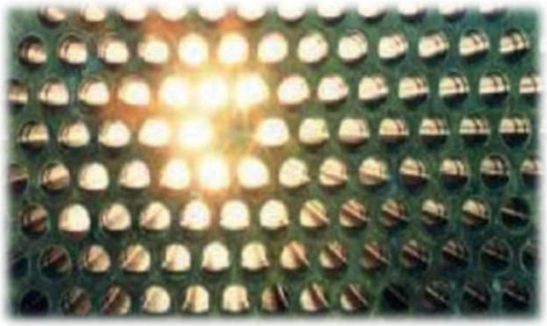
INNOVATIVE TUBE CLEANING SYSTEM

YK Auto Tube Cleaning System offer an integrated solution in term of maintaining condenserThermal efficiency i.e cooling tower side stream filtration, non chemicaltreatment solution and on line ball cleaning system for the open loop system.

In additional, the controller able integrate with on line monitoring of the controller parameter and the chiller thermal efficiency by tracking condenser approached temperature .



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