

**NEVER BEEN APPLIED
FOR COOLING TOWER BEFORE!**



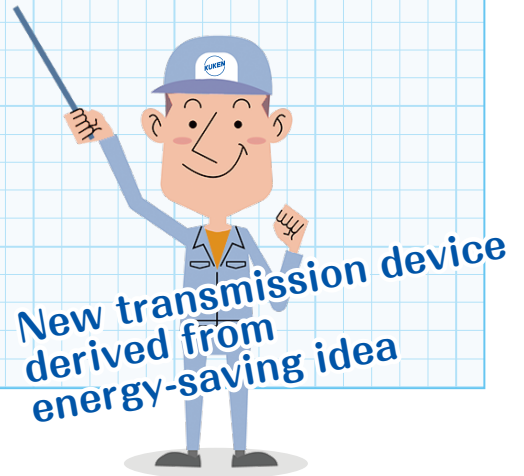
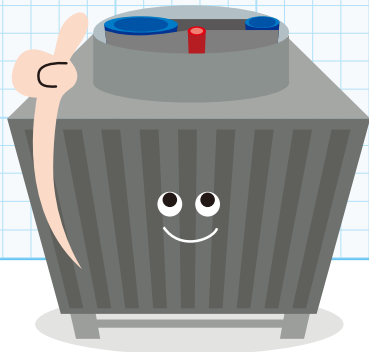
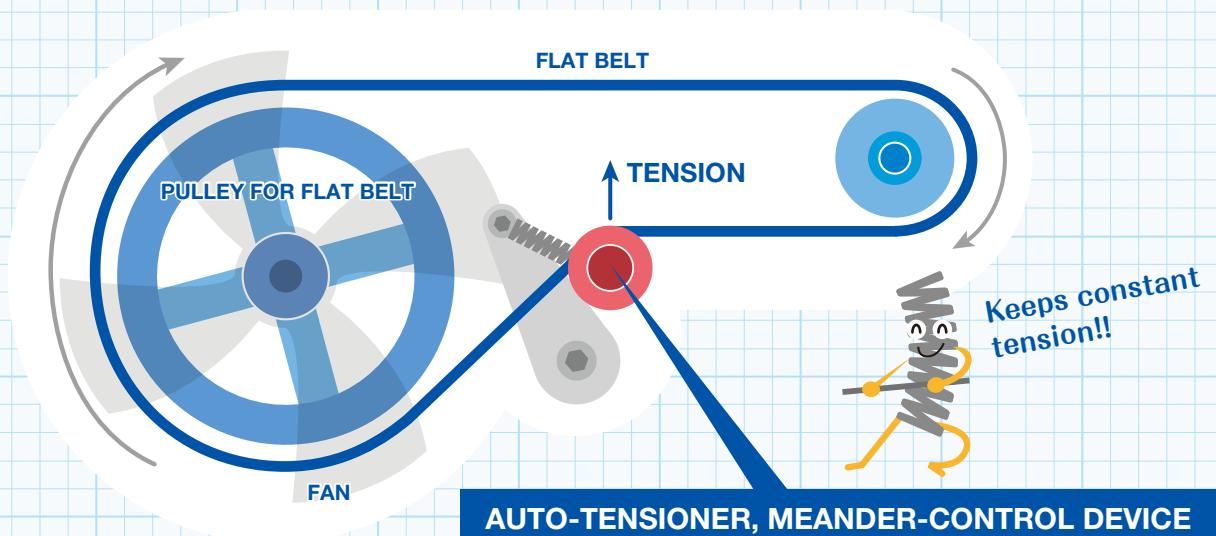
HFD Hyper Flat Drive System

BRAND NEW SYSTEM APPLIED FOR CT FAN FREE FROM MAINTENANCE AND CONTRIBUTES TO ENERGY-SAVING

What is HYPER FLAT DRIVE?

By applying flat belt in combination with meander-control device and auto-tensioner, fan unit deserves maintenance-free, longer life time & higher transmission efficiency compared to the one having v-belt equipped with.

- ✓ **SLIP-NOISE IS SUBDUED**
- ✓ **MAINTENANCE-FREE**
- ✓ **ENERGY SAVED**

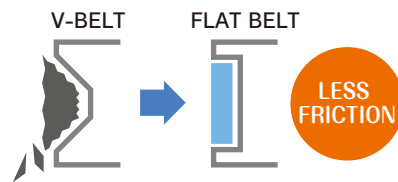


SUFFERING FROM THOSE PROBLEMS??

HERE'S THE ULTIMATE SOLUTION!

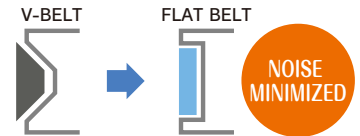
Belt maintenance is troublesome

- ⊙ No worries for belt slipping off
- ⊙ Only 1 piece of flat belt is enough to be applied
- ⊙ Flat belt doesn't leave a mass of cask like the way wedged-belt does.



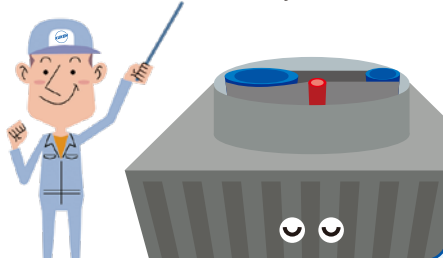
Belt-slipping noise is a nuisance

- ⊙ V-belt tends to make noise against pulley due to its expansion right after replacement if no proper adjustment is done accordingly.
- ⊙ HFD system is designed so as to keep the belt-tension set for the first time. In this way, slipping-noise is minimized and less stress is imposed on bearing.



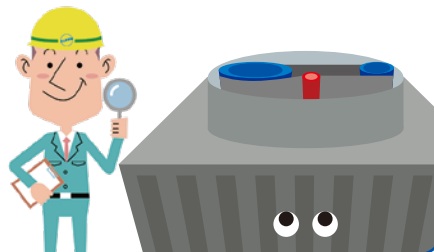
Vibration is annoying

- ⊙ No fluttering noise, no excessive vibration caused by belt expansion even without tension-adjustment.



Waste material treatment is troublesome

- ⊙ No need to replace belt until HFD device replacement(once/24,000hrs).



Electricity cost is overwhelming



Energy can be saved at least by 10% if IE3 motor is applied in HFD system.

BENEFITS EXPECTED BY APPLYING HFD SYSTEM!



MAINTENANCE-FREE!

By auto-tension function, slipping-off of belt (caused by expansion after replacement) and reduction in number of revolution(caused by slipping against pulley surface) will not occur, hence belt-maintenance is not required for 24,000hrs.

ENERGY-SAVING EFFECT!

Only by switching to HFD **6%* saved for Electricity consumption**

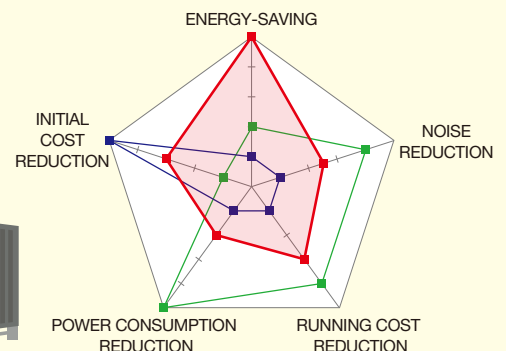
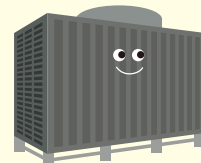
Further saving-effect can be expected for CT system with frequent on/off operation

*Our comparison



ADVANTAGE/DISADVANTAGE COMPARISON

- HFD
- V-BELT
- V-BELT + INVERTER



FURTHER! ENERGY-SAVING EFFECT CAN BE EXPECTED!

Frequency of on/off operation for fan becomes high in CT system applying thermo-control for cooling water. HFD system, high in transmission efficiency and short in time required for start-up, contributes to minimizing primary energy-loss thanks to its design.

WE CAN'T IGNORE THE TIME TO REACH RATED

Based on the actual testing with IE1, 7.5KW motor switched to IE3+HFD,

Energy-reduction up to 17% has been demonstrated

