

## TORISHIMA PUMP MFG. CO., LTD.

# Eco Pump: End-suction single-stage volute pump (CA Series)

- Smart eco-friendly activity, drastically reducing electricity cost and CO<sub>2</sub> emissions

## Features

More than 90% the average life cycle cost (LCC) of a pump is electricity cost, when calculating the cost structure including initial investment and operation costs.

In addition to the advantages boasted by our previous pumps, the Eco Pump features high efficiency, contributing to electricity cost and CO<sub>2</sub> emission reduction, by adopting a new hydraulic model.

The CA series products use the same components as far as possible to provide better maintenance services.



Applications  
illumination lamp of  
Construction such as factory, office, building, mansion etc.

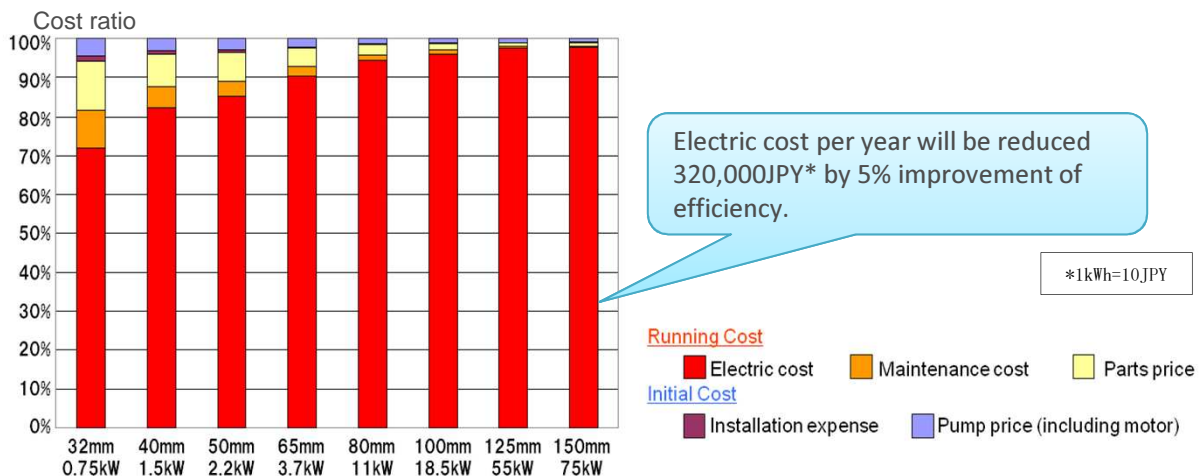
## Overview (Technical principles, actions, etc.)

<Ratio of pump electricity cost to LCC>

More than 90% the average life cycle cost (LCC) of a pump is electricity cost, when calculating the cost constitution by the pump caliber.

- Pump: CAL size 32mm~150mm
- Prerequisite: 50Hz-4P Normal temperature / fresh water
- Electric cost: 10JPY/kWh

- Main replacement parts (The number of times of assumed exchange)  
CASING(1), IMPELLER(2), SHAFT(2), WEAR RING(2), BEAR RING(7),  
GASKET(7), COUPLING(1), COUPLING RUBBER(7), MECHANICAL SEAL(7)



<Impeller cut(Trimming impeller diameter)>

The impeller cut of the pump is trimmed to the customer's specifications for energy saving.

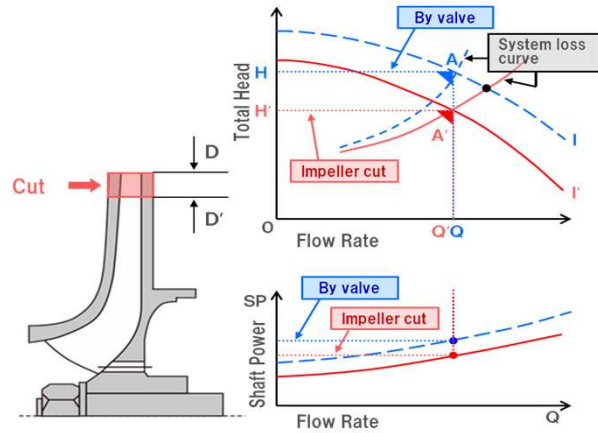
**What 's 'Impeller cut'?**

Impeller outer diameter to be trimmed in order to stop the excessive power consumption according to required specification point. In order to reach high efficiency and stable characteristic, three dimensional impeller is adopted.



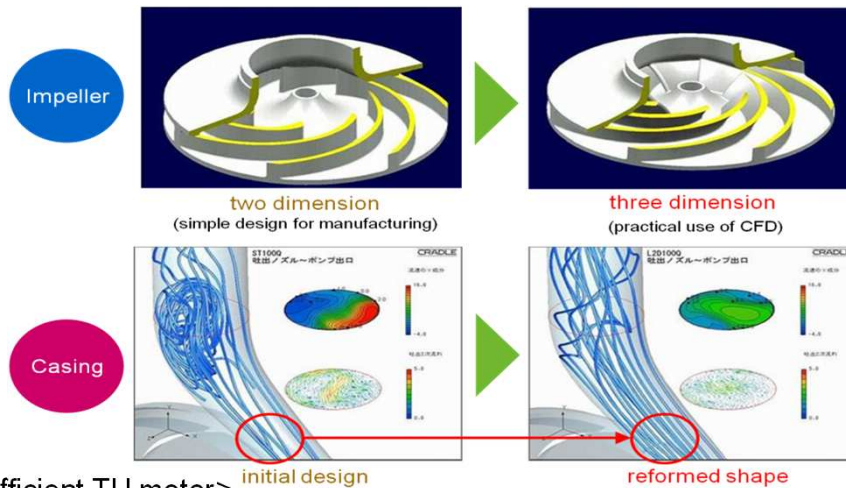
**Three-dimensional impeller**  
efficiency improved sharply by practical use of CFD compared with two-dimensional impeller.

Before : PointA (H·Q) ← only control by valve  
After : PointA'(H'·Q') ← Required spec. of plant



<High efficiency casing/impeller>

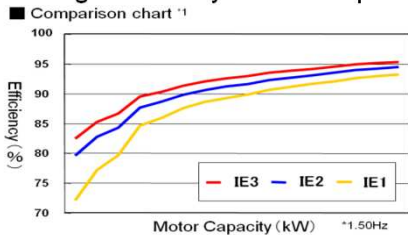
Using CFD analysis, high efficiency and excellent performance of the casing/impeller can be achieved.



<Super high efficient TU motor>

IEC(International Electrotechnical Commission)defines IE1(standard), IE2(high efficiency), IE3(premium efficiency) as motor efficiency classes.

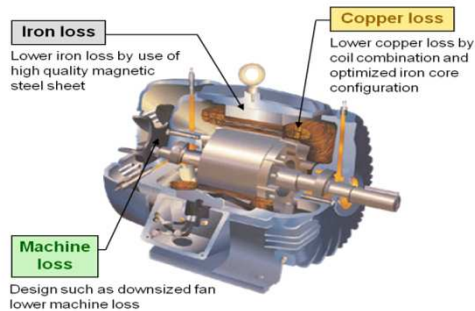
Torishima Ultra high efficiency motor is equivalent to IE3.



■ IEC 60034-30 Classes

	Classes
Premium efficiency motor *2	IE3
High efficiency motor (JIS C 4212)	IE2
Standard motor (JIS C 4210)	IE1

\*2: 50Hz-200V or 400V, 60Hz-220V or 440V



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