

CAM (Cast Iron)

CAS (Stainless Steel)

End-Suction Volute Pump



Go Green with the Eco Pumps, CA series.

End-Suction Volute Pump (16 bar type)

CAM is made from Cast Iron.
CAS is made from Stainless Steel.

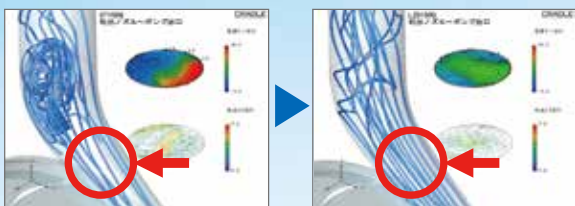
As a high efficiency Eco Pump, the 16 bar type CA series offer a wide range of specification, design and material to meet your needs.



High Efficiency Pump and Motor

Optimized Hydraulic Performance

CFD optimized casing design ensures smooth fluid flow.

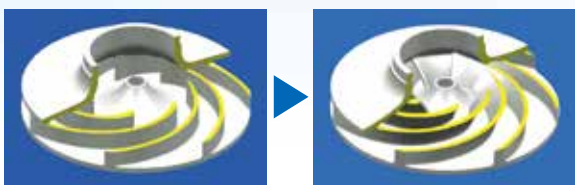


Before CFD analysis

After CFD analysis

3D impeller

Three dimensional curved impeller optimizes fluid flow.



2D impeller

3D impeller

Ultra High Efficiency Motor

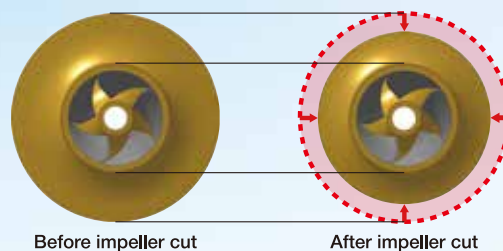
Torishima Ultra high efficiency motor is equivalent to IEC IE3 (premium efficiency).



TU motor
(Torishima Ultra high efficiency motor)

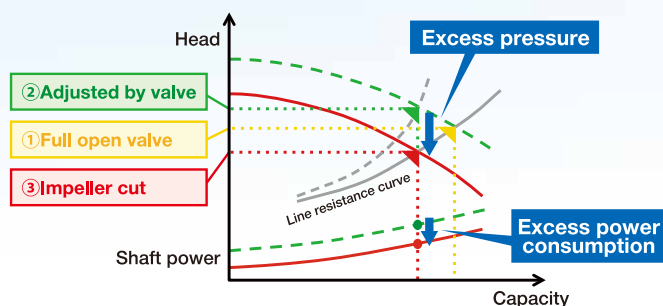
Meeting Customer's Specification (Impeller Cut)

The impeller diameter can be cut to meet the customer's specification to reduce unnecessary power consumption.



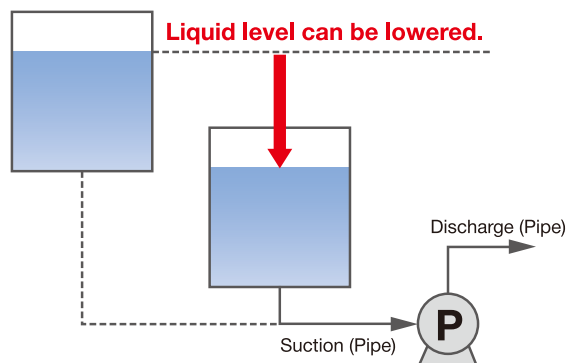
Before impeller cut

After impeller cut



Low NPSH (High Suction Performance)

Low NPSH performance enables lower suction level which reduces plant construction costs.



Applications

High quality materials and structural designs are adopted to meet specification requirements for a variety of applications, including petrochemical, chemical and general industries, seawater desalination, high temperature heating equipment, energy-related equipment, cooling water circulation for skyscrapers, district heating and cooling, water transferring, and water feeding.



Stable Operation

Stable pump performance enables valve control and parallel operation.



High Head and Capacity, High Suction and Discharge Pressure

The CA series of CAM and CAS achieve high head and high flow rate compared to the other CA series of CAL and CAR. In addition, the optimization of casing thickness and shape, angular contact bearing, the match of cylindrical roller bearing, and the balance mechanical seal enables the highest pressure resistance of CA series.



Excellent Parts Interchangeability

Excellent parts interchangeability allows to share parts among various pump types and thus you do not need to buy or store spare parts. (☞ page 4 for details)



Handling Various Liquids and Temperature

Suitable mechanical seal and gland packing are available to meet various specification requirements. A multi-spring single mechanical seal is supplied as standard. Minimal leakage from seal improves cleanliness around pump.



Simple Maintenance

A back pull-out assembly facilitates removal of the shaft without dismantling the piping. In addition, an optional spacer coupling facilitates dismantling and inspection of the pump without disturbing the motor. (☞ page 9 for details)



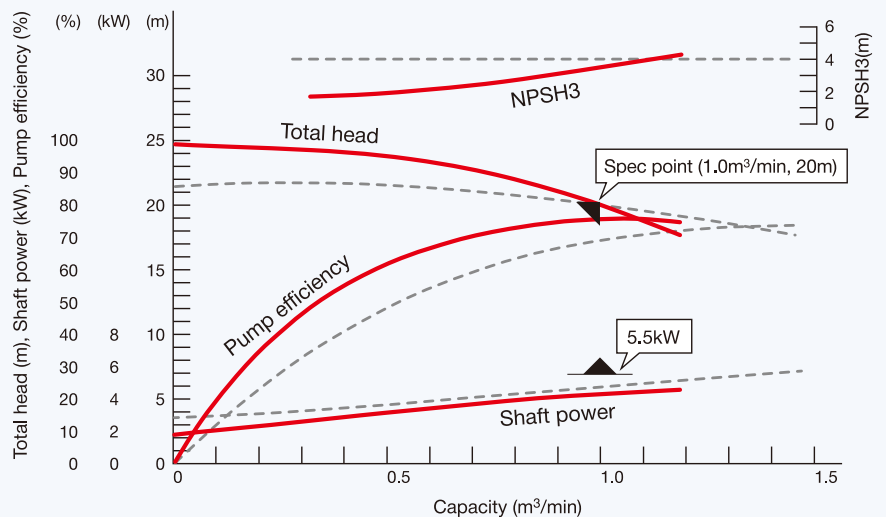
Short Delivery

Stock management with an excellent quality control system enables short pump delivery time.



Performance comparison CAM to CPCN that is a former type of CAM.

— CAM65-240 - - - CPCN80-200

Improved pump efficiency and stability!



Specification

		CAM (Cast Iron) 	CAS (Stainless Steel) 
Handled liquid	Kinds	Clean water, Warm water, Oil, Chemical medicine, Brine, Heat transfer media, etc.	Pure water, Hot water, Sea water, Salted water, Refrigerant, Electrodeposition paint, Abrasive slurry liquid under 3wt%, etc.
	Temperature	Standard: -10°C to +80°C Option: -30°C to +350°C	Standard: -10°C to +80°C Option: -40°C to +220°C
Max. allowable discharge pressure		Standard: 1.6MPa Option: 2.5MPa	Standard: 1.4MPa Option: 2.5MPa
Max. allowable suction pressure		Standard: 1.0MPa (Deep groove ball bearing) Option: Max. allowance discharge pressure - Pump shut-off head (Angular contact bearing + Cylindrical roller bearing) Ex.) In case of 2.5MPa max. allowance discharge pressure (Casing: FCD [CAM], SCS1T1 [CAS]) and 0.5MPa pump shut-off head, allowable suction pressure is 2.0MPa.	
Structure	Impeller	Closed	
	Shaft seals	Standard: Unbalanced mechanical seal (SiC × Carbon) Option: Unbalanced mechanical seal (SiC × SiC, Tungsten Carbide × Tungsten Carbide, etc.), Double mechanical seal, balanced mechanical seal, Gland packing	
	Lubricated bearing	Standard: Oil lubrication Option: Grease lubrication	
Flange standard		Standard: JIS20K RF Option: JIS10K, ASME125lb/150lb/250lb/300lb, JPI150lb/300lb	Standard: JIS10K RF Option: JIS20K, ASME150lb/300lb, JPI150lb/300lb
Pump material	Casing	Standard: FC250 Option: FCD400-15	Standard: SCS13 Option: SCS14, SCS1T1 (SCS16, 11)
	Impeller	Standard: FC200 Option: FCD400-15, SCS1T1, SCS13	Standard: SCS13 Option: SCS1T1, SCS14
	Shaft	Standard: SUS420J2 Option: SCM440Q, SUS316L, SUS329J1, SUS304, SUS316	Standard: SUS304 Option: SUS420J2, SUS316, SUS316L, SUS329J1

Design Features

Volute Casing

CFD optimized volute casing for high efficiency.

Wear Ring

Cast Iron CAM series pumps include wear ring as standard. Wear ring is not necessary for Stainless Steel CAS series.

High Efficiency (3D Impeller)

Closed impeller is designed for stable operation as well as high efficiency and low NPSH characteristics.

Mechanical Seal

Seal box is designed according to ISO3069. A variety of mechanical seals can be provided to suit the pumped fluid.

Shaft Sleeve

Stainless Steel as standard to provide good corrosion resistance.

Ball Bearing

Oil lubricated, deep groove ball bearings provided as standard. Angular contact bearings combined with cylindrical roller bearing is adopted for suction pressure higher than 1.0MPa. Oil lubrication as standard Grease lubrication as option

Shaft

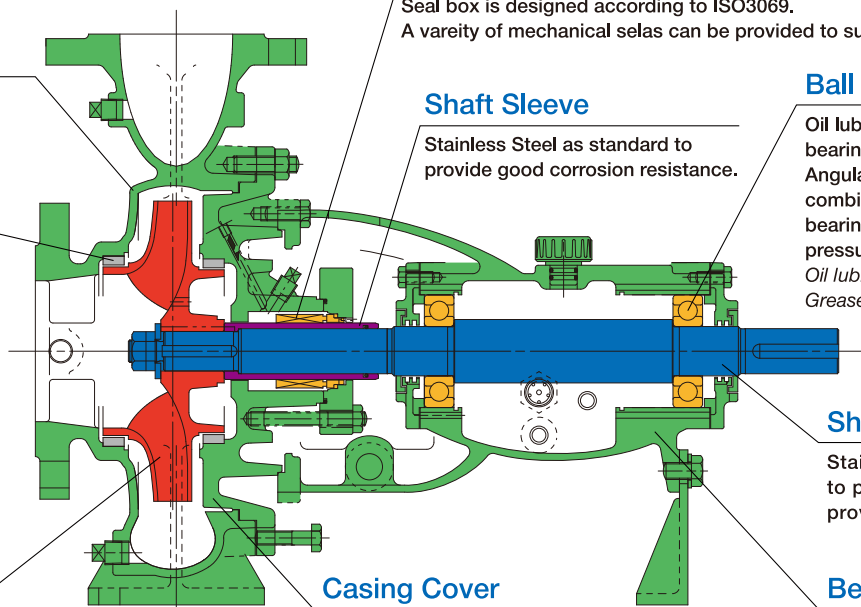
Stainless Steel as Standard to prevent corrosion and provide long service life.

Casing Cover

Cooling or non-cooling casing cover can be combined with gland packing or mechanical seal to meet various liquids.

Bearing Housing

Robust bearing housing reduces shaft deflection and ensures long lasting reliability.



Parts Interchangeability

■ **2P type** Same color and number in the same parts indicate interchangeability.

Pump type \ Parts	Casing	Casing Cover	Bearing Housing	Shaft	Mechanical Seal
32-125	1	1			
40-125	2				
65-125	3				
32-160	4	2	1	1	1
40-160	5				
50-160	6				
32-200	7	3			
40-200	8				
50-200	9				
80-160	10	4	2	2	2
80-200	11	5	3	3	
32-250	12	6			
40-250	13				
50-250	14				
80-250	15	7			

■ **4P type** Same color and number in the same parts indicate interchangeability.

Pump type \ Parts	Casing	Casing Cover	Bearing Housing	Shaft	Mechanical Seal
32-125	1	1			
40-125	2				
65-125	3				
32-160	4	2	1	1	1
40-160	5				
50-160	6				
65-150	7	3			
32-200	8				
40-200	9				
50-200	10	4	2	2	2
65-190	11				
100-125	12				
80-150	13	5	3	3	2
80-190	14	6			
125-160 *	15	7	4	4	
100-190 *	16	8			
32-250	17	9			
40-250	18				
50-250	19				
65-240	20	10	3	3	2
80-240	21				
100-250 *	22				
40-315	23	11	4	4	3
50-315	24				
65-310	25				
80-310	26	12	5	5	4
100-310 *	27				
150-190 *	28				
150-200 *	29	13	6	6	3
200-200 *	30				
125-240 *	31				
125-250 *	32	14	7	7	4
200-240 *	33				
200-250 *	34				
125-310 *	35	15	8	8	5
125-315 *	36				
80-400	37				
100-400 *	38	16	9	9	4
125-400 *	39				
250-240 *	40				
250-250 *	41	17	6	10	5
150-310 *	42				
150-315 *	43				
250-310 *	44	18	7	11	4
250-315 *	45				
150-390 *	46				
150-400 *	47	19	8	12	5
100-500 *	48				
125-500 *	49				
150-500 *	50	20	9	13	4
200-390 *	51				
200-400 *	52				
200-490 *	53	21	10	14	5
200-500 *	54				
200-500 *	55				

6P type follows above *.

Selection Range Charts

