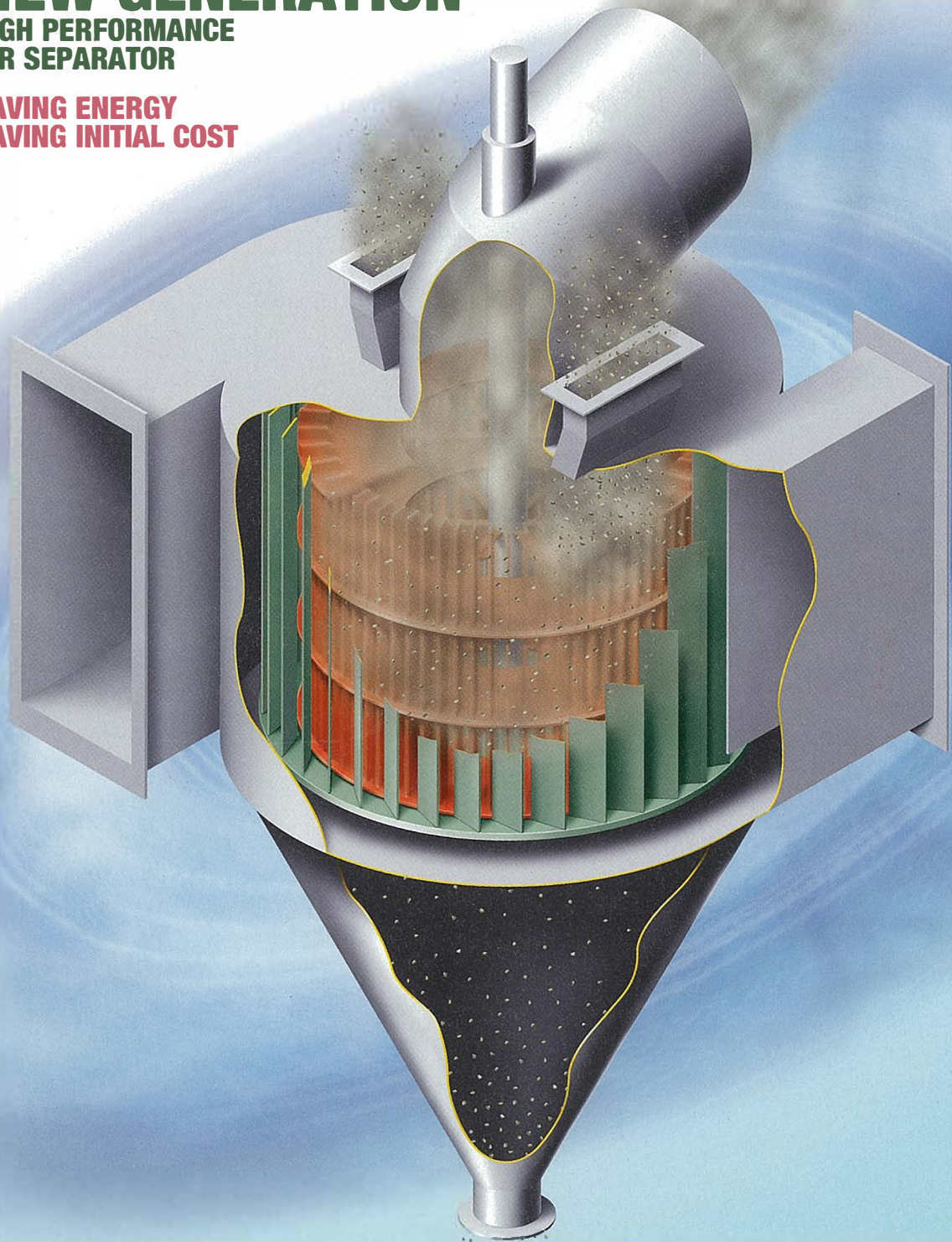


O-SEPA

NEW GENERATION

**HIGH PERFORMANCE
AIR SEPARATOR**

**SAVING ENERGY
SAVING INITIAL COST**



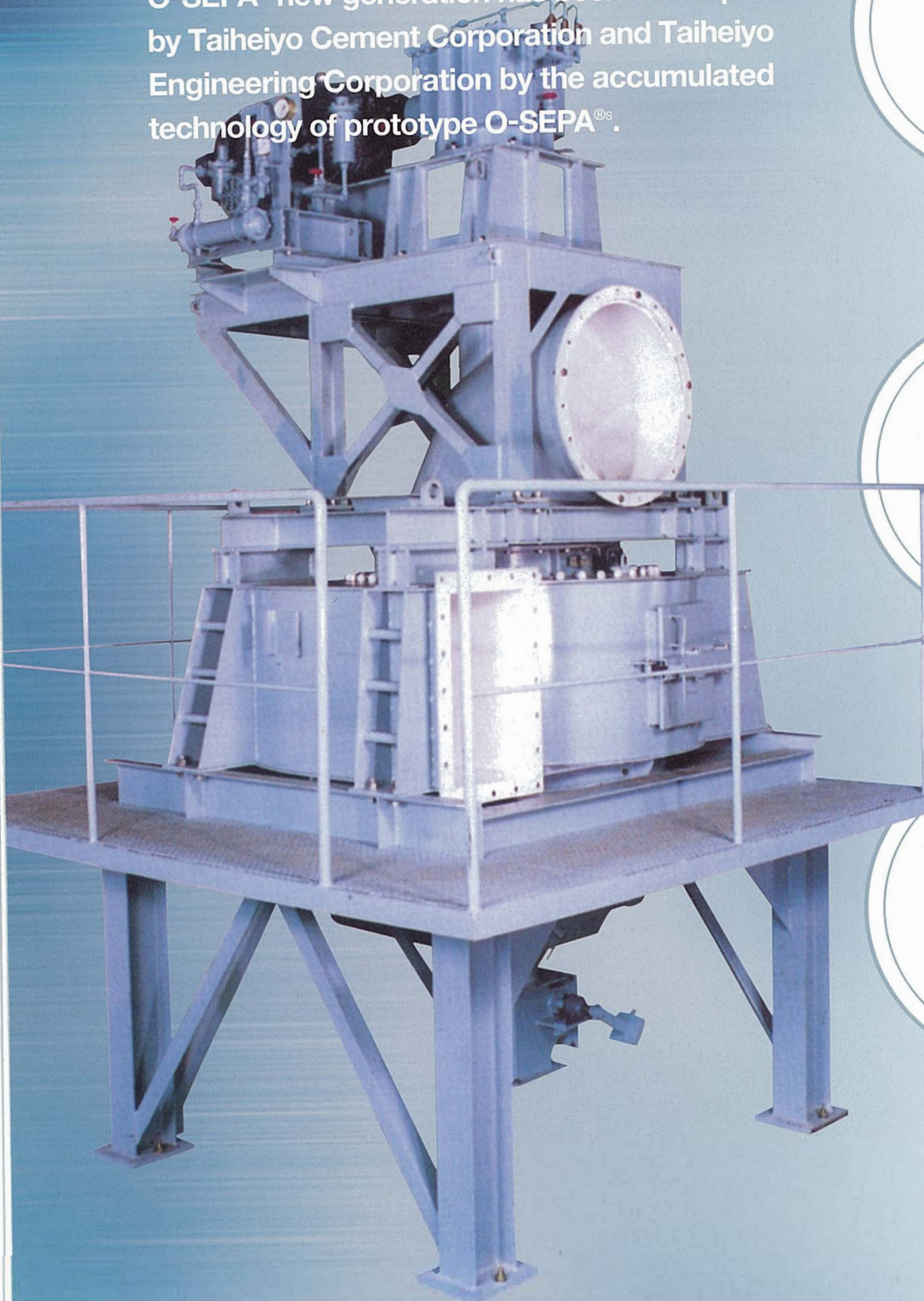
Taiheiyo Engineering Corporation

Tokyo, Japan

O-SEPA

Introduction

O-SEPA® new generation has been developed by Taiheiyo Cement Corporation and Taiheiyo Engineering Corporation by the accumulated technology of prototype O-SEPA®s.



NEW!

O-SEPA®
H
Series

O-SEPA®
N
Series

O-SEPA®
V
Series

O-SEPA® H Series

O-SEPA® H series has been developed aiming at minimizing power consumption and reduction of initial cost of prototype O-SEPA® (O-SEPA® N series) based on following concept

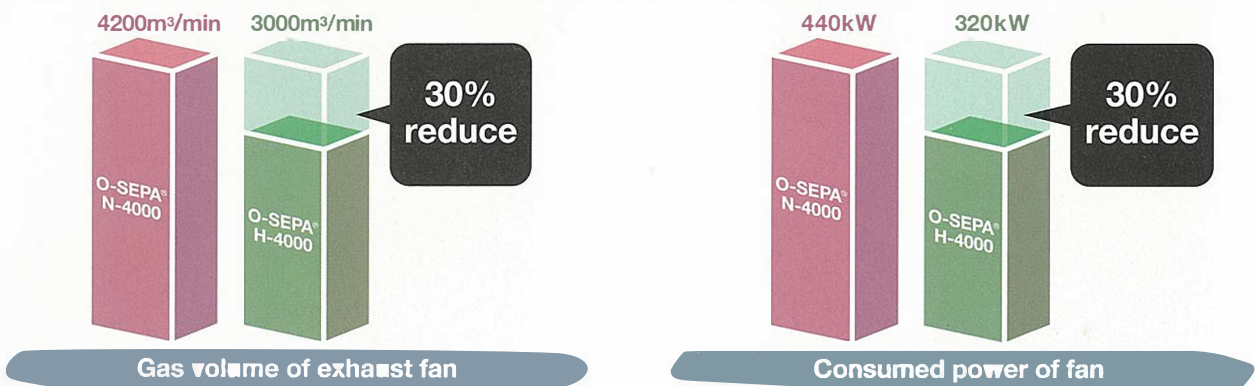
- To minimize classifying chamber
- To upgrade dispersion function of new feed material to O-SEPA®

O-SEPA® H series achieves reducing classifying air volume by 30%.
Advantage of reduction of O-SEPA®'s classifying air volume

- Reduction of power consumed by O-SEPA® exhaust gas fan

Saving Energy

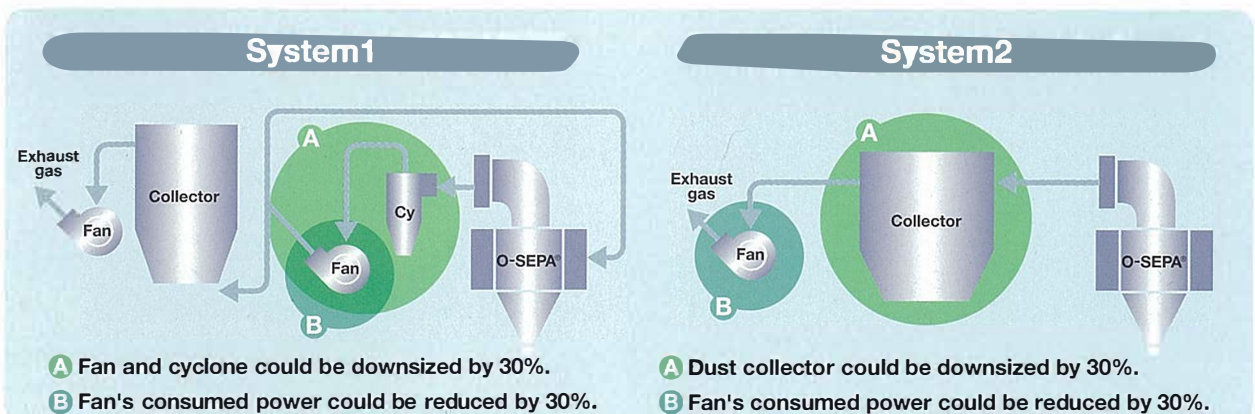
Typical Improvement of O-SEPA® H-4000 from O-SEPA® N-4000 (Prototype O-SEPA®)



- Down sizing of handling system by reduction of O-SEPA®'s exhaust gas volume.

- Exhaust gas induced fan
- Dust collector (Cyclone, Bag filter)

Saving Initial Cost



O-SEPA® H Series and N Series Dimensions

Schematic diagram

Main Motor

Reducer bed

Drive unit support

Outlet bend

Shaft and shaft casing

Feed chute liners

Lubricating oil piping

Dispersion plate

Casing

Gear reducer

Lubricating oil unit for gear reducer

Purge air piping

Air seals

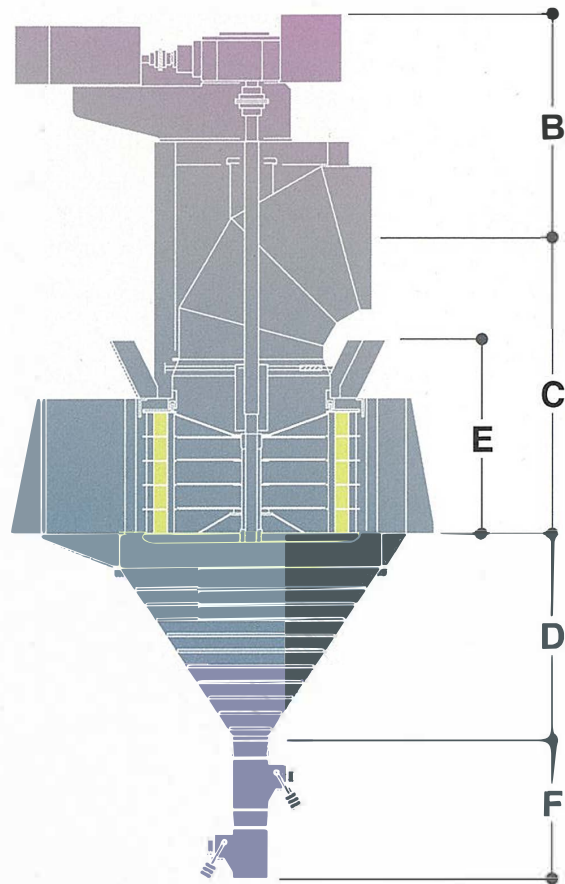
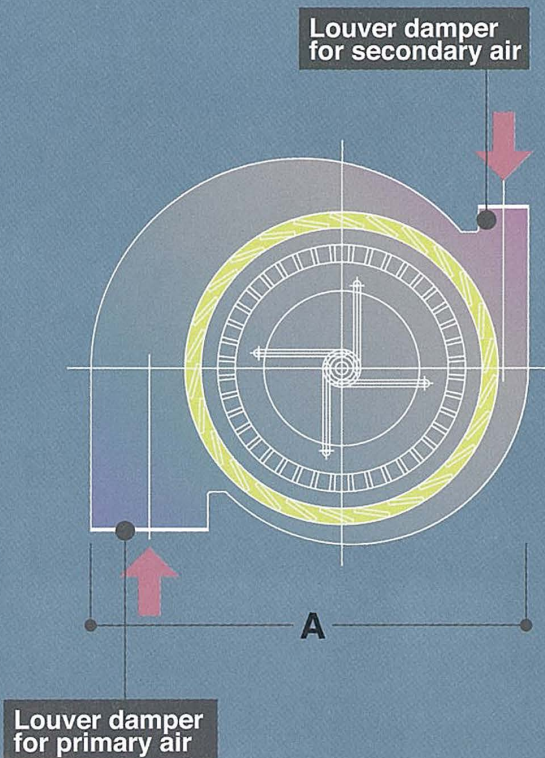
Buffer plate

Guide vanes

Rotor

Hopper

Double flap damper



Standard dimensions (O-SEPA® H Series)

Type	Dimensions (mm)						Rotation Speed	Motor Power	Min. Air Quantity	Max. Feeding Rate	Production Rate
	A Outer Diameter	B Motor Height	C Duct Height	D Cone Height	E Drum Height	F Damper Height	rpm	kW	m ³ /min	t/h	t/h
H-2000	4450	2050	2500	2100	2200	1610	105 ~ 230	130 ~ 200	1400	300	90 ~ 120
H-2500	4660	2340	3415	2391	2250	1610	95 ~ 205	150 ~ 230	1750	375	110 ~ 150
H-3000	5200	2720	3585	2600	2590	1610	85 ~ 190	175 ~ 250	2100	450	130 ~ 180
H-3500	5750	2950	3870	2900	2615	2000	80 ~ 175	200 ~ 270	2450	525	150 ~ 210
H-4000	6100	3100	4140	3100	2435	2000	75 ~ 170	230 ~ 300	2800	600	170 ~ 240
H-5000	6800	3250	5090	3250	2960	2570	75 ~ 160	300 ~ 350	3500	750	210 ~ 300

Note: The production rate is for cement with a fineness of 3,200 cm²/g (Blaine).

Standard dimensions (O-SEPA® N Series)

Type	Dimensions (mm)						Rotation Speed	Motor Power	Air Quantity	Max. Feeding Rate	Production Rate
	A Outer Diameter	B Motor Height	C Duct Height	D Cone Height	E Drum Height	F Damper Height	rpm	kW	m ³ /min	t/h	t/h
N-250	1900	860	1245	1000	830	800	250~550	15~30	250	38	11~15
N-500	2460	1150	1650	1300	1100	800	190~420	30~55	500	75	22~30
N-1000	3250	1600	2250	1700	1600	1100	140~320	75~100	1000	150	42~60
N-1500	3800	2020	2635	2100	1780	1000	120~260	90~150	1500	225	65~90
N-2000	4450	2340	3050	2100	2200	1610	105~230	130~200	2000	300	90~120
N-2500	4660	2480	3415	2391	2250	1610	95~205	150~230	2500	375	110~150
N-3000	5200	2870	3585	2600	2590	1610	85~190	175~250	3000	450	130~180
N-3500	5750	3100	3870	2900	2615	2000	80~175	200~270	3500	525	150~210
N-4000	6100	3290	4140	3100	2435	2000	75~170	230~300	4000	600	170~240
N-5000	6800	3450	5090	3250	2960	2570	75~160	300~350	5000	750	210~300

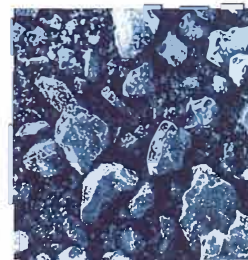
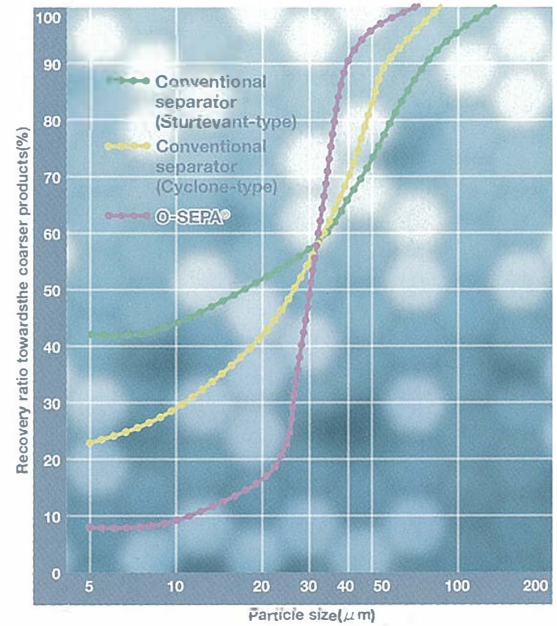
Note: The production rate is for cement with a fineness of 3,200 cm²/g (Blaine).

O-SEPA® H and N's Performance (Superior Classify Efficiency)

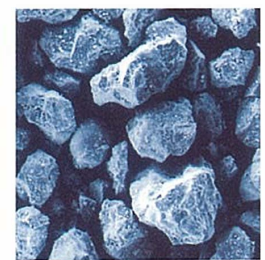
The tromp curve indicates the probability of a given size of particle in the separator feed being returned to the mill. Thus it is useful for evaluating separator performance. The steeper the curve becomes, the more efficient the separation can be expected.

The curve shows superior classifying efficiency of O-SEPA® H & N.

The photographs show the coarse particles of the product after separation (Scanned by electron microscope). The coarse and uniform particle of the product size by O-SEPA® shows its high classifying efficiency.



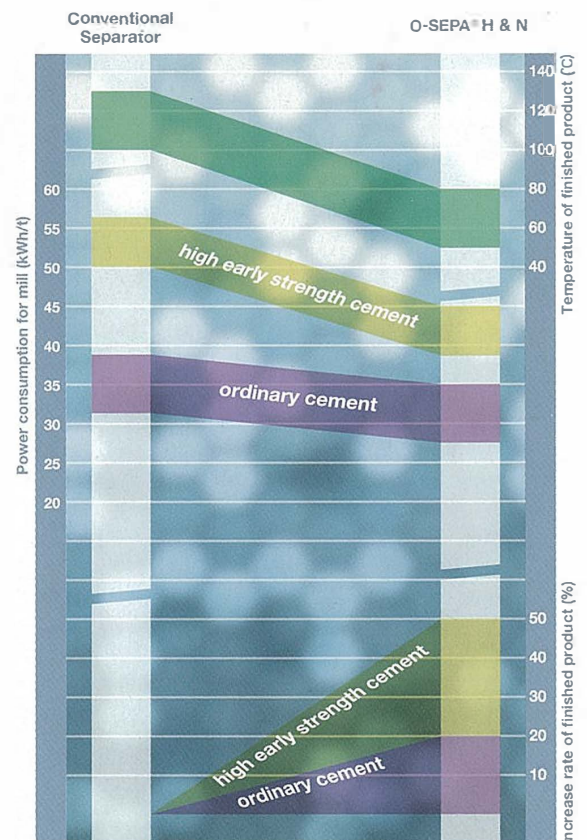
Conventional-type Separator



O-SEPA®

O-SEPA® H and N's Performance (Improvement in Grinding Process)

O-SEPA® H & N's performance achieves the saving energy of grinding process. In case that O-SEPA® N system II is applied, function of cooling product is expected.

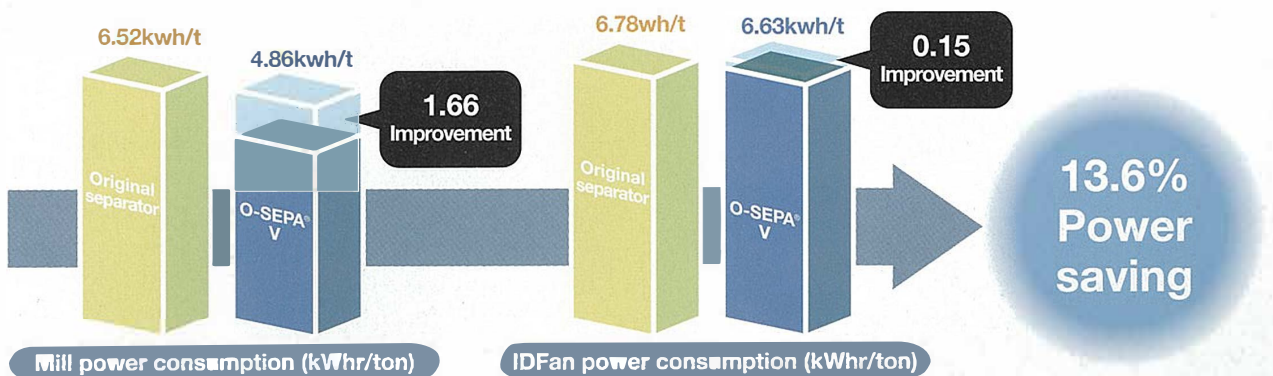


O-SEPA® V Series

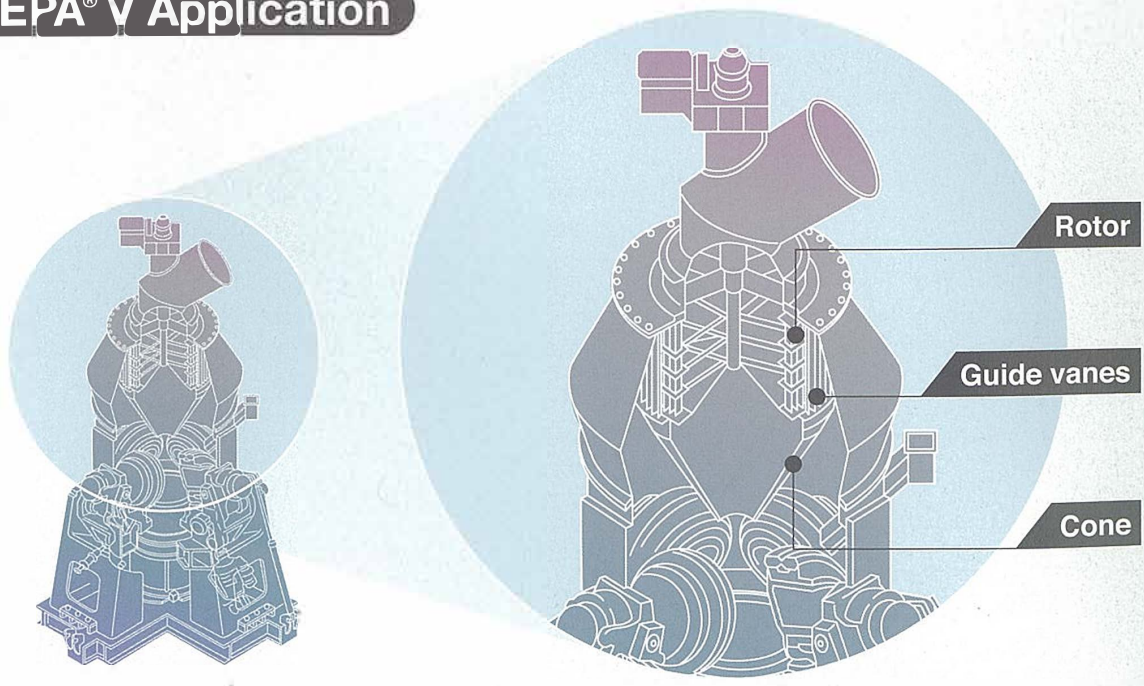
O-SEPA® V series improve the performance of vertical roller mill equipped with conventional type separator since O-SEPA® V realizes an optimum gas stream inside the vertical roller mill.

Typical Improvement

Vertical Roller Mill Specification	
Table diameter	4.3m
Roller	2.3m dia. X 4 sets
Installed motor power	2,970 kW
Original separator	Conventional rotor type



O-SEPA® V Application



TAIHEIYO ENGINEERING

Range Of Services For Cement
And Related Industries



Consulting Services

- Geological survey & quarry development
- Feasibility study
- Basic design and process selection
- Preparation of tender documents
- Evaluation of tenders and negotiation with contractors
- Control on construction works

Management Services

- Supervision of commissioning
- Operation and maintenance of plant
- Total plant management
- Training of client's personnel towards operation and maintenance

Engineering Services

- Research and development
- Testing of raw materials
- Basic design and detailed engineering
- Procurement
- Construction
- Commissioning
- Operation and maintenance

Process, Technology And Know-How

- NSP process with "RSP®" & "DD" precalcinators technology
- White cement process with specialized clinker cooling technology
- Air quenching coolers
- Vertical roller mills & Pre-grinder system
- O-SEPA® and CLASSIEL® system for grinding mills
- Handling system for pulverized and bulk materials
- Dust collecting system
- Stackers and Reclaimer process for pre-blending yard
- Efficient roll feeder system for vertical roller raw mill
- Improved water spraying system for Gas Conditioning Tower
- Technology for burning various kind of fuels
- NOx reduction control system
- Chlorine by-pass system
- Waste material recycling technology consisting of :
 - Waste material (tires, plastics, oil etc.) as alternative fuel
 - Recycling of sewage sludge
 - Recycling of municipal waste
- Refining of phosphogypsum to cement retarder

Building Materials

- Building materials
 - Gypsum Plasterboard
 - Calcium Silicate
- Ready-mixed concrete

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