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MITSUBISHI **SELFJECTOR** **HERCULES-SERIES**

 **MITSUBISHI KAKOKI KAISHA, LTD.**

Throughout the 70 years since the initial release in 1942, we, Mitsubishi Kakoki Kaisha, Ltd. has continued to serve the needs of our customers. By exploiting the technical capabilities, high quality and advanced service systems we have accumulated over the years, we were able to achieve sales of more than 90,000 units worldwide.

Now, we are proud to introduce our newest models—"Mitsubishi Selfjector Hercules (SJ-H) Series."



This new series, named after the famous mythological hero, is compact and offers high separation performance and expanded capacity. With its remarkable stability and purification effectiveness "Mitsubishi Selfjector Hercules (SJ-H) Series" provides superior purification of marine fuel oil, lubricating oil and even the mineral oil utilized in wide-ranging segments of industry. You will surely find extensive uses for this series.



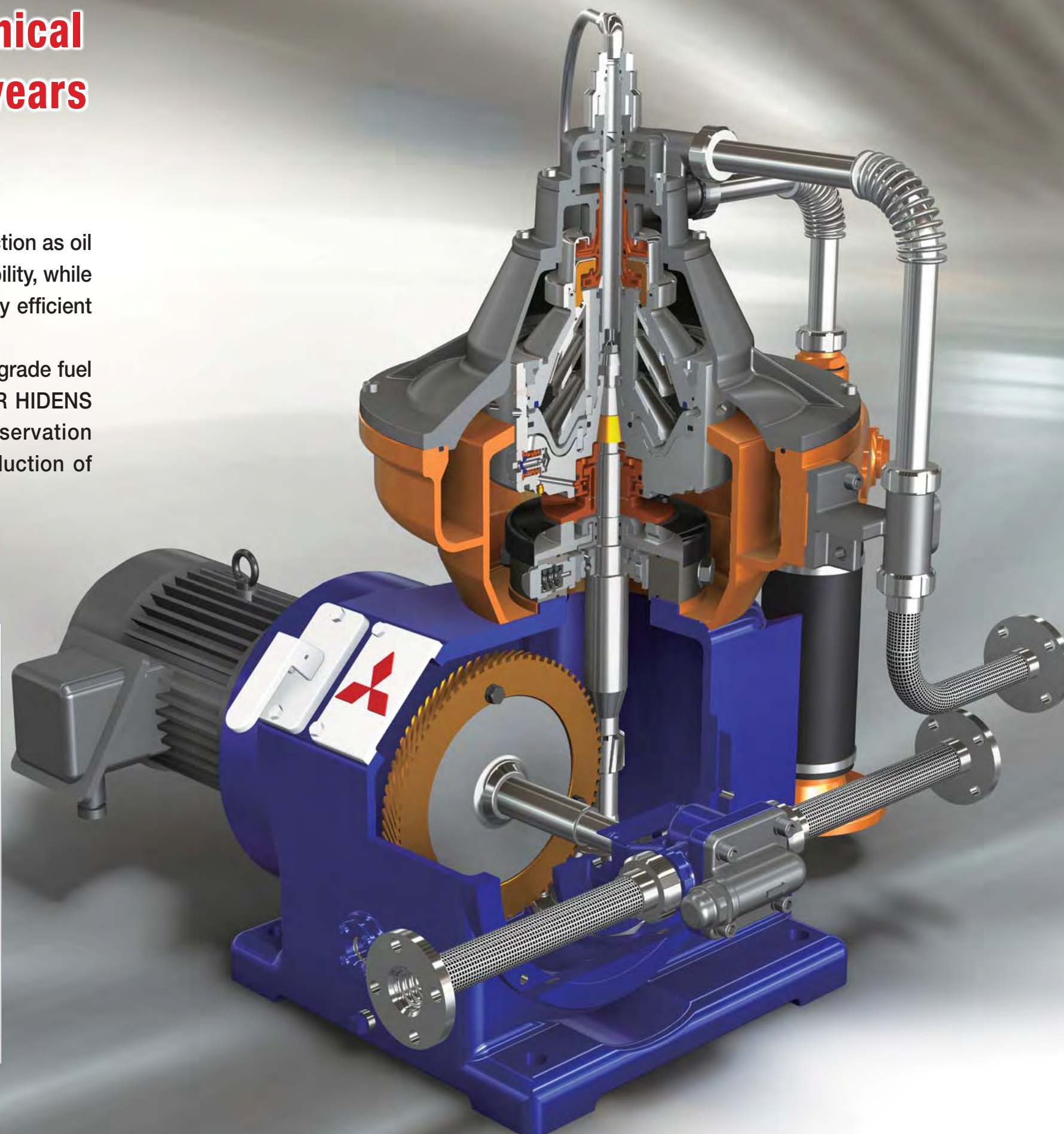
Fusion between our advanced technical capabilities accumulated over the years and new technologies.

Mitsubishi Selfjector H Series has achieved the highest degree of perfection as oil purifier to date by following our field-proven excellent stability and reliability, while integrating new technologies, including high centrifugal force and highly efficient discs.

In recognizing the growing demand for the diversified treatment of low-grade fuel oil, we have also developed the “H-HIDENS System” and the “SUPER HIDENS System (option).” Moreover, we gave special consideration to preservation of the global environment and devoted our efforts towards the “reduction of environmental load.”

Features of the SJ-H Series

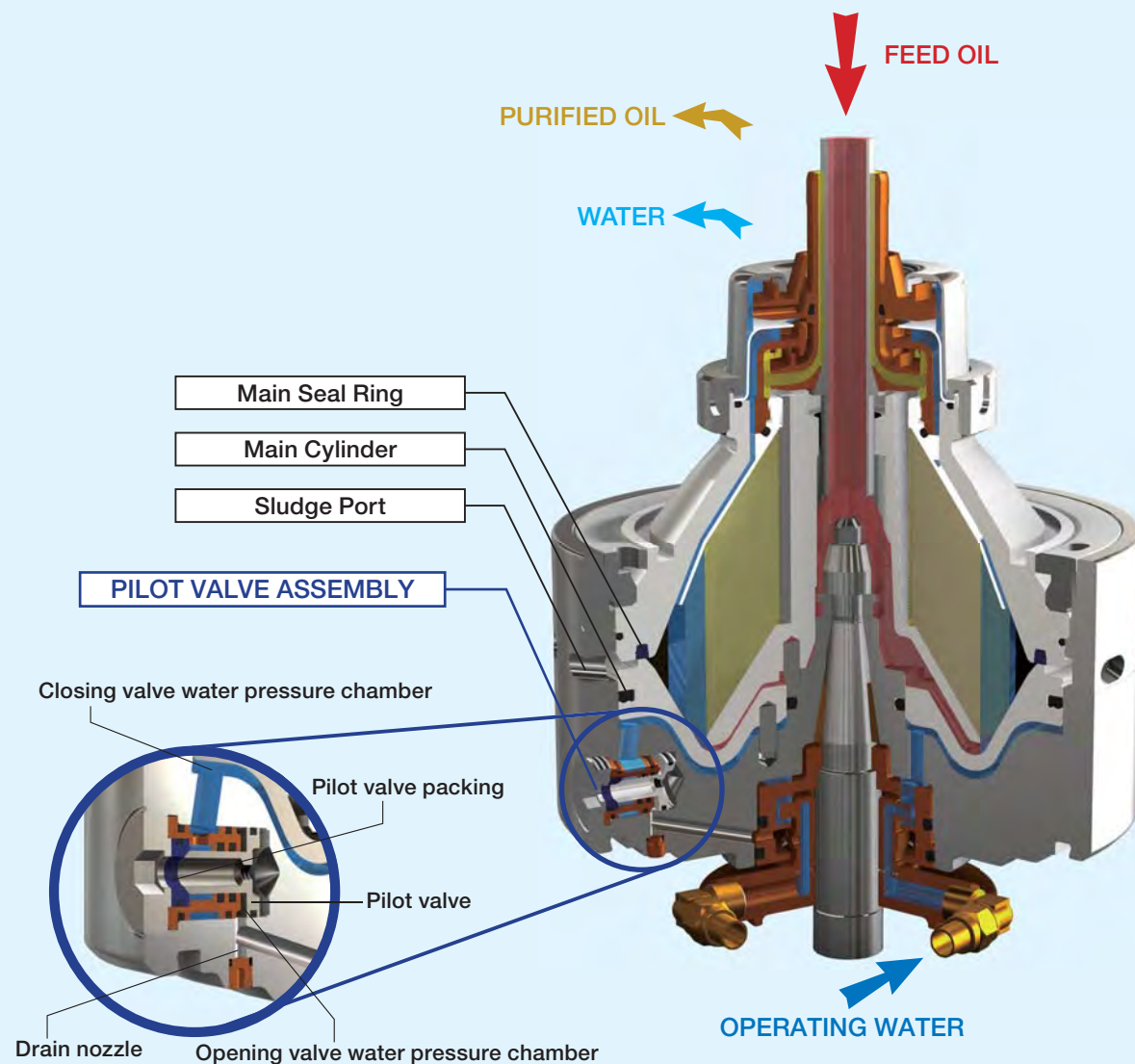
1. Field-proven and reliable pilot valve system adopted for the bowl
2. “H-HIDENS” and “SUPER HIDENS (option)” systems for low-grade fuel oil treatment systems
3. Multi-monitor with the seven segment LED display & the detector with high degree of precision
4. Reduction of environmental load
5. Equipped with gear pump that accommodates low-viscosity fuel oil as standard
6. Improved delivery head of centripetal pump for purified oil in order to apply large ships (25 m)
7. Compact design for space-saving
8. High-capacity models lined up to support high-output engines



Highly reliable pilot valve system, proven by a sales record of more than 50,000 units

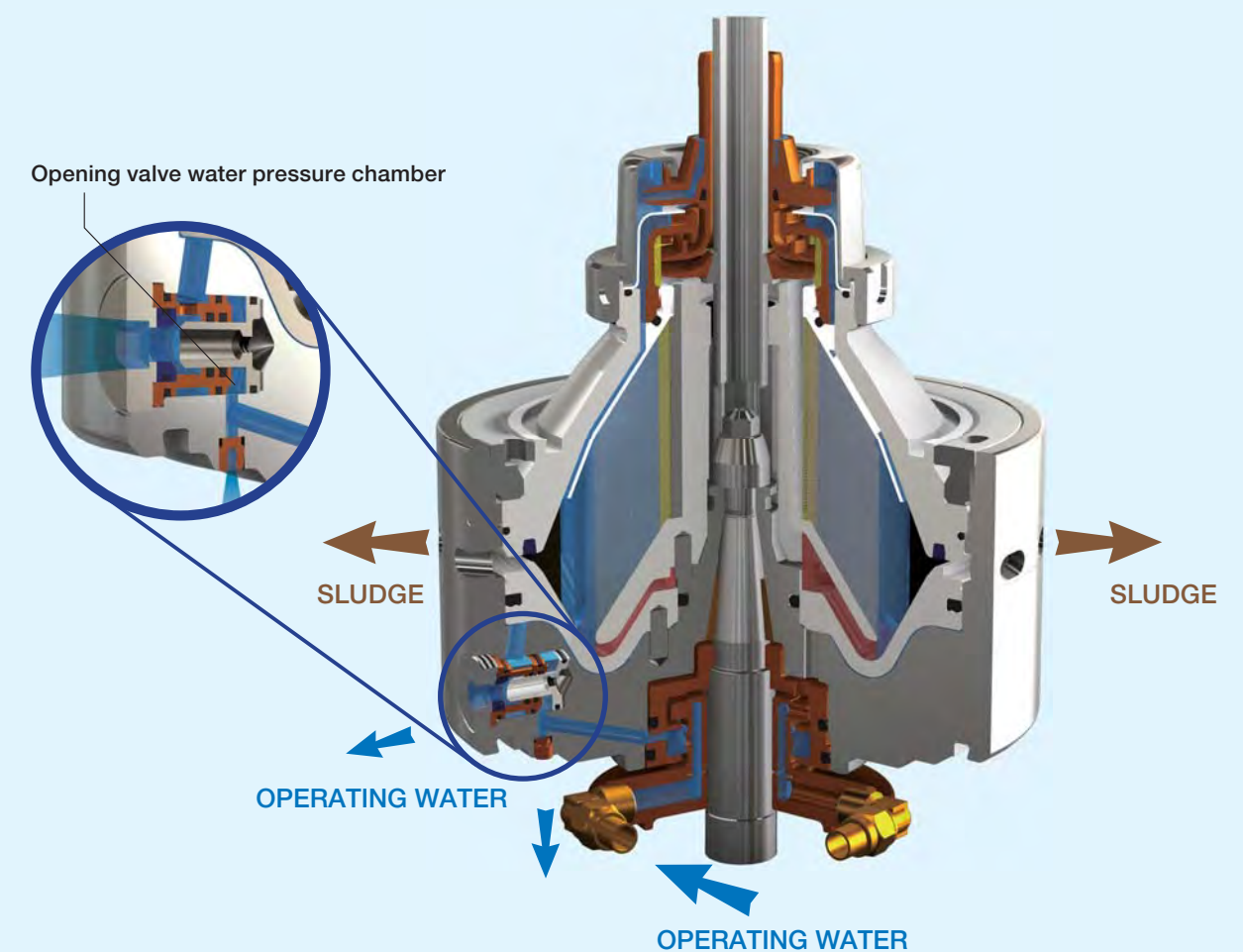
Oil Purifying Operation

Since the pilot valve is closed during oil purification operation, the main cylinder is closed by the pressure of operating water in closing valve water pressure chamber.



Sludge Discharge Operation

To discharge sludge, operating water is sent to opening valve water pressure chamber and the pilot valve is opened. The operating water in the closing valve water pressure chamber is then drained and the main cylinder is opened by the liquid pressure in the separation chamber.



MITSUBISHI SELFJECTOR HERCULES-SERIES Model No./Capacity Table

FUEL OIL

Model No.		Actual capacity (ℓ / H)						Electric motor kW (H/HH)
		Marine Gas oil	Marine diesel oil	Heavy fuel oil				
Viscosity	1.4~6	≤14	180	380	500	600	700	
	mm²/s/40°C		mm²/s/50°C					
Separating temperature	20~40°C	40°C	98°C					
SJ15H/HH	2,200	2,050	2,000	1,400	1,100	1,000	900	3.7/5.5
	2,200	2,050	1,900	1,350	1,050	950	850	
SJ25H/HH	3,400	3,150	3,000	2,100	1,700	1,500	1,400	5.5/7.5
	3,400	3,150	2,900	2,050	1,650	1,450	1,350	
SJ35H/HH	6,200	5,750	5,400	3,900	3,000	2,700	2,500	5.5/7.5
	6,200	5,750	5,250	3,800	2,900	2,650	2,400	
SJ60H/HH	10,500	10,300	8,300	5,900	4,600	4,100	3,700	11.0/11.0
	10,500	10,300	8,300	5,900	4,600	4,000	3,700	
SJ85H/HH	13,000	12,500	12,000	8,300	6,500	5,900	5,300	11.0/15.0
	13,000	12,500	12,000	8,300	6,500	5,750	5,300	
SJ110H/HH	19,400	18,000	15,500	11,000	8,500	7,700	7,000	18.5/18.5
	19,400	18,000	15,600	11,000	8,550	7,500	7,050	
SJ160H/HH	26,000	24,900	22,500	16,000	12,500	11,500	10,500	18.5/18.5
	26,000	24,900	21,500	15,300	12,000	11,200	10,000	
SJ220H/HH	34,000	31,500	30,000	22,500	16,500	15,000	13,500	18.5/22.0
	34,000	31,500	28,700	21,500	15,800	14,600	12,900	

Note) H: Standard model Upper 60Hz Lower 50Hz
HH: HIDENS model
In case of gas oil and diesel oil, electric motor output may change according to the treated capacity.

LUBRICATING OIL

Model No.	Actual capacity (ℓ /H)		Electric motor kW (H/HH)
	Cross-head	Trunk piston	
	Detergent oil		
	100mm²/s/40°C	150mm²/s/40°C	
Viscosity			
Separating temperature	MAX 90°C	MAX 95°C	
SJ15H/HH	1,600	1,300	3.7/5.5
	1,550	1,250	
SJ25H/HH	2,400	2,000	5.5/7.5
	2,350	1,950	
SJ35H/HH	4,300	3,600	5.5/7.5
	4,200	3,500	
SJ60H/HH	6,600	5,400	11.0/11.0
	6,600	5,400	
SJ85H/HH	9,300	7,700	11.0/15.0
	9,300	7,700	
SJ110H/HH	12,500	10,500	18.5/18.5
	12,500	10,500	
SJ160H/HH	18,000	15,000	18.5/18.5
	17,200	14,300	
SJ220H/HH	23,500	19,500	18.5/22.0
	22,500	18,700	

Note) H: Standard model Upper 60Hz Lower 50Hz
HH: HIDENS model

SUCTION PUMP CAPACITY TABLE (ℓ/h)

Model No.	Hz	GP15H	GP25H	GP35H	GP60H	GP85H
Heavy fuel oil / Lubricating oil	60	1,400	2,200	3,900	5,900	8,300
Marine gas oil / Marine diesel oil	60	1,150	1,800	3,200	4,850	6,850
Heavy fuel oil / Lubricating oil	50	1,150	1,800	3,250	4,900	6,900
Marine gas oil / Marine diesel oil	50	950	1,450	2,650	4,050	5,700

Suction head: -4m (HFO, LO), 0m (MGO, MDO)
Discharge head: 20m
The pump capacity and motor output should be decided according to customer's requirement

SPECIFICATIONS

Standard Type (H Type)

STANDARD TYPE

Accessories

- Manifold-type solenoid valve unit for operating water
- Multi-monitor
Display: Oil flow rate, discharge pressure, oil temperature
Detection: Oil leakage detection function

Options

- Starter
- Automation system/emergency shut-down system for oil feed
- Discharge detection function (in multi-monitor)
- Butterfly valve
- Cleaning table
- Oil heater (electric/steam)

HIDENS Type (HH Type)

HIDENS TYPE

Accessories

- Manifold-type solenoid valve unit for operating water
- Automation system
- Multi-monitor
Display: Oil flow rate, discharge pressure, oil temperature, rpm
Detection: Oil leakage detection, discharge detection, water detection functions *1

Options

- Starter
- Butterfly valve
- Cleaning table
- Oil heater (electric/steam)

*1: No moisture value display function available.

STANDARD MATERIALS

Main body

Bowl: High-tension stainless steel
Bowl nut: Carbon steel
Discs: Stainless steel
Frame: Cast iron
Spiral gear: Special aluminum bronze
Vertical shaft: Special alloy steel

Suction Pump

Casing: Cast iron
Pump gear: Carbon steel
Bush: Cast iron (oilless bearing)

H-HIDENS System

(PAT. 4397516)

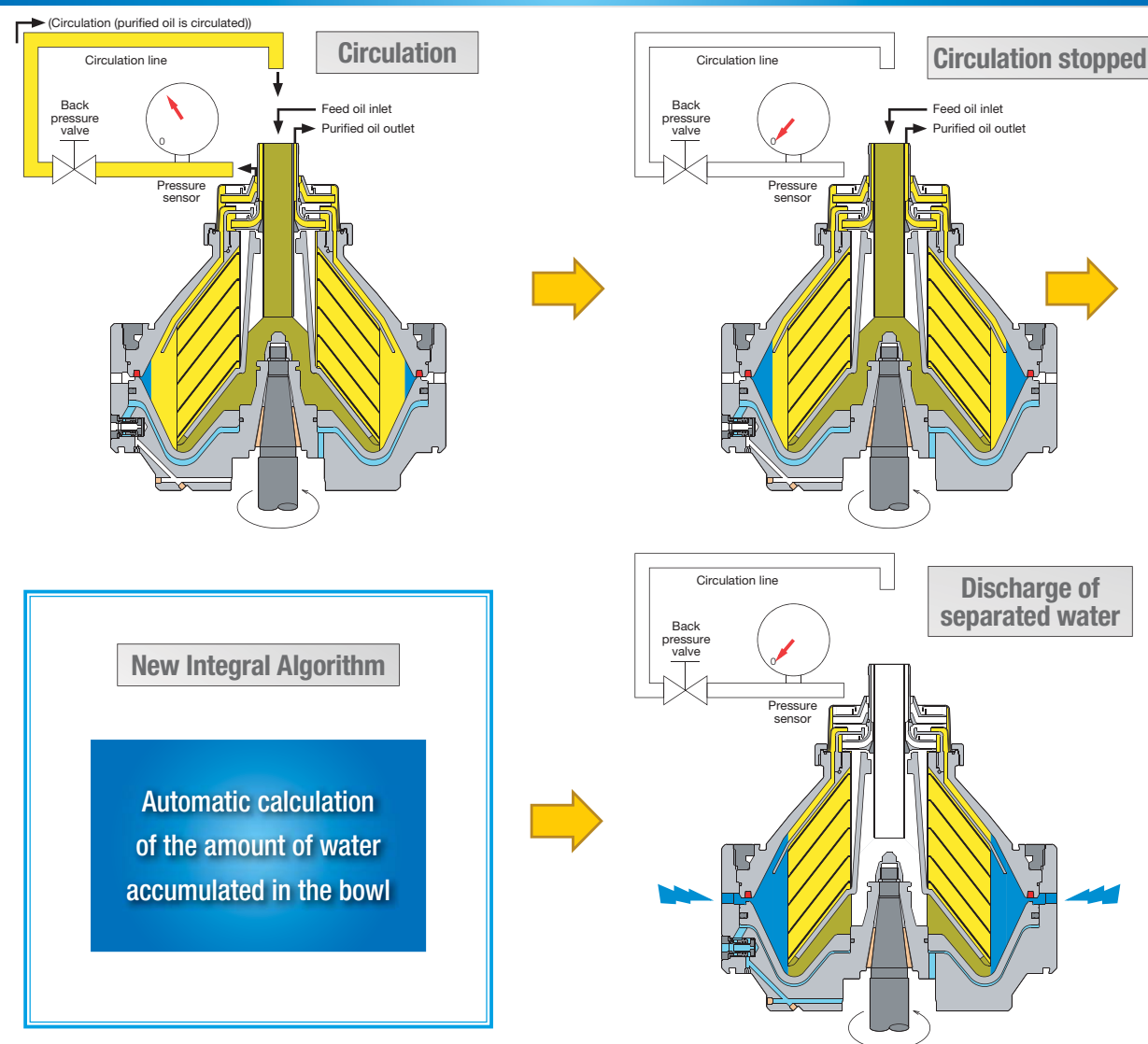
This system requires no adjustment gravity disc replacement, and it enables water separation from fuel oil up to density of $1,010 \text{ kg/m}^3$ (15°C) and lubricating oil.

It is composed of a selfjector, automatic control panel, and pressure sensor type of water detection system.

Features of H-HIDENS System

- 1 Use field-proven pressure sensor type of water detection system
- 2 Substantially reduced sludge discharge volume due to adoption of a new integral algorithm
- 3 Simplified installation work due to detectors incorporated into the main body

Mechanism of H-HIDENS System



SUPER-HIDENS System / Option

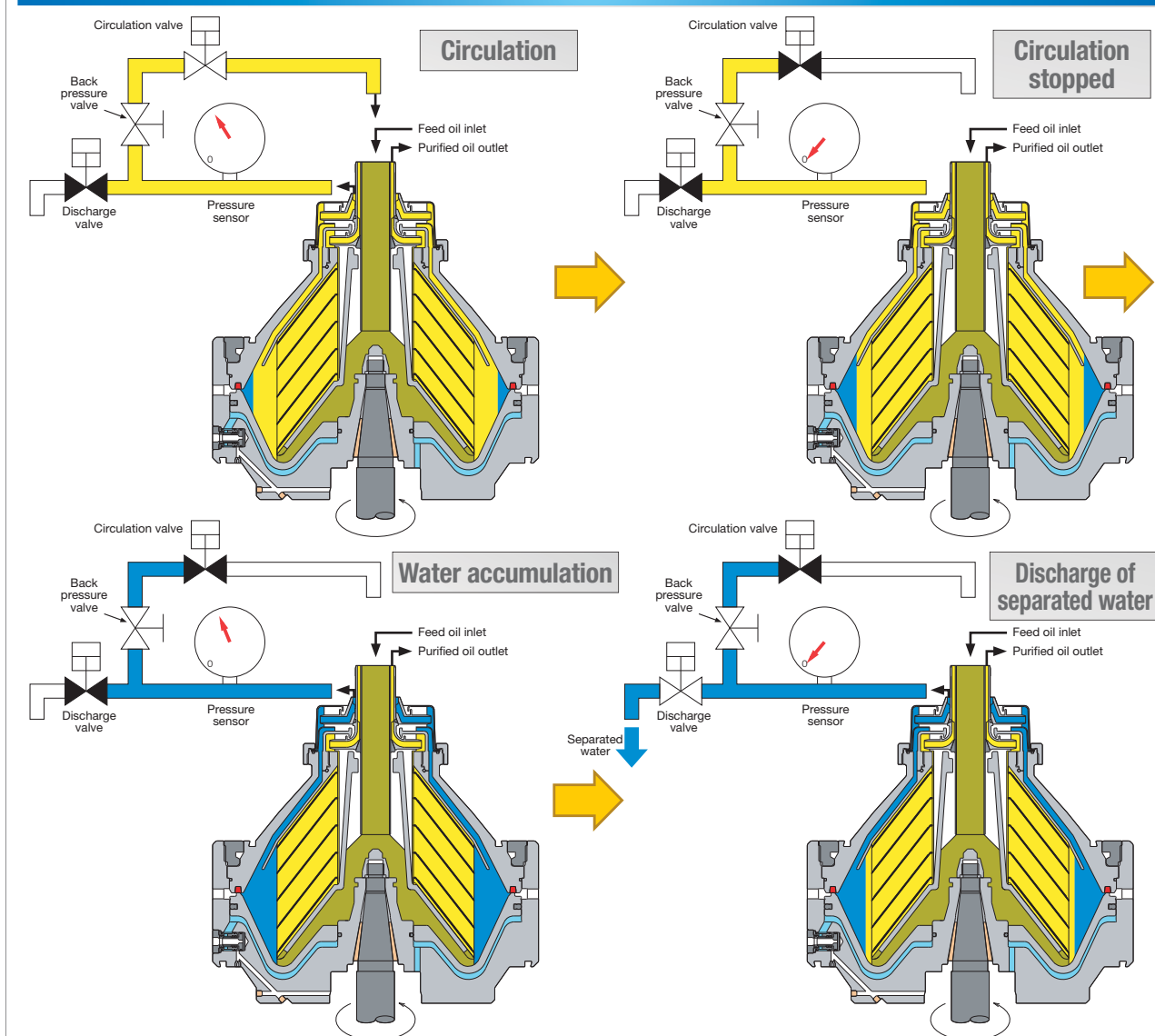
(PAT.P PCT/JP2010/65105)

Similar to the H-HIDENS system, this system also requires no adjustment gravity disc replacement and allows the treatment of high-density oil. In addition, in this revolutionary system it allows the discharge of separated water accumulated in the bowl without opening the main cylinder due to the pneumatic valves of the pressure sensor type of water detection system incorporated into the upper side of the main body.

Features of SUPER-HIDENS System

- 1 Separated water is discharged via the discharge valve.
- 2 The "AI-desludger" function automatically detects the volume of sludge in the bowl and discharges it.
- 3 Allows the treatment of oil with a high water content exceeding the property requirement of ISO 8217 (0.5 vol%)
- 4 Simplified installation work due to detection incorporated into the main body

Mechanism of SUPER-HIDENS System



Automatic Control System

Features of the Automatic Control System

- 1 Simplification and assurance of confirmation work with graphic panel (HBC-1/HBC-2).
- 2 Space-saving due to the miniaturization and weight reduction of the control panel.
- 3 Optional system alarm functions can be added.

Type	Number of purifiers	Number of control panels	Discharge method	Multi-monitor			Separation method	Control method	Applicable density (MAX) kg/m ³
				Leakage detection	Discharge detection	Water detection			
HSH-1	1	1	Total/partial	○	○	○	2-phase (3-phase also possible)	PLC	1,010
HBC-1	1	1	Total	○	Option	—	3-phase	CPU	991
HBC-2	2	1	Total	○	Option	—	3-phase	CPU	991
HAP-11	1	1	Total	○	—	—	3-phase	Relay type	991

※1: Two-phase (clarifier), Three-phase (purifier) ※2: HAP-11 is an alarm panel for emergency stop.

Automatic valve, etc.

- Feel valve
- Solenoid valve unit for operatingwater (mounted on main body)
- Solenoid valve for air

Multi-monitor

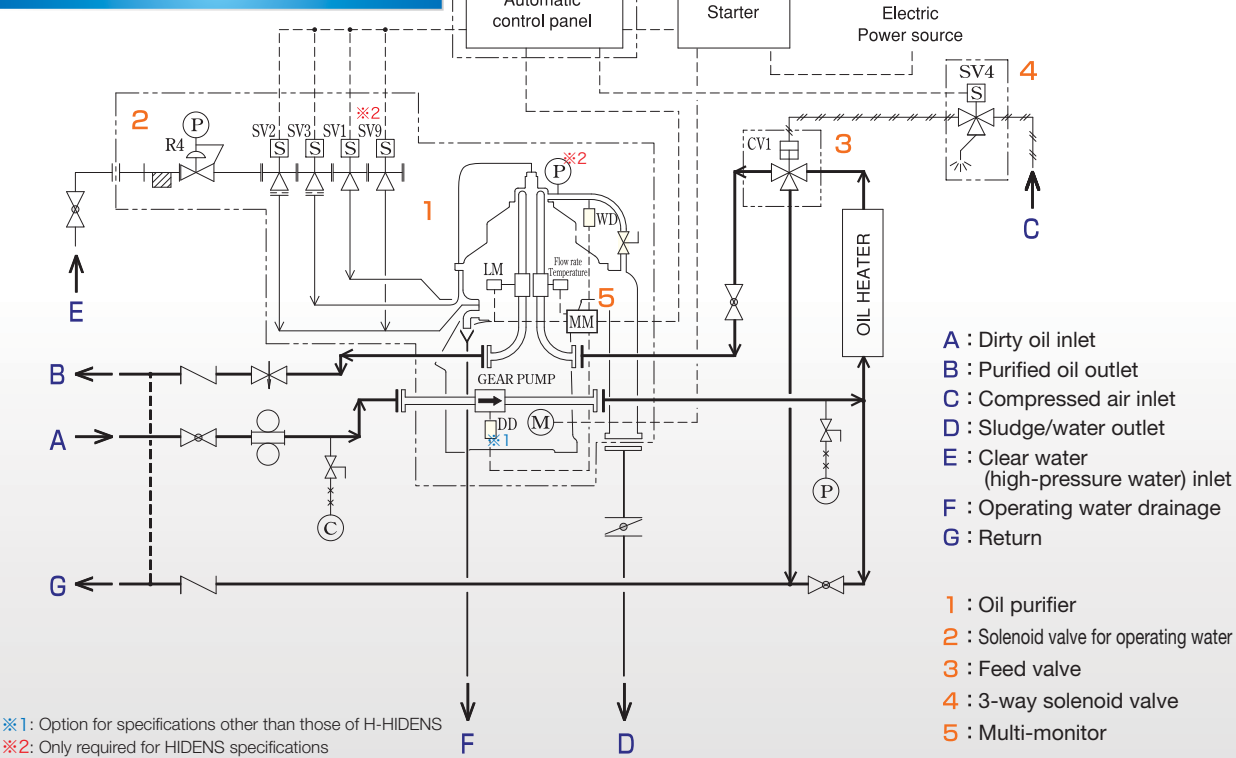
Improvement of visibility & the control algorithm of the detector



Multi-monitor functions (display/detection)

- Oil flow rate, oil temperature, discharge pressure
- Leakage monitor (LM)
Improved reliability against fluctuations in temperature/flow rate
- Discharge detector (DD)
Display of horizontal shaft rpm
- Water detector (WD)
H-HIDENS

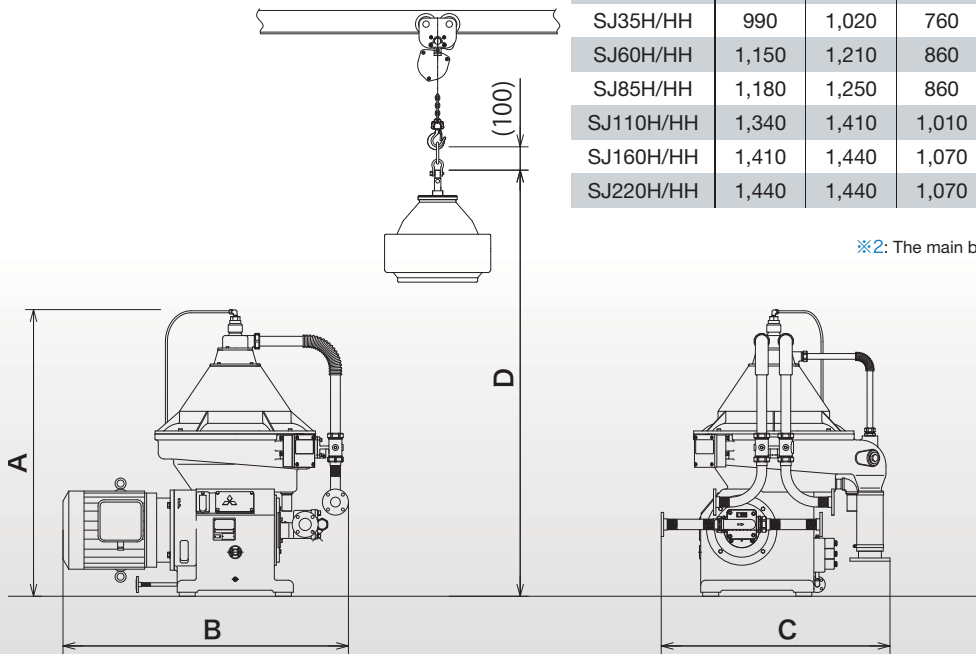
Flow Sheet (H-HIDENS Specifications)



Dimensions of SJ-H/HH

Model No.	A (mm)	B (mm)	C (mm)	D (mm)	Main body weight (Kg)	Bowl weight (Kg)
SJ15H/HH	960	970	760	1,400	340	40
SJ25H/HH	970	1,010	760	1,410	380	45
SJ35H/HH	990	1,020	760	1,430	390	55
SJ60H/HH	1,150	1,210	860	1,660	600	100
SJ85H/HH	1,180	1,250	860	1,690	650	110
SJ110H/HH	1,340	1,410	1,010	1,930	920	200
SJ160H/HH	1,410	1,440	1,070	2,000	1,000	250
SJ220H/HH	1,440	1,440	1,070	2,030	1,060	285

※1: Dimension B refers to SJ-H.
※2: The main body weight includes the bowl weight.



Cleaning Equipment

For more information, please refer to the separate catalogues or make an inquiry with our sales representatives.

MK-JET

Non-open cleaning equipment for the Mitsubishi Selfjector

- Power supply for cleaning equipment not required
Power saving due to adoption of a tank pressurization circulation system
- Shorter cleaning operation
The inside of the rotor can be cleaned without having to open the unit.
- Designed to prioritize ease of use and operability in marine environments
Compact size [380 (W) × 470 (D) × 970 (H) mm]
Lightweight (weight including dedicated hose: approx. 25 kg)



MK Clean Uno

Cleaning detergent dedicated to removing, carbon scale, etc. adhering to the separation discs of oil purifiers

- Economic-used by diluting with water and can be used repeatedly
- Easy to handle - little irritating odor due to mild acidity
- Not a hazardous substance according to the Fire Defense Law due to lack of a firing point
- Halogenated compound-free and no generation of dioxins even if incinerated

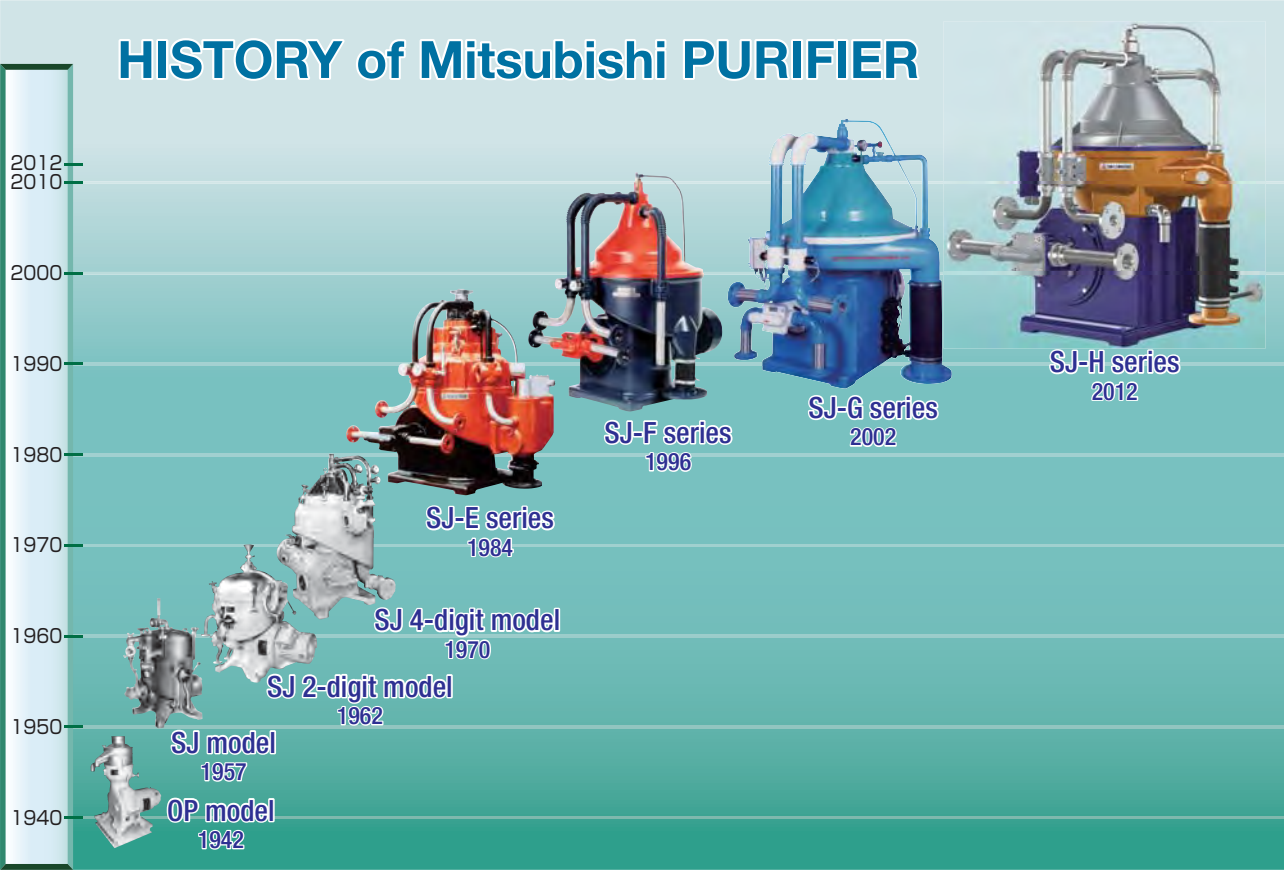


(Before cleaning)



(After cleaning)

HISTORY of Mitsubishi PURIFIER



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