
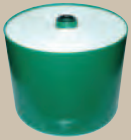
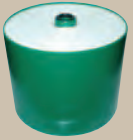


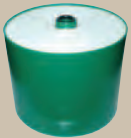





Specifications for MB Filter Element

*These specifications are for Japan only. If you need specifications for overseas, please contact us.

Model	 GE-21-SHG	 GE-21-N	 GE-21-NR	 GE-41-DC
Application	High-precision oily fluid filtration Standard type for hydraulic oil and lubricating oil For hydraulic/lubrication circuits requiring high precision such as servo valves For reciprocating oil-free turbo compressor oil and refrigerant oil	Medium-precision oily fluid filtration For heavily contaminated hydraulic oil, lubricating oil, vacuum pump oil and press lubricating oil For private power generator oil and automotive engine oil For heavy/light oil and rolling mill lubricant to finish nonferrous metal	Heavily contaminated oily fluid filtration For degreaser and cutting/grinding fluid requiring high precision For vacuum pump oil, press lubricating oil and wash oil with frequent incorporation of foreign matters For private power generator oil and automotive engine oil For low-viscosity quenching oil	High-precision oily fluid filtration Oxide removal and decoloration performance is more excellent than those of the standard types. For filtering and decoloring low-viscosity oil such as hydraulic oil and turbine oil Application for the fields which require the highest level control standard such as test equipment
Main material	Pulp fiber resin (Filter media) PP (Case/pipe) NBR (Sealed packing)	Pulp fiber resin (Filter media) PP (Case/pipe) NBR (Sealed packing)	Pulp fiber resin (Filter media) PP (Case/pipe) NBR (Sealed packing)	Pulp fiber resin (Filter media) Special adsorbent (pigment/oxide removal) NBR (Sealed packing)
Moisture removal rate (Max.)	1L	1L	1L	1L
Center of filtration accuracy distribution	3 μm	30 μm	50-100 μm	1 μm
Recyclability	Unrecyclable (Incineration disposal possible)	Unrecyclable (Incineration disposal possible)	Unrecyclable (Incineration disposal possible)	Depending on the conditions (Consult us.)
Outer dimension (mm)	φ 145 × H115	φ 145 × H115	φ 145 × H115	φ 145 × H240
Weight (One unit/DRY)	550g	550g	550g	1Kg
Date of delivery	Within 2 business days after your order	Within 2 business days after your order	Within 7 business days after your order	Within 14 business days after your order

Model	 GE-21-W4	 GE-21-W1	 GE-41-MR1
Application	High-precision water-soluble fluid filtration For water-glycol fluid used for die-casting machines, etc. For fluid requiring transparency such as leak test fluid For oily fluid not requiring moisture removal	Heavily contaminated water-soluble fluid filtration For water-glycol fluid and water-soluble fluid used for die-casting machines, etc.	High-precision oily fluid filtration To remove moisture and slight oxide from refrigeration compressor oil and high-precision hydraulic oil, etc. For insulation oil of transformers and tap changers For EHC oil, etc. used in thermal/nuclear power plants
Main material	Waterproof nonwoven fabric (Filter material) PP (Case/pipe) NBR (Sealed packing)	Waterproof nonwoven fabric (Filter material) PP (Case/pipe) NBR (Sealed packing)	Pulp fiber resin (Filter media) Special adsorbent (Moisture/oxide removal) PP (Case/pipe) NBR (Sealed packing)
Moisture removal rate (Max.)	None	None	1 L + Dissolving moisture 0.4 L
Center of filtration accuracy distribution	5 μm	100 μm	1 μm
Recyclability	Unrecyclable (Incineration disposal possible)	Unrecyclable (Incineration disposal possible)	Depending on the conditions (Consult us.)
Outer dimension (mm)	φ 145 × H115	φ 145 × H115	φ 145 × H240
Weight (One unit/DRY)	550g	380g	1Kg
Date of delivery	Within 14 business days after your order	Within 2 business days after your order	Within 21 business days after your order

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reference
materials by fax.
FAX.0545-51-1401)



CAUTION

- Read the instruction manual before using "Miracle Boy".
- Do not install "Miracle Boy" at locations subjected to water, vapor and dust; fire, malfunction or electric shock may occur.



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Amazing filtering rate prevents oil deterioration **99.9%**

High-Performance
Industrial Oil Filtration Device

Miracle
Boy
ミラクルボーイ



日本濾過工業株式会社

"Miracle Boy" prevents deterioration

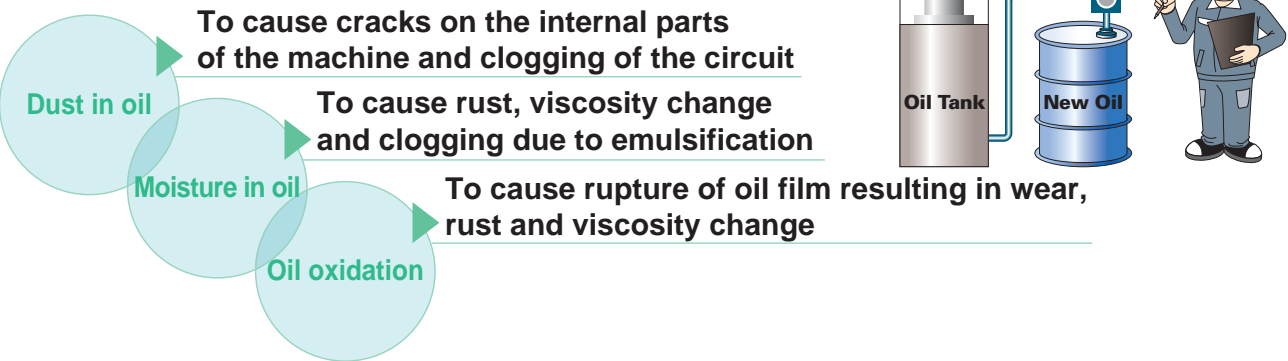


Eliminating contaminating particles, oxides and moisture (ppm) all together

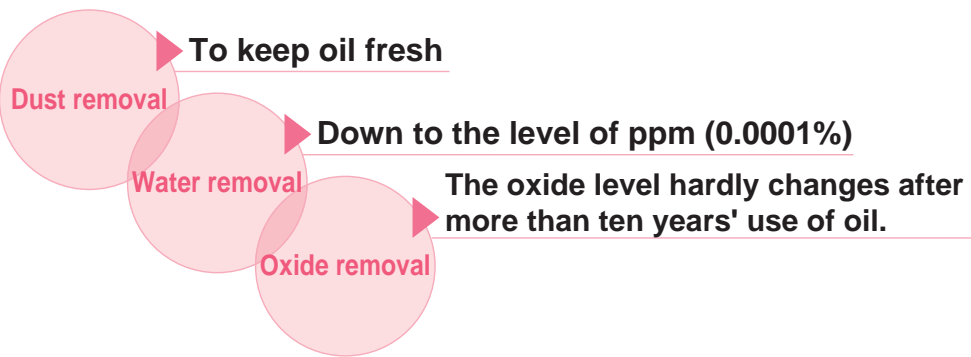
While we have been taking it for granted that we replace oil before it reaches the usable limit, development of additives and various filtration devices has extended oil life. Our company developed "Miracle Boy", the high-performance filtration device, whose greatest feature is to keep oil fresh, preventing oil deterioration.

"Miracle Boy" has changed the idea of oil filtration.

We have been replacing oil to run the machine at a high operating rate and to avoid troubles.

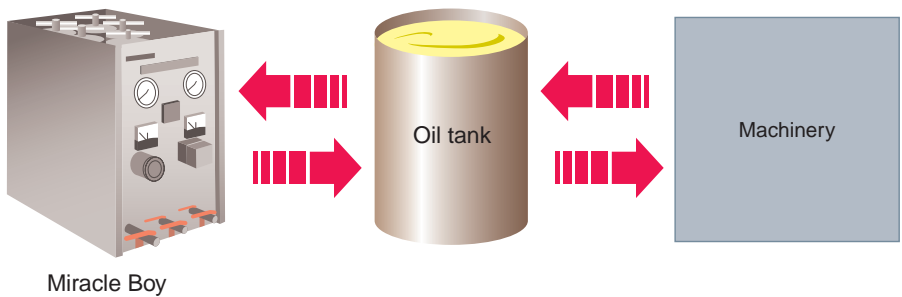


If you install "Miracle Boy", your machine will be free from maintenance, not requiring oil replacement



"Miracle Boy" corresponds to almost all machines

"Miracle Boy" works offline with the machine oil tank. Installation is easy. You can replace a filter element without stopping the production line.



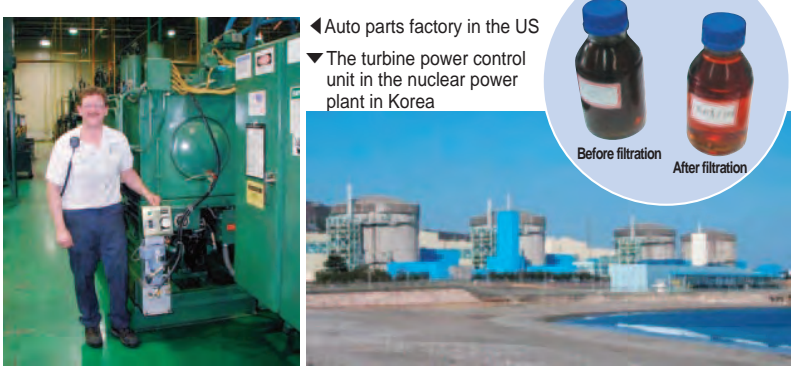
*To enhance or improve the product, the specifications are subject to change without notice.
*The followings are the standard models; if you need a high-capacity model or a special model (explosion-proof, outdoor, transportable, etc.), please consult us.
*Since we also offer the filtration devices for the diesel engines "SRC-VG Series", please contact us.
*These specifications are for Japan only. If you need specifications for overseas, please contact us.

	SRC-814-15V	SRC-816-22V	SRC-8110-162V	SRC-8112-70V	SRC-8118-223V	SRC-8124-224V
	900L/Hr	1,800L/Hr	3,000L/Hr	3,600L/Hr	5,400L/Hr	7,200L/Hr
	0.35MPa	0.35MPa	0.35MPa	0.35MPa	0.35MPa	0.35MPa
	16L	24L	40L	48L	72L	96L
	GE-21 (16 pcs)/GE-41 (8 pc)	GE-21 (24 pcs)/GE-41 (12 pc)	GE-21 (40 pcs)/GE-41 (20 pc)	GE-21 (48 pcs)/GE-41 (24 pc)	GE-21 (72 pcs)/GE-41 (36 pc)	GE-21 (96 pcs)/GE-41 (48 pc)
	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes
	Pump relief valve	Pump relief valve	Pump relief valve	Pump relief valve	Pump relief valve	Pump relief valve
	Motor protection breaker	Motor protection breaker	Motor protection breaker	Motor protection breaker	Motor protection breaker	Motor protection breaker
	Pressure sensor	Pressure sensor	Pressure sensor	Pressure sensor	Pressure sensor	Pressure sensor
	Overload current sensor	Phase adjusting circuit	Phase adjusting circuit	Phase adjusting circuit	Phase adjusting circuit	Phase adjusting circuit
	Emergency buzzer	Overload protection circuit	Overload protection circuit	Overload protection circuit	Overload protection circuit	Overload protection circuit
		Emergency buzzer	Emergency buzzer	Emergency buzzer	Emergency buzzer	Emergency buzzer
	0.4Kw	0.75Kw	0.75Kw × 2 motors	2.2Kw	0.75Kw × 3 motors	0.75Kw × 4 motors
	Single-phase 100 V or three-phase 200 V	Single-phase 100 V or three-phase 200 V	three-phase 200 V	three-phase 200 V	three-phase 200 V	three-phase 200 V
	Operation time meter	Operation time meter	Operation time meter	Operation time meter	Operation time meter	Operation time meter
	Operation time integrator	Operation time integrator	Operation time integrator	Operation time integrator	Operation time integrator	Operation time integrator
	IN side and the suction side	IN, OUT and the suction sides	IN, OUT and the suction sides	IN, OUT and the suction sides	IN, OUT and the suction sides	IN, OUT and the suction sides
	PT1/2.PT3/8.PT3/8	PT3/4.PT3/4.PT3/4	PT3/4.PT3/4.PT3/4	PT1.PT1.PT1	PT1.PT1.PT1	PT1.PT1.PT1
	W440 × L700 × H789	W530 × L888 × H1070	W530 × L1238 × H1070	W1050 × L1038 × H1170	W530 × L888 × H1070(3)	W530 × L888 × H1070(4)
	110 kg	125 kg	160 kg	250 kg	375 kg	500 kg
	Within 220 mm ² /S	Within 260 mm ² /S	Within 260 mm ² /S	Within 260 mm ² /S	Within 260 mm ² /S	Within 260 mm ² /S
	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil
	Hydraulic oil 4000 L/lubricating oil 2400 L	Hydraulic oil 6000 L/lubricating oil 3600 L	Hydraulic oil 10000 L/lubricating oil 6000 L	Hydraulic oil 12000 L/lubricating oil 7200 L	Hydraulic oil 18000 L/lubricating oil 11000 L	Hydraulic oil 24000 L/lubricating oil 15000 L
	Stationary	Stationary	Stationary	Stationary	Stationary	Stationary

*SRC-V Series correspond to reciprocating oil-free turbo compressors.
*To enhance or improve the product, the specifications are subject to change without notice.
*The followings are the standard models; if you need a high-capacity model or a special model, please consult us.

	SRC-815-C	SRC-816-C
	1,000L/Hr	1,200L/Hr
	Depending on the main unit (Max. 0.9 MPa)	Depending on the main unit (Max. 0.9 MPa)
	20L	24L
	GE-21 (20 pcs)	GE-21 (24 pcs)
	Y-type, 60 meshes	Y-type, 60 meshes
	Output: 170-210kw or less	Output: 220-250kw or less
	None	None
	Not required	Not required
	Replenish 40 L when replacing the element	Replenish 48 L when replacing the element
	IN and OUT sides	IN and OUT sides
	PT3/4.PT3/4.PT3/4	PT3/4.PT3/4.PT3/4
	W460×L725×H770	W460×L725×H770
	115 kg	125 kg
	Within 68 mm ² /S	Within 68 mm ² /S
	Mineral oil/synthetic lubricating oil	Mineral oil/synthetic lubricating oil
	Stationary	Stationary

"Miracle Boy" has been highly received by our worldwide customers (in the US, Korea, Thailand, Malaysia, etc.)



"Miracle Boy" is widely applied both at home and abroad!

- Hydraulic equipment, injection molding machines, extruding machines, granulators, kneading machines, rubber/tire vulcanizers
- Rolling machines, forging machines, die-casting machines, automatic welding machines, forging/hydraulic press machines
- Machine tools, metal processing facilities, wire processing/wiredrawing machines, diesel engines (generators/small boats)
- Private turbine generators, power plant equipment
- Boats and ships (turbines, steering gears, winches, hatches)
- Paper-making machines (pulpers, pulping vessels, presses, dryers, coaters, calendars, winders), fiber manufacturing machines
- Chemical plant equipment, farm machines, port cargo handling machines, construction machinery
- Food processing machines, packaging machinery, printing machines (offset printing, web presses, gravure printing)

Specifications for SRC Series

n of lubricating/hydraulic oil



Main Specifications for Filtration Devices (SRC-V Series)

Model	SRC-411-12V	SRC-811-8V	SRC-812-6V	SRC-813-10V	
Filtration flow rate (VG46)	180L/Hr	300L/Hr	600L/Hr	700L/Hr	
Filtration pressure	0.35MPa	0.35MPa	0.35MPa	0.35MPa	
Moisture removal rate (Max.)	2L	4L	8L	12L	
Number of elements attached	GE-21 (2 pcs)/GE-41 (1 pc)	GE-21 (4 pcs)/GE-41 (2 pc)	GE-21 (8 pcs)/GE-41 (4 pc)	GE-21 (12 pcs)/GE-41 (6 pc)	
Pre-filter	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	
Safety device	Pump relief valve	Pump relief valve	Pump relief valve	Pump relief valve	
	Motor protection breaker	Motor protection breaker	Motor protection breaker	Motor protection breaker	
Safety device			Pressure sensor	Pressure sensor	
Mounted motor	75w	0.2Kw	0.25Kw	0.25Kw	
Power supply	Single-phase 100 V or three-phase 200 V	Single-phase 100 V or three-phase 200 V	Single-phase 100 V or three-phase 200 V	Single-phase 100 V or three-phase 200 V	
Time counter	Operation time meter	Operation time meter	Operation time integrator	Operation time integrator	
Pressure gauge	IN side	IN side	IN side and the suction side	IN side and the suction side	
Connection diameter (IN/OUT/DRAIN)	PT1/4,PT1/4, no drain	PT3/8,PT3/8,PT3/8	PT3/8,PT3/8,PT3/8	PT3/8,PT3/8,PT3/8	
Outside dimension (mm)	W300 × L265 × H423	W270 × L435 × H768	W600 × L305 × H801	W800 × L305 × H801	
Weight	16 kg	31 kg	55 kg	70 kg	
Working viscosity range	Within 150 mm ² /S	Within 150 mm ² /S	Within 220 mm ² /S	Within 220 mm ² /S	
Target liquid oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	Mineral oil/synthetic oil	
Tank capacity	Hydraulic oil 500 L/lubricating oil 300 L	Hydraulic oil 1000 L/lubricating oil 600 L	Hydraulic oil 2000 L/lubricating oil 1200 L	Hydraulic oil 3000 L/lubricating oil 1800 L	
Installation	Stationary	Stationary	Stationary	Stationary	

Main Specifications for Filtration Devices SRC-V Series

(corresponding to screw compressors, scroll compressors, tooth compressors, etc)

Model	SRC-811-C	SRC-812-C	SRC-813-C	SRC-814-C	
Filtration flow rate (Differential pressure: 0.15 MPa)	200L/Hr	400L/Hr	600L/Hr	800L/Hr	
Filtration pressure	Depending on the main unit (Max. 0.9 MPa)	Depending on the main unit (Max. 0.9 MPa)	Depending on the main unit (Max. 0.9 MPa)	Depending on the main unit (Max. 0.9 MPa)	
Moisture removal rate (Max.)	4L	8L	12L	16L	
Number of elements attached	GE-21 (4 pcs)	GE-21 (8 pcs)	GE-21 (12 pcs)	GE-21 (16 pcs)	
Pre-filter	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	Y-type, 60 meshes	
Applicable compressor	Output: 37kw or less	Output: 55kw or less	Output: 75-90kw or less	Output: 110-160kw or less	
Mounted motor	None	None	None	None	
Power supply	Not required	Not required	Not required	Not required	
Lubricating oil supply quantity	Replenish 8 L when replacing the element	Replenish 16 L when replacing the element	Replenish 24 L when replacing the element	Replenish 32 L when replacing the element	
Pressure gauge	IN and OUT sides	IN and OUT sides	IN and OUT sides	IN and OUT sides	
Connection diameter (IN/OUT/ DRAIN)	PT3/8, PT3/8, PT3/8	PT3/8, PT3/8, PT3/8	PT3/8, PT3/8, PT3/8	PT3/8, PT3/8, PT3/8	
Outside dimension (mm)	W255 × L350 × H725	W565×L310×H725	W565×L310×H725	W460×L725×H770	
Weight	15 kg	30 kg	40 kg	105 kg	
Working viscosity range	Within 68 mm ² /S	Within 68 mm ² /S	Within 68 mm ² /S	Within 68 mm ² /S	
Target liquid oil	Mineral oil/synthetic lubricating oil	Mineral oil/synthetic lubricating oil	Mineral oil/synthetic lubricating oil	Mineral oil/synthetic lubricating oil	
Installation	Stationary	Stationary	Stationary	Stationary	



SRC-411-12V



SRC-811-8V



SRC-812-6V



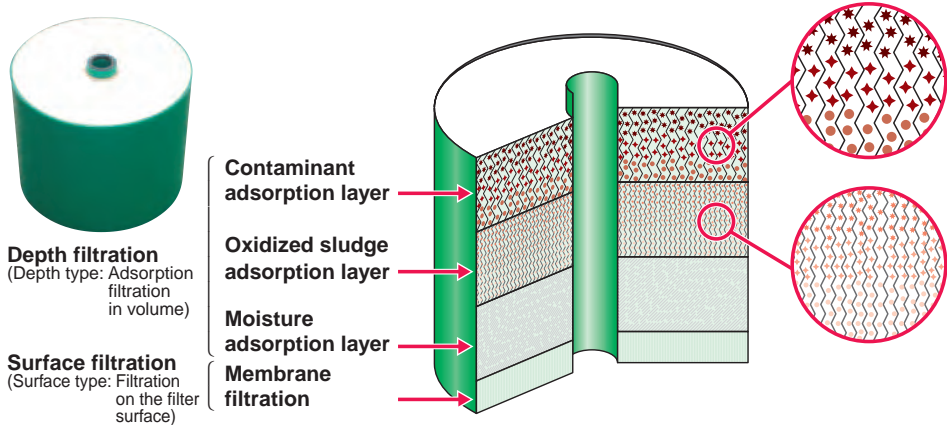
SRC-814-15V



SRC-816-22V

The multifunctional filter element eliminates deterioration factors all together.

The filter element is divided into adsorption layers to remove contaminating particles, oxidized sludge and moisture in dew condensation and coolant. The innovative and ideal inner structure prevents clogging and ensures trapping of contaminating particles (μm).



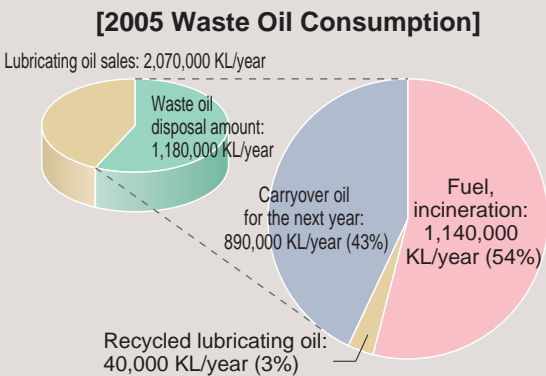
- * Each adsorption layer collects contaminants, oxides or moisture (Max. 1,000 cc/layer), trapping and removing the deterioration factor until it becomes full (Maximum trap mass: Approx. 5,700 kg/layer).
- * The standard element corresponds to low-viscosity (VG2 -) to high-viscosity (VG260) hydraulic oil.
- * You can incinerate used elements and cases, which are made of inflammable materials.
- * Soluble additives (equivalent to oil molecule) contained in new oil are not eliminated.



Innovative!

"Miracle Boy" contributes to global green house gas reduction.

The current situation survey of waste oil disposal (2005) by Japan Lubricating Oil Society shows that: The annual lubricating oil sales totaled 2,070,000 KL and the annual waste oil disposal amount, 1,180,000 KL. Only 40,000 KL of the waste oil was recycled as lubricating oil. Most of the waste oil was used as fuel or was incinerated. Burning of 500 L waste oil produces 1.2 t of greenhouse gas emissions; burning of 1,000 L waste oil produces approx. 2.5 t of greenhouse gas.



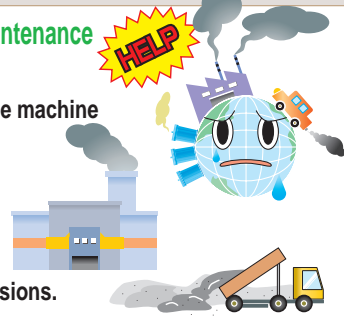
Conventional oil maintenance

Purchase of oil

The operator stops the machine for oil replacement.

Waste oil disposal

Burning of waste oil produces greenhouse gas emissions.

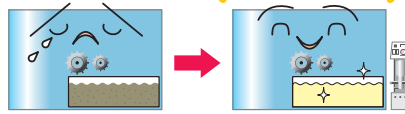


Oil maintenance with "Miracle Boy"

No need to purchase oil.

No need to replace oil; high performance of the machine

No waste oil disposal; reduction of greenhouse gas emissions

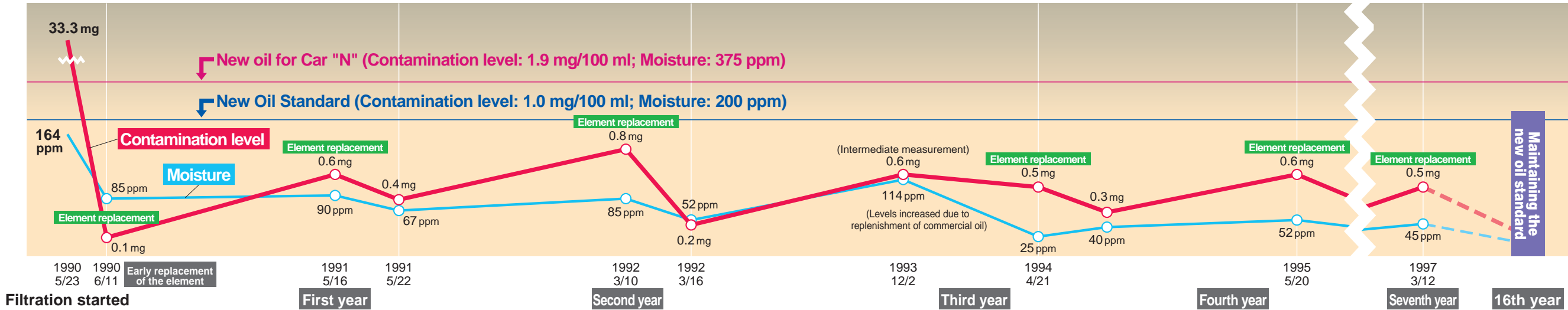


Maintaining the new oil safety standard for 16 years!



"Miracle Boy" (SRC-814-15V) installed at the dryer bearing lubrication oil (turbine oil) tank of the paper machine at the paper factory

The graph below shows the analysis results of the oil contamination levels and the moisture levels for 16 years from May 1990.



[No need to replace oil]

Contamination and moisture are said to be two major causes of machine failures. "Miracle Boy" continuously removes contaminants and moisture, ensuring the oil condition exceeding the new oil standard. "Miracle Boy" also removes oxidized sludge, a cause of oil deterioration, at the same time to reduce contamination.

Cleanliness levels according to applications before/after filtration

■ Hydraulic oil for the hydraulic Injection molding machine (850 t) SRC-811-8V
[The automotive large parts molding plant]

	Unit	Before filtration	After filtration
Kinematic viscosity (40°C)	mm ² /s	44.78	44.87
Moisture (KF Method)	ppm	1225	67
Total acid value	mgKOH/g	0.29	0.22
Contamination level (Mass Method)	mg/100ml	6.9	0.1

* Malfunctions of hydraulic control valves are eliminated and molding accuracy is increased.
* There is no need to replace oil; oil costs, the number of times of replacing solenoid valves and hydraulic pumps and personnel costs are significantly reduced; there is no waste oil emission.



■ Lubricating oil (1,000 L) for the reducer SRC-812-6V
[Plate manufacturing department in the metal processing factory]

	Unit	Before filtration	After filtration
Kinematic viscosity (40°C)	mm ² /s	137	136.7
Moisture (KF Method)	ppm	163	146
Total acid value	mgKOH/g	0.98	0.89
Contamination level (Mass Method)	mg/100ml	51.84	0.56

* Oil used to be replaced every six months due to significant contamination. At present there is no need to replace oil; metallic wear has dramatically decreased, thus increasing the operation rate.
* No oil replacement leads to drastic reduction of oil costs, machinery maintenance costs and personnel costs; there is no waste oil emission.



■ Hydraulic oil for the hydraulic equipment (800 L tank) SRC-811-8V
[The hydraulic equipment in the electric wire plant]

	Unit	Before filtration	After filtration
Kinematic viscosity (40°C)	mm ² /s	30.71	30.73
Moisture (KF Method)	ppm	11254	33
Total acid value	mgKOH/g	0.39	0.30
Contamination level (Mass Method)	mg/100ml	122	0.1

* Oil used to be replaced frequently due to significant contamination. At present, however, there is no need to replace oil. Machinery failures have decreased drastically, thus reducing maintenance personnel costs.
* No oil replacement leads to drastic reduction of oil costs, the number of replacement of solenoid valves and hydraulic parts and personnel costs; there is no waste oil emission.



■ Lubricating oil (12,000 L) for the paper-making machine bearing SRC-8124-224V
[Lubricating oil for the dryer bearing/gear in the paper factory]

	Unit	Before filtration	After filtration
Kinematic viscosity (40°C)	mm ² /s	224.9	222.1
Moisture (KF Method)	ppm	3000	59
Total acid value	mgKOH/g	0.35	0.34
Contamination level (Mass Method)	mg/100ml	12.2	0.3

* Metallic abrasion powder collected in the tank was eliminated with time. There is no need to replace oil.
* There is no failure occurring. Personnel costs are reduced and waste oil emissions are eliminated.



"Miracle Boy" Installation/Operation

The followings are several installation/operation examples out of more than 2,000 cases:



Lubricating oil for the sheet offset press (SRC-411-12V)



Lubricating oil for the oil-free compressor (SRC-411-12V)



Refinery turbine lubricating oil (SRC-814-15V; explosion proof)



Turbine engine oil for the natural gas carrier (SRC-8112-70V)



Geothermal plant turbine oil (SRC-8110-162V/-816-22V)



Paper machine lubricating hydraulic oil (SRC-816-22V)



Lubricating oil for the auto parts manufacturing process (SRC-814-15V)



Lubricating oil for the 75 kw screw compressor (SRC-813-C)



Lubricating oil for the 150 kw screw compressor (SRC-814-C)