

Donaldson[®]
Facet[™]

TURBO-TOC[™]

TURBINE OIL CONDITIONING
SYSTEMS



Advancing Filtration for a Cleaner World

A close-up photograph of industrial machinery, likely a turbine or compressor, featuring a series of dark, curved blades. A semi-transparent blue overlay covers the upper left portion of the image, containing white text. The background is a blurred continuation of the machinery.

With over 80 years of experience, Facet is a trusted global leader in delivering high-quality filtration solutions.

We specialize in protecting mission-critical fluids, safeguarding the integrity of vital processes across diverse sectors.

Guided by a commitment to quality, reliability, and customer satisfaction, we provide innovative solutions tailored to meet unique industry needs. Our mission is to help you reduce downtime, extend equipment life, and meet environmental goals through reliable and efficient filtration.

Our products are engineered to deliver superior performance, durability, and compliance with the most stringent industry standards, ensuring operational excellence and long-term value for our clients. We prioritize exceptional service, lead times, and a customer-focused approach that promotes collaboration and drives results. This enables us to exceed expectations at every stage.

At Facet, we don't just provide filtration systems—we build lasting partnerships. With our expertise and unwavering reliability, we deliver solutions our clients can trust.

TURBO-TOC™

The most efficient conditioning system in the market for water removal, TURBO-TOC™ removes 100% of damaging water from turbine oil and reduces Total Water Content to 100 ppm (0 ppm free, 0 ppm emulsified, 100 ppm dissolved).

TURBO-TOC™ systems deliver 99% removal of free and emulsified water in a single pass, reducing total water content to below 100 ppm. Designed for continuous-duty operation, units provide variable flow rates—up to 125 gpm—enabling multiple reservoir turnovers per day depending on system size and oil temperature.

This high-frequency circulation supports rapid decontamination, especially after seal failures or water ingress events. TURBO-TOC™ units consistently achieve ISO 15/13/11 cleanliness levels and restore turbine oil to “clear and bright” condition, minimizing the risk of varnish formation, bearing wear, and unplanned outages.



LONGER TURBINE LIFE

TURBO-TOC™ continuously removes harmful contaminants, keeping your oil system flushed and increasing reliability.



REDUCED BEARING FAILURE

When both water and particulate are brought down to acceptable levels, bearing failures are eliminated.



FEWER FORCED OUTAGES

A continuous flow filtration system efficiently removes contamination, preventing forced outages.



LESS-COSTLY TURBINE REBUILDS

Clean turbine oil increases turbine dependability and helps reduce repair costs directly associated with contaminated oil.

THE ULTIMATE PLUG-AND-PLAY SOLUTION: EASY TO USE, EASY TO MAINTAIN, READY TO PERFORM

The TURBO-TOC™ system stands out for both its exceptional performance and user-friendly design. Delivered as a pre-engineered, ready-to-use solution, it requires no customer adjustments—simply install and operate.

All KL10, KL30, KL60, and KL100 TURBO-TOC™ units feature advanced control panels equipped with PLC controllers, allowing seamless integration with existing monitoring systems and enabling remote operation. Minimal training is needed, making operation intuitive and maintenance straightforward.

With its easy-to-use, low-maintenance design, the TURBO-TOC™ system delivers more than just filtration—it ensures optimal oil cleanliness and reliable protection for your critical machinery.

STATIONARY SYSTEMS



The TURBO-TOC™ KL Series is engineered for continuous, high-flow oil conditioning in large turbine lube oil reservoirs, supporting volumes up to 24,000 gallons. With multi-stage coalescing technology, particulate control, and water removal, KL systems are optimized for permanent installation in steam turbine-driven power facilities where uptime, oil cleanliness, and system reliability are critical.

PORTABLE CARTS



The TURBO-TOC™ KLP Series provides the same fluid cleanliness performance as the KL line in a compact, mobile platform designed for systems up to 1,800 gallons. Ideal for service teams or facilities with multiple smaller reservoirs, KLP units deliver ISO-compliant particulate and water removal with field flexibility, making them a strategic solution for planned maintenance, commissioning, or rotating equipment support.

STATIONARY SYSTEMS

TURBO-TOC™ KL SPECIFICATIONS



Specifications

Performance	ISO Cleanliness 15/13/11 Total water: <100 ppm
Fluid Compatibility	Mineral-based Turbine Oil
Maximum Viscosity	ISO 68
Design Pressure	150 psi / 10.3 Bar
Materials of Construction	Carbon Steel, Bronze, Stainless Steel, Buna-N
Coating	Exterior: C4 Classification Paint (ISO 12944) Interior: Epoxy
Vessel Design	ASME Sec. VIII, Div. I
Voltage	460 VAC / 60 Hz / 3 PH
Controls	NEMA 4 Control Panel with PLC and Touch Screen Interface
Water Drain	Automatic
Water Level Detection	Visual Sight Glass

	KL10S2	KL30S2	KL60S2	KL100S2
Flow Rate	10 gpm (38 lpm)	10-30 gpm (30-113 lpm)	20-60 gpm (76-227 lpm)	20-100 gpm (76-378 lpm)
Reservoir Size	1801-2400 gallons (6801-9080 liters)	4801-7200 gallons (18201 - 27260 liters)	7201 - 14400 gallons (27261 - 54510 liters)	14401 - 24000 gallons (54511 - 90850 liters)
Approximate Dimensions (LxWxH)	48" x 46" x 82" (1219 x 1168 x 2083 mm)	55" x 54" x 94" (1397 x 1372 x 2388 mm)	69" x 65" x 92" (1753 x 1651 x 2337 mm)	91" x 88" x 102" (2311 x 2235 x 2591 mm)
Approximate Dry Weight	1700 lbs (771 kg)	2750 lbs (1247 kg)	4600 lbs (2087 kg)	5040 lbs (2286 kg)
Approximate Full Weight	2050 lbs (930 kg)	3500 lbs (1588 kg)	6000 lbs (2722 kg)	7016 lbs (3182 kg)
Inlet Connection	1 ½" (DN 40) RF Flange	2" (DN 50) RF Flange	2" (DN 50) RF Flange	3" (DN 80) RF Flange
Outlet Connection	1 ½" (DN 40) RF Flange	1 ½" (DN 40) RF Flange	1 ½" (DN 40) RF Flange	2" (DN 50) RF Flange
Pump Motor Rating	1.5 HP / 1.1 kW	5 HP / 3.7 kW	7.5 HP / 5.6 kW	15 HP / 11.2 kW
Oil Heater Rating	7.5 kW	22.5 kW	45 kW	75 kW

Elements		KL10S2	KL30S2	KL60S2	KL100S2
Prefilter	PN	K1100	K1100	K1100	K1100
	Qty	1	1	1	3
Coalescer	PN	K2100	K2100	K2100	K2100
	Qty	2	5	8	10
Separator	PN	K3100	K3100	K3100	K3100
	Qty	1	3	4	9

PORTABLE CARTS

TURBO-TOC™ KLP SPECIFICATIONS



Specifications

Performance	ISO Cleanliness 15/13/11 Total water: <100 ppm
Fluid Compatibility	Mineral-based Turbine Oil
Maximum Viscosity	ISO 68
Materials of Construction	Carbon Steel, Bronze, Stainless Steel, Buna-N
Coating	Exterior: C4 Classification Paint (ISO 12944) Interior: Epoxy
Water Level Detection	Visual Sight Glass
Controls	NEMA 4 Control Panel with PLC and Touch Screen Interface

	KLP-3	KLP-5	KLP-20
Flow Rate	3 gpm (11 lpm)	6 gpm (23 lpm)	20 gpm (76 lpm)
Reservoir Size	≤ 720 gallons (≤ 2725 liters)	721 - 1800 gallons (2726 - 6800 liters)	2401 - 4800 gallons (9081 - 18200 liters)
Design Pressure	100 psi (6.9 Bar)	100 psi (6.9 Bar)	150 psi (10.3 Bar)
Approximate Dimensions (LxWxH)	38" x 26" x 44" (965 x 660 x 1118 mm)	48" x 30" x 44" (1219 x 762 x 1118 mm)	71" x 44" x 87" (1803 x 1118 x 2210 mm)
Approximate Dry Weight	400 lbs (181 kg)	500 lbs (227 kg)	2050 lbs (930 kg)
Approximate Full Weight	500 lbs (227 kg)	600 lbs (272 kg)	2550 lbs (1157 kg)
Vessel Design	ASME Sec. VIII, Div. I (Non-Stamped)	ASME Sec. VIII, Div. I (Non-Stamped)	ASME Sec. VIII, Div. I (U-Stamped)
Inlet Connection	¾" NPT	¾" NPT	2" (DN 50) RF Flange
Outlet Connection	½" NPT	½" NPT	1 ½" (DN 40) RF Flange
Water Drain	Manual	Automatic	Automatic
Voltage	120 VAC / 60 Hz / 1 PH	460 VAC / 60 Hz / 3 PH	460 VAC / 60 Hz / 3 PH
Pump Motor Rating	0.5 HP / 0.37 kW	0.75 HP / 0.56 kW	3 HP / 2.2 kW
Oil Heater Rating	N/A	2.5 kW	15 kW

Elements		KLP-3	KLP-5	KLP-20
Prefilter	PN	KMP9600AKF8B	KMP9600AKF8B	K1100
	Qty	1	1	1
Coalescer	PN	C220270	C220270	K2100
	Qty	2	2	2
Separator	PN	C220271	C220271	K3100
	Qty	1	1	1

TURBO-TOC™ ELEMENTS

TURBO-TOC™ Turbine Oil Conditioning Elements are designed exclusively for TURBO-TOC™ systems, delivering exceptionally clean and dry turbine oil. Facet's integrated filtration, coalescer, and separator elements provide superior particle and water removal.

TURBO-TOC™ Particulate Elements

TURBO-TOC™ particulate filters are engineered to remove fine solid contaminants from turbine oil systems with high efficiency. They support aggressive ISO Cleanliness Code targets and protect sensitive bearing surfaces, enabling extended oil service intervals and reducing unplanned maintenance.

The portable TURBO-TOC™ system utilizes the same proven filter media as fixed units in a more compact footprint. These filters maintain system cleanliness, support reliable turbine performance, and extend oil life during both runtime and maintenance events, all while offering the flexibility of mobile deployment.



TURBO-TOC™ Coalescer and Separator Elements

The coalescer and separator elements in the TURBO-TOC™ system work together to remove free and emulsified water from turbine oil without chemicals or heat. The coalescer aggregates dispersed water into large droplets, while the separator blocks re-entry into the system —keeping oil dry, equipment protected, and startups reliable.

Specifications

Fluid Compatibility	Mineral-based Turbine Oil
Maximum Viscosity	ISO 68
Operating Temperature Range	32 - 200 °F (0 - 93 °C)

Elements for Portable Systems

	KMP9600AKF8V	C220270	C220271
Element Type	Particulate	Coalescer	Separator
Performance	ISO Cleanliness 15/13/11 βx = 1000 @ 4.2μ	ISO Cleanliness 15/13/11 βx = 1000 @ 5.1μ	-
Terminal Pressure Drop	25 psid (1.7 bar)	15 psid (1.0 bar)	15 psid (1.0 bar)
Nominal Dimensions (D x L)	3" x 8" (76 x 203 mm)	4" x 16" (102 x 406 mm)	4" x 12" (102 x 305 mm)
Approximate Weight	13 lbs (5.89 kg)	3 lbs (1.36 kg)	2 lbs (0.91 kg)

Elements for Stationary Systems

	K1100	K4100	K2100	K3100
Element Type	Particulate	Particulate	Coalescer	Separator
Performance	βx = 1000 @ 4.2μ	βx = 1000 @ 7.1μ	βx = 1000 @ 1μ	-
Terminal Pressure Drop	25 psid (1.7 bar)	25 psid (1.7 bar)	15 psid (1.0 bar)	15 psid (1.0 bar)
Nominal Dimensions (D x L)	6" x 36" (152 x 914 mm)	6" x 36" (152 x 914 mm)	6" x 44" (152 x 1118 mm)	6" x 28" (152 x 711 mm)
Approximate Weight	13 lbs (5.89 kg)	13 lbs (5.89 kg)	9 lbs (4.08 kg)	8 lbs (3.63 kg)



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DONALDSON COMPANY, INC.

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