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FILTERMAG[®]

INDUSTRIAL PRODUCTS DIVISION

Aggregate Processing Equipment Case Studies



Loader 8-Cylinder Diesel Engine

- \$48,000 Savings Expected per Loader
- 70% Average Reduction in Particles with FilterMag



Haul Truck 8-Cylinder Diesel Engine

- \$36,000 Savings Expected per Loader
- 73% Average Reduction in Particles with FilterMag

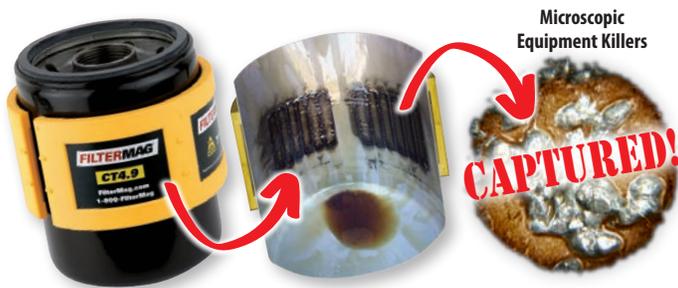


Hydraulic Power Unit

- \$3.5 Million Saved in Repair and Downtime
- 90% Average Reduction in Particles with FilterMag

Reduce Wear • Mitigate Damage • Increase Reliability • Extend Equipment Life

FilterMag extracts normal, wear causing, steel particles from your oil with its powerful, focused, magnetic field technology.



FILTERMAG[®] **RESULTS**
Outside... **Inside**

- ✓ **Reduce Wear**
- ✓ **Mitigate Damage**
- ✓ **Increase Reliability**
- ✓ **Extend Equipment Life**

FilterMag captures particles that would normally pass right through your standard oil filter. These equipment killing particles are captured and held by our powerful, focused magnetic field.

Measurably increase your productivity.

Enhanced reliability yields more hours of equipment operation. Grab these hours by reducing particulate contamination in engine oil, hydraulics, gearboxes, and rotating equipment. Cleaner fluids mean higher reliability.

Measurably lower your operating costs.

Your cost per hour of operation goes down as equipment life is extended. 30 to 60% increases are common. Equipment life extension is calculated by improvements in oil cleanliness. Third party data (30 years of equipment life enhancement studies) provide straight-forward projections based on reality.

FilterMag is safe, simple, and easy to install.

FilterMag is completely noninvasive and has no moving parts. No need to change plumbing or filters. Just Snap a CT on your current spin-on filter, slide it off, and re-use it on your new filter

What does a day of downtime cost you?

Case Study: 7-ft. Rock Crusher

- \$41,400 Saved on each crusher
- 98% Reduction in particles $\geq 6\mu\text{m}$
- 50% Increase in system life

Test Results Summary

	Without FilterMag	With Filtermag	Reduction
ISO 4406 Rating	25/22/16	20/18/13	
> 4 micron	912,192	26,666	97%
> 6 micron	139,356	3,264	98%
> 14 micron	341	98	71%



Case Study: 8-Cylinder Diesel Haul Truck Engine

- \$36,000 savings expected per haul truck
- 73% reduction of particles $\geq 6\mu\text{m}$
- 60% engine life extension expected



Test Results Summary

	Before FilterMag	After FilterMag	Reduction
Code ISO 4406 Rating	19/18/15	17/16/14	
>4 Micron (particles/ml)	3300	898	73%
>6 Micron (particles/ml)	1797	489	73%
>14 Micron (particles/ml)	305	83	73%

Case Study: 8-Cylinder Diesel Loader Engine

- \$48,000 savings expected per haul truck
- 70% average reduction of particles $\geq 6\mu\text{m}$
- 60% engine life extension expected



Test Results Summary

Equipment	Before FilterMag	After FilterMag	Projected
ISO Code levels	>6 μm / $>14\mu\text{m}$	>6 μm / $>14\mu\text{m}$	Life Extension
980G Loader	18/15	16/12	60%
988H Loader	24/21	18/15	60+%



8.4 million particles captured and held by FilterMag. Most are small enough to pass through an engine oil filter.

Case Study: Hydraulic Power Unit used in Copper Mining

- \$3.5 millions saved in repair and downtime
- 90% reduction of particles with FilterMag
- 70% increase in hydraulic system life

Test Results Summary

Equipment	Before FilterMag	After FilterMag	Projected
ISO Code levels	>6 μm / $>14\mu\text{m}$	>6 μm / $>14\mu\text{m}$	Life Extension
Stacker No. 1	18/14	15/11	70%



FilterMag Industrial Products

Spin-on Filters USE **CT**



Applications:

- Gas & Diesel Engines • Rotating Equipment
- Hydraulic Systems • Diesel Fuel Filtration
- For most spin-on filter applications

Order part # based on oil filter diameter

Pairs		Fits Spin-on Filter Diameters		Dimensions			
Part #	Qty.	Minimum	Maximum*	Height	Thickness	Arc (Max)	Weight
CT3.2PR	2-ea.	2.9 in (74 mm)	3.5 in (89 mm)	2.65 in (67 mm)	.34 in (8.6 mm)	360°	18 oz (.52 kg)
CT3.8PR	2-ea.	3.6 in (91 mm)	4.4 in (112 mm)	2.65 in (67 mm)	.35 in (8.9 mm)	360°	28 oz (.80 kg)
CT4.9PR	2-ea.	4.5 in (114 mm)	5.5 in (140 mm)	2.95 in (75 mm)	.36 in (9.1 mm)	360°	38 oz (1.08 kg)

Cartridge Filters USE **XT**



Applications:

- Rotating Equipment • Hydraulic Systems
- Gas & Diesel Engines • For most cartridge filters

Order part # based on outside diameter of filter housing

Pairs		Fits Outside Housing Diameters		Dimensions			
Part#	Qty.	Minimum	Maximum*	Height: Faceplate/Endcap	Thickness: Faceplate/Endcap	Arc (Max)	Weight
XT4PR	2-ea.	3.8 in (96 mm)	4.8 in (122 mm)	2.7" (68mm)/3.24" (82mm)	.9"(23mm)/1.4" (36mm)	330°	7.0 lb (3.2 kg)
XT5PR	2-ea.	4.8 in (122 mm)	5.8 in (147 mm)	2.7" (68mm)/3.24" (82mm)	.9"(23mm)/1.4" (36mm)	340°	9.0 lb (4.1 kg)
XT6PR	2-ea.	5.8 in (147 mm)	6.8 in (173 mm)	2.7" (68mm)/3.24" (82mm)	.9"(23mm)/1.4" (36mm)	344°	11.0 lb (5.0 kg)
XT7PR	2-ea.	6.8 in (173 mm)	7.8 in (198 mm)	2.7" (68mm)/3.24" (82mm)	.9"(23mm)/1.4" (36mm)	348°	13.0 lb (5.9 kg)
XT8PR	2-ea.	7.8 in (198 mm)	8.8 in (224 mm)	2.7" (68mm)/3.24" (82mm)	.9"(23mm)/1.4" (36mm)	350°	15.0 lb. (6.8 kg)

Operating Temperature Range: -40F to +302F (-40C to +150C) • Magnet Type: N42SH (High Temperature Nd-Fe-B alloy) with Ni-Cu-Ni plating*Maximum size may be significantly less on Aluminum and Plastic Housings.

Easy Installation: SNAP ON, SLIDE OFF, REUSE



1. Install two or more FilterMags on each spin-on filter opposite each other near the threaded end.
2. Reuse FilterMags by sliding them off the old filter and snapping them on a new one when the filter is changed.

FILTERMAG[®]

INDUSTRIAL PRODUCTS DIVISION

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