Circular use of oil

SKF RecondOil

RecondOil®


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This catalogue shows a selection of DST compatible, high-performing synthetic SKF oils. The oils are highly customizable and can be tailor made for specific applications or industries.

The industrial oil challenge

One of the main causes of premature equipment failure is lubricant contamination. In fact, up to 40% of maintenance costs are lubricant related, making proper lubrication management vital for profitability. And the lubricants themselves come at a high cost - not only in monetary terms but above all for the environment.

To meet global demand, large amounts of crude oil need to be extracted. And once extracted, the crude oil needs to be shipped, refined, shipped again and then modified to fit its purpose – before even reaching distributors and end users.

What's more, when it reaches the end of its intended life, the oil needs to be disposed of. Today, only a small part of it is recycled, often into base oil that is stripped of the additives from the original modification process. The recycled base oil then, again, needs to be transported, re-modified and redistributed. In most cases, however, it is burnt as fuel.

In every step along its supply chain and life cycle, industrial oil causes environmental impact and creates CO_2 emissions – be it from the machinery involved in the extraction process, the engines burning gasoline while the oil is being shipped from place to place, or the burning of used oil.

What if you could use the same oil again and again?

Today's linear use of industrial oil - where oil is used until it degrades, then gets discarded and replaced with new oil - is extremely unsustainable and inefficient. But an oil's lifetime is limited by degradation. And since viable methods to remove the causes of degradation have not been available, a linear use of oil has been the norm.

Different solutions for removing contaminants from industrial oil have been around for quite some time. However, getting rid of particles smaller than a micron has been nearly impossible with conventional methods. Over time, these miniscule particles accumulate and act as catalysts for oxidation, which causes the oil to degrade.

Conventional filters that can remove submicron particles also risk stripping the oil of the additives that give the oil specific properties and functionality. Eventually, the oil has lost its functionality and has to be replaced to not damage the application or the process.

But what if you could reuse all your industrial oil? Again, and again, without losing any of its original qualities.

Complete recovery and reuse of oil

With SKF RecondOil, a circular recovery and reuse of industrial lubrication oil is possible. We can help you cut lubrication costs, and at the same time reduce environmental impact and CO_2 emissions.

Our Double Separation Technology (DST) can capture and separate particles and other impurities down to nano-size from the oil. By removing the nano particles – and all other particles as well for that matter – we maintain the oil's original properties and prevent it from aging.

And in contrast to conventional filtering technologies, DST allows continuous regeneration of the same lubrication oil – without stripping it of the additives that provide the characteristics that your machines and production processes require.

In fact, with DST, we can purify the oil to higher levels of cleanliness than completely new oil. As a result, in some processes, the DST treated, ultra-clean oil provides higher performance than new, off-the-shelf virgin oil. In other words – the output of a production process could be higher and more stable.

DST enables completely circular recovery and reuse of industrial oils – with all original properties retained. And by regenerating the same oil – over and over again – an uncompromised circular use is created.

DST – a proven technology

DST is a patented technology, with roots in biochemistry. In contrast to conventional filter technologies, DST is an advanced process, involving chemistry, process know-how and mechanical separation. It's the only industrialized solution available today that can remove nano particles out of industrial oil.

The DST process takes place in a system that is either integrated into an applications existing oil circulation system, or in stand-alone units.

The systems are scalable, and their size depends on the volume of oil treated, level of contamination, and required throughput; we can adapt the technology to the system at hand.

The technology has been extensively tested, in real operating conditions During testing, we have been able to achieve particulate matter reduction of very small particles (less than <0 2 micron).

SKF high-performance synthetic oil

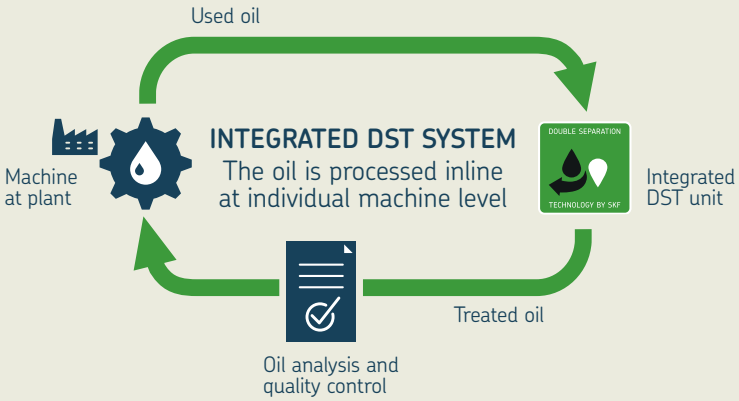
By combining our patented Double Separation Technology (DST) with SKF high-performance synthetic oil, we can extend the lifespan of the oil almost endlessly.

SKF oils are designed for machine performance, regeneration and circular use. They are made with top-quality, long lasting base oil, which we combine with customized additives formulated by our team of oil experts. We can also tailor make new formulas to solve specific problems in your production process.

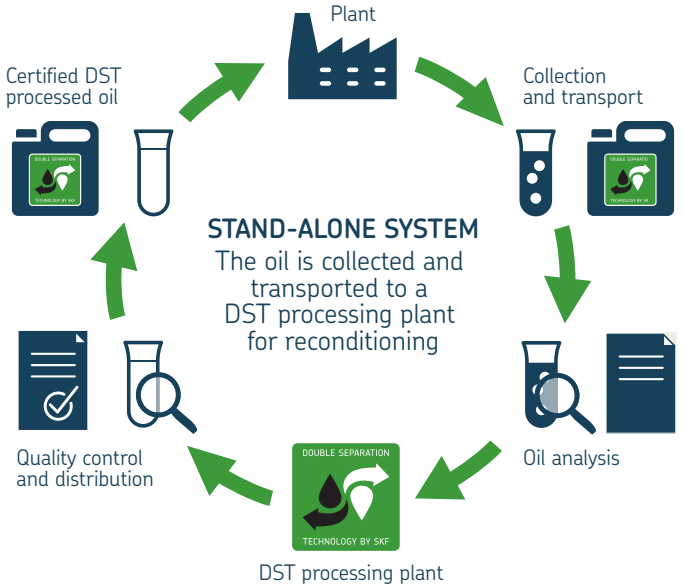
There are two main approaches to DST oil regeneration:

Integrated DST system

With an integrated DST system*, the oil is regenerated in line with your machine's existing lubrication system. The DST system performs a kidney function to keep the oil in circulation continuously clean. This means super-clean oil can be circulated again and again, enabling constant top performance and top final product quality - with no oil changes or disposal of used oil required.



Stand-alone DST system



A single Stand-alone DST system* can be used to regenerate a variety of different oils.

Once the oil in your machine has reached the highest acceptable point of degradation and contamination it can be transported to the Stand-alone DST system for regeneration. In the meantime, your machine is refilled with a new batch of oil.

The collected oil is regenerated: all contaminants are removed, additives are adjusted, and the oil quality is checked and approved for reuse. In this way, we create a completely sustainable, circular loop of industrial oil, while significantly improving performance and product quality.

* In Sweden and Mexico the DST systems are currently offered through exclusive licenses and not SKF RecondOil directly.

DST Gear S

Synthetic gear oil for demanding conditions

Description

DST Gear S is our synthetic industrial gear oil range, developed to provide best possible performance together with Double Separation Technology (DST). DST Gear S provides top performance, extends oil drain intervals and minimizes environmental impact.

The products are based on synthetic base oils, enhanced with carefully selected additives to obtain the following properties:

- Fully adapted to the DST process
- Excellent lubrication
- High viscosity index with excellent high- and low-temperature properties
- Very good resistance towards high pressure and shock loads
- High resistance towards micro-pitting
- Excellent corrosion protection and oxidation stability
- Long service life

Application

This synthetic oil is very suitable for the lubrication of heavily loaded mechanical gearboxes and bearings with a high thermal load. In comparison with mineral oils, synthetic oils substantially extend oil drain intervals.

When combined with the DST treatment, the oil can be used repeatedly with minimal environmental impact and heavily reduced CO_2 emissions.

This oil is compatible with all seal materials and paints normally specified for use with mineral oils. No special changeover procedure is necessary.

Performance Level	DIN 51517-3 CLP AIST 224 AGMA 9005-F16 David Brown S1.53.106 ISO 12925-1 Type CKD

DST Gear S

Name	Method	Unit	S68	S150	S220	S320
ISO viscosity grade	–	–	68	150	220	320
Density at 15 °C	ASTM D4052	kg/m^3	851	853	856	856
Kinematic viscosity at 40 °C	ASTM D445	mm^2/s	69	155	217	324
Kinematic viscosity at 100 °C	ASTM D445	mm^2/s	10.95	19.9	25.9	40.1
Viscosity index	ASTM D2270	–	151	148	152	177
Pour point	ASTM D97	°C	–60	–54	–51	–48
Flash point – open cup method	ASTM D92	°C	242	250	258	262
Foam sequence – tendency / stability	ASTM D892	ml/ml	10/0 30/0 0/0	0/0 0/0 20/0	0/0 0/0 10/0	10/0 30/0 0/0
Water separation at 82 °C	ASTM D1401	minute	N/A	15	15	25
Water separation at 54 °C	ASTM D1401	minute	15	N/A	N/A	N/A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DST Hydraulic S

High quality synthetic hydraulic oil

Description

DST Hydraulic S is our synthetic, zinc-free hydraulic oil range, developed to provide best possible performance with Double Separation Technology (DST). DST Hydraulic S provides top performance, extends oil drain intervals and minimizes environmental impact.

The products are based on synthetic base oils enhanced with carefully selected additives to obtain the following properties:

- Fully adapted to the DST process
- Very good lubrication with minimal wear
- Excellent corrosion protection and oxidation stability
- Very good demulsification properties
- Fast air release and low foaming properties
- Good rinsing properties
- High viscosity index with excellent high- and low-temperature properties

Application

DST Hydraulic S can be used for heavy-duty hydraulic equipment, as well as for light-duty gearboxes and bearings. The product can also be used for lubrication systems, general lubrication, and vacuum pumps. In comparison with mineral oils, synthetic oils substantially extend oil drain intervals.

When combined with the DST treatment, the oil can be used repeatedly with minimal environmental impact and heavily reduced CO_2 emissions.

Performance Level	AFNOR NF E 48-603 HM AIST (US Steel) 126/127/136 Cincinnati Machine P-68 (ISO VG 32), P-70 (ISO VG 46) Denison HF-0/HF-1/HF-2 DIN 51524-2 HLP Eaton (Vickers) M-2950-S SEB 181 222 SS 155434

DST Hydraulic S

Name	Method	Unit	Hydraulic S22	Hydraulic S32	Hydraulic S46	Hydraulic S68
ISO viscosity grade	–	–	22	32	46	68
Density at 15 °C	ASTM D4052	kg/m^3	840	844	848	857
Kinematic viscosity at 40 °C	ASTM D445	mm^2/s	22.77	31.7	44.9	66.04
Kinematic viscosity at 100 °C	ASTM D445	mm^2/s	4.72	5.89	7.44	9.52
Viscosity index	ASTM D2270	–	129	132	130	124
Pour point	ASTM D97	°C	–45	–42	–39	–33
Flash point – open cup method	ASTM D92	°C	215	236	255	257
Foam sequence – tendency / stability	ASTM D892	ml/ml	10/0 30/0 0/0	0/0 10/0 0/0	0/0 0/0 10/0	10/0 30/0 0/0
Water separation at 54 °C	ASTM D1401	minute	10	10	10	5

DST Cut S

High performance synthetic cutting oil

Description

DST Cut S is our synthetic cutting oil range developed to provide best possible performance with Double Separation Technology (DST).

The products are optimized to be fully compatible with the DST process, minimizing environmental impact.

DST Cut S oils are based on synthetic base oils enhanced with carefully selected additives to obtain the following properties:

- Fully adapted to the DST process
- Very good lubrication
- Excellent surface finish
- Low wear
- Easy filtrated with good rinsing properties
- Low mist formation
- Does not discolour Copper

Application

DST Cut S is recommended for all chip forming operations in iron, steel, aluminium, and yellow metals. The synthetic base oils in combination with the carefully selected additives provide extremely good lubrication, resulting in minimal wear and extended tool life. When combined with the DST treatment, the oil can be used repeatedly with minimal environmental impact and heavily reduced CO_2 emissions.

DST Cut S

Name	Method	Unit	DST Cut 13	DST Cut 23
ISO viscosity grade	–	–	13	23
Density at 15 °C	ASTM D4052	kg/m^3	851	863
Kinematic viscosity at 40 °C	ASTM D445	mm^2/s	13.2	23.4
Kinematic viscosity at 100 °C	ASTM D445	mm^2/s	3.32	4.78
Viscosity index	ASTM D2270	–	126	127
Flash point – open cup method	ASTM D92	°C	180	190

Packing specifications

IBC = Intermediate Bulk Container

Volume	**Dimensions** (∓ 5 mm)	**Weight, Empty** (∓ 10 kg)	**Pallet**	**UN-Approved**
l	mm	kg		D/BAM
1 000	1 200 × 1 000 × 1 173	55	Wooden pallet, heat-treated	11 027/31HA

Metal Drum

Volume	**Dimensions** Diameter	Height	**Weight, empty** (∓ 10 kg)	**UN-Approved**	**Certificate**
l	mm	mm	kg		
208	585	884	15	UN/1H1/Y/200	ETI-93001

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PUB SR/P1 18844/2 EN · May 2022

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