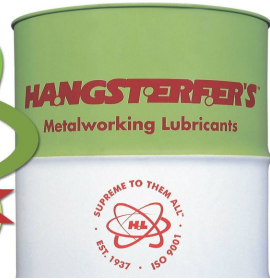


HANGSTERFER'S®

Metalworking Lubricants



- 1937 -



S500CF coolant could perhaps be regarded as Hangsterfer's first world wide product.

Despite being formulated many years ago, S500CF still meets all of today's standards for operator safety. In fact even under the latest stringent Global Harmonisation System for labelling and packaging, S500CF, unlike many of it's competitors, does not require any hazard warning label, no irritant symbol, no exploding body

- 1980s -



5080 New Technology Coolant

For your most difficult machining operations & the most difficult materials on Machining & Turning Centres & VIPER grinding. In controlled machining trials on an aerospace titanium alloy component 5080 gave a tool life increase of 30% compared with the best coolant the rest had to offer. Like S500CF no hazard warning label required.

S500CF and 5080 have full Rolls Royce and Boeing approval

- 2017 -



MacInnes

Metal Working Fluids



MacInnes Tooling Ltd
Adelaide Street, Helensburgh, G84 7DL
Tel. 01436 676913
sales@macinnes.co.uk — www.macinnes.co.uk

Why buy Hangsterfer's?

Coolant, who need it?, For some it is the bane of their life, for others a necessary evil, but for those in the know. Those who have discovered Hangsterfer's coolant it is an integral part of their manufacturing process. The part that makes the metal behave, the part that makes the tool work efficiently, the part that lubricates the machine, the part that does not affect the operator in a negative way.

So why don't you like it? Is it because it peels the paint from your new machine, maybe the operators skin is in a dreadful state, perhaps the tool life is poor or the coolant simply does not last and stinks to high heaven. If so, time to try Hangsterfer's

For us selling Hangsterfer's, it can be difficult, most coolants look the same and logically therefore must be the same, a bit like the two mushrooms in the photos, look the same so must be the same, eat the one on the left, quite a mild taste, eat the one on the right and your doctor will become your best friend.



Agaricus macrosporus

Hangsterfer's Laboratories was started by Dr William Hangsterfer in 1937. After 82 years Hangsterfer's is still owned and operated by the same family. Not just board members but involvement in the running of the company, formulation and manufacture as well as sales and technical backup. By utilising only the best raw materials available at the time, his work in the early years safeguarded both his own health and the health of his customers. As the years moved on his philosophy continued, thereby safeguarding the health of his children and grandchildren, all of whom work in the facility – and of course his customers



Agaricus xanthodermus

When we started selling Hangsterfer's coolants in the 1970s they warned us of the potential health problems associated with Boric Acid, telling us they did not use it because it was a reproductive toxin. 35 years later ECHA finally caught up and classified it as such and yet it is still commonly used in coolants today. The same applies to Formaldehyde now classified as a potential human carcinogen. Not used by Hangsterfer's. Diethanolamine, (secondary amine, DEA) not a very friendly product when it comes to operator health but very common and again not used by Hangsterfer's. New regulations are forcing coolant manufacturers to label their products to tell you these hazardous ingredients are included in the coolant. Under these new stringent regulations Hangsterfer's do not require any warning labelling.

2

Air Operated Tramp Oil Separator

Tramp Oil

Slide way oil that has finished lubricating your machine slides and is now contaminating your coolant. Tramp oil is the largest single cause of coolant failure

Tramp Oil

Excellent source of food for bacteria

Potential cause of skin irritation

Leads to smoke and mists when recirculated to the cutting tool

Leads to poor component finish when recirculated to the cutting tool

Solution

Remove with a tramp oil separator. One of our compact systems rapidly removes the tramp oil as well as cleaning and aerating the coolant sump. This continuous aeration process makes it difficult for unwanted micro organisms to survive thereby further extending coolant life

Benefits

No more "Monday morning smell"

Extended coolant life, reduced waste coolant for disposal

Extended tool life - Better surface finish

Smoke and odours eliminated, clearer refractometer readings

Better operator environment, eliminates risk of skin irritation from tramp oil.

Easier to comply with the HSE's guidelines with regard to bacteria in sumps

Features

Excellent tramp oil separation by means of a patented system to give maximum efficiency in a compact package. No electric supply required.

Extremely reliable oversized air diaphragm pump, rated at 50 litres per min but only working at 4 litres per minute. 2 sizes available, smallest and largest shown here.





Belt skimmer B
Oil removal 3 litres per hour.
Belt 30mm x 500mm

Belt Skimmer C
Belt 60mm x 600mm.
Both fitted with a short magnetic mount. Other belts available.

All Skimmers are 230 volt through a supplied 24 volt transformer

MixtronMTBZ coolant mixing valve, water powered with twin mixing chambers for consistent, accurate mixing of coolant concentrate into the water.

Mix ratio adjustable from almost 0 to 10% making it ideal for both filling and topping up of new generation coolants.

Inlet and outlet connections, 3/4" BSP Complete with mounting plate for wall fixing. Mixes up to 2500L/Hour



Slideway oil

Hangsterfer's Waylube 2 is a 68 viscosity slide way oil that is rejected by Hangsterfer's coolants thereby forcing it to float where it can be removed by tramp oil removal devices. Highest quality lubrication for your machine.

MacLube 68D, our own brand which includes an additive to make it float on top of coolants for easier removal. Quite reasonably priced.



Low cost coolant mixing valve for 114/205/208 litre drums. Accurate and easy to use with a graduated hand wheel. Inbuilt check valves prevent back flow.



Excellent quality refractometer Every machine shop needs one. Available as 0-10 or 0-20

10

S500CF coolant, formulated decades ago and still ahead of the game in terms of operator safety with no hazard warning labelling required even under the latest stringent labelling regulations.

From aluminium to aerospace alloys, S500CF will serve you well

From the beginning,

No Boric Acid - No Formaldehyde – No Amines - No Chlorine

Non irritating, non sensitising, perfect for operators with existing skin problems

S500CF is classed as a Bioconcept coolant which means you do not have to carry out bacteria dipslide testing.

According to the HSE, "A characteristic of bioconcept fluids is that metalworking fluid systems will not have to be monitored for bacterial contamination by users nor will biocides need to be added"

For customers in the aerospace industry, approvals are usually required, **S500CF** is :

Rolls Royce approved

Boeing approved

Bombardier approved

Kawasaki Heavy Industries approved

As well as many others

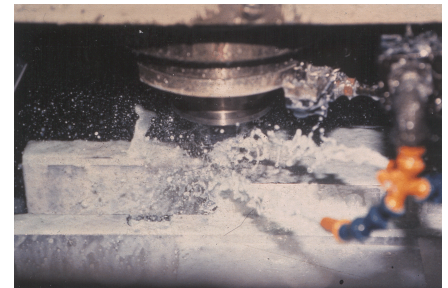
Additional coolants in the S500CF family

S555, very similar to the S500CF but with the addition of an inhibitor to protect yellow metals and aerospace aluminium alloys from staining.

Also the first choice for hard water areas

S388, a budget version of the S500CF, scent and dye free to reduce cost.

All the S500CF safety features still apply to these 2 versions.



Hangsterfer's New Technology Metal Working Coolants

5040

A coolant designed for the wide range of materials found in a general machine shop, from Aluminium through Steels to Stainless, 5040 will serve you well.

5040 is very low foaming and can be filtered below 5 micron without additive deletion.

5080

A high performance version of the 5040, designed for your most difficult operations on the most difficult materials such as aerospace alloys.

In controlled machining trials on an aerospace alloy component, 5080 gave a tool life increase of 30% compared with the customer's existing aerospace approved coolant.

5080 has both Rolls Royce and Boeing approval

5070

This is the very latest in vegetable based technology from Hangsterfer's and essentially a version of the 5080 but without the mineral oil which helps to reduce the droplet size making the potential for 5070 to be the first choice for VIPER grinding. Interestingly, in cutting trials, the hydrocarbon free formula of 5070 was found to be better on Titanium alloys than the 5080.

5090

This is an even higher performance version of the 5070/5080 series aimed squarely at Aerospace Nickel and Titanium Alloys. The performance on these difficult materials is simply outstanding.

When used on conventional alloys customers have reported doubling of tool life

5090 uses the latest environmentally sustainable vegetable oil chemistry. It is bio hard and does not promote bacteria or fungus.



5080 photo by courtesy of Makino USA

4

Machine Cleaning & Maintenance Guide

Water based coolants used in the majority of machine tools today are constantly being contaminated by slide way oils, tapping fluids, metal fines and cuttings, cutting tool particles, hard water soaps and organic life forms such as bacteria and fungus.

As the heavier particles sink to the bottom they take with them oil residues and other material which combine to form a perfect home and food source at the bottom of the sump for undesirable bacteria to flourish.

Left to accumulate these bacteria will, in time, not only destroy the coolant but make the machine environment a very unpleasant place for the operator.

In addition many other problems such as skin irritation and rusting of machine and components can develop.

A regular maintenance programme can reduce problems to a minimum while increasing coolant life to a maximum.

Removing tramp oil is the simplest way to increase coolant life

Efficient cleaning is the key. Before filling a machine with fresh coolant it should be clean, otherwise the fresh product will deteriorate and turn rancid.

We have two cleaning options

Interim clean, perhaps between fluid changes. Add our System Cleaner to the existing coolant in the sump at a ratio of 1.5% to 2% of the coolant already in the sump. Use the machine for 24 hours Drain the coolant and recharge with fresh coolant. Using this method the accumulated muck in the sump is neither removed or disturbed. If you feel the machine is badly contaminated the procedure with the Clean All should be used.

Thorough cleanout and sterilisation

This can be a long drawn out procedure but with the new Hangsterfer's Clean All the time is reduced to the absolute minimum. Clean All will destroy all of the organic life forms in the sump. In addition it will dissolve and remove all types of residue.

Drain the coolant from the machine and shovel out accumulated muck from the sump and wipe out. Fill the sump with water to a sufficient level to pump around the machine and add Clean All at 5% to 10% of the amount of water. Re-circulate this around the machine for about 30 minutes. While this is going on, use diluted Clean All in a spray and wipe down parts of the machine the normal coolant hoses don't reach. Drain the sump. Fill the sump with fresh water to which you have added a small amount of coolant concentrate. Circulate this around the machine making sure all the surfaces cleaned with the Clean All are rinsed.

Drain the sump and re-charge with fresh coolant at the desired strength

9

MacCool BF water mix coolant concentrate

For customers on a tight budget we offer MacCool BF. It is free from Boric acid and Formaldehyde release biocide but like most lower cost coolants it is not warning label free.

Nevertheless it designed for the machining of tough ferrous and non ferrous alloys. A unique lubricity additive combination gives excellent machining performance without the use of chlorinated additives.

This is an extremely robust coolant and will give extended life even under difficult service conditions.

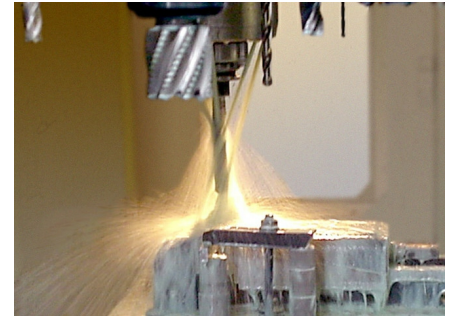
Recommended dilution ratios

- Turning, milling and drilling 5% to 7%
- Tapping and threading 6% to 8%
- Reaming and deep hole drilling 8% to 10%

Two versions are available:

MacCool BFAL, an extremely low foaming version suitable for soft water, through spindle coolant and high pressure coolant systems.

MacCool BFHW, designed for hard water areas.



6

Tapping Oils

525 Space Age Cutting Oil

525 is a heavy duty, high viscosity compound designed for tapping, broaching, stamping, fine blanking and forming of stainless steels, nickel alloys and titanium.

It also gives excellent results on high strength steels.
In it's role as a tapping fluid it is quite outstanding.

With a viscosity of 210 cSt it clings to the tap and being non hazardous and sulphur free, is very operator friendly.

525 is available as follows:

Box containing 5 off 500ml bottles with nozzles

3.8 litre "refill" container and a 19 litre Pail.

525 has full Rolls Royce approval

A small sample bottle is available FOC for you to try it for yourself.



500ml bottles with nozzles



100ml sample bottle

Easytap

For your most difficult tapping job.

Dramatically reduces tapping torque in difficult to machine alloys.

Eliminates torn threads.

1900 viscosity, apply by brush to tap and drilled hole.

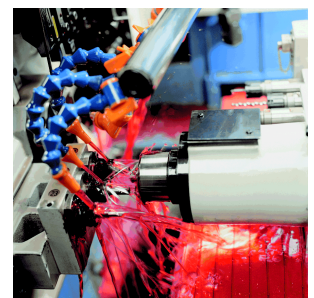
Very effective on large diameter taps.

Available in a 0.9 litre and 3.8 litre container



5258 Light

28 viscosity oil from Hangsterfer's for use on sliding head lathes and tapping oil dispensers



Other viscosities also available

7

Filling your machine

Mix the coolant concentrate into the water, either use a mixing valve or mix by hand, if by hand it is absolutely essential that you pour the concentrate into the water, never pour water into the concentrate. Why not? The coolant is designed to be an emulsion of oil in water, not water in oil. Think of a Malteser, chocolate wrapped round a candy core, if it were candy wrapped round a chocolate core it would be an M & M, same ingredients but a completely different product. A good starting point is 8%, about 12:1 water to concentrate.

Topping up

This is where the problems start. You need a refractometer, an instrument to check coolant concentration. We sell them for about £65 plus carriage. Before you top up the tank you need to know what the concentration is in the tank, it will not be the same as when you filled it. Without this information you have absolutely no way to know what concentration to use for top up.

Lets say you filled at 8%, a week's machining water evaporation might now have it at 10% so you need to top up with a lower concentration to bring it back down again, otherwise it will end up too strong and you will get residue build up on the machine. Now - do not be tempted to top up with just water to bring it down, if you do, you will destroy the chemistry and could get rust. Without a refractometer you have no idea what to do.

Coolants have a refractive index, when you look through the refractometer you will see a figure at the shadow line, lets say it reads a 5, this is not the concentration just a number. You then use a correction factor to get the actual concentration, the factor will be different for different coolants. If for example the factor is 2 then a reading of 5 is 10%

8

Hangsterfer's fully synthetic coolants

Crystal Cut 355

Best in class full synthetic Metal Working Fluid gives excellent tool life with ceramic, diamond and carbide tooling.

Suitable for all machining and grinding operations and unlike many conventional synthetic fluids- no compromise on operator safety

Crystal Cut 355 is primarily designed for machining and grinding steels, powdered metals and cast iron, it can also successfully be employed on aluminium, ceramics, carbide, precious metals & some synthetic materials. It can be used from 4% to 12% depending on the severity of the operation.

CC355 refractive index 3.3:1 a reading of 2 = 6.6%

When used on cast iron Crystal Cut 355 gives excellent corrosion protection and long sump life without Iron related problems such as chip clinkering

Crystal Cut 322

This is a premium synthetic coolant with full Boeing approval.

It is excellent for machining and grinding of all materials especially aerospace alloys. Crystal cut 322 is based on Alternative and Renewable Resources, and its unique formulation significantly eases the cutting process as well as providing excellent corrosion and rust protection, reducing oxidation of the freshly cut surfaces.

It is especially good for diamond abrasives preventing adhesion of the metal being ground. Typical primarily suitable workpiece materials are aluminium, ceramics, carbide, composites, cast iron and glass. In addition it can be used on steels, stainless, nickel alloys and titanium alloys.

Both above are Boric Acid and Formaldehyde free

Coolant concentration (3% to 4% is too low)	Refractometer reading		
	5040	5080	S500/S500CF S555/S388
3%	1	1.5	3
4%	1.3	2	4
5%	1.7	2.5	5
6%	2	3	6
8%	2.7	4	8
10%	3.3	5	10
12%	4	6	12
Coolant concentration (3% to 4% is too low)	Refractometer reading		
	Crystal Cut 322	Crystal Cut 355	MacCool BFHW&BFAL
3%	1.3	0.9	2.1
4%	1.8	1.2	2.8
5%	2.2	1.5	3.6
6%	2.7	1.8	4.3
8%	3.5	2.4	5.7
10%	4.4	3	7.2
12%	5.3	3.6	8.6

For 5070 and 5090 please ask for a recommendation

