



FINEBLANKING LUBRICANTS

For the optimal usage



EXPANDING HORIZONS

YOUR BENEFITS

- ▶ Lubricants specially tailored for fineblanking
- ▶ Longer tool life for contact elements thanks to optimal use of lubricants
- ▶ Combined know-how of leading lubricant manufacturers for Feintool customers
- ▶ Reliable manufacturing processes thanks to the coordination of all technology parameters of fineblanking
- ▶ Use of the entire Feintool network of partners for equipment, lubricants, and auxiliaries, as well as research and development

TRIBOLOGICAL SYSTEM FINEBLANKING

Influencing factors

Fineblanking is a manufacturing process for producing high-precision components from steel and nonferrous sheet metals.

The friction conditions in the forming zone are a major factor in defining how economical and reliable the forming and fineblanking processes are. Increasing material thicknesses, the use of high-alloy steels, increasing complexity of parts and the combination of forming and fineblanking creates additional challenges for the production process.

It is therefore extremely important to investigate and understand the processes occurring in the forming zone and to take measures to reduce wear – not just in the interests of prolonging tool life, but also for the entire process. The two main factors limiting the operational life of a punch or fineblanking tool are wear and breakage of its contact elements. This wear can be significantly reduced by selecting a lubricant tailored to the application.

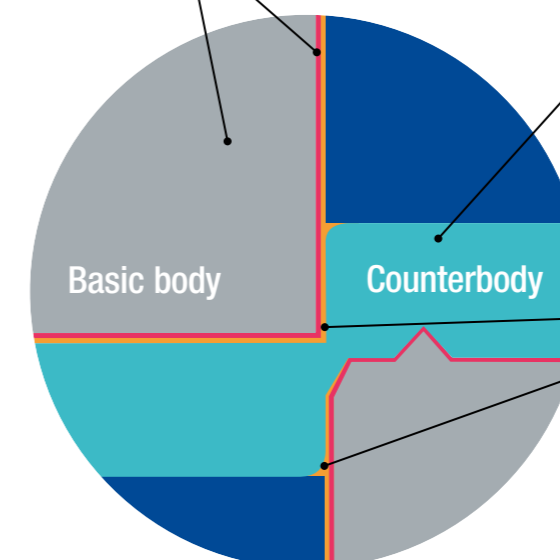
Tool steel and coating



Part material



Lubricants



FINEBLANKING LUBRICANTS

Recommendations

Lubricants in use

Due to the specific process features this manufacturing process is dependent on the use of high-performance lubricants. Feintool has worked with the lubricant manufacturers Fuchs Wisura and Holifa on a performance determination system developed for lubricants and the fineblanking process.

Oils certified under this procedure satisfy Feintool's requirements and, in combination with correctly used fineblanking presses and tools, will ensure that the process is a success. Nevertheless, the statements in this publication cannot be construed as giving a guarantee of correct functioning, since further parameters such as tool machining and coating,

cutting speed, and the condition of the material being blanked play a crucial role in the performance of the entire process. This overview deals with the processing of alloyed and unalloyed carbon steels, stainless steels, and aluminum.

If you have any questions on how to use fineblanking oils with copper alloys, please contact our Materials Technology Department to discuss your particular requirements.

Alloyed and unalloyed carbon steels:

Brand name	Chlorine-free	Viscosity (at 40°C)	Material thickness
Wisura FMO 5020	yes	110 mm ² /s	up to max. 8 mm
Holifa VP1127	yes	150 mm ² /s	up to max. 10 mm
Holifa HFF22	no	160 mm ² /s	up to max. 14 mm
Wisura FMO 5010	yes	170 mm ² /s	up to max. 12 mm
Holifa VP1150/250	yes	250 mm ² /s	up to max. 12 mm

Stainless steels/aluminum:

Brand name	Chlorine-free	Viscosity (at 40°C)	Material thickness
Holifa HFF22	no	160 mm ² /s	up to max. 12 mm
Wisura DSO 5012	yes	167 mm ² /s	up to max. 12 mm
Holifa VP1155	yes	200 mm ² /s	up to max. 12 mm

The right solution is key for every application, which is why we would be happy to provide individual advice regarding the optimal use of the oil.

OUR PARTNERS AT A GLANCE

FUCHS WISURA GMBH

Product Information



WISURA DSO 5012

Non watermiscible high performance forming lubricant

Description

WISURA DSO 5012 is a non watermiscible and based upon selected synthetic raw materials high performance forming lubricant.

WISURA DSO 5012 contains a selected additive package of native and synthetic polar substances as well as extreme pressure (EP) and anti wear (AW) agents.

In addition WISURA DSO 5012 contains neither chlorine, zinc, heavy metal nor silicone and no other relevant substances of negative lists of car manufactures.

Application

WISURA DSO 5012 is sufficient for several forming processes especially blanking and fine blanking of steel with ferritic and austenitic microstructure, but also in follow-up operations with deep drawing, bending and stamping.

In addition, WISURA DSO 5012 can also be used for processing aluminum.

Due to possible discoloration problems WISURA DSO 5012 is suitable only a limited extent for non ferrous metals.

WISURA DSO 5012 is used pure and can be applied by using common application methods like spraying, brushing or rolling.

Advantages

- high performance lubricant, especially for stainless steel
- excellent surface adhesion and wetting properties
- chlorine free

Degreasing

WISURA DSO 50012 can degreased from work pieces with common water based alkaline or solvent industrial cleaners.

It should be noted that a bath temperature >60°C with water based cleaners can lead to a change in the lubricant and could effect the degreasing properties in negative direction.

Storage Conditions

If sealed in the original container WISURA DSO 5012 can be stored up to 24 month at temperatures between -20°C and +40.

The indication of a minimum period of storage does not include any guarantee of durability.

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OUR PARTNERS AT A GLANCE

FUCHS WISURA GMBH

Product Information



WISURA FMO 5010

Fine blanking and forming lubricant

Description

Precision or fine blanking – often in association with forming procedures such as drawing, bending, stamping and countersinking – is used to create precision functional parts with maximum dimensional and contouring accuracy. The prerequisite for this, however, is that the precision cutting press, the material of the functional part, the tool and the lubricant all meet the highest of quality standards and are exactly coordinated with each other.

WISURA metalforming lubricants, which are free from chlorine and heavy metals, meet these requirements in an unparalleled manner. They are high-performance products based on special mineral oils or synthetic bases and a large share of different EP-active ingredients as well as natural and synthetic lubrication agents.

Taking into consideration the different sheet thicknesses as well as procedure and material-specific demands, the corresponding formulations and viscosity grades of WISURA metalforming lubricants guarantee optimal quality, productivity and efficiency while also taking safety requirements into account with regard to people, the environment and the systems.

Application

WISURA FMO 5010 is sufficient for all chipless forming operations, especially fine blanking of steel with ferritic microstructure up to 12mm thickness.

It is suitable to only a limited extent for non-ferrous metals because of possible discolouration problems. We suggest checking compatibility with respective materials in previous test.

WISURA FMO 5010 is used pure and can be applied to the work pieces by all common manual or mechanical methods like rolling, brushing or spraying.

Advantages

- chlorine- free
- excellent surface adhesion and wetting properties
- high pressure resistance and shear stability

Degreasing

WISURA FMO 5010 can be degreased with common methods, waterbased industrial cleaners or solvent agents.

However, degreasing is often made during the subsequent machining process by grinding.

Storage Conditions

If sealed in the original container WISURA FMO 5010 can be stored up to 24 month at temperatures between -20°C and +40.

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OUR PARTNERS AT A GLANCE

FUCHS WISURA GMBH

Product Information



WISURA FMO 5020

Fine blanking and forming lubricant

Description

Precision or fine blanking – often in association with forming procedures such as drawing, bending, stamping and countersinking – is used to create precision functional parts with maximum dimensional and contouring accuracy. The prerequisite for this, however, is that the precision cutting press, the material of the functional part, the tool and the lubricant all meet the highest of quality standards and are exactly coordinated with each other.

WISURA metalforming lubricants, which are free from chlorine and heavy metals, meet these requirements in an unparalleled manner. They are high-performance products based on special mineral oils or synthetic bases and a large share of different EP-active ingredients as well as natural and synthetic lubrication agents.

Taking into consideration the different sheet thicknesses as well as procedure and material-specific demands, the corresponding formulations and viscosity grades of WISURA metalforming lubricants guarantee optimal quality, productivity and efficiency while also taking safety requirements into account with regard to people, the environment and the systems.

Application

WISURA FMO 5020 is sufficient for all chipless forming operations, especially fine blanking of steel with ferritic microstructure up to 10 mm thickness.

It is suitable to only a limited extent for non-ferrous metals because of possible discolouration problems. We suggest checking compatibility with respective materials in previous test.

WISURA FMO 5020 is used pure and can be applied to the work pieces by all common manual or mechanical methods like rolling, brushing or spraying.

Advantages

- chlorine- free
- excellent surface adhesion and wetting properties
- high pressure resistance and shear stability

Degreasing

WISURA FMO 5020 can be degreased with common methods, waterbased industrial cleaners or solvent agents.

However, degreasing is often made during the subsequent machining process by grinding.

Storage Conditions

If sealed in the original container WISURA FMO 5020 can be stored up to 24 month at temperatures between -20°C and +40.

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OUR PARTNERS AT A GLANCE

HOLIFA Fröhling GmbH & Co. KG



HOLIFA Fineblanking Oil VP 1127

HOLIFA VP 1127 is a chlorine-free fineblanking oil, which is especially developed for fineblanking of carbon steel and alloyed steel qualities with a material thickness up to 10 mm. VP 1127 mainly consists of mineral oil raffinates and a combination of special high pressure additives, showing outstanding properties in fineblanking and other metal forming processes despite its moderate viscosity.

The application of this lubricant can be performed by contact lubrication units as well as by non-contact lubrication units. In addition to that, all common used industrial cleaning systems are suitable for degreasing of the blanked parts.

Technical Data:

Appearance:	brown liquid
Density (at 20°C):	0,98 g/cm ³
Viscosity (at 40°C):	150 mm ² /s
Flash point:	> 180°C

For further information concerning handling and storage conditions please consult the current material safety data sheet or ask our technicians.

OUR PARTNERS AT A GLANCE

HOLIFA Fröhling GmbH & Co. KG



HOLIFA Fineblanking Oil VP 1150/250

HOLIFA VP 1150/250 is a chlorine-free high-quality fineblanking oil, which is especially developed for extreme fineblanking operations of alloyed steel grades with high tensile strength and/or complicated geometry of the resulting parts as well as for stainless steel. VP 1150/250 mainly consists of mineral oil raffinates and a special combination of synthetic high pressure additives, providing outstanding properties in metal forming processes.

The application of this lubricant can be performed by spraying with applicable spraying systems or by rolling on the metal sheet. In addition to that, all common used water-based or hydrocarbon-based industrial cleaning systems are suitable for degreasing of the resulting parts.

Technical Data:

Appearance:	brown liquid
Density (at 20°C):	0,99 g/cm ³
Viscosity (at 40°C):	250 mm ² /s
Flash point:	> 180°C

For further information concerning handling and storage conditions please consult the current material safety data sheet.

OUR PARTNERS AT A GLANCE

HOLIFA Fröhling GmbH & Co. KG



HOLIFA Fineblanking Oil VP 1155

HOLIFA VP 1155 is a chlorine-free high-quality fineblanking oil, which is especially developed for extreme fineblanking operations of stainless steel up to 12 mm. VP 1155 mainly consists of mineral oil raffinates and a special combination of synthetic high pressure additives, providing outstanding properties in metal forming processes.

The application of this lubricant can be performed by spraying with applicable spraying systems and by rolling on the metal sheet. In addition to that, all common used water-based or hydrocarbon-based industrial cleaning systems are suitable for degreasing of the resulting parts while degreasing by use of perchlorethylene (PCE) as a solvent is not recommendable.

Technical Data:

Appearance:	brown liquid
Density (at 20°C):	1,02 g/cm ³
Viscosity (at 40°C):	200 mm ² /s
Flash point:	>150°C

For further information concerning handling and storage conditions please consult the current material safety data sheet.

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THE PROCESS CHAIN – SEAMLESSLY SUPPORTED

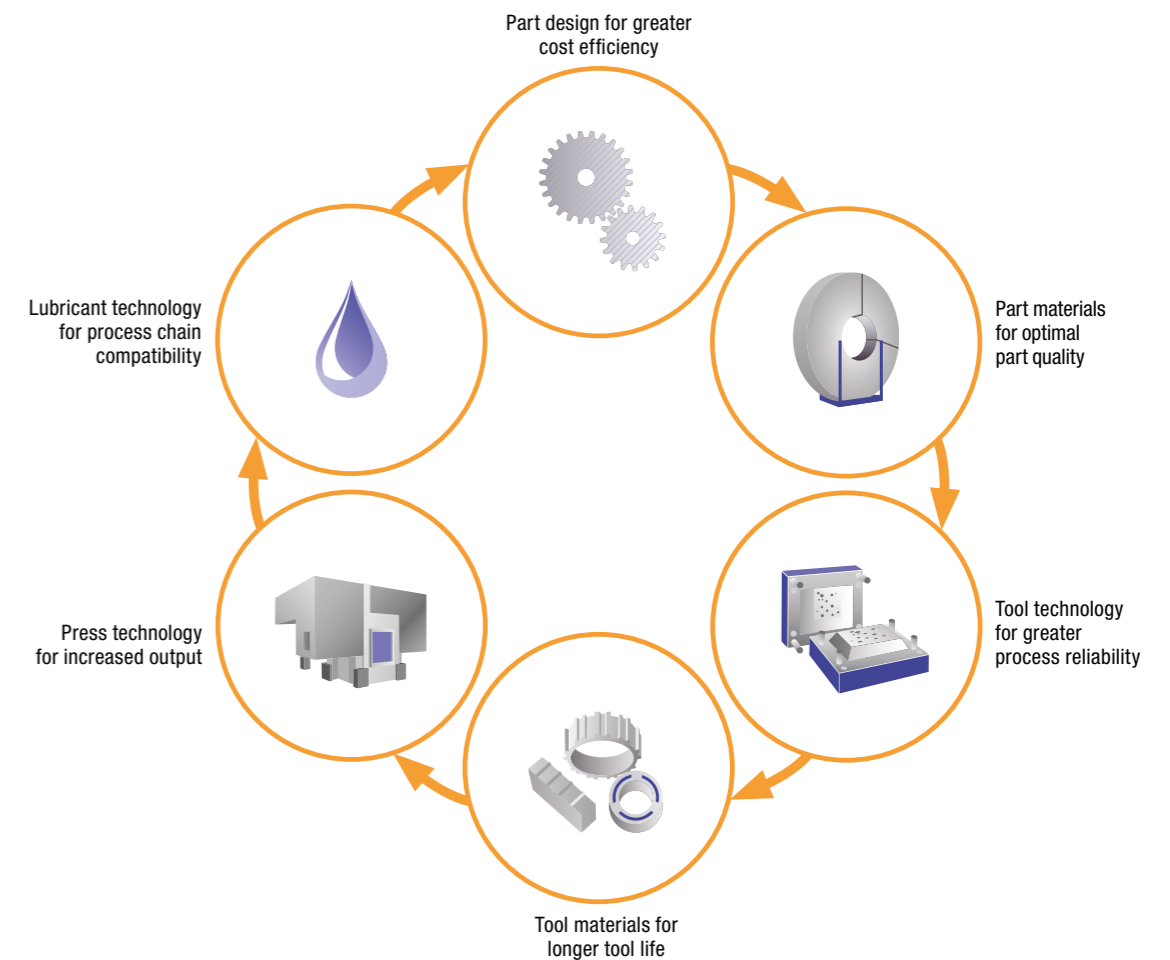
Expertise at every single step

Reliable production, seamless availability of the press as well as high tool life? We know how you achieve these goals – and lead competently the coordination of all technology parameters of fineblanking.

With Feintool, you get state-of-the-art expertise and system engineering straight from a single source. Our experts will support you along the entire process chain and can offer you a full fineblanking package to ensure your success.

We work with you, from the part and tool design to materials for parts and tools all the way to lubricants.

We will also be glad to offer you advice on process optimization, monitoring your production processes with the intelligent Internet-based FEINmonitoring system, press operation, and the preventive maintenance and servicing of your systems.



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