

**Beruform KFP – Cold forming oils**  
**Beruform MF – Multifunctional oils**



# Multifunctional oils for cold massive forming operations

**From the view of the lubricant manufacturer there are two problems occurring in forming processes on modern multiple stage presses:**

The construction design of certain types of presses does not allow a separation between cold forming oil (KFP) and machine oil. The use of conventional machine oils for cold massive forming will then lead to considerably increased tool wear due to the low level of high-pressure additives.

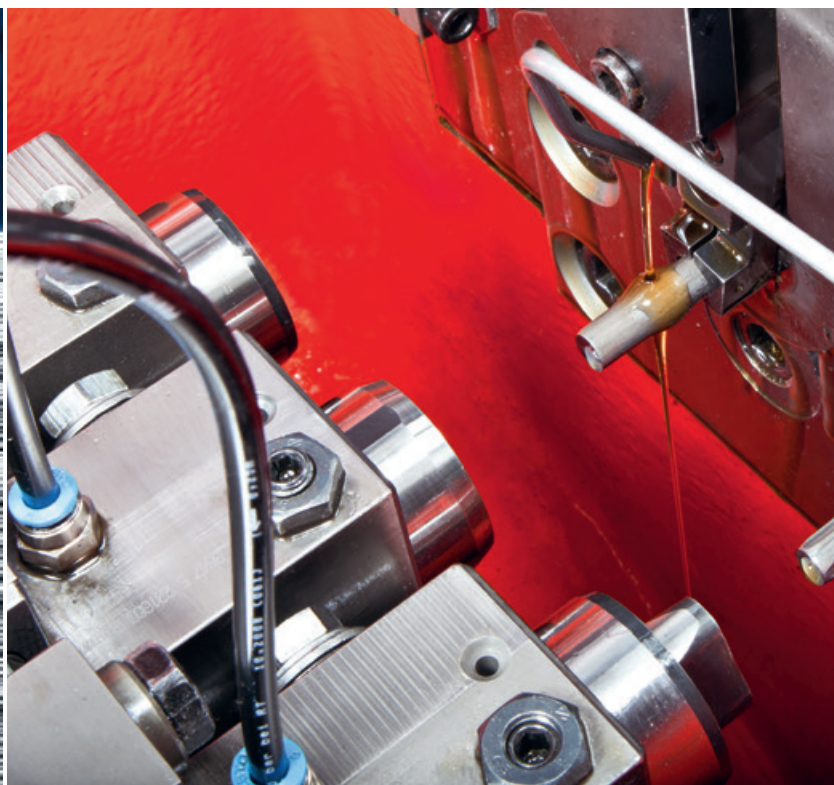
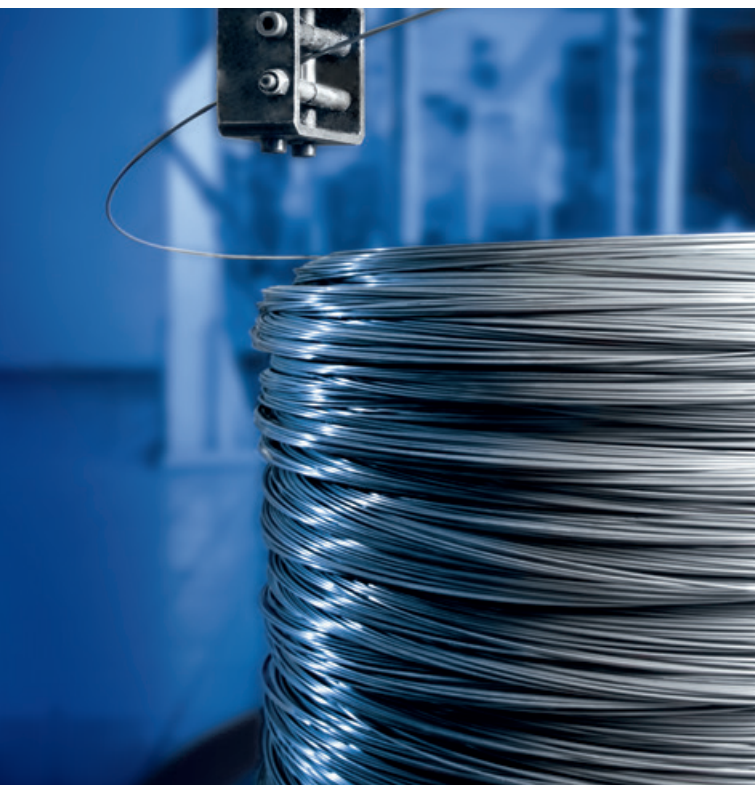
Even if presses are used which allow the separation between machine, slideway and cold forming oil, oil mixtures caused by leakages can never be totally excluded. This problem especially occurs with older machines. The additive level will drastically decrease due to dilution (mixture) whereas viscosity rises (increased drag-out losses). Finally, the performance loss will lead to premature oil change.

With the concept of multifunctional oils BECHEM offers an optimal and approved solution. The BECHEM multifunctional oils are products which ideally support both the forming process and machine lubrication.

The use of oil eliminates the problem of undesired mixing. A constantly high additive level and a consistent viscosity will thus be guaranteed.

In various practical tests (1.000 hours and more) on four and five stage presses identical or even longer tool life could be achieved with BECHEM multifunctional oils than with conventional lubricants. The oil changing intervals could in any case be considerably extended (50–100 %).

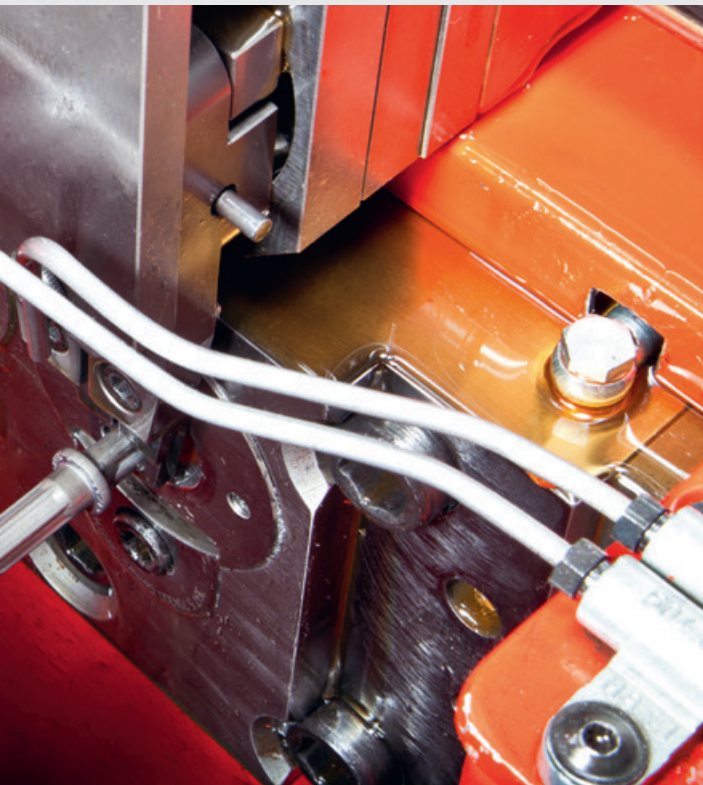
Based on their well balanced additive content the BECHEM multifunctional oils are also suitable for forming non-ferrous metals.





With an extensive product range we are able to cover your entire lubricant requirements:

- Cold forming and forming oils
- Gear and hydraulic oils
- Multifunctional oils
- Water miscible coolants
- Cutting and rolling oils
- Drawing lubricants: oils, emulsions and soaps
- Cleaning agents
- Anti-corrosion oils
- Machine cleaning and other services, complete fluid management upon request



		TECHNICAL DATA					APPLICATIONS					
		Product	Viscosity [mm²/s] at 40 °C	Polar additives	EP-additives						Properties	
						Steel	Stainless steel	Aluminium	Copper	Brass		
Forming operations of tempered and high-quality steels		Beruform KFP 49	69	○	○○	●					Cold forming oil for easy to medium forming processes on single and multiple stage presses, allows extended tool life and long service life in the coolant tank	
		Beruform KFP 95	90	○○○	○○○	●	●				Chlorine-free cold forming oil for very demanding, multiple forming of high-tensile carbon steels and alloyed steels, extended tool life, long service life in the coolant tank	
		Beruform KFP 96	91	○○○	○○○○	●	●				See <b>Beruform KFP 95</b> , however with a higher performance	
Demanding forming operations of tempered and high-quality steels		Beruform KFP 96 HC	80	○○○○	○○○○	●	●				Cold forming oil for extreme requirements with a high additive content, especially suitable for high-tempered steels and stainless steels, considerably reduced crack formation on formed parts	
		Beruform KFP 95 HP	120	○○○○	○○○○	●	●				Cold forming oil for extreme requirements with a high additive content, contains polar active substances, active sulfur compounds and special anti-wear additives, also suitable for minimum quantity spray systems	
		Beruform KFP PP-Z	115	○○○○○	○○○○○	●	●				Cold forming oil with an extremely high additive and solid lubricant content, excellent tool life with excellent surface qualities, also suitable for replacing chlorine containing products	
Extrusion and cupping operations		Beruform KFP 10	64	○○	○○○○	●					Cold forming oil for high requirements, e.g. very deep cupping operations, very long reductions of high-alloyed steels, application by immersion and spray lubrication	
		Beruform KFP 13 R	103	○○	○○○	●					Forming oil for demanding cold massive forming of low / high-alloyed steels, application by immersion and spray lubrication, contains high-performance anti-wear and extreme-pressure additives, extended tool life	
Multifunctional oils		Beruform MF 105-68	68	○	○	●		●	●	●	For easy to medium forming processes of steel and brass, also suitable as machine and slideway lubricating oil, to be used as forming oil with low tool wear	
		Beruform MF 105-100	100	○	○	●		●	●	●	See <b>Beruform MF 105-68</b> , however viscosity grade 100	
		Beruform MF 148 Neu	110	○○○	○○○	●	●	●	●	●	Chlorine-free cold forming oil with a high additive content for cold massive forming of multiple stage presses, multifunctional use as machine and forming oil, constant additive and viscosity level	
		Beruform MF 148-68	68	○○○	○○○	●		●	●	●	See <b>Beruform MF 148 Neu</b> , however viscosity grade 68	
		Beruform MF 85	90	○○	○○	●		●	●	●	Chlorine-free multifunctional oil with a high additive content for cold massive forming on multiple stage presses, extremely resistant to ageing, improved rinsing performance and optimised lubricating properties	
		Beruform MF 155	110	○○○	○○○	●	●	●	●	●	See <b>Beruform MF 85</b> , however with a higher performance	
Additives and forming agents		Beruform KFP PP	69	○○○○	○○○○	●	●				High-performance cold forming oil and additive package to increase the performance of conventional forming oils, excellent tool life with excellent surface qualities	
		Beruform KFP 22	-	○○○○○	○○○○○	●	●				Cold forming oil with extremely high additive content for most demanding forming processes, applied neat for complicated work pieces or as additive package to increase the performance of conventional forming oils	
		Beruform KFP 22 P	pasty	○○○○○	○○○○○	●	●				Pasty concentrate of active ingredients, agent for most demanding forming processes in cold forming, also suitable as drawing paste in pre-drawing machines for cold drawing of cold heading wires	

o = low ... ooooo = very high

APPLICATIONS

- Bending
- Punching
- Fine blanking
- Cold forming

PROPERTIES

- Corrosion protection
- Good rinsing performance
- Extended tool life

All indications and values correspond to latest knowledge and do not represent any product specification

# Products for cold massive forming operations

**In cold forming processes of metal materials (e.g. steel, non-ferrous metals, aluminium) preferably pre-treated work pieces have to be pressed into a defined form under considerable deformation forces. Depending on the geometry of the finished part and the material, several forming steps can be required.**

The extreme surface pressures between tool and work piece require high-performance forming agents which are able to build up high-pressure resistant layers during the forming process in order to prevent premature wear, fretting or even breaking of the tools.

For decades, the consequent and continuous development and improvement of forming products in close cooperation with users, machine and tool manufacturers set the standard for most demanding cold forming oils.

**BECHEM offers tailor-made products for all forming tasks:**

- Production of standard screws, solid, hollow and semi-hollow rivets
- All types of forming processes; for extrusion and cupping operations
- Products for demanding forming operations of tempered and high-quality steels
- Additive packages and forming additives



## Lubrication Solutions for Industry

With 180 years of experience, BECHEM is one of the leading manufacturers of premium quality special lubricants and metal working fluids.

Close cooperation with research institutes, industry partners and product users as well as the knowledge, skills and major commitment by our staff are guarantees of new and innovative high performance lubricants, which contribute to the success of our customers at home and abroad.

A powerful network of distributors and several national and international production sites ensure our products are readily available worldwide.

**Tomorrow's technologies. Today.**

