ADDINOL Belt Lube HT 220, HT 100 and HT 50 for the use in wood-processing industries

Reduced energy and oil consumption = Increased efficiency

Because of the tailored selection of special base components the lubricants of the ADDINOL Belt Lube HT range display optimum lubricating film thickness for high-speed plants under highest loads and temperatures. This way an improved rolling movement of all components is possible.

Because of its powerful additivation the ADDINOL Belt Lube HT range possesses outstanding friction coefficients* compared to competitive products. A lower frictional resistance produces reduced thermal and mechanical loads on the components involved having positive effects on the operating life of the whole plant. At the same time, efficiency is improved and less energy input is required for driving the chains.

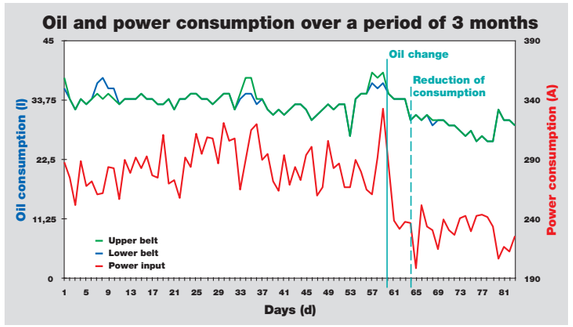

Chart 1: Oil and energy consumption at a Siempelkamp MDF press line: before and after changing to ADDINOL

At optimum adjustment of the lubrication with Belt Lube HT 220 a significant saving potential concerning energy and oil consumption is achieved in practical applications. This effect has been proven in a field test. Over a period of 81 days power input of press drives and oil consumption of belts has been measured and documented. Over the first two months a competitive product was being used. After changing to ADDINOL Belt Lube HT 220 a reduction of oil and energy consumption of about 30 % has been accomplished under comparable operating conditions (see chart 1).

Each plant has to be considered individually. In order to make the most of the benefits of the Belt Lube HT range it might be necessary to adjust lubricant supply. When changing over to ADDINOL Belt Lube HT central lubrication systems, as well as lubricant and energy consumption should be monitored. Only if considering all factors the efficiency increase can be proven.

*Friction coefficient = ratio for friction losses caused by the lubricant

Tips for practice

Optimum cleaning

For plants operating under extreme conditions we recommend the cleaning with **ADDINOL System Cleaner HT** before changing over to Belt Lube HT 50 or HT 100. Thanks to its excellent creeping capacity the product loosens solid and sticky residues thoroughly and cleans actively. Residues are transported to scrapers by rollers and chains and blown out. This way they do not disturb the run of the chain. ADDINOL System Cleaner HT can be applied at temperatures up to +240 °C and provides reliable wear protection for all components. With ADDINOL System Cleaner HT deposits and residues of lubricants previously applied are removed efficiently and the lubricants of the Belt Lube HT range can unfold their full and targeted performance immediately.

Trouble-free changeover

When selecting the suited lubricant, manufacturer instructions must be followed in any case. In systems of the manufacturer Dieffenbacher Belt Lube HT 220 must be changed over in combination with HT 50 and/or HT 100.

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Performance Profile

ADDINOL® THE ART OF OIL • SINCE 1936

ADDINOL Belt Lube HT 220, HT 100 and HT 50 for the use in wood-processing industries

ADDINOL Belt Lube HT 220, HT 100 und HT 50 are chain lubricants of extreme high-temperature stability. They are based on carefully selected fully synthetic components and a special additivation suited for highest temperatures.

- ✓ particularly developed for the application in continuous press lines in the manufacturing of particle boards of Dieffenbacher (CPS Conti-Panel-System) and Siempelkamp (ContiRoll®-presses) as well as Küsters presses operating discontinuously
- ✓ preferred for the use at chains, conveyor belts and rollers under high thermal loads
- ✓ ideal for applications exposed to dust, aggressive media and humidity

These are your practical benefits:

- ✓ outstanding thermal stability even under extreme operating conditions
- ✓ high cleanliness at chains and rollers by low tendency to form deposits
- ✓ effective reduction of incrustations on plant components
- ✓ stable and jerk-free run of chains and rollers
- ✓ reduced oil consumption thanks to minor evaporation losses
- ✓ effective corrosion protection for long lifetimes and reduced maintenance and spare parts costs
- ✓ maximum wear protection at high loads and sliding speeds
- ✓ ideal for pressing powers up to 600 N/mm²
- ✓ reduced energy consumption thanks to excellent friction values

Characteristic values	Test conditions	Unit	HT 220	HT 100	HT 50	Tested according to
Viscosity	40 °C	mm²/s	260	108	55	ASTM D 7042
	100 °C	mm²/s	24.5	13.0	8.4	
	200 °C	mm²/s	3.9	2.5	1.9	
Flash point	COC	°C	≥ 290	280	270	DIN EN 2592
Corrosion category on steel	Method A		passed	passed	passed	DIN ISO 7120
Corrosion category on copper	at 150 °C, 3h		1	1	1	DIN ISO 2160
Evaporation loss		%	1.6	< 2	< 2	DIN 51581-1
Welding load		N	2,000/2,200	1,800/2,000	1,600/1,800	DIN 51350-2

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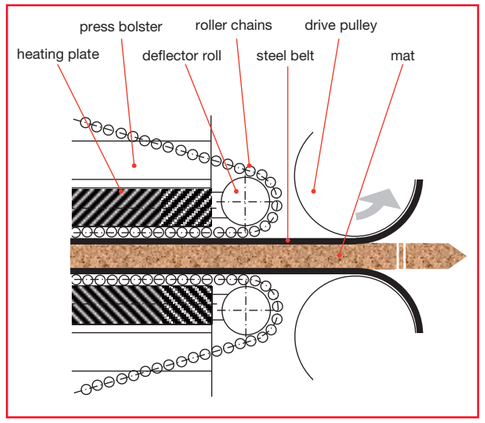
Wood-processing industry places extreme requirements on the lubricant

Press lines place high requirements on the lubricants used at belts, bending and rolling rods as well as chains. During manufacturing temperatures achieve peaks between +240 and +255 °C, belt speed is up to 100 m/min, pressures can reach 600 N/mm². In addition, wood-processing plants generally work at a dusty, humid and chemically aggressive environment (glues, release agents).

Typically, such plants operate at constantly high temperatures bearing the risk of lubricant residues, cracking and incrustations on chain components, rods, belts and rollers. These might hinder the smooth run of belt, bending rods and chain and quickly can cause a standstill of the whole plant.

Furthermore, constantly high loads might cause wear on all components calling for a reliable all-round protection provided by the lubricant. Both at low and at high speed a stable lubricating film of optimum thickness is required. Economic consumption and efficient application are taken for granted. Outstanding friction behaviour reduces thermal and mechanical loads of all components and ensures increased plant efficiency.



Picture 1: Scheme of continuous press line

ADDINOL Belt Lube HT 220, HT 100 and HT 50: The right product for each application

- ✓ **Belt Lube HT 220** preferred for steel bands and chains at continuous systems of Dieffenbacher and Siempelkamp as well as conveyor systems in discontinuous Küsters press lines
- ✓ **Belt Lube HT 100** ideal for bolts and bending rods in Dieffenbacher presses as well as rollers in Siempelkamp systems
- ✓ **Belt Lube HT 50** useable for the lubrication of bending rods in older systems of Dieffenbacher, suited also for older Siempelkamp or Küsters presses
- ✓ conveying and distributing by the help of central lubrication systems, application by drop oiler and sprayer

Picture 2: ADDINOL lubrication at a Dieffenbacher press line

Picture 3: Rods typically used in continuous press lines of SIEMPELKAMP (rolling rods at the top) and DIEFFENBACHER (bending rods at the bottom)

Performance Profile

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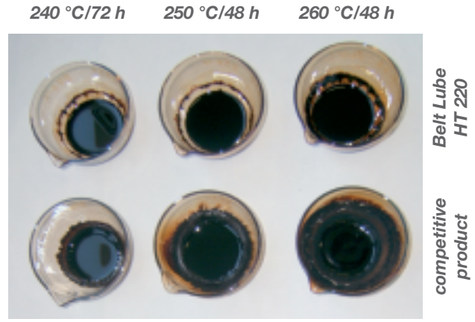
ADDINOL Belt Lube HT 220, HT 100 and HT 50 for the use in wood-processing industries

Highest thermal stability

The high-temperature chain lubricants of the ADDINOL Belt Lube HT range are based on fully synthetic components and carefully selected additives guaranteeing highest thermal-oxidative stability. Because of their high flash point ADDINOL Belt Lube HT chain lubricants are perfectly suited for the use at extreme temperatures. They do not form any incrustations or varnish on surfaces or components which could disturb the run of the chain. Deposits on friction pads of drive pulleys recede and are reduced. Therefore, time consuming manual cleaning by the help of dry ice is not necessary. Furthermore, the high flash point ensures maximum technical safety.

The chain lubricants of the Belt Lube HT range display extremely low evaporation losses having positive effects on the total oil consumption of the plants.



Picture 4: Simulation of ageing behaviour with bowl test at various temperature levels

Reliable protection against wear

Plants in wood-processing industry operate under changing loads and sliding speeds. To prevent friction efficiently and to ensure maximum lifetimes of all components, their stable and reliable lubrication is essential.

The lubricants of the ADDINOL Belt Lube HT range achieve best results in the Four-ball tester* (DIN 51350-2): with a welding load of 1800 N for Belt Lube HT 50 and HT 100 and of 2000 N for Belt Lube HT 220 highest wear protection is ensured.

*VKA = Four-ball tester (one rotating ball and three stationary balls immersed in the lubricant to be tested): method for determining wear on ball surfaces and/or welding load. The better the VKA value achieved, the better the lubricating effect under pressure loading.

Pictures 5 and 6:

Deposits on friction pads of deflector roll before changing over to ADDINOL Belt Lube HT 220

Clear reduction of deposits on friction pads about 6 months after changing to ADDINOL Belt Lube HT 220

Reliable protection against corrosion and aggressive environmental influences

During the manufacturing of particle boards the dusty environment and aggressive impacts in the form of humidity, glues and separating agents can cause corrosion or erosion on chains and rods. Because of its outstanding chemical stability the ADDINOL Belt Lube HT range offers superior protection against wear of components and damages on surfaces. This way it contributes to prolonging the operating life of belts, rods and rollers and reduces maintenance as well as related costs and also spare parts costs.

Picture 7: Corrosivity on copper (DIN ISO 2160, 3h, 150 °C)

Competitive product

ADDINOL Belt Lube HT 220

Picture 8: Corrosion and pitting on a bending rod after use of competitive product

Picture 9: Intact bending rod after use of ADDINOL Belt Lube HT 220