

## *Lincoln - spray lubrication systems type HSA*

### **Functional description of HSA**

Lincoln spray lubrication systems type HSA for applying adhesive lubricants to heavy-duty pinion gears of rotary kilns and tube mills, but also to racks of side-guards manipulators in rolling mills.

The specially developed adhesive lubricants are characterized by an high resistance to pressure and to shearing and by a very low consumption. Their consistence in in the range of NLGI class 00 and NLGI class 0. their solids content is up 12% for start-up lubricants and 5%-8% for operating lubricants.

The generally tough, strongly adhesive lubricants are delivered by piston pumps and finely distributed onto the surfaces to be lubricated using compressed air and wide-angle spray nozzles.

The pump design and the type of wide-angle spray nozzle depend on the desired degree of automation of the spray lubrication system. Electrical container pumps (model 215) or pneumatic barrel pumps (model SAF) are used for pumping the lubricant.

As for the wide-angle spray nozzles, a distinction is made between uncontrolled nozzles and controlled nozzles.

Both models are available as individual nozzles with bracket and as nozzle assemblies mounted on a mounting plate.

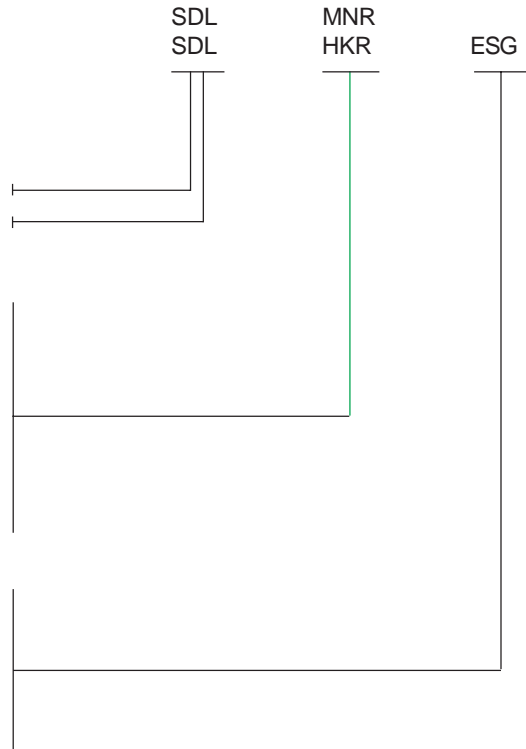
The only uncontrolled nozzles type available is model SD (HSA-TD2), while controlled nozzles may come in different models, depending on their design (type of electrical monitoring, with bracket or on mounting plate). Please refer to the following type explanation for the models available:

**Example of type designations:**

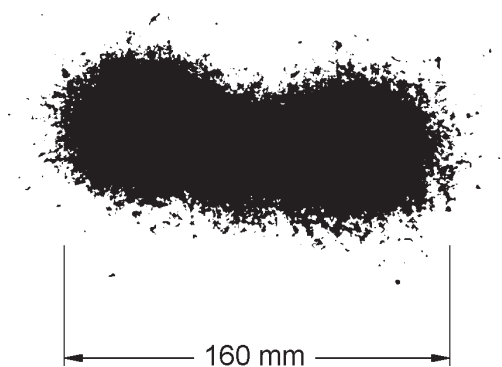
SD = spray nozzles  
L = air controlled

M = nozzle body with thread M12 for fastening on mounting plates  
H = Nozzle body with 8.5 mm bore for individual mounting using a bracket  
N = without monitoring (monitoring at the metering device)  
K = with monitoring  
R = with lubricant feedback

ES = electrically monitored nozzle (mechanical position switch)  
EN = electrically monitored nozzle (proximity switch)  
G = with screw-in thread



The designation „wide-angle spray nozzle“ illustrates the spraying pattern resulting from the use of commercially available adhesive lubricants:



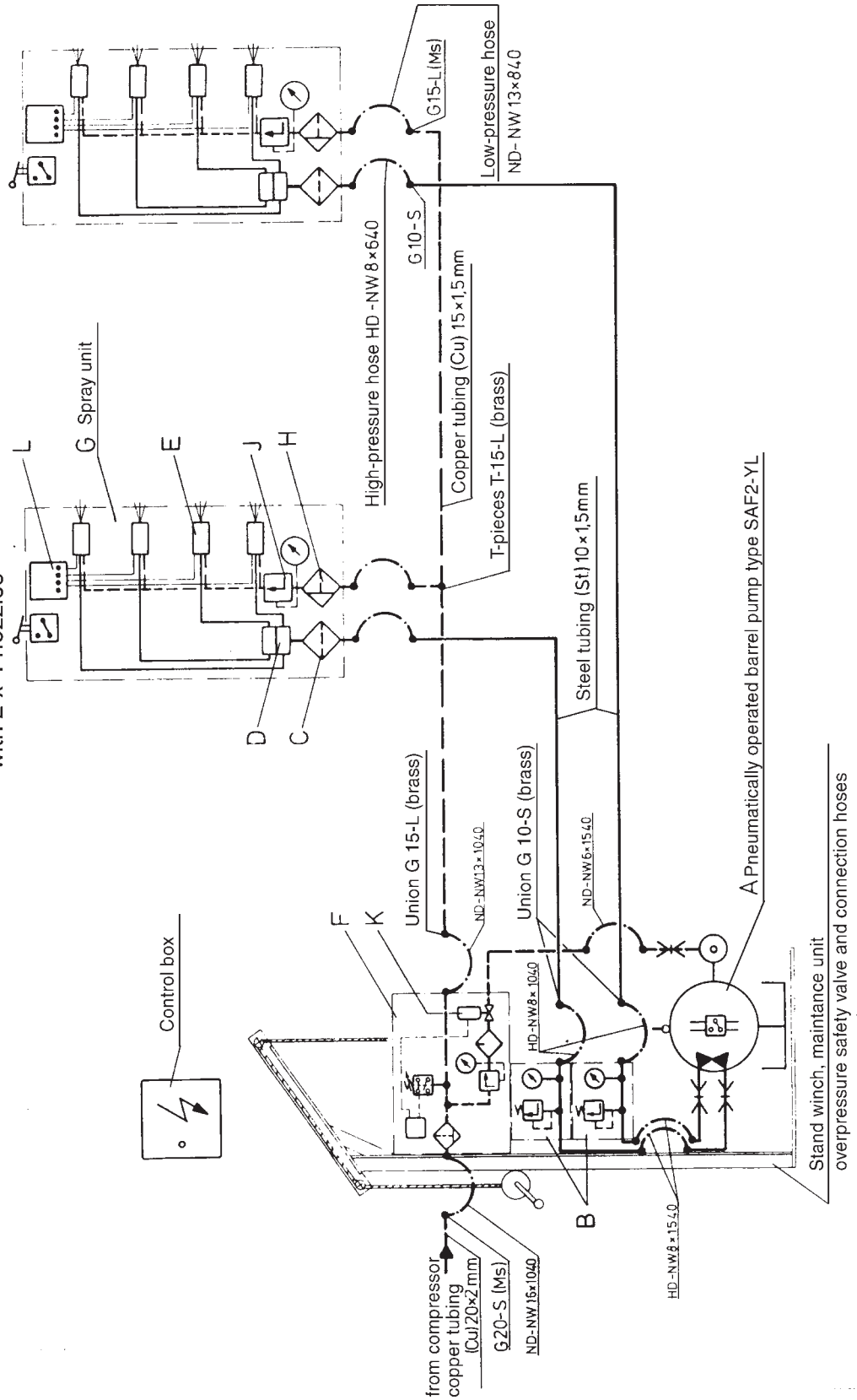
The number of nozzles depends on the wide of the pinion gear to be lubricated. One nozzles can lubricate a surface approx. 150 mm wide (spacing approx. 180 mm). For 1-pinion drives and 2-pinion drives we recommend lubricating the load-carrying tooth profile of the driving pinion.

For easy installation, the individual components of the spray lubrication system are available as pre-preparation and lubricant filter unit or overpressure safety valve and the nozzle assemblies including. The structure of a spray lubrication system for a 1-pinion drive with a pneumatic pump type SAF is shown on the following 2 schematic drawings.

Subject to modifications

# Spray lubrication system type HSA

with 2 x 4 nozzles

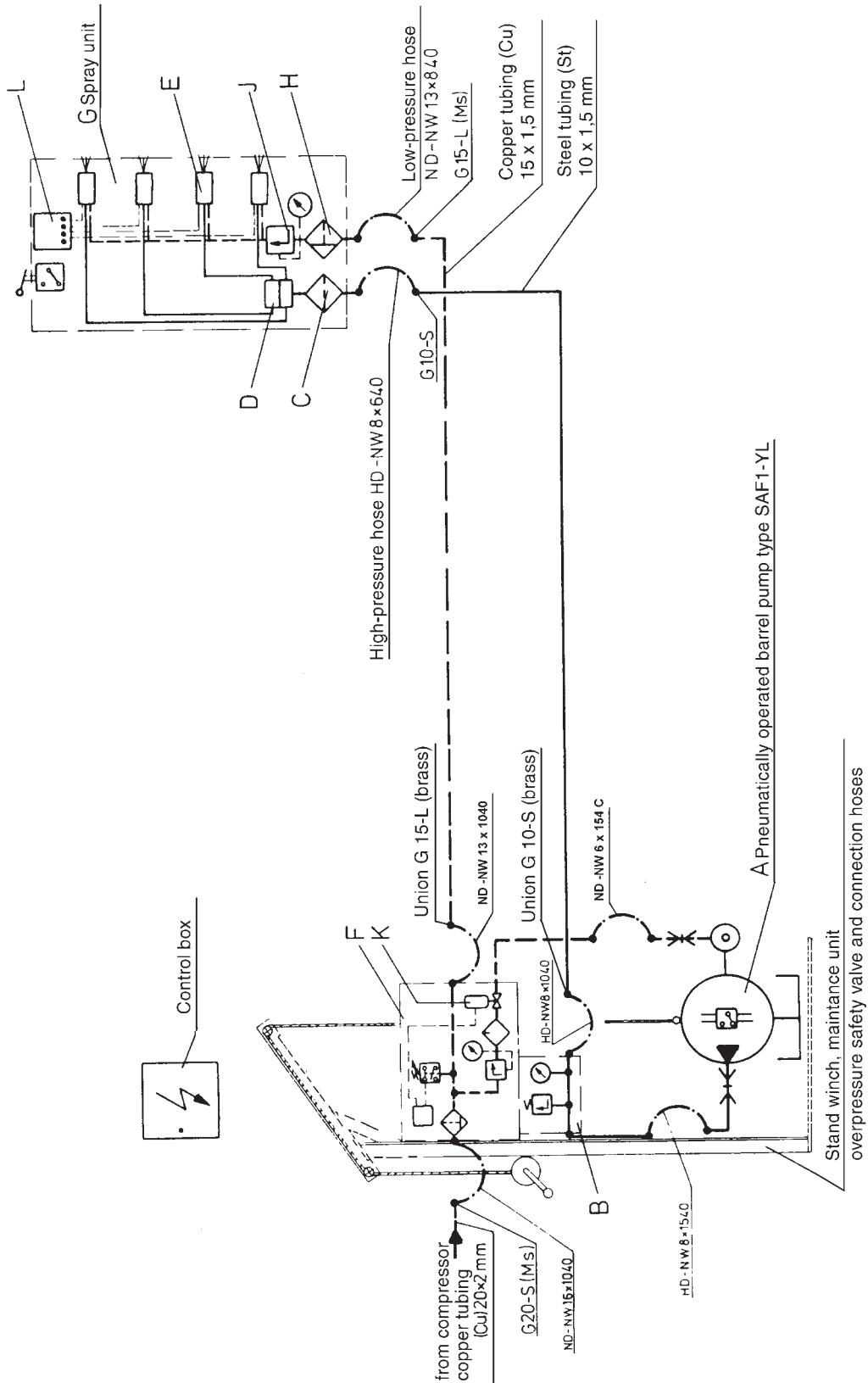


Subject to modifications

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# Spray lubrication system type HSA

with 1 x 4 nozzles



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