

Impression roller insulation and electrical contacting with Eltex ESA GNN75 and GNN75P Printing Assists

Insulation of the bearings

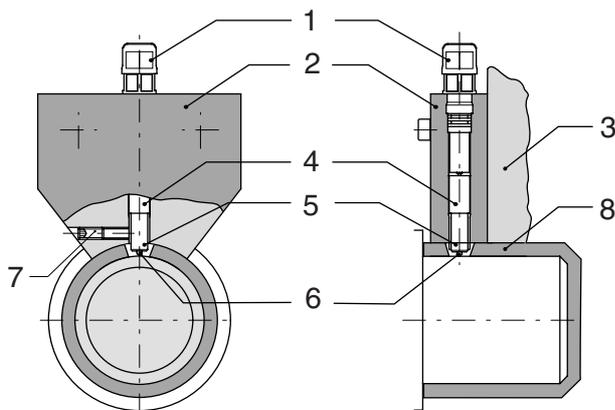
In order to guarantee the function of the electrostatic printing assist (ESA) with direct charge, a sufficient electrical insulation of the impression rollers against the surrounding machine parts is required. This can be achieved by the use of insulating bearing shells.

The thickness of the insulating material must not fall short of 4 mm, at no point. The employed insulating material must have a dielectric strength of minimum 5 kV/mm.

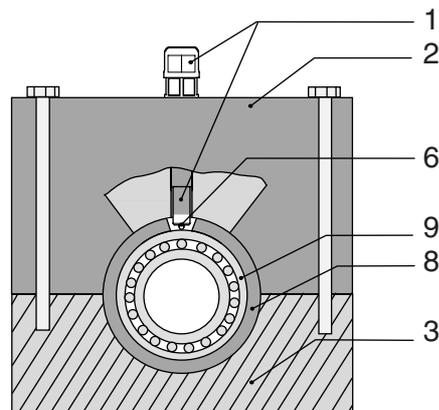
Depending on the tracking resistance of the material used, the following minimum creepage distances must be maintained between the conductive parts of the roller and the machine frame:

Tracking resistance (CTI value complying with IEC 112)	Creepage distance
$CTI \geq 600$	≥ 25 mm
$400 \leq CTI < 600$	≥ 32 mm
$175 \leq CTI < 400$	≥ 40 mm

When insulating, any hydraulics, coolant and pneumatic leads to the impression roller must also be taken into consideration: No metal conduits and leads and no electrically conductive fluids must be used which may short-circuit the impression roller against the grounded machine frame!



Example: publication printing



Example: packaging printing

- 1 Spring contact plug DAA75
- 2 Insulating element
- 3 Yoke
- 4 Stainless steel spacer *
- 5 Pressure element *

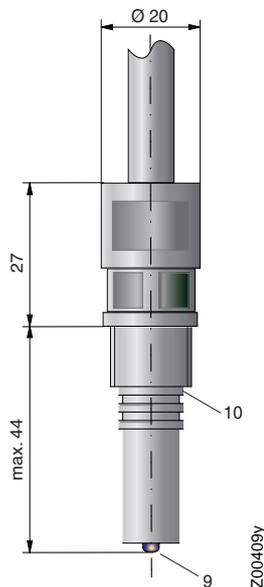
- 6 Ball-type contact
- 7 Grub screw with plastic spacer *
- 8 Insulation
- 9 Impression roller bearing
- * = optional

Current transfer

The voltage is transmitted via the spring contact plug and the impression roller bearing to the impression roller core which is rested electrically insulated. This guarantees an even charge distribution inside the impression roller coating and that the required nip voltage is built up in the printing nip.

An insulating element holds the spring contact plug which makes contact with the impression roller.

The insulating element should also help to protect the contact point from excessive dirt and pollution and allow the easy cleaning of the contact point when changing the impression roller.



Spring contact plug DAA75

- 9 Spring contact
- 10 Thread M16 x 1,5

If there is still the possibility of polluting the contact point, a stainless steel spacer and a pressure plate which makes contact with the impression roller can be used optionally. To guarantee safe contact with the impression roller, the pressure plate must have a minimum spring excursion of 3 mm and a minimum spring pressure of 60 N.

The current is transferred to the semi-conducting impression roller coating via the impression roller bearing and the impression roller mantle. The low current load does not put the bearing under excessive strain. What is important, however, is that the bearings are mechanically loaded. Lubricant layers developing on unloaded bearings can have an insulating effect.



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