

Strip Lubrication System

EPC NT



1. GENERAL DESCRIPTION

The EPC Lubrication System is composed by a Spray box controlled through a control unit and a tank.

The Machine is suitable for the installation on coil feeding line after the feeder or between 2 conveyors in case of application from blanks.

In case of Coil application, the system is synchronized with feed material to spray during the movement of the material. By a selection of spray time on the Control Panel we select the end of the spray according to the step of the coil.

In case of Blank application, a sensor in the entrance of the lubrication system detects the front of the material and starts to spray. When the blank is over the system stops spraying.

While the blanks/coil is running through the spray box the upper and lower side can be sprayed, with most of kind of oil, with programmable quantities.

The minimum strips of 100 mm and steps of 200 mm from the center of the machine.

No special programming knowledge is required to draw up the spray programs from the panel.

The special design of the suction system will prevent contaminated air from escaping through infeed and outfeed slot, the oil is collected in a waste tank with a level sensor.

For easy maintenance, the upper and bottom spray heads are extractable from the side of the machine.

2. TECHNICAL DATA

Strip Width depending on machine model:	
EPC CQ 2200	Min. 500 - max 2200 mm
Material length Front to Back	Coil Application
Material thickness	min 0.5 max 4 mm
Material	Steel and Aluminium
Total installed power	5 kW
Electrical equipment	400V, 50 HZ, 3 phases, N, PE (different voltage available)

Lubrication System Specification	
Number of spray nozzles	1 spray valve every 100 mm
Steps spray strip	100 mm
Spray oil quantity	0.5 – 5 g/m ² on each side
Single spray valve oil quantity	Manual adjustment
Oil Tank	40 lt tank unit
Oil details	To be communicated
Oil filter	Included 10 µm, single cartridge filter
Level sensor	Electrical minimum lubricant level warning sensor
Waste oil collection tank	Plastic tank for lubricant collection from the spray box and suction system
Extraction of the spray head	from the side of the machine
Coil transportation	No driven rollers
High efficiency suction filters	N°1 0.35 kW each; 2500 m ³ /h with analogic pressure gauge
Up & Down system upper spray head	Application from coil over 3 mm thickness

The machine is supplied with all mechanical, electrical, hydraulic and pneumatic equipment.
The lubricant is NOT included.

ELECTRIC COMPONENTS	
PLC	Siemens 1200 series
HMI	Siemens TP 700
Power supply	Murr
Cabinet carpentry	DKC
Protection	Siemens/Murr
Plugs	Harting
Sensors	Ifm/Electrotech
Safety relais	Siemens/Pilz
Motor	Motovario
Pneumatic part list	Smc
Oil devices part list	Dietronic/Omal/Debem/Ufi filter

OPTIONS:	
Additional Tanks for multiple oils management	40 lt
Additional tank for water-based oils	40 lt with automatic mixing unit
Cleaning Unit	Additional 40 lt tank
Automatic lubricant refilling unit	200 lt – 1000 lt

3. MAIN HOUSING

Structure

The machine's main housing is a solid and waterproof welded steel construction, standard colour RAL 2004.

Control Unit

The control cabinet can be placed on the back of the tank unit and the touch panel 7 inches on the top the tank.

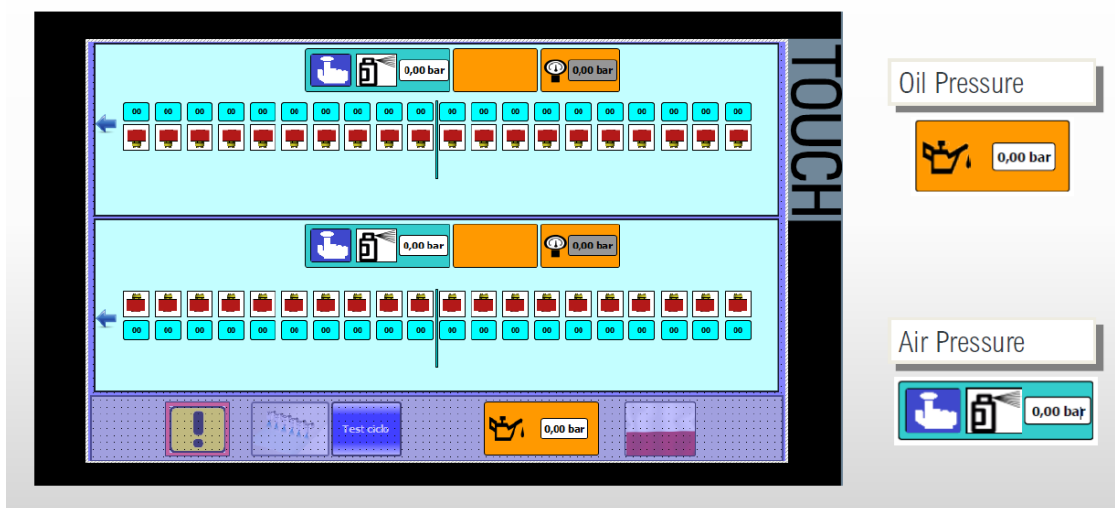
The control is equipped by Siemens CPU 1215, which is placed in the control cabinet.

Spray Visualization is programmed English language. (Optional other languages)

Spray synchronization

For blank application the machine is provided with a system to detect the front of the material and start spraying.

For coil application a hardware/software signal from feeder or press runs the activation of the spray. Is also possible to adjust the spray timing.



4. STRIP SPRAY LUBRICATION SYSTEM

The machine is created to apply lubricant onto blanks of uncoated or zink-coated steel, stainless steel as well as aluminum blanks.

The sheet metal passes through the spray box and the top and bottom side of the sheet metal can be sprayed with most types of oil according to the programmed spray strip.

The EPC controlled spray lubrication system consists of: a spray box, that can be connected to a suction system (optional). and a lubricant supply system, as well as a plastic tank for collecting the lubricant from the spray box.

A 7-inch control panel allows the input of all system adjustment parameters. The system allows strip lubrication, interfaced with the material feed, with an oil metering adjustment from 0.5 to 5 g/m².



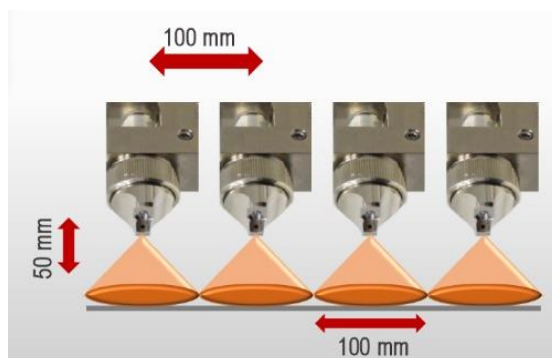
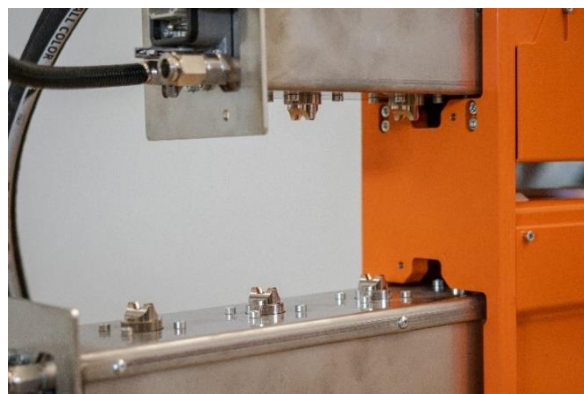
Spray Head Composition


Inside the spray box there are an upper and a lower extractable spray head that contains the LVLP spray valves model DTJ04. The extraction of the spray heads is from the side of the machine.

The distance between the DTJ04 spray valves is 100 mm, the distance of the spray valves from the material is 50 mm and the spray angle is 90°.

The number of spray valve depends of the size of the machine. (Please see the above table chart).

The spray valve is Low Volume Low Pressure design of spray valve with needle (more size available according to the viscosity of oil) activated by pneumatic signal. On the back of the spray valve is possibly change the volume applied from a single DTJ04 spray valve.





Inside of the spray box is designed to prevent spray-oil mist drops depositing on the inside walls of the spray box from dropping onto the coil or passing blank.

Oil Quantity Programmability and Spray Intensity

The usual intensity application of most of kind of oil in a approx. quantity of $< 0.5 - 5\text{g/m}^2$.

This variation is connected to the global oil pressure or independently by a screw on the back of single spray valve.

Air Pressure Control

The air pressure is completely automatic, no manual action is needed, adjustable from the operator panel.

Oil Tank

The machine is equipped with 40 lt oil tanks and by a pneumatic pump an accumulator of 2 litres is automatically refilled and maintained at constant fix level. With air pressure on this accumulator automatically controlled from the HMI is possible to set a very constant oil pressure to the spray heads.

As Option an automatic refilling units for the Oil media tanks from barrel or IBC Container 1000 lt can be supplied.

The unit is provided with level sensor switch displayed on the HMI of the machine.

Waste Tank

Plastic tank for collecting the oil that comes from the suction system and the spray box. The system is equipped with a level control that alerts the operator if the maximum level is reached.

Upper spray head lifting system

In case of coil application and in case of material thickness exceeding 3 mm, this device, which moves up and down, prevents any risk of material collision with the spraying head during material passage.

Oil Mist Extraction System

The suction systems are mounted on the top or on the side of the machine.

Air is extracted from the machine housing by a fan. Oil-mist separators clean the extracted air and drops in the waste tank.

The inside of the spray box is designed to prevent spray-oil mist drops depositing on the inside walls of the spray box from dropping onto the passing coil.

A high efficiency filter (the combination of polyester fabric and Teflon) allows the removal of smokes and vapours, providing filtration efficiencies reaching the remarkable value of 99,9%, IFA-BGIA Certification.

All models are equipped with a differential pressure gauge to monitor the filter life.

Automatic lubricant refilling unit

The machine can be equipped with a pumping unit for refilling the main tank(s) from 200-liter drums or 1000-liter containers.

Each unit has a tank to contain any oil leaks on the floor as well as an air pump to send the lubricant to the main tank.

The 40-liter main tank has a dual level control (minimum and maximum) that manages an interceptor valve.



5. GENERAL CONDITIONS AND SPECIFICATIONS

Certifications:	QUASI MACHINE 2006/42/EC Machine Directive
Components:	Standard DieTronic
Circuit Diagrams	Supplied in PDF version
Notes:	The software will be supplied with comments in Italian. Until the warranty expires, only a reading copy will be provided. The intellectual property of some key-blocks is password-protected.
Machine colour:	RAL 2004 and RAL 7035 for electrical cabinet
Standard length of cables and hoses:	From tank unit to spray box 5 mm
Commissioning:	Not include

NOT Included:

- Downloading from truck
- Positioning of the machine. DieTronic is not responsible about condition and alignment.
- Re-assembling of parts dismounted for transportation (DieTronic supervision included)
- All the activities that require to fix on the concrete
- Communication devices and cable for software interface between our machine and the line including cable channels
- Software integration to the line
- Positioning of IBS or Barrel holder
- Power supply and cable from the line to the machine
- Piping for air supply from line to the machine

Warranty Conditions

The Warranty goes into effect after maximum 60 days from when the new Dietronic unit has been delivered to the customer premises and expires at the end of the Warranty Period specified above.

The Warranty covers repairs to correct any unit defects related to materials or workmanship existing at the time of purchase. All requests must be approved by Dietronic prior to any work being performed during the Warranty Period. Specific exceptions to the Warranty are listed in the Exclusions section.

Dietronic will provide repairs to the unit during the Warranty Period in accordance with the Terms, Limitations, and Conditions. This is the sole Warranty provided by Dietronic.

Exclusions

Unit components subject to normal wear during the Warranty Period are not covered by Warranty and include the following items:

1. Filters (Oil tank, oiler suction systems filters)
2. Other wear parts

Component failure caused by customer misuse/abuse of the unit (e.g. incorrect modification of machine parameters that cause damages or the usage of incompatible materials), voids the Warranty.

Machine rupture caused by part handling/misuse or damages due to exposure to elements or incorrect storage of the equipment, voids the Warranty.

Standard Equipment Warranty Coverage

All unit components are warranted for 1-Years, except the items listed in the Exclusions section and workmanship.

Dietronic will supply new or remanufactured component of equal or better quality to replace the failed component, the works to complete the replacement of the faulty items are at customer's charge unless differently decided by Dietronic; it is the sole discretion of Dietronic to determine best method of replacement. The replaced component will be covered for the remainder of the Warranty Period or 90 days, whichever is longer.

The faulty material should be returned to Dietronic for check, unless differently specified by Dietronic, the costs incurred to return the material are solely at customer charge, if the items are not returned within 30 days from the reception on the replacement material they might be charged to the customer.

Commissioning Conditions

Please schedule a possible installation date with Mrs. Elisa Beccaria (service@dietronic.eu)

The following preconditions need to be met for a successful commissioning:

- 1) The Machine must be mounted and aligned
- 2) The electrical, pneumatic and liquid connections must have been installed
- 3) Electricity and compressed air should be available according to Dietronic specification
- 4) Free access to 230 V.
- 5) Customer must provide necessary safety training and access cards
- 6) Customer must guarantee working time without interruptions for Dietronic technicians
- 7) Commissioning will take place only once in Customer Plant
- 8) Working time 7 am to 5 pm; if technicians need to work extra hours, we will charge surpluses for night shifts or work during the weekends.

Scope of commissioning:

- 1) Functional control of the installation
- 2) Initial start-up of the system

Not included in the above price are the following items:

- 1) All sorts of mounting and installations works
- 2) Correcting mounting errors or deviations from Dietronic specifications

All waiting periods that go back to external factors or to non-compliance with the preconditions for a successful

commissioning will be invoiced according to the Dietronic pricelist for technicians.

An authorized person of the customer will have to confirm that the above services have been rendered directly after the end of the commissioning.

This must be done on the Dietronic form "confirmation commissioning". This confirmation ends the commissioning, the risk for running the machine will pass on to the customer.

A separate trip of the technicians to receive the customer's or end-customer's final acceptance is not included in this quotation/ order confirmation.

All additional services or items, that are not included in this quotation/ order confirmation will be charged according to the Dietronic pricelist for technicians.