



LRS4.0

AUTOMATIC COOLANT
RECYCLING SYSTEM



D&P GROUP



INDUSTRY 4.0

Industry 4.0, which includes a technological mix of sensors, connectivity and programming, represents a new revolution in industrial liquid management and process organization.

The integrated systems for recycling of exhausted coolant developed by D&P Group have been engineered to improve the automated management of industrial liquids in machining process.



PROBLEM

BAD ODORS

Exhausted coolants, developing bacterial growth, can result unpleasant odors.

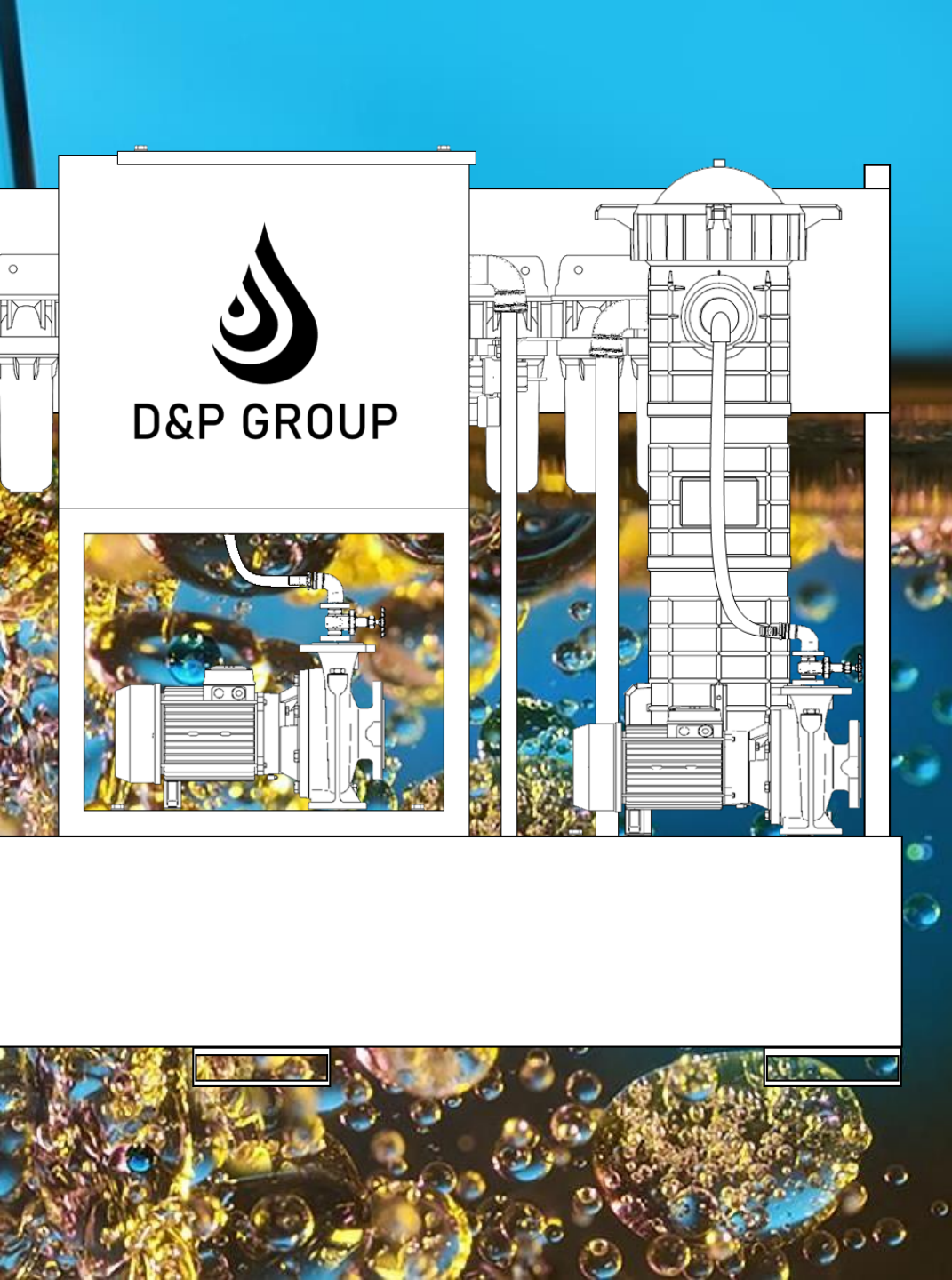
ENVIRONMENTAL IMPACT AND HEALTH

Exhausted emulsions, if not properly managed, from the production phase to the disposal phase, are highly polluting for the environment and can cause irritation and allergies.

DISPOSAL COSTS

The EU* enforces strict disposal regulations through rigid laws on the management of industrial liquids for disposal, resulting in high costs.

**CEE n. 75/442*



SOLUTION

Thanks to our combined technology, D&P Group can customize fluid handling machines and systems, including the exhausted coolant recycling plant, LRS4.0 series, according to customer needs.

Our systems use the following integrated technologies:

- Coalescence
- Filtration
- Magnetic filtration
- UV sanitization and disinfection
- Sanitization and disinfection by silver salts
- Dosage to restore water parameters by volumetric dosers, electromechanical microdosers.

PURPOSE OF THE LRS4.0 SYSTEM

The system, through the use of dedicated machines and equipment, is able to suck up exhausted coolant and to filter, de-oil and disinfect it from each single CNC machines' sump.





RECYCLING OF WASTE MATERIALS

The LRS4.0 main purpose is to minimize the cost of exhausted coolant disposal by allowing the customer to dispose only the solid waste (chips, sludge, powders, etc.) and oily waste (tramp oils). The entire process works to separate everything that cannot be recycled. The recycling part, properly treated, becomes reusable again. Waste materials (metal chips and powders, various kinds of pollutants, tramp oils, cutting oils, protectants, etc.) are recovered in special containers that can be easily emptied and sanitized.

THE STEPS OF THE RECYCLING PROCESS AND REUSE OF COOLANT

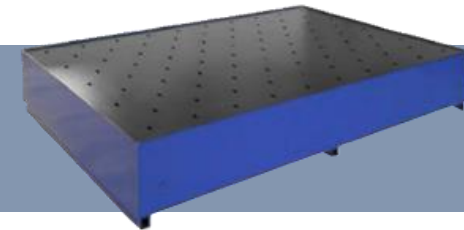
1

First filtration



2

Feeding the collecting and decanting tank



3

Coalescence oil remover for removal of tramp oils and hydrocarbons



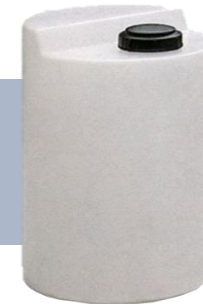
4

Second filtration



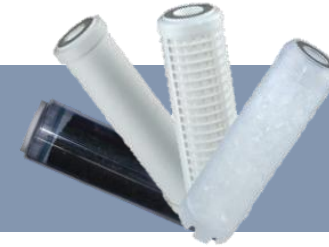
5

Decanting station



6

First stage of microfiltration for total removal of solid particulate



7

Disinfection and bacteria reduction through a Silver Salts filter and UV treatments



8

Treatment of anaerobic bacteria with oxygenation devices



FINAL PROCESS ALTERNATIVES

9a

Restoring of coolant concentration with dosing pumps



9b

Restoring parameters with LDS4.0 system



9c

Restoring water parameters with electromechanical microdosing pumps



! WARNING !
This is NOT a water purifier system





AUTOMATIC CORRECTION OF PARAMETERS

The system can automatically read and correct** the exhausted coolant values by restoring the optimal values of the main coolant parameters (concentration, sumps level, temperature, pH, conductivity, water hardness, bacterial growth).

**Possible only with the integration of a LDS4.0 system.



BENEFITS

- Reduction of disposal costs
- Optimization of the waste to be disposed*
- Reduction of space otherwise used for storage and collection of exhausted coolant
- Reduced environmental impact
- Improve of the personnel health and healthy working environment
- Plus for companies that obtain environmental certifications or are implementing the 2030 Agenda for Sustainable Development
- Optimization of disposal management labor costs
- Significant reduction in water consumption for coolant production

**considering 100 liters of coolant to be disposed, approximately 90 liters consist of water, if properly treated can be reused*



AGENDA 2030

D&P Group is supporting the sustainable development project drafted through the United Nations Global Agenda and the Sustainable Development Goals (SDGs)

- 17 Goals
- 169 Targets
- 240+ Indicators

An integrated vision of sustainable development, based on four pillars: Economy, Society, Environment, Institutions





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