



More than products. Partnership.

SOLID C

Dry, wet and liquid spreading with the lowest total cost of ownership

Spreaders for dry, wet and liquid spreading with dry agent tank capacities of 3.5 to 12 m, and liquid agent tank capacities of 2000 to 9680 L are the perfect choice if the same vehicle is used for road maintenance in different weather conditions.

The choice of one of the five offered conveyor systems, robust design and advanced control systems guarantee the efficiency and cost-effectiveness of your investment.





Three spreading technologies in a single machine unit

If one vehicle is used for road maintenance in different weather conditions, the SOLID C spreader family would be our suggestion for a solution adapted to your needs. Dry, wet and liquid spreading using a single device reduces the overall consumption of spreading materials, enables a better adjustment to weather conditions and increases the usability of the winter service vehicle.

SOLID C combines the best characteristics of SOLID and LIQUID spreaders in a single device. For dry and wet spreading with a spinner, SOLID C has the same characteristics as a standard SOLID spreader, whereas for liquid spreading it uses a specially designed ramp with nozzles, acting as a LIQUID spreader. Beside the latter two technologies, SOLID C also has the option of liquid spreading using the spinner, which is a functionality adapted to users who do not require simultaneous liquid spreading across three traffic lanes. The specific design of the conveyor and distribution system of the SOLID C spreader, which are controlled via intuitive control units, allows the selection of the liquid content in the spreading material from 0% up to 100%.

The conveyor system for dry agents can be produced in one of the five offered variants (auger conveyor, double auger conveyor, rubber belt, steel chain and steel chain with lowered bottom).

The wide range of available conveyor systems enables SOLID C spreaders to work with any known materials for dry spreading. For liquid spreading, the spreader can be equipped with one or two pumps with a total capacity of 100 to 400 litres per minute, which is sufficient for spreading across three traffic lanes with the vehicle moving at high speeds.

The mounting and de-mounting of the spreader from a vehicle is very simple due to a wide selection of mounting mechanisms adapted to any vehicle. The spreader can be powered via the hydraulic system installed on the vehicle, or via a diesel-hydraulic power unit.

The dry agent tank capacities of 3.5 to 12 m³, and liquid agent tank capacities of 2000 to 9680 L make SOLID C the perfect choice for winter maintenance in areas with variable weather conditions. The possibilities of the SOLID C spreader do not end here. Upon request, SOLID C can be equipped with a liquid spreading system for two different types of liquid agents, by automatic lifting of the chute exit and tanks that increase the available quantity of liquid agent instead of a dry agent. The SOLID C spreader family offers solutions for any challenge of winter road maintenance.

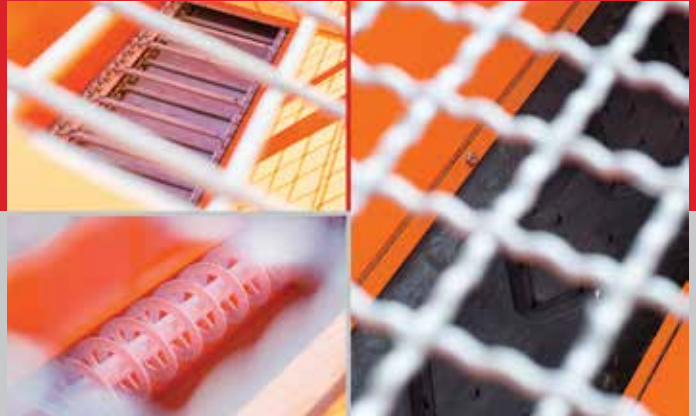


WHY CHOOSE THE SOLID C SPREADER? ❖



✓ Savings on resources and spreading materials

If one vehicle is used for road maintenance in different weather conditions, the technology of combined spreading will provide you with the flexibility of using dry, wet or liquid spreading without making investments into several specialized devices and vehicles.



✓ Widest choice of conveyor systems

SOLID C spreaders are available with conveyor system for dry agents in the form of a steel chain, steel chain with closed bottom, auger conveyor, double auger conveyor, or rubber belt conveyor.

Any of the latter options can be combined with a wide range of liquid spreading pump capacities.



✓ Lowest total cost of ownership

The unique surface protection system, easiness of use and maintenance, robust design, high-quality materials, and hydraulic components produced by renowned manufacturers guarantee a safe investment in the SOLID C spreaders.

Proven durability, safety, efficiency, simplicity, and availability of service parts and post-sales support guarantee the lowest overall cost of ownership of a spreader currently available on the market.



✓ Proven quality and reliability

We have incorporated the experience gathered from over 40 markets and three continents where RASCO operates in RASCO spreaders.

The quality, robustness and reliability of RASCO spreaders has been proven on virtually all European roads, from the Arctic Circle over sunny Spain to the toughest winter conditions in Russia and Ukraine.



1 | Conveyor system

Constructed in the form of an auger, double auger, chain, or chain with a lowered bottom, allowing use of any available materials for dry spreading. Membrane pumps with a total capacity of 100 to 400 litres per minute are used for liquid spreading.

2 | Distribution system

Two designs are available depending on the technology of spreading. Chute exit and spinner are used for dry and wet spreading. For liquid spreading, a ramp with nozzles is used. Both systems enable uniform application of material over the entire spreading width. The SOLID C spreader allows the selection of the liquid content in the spreading material from 0% up to 100%.

3 | Monitoring use of the spreader

As a part of the integrated monitoring system of the spreader's operation and vehicle movement, it enables simple and efficient control of the winter service fleet vehicles. It optimizes the quantity of used spreading material and reduces fuel consumption.

4 | Safety fences

Provide safety for the operator when moving on the upper part of the spreader.

5 | Rear and front platforms

Designed for easier access to the rear or front side of the spreader, recommended in case of fixed mounting of the spreader.

6 | Traffic signalisation

Installed according to legal regulations in force in the country of use. Reflective labels, rotating lights and illuminated signs ensure good visibility of the spreader and vehicle in all weather conditions.





7 | Dry agent tank

Constructed and manufactured in a way that prevents the adherence of spreading material to the spreader's walls, eliminates the tunnel effect and ensures a continuous flow of material toward the distribution system.

8 | Liquid agent tanks

Mounted on the side and/or front. Filled with a previously prepared solution of chloride (NaCl , MgCl_2), urea or eco-friendly agents for liquid spreading, which are mixed with a dry agent in the case of wet spreading, or sprayed directly onto the surface in case of liquid spreading.

9 | Control units

Ergonomically shaped and simple to use, EPOS control units enable the control of spreading parameters from the vehicle cabin without the need to look away from the road or distracting the driver while driving.

10 | Spreader hopper safety grid and spreader cover

The safety grid protects the spreader from damage when the spreading material is being added, while the cover prevents the material in the dry agent hopper from becoming wet.

11 | Vehicle mounting system

Depending on the vehicle onto which the spreader is mounted. Enables quick mounting and de-mounting from the vehicle.

12 | Storage outside the season

Storage of spreaders outside the season is made easier with the use of storage legs for storing an empty or a full spreader.



Equip the SOLID C with a conveyor system that suits you best

The SOLID C spreader can be equipped with one of the five conveyor systems for materials for dry spreading. The choice of a conveyor system depends on the material used for dry spreading and your preferences.

Steel conveyor chain

SOLID CL is especially designed for work with the most demanding materials for dry spreading, such as wet and adhesive sand with a high percentage of clay, coarse sea salt or a mixture of different materials.

High reliability and efficiency of the spreader is guaranteed by a strong chain conveyor which prevents the formation of a tunnel effect, regardless of the quality of spreading agents.



Steel chain with lowered bottom

SOLID CLLB is a patented chain conveyor system and represents a unique solution which combines the best characteristics of every known conveyor system.

The main advantage of this system is the prevention of falling out of the spreading material into the box or on the vehicle chassis, providing simultaneous robustness and reliability of the steel chain conveyor system.

This conveyor system ensures uniform emptying of the spreader and continuous fragmentation of the material for dry spreading before it is delivered to the distribution system.



Auger conveyor

SOLID CX is the best choice for spreading with materials such as fine salt with a low moisture content or stone granules. Precision and efficiency of work with SOLID CX is enabled by an auger conveyor system. The auger conveyor has a built-in fragmentation mechanism which prevents the passage of larger lumps of material for dry spreading onto the spinner.



Rubber belt conveyor

The SOLID CT spreader is intended for spreading with dry materials with low or moderate humidity. Reliability of spreading with more demanding materials using the SOLID CT spreader is guaranteed by a rubber belt conveyor used for supplying the material. The shape of the belt conveyor prevents adhesion of the material, and a part of the conveyor system is also equipped with a fragmentation system for the spreading material.



Double auger conveyor

SOLID CXX uses two auger conveyors as the transportation element. Therefore, SOLID CXX can be used as a spreader for one or two materials for dry spreading. If the spreader carries two materials for dry spreading, the hopper is divided into two sections.



MATERIALS FOR DRY AND WET SPREADING

From wet sand to fine salt: SOLID C can work with anything

The choice of material for dry spreading depends on weather conditions, user preferences and legal regulations for road maintenance. The most commonly used materials for dry spreading are salt of different grain size and moisture content, rock salt, sand and stone granulate or a mixture of these materials. Although salt is the most commonly used material for dry spreading, at low temperatures when spreading salt no longer gives the desired results, the final resort are sand and stone granulate. Sand is often wet, sometimes with a high percentage of clay. Ensuring efficient spreading using such materials and respecting the required parameters can be a challenge for any spreader.

When salt is used as the spreading material, wet spreading achieved by mixing salt and a water solution of salt enhances and accelerates de-icing of roads. Wet salt adheres to road surface more easily, and its action is accelerated and prolonged.

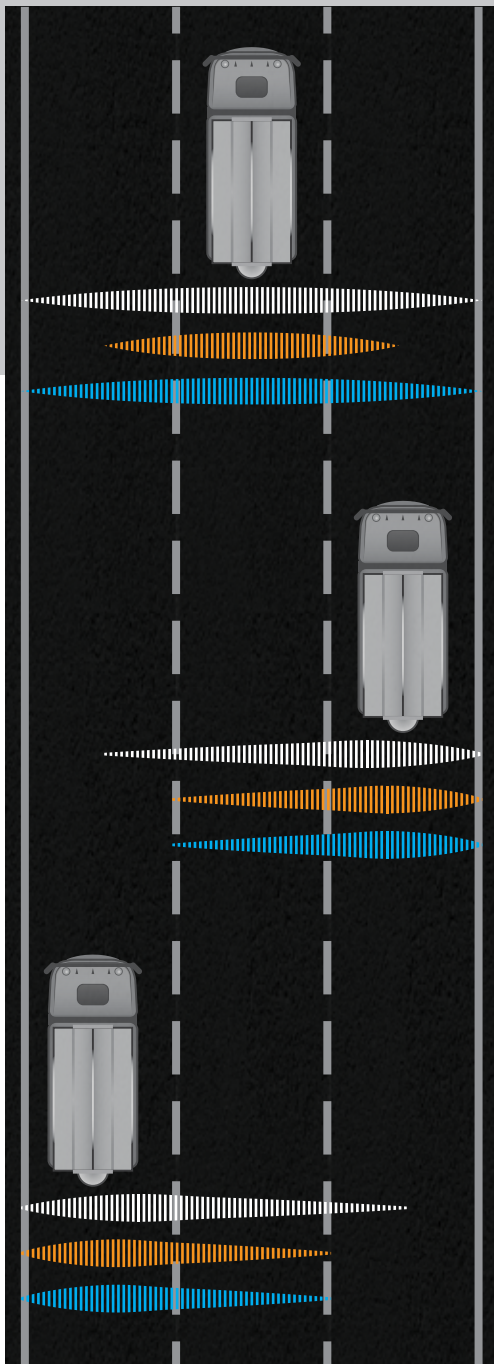
SOLID C spreaders have been developed by taking into consideration the properties of all materials for dry and wet spreading. The five available conveyor systems for SOLID C spreaders guarantee that a properly configured spreader will work in accordance with the expectations and preferences characteristic of a certain market.





Two systems for efficient distribution of spreading material

Every SOLID C spreader is equipped with a spinner for dry and wet spreading. Liquid spreading is possible by spraying liquid using the spinner or using a specially designed ramp with nozzles. Every parameter of spreading is controlled via the intuitive EPOS control unit located in the vehicle cabin.



Dry and wet spreading

The spinner offers the possibility of spreading dry or wet agents in ranges of 2-9 or 3-12 meters.

The spinner can be ordered in the standard or reinforced version which is recommended for use with abrasive materials such as sand or stone granulate.



Liquid spreading using the spinner

A special version of the SOLID C spreader offers the option of equipping the spinner for dry and wet spreading with additional nozzles which enable liquid spreading with a maximum width of 8 meters. For users who do not require liquid spreading of three traffic lanes in a single go, it represents a very efficient solution for liquid spreading.



Liquid spreading using the ramp with nozzles

When liquid spreading with a width of up to 12 meters is required, the SOLID C spreader can be equipped with an additional ramp with nozzles. Using this solution, it is possible to cover three traffic lanes in a single go.

The nozzles can be turned off individually, which expands or narrows the spreading width at intervals of 1 meter, or in groups, with one group covering the width of a single traffic lane.

USING THE SPINNER

USING THE RAMP WITH NOZZLES



Solution for vehicles with and without built-in hydraulic system



Vehicles with built-in hydraulic system

SOLID C spreaders can be powered using a built-in hydraulic system of the vehicle if it is designed according to the EN ISO 15431 standard.

If the hydraulic system of the vehicle is equipped with Load Sensing, the spreader must be equipped with a compatible hydraulic installation that is available as an option.



Vehicles without built-in hydraulic system

If the vehicle is not equipped with a hydraulic system, the SOLID C spreader can be powered using the highly reliable diesel-hydraulic power unit which is available as an option with the spreader. With this solution, the spreader becomes independent of the vehicle and can be easily and quickly moved to any carrier vehicle of sufficient capacity. In a particular edition, the diesel-hydraulic power unit mounted on the spreader can be used to power the front or side plough.



Every spreader needs a vehicle

SOLID C spreaders can be mounted on winter road maintenance trucks. With easy mounting onto vehicles, there are also a variety of mounting options for the SOLID C spreader:

- Mounting on dump box
- Mounting on dump box balls
- Mounting directly on vehicle chassis
- Mounting on trailers
- Mounting on vehicles equipped with hooklift system



RASCO spreader safety

- ✓ Mounting the spreader on vehicles is performed according to strict safety standards and recommendations of the vehicle manufacturer.
- ✓ The spreaders can be quickly and easily mounted or de-mounted from vehicles.
- ✓ Multiple safety elements protect the user during spreader operation and maintenance.
- ✓ Spreaders are marked with light and reflective markings that ensure visibility of the winter service vehicle regardless of weather conditions.



Intuitive and advanced control units

The work of all RASCO spreaders is controlled by EPOS control units. Their dedicated development by RASCO experts in cooperation with the users makes them a leading solution for spreading control and monitoring. The EPOS family of control units is the result of the knowledge and experience gathered in the quarter of century in over 40 markets where RASCO operates. The result is intuitive control units, easy to use, designed for controlling the spreader without taking your eyes off the road.

SOLID C spreaders can be controlled with EPOS 10 and EPOS 30 control units. EPOS 10 enables control of all spreader functions, and EPOS 30 adds the option of wireless connectivity, GPS automatic spreading, navigation, and front and side snow plough control.

The high reliability of compliance with the set parameters is achieved by using the system of feedback connections with the spreader's actuators, and the simple and rapid calibration system of the spreader ensures precision of spreading using different spreading materials.



Geolocation and navigation in the service of winter maintenance

Geolocation of vehicles and navigation are standard functionalities that are used primarily for easier and faster navigation on the roads.

They can be used in the winter road maintenance service for faster, easier and more reliable maintenance of smooth traffic flow. Record the routes used by winter road maintenance vehicles once. Add spreading parameters to segments of recorded routes. After that, the winter road maintenance drivers must only follow the instructions of the navigation system, and adjusting of the spreading parameters is fully left to the EPOS 30 control unit according to the pre-set parameters.

	EPOS	10	30
Control of spreading quantity and width		•	•
Dry spreading		•	•
Wet spreading		•	•
Liquid spreading		•	•
Travel-dependant spreading		•	•
Adjustment of the spreading pattern asymmetry		•	•
Spreading control using feedback connections		•	•
Separate adjustment of left and right spreading width		•	•
Thermal camera		•	•
Automatic spreading using GPS location and predefined routes			•
Online & offline maps			•
Connectivity via Bluetooth and Wi-Fi			•
Compatibility with additional control units (e.g. for front/side snow plough)			•



Keep track of your winter service fleet of vehicles in real time

The current position of the spreader, spreading parameters settings, working hours, and historical movement and usage data are information that you need available at any time. RASCO spreaders are adapted for connecting with monitoring and tracking systems.

ARMS is RASCO's software solution for monitoring and tracking – an information and communication system for control, central monitoring, reporting and optimization of activities related to the maintenance of traffic infrastructure. Monitoring of working hours of people and machines as well as of the used resources (such as the used spreading salt, vehicle fuel etc.) in real time provides a unique possibility to quickly decide on potential saving methods. Unchangeable logs protect the user from responsibility by providing clear information on any taken action, while the reduced consumption of spreading material at the same time protects traffic infrastructure and its surroundings.

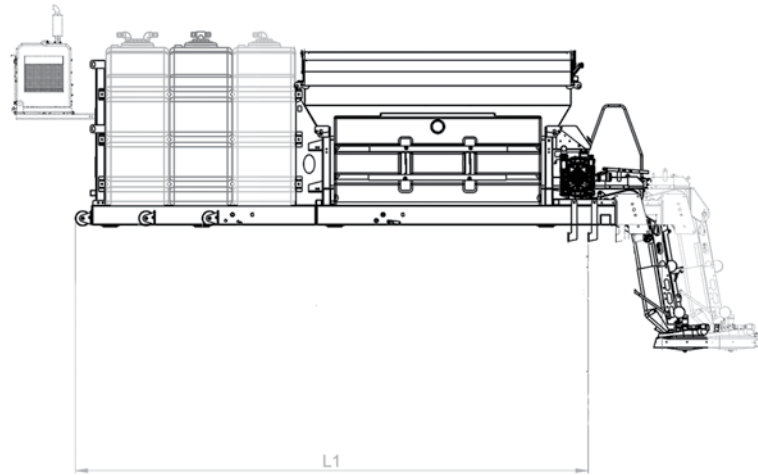
The system gathers information on device and vehicle usage in real time using a data mobile approach, standard in almost all countries of the world.

The application which collects information is placed in the “cloud” and is maintained by RASCO experts, which reduces operative costs and the need for system maintenance by users. The user can approach the system through a simple web interface from any computer.

ARMS can be integrated in a larger intelligent transportation system (ITS) or it can be connected to smaller systems such as RWIS (Road Weather Information System).



TECHNICAL CHARACTERISTICS



Model	Capacity [m³]			L1 - Mounting length		
	Dry agent hopper	Side liquid tanks	Front liquid tanks	1 front tank	2 front tanks	3 front tanks
	m³	L	L	mm	mm	mm
3.5	3.5	1840	2000 (1x) 4000 (2x) 6000 (3x)	4220	4910	5600
4.0	4.0					
5.0	5.0					
6.0	6.0					
7.0	7.0					
4.0	4.0	2300		4720	5410	6100
5.0	5.0					
6.0	6.0					
7.0	7.0					
6.0	6.0	2650		5220	5910	6600
7.0	7.0					
8.0	8.0					
9.0	9.0					
6.0	6.0	3000		5720	6410	7100
7.0	7.0					
8.0	8.0					
9.0	9.0					
8.0	8.0	3680	6520	7210	7900	
9.0	9.0					
10.0	10.0					
11.0	11.0					
12.0	12.0					

CHOICE OF SPREADER EQUIPMENT

- Conveyor system
- Cover grids and tarpaulins
- Edge protection from filling up
- Access platforms
- Safety fences
- Work lights and rotating lights
- Spinners for dry, wet and liquid spreading: A) 2 ÷ 9 m / 3 ÷ 12 m (dry), B) 1 ÷ 6 m / 2 ÷ 9 m (liquid)
- Vehicle mounting systems
- Storage legs
- Graphic markings
- Liquid agent pumps of different capacities
- Ramp with nozzles for liquid spreading
- Control units, sensors, cameras and motors for automation of the spreader
- Colour by customer's choice
- Vehicle undercarriage protection against spreading agents
- Different combinations of liquid agent tanks
- ARMS system
- Multiple spreader power system options



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