DE-ICING AND ANTI-ICING EQUIPMENT

EFFICIENCY, DURABILITY, SIMPLICITY AND SAFETY ARE THE KEY FEATURES OF PROFESSIONAL RASCO EQUIPMENT FOR DE-ICING AND ANTI-ICING OF TRAFFIC INFRASTRUCTURE.


ROSCO
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RASCO

The smart choice

RASCO is one of the leading European manufacturers of equipment for the maintenance of traffic infrastructure. The company's line of products is comprised of devices for summer and winter maintenance. All products from the RASCO product program have been developed based on 25 years of experience in the production of equipment for the maintenance of traffic infrastructure.

The key features of RASCO devices include efficiency, durability, simplicity and safety. They are included in design and manufacture processes of professional RASCO de-icing and anti-icing equipment. Efficiency, durability, simplicity and safety are implemented through a range of functional characteristics of RASCO de-icing and anti-icing equipment, such as high precision of spreading, spreader design adapted for simple maintenance, superior surface protection, simple mounting and a wide choice of additional options.

Today, RASCO equipment serves to maintain smooth traffic flow on roads in over 30 countries. Proven reliability in the most extreme winter maintenance conditions of traffic infrastructure in Europe and North and Central Asia and the ensured post-sales support make the use of RASCO de-icing and anti-icing equipment a smart choice.

SPREADING WIDTH [m]	PRE-WETTING SYSTEM	VEHICLE TYPE				SPREADING MATERIALS					CONVEYOR SYSTEM				
1 ÷ 6 / 2 ÷ 9 / 3 ÷ 12	•	•	•		•	•	•	•	•		•				
1 ÷ 6 / 2 ÷ 9 / 3 ÷ 12	•	•	•			•	•	•	•			•			
2 ÷ 9 (3 ÷ 12)	•	•	•				•	•	•				•		
2 ÷ 9 (3 ÷ 12)	•	•	•			•	•	•	•		•				
2 ÷ 9 (3 ÷ 12)	•		•			•	•	•	•		•				
2 ÷ 12		•	•		•					•					•
2 ÷ 9 (3 ÷ 12) / 1 ÷ 6 (2 ÷ 8)	•	•				•	•	•	•	•	•				•
2 ÷ 9 (3 ÷ 12) / 1 ÷ 6 (2 ÷ 8)	•	•				•	•	•	•	•		•			•
2 ÷ 9 (3 ÷ 12) / 1 ÷ 6 (2 ÷ 8)	•	•					•	•	•	•			•		•
1 ÷ 6 (2 ÷ 9)	•			•		•	•	•	•		•				
1 ÷ 6 (2 ÷ 9)			•			•	•	•	•		•				
2.2 ÷ 2.5		•				•	•	•	•					•	
1				•	•	•	•	•	•					•	

Fine salt · Coarse salt · Sand · Stone granules · Liquid

Auger conveyor · Belt conveyor · Chain conveyor · Supply roller · Pump

RASCO SPREADERS

Reliable solution for every challenge

RASCO's range of professional spreaders includes spreaders for all types of vehicles, ranging from trucks and multi-purpose vehicles to tractors, working machines and small utility vehicles. Spreaders are divided into two groups – solid agent spreaders and spreaders for liquid spreading.

The SOLID family of RASCO spreaders is intended for applying solid spreading agents on roads. Different conveyor system designs in the form of belt, chain or auger conveyors provide the user with the option of selecting a spreader based on the type of used spreading material. The LIQUID family of spreaders is intended for liquid spreading, which in certain weather conditions provides better results compared to the technology of solid material spreading.

Regardless of the spreading technology, RASCO spreaders use the same control units, they are mounted on vehicles in the same way and their work can be monitored with the use of an integrated satellite tracking system. All RASCO spreaders are designed and constructed for efficient, simple and safe spreading on roads, and their quality of construction and robustness serve as a guarantee of durability.


RASCO
RASCO

EFFICIENCY

High spreading precision of RASCO spreaders is achieved through constant and uniform distribution of spreading material which always matches set spreading parameters.

Different conveyor systems adapted to the properties of spreading materials ensure a constant flow of the spreading material to the spreader's distribution system even in the most difficult working conditions.

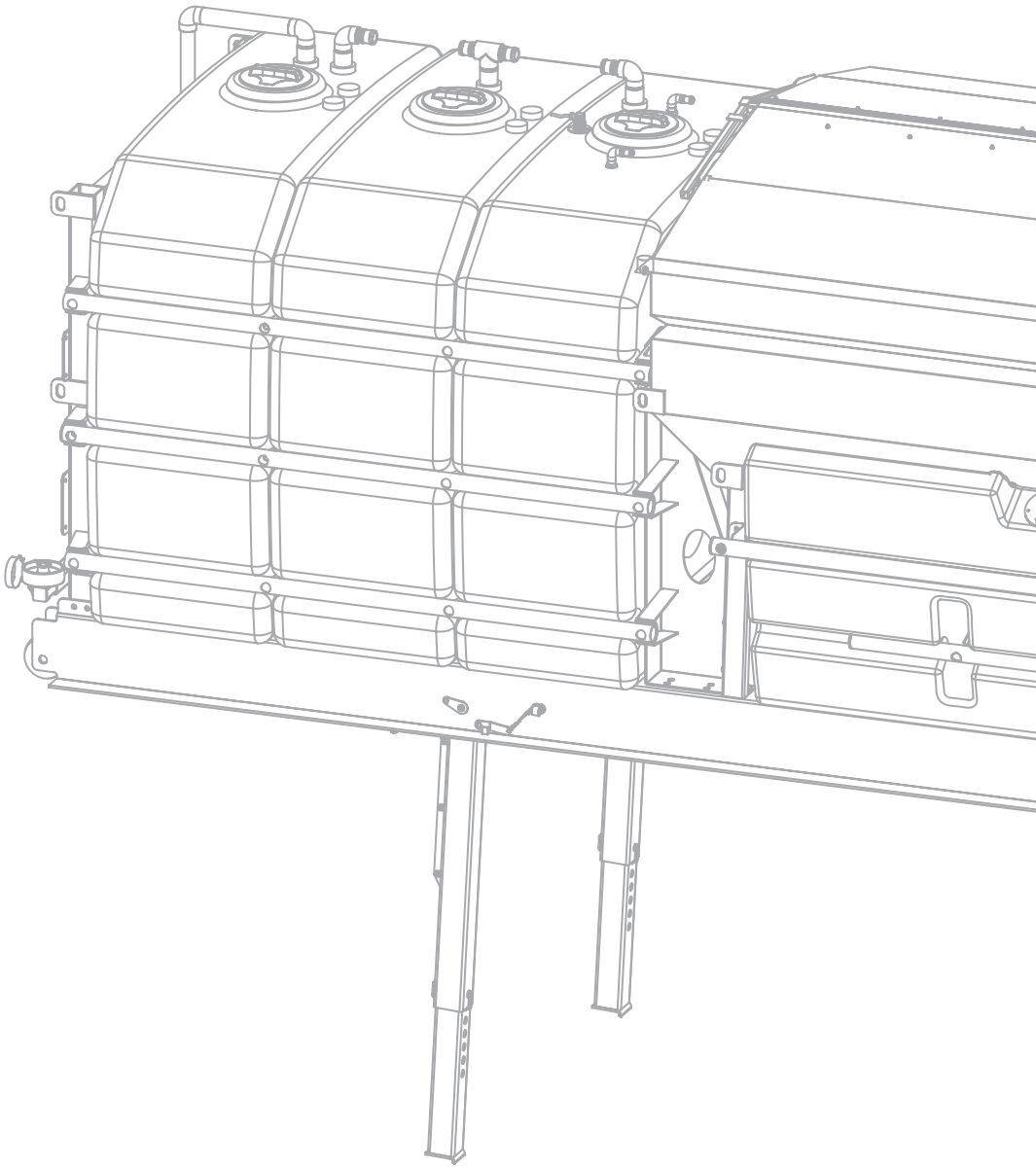
A simple calibration process reduces the time necessary for preparation of the spreader and ensures that the set spreading parameters are followed.

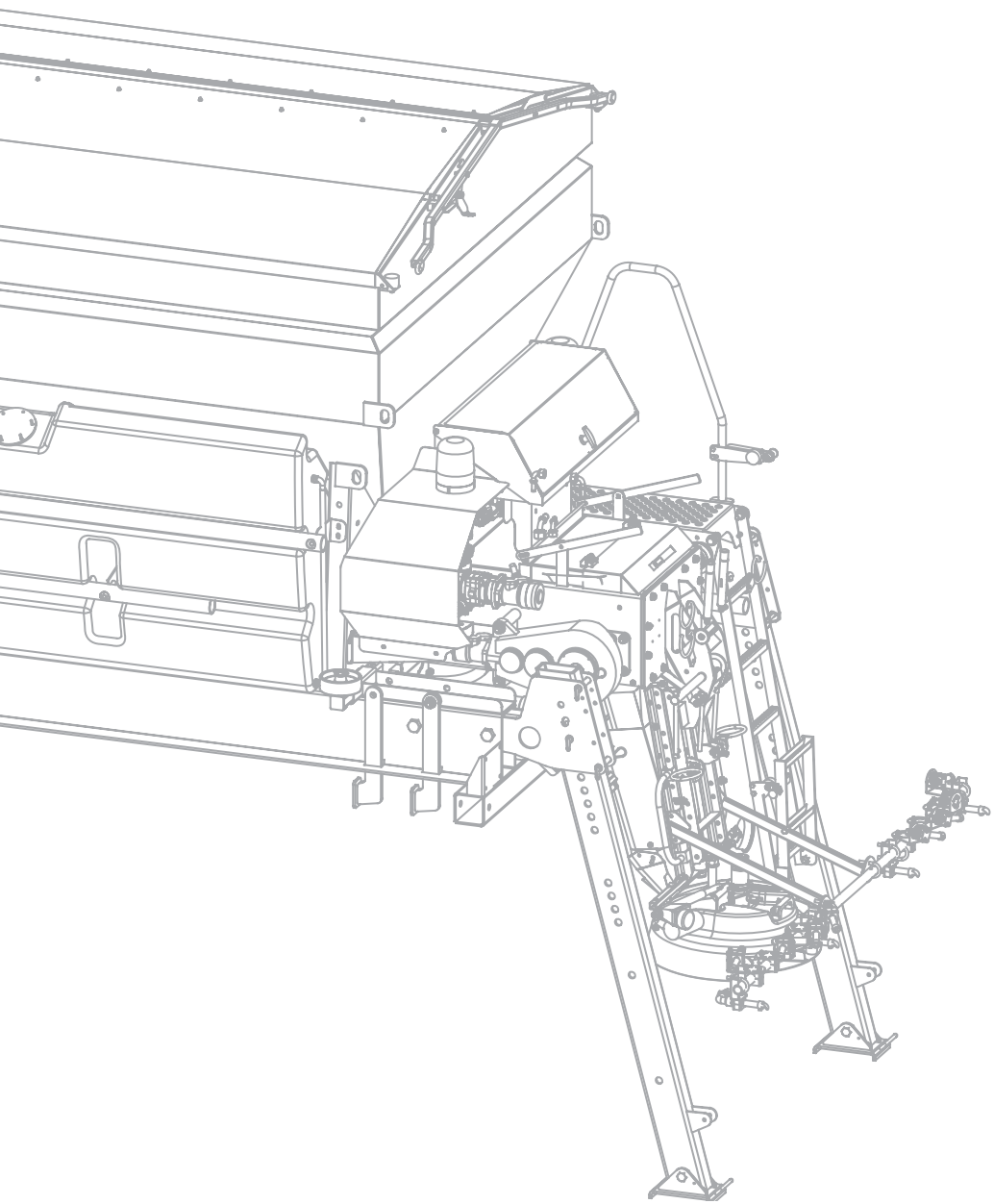
SAFETY

Multiple safety elements protect the user during spreader operation and maintenance.

Mounting the spreader on vehicles is performed according to strict safety standards and recommendations of the vehicle manufacturer.

Spreaders are marked with light and reflective markings that ensure visibility of the winter service vehicle regardless of weather conditions.





SIMPLICITY

Intuitive and ergonomically shaped control units enable control of all spreader's functions from the vehicle cabin.

One person can quickly mount and demount the spreader from the vehicle.

Robust construction and design focused on simplicity enable the spreader's work throughout the season with minimal maintenance.

DURABILITY

SurfaceArmour system for surface protection offers RASCO spreaders an unparalleled protection from corrosion and abrasion.

The production of RASCO spreaders includes only the use of high quality materials and components, intended for operation for several years in the most extreme weather conditions with minimal maintenance.

The completely integrated production process of RASCO spreaders, which begins with raw metal and ends with the final product, serves as a guarantee of their quality and durability.

1 Solid material hopper

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.

2 Spreader's safety grid and cover

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

3 Conveyor system

Constructed in the form of a belt, chain or auger conveyor, it enables the use of spreading materials of different types and quality.

4 Pre-wetting system

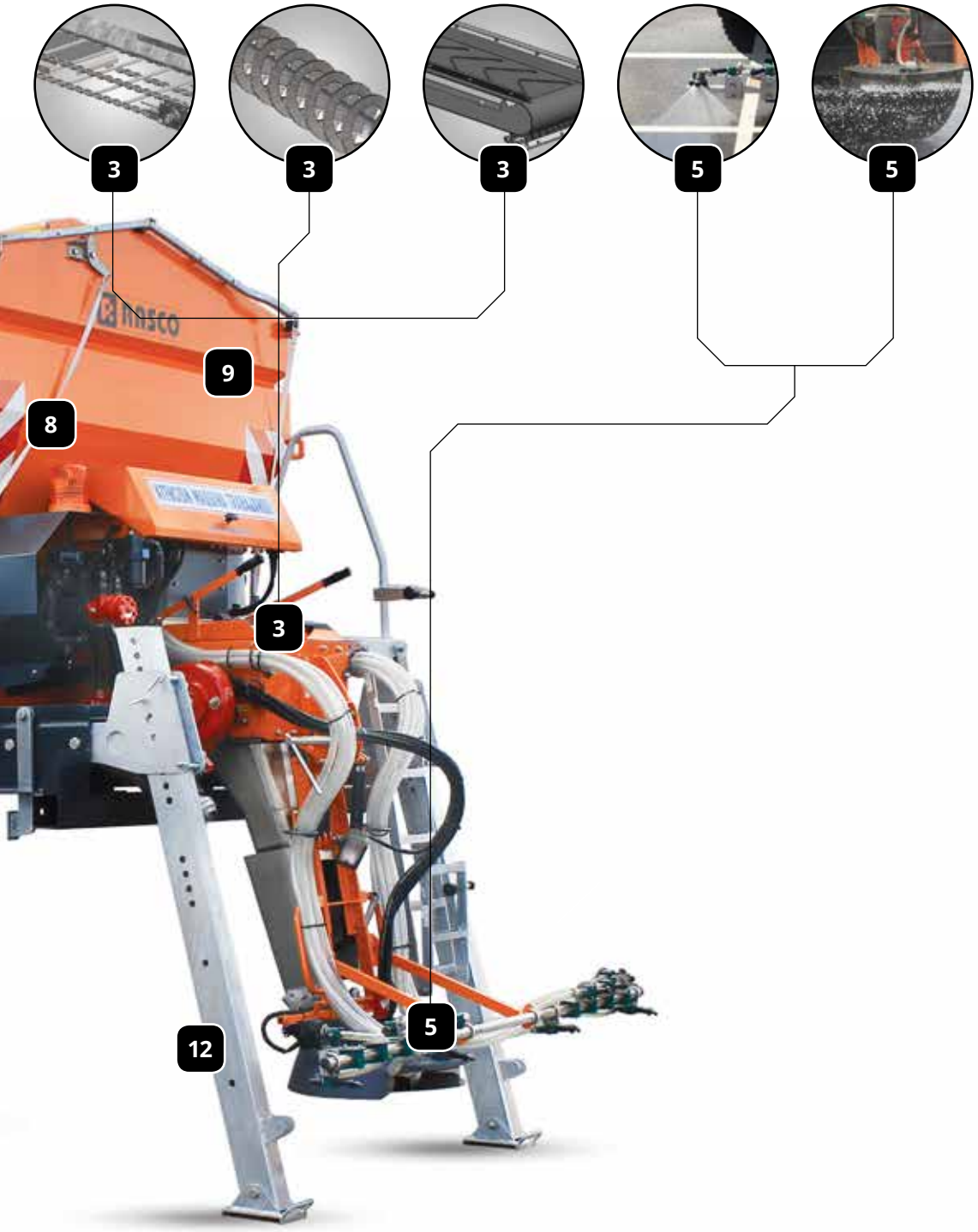
Increases the percentage of moisture in dry spreading materials in order to increase their capability of adherence to the surface and their road de-icing performance.

5 Distribution system

Two designs are available depending on the technology of spreading. For solid materials, a chute exit and spinner for rotation spreading are used. For liquid materials, a ramp with nozzles is used. Both systems enable uniform application of material over the entire spreading width.

6 Vehicle mounting system

Includes the use of legs for quick mounting and demounting and a frame which can be adjusted for various mounting methods.



7 Spreader drive

It can be carried out through built in vehicle hydraulics or a diesel hydraulic power unit mounted on the spreader.

8 Traffic signalisation

Carried out 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.

9 Surface protection

Includes a combination of three systems (SurfaceArmour, hot-dip galvanizing, anti-corrosion wax application), depending on the part of the spreader in need of protection. It secures a long lifespan of the spreader even in the most difficult working conditions.

10 Remote monitoring

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.

11 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.

12 Storage outside the season

Storage of spreaders outside the season is made easier with the use of storage legs.

Efficiency at work

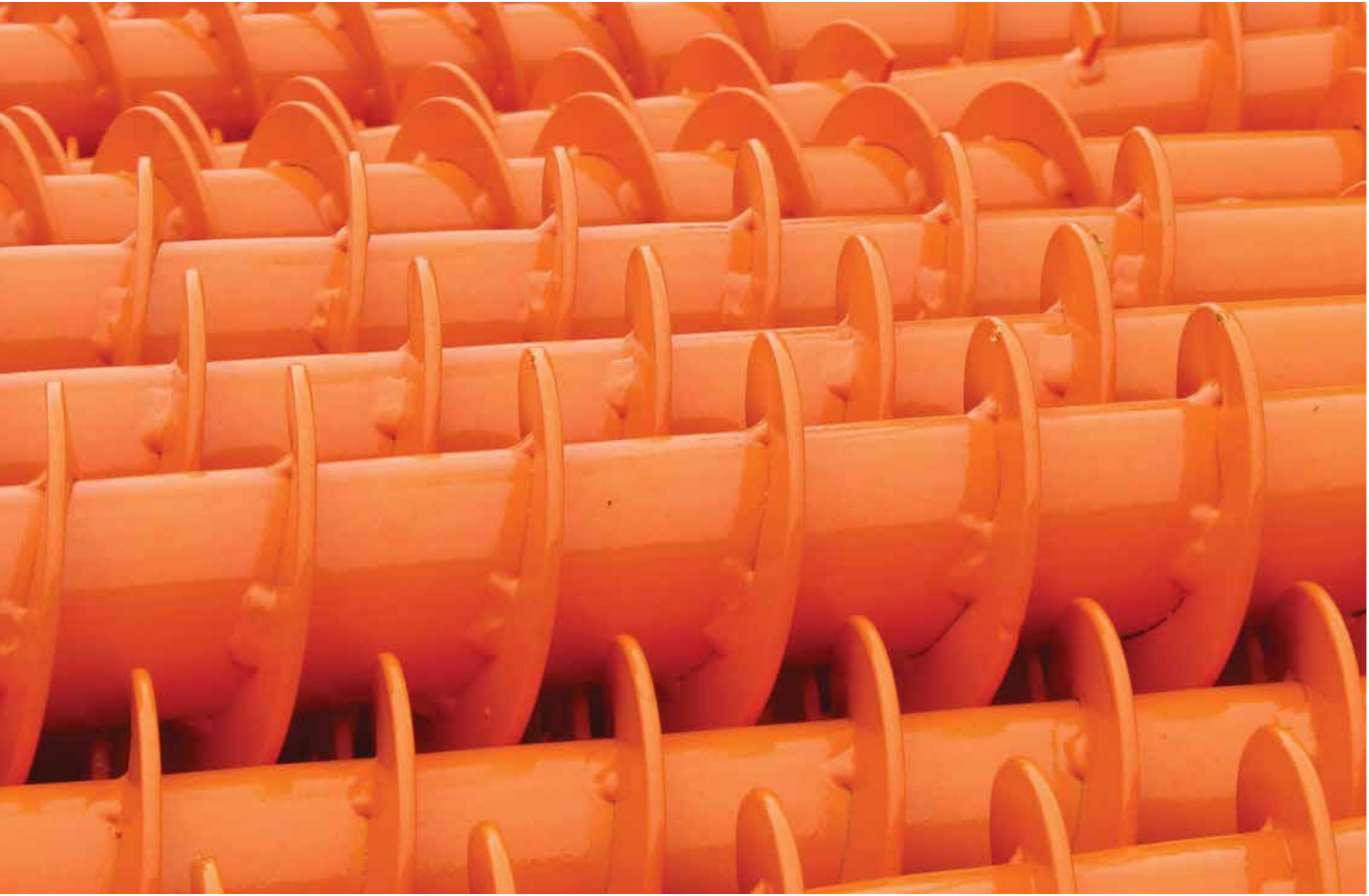
PRECISE SPREADING AND HIGH RELIABILITY DURING OPERATION OF RASCO SPREADERS ENABLE SMOOTH TRAFFIC FLOW EVEN IN THE MOST DIFFICULT WORKING CONDITIONS.

A reliable electronic system supported by feedback connections ensures precise operation of all spreader hydraulic actuators. The spreader's hopper and conveyor system are designed for continuous dosage of material, and the distribution system ensures precise and continuous application of spreading material on all parts of the road, while strictly adhering to the set spreading parameters. High precision and reliability of RASCO spreaders are supported by the EUnited certificates for spreading precision of SOLID and LIQUID spreaders.

All RASCO spreaders are tested and calibrated in detail for multiple types of material prior to delivery in order to ensure precision and reliability in working conditions. Subsequent spreader calibrations are simple and performing them regularly guarantees spreading performance in accordance with the selected parameters.

In addition to spreading precision, RASCO spreaders are also highly reliable during operation. High quality components and the design of key spreader parts put to test in the most difficult conditions serve as a guarantee of the spreader's reliable operation.

A range of reliable mechanic, hydraulic and electronic systems that make RASCO spreaders ensures a high spreading precision regardless of weather conditions.



Simplicity of use

CONTROL SYSTEMS DEVELOPED IN CO-OPERATION WITH USERS AND ACCORDING TO THEIR NEEDS, AS WELL AS SPREADER DESIGN THAT REQUIRES MINIMAL MAINTENANCE, GUARANTEE SIMPLE USE OF RASCO SPREADERS.

Intuitive and ergonomically designed EPOS control units enable spreader users to remain focused on driving, instead of looking for ways to change spreading parameters. The distribution of key controls on the control unit, sound and voice instructions and screen backlight adjustable to the degree of light in the vehicle cabin are the key elements that enable a simple use of RASCO spreaders. In case of problems with electronic components of the control systems, key functions of the spreader, such as the dosage of dry and pre-wetted material and spreading width, can be adjusted manually.

Spreaders can be unloaded by pressing a single button, mounting and demounting can be performed by one person, and the replacement of key components is fast and simple. Components of the spreader are easy to access, and mechanical solutions are performed in a simple yet effective manner, with a minimal number of consumable parts and low maintenance requirements. A simple procedure of preventive maintenance recommended prior to the beginning of the winter season enables spreaders to work continuously for months without the need for additional maintenance.

Advanced technology that is simple to use and maintain is the basic philosophy behind the design of all parts of RASCO spreaders.


EPOS20
RASCO
g/m²
m
m
AUTO
0 1
MAX

Product durability

COMPLETE CONTROL OF THE PRODUCTION PROCESS, FROM THE CONCEPT TO THE FINAL PRODUCT, RESULTS IN ROBUST AND LASTING PRODUCTS.

A completely integrated production process, which begins with raw metal and ends with the final product, use of components made by renowned and verified manufacturers and a surface protection system tested in practice serve as a guarantee of durability and reliability of RASCO spreaders.

All key spreader parts which have the most contact with salt, such as the chute exit and spinner, are made from stainless steel. Parts that are not in contact with salt to such a degree, such as storage legs and safety grid, are hot-dip galvanized for an extended lifespan, and key hydraulic components are protected with an anti-corrosion wax in addition to paint protection.

For paint protected parts of spreaders, RASCO uses the SurfaceArmour system of surface protection, developed in co-operation with the world leader for surface protection, which provides long-lasting protection from corrosion, as well as active and passive protection for abrasion. The combination of efficient preparation of the metal surface by shot blasting, with the aim of creating a clean and rough surface of Sa 2.5 quality, SurfaceArmour system of surface protection, hot-dip galvanization and application of anti-corrosion wax guarantee a long lifespan of RASCO spreaders, even if they are used in the most difficult working conditions.

RASCO spreaders are designed for long-term use in the hardest working conditions. Their durability is a result of robust construction, high quality of installed components and a leading system of surface protection.

Safe spreader use

RASCO SPREADERS HAVE A RANGE OF MECHANISMS THAT PROVIDE SAFETY FOR THE USER AND OTHER TRAFFIC PARTICIPANTS.

Access to all key parts of RASCO spreaders is performed in a safe manner. Spreader parts that are not available from the ground are accessed with the use of a ladder and access platforms equipped with safety railings. The safety grid on top of the spreader, among other things, protects the user from accidental approach to moving parts, and in case of emergency the spreader can be stopped by pressing the emergency stop switch.

RASCO spreaders can be mounted on all vehicle types and sizes, from trucks, multi-purpose vehicles and tractors to small utility vehicles.

Although the manner of mounting depends on the type and configuration of the vehicle, mounting is always performed in accordance with current safety regulations and recommendations by vehicle manufacturer.

All RASCO spreaders are equipped with lighting and reflective markings in accordance with the requirements in force in the country of use. Visual marks ensure the spreader's visibility for all traffic participants, and working lights located in key positions enable the user's control over the spreader's operation in all weather conditions.

Markings in accordance with legal regulations, safe approach to key parts and mounting on vehicles performed according to strict safety standards and recommendations of vehicle manufacturers make RASCO spreaders safe for use even in the most difficult weather conditions.


RASCO

SOLID SPREADER FAMILY

Spreaders for a wide range of working conditions

The SOLID line of spreaders has been created taking into account numerous differences in technological and climate conditions encountered by winter service operators. Precise spreading using spreading agents of different types and qualities makes these spreaders an excellent choice for all types of roads. SOLID spreaders can be mounted on a variety of different vehicle types and adjusted to individual needs of users due to a large selection of dimensions, mounting methods, drives and additional equipment.

To achieve optimal spreading results regardless of the type and quality of spreading agent used, different types of conveyor system designs are available. Dosage of the spreading agent and all other functions and work parameters of the spreader are controlled electronically from the vehicle cabin using advanced control units that enable simple use.

Besides working with solid spreading materials, SOLID spreaders are capable of mixing a solid agent and chloride solution by installing a pre-wetting system. Pre-wetting speeds up the de-icing process and improves adherence of the spreading material to roads, which results in reduced consumption of spreading agents.

High quality materials and components are used in the making of SOLID spreaders. Key components of the spreader which have the most contact with salt, such as the spreader's bottom, chute exit and distribution spinner are created from stainless steel, which in combination with quality anti-abrasion and anti-corrosion surface protection guarantees a long lifespan of the device even in extreme working conditions.

SOLID spreaders are designed as machines with low maintenance requirements. A simple procedure of preventive maintenance that the user performs once before the beginning of the winter season enables the spreader to work for months without any service interventions, as the key components are constructed in a way that enables work throughout the entire winter season without additional maintenance.


RASCO

CONVEYOR SYSTEMS OF SOLID SPREADERS

Three main versions of SOLID spreaders differ in one key characteristic – the type of system used to transport the spreading agent to the chute spinner. The choice of conveyor systems depends on the type of used spreading material:

The **SOLID X** is the best choice for spreading with materials such as salt, sand or stone granules with low moisture content. Precision and efficiency of work with SOLID X is enabled by an auger conveyor system. To achieve a highly precise and uniform spreading pattern, the auger conveyor has an in-built crushing mechanism which prevents the passage of larger clumps onto the spinner.

The **SOLID T** spreader is intended for spreading with dry materials of low or moderate humidity. Reliability of spreading with more demanding materials using the SOLID T spreader is guaranteed by a belt conveyor used for supplying the material. The belt conveyor has a specially designed shape which prevents the formation of a tunnel effect and the adherence of material, and is also equipped with a material crushing system. The distribution system of SOLID T is adapted for the distribution of moderately moist fine and coarse materials.

The **SOLID L** spreader is especially designed for work with the most difficult spreading materials, 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 spreading with the hardest materials is guaranteed by an especially strong chain conveyor which prevents the formation of a tunnel effect, regardless of the quality of spreading agents. The chain can easily transport all materials to the distribution system especially designed for an easier flow of coarse and wet materials.

SOLID Spreaders

Wide selection for all working conditions

The wide range of selection offered by the SOLID family of spreaders provides solutions for all user requirements regarding spreading precision, the use of different types of spreading materials and spreader functionality. In addition to the choice of three types of conveyor systems, the SOLID family also offers a wide range of spreader volumes, which provides the user with completely modular solutions for all types of vehicles, roads and working conditions.

Spreading precision is achieved by the right choice of conveyor systems in combination with an advanced control system and design of the spreader's mechanical components. The choice of a conveyor system adapted to the characteristics and type of spreading material enables a continuous supply of spreading material without the formation of a tunnel effect.

Control system with feedback connections enables a precise control of the actuator work, and a wide chute exit ensures a continuous flow of material toward a concave distribution spinner that mixes dry material and liquid agent with precision.

SOLID spreaders can be mounted on all types of trucks, multi-purpose vehicles and small utility vehicles, and they can also be used in combination with tractors if mounted on a trailer. Installation performed in accordance with strict safety standards and recommendations by the vehicle manufacturer in combination with easily noticeable visual markings of the spreaders serve as a guarantee for the safe use of SOLID spreaders both for users and other traffic participants.

Constructed with the aim of minimal and simple maintenance and adjusted to all types of spreading materials, SOLID spreaders have a proven quality and reliability in the most difficult working conditions and meet the most complex user requirements.

CHOICE OF SPREADER EQUIPMENT

- Cover grids and tarpaulins
- Edge guards against material overflow
- Safety railings
- Access platforms
- Spinner for spreading up to 1 ÷ 6 m / 2 ÷ 9 m / 3 ÷ 12 m
- Multiple mounting options
- Storage legs
- Control units, sensors, cameras and actuators for automation of spreading
- ARMS system
- Spreader drive: multiple system choices
- Working and rotating lights
- Reflective markings
- Colour tone in accordance with user requests

1 ÷ 6 m / 2 ÷ 9 m / 3 ÷ 12 m

2500 L

Volume of liquid agent tanks:
480 – 2500 litres.

Mounting on trucks, multi-purpose
and small utility vehicles.

12.0 m³

Volume of dry agent hopper:
0.85 – 12.0 m³.

SOLID DUO

Simultaneous use of two kinds of spreading agents

The SOLID Duo spreader is constructed for simultaneous use of two types of solid spreading materials. It has two chambers with an auger conveyor in each, enabling spreading with one material or a mixture of two materials in the desired ratio. When spreading with a mixture of materials, SOLID Duo saves time and money by avoiding the need for previous mixing of material prior to spreader loading. On the other hand, using two separate types of materials on the same route means that SOLID Duo saves fuel, since this eliminates the need for the vehicle to return to the base in order to load another type of material. Mounting of a pre-wetting system serves to additionally improve the spreading efficiency of one solid material or a mixture of two solid materials.

Precise spreading with the use of two types of materials is enabled by a special design of each of the two auger conveyors which enables two-chamber spreading. Both conveyors have an in-built crushing mechanism for a smooth material flow. The exit chute carefully positions the flow of material onto the spinner for a uniform spreading pattern.

SOLID Duo spreaders have all characteristics of the SOLID family of spreaders, which is why their simple use, durability and safety represent a good choice for all users with the specific need for performing spreading on roads with more than one solid material.

CHOICE OF SPREADER EQUIPMENT

- Cover grids and tarpaulins
- Edge guards against material overflow
- Safety railings
- Access platforms
- Spinner for spreading up to 2 ÷ 9 m / 3 ÷ 12 m
- Multiple mounting options
- Storage legs
- Control units, sensors, cameras and actuators for automation of spreading
- ARMS system
- Spreader drive: multiple system choices
- Working and rotating lights
- Reflective markings
- Colour tone in accordance with user requests

2 ÷ 9 m / 3 ÷ 12 m

1720 L

Volume of liquid agent tanks:
1720 litres.

Mounting on trucks and universal working vehicles.

6.0 m³

Volume of dry agent hopper:
4.0 – 6.0 m³.

SOLID XF

Created for Unimog

SOLID XF is a low-profile spreader, with a construction adjusted to Unimog vehicles. The spreader design maximally utilizes useful load capacity of the vehicle without compromising visibility of the surroundings from the driver's seat. The SOLID XF spreader design contains all the characteristics of the SOLID X family of spreaders, this time placed in a specially shaped housing. The spreader is designed for installation instead of tipper body or inside the tipper body and mounting and demounting are simple thanks to hydraulic quick couplings and legs with jacks.

Solid material hopper of SOLID XF is equipped with two auger conveyors which enable uniform tank unloading with the reduced possibility for tunnel effect formation. The XDF spreader version comes with installed bulkhead that separates the hopper into two chambers with a 2:1 ratio.

This enables the spreader to operate simultaneously with two types of solid spreading agents. Mounting of a pre-wetting system serves to additionally improve the spreading efficiency of one solid material or a mixture of two solid agents.

The spreader is constructed in a simple and efficient manner, with a minimal number of consumable parts and low maintenance requirements. Unique surface protection and multiple safety elements are a guarantee of durability and safe use of the SOLID XF spreader.

CHOICE OF SPREADER EQUIPMENT

- Cover grids and tarpaulins
- Edge guards against material overflow
- Safety railings
- Access platforms
- Spinner for spreading up to 2 ÷ 9 m / 3 ÷ 12 m
- Multiple mounting options
- Storage legs
- Control units, sensors, cameras and actuators for automation of spreading
- ARMS system
- Spreader drive: multiple system choices
- Working and rotating lights
- Reflective markings
- Colour tone in accordance with user requests

2 ÷ 9 m / 3 ÷ 12 m

1120 L

Volume of liquid agent tanks:
940 - 1120 litres.

Mounting on universal working
vehicles type Unimog.

2.8 m³

Volume of dry agent hopper:
1.8 – 2.8 m³.

ANTI-ICING

Liquid spreading technology

Liquid spreading is a proven spreading technology which achieves best results in weather conditions that are characteristic for transitional periods with moderately low temperatures or immediately before the formation of ice on road surfaces. Liquid spreading reduces the total consumption of salt and increases maximum spreading speed, which results in the reduction of operative costs and negative environmental impact, as well as protecting the traffic infrastructure.

Liquids used for spreading most commonly include solutions of sodium, calcium or magnesium chloride or urea. Since liquids adhere to road surfaces better than dry or moist grains of salt and can achieve almost perfect road coverage at the same time, liquid spreading prolongs the spreading effect, i.e. increases residual salinity of the road after the performed spreading.

In addition to a higher efficiency of the used spreading material, liquid spreading technology is also characterised by a greater spreading speed, which can be up to twice as high as the speed achieved with the use of dry or pre-wetted materials. Besides saving material, this enables savings with regard to the operative costs of spreading.

RASCO products that use the liquid spreading technology include LIQUID and SOLID C spreaders. LIQUID spreaders are intended exclusively for spreading liquid material through specially designed nozzles, while SOLID C spreaders enable the spreading of dry and pre-wetted materials through the standard distribution spinner, as well as spreading of liquid material through nozzles or the distribution spinner.

LIQUID

Multifunctional use for great savings

LIQUID spreaders implement the liquid spreading technology for road anti-icing or de-icing roads where ice has already formed. Spreading liquids that are used on roads include solutions of sodium, calcium or magnesium chloride or urea. Designed specifically as a multifunctional device, LIQUID can also be used in the summer as a water tank in combination with a front cleaner mounted on the vehicle. In addition to spreading liquids on roads, LIQUID can be used for de-icing traffic signs during winter and for the maintenance of hard to access areas by the side of roads with the use of a mounted manual jet washer.

LIQUID's distribution system consists of a ramp with a system of nozzles with variable flow. This patented solution enables high precision of spreading when the vehicle on which the spreader is mounted moves at high speeds. Two different types of nozzles, one of which is used for spreading immediately after the spreader, and the other for left and right lane spreading, provide the possibility not only of a wide spreading pattern, but also of precise control of spreading asymmetry.

All key characteristics of RASCO spreaders, such as simple control of spreader functions, safe and fast mounting on different vehicles and a unique system of surface protection are also present in LIQUID spreaders. With a functional design, high performance quality and low maintenance costs, LIQUID spreaders are a reliable multifunctional solution for winter and summer maintenance of traffic infrastructure.

CHOICE OF SPREADER EQUIPMENT

- Pressure hose with nozzle
- Multiple mounting options
- Storage legs
- Control units, sensors, cameras and actuators for automation of spreading
- ARMS system
- Spreader drive: multiple system choices
- Working and rotating lights
- Reflective markings

2 ÷ 12 m

14 000 L

Liquid tank volume:
1500 – 14000 l.

Mounting on trucks, multi-purpose
and small utility vehicles.

Liquid is supplied to the distribution
system by a high-flow pump.

SOLID C

Combined spreading for a high degree of efficiency

The SOLID C spreader is specifically designed for combined spreading. In addition to dry and pre-wetted spreading, it also enables liquid spreading due to its construction that allows carrying additional liquid agent tanks. Combined spreading provides flexibility in situations when one vehicle is used for road maintenance in different weather conditions. The combination of dry, pre-wetted and liquid spreading reduces the total consumption of spreading material and increases the efficiency of use of a single winter service vehicle.

Exceptional efficiency of combined spreading is enabled by three available designs of SOLID C spreaders – SOLID CX, SOLID CT and SOLID CL. Spreader designs differ depending on the conveyor system for the dry agent (auger, chain or belt conveyor) in combination with liquid spreading. The control unit and design of the SOLID C spreader enable spreading with dry material, spreading with pre-wetted material with different liquid ratios, liquid spreading via the spinner or liquid spreading using a ramp with nozzles.

The process of mounting and demounting the spreader from the vehicle is simple due to the system of mounting legs and quick couplings, while a unique surface protection guarantees a long lifespan of the device. The spreader can be powered through a hydraulic system mounted on the vehicle or through a separate diesel hydraulic power unit installed on the spreader.

High precision and efficiency of spreading are enabled by the quality of construction of all spreader components and the EPOS control unit which enables the control of all spreading parameters directly from the vehicle cabin.

CHOICE OF SPREADER EQUIPMENT

- Cover grids and tarpaulins
- Edge guards against material overflow
- Access platforms
- Spinner for spreading 2 ÷ 9 m / 3 ÷ 12 m (dry) ; 1 ÷ 6 m / 2 ÷ 9 m (wet)
- Multiple mounting options
- Storage legs
- Various combinations of liquid agent tank volumes
- Liquid agent pumps
- Liquid agent spreading using a spinner or ramp with nozzles
- Control units, sensors, cameras and actuators for automation of spreading
- ARMS system
- Spreader drive: multiple system choices
- Working and rotating lights
- Reflective markings
- Protection of vehicle undercarriage
- Colour tone in accordance with user requests

Dry/wet spreading with a spinner 2 ÷ 9 / 3 ÷ 12 m; liquid spreading with a spinner 1 ÷ 6 / 2 ÷ 8 m; liquid spreading with a ramp with nozzles 3 x 3.75 / 2 ÷ 12 m.

Dry agent hopper with a volume of 4.0 – 9.0 m³, liquid agent tank with a volume of 2000 – 8500 litres.

Intended to be mounted on trucks.

One of three dry agent conveyor systems (auger, chain, belt conveyor) in combination with liquid spreading.

MMS

Pre-wetting and liquid spreading agent mixer

MMS is a device used for preparing solutions ($CaCl_2$, NaCl, $MgCl_2$, urea) for pre-wetting or liquid spreading on roads. It enables the dissolution of spreading materials by creating a vortex within the tank with the use of a high-flow pump. The liquid is automatically mixed by the pump, and when the desired concentration of the solution is achieved, the same pump can be used for filling the spreader or transferring the prepared solution to additional tanks. Additional tanks can have a volume of up to 50 000 litres as well as their own pumps that enable the maintenance of solution concentration and prevent the accumulation of material during longer periods of storage.

Two functional characteristics of MMS enable efficient dissolution of materials. The high capacity pump uses a system of nozzles to moisturise the dry material, thus supporting its fast dissolution in the vortex created within the MMS tank. The tank's construction enables the creation of a strong vortex and minimises the accumulation of undissolved material in hard to reach spots. The key to correct preparation of spreading solutions for roads is a precise concentration of the spreading material in water. This is why MMS and additional tanks can be equipped with an additional electronic system for measuring concentration, which can also control the work of the mixing pump if necessary.

The construction of the MMS device enables minimal maintenance costs. The device's tank is made from a special polyethylene material resistant to UV radiation, temperature changes and impacts. Material is loaded in the MMS spreader through a special screen which is easily removed and washed, enables faster dissolving of materials and prevents the entry of large pieces of material and contaminants. The bottom of the device has two levels for reducing accumulation of material, as well as in-built apertures for removing contaminants that are not water soluble.

CHOICE OF EQUIPMENT

- Automatic brine concentration measurer
- Stainless steel screen above the chute entrance
- Hose for filling spreader tanks from the top
- Additional tanks: 5000 - 50 000 lit
- Pumps for additional tanks

4.0 - 8.0 m³

Mixer reservoir capacity

5000 - 50 000 l

Aditional tanks capacity

1510 - 2500 mm

Overall height of the mixing device

2240 mm

Transport width of the mixing device

SMALL SPREADERS

Smaller spreader for professional use

In addition to spreaders from SOLID and LIQUID families, the RASCO line of products also includes four types of smaller spreaders. The design of TRP, JUNIOR, RAS and MINI spreaders is adjusted to tractors, smaller freight vehicles or vehicles with a towing hitch. They are a good choice for performing spreading on smaller or hard to reach roads where manoeuvring capability is an important consideration for winter service vehicle operators. Due to different options of mounting, spreader drive and choice of additional equipment, these spreaders can be adjusted easily to the requirements of different types of roads vehicle types.

TRP and JUNIOR are spreaders which are controlled from the vehicle cabin by using EPOS control units. Intended to be mounted on tractors, TRP can transform every tractor into a winter service vehicle. JUNIOR is intended to be mounted on light freight vehicles and, in combination with a road maintenance patrol vehicle, makes an ideal combination for emergency spreading on key road sections. RAS and MINI are towed salt spreaders powered by their own wheels and are a good choice for less demanding spreading tasks, since they do not offer advanced options for adjusting the spreading pattern like other RASCO spreaders.

TRP, JUNIOR, RAS and MINI spreaders are constructed using the same materials, components and processes as those used in the production of SOLID and LIQUID spreaders, which is a guarantee of their safety, simplicity and durability.


RASCO
RASCO

TRP

Spreader for winter service tractors

TRP is a simple, yet professional and reliable solution which turns every tractor into a winter road maintenance vehicle. Equipped with a system for pre-wetting and dry spreading, TRP is a good choice for urban and rural areas where simplicity, efficiency and value for money are the key factors for the selection of road maintenance equipment.

The conveyor system of the TRP spreader consists of counterflow augers that bring the spreading material to the rotating spinner designed for minimising the reflection of the spreading agent from the road surface. The special design of the hopper prevents the adherence of material to the side walls and formation of the tunnel effect and a tarpaulin of high strength cover the top of the hopper in order to protect the spreading material from rain and snow. The spreader's functions are controlled from the cabin of the tractor with an EPOS control unit, which makes TRP equal to truck spreaders with regard to functionality and precision of spreading.

Good visibility of the TRP device in all winter condition is enabled by reflective and light markings that increase the safety of users and other traffic participants.

Simple mounting on the rear tractor three-point attachment, self-loading mechanism (if TRP is not equipped with a pre-wetting system), robust construction and minimal maintenance requirements make TRP an indispensable addition to every tractor during the winter months.

CHOICE OF SPREADER EQUIPMENT

- Cover tarpaulin
- Protective screen and additional auger conveyor cover
- Spinner for spreading up to 1 ÷ 6 m / 2 ÷ 9 m
- Self-loading system
- Pre-wetting system
- Control units, sensors and engines for automation of spreading
- ARMS system
- Working and rotating lights
- Hopper hot-dip galvanized
- Hopper and screen from stainless steel

1 ÷ 6 m / 2 ÷ 9 m

Solid agent tank with a volume of 0.4 – 1.5 m³ / liquid agent tank with a volume of 500 litres.

Intended to be mounted on tractors.

Dry spreading material is obtained by counterflow auger conveyors, and liquid by a pre-wetting pump.

JUNIOR

Solution for emergency spreading

Due to its compact dimensions, JUNIOR can be mounted on smaller freight vehicles, which makes it a good choice for winter road maintenance in urban areas. In addition to urban areas, JUNIOR is also a good choice for emergency spreading of the most sensitive parts of high priority roads. When the JUNIOR spreader is mounted on light road patrol vehicles, it becomes an indispensable tool for removing ice and frost from bridges and overpasses on roads of high importance.

JUNIOR uses an auger conveyor. Auger protection prevents downtime due to an excessive pressure of the spreading material, and an additional cover keeps the spreading material dry, thus reducing the possibility of tunnel effect formation. Mounted reflective markings and rotating lights ensure the visibility of the vehicle and spreader in all weather conditions.

EPOS control unit for controlling the spreader from the vehicle cabin, simple and fast mounting on all types of appropriate vehicles and robust and long-lasting construction make the JUNIOR spreader a professional solution for emergency interventions both in urban areas and on open roads.

CHOICE OF SPREADER EQUIPMENT

- Cover tarpaulin
- Distribution system extension
- Spinner for spreading up to 1 ÷ 6 m / 2 ÷ 9 m
- Storage legs
- Control units and sensors for automation of spreading
- ARMS system
- Diesel hydraulic power unit
- Working and rotating lights

1 ÷ 6 m / 2 ÷ 9 m

1.5 m³

Dry agent hopper with
a volume of 1.0 - 1.5 m³.

Intended for mounting on
smaller freight vehicles.

Spreading material is supplied
by an auger conveyor.

RAS

Simple spreader of a large range

RAS is a simple towed spreader intended primarily for spreading sand, crushed rock and their mixtures with salt on local roads. Powered by its own wheels and loaded directly from the tipper box of the vehicle on which it is attached, it has a spreading range limited only by the tipper capacity.

Despite its simplicity, RAS is a reliable device. The roller spreading mechanism distributes the material equally over the entire spreading width, while the mixing shaft prevents the creation of a tunnel effect. Spreading control is performed using a control system located on the spreader. Dosage of spreading material is performed mechanically using an integrated lever with a visual indication of the spreading material quantity.

Safe use of the RAS spreader is enabled by guiding chains which prevent the contact of the spreader and towing truck, while the protective grid prevents damage to the spreader by chunks of material falling on the distribution cone or mixing shaft, and provides a safe work environment for the user.

Due to its simple and efficient design, RAS is a reliable and safe product that requires very little maintenance.

CHOICE OF SPREADER EQUIPMENT

- Remote spreader activation system in the vehicle cabin
- Hot-dip galvanized and painted hopper
- Hopper and screen from stainless steel
- Working and rotating lights
- Side outline lights
- Side yellow lights

2.2 ÷ 2.5 m

1.2 m³

Dry agent hopper 1.0 - 1.2 m³.

Intended to be mounted
on trucks.

Spreading material is supplied
by a supply roller.

MINI

Simple maintenance of narrow roads

The towed MINI spreader is intended for spreading on narrow roads, such as pedestrian areas by the side of roads or in parks. It is easily mounted on small vehicles or tractors equipped by a towing hitch.

MINI is powered by a mechanism on the spreader's wheels. The spreading material is taken from the hopper using a roller with thrust plates, while the control of quantity of the used spreading material is performed by a mechanical lever for dosing. The spreader's hopper is protected by a grid that prevents the entrance of large clumps of material. A cover tarpaulin protects the spreading material from precipitation and keeps it dry. Filled spreader tyres enable operation even on the most demanding terrains and guarantee the device's durability. MINI's visibility in traffic is ensured by lights mounted on the rear side, powered through a standard connector on the vehicle.

Simplicity of use is the basic characteristic of the MINI spreader, which makes it an ideal choice for easy but efficient winter maintenance of small and narrow traffic surfaces.

CHOICE OF SPREADER EQUIPMENT

- Sieve above the material container
- Upper tarpaulin for spreading material protection
- Wheels with inner tube
- Wheels with filled tires

1.0 m

0.5 m³

Dry agent hopper with
a volume of 0.5 m³.

Intended for mounting on smaller
vehicles and tractors.

Spreading material is supplied
by a roller with thrust plates.

EPOS CONTROL UNITS

Simple control and high spreading precision

The operation of all RASCO spreaders is controlled by EPOS control units. Their dedicated development by RASCO experts makes them a leading solution for spreading control and monitoring. They guarantee a high precision of implementing set spreading parameters, as well as safe and simple use.

EPOS control units are used to control all spreader elements. Control of the spreader's hydraulic actuators with a system of feedback connections ensures highly precise spreading in all work conditions, while the automated calibration system enables fast and simple calibration of spreading precision. Spreading parameters are not lost when the control unit is turned off and can be automatically activated the next time when the spreading process is started.

Control unit design, created in co-operation with users, enables control of all spreading parameters, such as width, quantity of dry and pre-wetted spreading material and spreading pattern asymmetry, with just one touch.

Spreading control with the use of EPOS control units is possible without looking away from the road due to an ergonomic distribution of keys and implemented sound warnings. Screen and key backlight of control units is automatically adjusted to the level of light in the vehicle cabin and ensures safe and comfortable work. For complete safety and simplicity of use, EPOS control units display all information in the user's language.


RASCO
EPOS20
g/m²
AUTO
0
1
MAX

EPOS 20

Enables automated road spreading based on the current location (GPS vehicle position), predefined routes of vehicle movement and predefined spreading parameters. By using the aforementioned parameters, the control unit automatically adjusts characteristics of the spreading pattern, such as width, asymmetry and quantity of spreading material.

Using predefined spreading parameters ensures precise spreading along the road contours without wasting material. The position of special objects such as bridges and overpasses, which require larger quantities of spreading material, is known in advance to the control unit.

Along with automated spreading, EPOS 20 also provides in-built navigation which helps to guide the winter service vehicle according to the chosen road sections for spreading. Voice warnings indicating the direction of movement and change of spreading parameters in combination with the concept of separating control keys from the information screen make the EPOS 20 control unit safe and simple to use.

EPOS 10

Technologically advanced control unit for controlling the operation of demanding spreader versions and functions. It contains all standard control functions with the possibility of regulating asymmetrical spreading, i.e. separate and independent setting of the spreading width specifically for the left and the right side. The highly visible LCD screen with backlight illumination, USB interface and detailed storage of information on the operation of the spreader and vehicle enable comfortable work for the user and a subsequent analysis of the vehicle and spreader operation. The option of installing a thermal camera enables automated setting of spreading parameters depending on the measured road surface temperature.

EPOS 5

Standard control unit for precise control of the spreader's operating functions. It uses feedback connections from actuators, which increases spreading precision regardless of the temperature of oil in the hydraulic system. The control unit can record and transfer information on all of the spreader's work activities, which facilitates spreading control and the creation of work reports, while the backlit LCD screen enables a transparent overview of all information and warnings during work.

EPOS 2

This control unit is intended for the control of smaller spreaders used on more demanding road sections. Based on more complex EPOS units, but lacks the system of feedback connections. However, its operating precision is still very high. Ergonomic and transparent, with an intuitive distribution of controls for managing the operation of spreader functions and a two-row LCD screen showing the currently set spreading parameters.

EPOS 1

The simplest control unit used to control smaller spreaders on less demanding road sections. The control of spreading quantity and width is performed using two dials, and the performed spreading is not speed-dependant.

EPOS	1	2	5	10	20
Control of spreading quantity and width	•	•	•	•	•
Dry spreading	•	•	•	•	•
Pre-wetting		•	•	•	•
Speed-dependant spreading		•	•	•	•
Spreading control using feedback connections		•	•	•	•
Adjustment of spreading pattern asymmetry			•	•	•
Separate adjustment of left and right spreading width				•	•
Thermal camera				•	•
Liquid spreading				•	•
Combined spreading				•	•
Automatic spreading using GPS location and predefined routes					•

ARMS

Advanced Road Management System

ARMS is 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 creates a unique possibility to quickly decide on potential saving methods. Unchangeable logs protect the user from liability 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 the GPRS data mobile approach, standard in almost all countries of the world. The information collection application is cloud-based and 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 connected to smaller systems such as RWIS (Road Weather Information System).


10
80
5 m
21
Course: 19 deg
Altitude: 899 m
DOP: 1
Wet
Quantity: 80 %

Mounting of RASCO spreaders on vehicles

RASCO offers a range of options for mounting spreaders on vehicles, ranging from the most common RO-RO system which enables mounting in the vehicle's tipper box, direct mounting on the chassis and hook-lift systems, to complex multi-purpose solutions which turn vehicles into multi-purpose working machines.

Two key characteristics for mounting all spreaders on vehicles are simplicity and uncompromised safety for users and other traffic participants. A system of height-adjustable spreader legs, a special frame and side attachment points minimise the time necessary for mounting and demounting spreaders from vehicles.

Safety of vehicles after mounting RASCO spreaders is indisputable. The mounting is performed in accordance with strict safety standards and recommendations by the vehicle manufacturer.


RASCO
MAN

MOUNTING ON TIPPER BOX



System for mounting the spreader in a tipper box using RO-RO (Roll-On, Roll-Off) legs and rollers on the device itself is the most common and simplest mounting method. The spreader is easily attached to the tipper box by using tension chains or belts.

MOUNTING ON VEHICLE CHASSIS

Suitable in situations when the vehicle is used exclusively for road maintenance. Different devices, including the spreader, can be easily replaced on the vehicle chassis using specially designed carrying frames.

MOUNTING ON TIPPER BOX BALLS


Fast and simple mounting using the existing sub-chassis of the vehicle tipper box and a special carrying frame on the spreader. The simplest mounting method that enables complete vehicle multifunctionality.

MOUNTING ON TRAILERS

Spreaders are mounted on tractor or truck trailers, thus becoming independent from the towing vehicle.

MOUNTING ON VEHICLES EQUIPPED WITH HOOK-LIFTS

A specially adjusted spreader frame enables simple mounting on vehicles equipped with a system for raising devices using a hook.

MOUNTING ON VEHICLES EQUIPPED WITH SKIP LOADERS

Simple mounting on vehicles equipped with a container lifting system is enabled by special attachment points on the sides of the spreader.

MOUNTING ON REAR TRACTOR THREE-POINT ATTACHMENT

The spreader is mounted on the standard rear leverage of the tractor. The spreader is powered by the tractor's hydraulic system, and only one pair of hydraulic couplings is needed.

MOUNTING OF TOWED SPREADERS

Mounting is performed by a rear hook or attaching the vehicle to the drawbar. The spreader is secured from side movements during reverse driving with chains attached to the vehicle box.

Upgrades for all types of vehicles

Efficiency, safety, durability and simplicity of use of RASCO devices largely depend on the manner of their installation on vehicles, vehicle and device marking and steering mode. Within its product range, RASCO offers a wide range of upgrades for different types of vehicles in the form of hydraulic systems, front and side mounting plates and vehicle electrical installation upgrades.

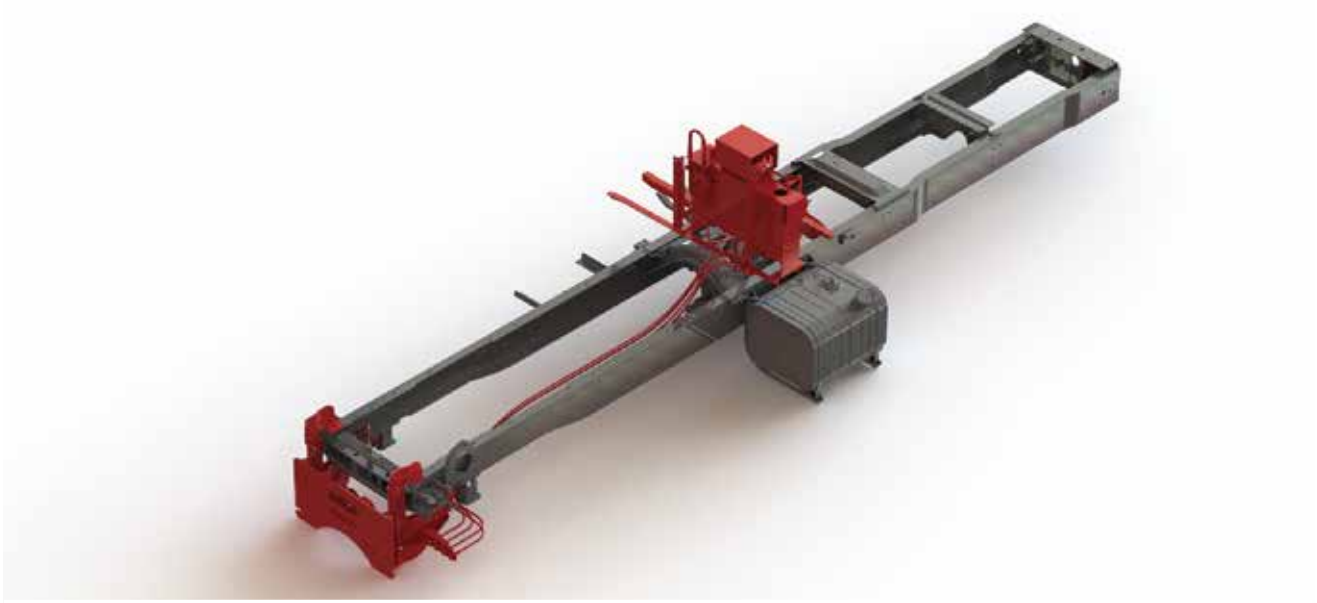
Hydraulic systems provide the necessary drive power and guarantee simple control of attachments. Front and side mounting plates designed in accordance with the current standards enable simple and easy mounting of snow ploughs and are a requirement for safe ploughing, while the electrical installation upgrades provide very good visibility of the vehicle and RASCO device even in the most difficult working conditions.

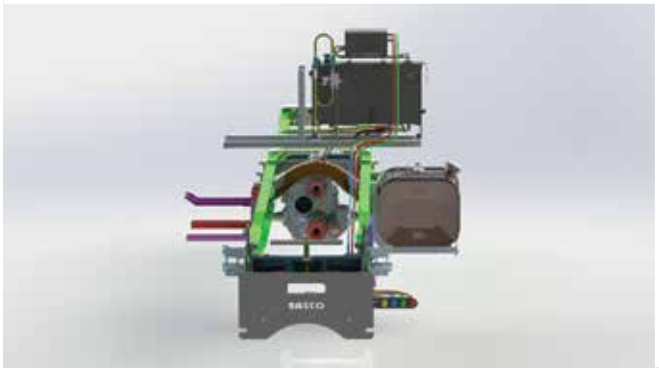
RASCO experts approach each project of adding upgrades to the vehicle individually in order to secure complete adjustment of the upgrade to the vehicle and avoid damage and unnecessary strain of the chassis, power train and other elements of the vehicle.


HD 208 EN 853 2SN
EN 853 2SN 08 WP 350 BA

Hydraulic systems

RASCO offers a wide choice of hydraulic upgrades made in accordance with the current standards and designed to drive the device such as rotary salt spreaders, spreaders for liquid spreading, front and side snow ploughs, intermediate shaft brushes, front ramps for washing roads and vacuum cleaners. The hydraulic system is constructed in accordance with the number and type of connections and an appropriate control unit is added to it depending on its design. High quality design of the hydraulic system in combination with the appropriate control unit guarantees simple use of all connections in all work conditions.





EDH 5

EDH 10

EDH 11

KH5R

LS 3

Mounting plates

RASCO offers the possibility of creating and installing mounting plates for various trucks and tractors. All mounting plates are created in accordance with the current standards, which guarantee high quality and resistance to damage such as torsion or bending.

Designed for complete efficiency during the operation of attachments and adjustable according to vehicle height, mounting plates enable fast and simple installation of snow ploughs on all types of vehicles.

Electrical installation upgrades

For complete efficiency and uncompromised safety during work, RASCO offers the possibility of installing additional electrical installations that provide better visibility of the device and attachment for all traffic participants. Rotating signal lights are mounted on the vehicle cabin in order to ensure better visibility of the vehicle in traffic.

Raised headlamps, installed on the vehicle above attachments, provide the user with a better overview of the clearing area in front of the vehicle. Mounting of outline lights that guarantee snow plough visibility is possible after the installation of an adequate socket on the vehicle.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ORIGINAL PARTS
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POST-SALES SUPPORT

Along with a high-quality product, every RASCO solution also offers fast and reliable post-sales support

Post-sales support is provided by educated staff and based on an IT system that guarantees consistent processing of customer claims. All employees in the Customer support department have passed through all manufacturing stages during their career in RASCO and are very well acquainted with the functionality of RASCO machines and equipment. The post-sales team is always ready to respond to all claims and inquiries of RASCO equipment users. A special group of RASCO service experts trains the service staff of RASCO partners across Europe, in order to secure the same level of service in all represented markets.

The educated consulting team with many years of experience is available for any inquiries related to devices, the service team resolves device malfunctions, while spare part warehouses guarantee a minimised time from the occurrence of malfunctions to the return of device functionality.

Constant focus on customer and partner support for the duration of product lifespan is the key to RASCO's success. This is why resolving malfunctions are followed by a detailed investigation of causes in order to take corrective measures to avoid any future occurrence of such malfunctions. Information gathered from customers is used to improve products and the manufacturing process.

	Minimal Mass [kg]*	Spreader capacity		Spreading width [m]
		Liquid agent [l] **	Solid agent [m³]	
SOLID X				
1.7	780	840	1.7	1 ÷ 6 / 2 ÷ 9 / 3 ÷ 12
2.0	960	800	2.0	
2.5	1090	1000	2.5	
3.0	1200	1200	3.0	
4.0	1300	1800	4.0	
5.0	1380	2300	5.0	
6.0	1450		6.0	
7.0	1520	2500	7.0	
8.0	1580		8.0	
SOLID T				
3.0	1200	1240	3.0	1 ÷ 6 / 2 ÷ 9 / 3 ÷ 12
4.0	1300	1800	4.0	
5.0	1380	2400	5.0	
6.0	1450		6.0	
7.0	1520	2520	7.0	
8.0	1580		8.0	
9.0	1700		9.0	
SOLID TK				
4.0	1250	-	4.0	2 ÷ 9 (3 ÷ 12)
SOLID TG				
0.85	400	480	0.85	1 ÷ 6 (2 ÷ 9)
1.0	420		1.0	
1.2	430		1.2	
1.5	440		1.5	
SOLID L				
3.0	1300	1240	3.0	2 ÷ 9 (3 ÷12)
4.0	1400	1940	4.0	
5.0	1480	2400	5.0	
6.0	1580		6.0	
7.0	1680	2500	7.0	
8.0	1680		8.0	
9.0 k	1780		9.0	
9.0 d	1880		9.0	
10	1980		10.0	
11	2080		11.0	
12	2180		12.0	
SOLID DUO				
4.0-SD	1400	1720	4.0	2 ÷ 9 (3 ÷12)
4.0-P35	1450			
4.0-P70	1500			
5.0-SD	1550		5.0	
5.0-P35	1600			
6.0-SD	1700		6.0	
SOLID XF				
1.8	985	940	1.8	2 ÷ 9 (3 ÷12)
2.2	1006		2.2	
2.5	1020	1120	2.5	
2.8	1030		2.8	
SOLID XK				
3.0	1200	1200	3.0	2 ÷ 9 (3 ÷ 12)
4.0	1300	1800	4.0	
SOLID XG				
0.85	430	480	0.85	1 ÷ 6 (2 ÷ 9)
1.0	450		1.0	
1.2	470		1.2	
1.5	490		1.5	

* Mass of fully configured device depends on chosen options.
** Capacity of the pre-wetting system can be increased by installing additional tanks in accordance with customer wishes.

	Minimal Mass [kg]*		Volume of liquid agent tank [l]	Spreading width [m]
LIQUID	CaCl2	NaCl		
S 1.5	1740	1800	1500	2 ÷ 6
S 2.0	2320	2400	2000	
S 2.5	2900	3000	2500	
M 3.0	3480	3600	3000	
M 4.0	4640	4800	4000	
M 5.0	5800	6000	5000	
6.0	8900	9140	6000	2 ÷ 12 (10 - 200 ml)
8.0	11320	11640	8000	
10.0	13740	14140	10 000	
12.0	16160	16640	12 000	
14.0	18580	19140	14 000	

	Volume of solid agent hopper [m³]	Volume of liquid agent tank [l]					
		1 front tank	1 front + 2 side tanks	2 front tanks	2 front + 2 side tanks	3 front tanks	3 front + 2 side tanks
SOLID C							
4.0	4	2000	3840	4000	5840	6000	7840
5.0	5						
6.0	6						
7.0	7						
7.0d	7		4300		6300		8300
9.0	9		4500		6500		8500

	Minimal Mass [kg]*	Spreader capacity		Spreading width [m]
		Liquid agent [l]	Solid agent [m³]	
TRP				
0.4	325	-	0.4	1 ÷ 6 (2 ÷9)
0.65	430	-	0.65	
1.0	500	-	1.0	
1.5 M	710	500	1.5	
JUNIOR				
1.0	380	-	1.0	1 ÷ 6 (2 ÷9)
1.2	600	-	1.2	
1.5		-	1.5	
RAS				
2400	640	-	1	2,2
2800	715	-	1.2	2,5
MINI				
1000	190	-	0.5	1

	Minimal Mass [kg]*	Pump capacity [m³/h]	Pump drive	Volume of mixer tank [m³]
MMS				
4.0	330	30	380 V / 50Hz - 1,5kW	4
5.0	350			5
6.0	370			6
8.0	440			8

* Mass of fully configured device depends on chosen options.

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