

VACUUM LINE & TRAILERS

The perfect complete range
for your portable restroom service



Armal
Strong. Experienced. Worldwide.
MADE IN ITALY



ver 30 years of experience in the research and development of innovative products for the Portable Sanitation Industry, Armal S.p.A. has gained a worldwide reputation in over 130 countries for the reliability and value of its products. Extraordinary modern production technology, the combination of meticulously selected raw materials, the quality control system, the respect of safety and environmental standards, together with the research of new innovative and creative products, are Armal key factors.

A wide range of **VACUUM TANK UNITS**, **PORTABLE RESTROOM VACUUM SERVICE TRUCKS** and **TRANSPORT TRAILERS** is the other Armal fast growing core business and the result of many years of manufacturing experience in its Italian plant where all products are made from bottom to top in a dedicated, lean, and responsive production line.

Always on the lookout for innovative solutions, Armal offers a customized and complete range to run a successful portable restroom rental business and ... **if you cannot find the solution for your needs, Armal designs and manufactures it!**

INDEX



VACUUM TANK UNITS	p. 4
-------------------------	------

ENGINE DRIVEN VACUUM TANK UNITS	p. 6
---------------------------------------	------

SUN Units with Hydraulic System	p. 7
---------------------------------------	------

• SUN 1100T M1 and SUN 2000T M1	p. 8
---------------------------------------	------

• SUN 1100T M2 and SUN 2000T M2	p. 10
---------------------------------------	-------

• SUN 1100L M1 and SUN 2000L M1	p. 12
---------------------------------------	-------

• SUN 600V M3	p. 14
---------------------	-------

EASY Units with Belt Drive System	p. 16
---	-------

• EASY 1100T B1 and 2000T B1	p. 18
------------------------------------	-------

• EASY 600V B3	p. 20
----------------------	-------

PTO DRIVEN VACUUM TANK UNITS	p. 22
------------------------------------	-------

• TRK 1100T P2 and TRK 2000T P2	p. 24
---------------------------------------	-------



PORTABLE RESTROOM VACUUM SERVICE TRUCKS	p. 26
---	-------



TRANSPORT TRAILERS FOR PORTABLE CABINS	p. 29
--	-------

VACUUM TANK UNITS COMPARATIVE TABLE	p. 30
---	-------

PRODUCTS LIST/ARMAL PURCHASE ITEM NUMBER	p. 31
--	-------

Armal vacuum tank units are engineered to achieve fast, easy, and effective servicing of portable restrooms. Compact and simple in their design, Armal vacuum tank units are made of carefully selected components that ensure worry-free operations. Ideal to bolt onto any flatbed truck, Armal units are highly versatile and essential for any fleet of portable restrooms.

Driven by gasoline engine or power take-off (PTO), Armal vacuum tank units are configured with **crossway assembly** to the longitudinal axis of the vehicle, allowing the loading of extra portable restrooms on the truck flatbed, or with **longitudinal assembly**, if you wish to use reduced width vehicles.

Armal provides a full range of models with **different operating systems** (*), **generation type of the propulsive force**, **various fresh and grey water tanks capacities** and possibility to purchase **MINI units** as well.

With this variety and flexibility, Armal vacuum tank units are the right choice for every type of truck, different needs and any budget!

4 (*) Armal vacuum tank units are equipped with 3 different types of mechanical groups marked with letters: **M** (engine driven units with hydraulic system), **B** (engine driven units with belt system) and **P** (PTO driven units). **Double Belt Units** are also available upon request.

No matter the model you choose, all Armal vacuum tank units have some **features in common**:

- **Maximum compactness, ergonomics, and safety**
- Use of quality materials and well-known suppliers, such as Battioni and Pagani vacuum pumps, Annovi Reverberi water pumps, Honda/Kohler and Loncin engines, Hydrocar PTO: all components that make Armal products reliable and durable over time
- **Complete segregation of fresh and gray water**
- Fresh water tank placed under the gray water tank to ensure an excellent load balance and maximum stability to the vehicle on which Armal vacuum tank units are mounted
- **High suction capacity and excellent vacuum performance**
- Superb water pump performance
- **Presence of the following safety protections:**
 - Siphon valve to prevent gray water from entering the vacuum pump
 - Ball overflow valve to protect against over-pumping
 - Safety relief valve on the top of the gray water tank to prevent dangerous pressures from being reached inside the tank
- Valve on the suction syringe, easily accessible by operators to immediately stop suction
- **One or two washing lances with automatic hose reel and suction syringes to easily perform cleaning operations of portable restrooms**
- Lightweight plastic fresh water tank so as to quickly monitor the water level inside
- **Gray water tank body made of carbon steel**
- Sight glass bowls and plastic level sight glasses to immediately check the levels of gray water and fresh water inside the respective tanks
- **Manhole located on the upper part of the gray water tank to allow operators to check and clean the inside in case of extraordinary maintenance operations**
- CE Mark

ENGINE DRIVEN VACUUM TANK UNITS

Easy to mount and maintain, Armal vacuum tank units driven by gasoline engine are available with [Hydraulic Driven Vacuum Pump](#) or [Belt Driven System](#), the Armal [SUN](#) and Armal [EASY](#) vacuum tank units respectively.

These units are provided in different weights and capacities for a maximum truck weight ranging from less than 3.5 tons up to 6.0 tons. A [mini version](#) of both SUN and EASY models is also possible, ready to be installed on pick-ups, small trucks, and trailers.

SUN Units with Hydraulic System

Armal SUN vacuum tank units are equipped with a gasoline engine and hydraulic system. They excellently perform the high-pressure suction and washing operations required by portable restrooms.

SUN vacuum tank units are available in 3 different models, namely [M1](#), [M2](#) and [M3](#). M1 and M2 can have [transversal or longitudinal positioning](#), a gray water tank capacity of 1.100 or 2.000 liters/290.59 or 528.34 gallons and are suitable for installation on vehicles up to 6.0 tons. M2 units stand out for their [reduced weight](#) and for [the electronic and remote control system](#) that allows operators to work safely and remotely from the vehicle. M3 is the first Armal [MINI unit](#) which completes the SUN range.

SUN features include:

- Ready for use
- [Hydraulic drive system](#)
- Native with high pressure washing
- [Washing water pressure regulator outfitted on the water pump](#)
- Vacuum pump filter-silencer
- [One or two drive controls on the units depending on the model](#)
- Mechanically autonomous operating systems: connected to the vacuum tank unit, they allow the unit to operate in a stand-alone configuration
- [Operations by remote control \(where provided\)](#)
- Remote control unit with emergency stop push button (where provided); the emergency stop button is always available on the control panel to ensure the highest level of safety for the units and the operators

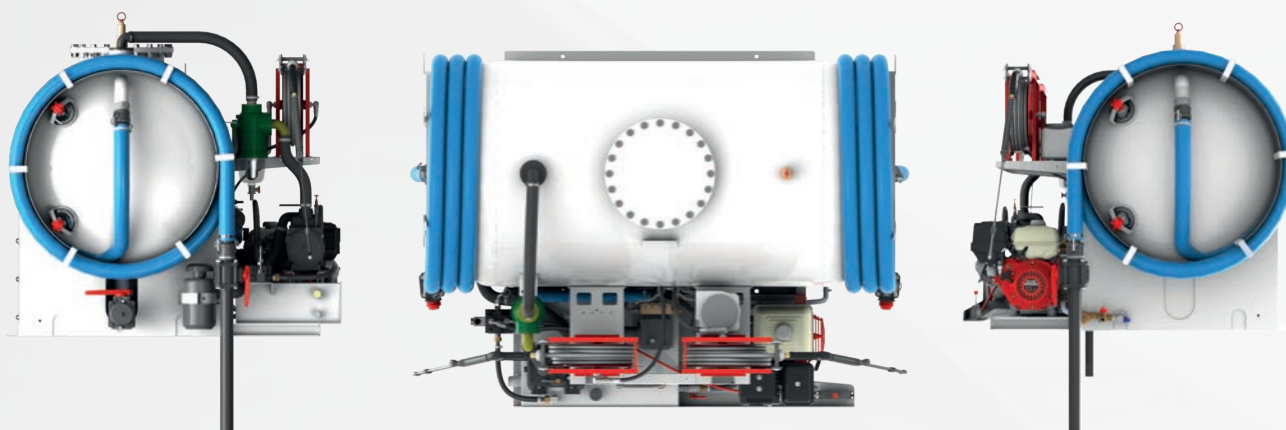
SUN 1100T M1 and SUN 2000T M1

The Transversal Units with Hydraulic System

SUN 1100T M1 and SUN 2000T M1 are ideal for vehicles up to 6.0 tons. Their **transversal positioning** to the longitudinal axis of the vehicle allows the loading of extra portable restrooms onto the truck flatbed while their **dual-side service** permits operators to use the units without having to move the vehicle depending on the location of the portable restrooms.

These units are equipped with an air-cooled 4-stroke OHV gasoline engine (*) and are operated by **manual controls** on both left and right sides. The washing system is provided with a **manual injector** that automatically mixes the sanitary concentrate or any other additive liquid to ensure in-depth cleaning of your portable restrooms.

The fresh and gray water tanks of SUN 1100T M1 and SUN 2000T M1 have a capacity of 460 liters/121.52 gallons and 580 liters/153.22 gallons of fresh water and 1.100 liters/290.59 gallons and 2.000 liters/528.34 gallons of gray water.

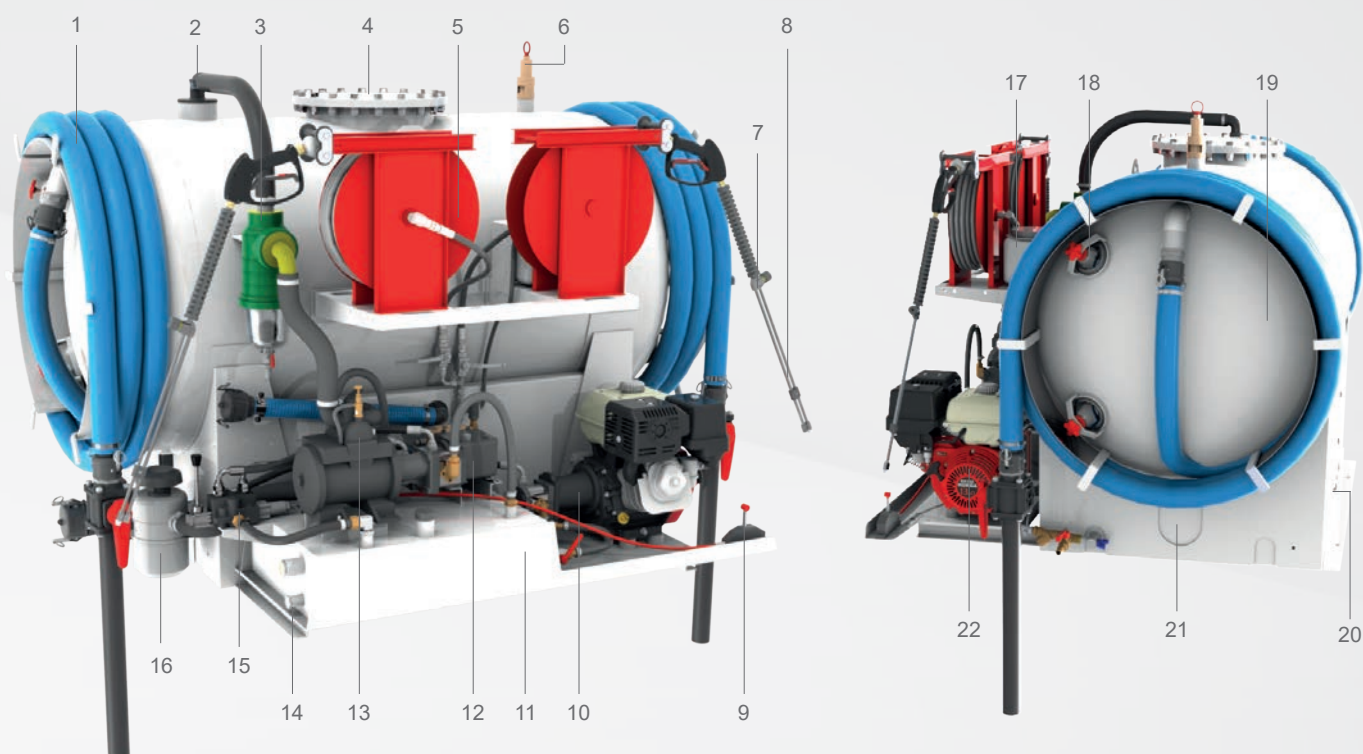


Specifications:

	SUN 1100T M1	SUN 2000T M1
Height	1.530 mm / 60.23"	1.830 mm / 72.04"
Width	2.100 mm / 82.67"	2.100 mm / 82.67"
Lenght	1.580 mm / 62.20"	1.880 mm / 74.01"
Diameter	1.000 mm / 39.37"	1.300 mm / 51.18"
Gray water capacity	1.100 L / 290.59 gal.	2.000 L / 528.34 gal.
Fresh water capacity	460 L / 121.52 gal.	580 L / 153.22 gal.
Weight in running order	710 kg / 1565.28 lb.	880 kg / 1940.07 lb.
Material used	Main tank body made of carbon steel and fresh water tank in semi-transparent plastic material	
Standard color	White	

(*) These units are supplied with Honda engine mod. GX270 or similar such as Kohler or Loncin engines, depending on availability.

8 (**) The pictures are for demonstration purposes only. Armal S.p.A. has decided to show only pictures of 1100T model.



Features include:

1. No. 2 gray water suction hoses of 9 m/354.33" (mod. SUN 1100T M1) and 12 m/472.44" (mod. SUN 2000T M1) complete with syringes
2. Ball overflow valve
3. Siphon valve
4. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
5. No. 2 automatic hose reels with 10 m/393.70" washing hoses
6. Safety relief valve
7. Valve on the washing lance to select the high- or low-pressure water supply (high pressure for washing portable restrooms and low for filling the restroom tanks and those of the hand wash sinks)
8. No. 2 double barrel washing guns with high pressure nozzle and low pressure outlet
9. Manual drive controls on the left and right side of the unit
10. Hydraulic pump
11. Hydraulic oil tank (45 L/11.88 gal. capacity)
12. Annovi Reverberi high pressure water pump (15 L/min.-3.96 gal./min. @ 150 bar-2175.57 psi)

13. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)
14. Magnetic cap for oil tank
15. Manual hydraulic control valve
16. Vacuum pump filter-silencer
17. Sanitary concentrate tank (5 L/1.32 gal. capacity)
18. No. 2/3 sight glass bowls respectively on SUN 1100T M1 and SUN 2000T M1 placed on both sides of the gray water tank to check the level
19. Gray water tank body made of carbon steel
20. No. 3 plastic level sight glasses on the fresh water tank to check its level
21. Lightweight fresh water tank in semi-transparent plastic material
22. Gasoline engine with recoil start (predisposition for electric start)

Moreover:

- Washing water pressure regulator outfitted on the water pump
- Sanitary concentrate manual injector
- Holder to store the gray water suction hose
- No. 3 eyes for a more stable and safe anchoring of the portable cabins during transport

Optional accessories:

- High pressure water pump (11 L/min.-2.90 gal./min. @ 170 bar - 2465.64 psi)
- Automatic hose reel with 20 m/787.40" washing hose
- 19 L/5 gal. sanitary concentrate tank

SUN 1100T M2 and SUN 2000T M2

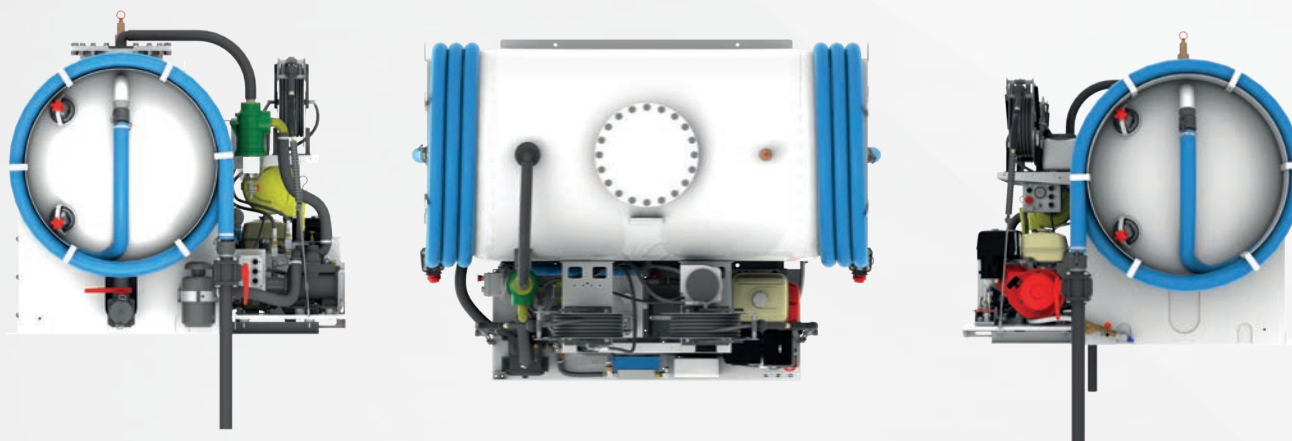
The Transversal Units with Hydraulic System and Remote Control

With the same main features as the M1 models, Armal SUN M2 vacuum tank units represent a step forward as they are designed to facilitate all operations thanks to their advanced technology, automation, and usability. The innovation is represented by **their reduced weight** and the presence of an **electronic and remote control system** that allows faster operations at distance from the vehicle, guaranteeing **net economic savings** for each service as well as making the daily work of the operators easier, less tiring and worry-free. Suction and washing operations can also be activated/deactivated by the appropriate drive controls on the left and right side of the units.

To ensure the highest level of safety for the units and operators, the remote control is equipped with an **emergency stop push button**; immediate shutdown is however always possible thanks to the emergency push buttons on the units control panel.

SUN M2 vacuum tank units include a **reduced capacity oil tank** to minimize their weight, an **air-oil heat exchanger** that avoids the overheating of the hydraulic oil and optimizes the thermal range of the hydraulic system operations, **lights** to work easily in dark places or at night, and an **hour counter device** that indicates the time of use of the units. The air-cooled 4-stroke OHV gasoline engine has recoil and electric start (*). The fresh and gray water tanks of SUN 1100T M2 and SUN 2000T M2 contain respectively 460 liters/121.52 gallons and 580 liters/153.22 gallons of fresh water and 1.100 liters/290.59 gallons and 2.000 liters/528.34 gallons of gray water.

The deodorizing control system and/or the combined operation system can be added as optional accessories along with other accessories to improve the service of your portable restrooms.

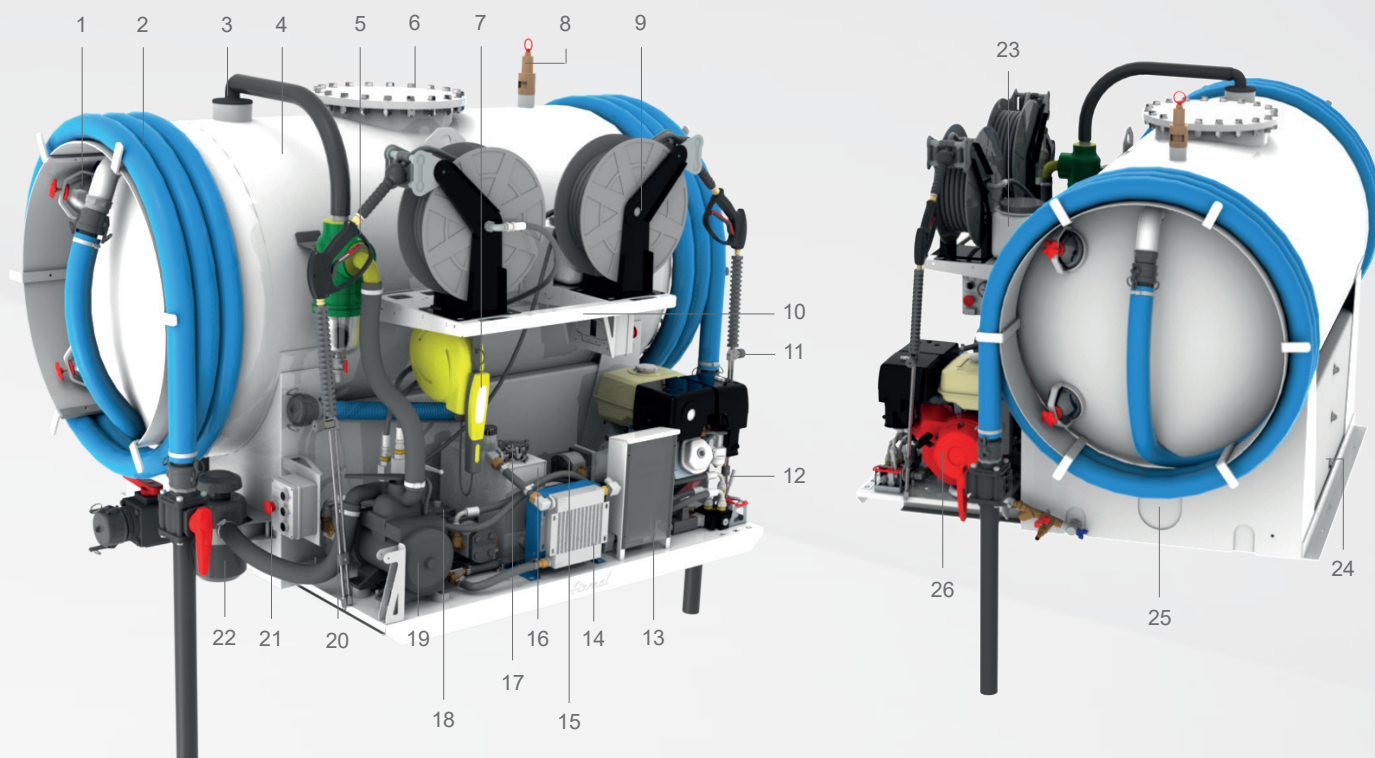


Specifications:

	SUN 1100T M2	SUN 2000T M2
Height	1.530 mm / 60.23"	1.830 mm / 72.04"
Width	2.100 mm / 82.67"	2.100 mm / 82.67"
Lenght	1.585 mm / 62.40"	1.885 mm / 74.21"
Diameter	1.000 mm / 39.37"	1.300 mm / 51.18"
Gray water capacity	1.100 L / 290.59 gal.	2.000 L / 528.34 gal.
Fresh water capacity	460 L/121.52 gal.	580 L / 153.22 gal.
Weight in running order	650 kg / 1433 lb.	800 kg / 1763.7 lb.
Material used	Main tank body made of carbon steel and fresh water tank in semi-transparent plastic material	
Standard color	White	

(*) These units are supplied with Honda engine mod. GX270 or similar such as Kohler or Loncin engines, depending on availability.

10 (**) The pictures are for demonstration purposes only. Armal S.p.A. has decided to show only pictures of 1100T model.



Features include:

1. No. 2/3 sight glass bowls respectively on SUN 1100T M2 and SUN 2000T M2 placed on both sides of the gray water tank to check the level
2. No. 2 gray water suction hoses of 9 m/354.33" (mod. SUN 1100T M2) and 12 m/472.44" (mod. SUN 2000T M2) complete with syringes
3. Ball overflow valve
4. Gray water tank body made of carbon steel
5. Siphon valve
6. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
7. LED work light with 15 m/590.55" automatic cable reel located under the hose reel to enlighten the inside of portable restrooms
8. Safety relief valve
9. No. 2 automatic hose reels with 15 m/590.55" washing hoses
10. Courtesy night light, placed under the washing hose reels and controlled by a switch, useful to light the mechanics and the controls of the suction groups
11. Valve on the washing lance to select the supply of high pressure or low pressure water (high pressure for washing portable restrooms and low for filling the restroom tanks and those of the hand wash sinks)
12. Electrically operated hydraulic control valve with manual control in case of emergency
13. Remote control unit
14. Air-oil heat exchanger with electric fan

15. Hydraulic pump
16. 10 L/2.64 gal. hydraulic oil tank with magnetic cap
17. Cartridge oil filter
18. Annovi Reverberi high pressure water pump (15 L/min.-3.96 gal./min. @ 150 bar -2175.57 psi)
19. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)
20. No. 2 double barrel washing guns with high pressure nozzle and low pressure outlet
21. Electric drive controls on the left and right side of the unit
22. Vacuum pump filter-silencer
23. Sanitary concentrate tank (5 L/1.32 gal. capacity)
24. No. 3 plastic level sight glasses on the fresh water tank to check its level
25. Lightweight fresh water tank in semi-transparent plastic material
26. Gasoline engine with electric and recoil start

Moreover:

- Hour counter device
- Washing water pressure regulator outfitted on the water pump
- Manual injector on the washing system to automatically mix the sanitary concentrate or other additive liquids to guarantee a perfect cleaning
- Holder to store the gray water suction hose
- No. 3 eyes for a more stable and safe anchoring of the portable cabins during transport

Optional accessories:

- Combined suction and washing operations system
- Deodorizing control system to spread deodorant fragrances during suction
- High pressure water pump (11 L/min.-2.90 gal./min. @ 170 bar - 2465.64 psi)
- Automatic hose reel with 20 m/787.40" washing hose
- Electric drive of the sanitary concentrate
- 19 L/5 gal. sanitary concentrate tank
- Magnetic work light (radio-controlled)

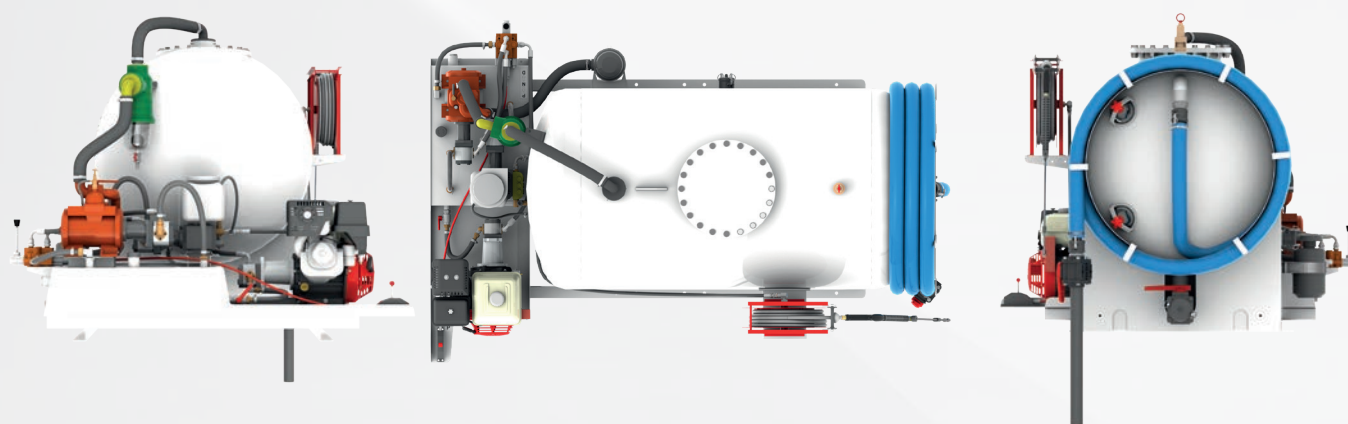
SUN 1100L M1 and SUN 2000L M1

The Longitudinal Units with Hydraulic System

Ideal for vehicles up to 6.0 tons, their **longitudinal positioning** on the truck flatbed allows to have a slimmer truck. These units have a single suction station and a washing one, positioned at the rear of the truck to ensure a lower weight on the vehicle.

SUN 1100L M1 and SUN 2000L M1 are provided with an air-cooled 4-stroke OHV gasoline engine (*) and are activated/deactivated by manual controls placed on the units. The washing system is provided with a **manual injector** that automatically mixes the sanitary concentrate or any other additive liquids to ensure in-depth cleaning of the portable restrooms.

The SUN 1100L M1 and SUN 2000L M1 fresh and gray water tanks hold respectively 460 liters/121.52 gallons and 580 liters/153.22 gallons of fresh water and 1.100 liters/290.59 gallons and 2.000 liters/528.34 gallons of gray water.

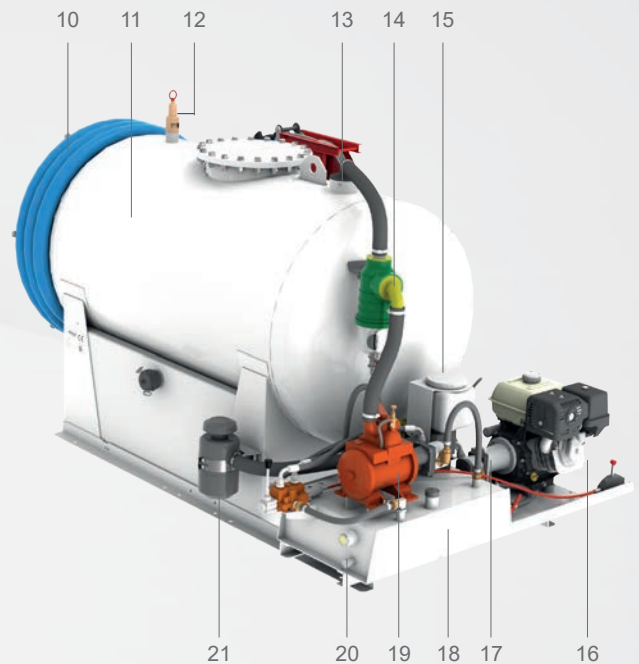
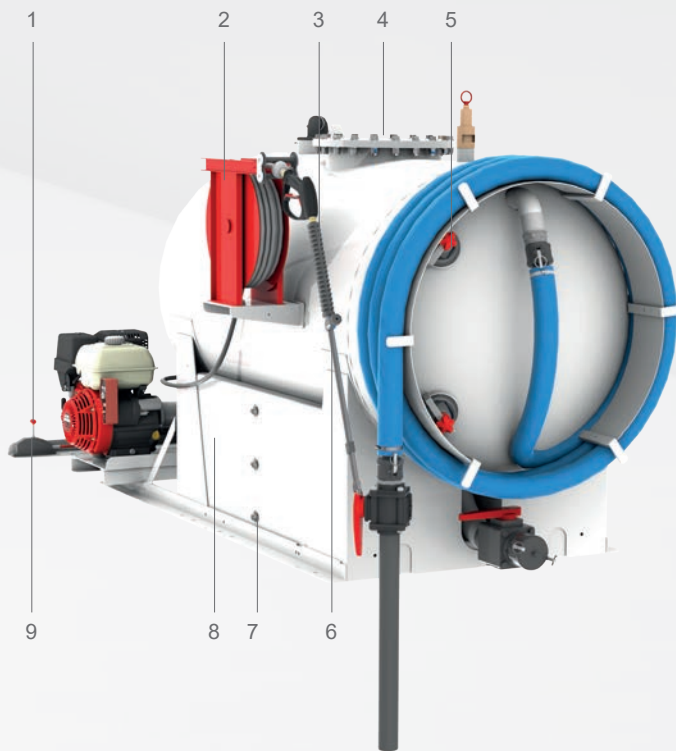


Specifications:

	SUN 1100L M1	SUN 2000L M1
Height	1.530 mm / 60.23"	1.830 mm / 72.04"
Width	1.770 mm / 69.68"	1.960 mm / 77.16"
Lenght	2.545 mm / 100.20"	2.490 mm / 98.03"
Diameter	1.000 mm / 39.37"	1.300 mm / 51.18"
Gray water capacity	1.100 L / 290.59 gal.	2.000 L / 528.34 gal.
Fresh water capacity	460 L/121.52 gal.	580 L / 153.22 gal.
Weight in running order	670 kg / 1477.10 lb.	840 kg / 1851.88 lb.
Material used	Main tank body made of carbon steel and fresh water tank in semi-transparent plastic material	
Standard color	White	

(*) These units are supplied with Honda engine mod. GX270 or similar such as Kohler or Loncin engines, depending on availability.

(**) The pictures are for demonstration purposes only. Armal S.p.A. has decided to show only pictures of 1100L model.



Features include:

1. Manual drive controls on two sides of the unit
2. No. 1 automatic hose reel with 10 m/393.70" washing hose
3. No. 1 double barrel washing gun with high pressure nozzle and low pressure outlet
4. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
5. No. 2/3 sight glass bowls respectively on SUN 1100L M1 and SUN 2000L M1 placed on one side of the gray water tank to check the level
6. Valve on the washing lance to select the high- or low-pressure water supply (high pressure for washing portable restrooms and low for filling the restroom tanks and those of the hand wash sinks)
7. No. 3 plastic level sight glasses on the fresh water tank to check its level
8. Lightweight fresh water tank in semi-transparent plastic material
9. Manual hydraulic control valve
10. No. 1 gray water suction hose of 9 m/354.33" (mod. SUN 1100L M1) and 12 m/472.44" (mod. SUN 2000L M1) complete with syringe
11. Gray water tank body made of carbon steel
12. Safety relief valve

13. Ball overflow valve

14. Siphon valve

15. Sanitary concentrate tank (5 L/1.32 gal. capacity)

16. Gasoline engine with recoil start (predisposition for electric start)

17. Hydraulic pump

18. Hydraulic oil tank (45 L/11.88 gal. capacity)

19. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)

20. Magnetic cap for oil tank

21. Vacuum pump filter-silencer

Moreover:

- Annovi Reverberi high pressure water pump (15 L/min.-3.96 gal./min. @ 150 bar -2175.57 psi)
- Washing water pressure regulator fitted on the water pump
- Sanitary concentrate manual injector
- Holder to store the gray water suction hose
- No. 3 eyes for a more stable and safe anchoring of the portable cabins during transport

Optional accessories:

- High pressure water pump (11 L/min.-2.90 gal./min. @ 170 bar - 2465.64 psi)
- Automatic hose reel with 20 m/787.40" washing hose
- 19 L/5 gal. sanitary concentrate tank

SUN 600V M3

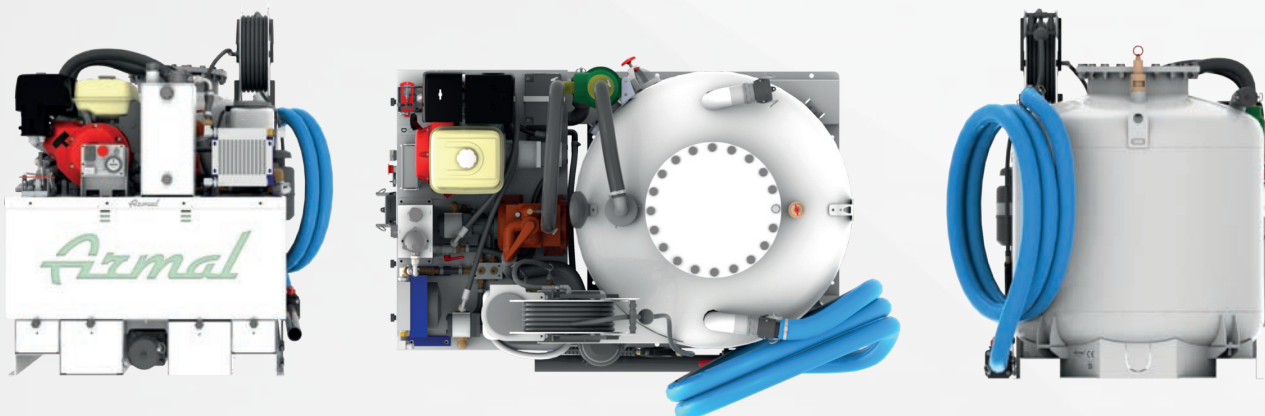
The Mini Unit with Hydraulic System and Remote Control

SUN 600V M3 is **Armal mini vacuum tank unit** specifically designed to be installed on pick-ups, small trucks, or light trailers. Its compact size allows easy access to remote or hard to reach areas and is perfect for small jobs too.

The **remote control system** to work easily and reduce the time of each service, the **emergency stop control** on the remote control and the control panel to deactivate the unit in case of accidental events, the **reduced capacity oil tank** to minimize the weight of the unit, the **air-oil heat exchanger** to prevent the overheating of the hydraulic oil and optimize the thermal range of the hydraulic system operations, **lights** to work easily in dark places or at night, the **hour counter device** to indicate the time the unit has been used, are all standard features of Armal SUN 600V M3.

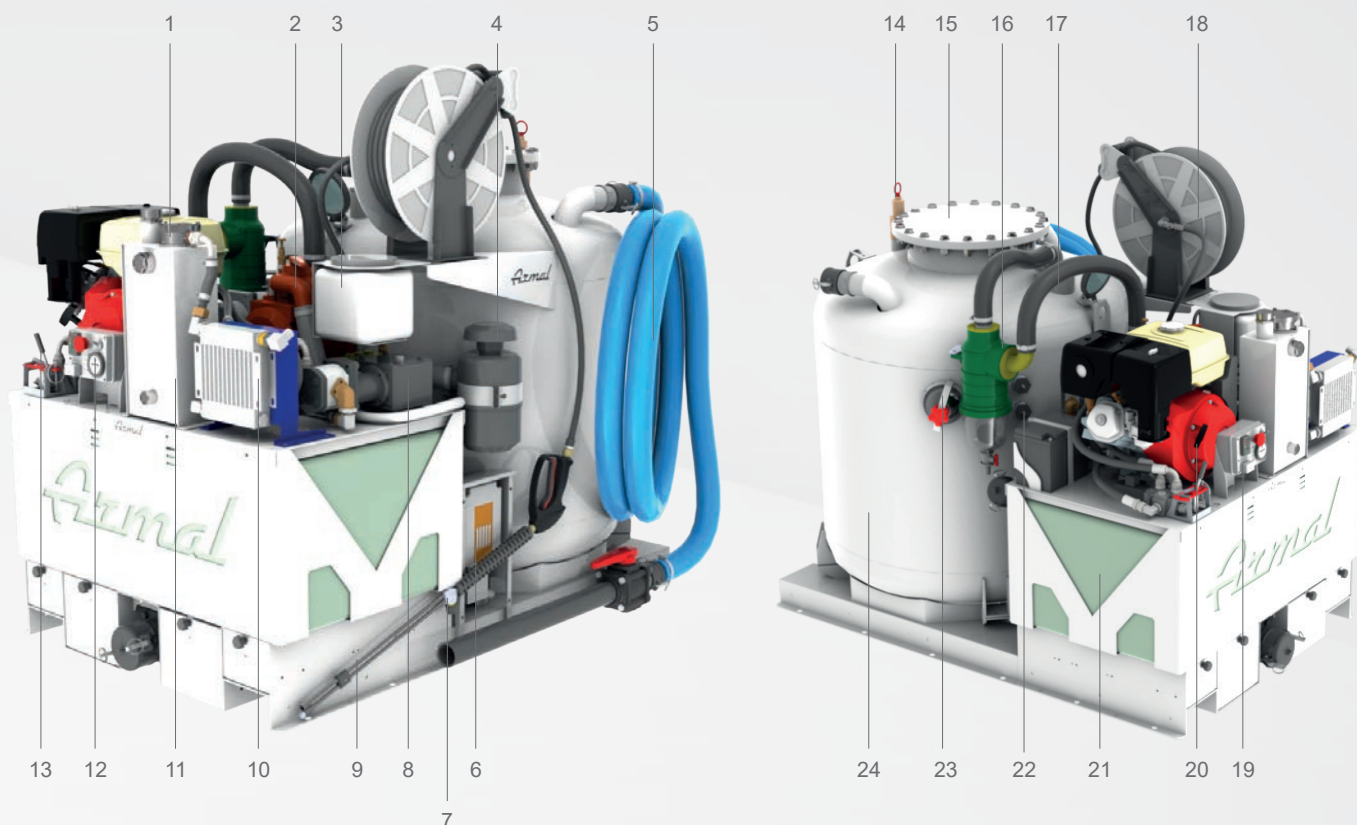
The suction and washing operations can always be activated/deactivated using the appropriate controls on the unit. The air-cooled 4-stroke OHV gasoline engine has recoil and electric start (*). SUN 600V M3 has a 200 liters/52.83 gallons fresh water tank and a 600 liters/158.50 gallons gray water tank.

This unit can be improved with some optional accessories such as the deodorizing control system and/or the automatic suction stop system when the maximum level of gray water is reached.



Specifications:

Height	1.500 mm / 59.05"
Width	1.010 mm / 39.76"
Lenght	1.650 mm / 64.96"
Diameter	1.000 mm / 39.37" (vertical)
Gray water capacity	600 L / 158.50 gal.
Fresh water capacity	200 L / 52.83 gal.
Weight in running order	500 kg / 1102.31 lb.
Material used	Main tank body made of carbon steel and fresh water tank in plastic material
Standard color	White



Features include:

1. Cartridge oil filter
2. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)
3. Sanitary concentrate tank (5 L/1.32 gal. capacity)
4. Vacuum pump filter-silencer
5. No. 2 gray water suction hoses of 9 m/354.33" complete with syringes
6. Remote control unit
7. Valve on the washing lance to select the high- or low-pressure water supply (high pressure for washing portable restrooms and low for filling the restroom tanks and those of the hand wash sinks)
8. Annovi Reverberi high pressure water pump (15 L/min.-3.96 gal./min. @ 150 bar -2175.57 psi)
9. No. 1 double barrel washing gun with high pressure nozzle and low pressure outlet
10. Air-oil heat exchanger with electric fan
11. 8 L/2.11 gal. hydraulic oil tank with magnetic cap
12. Hour counter device
13. Electrically operated hydraulic control valve with manual control in case of emergency
14. Safety relief valve

15. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
16. Siphon valve
17. Ball overflow valve
18. No. 1 automatic hose reel with 15 m/590.55" washing hose
19. Electronic gray water level control system
20. Gasoline engine with electric and recoil start
21. Lightweight fresh water tank in plastic material
22. Level sensors with display of the level reached by the gray water through LED light indicator
23. No. 1 transparent sight bowl to indicate the gray water tank maximum level
24. Gray water tank body made of carbon steel

Moreover:

- High brightness LED work light controlled by a switch, useful to enlighten the working area
- Hydraulic pump
- Washing water pressure regulator outfitted on the water pump
- Manual injector on the washing system to automatically mix the sanitary concentrate or other additive liquids to guarantee a perfect cleaning

Optional accessories:

- Deodorizing control system to spread deodorant fragrances during suction
- Automatic suction stop system when the maximum level of gray water is reached
- High pressure water pump (11 L/min.-2.90 gal./min. @ 170 bar - 2465.64 psi)
- Automatic hose reel with 20 m/787.40" washing hose
- Electric drive of the sanitary concentrate

EASY Units with Belt Drive System

To better meet market needs, EASY vacuum tank units has been designed as an alternative for the suction and washing of portable restrooms. Durable, practical, and reliable, these units are entry-level products that offer [an economical solution without compromising quality, safety, and performance.](#)

Without high pressure washing, the power transmission is designed to guarantee the best combination of performance, economy, maintenance, and consumption. The vacuum pump is driven by an internal combustion engine by means of a belt drive while the washing system is driven by an electric pump. To obtain the maximum lightness of these units, they come with one suction and one washing station. Simple to operate and maintain, EASY vacuum tank units are also available in [different capacities](#) to meet all customer needs.

EASY features include:

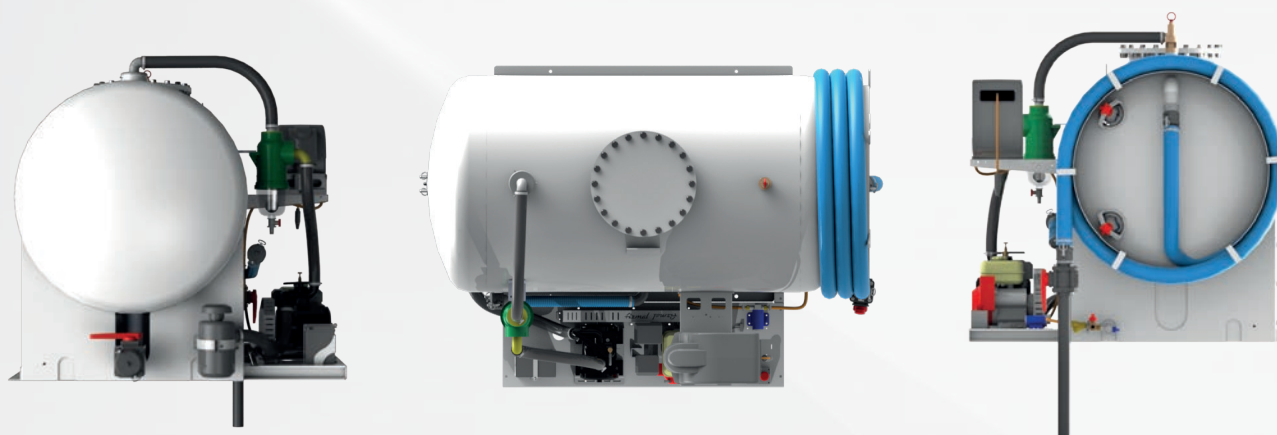
- Ready for use
- [Belt drive system \(on request, possibility to have the double belt too\)](#)
- Vacuum pump filter-silencer
- [Mechanically autonomous operating systems: connected to the vacuum tank unit, they allow the unit to operate in a stand-alone configuration](#)
- Extremely light and practical to move and place on any portable restroom vacuum service truck
- [Extreme constructive and mechanical simplicity](#)
- Reduced maintenance costs
- [Basic yet sophisticated](#)
- Versatile, economical yet efficient

EASY 1100T B1 and EASY 2000T B1

The Transversal Units with Belt Drive System

EASY 1100T B1 and EASY 2000T B1 can be equipped on vehicles up to 6.0 tons. Their **transversal positioning** allows to have enough space to load extra portable restrooms. The system is mechanically autonomous, and the vacuum pump is driven by an air-cooled 4-stroke OHV gasoline engine by belt drive with centrifugal clutch (*). Washing is provided by an **electric pump** (8 liters/min. – 2.11 gallons/min.).

EASY 1100T B1 has a 460 liters/121.52 gallons fresh water tank and a 1.100 liters/290.59 gallons gray water tank while EASY 2000T B1 tanks contain 580 liters/153.22 gallons of fresh water and 2.000 liters/528.34 gallons of gray water.

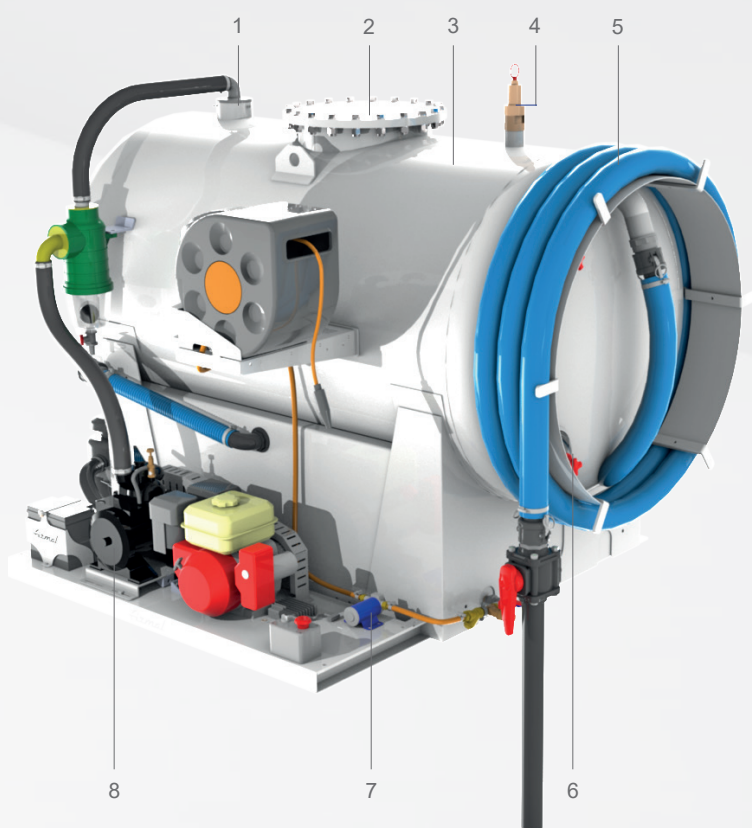


Specifications:

	EASY 1100T B1	EASY 2000T B1
Height	1.530 mm / 60.23"	1.830 mm / 72.04"
Width	2.100 mm / 82.67"	2.000 mm / 78.74"
Lenght	1.490 mm / 58.66"	1.790 mm / 70.47"
Diameter	1.000 mm / 39.37"	1.300 mm / 51.18"
Gray water capacity	1.100 L / 290.59 gal.	2.000 L / 528.34 gal.
Fresh water capacity	460 L / 121.52 gal.	580 L / 153.22 gal.
Weight in running order	560 kg / 1234.69 lb.	730 kg / 1609.37 lb.
Material used	Main tank body made of carbon steel and fresh water tank in semi-transparent plastic material	
Standard color	White	

(*) These units are supplied with Honda engine mod. GX160 or similar such as Kohler or Loncin engines, depending on availability.

18 (**) The pictures are for demonstration purposes only. Armal S.p.A. has decided to show only pictures of 1100T model.



Features include:

1. Ball overflow valve
2. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
3. Gray water tank body made of carbon steel
4. Safety relief valve
5. No. 1 gray water suction hose of 9 m/354.33" (mod. EASY 1100T B1) and 12 m/472.44" (mod. EASY2000T B1) complete with syringe
6. No. 2/3 sight glass bowls respectively on EASY 1100T B1 and EASY 2000T B1 placed on one side of the gray water tank to check the level
7. Electric pump (DC 12V - 8 L/min. - 2.11 gal./min. @ 1.5 bar / 21.75 psi)
8. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)

9. Siphon valve

10. No. 1 automatic hose reel with 10 m/393.70" washing hose (low pressure)

11. Gasoline engine with electric and recoil start

12. Lightweight fresh water tank in semi-transparent plastic material

13. Vacuum pump filter-silencer

Moreover:

- No. 3 plastic level sight glasses on the fresh water tank to check its level
- Holder to store the gray water suction hose
- No. 3 eyes for a more stable and safe anchoring of the portable cabins during transport

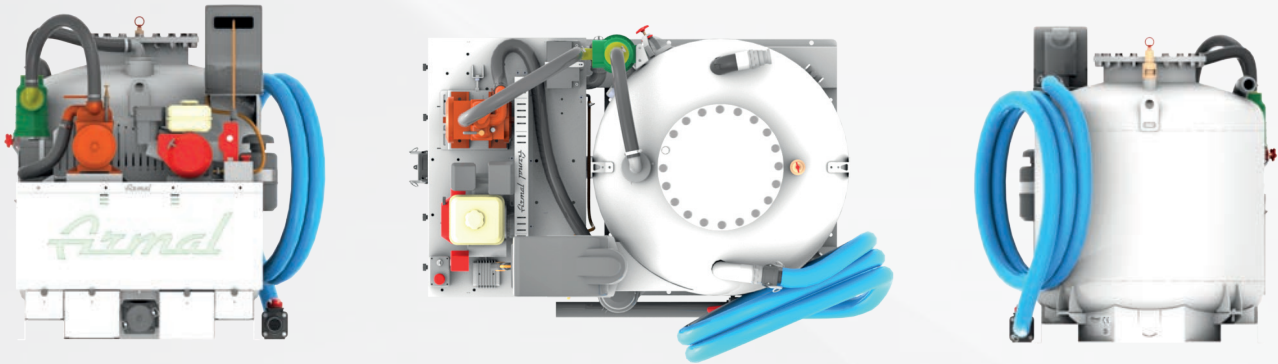
EASY 600V B3

The Mini Unit with Belt Drive System

EASY 600V B3 is Armal **new entry** vacuum tank unit. Small and lightweight, it has the same main features as the other EASY units; thanks to its **vertical position**, it is perfect to be installed on pick-ups, small trucks, or light trailers.

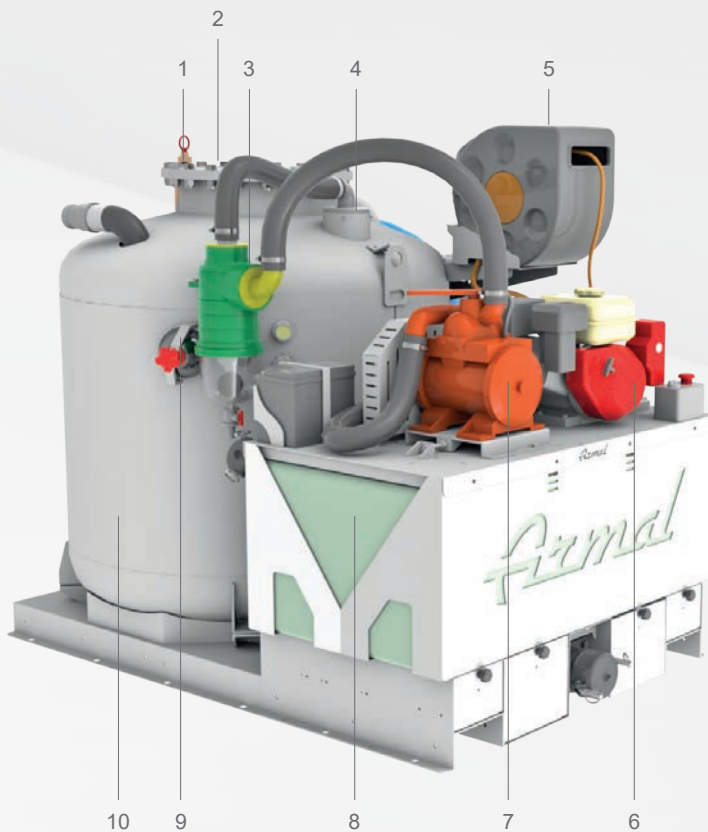
EASY 600V B3 system is mechanically autonomous; the vacuum pump is driven by an air-cooled 4-stroke OHV gasoline engine by a belt drive with centrifugal clutch (*). The washing is guaranteed by an **electric pump** (8 liters/min. – 2.11 gallons/min.).

The fresh water tank has a capacity of 200 liters/52.83 gallons and the gray water tank holds 600 liters/158.50 gallons.



Specifications:

Height	1.500 mm / 59.05"
Width	1.010 mm / 39.76"
Lenght	1.650 mm / 64.96"
Diameter	1.000 mm / 39.37" (vertical)
gray water capacity	600 L / 158.50 gal.
Fresh water capacity	200 L / 52.83 gal.
Weight in running order	440 kg / 970.05 lb..
Material used	Main tank body made of carbon steel and fresh water tank in plastic material
Standard color	White



Features include:

1. Safety relief valve
2. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
3. Siphon valve
4. Ball overflow valve
5. No. 1 automatic hose reel with 10 m/393.70" washing hose (low pressure)
6. Gasoline engine with electric and recoil start
7. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)
8. Lightweight fresh water tank in plastic material
9. No. 1 big sight glass bowl and additional smaller ones in plastic positioned on the gray water tank to monitor its level
10. Gray water tank body made of carbon steel
11. No. 1 gray water suction hose of 9 m/354.33" complete with syringe
12. Vacuum pump filter-silencer
13. Electric pump (DC 12V - 8 L/min. - 2.11 gal./min. @ 1.5 bar / 21.75 psi)

PTO DRIVEN VACUUM TANK UNITS

Armal PTO driven vacuum tank units are to be connected to a vehicle power take-off. This has many advantages in terms of lower weight and lower maintenance costs because they:

- are more compact and lighter without the presence of their own gasoline engine
- do not require refueling
- produce less noise and vibrations during suction and washing operations
- have better emissions control and lower consumption
- turn operations into an easy task and require minimal maintenance with lower maintenance costs

Armal is proud to make the operators life easier and easier everyday!

Features include:

- Hydraulically driven vacuum pump
- Native with high pressure washing
- Remote control operations (operation controls are also available on both the left and right side of the units)
- Remote control unit with emergency stop push button (the same stop button is always present on the control panel to ensure the highest level of safety for the units and the operators)
- Vacuum pump filter-silencer
- Optimization of the ratio between the hydraulic pump, the PTO, and the hydraulic engines
- Optimization of gasoline consumption and noise level, reduction of mechanical stress on the vehicles and vacuum tank unit due to the ability to perform operations while keeping the vacuum service truck engine idling
- Automatic power on/off of the units when the PTO is on/off due to the integration between the vehicle and the vacuum tank unit
- Available power, provided by the portable restroom vacuum service truck engine, extremely higher than that required by Armal vacuum tank units, so the truck engine and gearbox are not fatigued
- No oscillation of the engine power, so the oil at the inlet of the hydraulic control valve is in constant pressure and flow conditions improving the service performance

TRK 1100T P2 and TRK 2000T P2

The Transversal Units with Hydraulic System and Remote Control

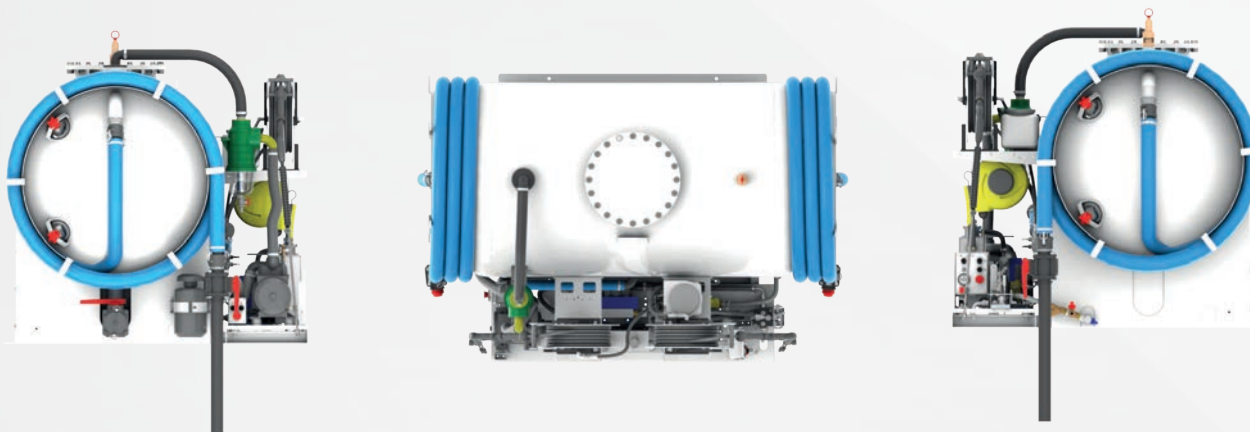
TRK 1100T P2 and TRK 2000T P2 have features and optimizations that make them particularly suitable for the execution of the service performed by a dedicated vehicle. They can be easily installed on vehicles up to 6.0 tons. Their **transversal positioning** allows the loading of extra portable restrooms on the truck's flatbed, while their **dual-side service** permits operators to use the units without any need to move the vehicle depending on the location of the portable restrooms. The control panel and suction/washing operations are immediately on/off when the PTO is activated/deactivated (*).

TRK vacuum tank units come as standard with an **electronic and remote control system** that allows faster operations at distance from the vehicle, a **reduced capacity oil tank** to minimize their weight, an **air-oil heat exchanger** that avoids the overheating of the hydraulic oil and optimizes the thermal range of the hydraulic system operations, **lights** to work easily in dark places or at night, and an **hour counter device** that indicates the time of use of the units.

Their **reduced weight** and the **electronic and remote control system** guarantee a **net economic saving** for each service as well as making the daily work of the operators easier, less tiring and worry-free. To ensure the highest level of safety for both units and operators, the **emergency stop push buttons** on the remote control and on the control panel ensure immediate shutdown whenever an emergency arises.

The fresh water and gray water tanks of TRK 1100T P2 and TRK 2000T P2 contain respectively 460 liters/121.52 gallons and 580 liters/153.22 gallons of fresh water and 1.100 liters/290.59 gallons and 2.000 liters/528.34 gallons of gray water.

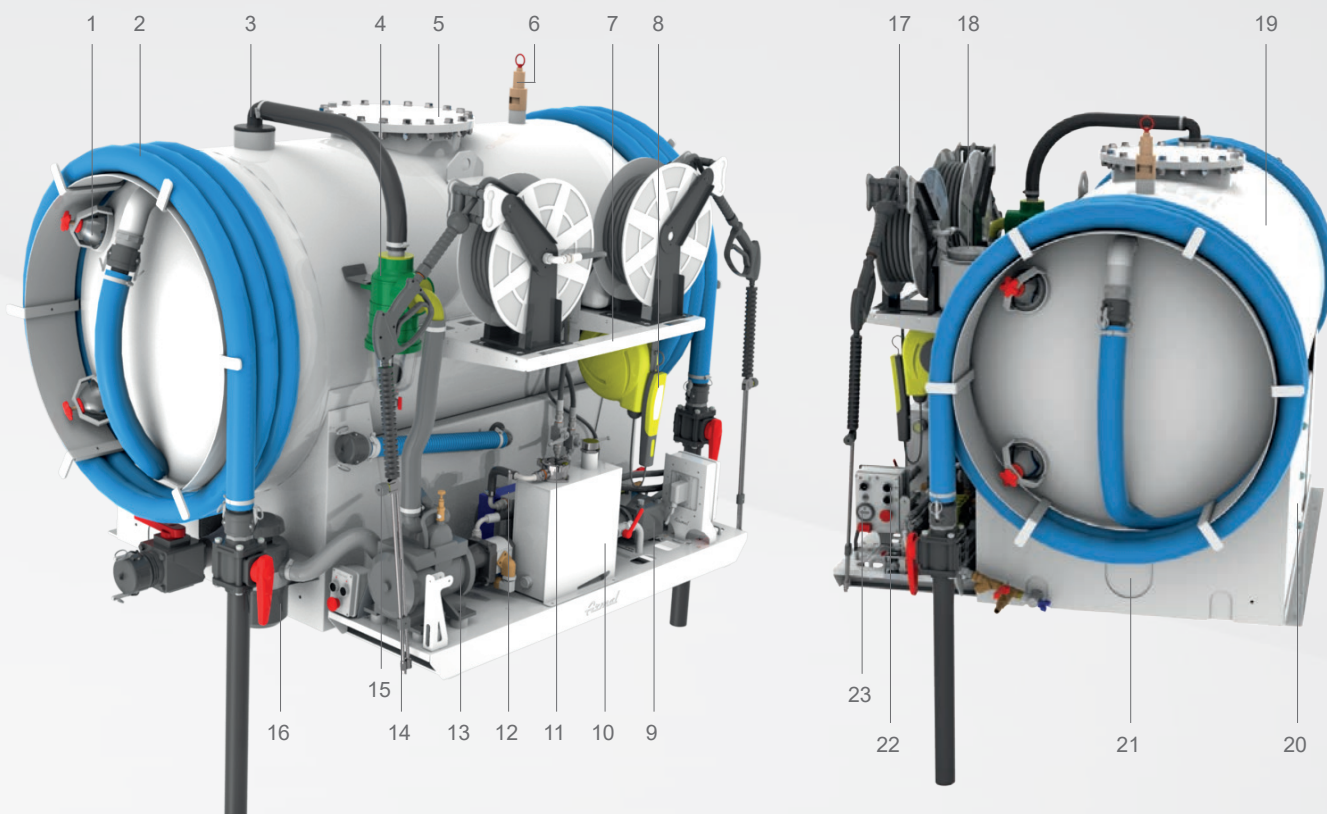
The deodorizing control system and/or the combined operation system can be added as **optional accessories** along with other accessories to facilitate and improve the service of your portable restrooms.



Specifications:

	TRK 1100T P2	TRK 2000T P2
Height	1.530 mm / 60.23"	1.830 mm / 72.04"
Width	2.100 mm / 82.67"	2.100 mm / 82.67"
Length	1.480 mm / 58.26"	1.780 mm / 70.07"
Diameter	1.000 mm / 39.37"	1.300 mm / 51.18"
Gray water capacity	1.100 L / 290.59 gal.	2.000 L / 528.34 gal.
Fresh water capacity	460 L / 121.52 gal.	580 L / 153.22 gal.
Weight in running order	580 kg / 1278.68 lb.	620 kg / 1366.87 lb.
Material used	Main tank body made of carbon steel and fresh water tank in semi-transparent plastic material	
Standard color	White	

(*) PTO: on request depending on the truck model.



Features include:

1. No. 2/3 sight glass bowls respectively on TRK 1100T P2 and TRK 2000T P2 placed on both sides of the gray water tank to check the level
2. No. 2 gray water suction hoses of 9 m/354.33" (mod. TRK 1100T P2) and 12 m/472.44" (mod. TRK 2000T P2) complete with syringes
3. Ball overflow valve
4. Siphon valve
5. Manhole on the upper part of the gray water tank to allow operators to check the inside and clean it in case of extraordinary maintenance operations
6. Safety relief valve
7. Courtesy night light, placed under the washing hose reels and controlled by a switch, useful to light the mechanics and the controls of the suction groups
8. LED work light with 15 m/590.55" automatic cable reel located under the hose reel to enlighten the inside of the portable restrooms
9. Annovi Reverberi high pressure water pump (15 L/min.-3.96 gal./min. @ 150 bar -2175.57 psi)
10. 10 L/2.64 gal. hydraulic oil tank with magnetic cap
11. Cartridge oil filter
12. Air-oil heat exchanger with electric fan
13. Vacuum pump mod. BP MEC1600P (1.980 L/min. - 523.06 gal./min.)
14. No. 2 double barrel washing guns with high pressure nozzle and low pressure outlet

15. Valve on the washing lance to select the high- or low-pressure water supply (high pressure for washing portable restrooms and low for filling the restroom tanks and those of the hand wash sinks)
16. Vacuum pump filter-silencer
17. No. 2 automatic hose reels with 15 m/590.55" washing hoses
18. Sanitary concentrate tank (5 L/1.32 gal. capacity)
19. Gray water tank body made of carbon steel
20. No. 3 plastic level sight glasses on the fresh water tank to check its level
21. Lightweight fresh water tank in semi-transparent plastic material
22. Electric drive controls on the left and right side of the unit
23. Hour counter device

Moreover:

- Remote control unit
- Electrically operated hydraulic control valve with manual control in case of emergency
- Washing water pressure regulator outfitted on the water pump
- Manual injector on the washing system to automatically mix the sanitary concentrate or other additive liquids to guarantee a perfect cleaning
- Holder to store the gray water suction hose
- No. 3 eyes for a more stable and safe anchoring of the portable cabins during transport

Optional accessories:

- Combined suction and washing operations system
- Deodorizing control system to spread deodorant fragrances during suction
- High pressure water pump (11 L/min.-2.90 gal./min. - 170 bar/2465.64 psi)
- Automatic hose reels with 20 m/787.40" washing hoses
- Electric drive of the sanitary concentrate
- 19 L/5 gal. sanitary concentrate tank
- Magnetic work spotlight (radio-controlled)

Your portable restrooms service will not be perfect without a professional vacuum service truck. If you do not know the ideal model for your needs or where to buy it, Armal has the answer: you can purchase “[turnkey vacuum service trucks](#)”, new vehicles outfitted with ad hoc flatbeds and PTO driven vacuum tank units, or [the assembly of Armal new flatbeds and vacuum tank units on your vehicle](#), or you can request only [the flatbed and the TRK unit](#) to be assembled on your truck by your trusted automotive service. In all cases, Armal offers customized solutions according to customers’ demands and needs.

Armal mainly outfits Iveco Daily chassis with twin rear wheels and gross ground mass starting from 3.5 tons; these chassis, available in various capacities and versions, are the best ones in terms of performance, best value for money, ease of use, overall strength of the basic chassis, comfort, driveability, and handling, thanks to the wide track and the optimum wheelbase (*).

Armal vehicles are equipped with flatbeds designed to have [the cabins loading floor with the minimum possible height from the ground](#) allowed in compliance with the indications of the chassis manufacturers. The [new Armal my2021 flatbed](#) has many new features and improvements that are the result of its production experience and customers suggestions. Armal my2021 flatbed features include:

- Lightness
- Extreme sturdiness
- Loading shelves in almond-shaped aluminium
- Marker lights integrated in the bodywork in a position protected from accidental impacts
- Specific housings to anchor the portable cabins
- Shaped rear corners to reduce the possibility of bumping edges
- Removable and replaceable rear bar
- Truck cab protection system
- Easily removable loading platforms to facilitate the maintenance operations on the mechanics of the vehicle
- Specific housings for underfloor cab trolley
- Lockable toolbox
- Work light with automatic cable reel
- Moulded bodywork for a better aesthetic appearance



Armal portable restrooms vacuum service trucks can be equipped with:

- **Short wheel-base:** it is extremely compact, practical, easy to maneuver, and suitable for use in areas with difficult access or mobility (such as big cities or small towns, mountain areas, rural villages, construction sites, etc.). The vacuum tank unit is installed close to the vehicle cab thus allowing space for a large loading platform in the rear: you can carry 2 Armal standard cabins or 1 wheelchair accessible portable restroom.
- **Medium wheel-base:** more compact, it is practical and easy to drive, suitable for use in areas of difficult mobility such as big cities, small towns, construction sites, etc. It merges easy handling capabilities and transport needs and allows the vacuum tank unit to be positioned in the centre of the flatbed to load 4 Armal standard cabins. It can also be equipped with a sliding rear platform to increase the flatbed length (if this is allowed by the country's traffic regulation).
- **Long wheel-base:** it optimizes the transport service as it allows to position the vacuum tank unit in the centre of the truck flatbed to leave free space in the front and behind to load 4 Armal standard cabins or 2 standard cabins and 1 wheelchair accessible portable restroom.

All Armal portable restroom vacuum service trucks are equipped with **a professional radio control system** to improve the conditions of the operators' work. The receiving unit is located inside the driver's cab in a position extremely protected from accidental damage. Other devices included are the electric PTO control with clutch safety system, the suction system silencer, the supports for the handling trolleys, the hooks for the correct anchoring of the cabins, and the flashing lights. Utmost attention has been paid to optimizing the on-board space and the distribution of loads on the axles for excellent handling and safe driving.

Armal trucks are equipped **with TRK vacuum tank units** (**), specially designed to optimize on-board space, ease of use, load capacity while maintaining excellent vehicle handling qualities. Armal also determines the positioning of the unit in the most appropriate point on the flatbed, finding the best compromise between space, load capacity, flow rate and height of the gravity center. Armal decided to use **the PTO system** to outfit the portable restroom vacuum service trucks because it offers **numerous advantages**:

- Noise reduction during suction and washing operations
- Greater available power
- Brilliant performance
- Low pollution levels (vehicles meet the strictest anti-pollution standards)
- Reduced fuel consumption
- Reduction of overall maintenance time and costs
- Higher levels of equipment availability
- Faster execution of interventions
- Reduction of the overall vehicle tare weight



(*) Contact your Armal Sales Manager for vehicles of other brands.

(**) Features and specifications: see p. 24/25 of this catalog.

(***) The pictures are for demonstration purposes only. Armal S.p.A. has decided to show only pictures of long-wheel base vehicle with low-flatbed.

The power take-off is mounted **on the vehicle's gearbox**, allowing for a perfect integration between the vehicle and the vacuum tank unit, and can be electric or manual depending on the customer preferences. The unit is automatically put in the **"ready to start"** condition when the PTO is activated, thus considerably increasing the speed of execution of suction and washing operations.

All Armal portable restroom vacuum service truck can be upgraded with many optional accessories such as flashing lights, additional lockable toolbox or high-volume toolbox, open compartments on the flatbed, work lights, parking sensors, air suspension, suspension seat, electric mirrors, towbar and much more ...

To help you make the right choice, Armal concludes with the main advantages of buying its "turnkey portable restrooms vacuum service trucks": less noise during suction and washing operations, less weight on the chassis, more consistent performance, lower consumption, less maintenance required, greater emissions control, more space available on the flatbed thanks to the TRK units compact design, economic savings, and no waste of time with the use of the remote control.



Armal trailers are the ideal solution to transport portable cabins. They are available in three different sizes: L-TRAILER, TRAILER-6 and TRAILER-12 can accommodate up to 3, 6 and 12 restrooms at the same time.



Specifications:

	L-TRAILER	TRAILER-6	TRAILER-12
Height from the ground	540 mm / 21.26"	669 mm / 26.33"	711 mm / 27.99"
Width	1.720 mm / 67.71"	2.120 mm / 83.46"	2.120 mm / 83.46"
Length of the loading surface	3.080 mm / 121.26"	3.410 mm / 134.25"	6.808 mm / 268.03"
Clear weight	300 kg / 661.39 lb.	350 kg / 771.62 lb.	600 kg / 1633.77 lb.
Load weight	900 kg / 1984.16 lb.	400 kg / 992.08 lb.	900 kg / 1984.16 lb.
Total ground mass	1.200 kg / 2645.55 lb.	750 kg / 1653.47 lb.	1500 kg / 3306.93 lb.
Material used	Carbon steel treated to prevent corrosion and rust with hot galvanizing process		

Features include:

- Low ground clearance and excellent balance with Armal vacuum service trucks or pick-ups
- Same width as Armal portable restrooms vacuum service trucks (TRAILER-6 and TRAILER-12 only)
- Predisposition to hook the belts to tie up the cabins
- Electrical connection to the towing vehicle via standard 13-pin socket
- Rear fog light and reversing lights
- Support wheel (extra smooth manoeuvrability on any surface)
- Spare wheel
- Made of carbon steel treated to prevent corrosion and rust with a hot-dip galvanizing process

Optional accessory:

- Adjustable jacks stand to guarantee stability to the vehicle when parking or loading

VACUUM TANK UNITS COMPARATIVE TABLE

	SUN 1000T M1 SUN 2000T M1	SUN 1000T M2 SUN 2000T M2	SUN 1000L M1 SUN 2000L M1	SUN 600V M3	EASY 1100T B1 EASY 2000T B1	EASY 600V B3	TRK 1100T P2 TRK 2000T P2
Engine	✓	✓	✓	✓	✓	✓	
PTO (Power Take-Off)							✓
High Pressure Hydraulic Vacuum Pump	✓	✓	✓	✓			✓
Low Pressure/Belt Drive System					✓	✓	
Remote Control System		✓		✓			✓
Mechanical Operations	✓		✓		✓	✓	

PRODUCTS:

Vacuum Tank Units:



1100TM1:
SUN 1100T M1

2000TM1:
SUN 2000T M1

1100TM2 :
SUN 1100T M2

2000TM2:
SUN 2000T M2



1100LM1:
SUN 1100L M1

2000LM1:
SUN 2000L M1

600VM3:
SUN 600V M3



1100TB1:
EASY 1100T B1

2000TB1:
EASY 2000T B1:

600VB3:
EASY 600V B3



1100TP2:
TRK 1100T P2

2000TP2:
TRK 2000T P2

Transport Trailers:



R041730:
L-TRAILER



R022134:
TRAILER-6



R032168:
TRAILER-12

Armal®

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