

## **THE VACUUM TRUCK OF THE FUTURE!!**

### **V-FORCE 3000 ADR including a M.A.N. TGS 6x2 320 HP Truck**



#### **The V-FORCE 3000 ADR offers:**

- **13m<sup>3</sup> Stainless Steel (Polished) 316 L Product Tank**
- **Powerful V-FORCE 3000 Liquid Ring Pump – Rated: 3,000m<sup>3</sup>/hour @ 90% Vacuum**
- **Jetting Pump Rated: 50Litres/min @ 120bar**
- **Jetting Water Tank (Stainless Steel) – Capacity: 1,500Litres**
- **Vacuum Pump Water Tank – Capacity: 1,500Litres Stainless Steel with “Chimney” exhaust**
- **Air Compressor - 2bar complete with Nitrogen connection for unloading**
- **Continuous Earth Grounding Control Unit**
- **Hose Racks & Tool Boxes – Stainless Steel**
- **Paint Coating includes a Clear Coat!**
- **Specification Includes a M.A.N.TGS 6 x 2, 320HP EURO 4 Engine, 28tonne chassis, with Lift Axle and 9tonne Front Axle**

## TECHNICAL SPECIFICATION:

### Chassis:

<b>Delivery:</b>	Is included in the delivery.
<b>Model &amp; Type:</b>	M.A.N. TGS 320HP, EURO 4 Engine, 6x2, 28tonne, ADR/VLG.
<b>MAW:</b>	28,000kg (UK Spec: 26,500Kg)
<b>Wheelbase:</b>	4,500mm
<b>ADR:</b>	The chassis has to be equipped according all ADR-2005 regulations, execution "FL".



### Power Take-Off:

<b>PTO:</b>	The chassis is equipped with: <ul style="list-style-type: none"><li>- 1 x PTO on the gearbox with twin outlets:<ul style="list-style-type: none"><li>o 1 x Outlet for driving the vacuum pump (<math>\pm 85\text{kW}</math>)</li><li>o 1 x Outlet for driving the hydraulic pumps. (<math>\pm 15\text{kW}</math>)</li></ul></li><li>- All outlets are able to work simultaneously when needed at their full power demand.</li></ul>
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### Remarks:

<b>Payload:</b>	Maximum payload of the vehicle, after construction, does not depend on the capacity of the Sludge Tank but is function of the maximum admissible load of the vehicle permissible in the national legislation of your country.
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### Execution:

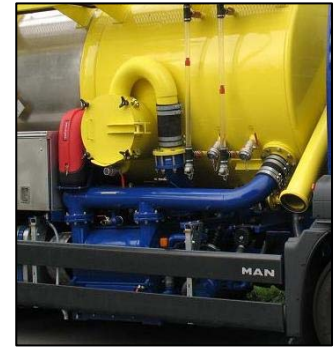
<b>Pressure/Vacuum:</b>	Suitable for the transport of Hazardous Waste Products and built in accordance with the design rules Int. ADR-2005 for Vacuum Operated Waste Tankers, §6.10 – Tank Code L4AH & S4AH.
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## Pressure / Vacuum Tank:

- Shape:** Cylindrical Tank with U-Section External Stiffening Rings.
- Material:** Stainless Steel - 316L.
- Build:** The plates of the barrel are polished.  
 All plates welded onto this barrel will be sandblasted and painted afterwards.
- Capacity:** ± 13,000Litres (2,800gallons)
- Wall Thickness:** ± 6.0mm
- Head Thickness:** ± 6.0mm (torispherical heads)
- Design Pressure:** FV and 4.0bar Overpressure
- Working Pressure:** -1.0bar Under Pressure and 2bar Overpressure
- Tipping Ram:** Front Tipping Ram with Safety Support for easy working under a tipped tank. Tank fixing in accordance with ADR Regulations.
- Manhole:** 1 x Manhole, ADR approved, positioned on the top of the barrel.
- Overpressure Safety:** A Bursting Disc [graphite] is mounted with the Overpressure Relief Valve, Spark Arrestor and Pressure Gauge (acc. ADR-2005)
- Roll Over Protection:** In accordance with ADR Regulations.
- Walkway:** Aluminium Low Level Walkway to man-way, with rigidly fixed handrail, accessible by ladder.
- Vent Valve:** An 80mm Stainless Steel Butterfly Valve, pneumatically operated from the Main Control Panel, on tank top.
- Discharge Chute:** A Discharge Chute (Stainless Steel) will be mounted at the rear to protect the chassis.
- Advertising Boards:** Mounted on both sides of the barrel. Boards to be in aluminium and painted.
- Rear Door:** Full size door with hydraulically opening operation and heavy duty adjustable hinges. No rim fitted - door bottom is at same level as tank floor.
- Safety:** Hydraulic Check Valves with Auto Check and mechanical hold in upper position.
- Locking Mechanism:** The door is locked by hydraulic operated clamps.
- Seal:** Positive Seal in Neoprene Rubber.
- Contents Indicator:** A Stainless Steel Floating Ball inside the tank and an Indicating Arrow on the outside. When the tank is full the suction duct is closed automatically and a horn signal is activated. A By-Pass Switch is fitted so you can still empty the Suction Hoses.



- Inlet Valve:** 1 x 150mm Ball Valve, Make: JC, with manual operation. Valve in steel with stainless steel ball and PTFE seals it is located in base of rear door. A riser pipe is fitted to the inlet line with a suitable bend & terminating in 6" coupling of your choice with Blanking Cap.
- Outlet Valve:** 1 x 150mm Ball Valve, Make: BV, with manual operation. Valve to be in steel with stainless steel ball and PTFE seals, located in base of rear door & terminating in 6" coupling of your choice with blanking cap.
- ADR:** Valves protected according ADR. Valves locked pneumatically during transport.



### Vacuum Pump:

- Type:** Liquid Ring Vacuum Pump, Make: V-FORCE, Type: 3000, driven from the PTO on the gearbox with Cardon Shaft and V-belts. Engage and Disengage from drivers ca
- Flow:** ± 3,000m<sup>3</sup>/h (approx: 1,850cfm)
- Power Requirement:** ± 85kW
- Piping:** 6" – in steel and rubber hosing
- Equipment:** 1st Cut-Off with stainless steel floating ball, in top of tank.  
 Stainless steel secondary Cut-Off.  
 Pneumatic operated transport valve on top of tank.  
 Non Return Valve at pump inlet.  
 Snifter Valve 2"
- Exhaust:** On top of the Water Tank and at ground level. The upper exhaust operates as a "Chimney" Exhaust. Exhausts are fitted with a male coupling.
- Pump Cooling:** Water Tank in Stainless Steel 304(L), Capacity: ± 1,500Litres, mounted just behind the drivers cab and fitted with filling pipe and discharge line, manhole and 40/30m Acrylic Sight Glass. Cooling pipe to pump fitted with automatic operated Isolation Valve.



### Air Compressor:

- Type:** Rotary vane compressor, hydraulically driven.
- Flow/Pressure:** ± 165m<sup>3</sup>/h – 2bar (100cfm – 2bar)
- Power Requirement:** ± 8.2kW
- Pipework:** To be in mild steel and rubber hosing.



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**Equipment:** Pneumatic operated Transport Valve on top of each compartment.  
Overpressure Safety Valve, set @ 2bar.  
Overpressure Safety Valve set @ 1bar for the discharge of flammable products with flashpoint < 23°C  
Nitrogen connection 1" with manually operated valve 1".

### Washdown Pump:

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**Make:** UDOR  
**Type:** GC 50/12.5  
**Flow:** ± 48Litres/min (10.66gpm)  
**Max Pressure:** ± 120bar (approx 1,700psi)  
**Power Requirement:** ± 12 kW  
**Drive:** Hydraulically driven from the 2<sup>nd</sup> PTO on the gearbox.  
Fully protected for safe operation.  
Jetting pump is engaged and disengaged from the main control panel.  
**Safety Features:** The jetting pump will automatically shutdown at minimum water level.  
**Water Tank:** Capacity: ± 1,500Litres c/w filling device, overflow and drain pipes all fitted with the necessary valves and quick couplings.  
Manhole is fitted.  
Water Level Sight Glass with couplings at top and bottom for cleaning purposes.  
Low level water detection in water tank.  
**Suction Piping:** Made in stainless steel with flexible tubing and foreseen with a water filter and the necessary isolation valves.  
**Pressure Hose:** Maximum Working Pressure: 150bar (2,000psi).  
**Jetting Hose Reel:** Executed in stainless steel, fixed mounted on the side.  
Suitable for and including 20m x HP Hose [ID:13mm – (½")].  
Reeling Out - manually operated, Reeling In - automatic (spring return system)  
Fitted with lever operated ball valve.



### Tank Mounting:

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**Mounting:** The chassis will be equipped at our expense with a sub frame in accordance with the chassis manufacturer's requirements

- At the rear, the tank is equipped with 2 heavy hinge points.
- At the front, the tank rests in a tank saddle with rubber lining.





### *Hydraulic, Pneumatic and Electrical Equipment:*

- Equipment:** All control valves and equipment required for smooth operation are included.
- Hydraulic:** The Hydraulic Pump is mounted directly onto the gearbox PTO.  
 The unit is fitted with an Oil Tank complete with filters and valves.
- Pneumatic:** The air supply is taken from the truck chassis all necessary safety valves are included.
- Electrical:** The electrical supply (24VDC) is taken from the trucks electrical system and is complete with all fuses.

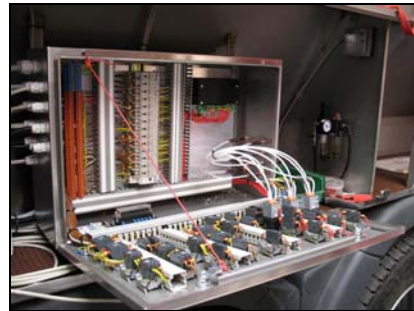
### *Supplementary Safety Features:*

- Earthing:** An Earthing Reel with 10m x cable and spike is included.  
 The grounding control device will set off a red warning light in case of failure.
- Emergency Stop:** An emergency stop is installed on the main control panel.
- Rotary Beacon:** 1 x Amber Rotary Beacon is mounted at the top at the rear.
- Working Light:** 1 x Working Light is fitted at the rear of the truck.

### *Control Panel:*

- Controls:** All necessary controls needed for good operation are mounted on the right rear side in a stainless steel box.
- Labels:** The whole unit is fitted with clearly engraved labels where necessary.
- Speed Governor:** A speed governor is fitted in the control panel.

Note: Pre-wiring for this has to be executed by the chassis supplier at his expense.



### *Finish:*

- Hose Racks:** On one side a Stainless Steel Hose Storage Rack with solid bottom. Length according available space. By preference, the hose rack will stay untreated.
- Tool Boxes:** On one side a Multi Compartment Stainless Steel Toolbox is fitted. The Main Control Panel is also located inside this box. By preference, the Toolbox will stay untreated.
- Mud Guards:** Synthetic mud guards are fitted on all rear axles.
- Traffic Regulations:** All necessary items to comply with the local traffic regulations are mounted on the truck.
- Under Run Protection:** At the rear - fixed under run protection will be installed.
- ADR:** Stainless Steel ADR sign holders for both UN Numbers and Dangerous Goods Symbols are fitted on both sides and at the rear.  
A 9kg Fire Extinguisher in a cabinet is also included.



### *Treatment:*

- Barrel:** As described earlier, the body plates of the barrel will stay in their natural finish.
- Sandblasting:** All other Steel and Stainless Steel parts are sandblasted to grade SA2.5.
- Paint:** The whole unit is painted in an acrylic paint in your FLN colours and includes a varnish top coat.
- Inside:** The inside of the tank is pickled and passivated.



***Delivery:***

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- Delivery:*** The unit is ready to operate but without Suctions uses and other equipment, unless mentioned earlier in this offer.
- Certification:*** ADR certified.
- Manuals:*** The unit comes complete with an Operating Manual and a Maintenance Manual.
- Training:*** A One Day Training Course at our production facility is included.