

TANA Gx SERIES

Crushing force



TANA

From Waste to Value

Gx SERIES

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In most societies, the future of modern waste management rests in treatment methods other than landfill. Although such methods are under research, in many countries the volume reduction of waste is still carried out by landfills and continues to be so for quite some time.

Landfill management orientates on business

Landfill management has become increasingly a business-driven industry. Waste management companies see cost efficiency as a key factor. Landfills compete for waste producers, requiring improved anticipation of the future, financial management and controlling measures.

Air space management the main driving force

Landfill air space management means more waste into fewer landfills. The environmental authorities require exact and accurate planning. Simultaneously, the waste management company must meet the demands made by the remaining space available. Hence, the placement and the compaction of waste have become an extension of cash flow for the landfill management companies.

Waste transport traffic on the increase

Today, waste is being transported longer distances than ever before. The waste haulage companies demand for an efficient waste vehicle operations on landfill sites on a 24-hour, 7-day basis. The constant incoming waste flow calls for continuous compaction work. Organising site operations and utilising expensive capital equipment have become key elements in minimising the waste transport vehicle turnaround times.

Waste composition under permanent change

Waste laws and regulations begin to focus on pre-treatment. Waste deposited on landfills becomes more homogenous and difficult to treat. The development in landfill compactor design and crushing teeth must reflect these changes to enable the maximisation of compaction in the future.

Capital equipment uptime crucial

The demand for cost efficiency requires maximised machine uptime. Machinery needs to be designed to minimise structural stresses. Servicing has to focus most

on preventative maintenance. Response and product support to address machine breakdown is crucial. Operators want the best cabin ergonomics to maximise their input during the entire work shift.

Environmental impact to be minimised

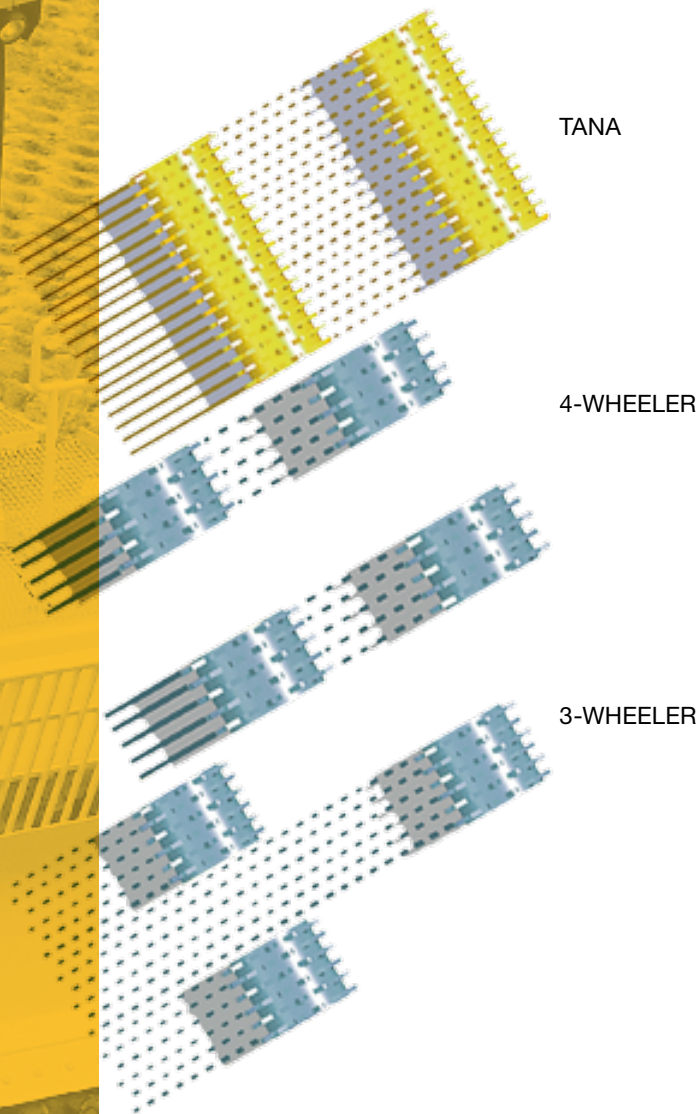
Landfills of the future must fit better in the surrounding society and environment. Improved and more effective methods for treating odours, dust, debris and litter are on demand. All sites must be able to show constant operational developments to address these harms.

Landfill sizes increase, number decreases

Waste management experts agree that landfill operations are turning into production plants. The competition for waste increases between landfills. The industry will see more rapid fluctuations in the daily inputs on individual sites. The landfill management companies want their capital equipment on site to be able to encounter these fluctuations and peak traffic situations.



The logic to efficiency and productivity



Landfill operators worldwide agree that operative efficiency on a landfill site is largely dependent on the compactor capacity against the required volume reduction of waste. Fine-tuning the way in which a landfill compactor is operated has multiple effects on the end result.

Compactor capacity dependent on number of passes and treatment width

Typically, most landfill operators measure the capacity of a landfill compactor in terms of waste tons treated per hour. Practice has proven that this capacity is dependent on the width of the compaction path and the average working speed the compactor is able to keep up during dozing, crushing and compaction. The effective capacity depends on the compaction more passes result in more compaction, slightly reducing capacity.

1. Optimising load breaking and spreading

Load breaking and spreading depends on compactor pushing power and the type of dozer blade. Generally it is seen that the dozer blade should be wide and straight with forward wings on the ends. This enables a more accurate cutting and breaking

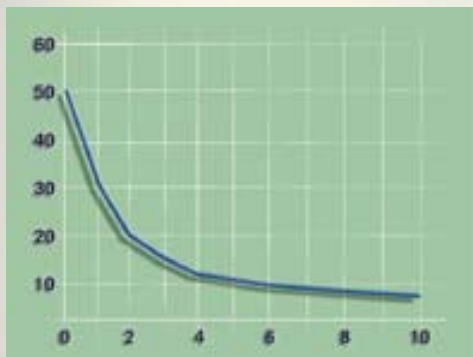
of a load and gives improved control over the spreading work. Quick movement of waste loads requires high engine power output and very good traction. The pushing power should be available within the maximum engine torque range at all times, best ensured by load-sensing hydraulic systems.



2. Maximum crushing force, reduced number of passes required

Most professionals support the claim that the key to compaction is reducing the incoming waste into more uniformly sized particles. Large size differences may allow empty spaces between the waste items even after compaction. A very high crushing force made by the compactor is needed to minimise this effect.

Effect of number of passes
Layer thickness (cm)



Number of passes

3. Even, compacted surface

Tightly compacted, even surface enables waste transport vehicles to turn around with less effort. The even surface mini-

mises turnaround times and also reduces chassis damage to vehicles. The level surface gives better traction to waste vehicles and leaves no uneven bumps or holes.



Maximum compaction in minimum time

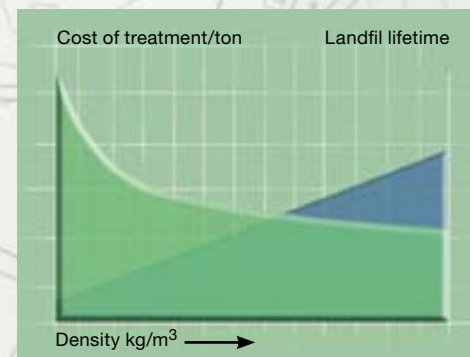
The compactor's capability in fully compacting the waste in the least amount of time saves costs to the landfill manager. The machines accumulate less operating hours, use less fuel and manage with longer service intervals. In the end of the day, these savings minimise operating costs per compacted ton of waste.

Efficient operation maximises air space management

The maximisation of air space management on a landfill site depends on the

general operation efficiency and the compaction. It has been proven that evenly compacted waste mass settles more evenly. A smooth compaction surface yields less pockets and unseen soft spots, dramatically reducing the amount of cover material/soil required. As a result, the overall operation costs are reduced and the lifetime of the landfill may be stretched considerably.

Optimizing landfill cost efficiency and lifecycle



Landfill lifetime (blue area)
Cost of air space management per ton (green area)

Review your principles of best compaction



TANA TRC Construction
(Twin Drums, Rigid Frame, Crushing Teeth)

Rigid frame provides best crushing force

Conventional oscillation of a wheel loader is aimed at maximum wheel-to-ground contact during loading. Unfortunately, oscillation in a landfill application sacrifices the crushing force as the weight of the machine is divided between four individual wheels. The TANA compactor has been built around a rigid articulating frame, which enables up to 100 % more crushing force on a single drum compared to an oscillating four-wheeler of similar weight. TANA compacts a full-width path in the waste, leaving an even surface in its wake. The rigid frame also eliminates abrupt machine swaying, allowing a smooth operation with the blade as a bulldozer.

Full-width twin compaction drums

With a TANA compactor, a one-way machine movement results in half the compaction passes needed by a four-wheeler. The compaction force of the fullwidth drums is directed straight down, preventing waste extrusion from underneath the compactor. This also produces the

unrivalled smooth and dense surface.

Large number of crushing teeth

The size, shape, structure and total number of the crushing teeth must be optimised. In a TANA, the teeth are 200 mm high, allowing thorough highly wear-resistant penetration of every fresh waste layer. The teeth are of pyramid design, made of solid steel, and are kept clean by a large number of adjustable scraper bars. Additionally, TANA Gx Series has a traction control system (available as an option). It prolongues the lifespan of the crushing teeth up to 20 % and reduces the fuel consumption. The TANA design aims at effective crushing and compaction, all made simultaneously by the long, heavy teeth. In fact, the drum shell

exists only to provide structural support for the teeth.

On the first pass, the TANA spreads and compacts the new waste layer on top of the previously compacted surface. The second pass concentrates on the crushing and thorough compaction of the waste. On the third pass, the pyramid shaped teeth and the inverted conical spaces in between the teeth tie down the surface of the compaction path. Naturally, different waste types require a different number of passes to achieve the best results. All homogenous waste fractions have the tendency to extrude from underneath a conventional compactor's wheels. The structure of TANA's drums and teeth prevent this from happening.





You want maximum uptime – we built it



The future trends in landfill management ensure that landfill management companies require maximum utilisation of all capital equipment on site. This results in more operation hours on machines in a shorter period of time. The design features of a landfill compactor must reflect these trends, calling for greater material strengths, higher durability and most of all, increased reliability.

Designed as simple, strong on purpose

TANA relies on a simple and strong, boxed frame made out of thick gauge steel. There are no holes or gaps through which waste can enter the frame or the engine bay. The

engine, the pump pack and the radiator unit are all housed inside the frame and completely protected from damage coming from the outside. All build materials have

been carefully tested and selected to withstand the extremely harsh conditions on any landfill. The construction is based on accessibility and protection from damage.





New Cummins and Caterpillar engines

The TANA Gx Series compactors are powered by Cummins and Caterpillar engines, ranging from 194 kW (260 hp) to 403 kW (540 hp). The electronic engine management system is connected to the TANA's computerised diagnostics system, allowing for more efficient operation and control of the machine functions than ever before.

New power transmission increases strength, durability and reliability

The Gx Series compactors have a hydrostatic drive. The engine runs the tandem arranged hydraulic pumps that feed the hydraulic motors, thus eliminating the need for a splitter gearbox. Each hydraulic motor is coupled to an individual planetary final drive bolted to the end of the compaction drum. All main drive hydraulic hoses are fully protected inside the frame while still easily accessible.

Engine cooling strong and easy to clean

The intake air of a TANA Gx Series compactor is drawn from even a greater height to eliminate airborne litter from entering the intake chute. The pre-filtering mesh installed before the radiator is within easy

access for daily cleaning. The new design features in the radiator reduce accidental damage to the cooling fins.

Larger fuel tank extends time between fill-ups

The fuel tank volume on the TANA Gx Series has been increased to accommodate up to two full work shifts on busy landfill sites. The operator can now focus on his work rather than on the fuel gauge. This is further assisted by the reduced fuel consumption of the new engines.

Safety and comfort main themes in cabin

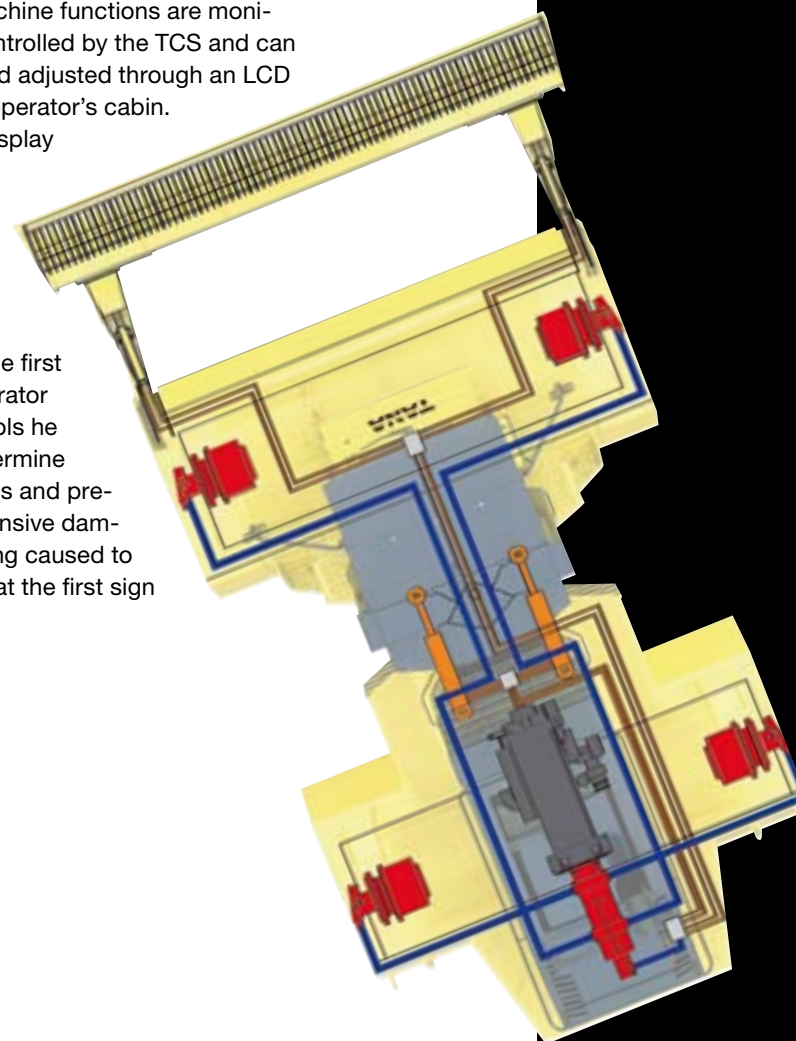
The new operator's cabin is one of the most spacious compactor cabins on the market today. The large window screens have all been made of triple-laminated safety glass and allow an unobstructed view for the operator. The cabin now has two doors and is protected by both the ROPS and the FOPS certified far beyond the current weight range of the Gx Series.

Best diagnostics system in any compactor

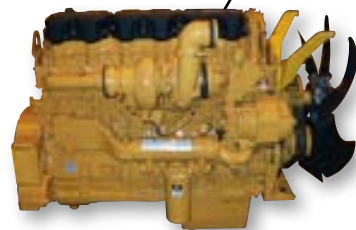
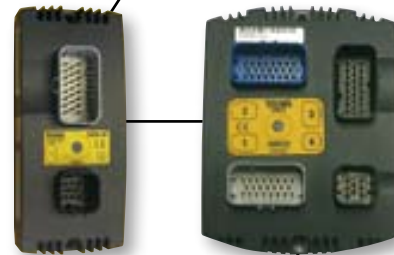
All TANA Gx Series compactors are equipped with the TANA Control System

(TCS). All machine functions are monitored and controlled by the TCS and can be altered and adjusted through an LCD panel in the operator's cabin.

The colour display improves the visibility and the user interface is even easier to use than before. For the first time, the operator has all the tools he needs to determine machine faults and prevent any extensive damage from being caused to the machine at the first sign of trouble.



Protect your investment



The TANA Gx Series compactors are equipped with a decentralised electronic total control system which monitors and controls the diesel engine, the hydrostatic drive, the steering and the dozer hydraulic systems and all auxiliary systems connected with the above.

The system consists of three independent modules controlling different functions of the compactor. In addition to this, the diesel engine has its own control unit, which has been programmed as an integral part of the central control system of the machine. The modules are interconnected via a CAN (Controller Area Network) bus which provides fast and trouble-resistant data transfer.

The control of different systems in the machine has been divided between the following different modules:

1. Display Module: Acts as the control panel for the operator; i.e. all traditional gauge functions are shown on the LCD display. The display also enables the operator view and monitor the fault memory functions of the machine.

2. Cabin Module: The operative controls, cabin switches, etc. have all been connected to this module.

3. Chassis Module: Controls the hydrostatic drive as well as the steering and the dozer blade hydraulics, and functions as a connector base to sensor units and switches located in the engine bay.

4. Electronic Engine Control Unit: Controls independently the diesel engine and conveys data from the engine's own sensor units to the compactor's main control system. The display panel acts as a monitor for the operator. Most machine functions can be adjusted and faults detected in this panel. The panel has five main menu screens:

- 1) Main Display
- 2) Alarm Display
- 3) Service Display
- 4) Engine Display
- 5) Planetary Drive Display



Main display provides total system access

The Main Display shows bar graphs and numerical values for remaining fuel, engine coolant temperature, hydraulic oil temperature and engine oil temperature, as well as the engine RPM, the alternator voltage, selected drive speed and the total operating hours. From the Main Display the operator may access all the other displays.



Immediate troubleshooting minimises damage

The Alarm Log Display acts as a nonerasable electronic log for all faults and problems detected in any of the drives, the electronic system, the auxiliary hydraulics, the temperature monitoring or the engine control system. This allows both the operator as well as the service and maintenance staff to analyse the cause and the nature of any problems that may arise. The USB-connector of the colour screen of the Gx Series facilitates the updating of the software and helps to keep the programme up-to-date.



Service log helps maintenance planning

The Service Display shows the compactor serial number, time and date, date of commissioning, the date and operating hours at the last service. All machine input and output readings, as well as control calibration is accessed through the service log.



Final drive monitoring made easy

The Planetary Drive Display shows bar graphs and numerical values for the temperatures in each individual drive in addition to the engine RPM, the alternator voltage, the selected speed range and the total operating hours.



Maximum compactor systems control gains cost savings

The control system has a dual purpose:
 1) Increasing the level of interaction between the operator and the machine, thus increasing operator comfort and productivity; and
 2) Minimising all possible downtime due to lengthened service intervals and drastically reduced faultfinding times.

Motivation by cabin



The cabin is the command centre for the operator. All cabin details, build quality and ergonomics contribute directly to the motivation level of the operator. In the interests of the landfill manager, the better the motivation of the professional operator, the better is his productivity. The TANA Gx Series addresses this situation thoroughly and sets a benchmark for the others to follow.

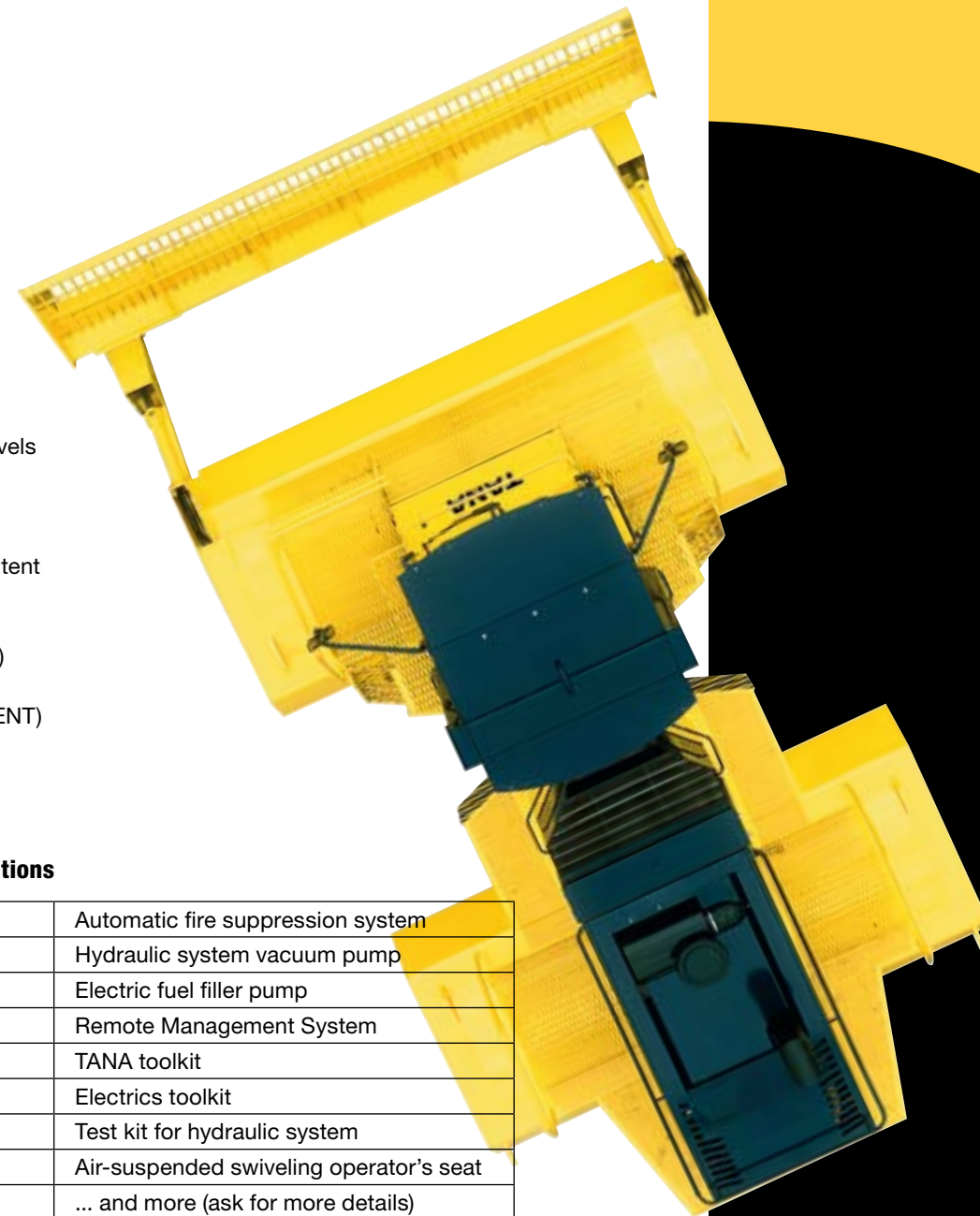
- Superb ergonomics based on extensive research and experience
- Falling Object Protection Structure (FOPS) integrated with Roll-Over Protection Structure (ROPS)
- Cabin isolated from machine and engine vibration
- Cabin located on the front frame to give best visibility at the dozer blade
- Cabin located as far away from the engine as possible to reduce noise and heat effects
- The ventilation and air conditioning act as the nerve centre of the cabin climate control
- Joysticks integrated in the operator's seat
- Cabin equipped with two doors (optional)
- The easy-to-use TANA Control System (TCS) LCD panel informs the operator of all machine functions



- Triple-laminated, tinted safety glass all around
- 8 halogen working lights (Xenon lights optional)
- Best overall cabin visibility in any compactor
- The available air-suspended seat swivels a total of 140 degrees to allow best versatility during operation
- Socket for mobile phone recharge
- Windscreen and rear window intermittent wiper-washers
- Roll-down sun visor (optional)
- AM/FM radio CD player unit (optional)
- Cabin pressurisation
- Replaceable cabin air filters (EUROVENT)
- Instructor's seat (optional)
- Drink container holder

Options available to owner's specifications

Central greasing system	Automatic fire suppression system
Rotating beacon	Hydraulic system vacuum pump
Reverse camera and monitor	Electric fuel filler pump
Heated mirrors	Remote Management System
Engine block heater	TANA toolkit
Hydraulic oil heater	Electrics toolkit
Tana traction control system	Test kit for hydraulic system
Pre-filtration of engine air filter	Air-suspended swiveling operator's seat
Fire extinguishers	... and more (ask for more details)





Your future demands easier service access

Easy service access, minimised downtime during servicing and the economy of the service and maintenance are the key to any compactor owner.

Less individual service points minimise downtime

Reducing the number of service points minimises the time consumed on the service tasks. The direct drive for the hydraulic pumps has no separate pump drive, resulting in no costly oil changes or time-consuming greasing. The final planetary drives are practically maintenance free between scheduled services. All frame grease points are concentrated in one location on the compactor to save time and effort.

Easy access more safe for the operator

All landfill operators agree that safety is one of the most important issues with the machinery. All scheduled maintenance points as well as major components are well within quick access. Majority of all maintenance can be done on the service platforms. The sloped engine cover tilts for full access to the engine bay and the hydraulic system, eliminating the need for any small hatches to crawl through.

The hinged trash screen assembly on the engine air intake cowling provides easy and safe cleaning and access to the radiator section.

Longer service intervals reduce operation costs

The service interval on the Cummins Q Series diesel engines is now up to 250 hrs depending on operation conditions. This combined with the hydraulic oil and return line filters change interval at every 1500 hrs reduces service costs and time. The new crushing teeth are constructed of wear resistant steel and are uniform containing no loosening parts.

Electronic control system provides improved monitoring of machine systems

Monitoring of Machine Systems The operator's ability to monitor the machine functions allows for most cost efficient use of the compactor. The TANA Control System (TCS) monitors the performance of the engine, and all other major components including the power train and the auxiliary hydraulics. TCS also provides a full diagnostic capability, e.g. all faults are stored in data logger allowing technicians to trouble-

shoot possible problems. The system is complete with test point adapters for easy hydraulic system checks. In addition to the above, TCS has the capability to remind the operator of the scheduled service at 250 hrs intervals. The new colour screen reduces reflections, has sharp contrasts and superior visibility which further facilitates its use.



ENGINE	Oil and oil filter change	250–500 hrs
	Fuel filter change Up to	1500 hrs
	Coolant filter change Up to	1500 hrs
HYDRAULICS	Breather filter change	500 hrs
	Charge pressure filter change	500 hrs
	Hydraulic oil change	1500 hrs
	Return filter change	1500 hrs
	Refill filter change	3000 hrs
FINAL DRIVE	Oil change	500 hrs



Heavy Duty

	Gx260	Gx320
Operating weight	26 000 kg	32 000 kg
Crushing force	127 kN	157 kN
Engine	Cummins QSC 8.3 – C240	Cummins QSM 11 – C335
Gross power output	186 kW (250 bhp) / 2 100 rpm	260 kW (348 bhp) / 2 000 rpm
Displacement	8,3 l	11 l
No. Of cylinders	6	6
Aspiration	Turbocharger and aftercooler	Turbocharger and aftercooler
Cooling	Liquid	Liquid
Emission limits	EU NRMM STAGE III A US EPA / TIER 3	EU NRMM STAGE III A US EPA / TIER 3
Hydrostatic transmission	Sauer-Danfoss	Bosch Rexroth
Pumps	1 tandem pump; variable displacement axial piston pumps with electronic proportional control	1 tandem pump; variable displacement axial piston pumps with electronic proportional control
Fuel tank	760 l	760 l
Cabin air filtration grade	EU7 & active carbon filter	EU7 & active carbon filter
Service brakes	Hydraulic system acts as service brakes	Hydraulic system acts as service brakes
Brakes; dual circuit	Yes	Yes
Compaction drums	Tana full-width	Tana full-width
Width in front	2 660 mm	2 660 mm
Width in rear	2 660 mm	2 660 mm
Diameter	1 570 mm	1 620 mm
No. Of teeth in front	132 pcs	144 pcs
No. Of teeth in rear	132 pcs	144 pcs
Height of teeth	180 mm	200 mm
Footprints/m ²	26	28
No. Of scraper bars (F/R)	22/22 pcs	22/22 pcs
Dozer blade	Tana straight	Tana straight
Width	3 460 mm	3 660 mm
Height	1 525 mm	1 760 mm
Movement above ground level	1 150 mm	1 200 mm
Movement below ground level	95 mm	115 mm
Inner turning radius	4 090 mm	4 090 mm
Ground clearance	890 mm	910 mm



Heavy Duty Plus

Operating weight	
Crushing force	
Engine	
Gross power output	
Displacement	
No. Of cylinders	
Aspiration	
Cooling	
Emission limits	
Hydrostatic transmission	
Pumps	
Fuel tank	
Cabin air filtration grade	
Service brakes	
Brakes; dual circuit	
Compaction drums	
Width in front	
Width in rear	
Diameter	
No. Of teeth in front	
No. Of teeth in rear	
Height of teeth	
Footprints/m ²	
No. Of scraper bars (F/R)	
Dozer blade	
Width	
Height	
Movement above ground level	
Movement below ground level	
Inner turning radius	
Ground clearance	

Weights and measurements are given within normal tolerances. Manufacturer reserves the right to changes without prior notification.



Super Heavy Duty

Gx380

38 000 kg
185 kN
Cummins QSM 11 – C375
288 kW (386 bhp) / 2 000 rpm
11 l
6
Turbocharger and aftercooler
Liquid
EU NRMM STAGE III A
US EPA / TIER 3
Bosch Rexroth
1 tandem pump; variable displacement axial piston pumps with electronic proportional control
760 l
EU7 & active carbon filter
Hydraulic system acts as service brakes
Yes
Tana full-width
2 660 mm
3 800 mm
1 620 mm
144 pcs
221 pcs
200 mm
28
22/32 pcs
Tana straight
4 500 mm
1 760 mm
1 200 mm
115 mm
3 520 mm
890 mm

Gx450

Operating weight	45 000 kg
Crushing force	221 kN
Engine	Caterpillar C15
Gross power output	383 kW (513 bhp) / 1 900 rpm
Displacement	15 l
No. Of cylinders	6
Aspiration	Turbocharger and aftercooler
Cooling	Liquid
Emission limits	EU NRMM STAGE III A US EPA/ TIER 3
Hydrostatic transmission	Bosch Rexroth
Pumps	1 tandem pump; variable displacement axial piston pumps with electronic proportional control
Fuel tank	760 l
Cabin air filtration grade	EU7 & active carbon filter
Service brakes	Hydraulic system acts as service brakes
Brakes; dual circuit	Yes
Compaction drums	Tana full-width
Width in front	3 800 mm
Width in rear	3 800 mm
Diameter	1 620 mm
No. Of teeth in front	221 pcs
No. Of teeth in rear	221 pcs
Height of teeth	200 mm
Footprints/m ²	28
No. Of scraper bars (F/R)	32/32 pcs
Dozer blade	Tana straight
Width	5 000 mm
Height	1 960 mm
Movement above ground level	1 200 mm
Movement below ground level	115 mm
Inner turning radius	3 370 mm
Ground clearance	890 mm

Gx520

52 000 kg
257 kN
Caterpillar C15
403 kW (540 bhp) / 1 900 rpm
15 l
6
Turbocharger and aftercooler
Liquid
EU NRMM STAGE III A
US EPA/ TIER 3
Bosch Rexroth
1 tandem pump; variable displacement axial piston pumps with electronic proportional control
760 l
EU7 & active carbon filter
Hydraulic system acts as service brakes
Yes
Tana full-width
3 800 mm
3 800 mm
1 620 mm
221 pcs
221 pcs
200 mm
28
32/32 pcs
Tana straight
5 000 mm
1 960 mm
1 200 mm
115 mm
3 370 mm
890 mm



Tana worldwide

Since its establishment in 1971, TANA has continued to manufacture and develop the only twin full-width drum landfill compactor in the world over 35 years. Today, more compactors than ever keep rolling off our assembly lines.

Concentrating only on the product we know best, we have been able to prosper in the heavily competed niche market of landfill.

Today we are proud to say that we are in the frontline of landfill compaction technology. We want to do things the TANA Way and would like to invite you to join our global family.

In the changing field of solid waste management progress and development are necessities. The success with waste compaction technology has encouraged us to further develop our business towards the field of recycling. We have successfully launched a mobile waste shredder, TANA Shark, to the international market. And there will be more to come.

The TANA Sales Department liaises through independent partners on 5 continents.

Our partners are reputable professionals dealing in capital equipment in their respective regions and they all have a factory-

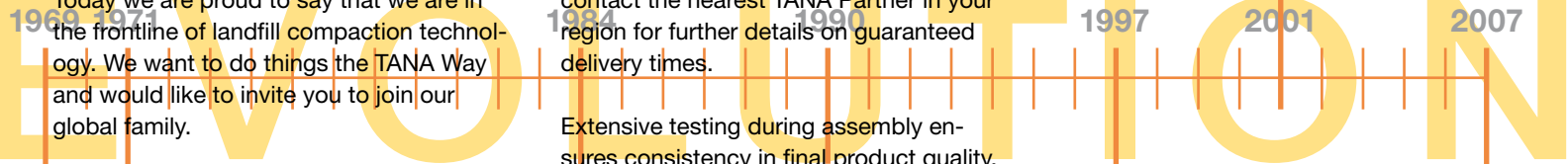
trained, expert approach to supporting the TANA products.

We have established a very effective system together with our subcontracting partners that makes them fully committed to satisfying our customers. Our repeat sales customers may make a pre-booking for a production slot up to twelve months prior to delivery. Please contact the nearest TANA Partner in your region for further details on guaranteed delivery times.

Extensive testing during assembly ensures consistency in final product quality. All TANA compactors are subjected to loading conditions similar to those on the landfill prior to shipment.

All customer dialogue is given thorough consideration in TANA's own R&D processes. The TANA Customer Relations Development System is a network we are constantly developing together with our partners worldwide. The system aims at channelling all end-user feedback on our compactors from the landfill market back to the manufacturer; we then individually notify the customer of the actions we are taking based on the feedback.

TANA is also building up its Operation Support System (OSS), based at the factory. The objective of the OSS is to provide support and information services to site level operations on landfills. We feel that our customers buy not just the machine but are also interested in any additional know-how in the industry — our task is to supply that know-how through our global network of contacts.





Dealers and references





TANA
From Waste to Value

Tana Oy
P.O.Box 7
Haapaniementie 1
FI-40801 Vaajakoski
FINLAND
Tel. +358 20 7290 240
Fax +358 20 7290 241
E-mail: mail@tana.fi
www.tana.fi