

SPECIFICATION MANUAL

Tandem Vibratory Rollers

VT 090H, 100H



ORIGINAL OPERATION MANUAL (2006/42/EC)

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SPECIFICATION MANUAL

This Manual consists of:

I. Specification Manual

Please read all the instructions in the manuals before operating this machine.



This Manual provides the basic information on operation of the machine. In case of larger repairs, please follow the Service Manual or have the machine repaired in an authorized service station. The manufacturer cannot be responsible for damage to the machine, machine defects or other damages caused by improper maintenance or repair or by nonobservance of the prescribed technological processes.



We reserve the right of changes in the figures and data of these manuals in order to improve their quality.

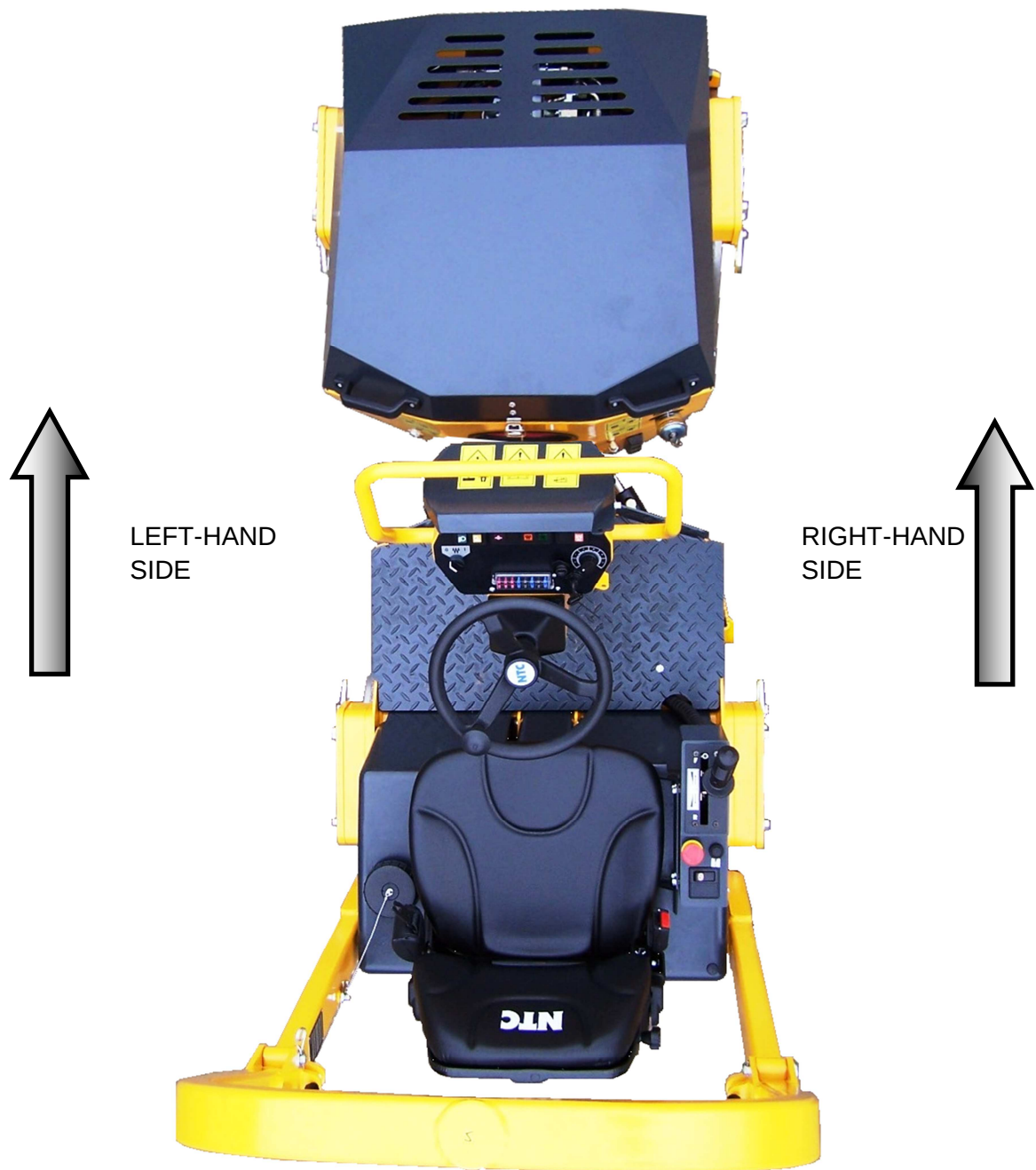
The manuals must not be reprinted or copied in whatever manner without our written consent.

! REMARK !

In this Manual, the words "on the right", "on the right-hand side", "to the right", "to the left", "on the left", "on the left-hand side", "in the front", "in the back", etc. are used. These sides are considered to be those from the forward-movement point of view.

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IN THE FRONT



IN THE BACK

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ES/EU PROHLÁŠENÍ O SHODĚ (originál) EC/EU Declaration of conformity (original)

Prohlašujeme, že zařízení definované níže uvedenými údaji je ve shodě s požadavky níže uvedených NV a směrnic
We declare that the trough below mentioned specifications defined equipment complies with requirements of below cited Directives

Výrobce (manufacturer): Sídlo firmy (company domicile):	NTC STAVEBNÍ TECHNIKA spol. s r.o. Jiřinková 120, Česká Skalice 552 03
IČ (identification number):	63221152
Osoba pověřená sestavením a uchováváním technické dokumentace: (Person in charge of assembling and storing technical documentation)	NTC STAVEBNÍ TECHNIKA spol. s r.o.
Název (model):	TANDEMOVÝ VIBRAČNÍ VÁLEC / TANDEM VIBRATORY ROLLER
Typ (type):	VT090H, VT100H
Výrobní číslo (serial number)	
Popis (description):	Tandemový vibrační válec řady VT se dvěma hnanými vibrujícími běhouny pracující na frekvenci 60 Hz, pohon všech funkcí je hydrostatický. Motor: HATZ 2G40H, vznětový, vzduchem chlazený, čistý výkon 15 kW. Vibrační válec tandemový je určen pro zhutňování nesoudržných, částečně soudržných a živiničných povrchů. Tandem vibratory roller Series VT the driving vibrating with two runners working at 60 Hz, driven all the hydrostatic function. Engine: Hatz 2G40H, diesel, air-cooled net power of 15 kW. Tandem vibratory roller is designed for compacting cohesive, partially coherent and bituminous surfaces.
Všechna příslušná ustanovení, která výrobek splňuje (The product meets all relevant provisions)	Strojní zařízení – směrnice 2006/42/ES; NV č.176/2008 Sb. Machinery Directive 2006/42/EC Emise hluku – směrnice 2000/14/ES; NV č.9/2002 Sb. Noise Emission 2000/14/EC Elektromagnetická kompatibilita – směrnice 2014/30/EU; NV č.117/2016 Sb. Electromagnetic Compatibility Directive 2014/30/EU
Harmonizované technické normy: (The harmonized technical standards)	ČSN EN ISO 12100, ČSN EN 500-1+A1, ČSN EN 500-4, ČSN EN 474-1+A1, ČSN EN 60201-1 ed.2, ČSN EN 13309:2010
Osoby zúčastněné na posouzení shody (Bodies engaged in the conformity assessment)	Autorizovaná osoba č. 255 (authorized Body No. 255) Notifikovaná osoba č. 1016 (the European Notified Body No. 1016) Státní zkušebna zemědělských, potravinářských a lesnických strojů, a.s., Třanovského 622/11, 163 04 Praha 6-Řepy, ČR The Government Testing Laboratory of Agricultural, Food Industry and Forestry Machines, joint-stock company
Použitý postup na posouzení shody: (To the conformity assessment applied procedure)	Na základě směrnice 2000/14/ES příloha VI; NV č.9/2002 Sb., příloha č.5 Pursuant to the Directive for Noise Emission 2000/14/EC Annex VI Na základě směrnice 2006/42/ES příloha IX; NV č.176/2008 Sb., příloha č.9 Pursuant to the Machinery Directive 2006/42/EC Annex IX
Naměřená hladina akustického výkonu: (Measured sound power level)	L _{WA} = 103 dB
Garantovaná hladina akustického výkonu: (Guaranteed sound power level)	L _{WA} = 106 dB

Poznámka: Veškeré předpisy byly použity ve znění jejich změn a doplňků platných v době vydání tohoto prohlášení bez jejich citování.
Note: All regulations were applied in wording of later amendments and modifications valid at the time of this declaration issue without any citation of them.

Místo a datum vydání:
Place and date of issue:
Česká Skalice, 01.01.2012

Osoba zmocněná k podpisu za výrobce:
Signed by the person entitled to deal in the name of producer:

Jméno (Name):
Ing. Petr Ratsam

Funkce (Grade):
jednatel společnosti (Company Executive)

Podpis (signature)

1. SPECIFICATION MANUAL

VT 090H and VT 100H

1.1 Basic data

1.1.1 Machine Description

The VT 090H and VT 100H machines are tandem vibration rollers with an articulated frame and two smooth steel rollers. Both the rollers are hydrostatically driven and vibrating. Vibration of the rear roller can be switched off. All the machine functions are provided by hydrostatic motors. The design of the frame enables the operator to carry out compacting work close to walls and raised kerbs on both sides of the machine. Owing to its small size and the small turning radius, the machine is suitable for work in limited spaces. The position of the operator's seat enables operator to have full control of both the edges of the rollers.

1.1.2 Field of Use

The roller is intended to be used for small-scale compaction work in the road-construction industry (construction of local roads, cycle paths, sidewalks, pavements, parking lots and garage entrances, small industrial areas, etc.).

The roller is especially suitable for compacting asphalts up to 80 millimetres (3.15 inches) in thickness (when compacted). It can also be used for compacting hydraulically cemented mixtures up to 100 millimetres (3.94 inches), mixed soils up to 120 mm (4.72 inches) or layers of sandy or gravel materials up to 200 millimetres (7.88 inches).

The roller is not suitable for compacting rockfill or loamy or clayey materials.

The machine has been designed to be operated in the conditions according to CSN IEC 721-2-1 (038900): WT, WDr, MWDr (i.e. the temperate zone, warm dry zone or tropical dry zone with the limited temperature range from –10°C (14°F) to +40°C (104°F).

1.1.3 Machine Construction

Machine meets the requirements for CE mark "CE" – see CE Declaration of Conformity.

When designing the machine, the hygienic, ergonomic and labour-safety requirement were taking into account. The machine meets the condition for being marked with the "CE" symbol.

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Fig.1 – Machine Data Plate

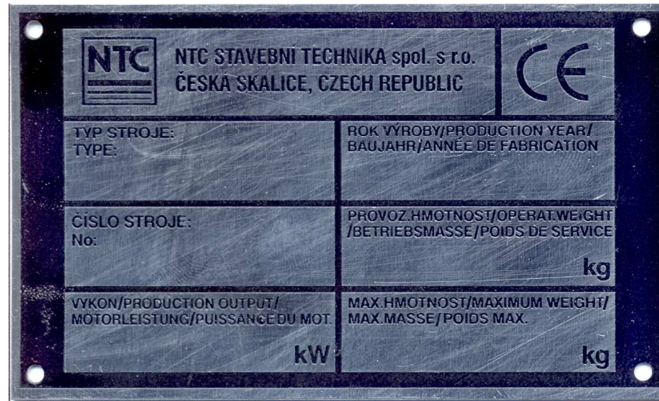


Fig.2 Machine Data Plate Location



Fig.3 Machine Serial Number



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Fig.4 Engine Data Plate



Fig.5 Engine (HATZ) Serial Number

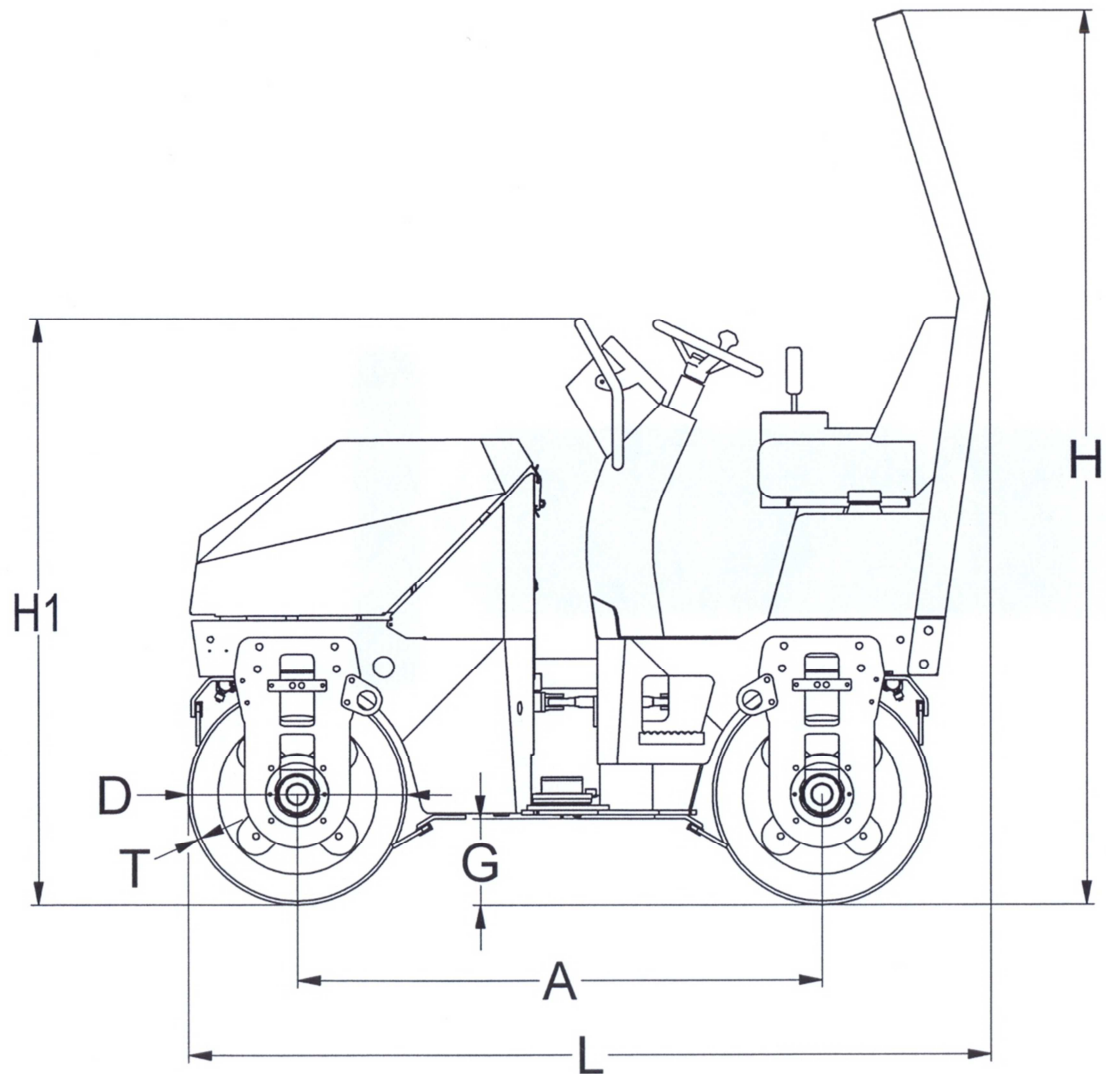


Please mention the data in the table whenever you contact the dealer or manufacturer:

Please fill in the following data:	
Machine Type (Fig.1, 2)	
Machine Serial Number (Fig.1, 2, 3)	
Year of Production (Fig.1, 2)	
Engine Type (Fig.4, 5)	
Engine serial Number (Fig.4, 5)	

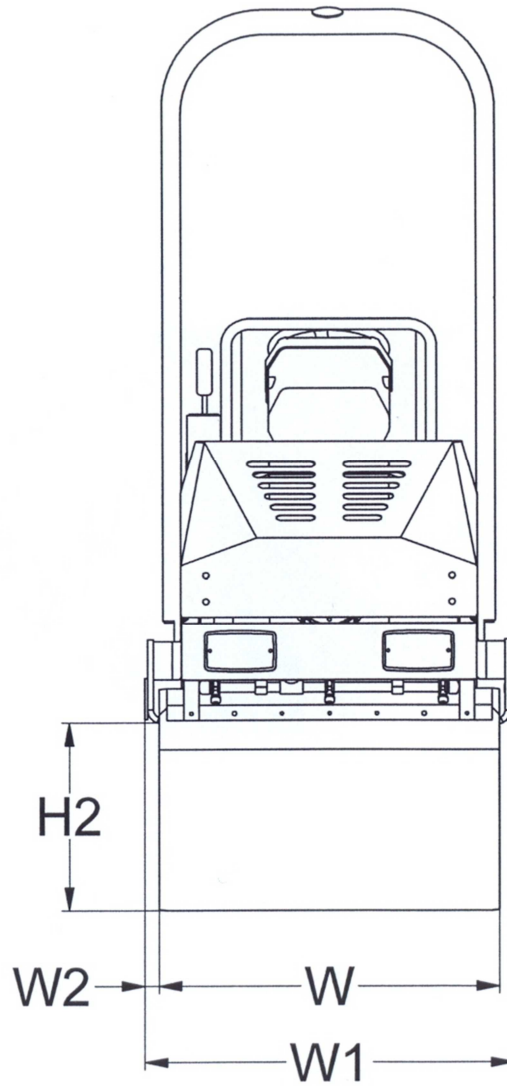
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1.2 Dimensional Diagram of the Machine



Dimensions (mm)	A	D	G	H	H1	L	T
VT 090H	1400	580	220	2370	1560	2140	9,5
VT 100H	1400	580	220	2370	1560	2140	9,5

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Dimensions (mm)	H2	W	W1	W2
VT 090H	490	900	990	45
VT 100H	490	1000	1090	45

1.3 Specifications

1.3.1 Weights

		VT 090H	VT 100H
Operating weight with ROPS according to ČSN EN 500-1	kg (lb)	1390 (3064)	1460 (3218)
on the front roller	kg (lb)	615 (1356)	650 (1433)
on the rear roller	kg (lb)	775 (1708)	810 (1785)
Static linear load			
of the front roller	kg/cm (lb/in)	6,8 (36,4)	6,5 (34,8)
of the rear roller	kg/cm (lb/in)	8,6 (48,2)	8,1 (45,4)
Operating weight with ROPS according to ČSN ISO 6016	kg (lb)	1455 (3208)	1525 (3362)
on the front roller	kg (lb)	628 (1385)	663 (1462)
on the rear roller	kg (lb)	827 (1823)	862 (1900)
Static liner load			
of the front roller	kg/cm (lb/in)	7 (39,5)	6,6 (37,2)
of the rear roller	kg/cm (lb/in)	9,2 (51,5)	8,6 (48,1)

The weight data may differ from those mentioned above when the customer requires additional equipment and/or accessories.

Remark: The Operating weight according to EN 500-1 is identical with the CECE operating weight.

1.3.2 Riding Characteristics

		VT 090H	VT 100H
Travel speed (continuous regulation)			
in both directions	km p.h.(m.p.h.)	10 (6,21)	10 (6,21)
Horizontal steering angle	±°	35	35
Vertical swings of the frames	±°	5	5
Theoretical climbing ability	%	35	34
Lateral static stability	°	30	30

1.3.3 Vibration

		VT 090H	VT 100H
Drive		hydrostatic	
Vibration exciter		hydrostatic single-stage,	
		Vibration: circular, non-directed	
Frequency	Hz (VPM)	60 (3600)	60 (3600)
Nominal amplitude	mm (in)	0,5 (0,0197)	0,5 (0,0197)
Centrifugal force on one roller	kN (lbf)	14 (3147)	15,5 (3485)

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1.3.4 Engine

		VT 090H and VT 100H	
Manufacturer		HATZ (Germany)	
Type		2 G 40H, four-stroke Diesel, air-cooled engine	
Number of cylinders		2	
Cylinder bore	mm (in)	92	(3,62)
Stroke	mm (in)	75	(2,95)
Cylinder capacity	cc (cu in)	997	(60,83)
Engine output according to ISO 3046/1	kW (HP)	14,7	(19,7)
Rated speed	min ⁻¹ (RPM)	3000	
Maximum torsional moment	Nm (ft lb)	52,5	(407)
Fuel consumption at normal operation	l/h (gal US/h)	2,5	(0,66)
Fuel filter		HATZ	
Oil filter		56302800	
Air filter element		49061600	
Electric starter		ISKRA	

1.3.5 Brakes

		VT 090H and VT 100H	
Working (operated) brake		Travel hydrostatic system	
Parking and emergency brake		Multi-plate brakes built in the travel hydraulic motors and controlled with springs with hydraulics release	
Minimum release pressure	MPa (PSI)	1,7	(246,5)

1.3.6 Steering Mechanism

		VT 090H and VT 100H	
Hydrostatic servo steering		with one linear hydraulic motor	
Hydraulic servo steering and vibration generator: geared		SAURER DANFOSS	
Servo steering		SAURER DANFOSS	
Safety pressure	MPa (PSI)	9	(1305)
Linear hydraulic motor		PHM 50/22/140	

1.3.7 Hydrostatic Drive of the Machine Travel

		VT 090H and VT 100H	
Regulating mechanically controlled travel hydrogenerator		HYDRO-GEAR TB-1GGV-XXXX	
Speed	min ⁻¹ (RPM)	2900	
Volume quantity delivered per one revolution	cm ³ (cu in)	21	(1,28)
Safety pressure	MPa (PSI)	16	(2320)
Rollers drive hydraulic motors		SAUER-DANFOS OMEW 315 F	
Motor capacity	cc (cu in)	315	(19,22)
Range of working revolutions	min ⁻¹ (RPM)	0 - 90	
Maximum torsional moment	Nm (ft lb)		

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1.3.8 Hydrostatic Drive of the Vibration

Vibration hydraulic generator: geared		VT 090H and VT 100H
Hydraulic generator speed	min ⁻¹ (RPM)	SAUER DANFOSS 2900
Volume quantity delivered per one revolution	cm ³ (cu in)	8 (0,488)
Safety pressure	MPa (PSI)	17,5 (2537,5)
Vibration hydraulic motors		SAUER DANFOSS SNM2/6
Nominal motor speed	min ⁻¹ (RPM)	2900

1.3.9 Hydraulic tank

	VT 090H and VT 100H
Suction basket	SOFIMA
Hydraulic oil filter element	SOFIMA

1.3.10 Fillings

		VT 090H and VT 100H
Engine (oil filling)	l (gal US)	3 (0,79)
Fuel tank	l (gal US)	32 (8,45)
Hydraulic system	l (gal US)	34 (8,98)
Sprinkling water tank	l (gal US)	100 (26,42)

1.3.11 Sprinkling

	VT 090H and VT 100H
Water pump	SHURFLO
Water filter	FLOJET

1.3.12 Wiring

		VT 090H and VT 100H
Voltage	V	12
Accumulator capacity	Ah	44
Connection to the frame		minus pole

1.3.13 Safety Devices

Emergency brake	Indicated visually when applied
Accumulator disconnecting switch	Wiring disconnection
Flashing light	Warning flashing light (optional)

ROPS Protective Frames

The ROPS protective frames in fixed and tilting type of construction on the machine meet the ISO 3471, AS / NZS 4355:2006, SAE J1040 a SAE J/ISO5005, and SANS 3471 International Standards.

		VT 090H and VT 100H
For the total weight of the machine	kg (lb)	1600 (3527)
Weight of the fixed protective frame	kg (lb)	47 (104)
Weight of the tilting protective frame	kg (lb)	56 (123)
Fixing bolts for connection to the machine frame		M20x45 (8G) – 4 bolts
Tightening moment	Nm (in lb)	314 (2779)

1.3.14 Hygienic data

VT 090H and VT 100H

Noise:

Declared emission sound pressure level A at the operator: $L_{pAd} = 90+4$ dB
(measured according to ČSN EN 500-4, Annex D and EN ISO 11201)

Guaranteed sound power level A $L_{WA} = 106$ dB (A)
(measured according to NV č.9/2002 Sb., Directive 200/14/ES and ČSN EN ISO 3744:2010)

Vibration:

VT 090H

VT 100H

Declared highest frequency weighted rms vibration acceleration of the total (seat):

$$a_{vd} = 0,7+0,35 \quad 0,75+0,35 \text{ m.s}^{-2}$$

Declared aggregate value of the acceleration of the hand-arm operator:

$$a_{hvd} = 4,1+2,0 \quad 6,2+2,5 \text{ m.s}^{-2}$$

(measured according to ČSN EN 1032+A1 and ČSN EN ISO 5349-1, gravel subsoil compaction)

With regard to the declared value of emission sound pressure level A at the operator, declared the highest frequency-weighted rms vibration acceleration of the total (seat) and declared a general acceleration value to the hand-arm operator, it is necessary to use the respective personal protection means in accordance with Governmental Order 272/2011 Sb. as amended. The protection means should be effective within the level of tandem vibratory rollers to the hands the values of which are given in the above Table.

The working procedures should include technological breaks to interrupt the staff's exposition to the vibrations.

Electromagnetic compatibility - electromagnetic interruption

Complies with ČSN EN 13 309 - interruptive electromagnetic field, frequency band from 30 upto 1000 MHz.

At the same time meets the legabtilities no. 127/2005 Sb.

Spacing of controllers

- in corformity with regulations ČSN EN 474-1+A1, ČSN ISO 10968, ČSN EN ISO 5353, ČSN ISO 6682

1.3.15 Traffic rules Requirements

The roller is not intended to be driven on public roads. For that reason, its safety equipment does not correspond to the respective regulations valid for road vehicles.

1.3.16 Standard Equipment

The ROPS protective frame (obligatory for CE)

Both the rollers driven and vibrating

Vibration of the rear roller can be switched off

Working lights

1.3.17 Optional Equipmenet

The tilting ROPS protective frame

Lights for road traffic

Flashing light

[illegible]