TOYOTA

MATERIAL HANDLING

Environmental declaration

In accordance with ISO 23434-2:2021 - Industrial trucks - Sustainability

Toyota Traigo80 2,0t-3,5t

Electric counterbalanced truck

The environmental factors reported in this document are in accordance with ISO 23434-2:2021 - Industrial trucks - Sustainability - Part 2: Factors and reporting. The standard identifies sustainability factors and provides a reporting format for sustainability information applicable for industrial trucks.
The data reported are specific for the Toyota Traigo80 2,0t - 3,5t family; the calculation considered the average data of all the models belonging to this truck family.
The trucks are assembled at the Toyota Material Handling Manufacturing Italy plant in Bologna. Our production facilities are certified according to ISO 14001:2015 - Environmental management systems, ISO 50001:2018- Energy management systems, ISO 9001:2015 – Quality management systems and ISO 45001:2018 – Occupational health and safety management systems. The manufacturing process follows the Toyota Production System. Over the years, our processes have become more sustainable: we currently use hydrosoluble paint instead of solvent-based paints. Moreover, we have scrapped the washing process prior to the painting phase. This leads to a reduction of water and gas consumption, without detracting from the quality of the product. Toyota Material Handling Manufacturing Italy has worked to reduce the emissions generated by its own operations: a photovoltaic system has been installed on the factory roof and one of three boilers has been replaced with heating pumps. All energy sources are controlled by the Building Management System. In addition, Toyota Material Handling Manufacturing Italy buys green electricity and compensates the full amount of natural gas used.

Restriction on use of hazardous substances

Toyota Material Handling Europe selects and supports suppliers who comply with the applicable laws and regulations such as the EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and Waste Framework Directive (WFD) which prohibit, restrict and control the use of substances of concern during the entire life cycle of the truck. Our suppliers must identify Substances of Very High Concern (SVHCs) as required and comply with applicable labelling laws and regulations for design, manufacturing, recycling and disposal. The list of Substances of Very High Concern applicable to the Toyota Traigo80 2,0t - 3,5t trucks is published in the REACH letter on our official website (toyota-forklifts.eu). Articles containing Candidate List Substances are reported by Toyota Material Handling Europe into the European Chemicals Agency's SCIP database, according to the Waste Framework Directive, and we make sure that the information is available, throughout the whole lifecycle of products, to waste operators and consumers. The SCIP number registration number of the Toyota Traigo80 2,0t - 3,5t family is 5ba5724f-1079-4b43-91dc-f5943ee87e90.

Proper use and safety

The standards of ISO 3691-1:2015 - Industrial trucks - Safety requirements and verification, and of EN 16307 - Industrial trucks - Safety requirements and verification, are applied to ensure safety during the useful life of the truck.

Energy consumption during operation

Measurements are verified in accordance with the requirements of EN 16796-2:2016 - Energy efficiency of industrial trucks - Test methods Part 2: Operator controlled self-propelled trucks, towing tractors and burden-carrier trucks and units listed consider a one-hour work cycle.

Truck model	E_{truck} [KWh]
9FBMK20T	5,4
9FBMK25T	5,8
9FBM25T	5,9
9FBH25T	6,3
9FBMK30T · 9FBM30T	6,7
9FBH30T	7,2
9FBM35T	7,6

Table 1 Energy consumption in accordance with EN 16796-2:2016.

Greenhouse gas emissions during operation

The energy consumed during operation is translated into mass of CO2 equivalent in accordance with standard EN 16796-1:2016 - Energy efficiency of industrial trucks - Test methods - Part 1: General. The calculations are based on the CO2 equivalent value that includes all effects of greenhouse gases emitted during electric power production. Emissions for electrical grid energy data are based on the European context.
Mass of CO2 equivalent emissions listed consider a one-hour work cycle.

Truck model	[$kgCO_2e$/cycle]
9FBMK20T	2,9
9FBMK25T	3,1
9FBM25T	3,2
9FBH25T	3,4
9FBMK30T · 9FBM30T	3,6
9FBH30T	3,9
9FBM35T	4,1

Table 2 Mass of CO2 equivalent emissions in accordance with EN 16796-1:2016. Energy efficiency of industrial trucks during one-hour work cycle.

Noise emissions

The values listed were measured according to EN 12053:2001 + A1:2008 - Safety of industrial trucks - Test methods for measuring noise emissions.

Truck model	Sound level [dB(A)]
All models	64,9

Table 3 Sound level at the height of the driver's ears according to EN 12053:2001 + A1:2008.

Vibration

The values were measured according to EN 13059:2002 + A1:2008 - Safety of industrial trucks - Test methods for measuring vibration.

Truck model	Vibration [m/s^2]
All models	0,49

Table 4 Vibration emitted, in accordance with EN 13059:2002 + A1:2008.

Life-span resource consumption

Regular inspection and maintenance are required to keep the forklift truck in perfect working condition and should be carried out by specialised technicians. Service intervals refer to normal use of a standard truck. They are based on the total operating hours of the truck, or months elapsed during the life of the truck, whichever comes first.

	First	Every		
REPLACEMENT CYCLE	6 weeks 250 h	12 Mo. 2000 h	12 Mo. 6000 h	60 Mo. 10000 h
Drive unit oil	R	R		
Hydraulic oil		R		
Hydraulic oil filter / return filters		R		
Hydraulic oil tank suction filter			R	
Hydraulic oil tank breather cap filter		R		
Hydraulic oil control valve filters		R		
Brake fluid /oil		R		
Control unit thermo-conductive paste				R*4
Pump coupling silicon paste				R*4
Power steering rubber parts				R*4
Service brake and parking brake hoses				R*4
Steering system hoses				R*4
Tilt cylinder hydraulic hoses				R*4
Load handling system hoses				R*4
Chains				R*5
Chains securing tie rods				R*5
Swing lock cylinder				R

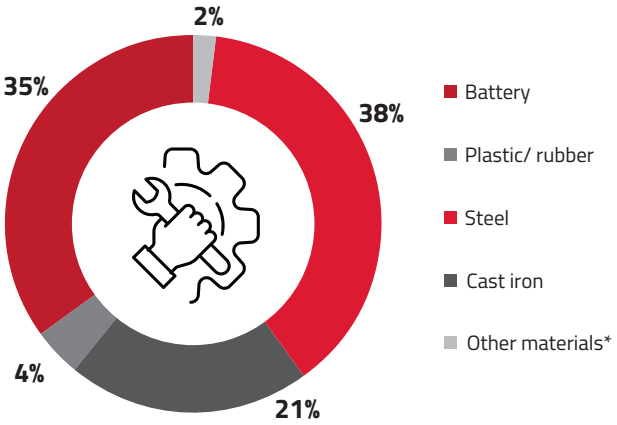
Table 5 Replacement cycle for correct maintenance. *4: Replace without reserve at the interval indicated in the case of severe operating conditions as specified below. Under normal operating conditions, the Service Centre is responsible for determining whether parts need to be replaced or not. If replacement is deemed unnecessary, be sure to inspect the part in question at the next periodic maintenance. *5: The Service Centre is responsible for determining whether parts need to be replaced or not. If replacement is deemed unnecessary, be sure to inspect the part in question at the next periodic maintenance.

Amount of fluid required for maintenance by application point

Application point	Quantity
Chassis and mast; grease nipples	As needed
Chain	As needed
Hydraulic oil tank	**Tank:** 23 l (2,0 t - 2,5 t); 25 l (2,5 t H - 3,0 t - 3,0 t H, 3,5 t) **System total:** 29 l (2,0 t - 2,5 t); 31 l (2,5 t H - 3,0 t - 3,0 t H, 3,5 t)
Drive unit	1,7 l
Brake fluid reservoir	0,5 l
Wiper reservoir	2,1 l

Table 6 Quantity of necessary lubricants and fluids for correct maintenance. "H" models with load centre of gravity of 600 mm.

Truck material



Graphic 1 Main material used in a standard Toyota Traigo80 2,0 t - 3,5 t truck. (*) Other materials include electrical and electronic components.

Materials of construction have been classified into 5 main categories: battery, plastic/rubber, steel, cast iron and other materials, where steel and cast iron are 100% recyclable materials. The calculation was approximated based on representative standard model (average trucks weights: 5189kg).

Lithium-ion battery module chemical composition

Material	Weight %
Cobalt oxide	<30 %
Manganese dioxide	<30 %
Nickel monoxid	<30 %
Carbon	<30 %
Electrolyte (*)	<20 %
Polyvinylidene fluoride (PVDF)	<10 %
Aluminium foil	2 – 10 %
Copper foil	2 – 10 %
Aluminium and inert materials	5 – 10 %

Table 7 Substances of a truck lithium battery, weight range in %. (*) Main ingredients: Lithium hexafluorophosphate, organic carbonates.

Batteries recycling and discarding

Batteries contain harmful materials with risks to the environment and human health. Therefore, return them, at the end of their life, to a manufacturer or a waste operator able to handle recycling. Lithium-ion batteries are subject to the EU Battery Directive (2006/66/EC) and to the Regulation (EU)2023/1542. These regulations are applied with regard to battery composition and to battery end-of-life management. Suggested waste code is 16 06 05 (EWC code).

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