

GHG emissions accounting in accordance with GHG protocol

Makino Milling Machine Co., Ltd.

		Description
Scope1		The fuel consumption of our consolidated group—including gasoline, kerosene, diesel, LPG, city gas, and natural gas—is calculated by multiplying the usage amounts by the emission factors from the “List of Calculation Methods and Emission Factors in the Accounting, Reporting, and Publication System” published by the Ministry of the Environment under the Act on Promotion of Global Warming Countermeasures.
Scope2 (Location-based approach)		The electricity purchased at each site of our consolidated group is calculated by multiplying the purchased volume by the average emission factors of the relevant country, region, or grid.
Scope2 (Market-based approach)		The electricity purchased at each site of our consolidated group is calculated by multiplying the purchased volume by the emission factors corresponding to the contract type of each electricity supply.
Scope3		
1	Purchased goods and services	Calculated by multiplying the purchase price of raw materials, parts, etc. used in production within our consolidated group, as well as goods and services necessary for sales and management, by the emissions factor of the National Institute for Environmental Studies' "Environmental Impact Intensity Considering Global Supply Chains" and the National Institute of Advanced Industrial Science and Technology's "IDEA" emissions intensity. As the former includes emissions during transportation related to procurement, these emissions are included in this category rather than Category 4.
2	Capital goods	Calculated by multiplying the amount of fixed asset acquisitions by our consolidated group by the emissions intensity from the Ministry of the Environment's "Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains."
3	Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	Calculated by multiplying the amount of fuel (gasoline, kerosene, diesel, LPG, city gas, natural gas) and electricity used for calculating Scope 1 and 2 by the emission factors from the “IDEA” database developed by the National Institute of Advanced Industrial Science and Technology (AIST).
4	Upstream transportation and distribution	Calculated by multiplying each ton-kilometer of material and product transportation in the production and sales processes of our consolidated group by the emission factors for each transportation method from the “IDEA” database developed by the National Institute of Advanced Industrial Science and Technology (AIST). (Transportation emissions during procurement are included in Category 1.)
5	Waste generated in operations	Calculated by multiplying the weight of each type of industrial waste (including waste plastics, waste oil containing oily wastewater, sludge, wood waste, and metal scrap; excluding valuable materials) and the disposal cost of general waste by the emission factors from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment.
6	Business travel	Calculated by primarily multiplying the number of employees of our consolidated group by the emission factors from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment.
7	Employee commuting	Calculated by primarily multiplying the number of employees at each site of our consolidated group by the emission factors from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment.
8	Upstream leased assets	Calculated by multiplying the amount of fuel purchased for company-owned vehicles leased under operating lease arrangements by our consolidated group by the emission factors from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment.
9	Downstream transportation and distribution	No applicable items in this category.
10	Processing of sold products	No applicable items in this category.
11	Use of sold products	<p>Calculated by multiplying the estimated electricity consumption during customer use of our products and the assumed leakage of fluorocarbons contained in peripheral equipment by the emission factors from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment, as well as other relevant databases such as those from IGES, the European Environment Agency, and the European Commission.</p> <p>Electricity consumption is calculated based on measured power consumption and usage scenarios assumed in LCA studies. CO₂ emissions are then calculated using emission factors corresponding to the countries or regions where the products are sold.</p> <p>CO₂ equivalent emissions from fluorocarbon leakage are calculated by multiplying the amount of fluorocarbons used in peripheral equipment by the leakage rates assumed in LCA, the leakage rates from the Ministry of the Environment’s database, and the global warming potentials published on the Ministry’s Fluorocarbon Emissions Control Law website.</p>
12	End-of-life treatment of sold products	As most of our products are recyclable, CO ₂ emissions are calculated for the disposal of packaging materials used for the machine body and transportation, as well as for the disposal of fluorocarbons contained in peripheral equipment. Emission factors based on the material types of packaging are referenced from the “Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations through Supply Chains” provided by the Ministry of the Environment. For fluorocarbons, global warming potentials published on the Ministry’s Fluorocarbon Emissions Control Law website are used for the calculation.
13	Downstream leased assets	No applicable items in this category.
14	Franchises	No applicable items in this category.
15	Investments	The emissions from the affiliated companies and non-consolidated entities are negligible, and therefore not included in the calculation.