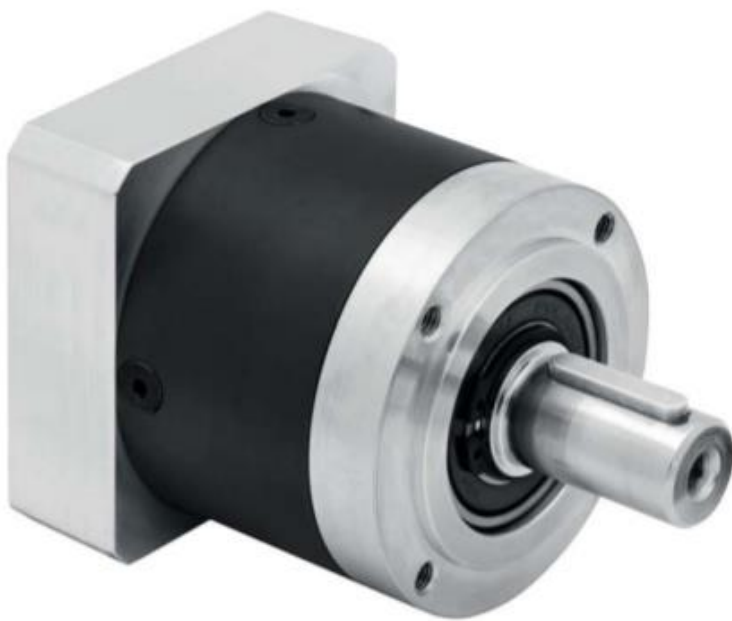


# Product Environmental Profile

**Gearbox GBX040 to GBX160**





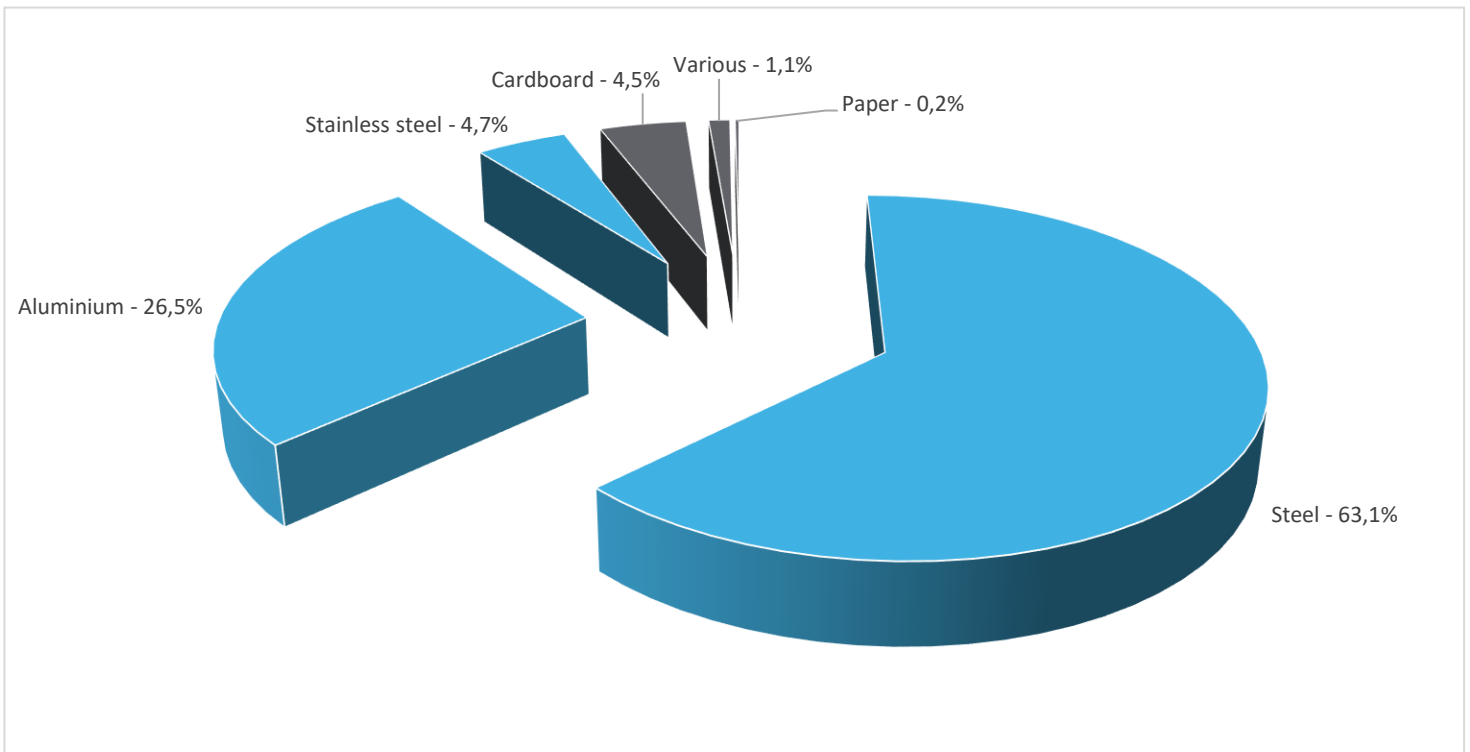
## General information

<b>Representative product</b>	Gearbox GBX040 to GBX160 - GBX080012K
<b>Description of the product</b>	GBX planetary gearboxes is the combination with Lexium servo motors BSH, BMH, Lexium Integrated Drives ILx and Lexium stepper motors BRS3.
<b>Description of the range</b>	This range consists of gearboxes GBX040 to GBX160 from 5 Nm to 800 Nm The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology.
<b>Functional unit</b>	The gearbox allows optimizing the load inertia of the machine process which is driven by the servo motor. The gearbox is converting the torque supplied by the motor to control the movement of the moving load of the machine process during 10 years and a 50% use rate at 108 W.



## Constituent materials

<b>Reference product mass</b>	2784 g including the product, its packaging and additional elements and accessories
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Plastics	0,0%
Metals	94,3%
Others	5,8%



## Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 2 January 2013, amended in March 2015, 2015/863/EU and in November 2017, 2017/2102/EU) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers – PBDE), Bis (2-ethylhexyl)phthalate - DEHP, Benzyl butyl phthalate– BBP, Dibutyl phthalate - DBP, Diisobutyl phthalate - DIBP) as mentioned in the Directive.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website

<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>

## Additional environmental information

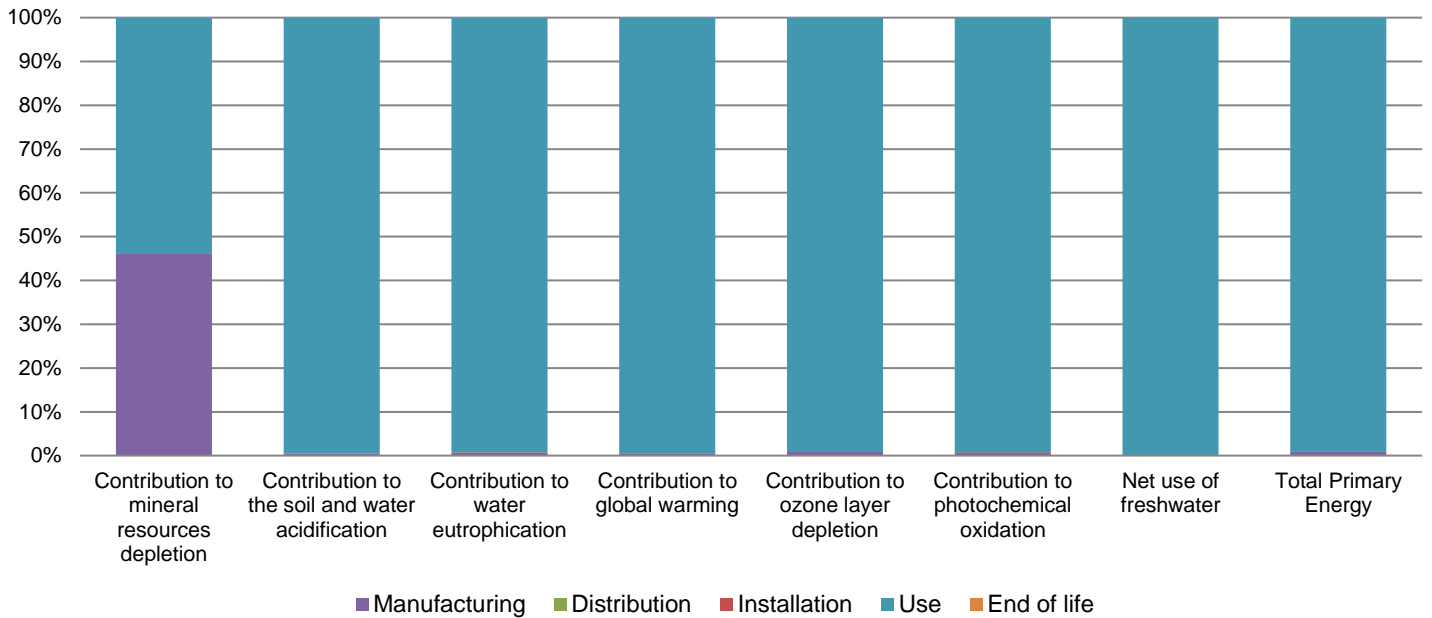
The Gearbox GBX040 to GBX160 presents the following relevant environmental aspects

<b>Manufacturing</b>	Manufactured at a Schneider Electric production site ISO14001 certified
<b>Distribution</b>	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 130,2 g, consisting of cardboard (96%) and paper (4%). Product distribution optimised by setting up local distribution centres
<b>Installation</b>	GBX080012K does not require any installation operations.
<b>Use</b>	The product does not require special maintenance operations.
<b>End of life</b>	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials  No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process.  Recyclability potential: <b>92%</b> Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

## Environmental impacts

<b>Reference life time</b>	10 years								
<b>Installation elements</b>	No special components needed								
<b>Use scenario</b>	Assumed service lifetime is 10 years and use scenario is : - Active phase: consumed power 108 W during 50 % uptime - Off phase: consumed power 0 W during 50 % uptime - 24 hours per day, during 10 years								
<b>Geographical representativeness</b>	Europe								
<b>Technological representativeness</b>	GBX planetary gearboxes is the combination with Lexium servo motors BSH, BMH, Lexium Integrated Drives ILx and Lexium stepper motors BRS3.								
<b>Energy model used</b>	<table border="1"> <thead> <tr> <th>Manufacturing</th> <th>Installation</th> <th>Use</th> <th>End of life</th> </tr> </thead> <tbody> <tr> <td>Energy model used: Germany</td> <td>Electricity grid mix; AC; consumption mix, at consumer; &lt; 1kV; EU-27</td> <td>Electricity grid mix; AC; consumption mix, at consumer; &lt; 1kV; EU-27</td> <td>Electricity grid mix; AC; consumption mix, at consumer; &lt; 1kV; EU-27</td> </tr> </tbody> </table>	Manufacturing	Installation	Use	End of life	Energy model used: Germany	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27
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Compulsory indicators		Gearbox GBX040 to GBX160 - GBX080012K					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	3,74E-04	1,72E-04	0*	0*	2,01E-04	0*
Contribution to the soil and water acidification	kg SO <sub>2</sub> eq	9,72E+00	4,83E-02	1,64E-03	0*	9,67E+00	0*
Contribution to water eutrophication	kg PO <sub>4</sub> <sup>3-</sup> eq	5,88E-01	3,94E-03	3,78E-04	0*	5,84E-01	1,80E-04
Contribution to global warming	kg CO <sub>2</sub> eq	2,33E+03	1,12E+01	3,59E-01	0*	2,32E+03	2,49E-01
Contribution to ozone layer depletion	kg CFC11 eq	1,52E-04	1,21E-06	0*	0*	1,51E-04	1,59E-08
Contribution to photochemical oxidation	kg C <sub>2</sub> H <sub>4</sub> eq	5,35E-01	3,92E-03	1,17E-04	0*	5,31E-01	8,26E-05
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	8,40E+03	0*	0*	0*	8,40E+03	0*
Total Primary Energy	MJ	4,67E+04	4,24E+02	5,08E+00	0*	4,63E+04	0*



Optional indicators		Gearbox GBX040 to GBX160 - GBX080012K						
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Contribution to fossil resources depletion	MJ	2,64E+04	1,05E+02	5,05E+00	0*	2,63E+04	3,09E+00	
Contribution to air pollution	m <sup>3</sup>	1,01E+05	1,43E+03	1,53E+01	0*	9,98E+04	2,72E+01	
Contribution to water pollution	m <sup>3</sup>	9,63E+04	5,40E+02	5,91E+01	0*	9,56E+04	2,91E+01	
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Use of secondary material	kg	1,08E+00	1,08E+00	0*	0*	0*	0*	
Total use of renewable primary energy resources	MJ	5,89E+03	6,88E+00	0*	0*	5,89E+03	0*	
Total use of non-renewable primary energy resources	MJ	4,08E+04	4,17E+02	5,07E+00	0*	4,04E+04	0*	
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	5,89E+03	4,39E+00	0*	0*	5,89E+03	0*	
Use of renewable primary energy resources used as raw material	MJ	2,48E+00	2,48E+00	0*	0*	0*	0*	
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4,08E+04	4,16E+02	5,07E+00	0*	4,04E+04	0*	
Use of non renewable primary energy resources used as raw material	MJ	1,37E+00	1,37E+00	0*	0*	0*	0*	
Use of non renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	
Use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	
Waste categories	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Hazardous waste disposed	kg	1,18E+01	7,73E+00	0*	0*	1,21E+00	2,88E+00	
Non hazardous waste disposed	kg	8,65E+03	1,10E+01	0*	0*	8,64E+03	0*	
Radioactive waste disposed	kg	5,78E+00	8,72E-03	0*	0*	5,77E+00	0*	
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Materials for recycling	kg	2,85E+00	2,73E-01	0*	1,30E-01	0*	2,45E+00	
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	
Materials for energy recovery	kg	5,00E-04	0*	0*	0*	0*	5,00E-04	
Exported Energy	MJ	4,12E-04	3,86E-05	0*	3,73E-04	0*	0*	

\* represents less than 0.01% of the total life cycle of the reference flow

Life cycle assessment performed with EIME version EIME v5.8.1, database version 2016-11 in compliance with ISO14044.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

Depending on the impact analysis, the environmental indicators (without "contribution to Mineral Resources Depletion") of other products in this family may be proportional extrapolated by energy consumption values. For mineral resources depletion, almost 45% is caused by manufacturing and 55% is caused by the use phase therefore 45% of the impact may be proportional extrapolated by mass of the product and 66% may be proportional extrapolated by energy consumption values.

*Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.*

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<i>Independent verification of the declaration and data</i>			
Internal	X	External	
<i>The elements of the present PEP cannot be compared with elements from another program.</i>			
<i>Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »</i>			

Schneider Electric Industries SAS

Country Customer Care Center  
<http://www.schneider-electric.com/contact>

35, rue Joseph Monier  
CS 30323  
F- 92506 Rueil Malmaison Cedex  
RCS Nanterre 954 503 439  
Capital social 896 313 776 €

[www.schneider-electric.com](http://www.schneider-electric.com)

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