

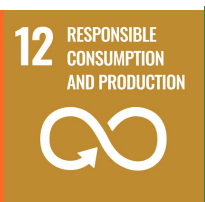


END-OF-LIFE TREATMENT GUIDELINES



Kirloskar Brothers Limited considers “circular economy” as a key aspect while designing and manufacturing of resource efficient products. Our target is to keep the materials in circulation to ensure vital resources are not lost.

This approach supports our strategic objective of “Environment Protection” and promotes recycling of resources to reduce our dependency on virgin material along with reduction of carbon footprint of products.





Enriching Lives

KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

Instructions –

- *This document provides generic instructions to our customers* about treatment of Kirloskar Brothers Limited (KBL) Product at its end-of-life stage.*
- *End-of-Life stage of a KBL product shall be considered to be reached, when the customer has declared that the product has become redundant (the product has become obsolete / unfit for use / non-functional and cannot be refurbished in consultation with the KBL personnel) OR the customer wishes to replace existing product for a shift in technology or with an energy efficient / environment friendly product or due to some legal obligation enforced by governing bodies from time to time*
- *KBL product shall be handled and dismantled only by an experienced and skilled technician or engineer.*
- *Local legislation should always be followed, as this document is not intended to contradict or overrule any other regulations or local laws.*
- *KBL shall not be liable for any kind of direct or indirect consequences due to use of this document.*
- *Content of this document is liable to change without any notice and shall not be used as any sort of commitment from KBL.*

Note: **Customer in this document shall be considered as the end user of KBL product or the person / agency responsible for end-of-life treatment of KBL product*



KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

Enriching Lives

1.0 PURPOSE:

As a commitment towards greener future, conservation of natural resources and reduction of carbon footprint, we recommend our customers to dispose of our products responsibly and, in an environment-friendly manner once it has reached the end-of-life stage

2.0 SCOPE:

- This document can be used for all types of KBL Products such as Pumps, Pump-sets, Valves, Turbines, and Pumping Systems manufactured and / or sold by KBL through various distribution channels
- For OEM (Original Equipment Manufacturer) products supplied along with KBL products like electric motors, Diesel Engines, Electric Actuators, Hydraulic Systems and Control Panels, customers are recommended to follow disposal guidelines of respective OEMs or seek support from an authorised recycler of these products

3.0 OBJECTIVE:

- To guide customers on environment friendly disposal of our products and components at the end-of-life stage
- To minimise the impact caused by product disposal on society and environment

4.0 PROCEDURE:

- We practice 3R approach of “Reduce, Reuse and Recycle” during design and manufacturing of our products to minimise use of resources. We also promote reuse and recycling of most of the components after the end-of-life stage of our products
- All KBL products are mainly made of metallic components (up to 95% by weight) and hence, these components can be easily transformed into raw material for production of new metallic components by recycling after its end-of-life stage
- Since metallic components can be recycled any number of times, we can say that process of treating our products at its end-of-life stage is sustainable

4.1 Preparations for Product Disposal:

- Product nameplates / tag plates shall be removed and destroyed to restrict misuse of the same
- Oil, grease, or any other liquid used in KBL products shall be drained and collected without spillage
- Product shall then be dismantled with segregation of metallic and non-metallic parts
- Appropriate tools and tackles shall be used for dismantling and segregating the pump components
- Hydraulic and critical components like casing, impellers, turbine runners, etc shall be cut into pieces before disposing of as per recommendations stated in clause 4.3 to restrict its misuse

4.2 Disposal Options

Material shall be disposed of in a safe and environment friendly manner by one of the following options

-
- a) **Reuse** – Components can be reused as it is or with minor processing for similar applications
- b) **Recycle** – Components can be reused / reproduced as raw material after recycling, which can be a mechanical or chemical process
- c) **Incineration** - Incineration is the process of burning hazardous materials at temperatures high enough to destroy contaminants. Incineration is conducted in an “incinerator,” which is a type of furnace designed for burning hazardous materials in a combustion chamber



KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

Enriching Lives

d) **Landfill** – When reuse or recycling of components is not possible, customer shall resort to landfill option. It is a process of dumping waste into a “specific” area of the land followed by compaction (crushing) of the waste and then covering of the waste with soil. This shall be done in line with local regulations

Note –

- 1) Disposal (except reuse) shall be executed through government authorised scrap dealer or registered recycler and in compliance with applicable laws and regulations. (For example, State Pollution Control Board, Central Pollution Control Board, Ministry of Environment, Forest and Climate Change of India, etc.)
- 2) Common Integrated Treatment, Storage & Disposal Facilities (TSDFs) with Common Incinerators & Secured Landfills are recommended for option (c) & (d) above.

4.3 Category-wise Disposal Methods

Sr No	Category of Material	Hazardous (YES/NO)	Indicative List of Components	Disposal Method
1	Metal – Castings, Forgings, Bars, Plates, Pipes, etc.	No	Casing, Casing Covers, Impellers, Bearing Housings, Diffusers, Metallic Bushes, Valve Body & Disc, shafts, sleeves, bearings, fasteners, motor body, metal packings, and other metallic components	Resue or Recycle
2	Plastic / Teflon	Yes	Plastic Impellers, Diffusers, terminal boxes, control bushes, lantern rings, plastic sheets, packing bags, etc.	Recycle
3	Electrical Steel components - Copper, Aluminium, Silicon Steel, etc.	No	Stator and Rotor components of electric motor	Reuse or Recycle
4	Rubber	No	Rubber Seals, Gaskets, bushes, diaphragms, O rings, rubber components, coupling spiders, etc.	Recycle (Through special processes like Pyrolysis or Devulcanisation)
5	Cables	Yes (only insulation)	Power cables and Control Cables	Reuse or Recycle
6	Wood, Plywood and Corrugated Boards	No	Packing boxes	Reuse or Recycle
7	Graphite	Yes	Gland Packing, gaskets	Incineration



KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

Enriching Lives

Sr No	Category of Material	Hazardous (YES/NO)	Indicative List of Components	Disposal Method
8	Grease & Oil	Yes	Grease & lubricating Oil used for lubrication of bearings, hydraulic cylinders, Oil pressure units , mineral oil in oil filled submersible motors	Recycle after treatment or Incineration
9	Glycol Water	No	Water + Glycol mixture used in water-filled Submersible Motors	To land after processing in water treatment plant
10	E-Waste	Yes	Control panels and other e-components used in pump-sets	Recycle
11	Glass	No	Glass used in Gauges & Indicating instruments	Reuse or Recycle
12	Metal Carbides	No	Mechanical seal components like Silicon and Tungsten carbide	Landfill

5.0 PRODUCT EXCHANGE

In case of a customer is willing to buy out KBL product as a replacement of existing product, especially medium and large size products, a special discount can be extended to the customer considering environmental aspect. In such case, customer may contact respective regional / zonal sales or service representative of KBL

6.0 COMMUNICATION

End-of-Life treatment guidelines shall be communicated to all the Customers through Installation and Operating Manual (IOM) and shall also be displayed on KBL Website at –

<https://www.kirloskarpumps.com/spares-and-services/End-of-life Treatment Guidelines>

For any support on end-of-life treatment of KBL products, customers may contact KBL sales or service team, or they can also write to sustainability@kbl.co.in for more information

Issue No.: 01

Review Date: 1st May 2024

Next Review Date: 30th April 2027

Sanjay C. Kirloskar
Chairman and Managing Director