

Intervening Technology/ Technique	Printer Toner Cartridge Re-manufacturing (Recycling)
About the industry	M/s. GRC (Gujarat Refilling Centre) is one of the largest and fastest growing remanufacturing high quality printer toner cartridges company, located at Vadodara in Gujarat, India.
Implemented Techniques/ Technology	<p>Remanufactured cartridges are essentially reused cartridges. It was empty cartridges that have been collected, inspected, cleaned and rebuilt. The process by differs by manufacturer and materials used with varying results in quality and page yields. Remanufactured cartridges have quality control standards, lab-tested components to ensure consistent OEM (Original equipment manufacturer) equivalent performance.</p> <p>Toner Re- Manufacturing Process</p> <ol style="list-style-type: none"> 1. Incoming raw material <ul style="list-style-type: none"> ● All incoming cartridges are thoroughly inspected for irregularities before dismantling. 2. Sorting and gradation <ul style="list-style-type: none"> ● All empty cartridges are sorted and graded as per OEM Brands. 3. Dismantling <ul style="list-style-type: none"> ● All incoming cartridges are dismantled to drums, toner, blades, PCRs, magnetic rollers, etc which are verified before it reach the production floor. 4. Disassembling and Clean <ul style="list-style-type: none"> ● Empty cartridges are carefully disassembled and cleaned. Through automation, it precisely splits the toner hopper with custom splitting equipment and the hopper for the sealing phase. 5. Toner Filling <ul style="list-style-type: none"> ● Toner hoppers are filled with premium toners, which are technically matched to the OPCs (drum) for optimal yields and printer performance. 6. Assembly <ul style="list-style-type: none"> ● Factory-trained technicians assemble all cartridges with OEM grade compatible components (up to 75 % new components are used in each cartridge.) <p>The assemble process includes the installation of a pre-qualified drum, wiper blade, doctor blade, PCR and magnetic roller.</p> 7. 100 % Post Testing <ul style="list-style-type: none"> ● Each Cartridge is tested for standard print tests to ensure their performance and quality. 8. Quality Control <ul style="list-style-type: none"> ● Each step in manufacturing process is monitored by dedicated quality control experts. Each step in production process undergoes regular and spot inspections 9. Packaging <ul style="list-style-type: none"> ● All cartridges receive a final inspection to ensure for quality standards.



Benefits*Economical*

CP option	Remanufacturing of cartridge
Investment	Rs: 38,00,000
Annual Operating Cost	Rs: 6,00,000
Annual Saving	Rs: 2.5 Lac Approx
Payback Period	5 Years

Life Cycle Stage	Emission Per New cartridge (gCO ₂)	Emission during remanufacturing (gCO ₂)
Components (Inc. End of Life)	2136	223
Component Packaging	286	65
Cartridge Packaging	980	380
Components Shipping	203	19
Distribution	33	451
Energy Use	761	451
Total	4399	1802

Environmental

- Reduction in carbon emissions.
- Remanufactured cartridges reduces landfill waste.

