

# Ideas for Product Needs

Ideas for product needs or requirements to help on the development of your product.

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Domain	Examples
Geometry	Size (height, width, length, depth, diameter), occupied/necessary space for operation, exterior and interior surfaces, symmetry.
Kinematics	Type of movement (linear, rotation), movement direction, extremes and control of speed and acceleration, repeatability, vibrations, precision of movement.
Forces	Magnitude, direction, distribution, displacements, strain, rigidity, resonance, frequency, payload, fatigue, impact, fracture resistance, compression, tension, flexure.
Energy	Energy consumption, efficiency, friction losses, ventilation, state variables – pressure, temperature, humidity, heating, cooling, supply energy, storage type, storage replacement, storage capacity, energy conversion, resistance to temperature extremes, isolation, conduction.
Matter	Chemical properties, thermal properties, electro-magnetic properties, forbidden substances, flow of material, porosity, transparency, density, multifunctionality.
Signal	In and out signals, type of dashboard, production and monitoring devices, signal shape, sensitivity.
Safety	Safety principles, protective systems, industrial safety, workplace safety, environmental safety, safety norms, emergency protocols, flammability.
Ergonomics	Lighting, display, color, design, comfort, customization, feeling it instills to user (pride, confidence, exclusiveness).
Production	Manufacturing place limitations, extreme sizes (maximum and minimum) of the part to be manufactured, preferred production process, means of production, possible quality and tolerances.
Quality Control	Testing and measurement, quality control, quality norms.
Assembly	Assembly time, number of different steps, complexity of steps.
Transportation	Limitations through winches, railway gauge, transport routes by size and weight, type and transport restrictions.
Use	Cadence, noise, wear rate, scratch resistance, type of application and domain of use, conditions of use (pH, maritime, wet, dusty, tropics, oxidative), modularity (be used with other products, have components that can be replaced with others that have other functions), self-adaptability (automatic, smart), UV resistance, ability to be adjusted, ease

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	of use, fun of use, setup (preparation to make it ready to be used) time and complexity (number of steps, need of external tools), need of external accessories.
Recycling	Reuse (reuse with minor repairs / adjustments), reprocessing (recycling), final disposal (landfill), storage.
Costs	Acquisition of standard components, maximum manufacturing costs, tool costs, investments, life, depreciation, final acquisition cost (price that buyer pays).
Deadlines	End of development, network plan for intermediate stages, delivery time, installation time.
Maintenance	Ease of maintenance (number of steps, difficulty), accessibility to components that require frequent maintenance, maintenance time/frequency, discoloration over time, ease of cleaning.

## Stakeholders

Talk to the various stakeholders (people that may affect / be affected by the product) to find out what their needs are.

- Buyer;
- Manufacturer / Producer;
- Carrier;
- Salesperson;
- User.

## By life phases

