

# Technical Service Bulletin

**Service For:** Master Systems (Floorcare Buddy) **Sector:** Industrial/Commercial – Product Development



Master Systems Inc. is a floor-care company located in Dunnville, Ont. Several years ago, owner Mark Raddick invented the Floorcare Buddy, a safer way to apply floor care products. When the Floorcare Buddy appeared in Season 6 of CBC's *Dragon's Den*, it did not receive a deal, however, it provided great exposure for the product. Since his appearance on the show, Mark has continued to improve the design of the Buddy.

## **TECHNICAL SERVICE CHALLENGE:**

Since the inception of the Floorcare Buddy, Master Systems has had several design engineering companies involved in its product development, but had not delivered a turnkey set of deliverables, which included refinement to key design components and a full set of manufacturing drawings.

## **DELIVERABLES:**

Since a referral from Innovate Niagara, the research team at the Walker Advanced Manufacturing Innovation Centre has provided Master Systems with prototype development and parts production, using the Centre's leading-edge 3D technologies, including 3D design, 3D scanning and rapid prototyping. Small runs of newly designed 3D printed parts for their metering system were produced to reduce the risk of non-conforming injection mold tooling. This resulted in a full set of manufacturing and assembly drawings for tender to

potential sub suppliers. The college also assisted Master Systems in improving the design for manufacturability with consideration to the latest in injection molding, machining, fabrication, and blow molding processes.

## **EQUIPMENT USED:**

Autodesk Design Suite Software - 3D Printing - Fortis 400mc, acquired thanks to an NSERC ARTI grant.

## **RESOURCES:**

1x Niagara College TAC Staff, 2x - 4 year Niagara College Mechanical Engineering Technology students.

## **DURATION:**

3 projects in total, 2 months each

## **BENEFITS TO INDUSTRY PARTNER:**

New beta prototype components for metering and control were developed based on operator feedback from the field of the alpha prototype. Master Systems now has a complete set of manufacturing drawings in which to tender individual parts for production purposes.

## **BENEFITS TO NIAGARA COLLEGE:**

Real-world job experiences in product development for our students. This also fosters further learning opportunities utilizing innovative solutions, using advanced manufacturing technologies, better preparing them for employment after graduation.

*For more information, contact Charles Lecompte, Senior Application Specialist, at 905-735-2211, ext. #7173 or clecompte@niagaracollege.ca*

Access Technical Services at the Walker Advanced Manufacturing Innovation Centre, your company's R&D partner, located at the Welland Campus of Niagara College. We provide a key competitive advantage to industry, offering access to cutting-edge equipment – and related services – for the development of products and manufacturing processes.

## We specialize in

### TECHNICAL SERVICES

Including: 3D Printing, 3D Design, 3D Measurement and Scanning

### AUTOMATION

Mechanizing a process to decrease human labour and increase efficiency

### PRODUCT DESIGN AND DEVELOPMENT

Creating a new product for deployment within your business or to be sold to a customer

### REVERSE ENGINEERING

Discovering the technological principles of a device, object or system through analysis of its structure and functions

### LEAN MANUFACTURING ASSESSMENT

Analyzing and improving an existing process within your operations

### PRODUCT RE-DESIGN AND IMPROVEMENT

Revamping an existing product to improve quality and/or adapt to changing market conditions

## Resources & Capabilities

- *Rapid Prototype Machine*
- *Laser Scanners (small-scale and room-size)*
- *Vision System*
- *Hand Measurement Tools*
- *3D Computer-Aided Design*
- *3D Factory Design*
- *Physical Simulations and Modelling*
- *Engineering Design*
- *Electronics and Electrical*

*“Niagara College brings youth, enthusiasm and knowledge to a tough playing field where every dollar is critical to the survival of many small businesses.”*

*~Bob Benner, Hamill Machine Company Inc.*

