

barrows

FREEZE TRIM



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Designed and built to meet the most exacting demands of industry, the Barwell Trim Freeze Systems are today's answer to economic productivity.

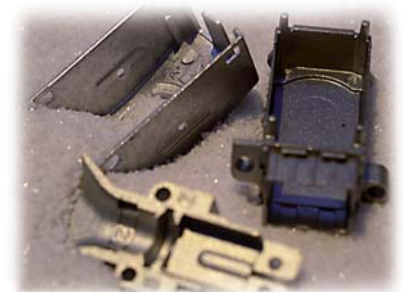
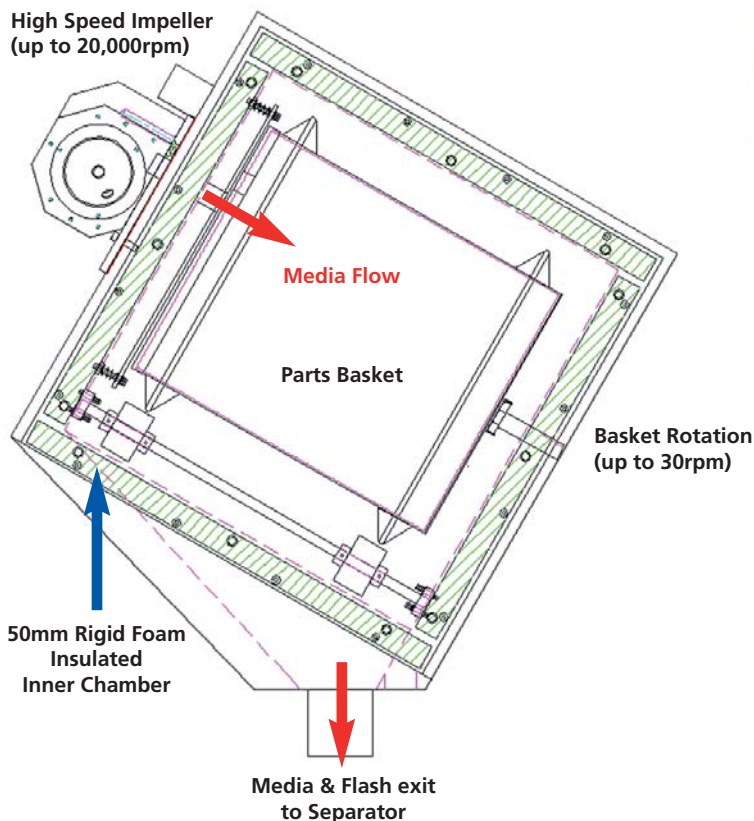
Able to process a wide range of materials and available in a range of sizes, these compact units achieve fast process times and help to significantly reduce the operational costs involved in moulded product deflashing.

Incorporating the latest PLC controls coupled with a touch screen operator interface simplifies the whole deflashing process. A product database for thousands of part set-ups allows quick and easy operation when changing from one part to another.

Fully enclosed construction and a system media assist ensures minimal usage of liquid nitrogen.



SCHEMATIC DIAGRAM OF WORKING PRINCIPLE





Rubber and plastic parts are placed in a stainless steel parts basket, which rotates in a blast chamber evenly exposing all parts to the blast media. The chamber is insulated with rigid polyurethane foam to ensure stable temperatures.

Liquid nitrogen lowers the interior temperature, freezing the flashing to make it brittle. Use of high-purity, moisture-free nitrogen eliminates the need for a dryer and prevents part contamination due to moisture.

The high-speed impeller shoots polycarbonate plastic pellets into the chamber. Travelling at high speeds, these pellets cleanly trim off the inner and outer diameter flash of parts in one operation.

The unit is fully enclosed to minimize ambient noise levels. Blast media can be separated from the flash and recovered for reuse.

Once the temperature has reached within 5°C of the set temperature, the throw wheel (impeller) will start rotating to the set rpm. The separator (which is located in the lower compartment) will start. The media assist function will start allowing clean/dry shop air or gaseous nitrogen (GN2) to flow. The air or GN2 force feeds the deflashing polycarbonate media from the media hopper (reservoir) through the feed tube and sight glass (on the front face panel) and into the throw wheel housing. The impeller, rotating at high speed, then shoots the media into the blast chamber (into the parts basket) at high velocity and onto the parts, removing the excess flash.

The polycarbonate media and flash will come out of the parts basket, go down through the drain port, and into the separator. Then the separator will separate the polycarbonate media from the flash, sending the flash to the flash reservoir (located in the lower compartment). The separator automatically recycles the polycarbonate media back into the media hopper. The media is then again force fed back up to the impeller for reuse. In normal operating conditions the polycarbonate can be used for up to 300 cycles, and as we use GN2 for the media assist there is no media sticking together due to moisture (which is common in other systems). Once the selected cycle time has been completed, all of the functions will stop except for the parts basket. It will continue to rotate for a few seconds (post tumble) to get rid of excess media which may be left in the basket.

MAIN FEATURES

- 20,000 rpm Impeller
- Hardened Impeller for long life
- Omron Motor, Controller and PLC
- No Dryer required as no external parts
- In-line Separator (for flash and media)
- 50mm Rigid Foam Insulation
- 8" TFT Touch Screen
- 2,000 Product Database
- On Screen Diagnostics
- Standard "QWERTY" Touch Keypad
- Multi Language Support
- Daily Maintenance Checklist
- Password Protection
- Auto or Manual Operation
- Process Sheet Checklist
- Conforms to all CE Standards



LOW LN₂ USAGE
GN₂ MEDIA ASSIST
SIMPLE OPERATION
POLYCARBONATE MEDIA
INCREASED PRODUCTIVITY
BETTER PRODUCT QUALITY
ENVIRONMENTALLY FRIENDLY
TOUCH SCREEN CONTROLS WITH DATABASE

Technical Data	BFT20	BFT40	BFT140
Refrigerant	LN ₂ @ 212°C @ 3.5 bar	LN ₂ @ 212°C @ 3.5 bar	LN ₂ @ 212°C @ 3.5 bar
Media Flow Systems	GN2 or Clean Dry Air @ 2.5 bar	GN2 or Clean Dry Air @ 2.5 bar	GN2 or Clean Dry Air @ 2.5 bar
Parts Basket Size (diameter)	300 mm	330 mm	610 mm
(depth)	300 mm	400 mm	480 mm
Powered Door	No	Optional	Standard
Basket Standard Perforation	6.35 mm	6.35 mm	6.35 mm
Maximum Basket Volume	20 litres	35 litres	140 litres
Usable Volume	7 litres	12 litres	50 litres
Media Throwing Wheel	100 mm dia.	100 mm dia.	150 mm dia.
Media Throwing Wheel	Up to 20,000 rpm	Up to 20,000 rpm	Up to 20,000 rpm
Media Type	Polycarbonate	Polycarbonate	Polycarbonate
Controls	Omron PLC and Servo Motor with up to 2000 set-ups	Omron PLC and Servo Motor with up to 2000 set-ups	Omron PLC and Servo Motor with up to 2000 set-ups
Screen	8" TFT Colour Touch Screen	8" TFT Colour Touch Screen	8" TFT Colour Touch Screen

Liquid Nitrogen Consumption
(calculated estimates for BFT40 based on nominal basket load factor) litres / minute

Cycle Time (min)	Temperature (°C)							
	-50	-60	-70	-80	-90	-100	-110	-120
5	2	3.1	4	4.8	5.6	6.3	7	7.7
10	4.6	5.1	5.6	6.2	7	7.7	8.4	9.1
15	6	7.1	8.2	9	9.7	10.5	11.2	11.9

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