Introduction

Time and time again The Muncher Family proves to be the most economical solution to a problem many of our customers previously thought impossible to solve.

- protection of submersible or dry well sewage pumps prone to blockage problems
- economical solution for small headworks requirements
- efficient disintegration of extracted screenings prior to treatment
- high volume fine grinding of sludges improving digestion plant efficiency
- handling of tankered sludges to a whole host of industrial wet waste grinding duties

The Muncher Family is designed to cope with modern waste waters and sludges, with all the discarded trappings of today’s disposable society that find their way into community and industrial waste collection and treatment systems.

The Principle

The Muncher Family is a range of Twin Shaft, Slow Speed, High Torque Grinders.

Each shaft is fitted with a series of interleaving cutters and spacers to give real “positive displacement” solids grinding. Once an object becomes trapped in the slowly revolving cutter stacks there is no escape - rags, rope, plastic, drink cans, pantyhose, wood and sundry rubbers are all easily processed through the machine.

Powerful it may be - energy wasteful it is not!

- Shafts operate at differential speeds - to promote a tearing action on the solids
- Low operating speed (typically 50-80 rpm) give high torque capability
- Low cutter tip speeds ensure power is not wasted in “water horsepower” and abrasive wear rates are minimised
- Various Unique Patented Items

Optimum Grinding Capability

The differential speed of the cutter stacks pull apart fibrous material, whilst the leading edge and sides of the cutter teeth crop and shear plastic into small pieces. The circumferential ‘land’ of the cutter crushes friable or brittle material.
Features - SB and TR Muncher

SB Range

- Designed to replace traditional high speed, high power centrifugal macerators
- Low cutter tip speeds - Low power - Low noise level
- 3 Year warranty on Raw Sewage applications for pipeline units

- Hardened cutters
- Cantilever shaft design - no bottom bearings or seals
- Integral 150mm inlet flange
- Screwed outlet to suit pipework
- One piece cutter/box bearing housing

TR Range

- Latest Generation Twin Shaft Grinder
- Designed specifically for efficient treatment of abrasive sludges

- Layback cutter shafts - rejected material drops clear of shafts
- Patented built-in trash trap with clean-out ports to catch any rejected material
- Integral flanged, one piece main body
- Cantilever shaft design
- Pull back cutter stack allows removal without disturbing pipeline
- Hardened cutters
- No bottom bearings and seals
- Integral feet
Features - Series ‘A’ and F Muncher

Series ‘A’ Range
- Engineered and improved through 35 years experience in waste water grinding
- Optional high flow side rail
- Hardened cutters
- Bearings protected by mechanical seals
- Specially developed multispring tungsten carbide faces

Series F Range
- For wet and dry material processing
- Ideally suited for screenings/bio-degradable waste processing
- Eliminates need for costly disposal - can generate income from better digester gas yields
- Independent shaft drives
- Rugged machine construction
- Gearboxes and cutter chamber independently mounted
Each Muncher is supplied with a Programmable Logic Controller (PLC) designed to protect the machine against damage from rogue materials and overloads. This can be as an individual PLC unit, a chassis backplate, or a complete control panel.

The Muncher PLC is designed to distinguish between a locked rotor full overload requiring instant reversal and a varying allowable periodic low level overload allowing an ongoing running period before the reversal mode is engaged. The critical time/power relationship is continually monitored by the logic to avoid either unnecessary shutdowns or failure to respond to genuine overloads that less sophisticated systems could induce.

This logic control unit is programmed to operate in the following manner:

1. To operate in a normal On/Off mode.
2. To sense an overload condition (jam), momentarily reverse the cutters to clear the condition and then return to normal operation.
3. If a third overload (jam) occurs within 60 seconds of the first, the machine will then automatically shut down in reversed mode and an alarm circuit will be energised. (Alarm not supplied in standard packages).

Panel layouts are available to all UK Water Company standards, Sewers for Adoption and most international standards including I.E.C., N.E.M.A., and Australian.

Standard Supply is:

- Series 'A' Muncher - Complete control panel to IP55
- SB Muncher - Controller optional
- TR Muncher - PLC Unit
- Series F Muncher - Complete control panel to IP55
Applications - Pump Protection

SB, TR & Series 'A' Munchers

- Facilitates use of small bore rising main
- Effective macerator replacement
- 3 year warranty on raw sewage (SB Pipeline only)
- Full packaged pump stations available

Centrifugal Pump Protection

- Single Muncher protects duty/standby pumps
- Above sewage installation
- Allows use of better efficiency pumps
Applications - Inlet Works

SB, Series 'A' and F Munchers

- In-flow Disintegration
- Screening

- Small works automation
- Downstream system protection
- No removal costs
- Small footprint
- Minimal civil requirements

- Eliminate disposal costs
- Heavy duty capability
- Increase digester gas yield
Applications - Sludge

SB, Series 'A' and TR Munchers

- Homogeneous sludge increases process efficiency
- Protects pumping equipment
- Prevents blockages

Pump
Filter Press
Belt Press
Centrifuge
Bio Gas Digester
Heat Treatment
Applications - Industrial

Municipal or Industrial Incineration - Series 'A', TR and F Munchers

- Profit from waste
- Bulk reduction
- Product recycling

Organic Waste e.g. Food Processing Waste, Household Waste Fractions, Plant Thinnings Waste
### SB Muncher Range

**SB Pipeline Muncher**

\[
\text{UPSTREAM} = \text{DOWNSTREAM} + \text{HEADLOSS}
\]

### SB Channel Muncher

**CAPACITY FOR RAW SEWAGE**

### TR Muncher Range

**CT203**

CT203E (200mm)

CT203D (150mm)

CT203C (100mm)

**CT205**

CT205G (300mm)

CT205F (250mm)
**Series 'A' Muncher Range**

**Standard Series 'A' Channel**

** UPCSTREAM = DOWNSTREAM + HEADLOSS**

**Extra Hi-Flow Series 'A' Channel**

**Series F Muncher Range**

**Typical Capabilities**

<table>
<thead>
<tr>
<th>Material</th>
<th>600mm Throat</th>
<th>1000mm Throat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage screenings</td>
<td>m³/h</td>
<td>0-5</td>
</tr>
<tr>
<td>Screened refuse</td>
<td>m³/h</td>
<td>0-6</td>
</tr>
<tr>
<td>Composting material</td>
<td>m³/h</td>
<td>0-8</td>
</tr>
<tr>
<td>Alloy/tin cans</td>
<td>m³/h</td>
<td>0-2</td>
</tr>
<tr>
<td>Bio-waste</td>
<td>Kg/h</td>
<td>0-1200</td>
</tr>
</tbody>
</table>

- 600mm throat with single drive (7.5kW)
- 1000mm throat with double drive (7.5kW and 5.5kW)
**SB Muncher**

**Channel Unit**

**Pipeline Unit with Baseplate**

- **Motor**
  - kW: 1.1
  - IP: 55
  - Dim 'X': 352
  - Dim 'Y': 122
  - Dim 'Z': 330
  - Weight kg: 1.1

- **Motor**
  - kW: 1.5
  - IP: 67 & 68
  - Dim 'X': 260
  - Dim 'Y': 178
  - Dim 'Z': 201
  - Weight kg: 1.5

- **Motor**
  - kW: 2.2
  - IP: 67 & 68
  - Dim 'X': 330
  - Dim 'Y': 180
  - Dim 'Z': 230
  - Weight kg: 2.2

**TR Muncher**

- **Model No.**
  - CT203C: 100
  - CT203D: 150
  - CT203E: 200
  - CT205F: 250
  - CT205G: 300

- **Dimensions**
  - Dim 'X': 342
  - Dim 'Y': 270
  - Dim 'Z': 320

- **Weight kg**
  - 1.1 kW: 107
  - 2.2 kW: 152

All dimensions in mm unless stated otherwise.
**G.A. Drawings**

**Series 'A' Muncher**

1. **1.5kW IP55 motors (dimensions in millimetres)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>H</th>
<th>Wt. kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA202AA</td>
<td>175</td>
<td>515</td>
<td>1080</td>
<td>260</td>
<td>220</td>
</tr>
<tr>
<td>CA203AA</td>
<td>290</td>
<td>629</td>
<td>1194</td>
<td>260</td>
<td>230</td>
</tr>
<tr>
<td>CA205AA</td>
<td>440</td>
<td>779</td>
<td>1344</td>
<td>260</td>
<td>255</td>
</tr>
<tr>
<td>CA206AA</td>
<td>585</td>
<td>924</td>
<td>1489</td>
<td>260</td>
<td>265</td>
</tr>
<tr>
<td>CA210AA</td>
<td>1000</td>
<td>1339</td>
<td>1904</td>
<td>260</td>
<td>330</td>
</tr>
</tbody>
</table>

2. **2.2kW IP55 motors (dimensions in millimetres)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>H</th>
<th>Wt. kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA202AB</td>
<td>175</td>
<td>515</td>
<td>1146</td>
<td>260</td>
<td>235</td>
</tr>
<tr>
<td>CA203AB</td>
<td>290</td>
<td>629</td>
<td>1258</td>
<td>260</td>
<td>245</td>
</tr>
<tr>
<td>CA205AB</td>
<td>440</td>
<td>779</td>
<td>1408</td>
<td>260</td>
<td>265</td>
</tr>
<tr>
<td>CA206AB</td>
<td>585</td>
<td>924</td>
<td>1553</td>
<td>260</td>
<td>275</td>
</tr>
<tr>
<td>CA210AB</td>
<td>1000</td>
<td>1339</td>
<td>1970</td>
<td>260</td>
<td>350</td>
</tr>
<tr>
<td>CA215AB</td>
<td>1510</td>
<td>1849</td>
<td>2480</td>
<td>260</td>
<td>420</td>
</tr>
</tbody>
</table>

3. **4.0kW motors IP55 (dimensions in millimetres)**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>D</th>
<th>H</th>
<th>Wt. kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA202AC</td>
<td>175</td>
<td>515</td>
<td>1197</td>
<td>300</td>
<td>265</td>
</tr>
<tr>
<td>CA203AC</td>
<td>290</td>
<td>629</td>
<td>1311</td>
<td>300</td>
<td>275</td>
</tr>
<tr>
<td>CA205AC</td>
<td>440</td>
<td>779</td>
<td>1461</td>
<td>300</td>
<td>295</td>
</tr>
<tr>
<td>CA206AC</td>
<td>585</td>
<td>924</td>
<td>1606</td>
<td>300</td>
<td>305</td>
</tr>
<tr>
<td>CA210AC</td>
<td>1000</td>
<td>1339</td>
<td>2021</td>
<td>300</td>
<td>380</td>
</tr>
<tr>
<td>CA215AC</td>
<td>1510</td>
<td>1849</td>
<td>2533</td>
<td>300</td>
<td>450</td>
</tr>
</tbody>
</table>

**NOTE:** On IP67 & IP68 motor dimension D is increased by 74mm on 1.5kW motors. 18mm on 2.2kW motors. 165mm on 4.0kW motors.

**Series F Muncher**

4. **600mm Throat**

- Weight = 750kg
- Unit Depth = 599mm
- Drive = 7.5kW

5. **1000mm Throat**

- Weight = 1100kg
- Unit Depth = 599mm
- Drive = 7.5kW & 5.5kW

*ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED*
<table>
<thead>
<tr>
<th>Company</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Position</td>
</tr>
<tr>
<td>Post Code</td>
<td>Tel. No.</td>
</tr>
<tr>
<td>Fax No.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material/Liquid</th>
<th>Solids Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volts</td>
<td>Ph</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP</td>
</tr>
</tbody>
</table>

**Other Requirements/Sketch**

**Action (for internal use)**