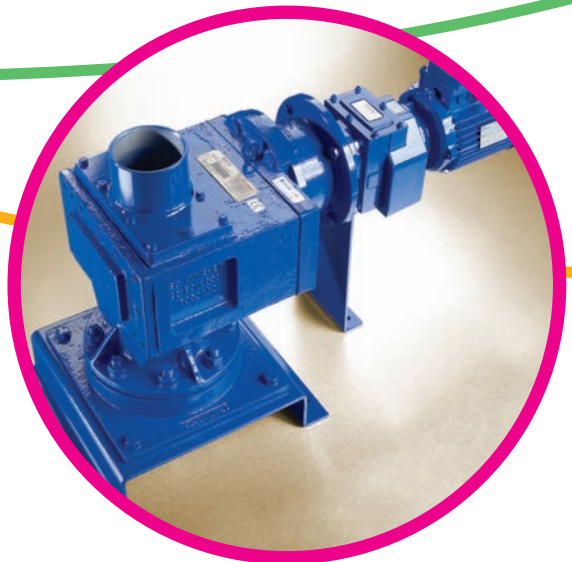
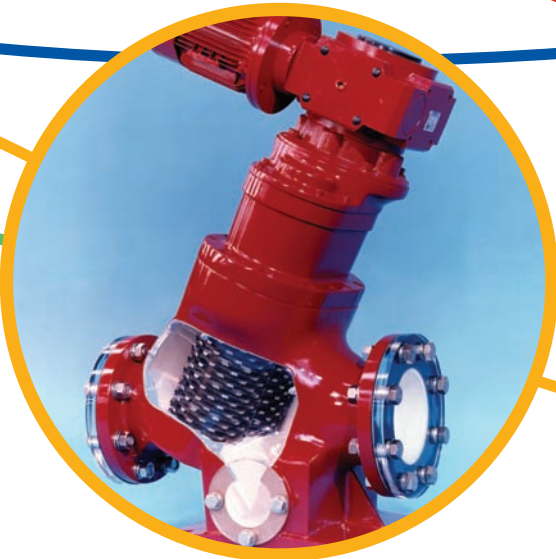
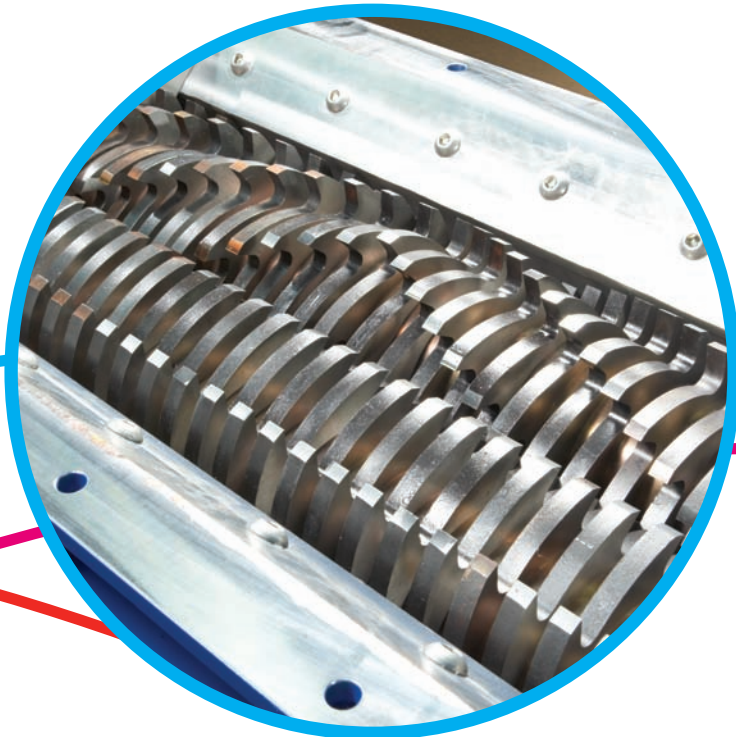


Muncher® Family



Mono® **NOV**

One Company, Unlimited Solutions

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.

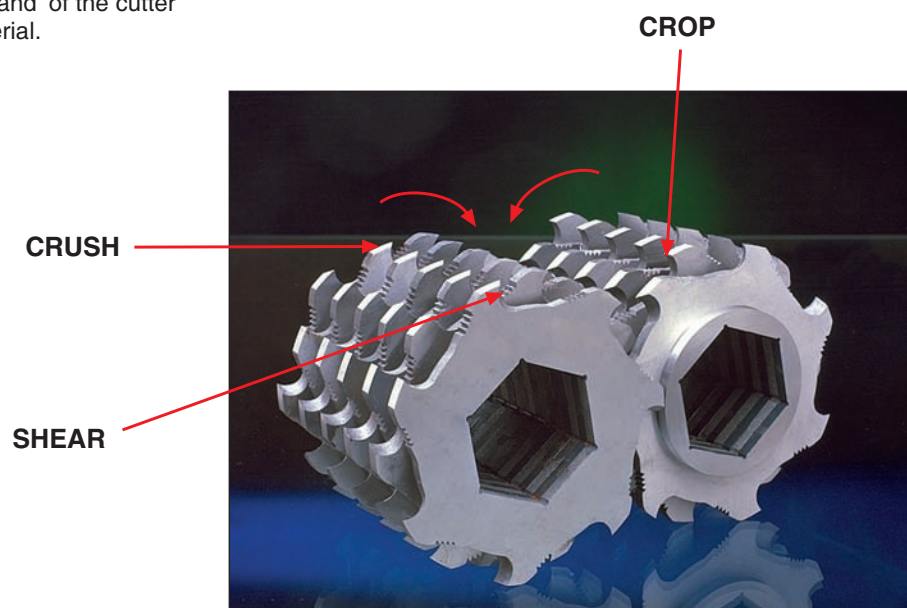
Each shaft is fitted with a series of interleaving cutters and spacers to give real "positive displacement" solids grinding. Once an object becomes trapped in the slowly revolving cutter stacks there is no escape - rags, rope, plastic, drink cans, panti-hose, wood and sundry rubbers are all easily processed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

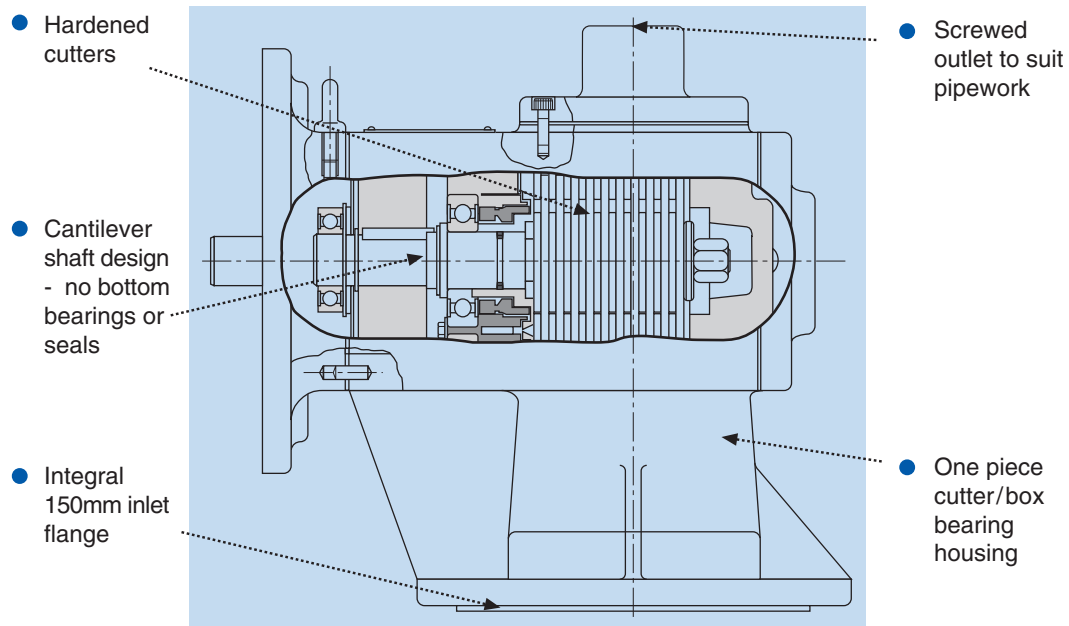
The differential speed of the cutter stacks pull apart fibrous material, whilst the leading edge and sides of the cutter teeth crop and shear plastic into small pieces. The circumferential 'land' of the cutter crushes friable or brittle material.



Features - SB and TR Muncher

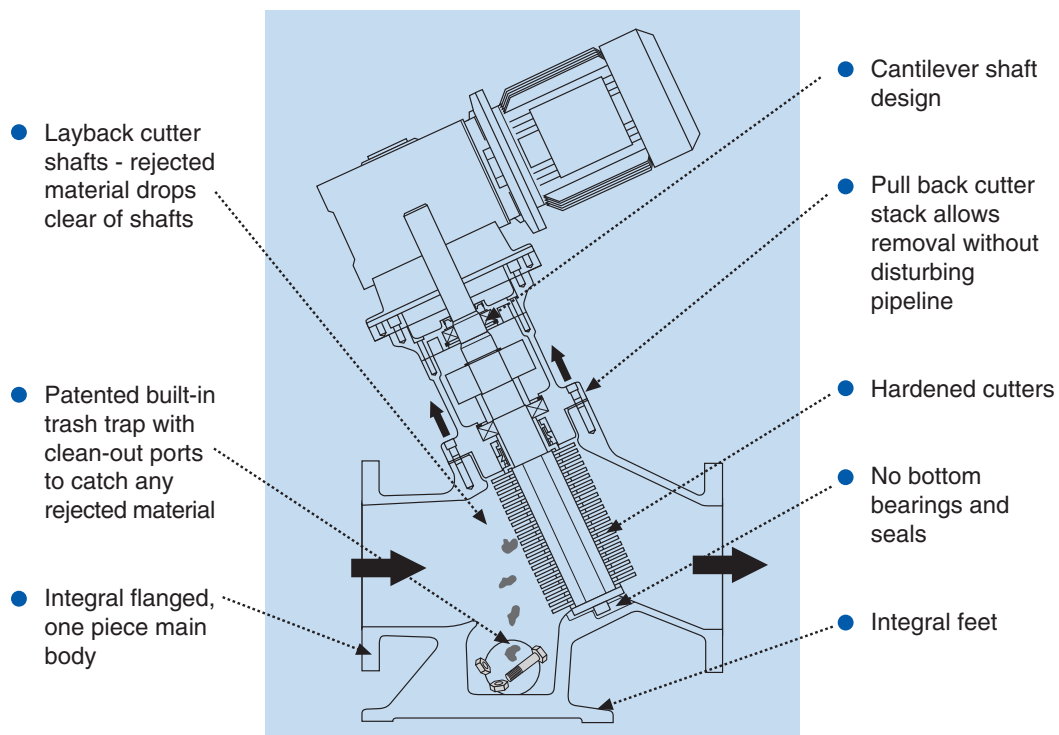
SB Range

- 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



TR Range

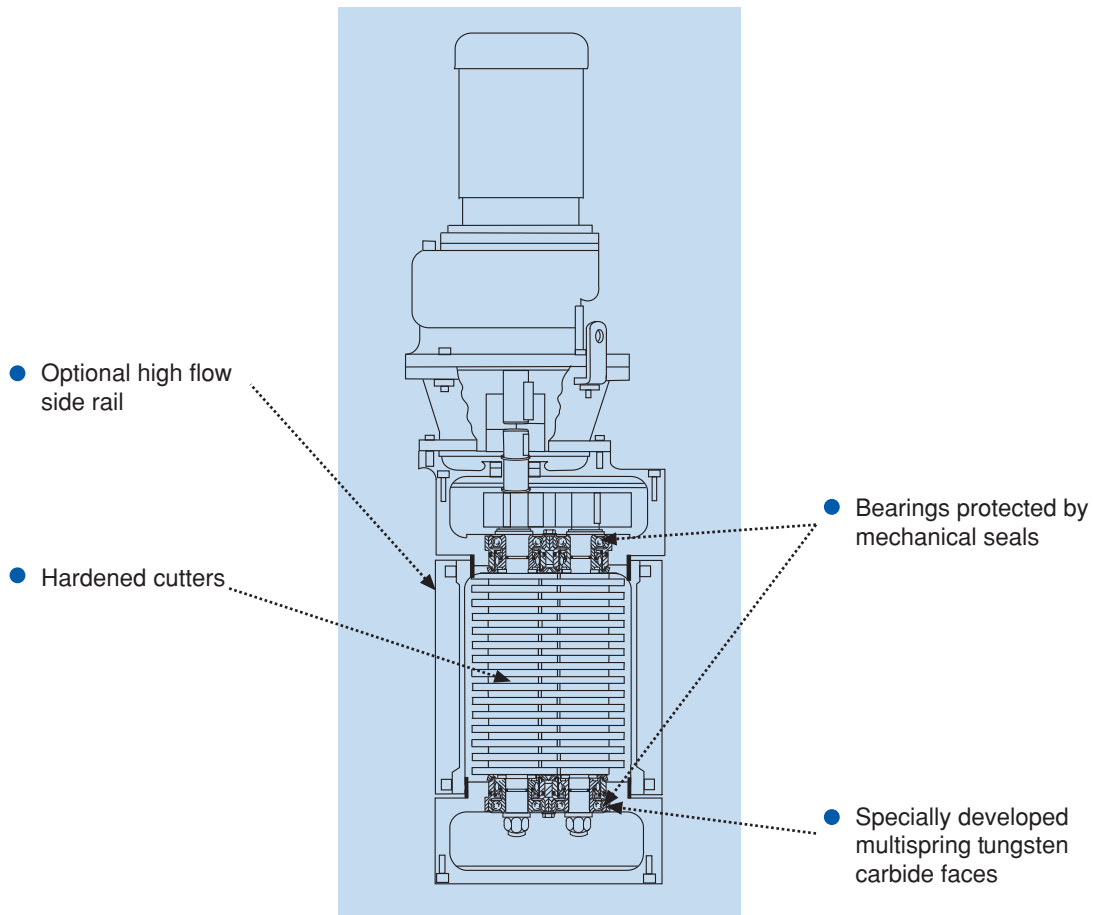
- **Latest Generation Twin Shaft Grinder**
- Designed specifically for efficient treatment of abrasive sludges



Features - Series 'A' and F Muncher

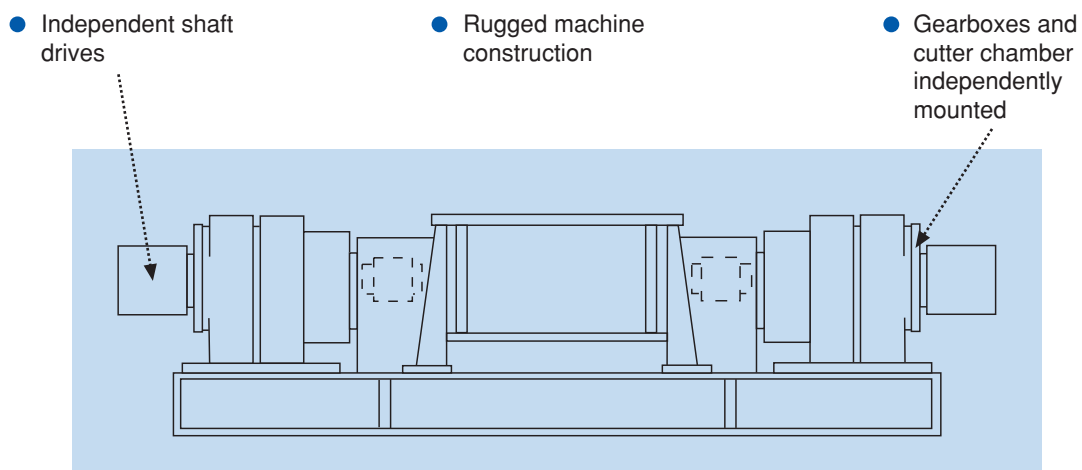
Series 'A' Range

- Engineered and improved through 35 years experience in waste water grinding



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



Control Equipment

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.

Typical PLC Unit for assembly into composite systems



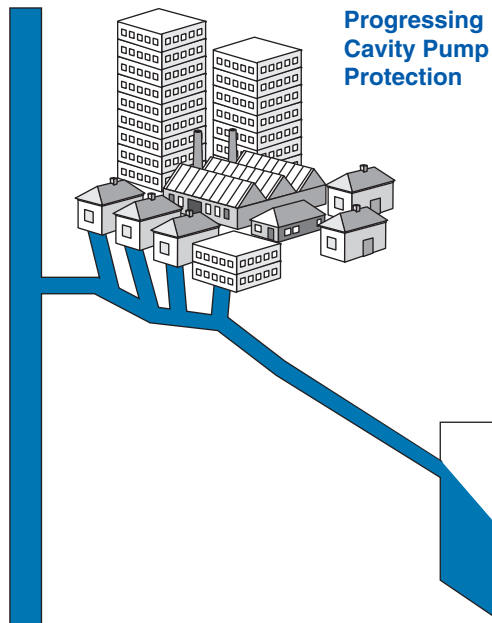
Typical Control Panel

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

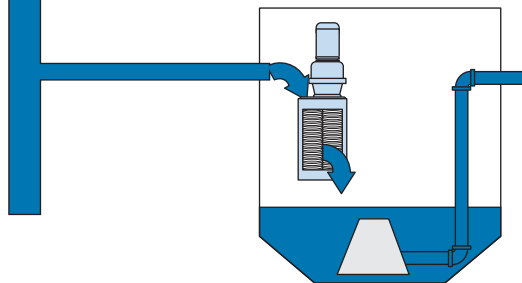
Applications - Pump Protection

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



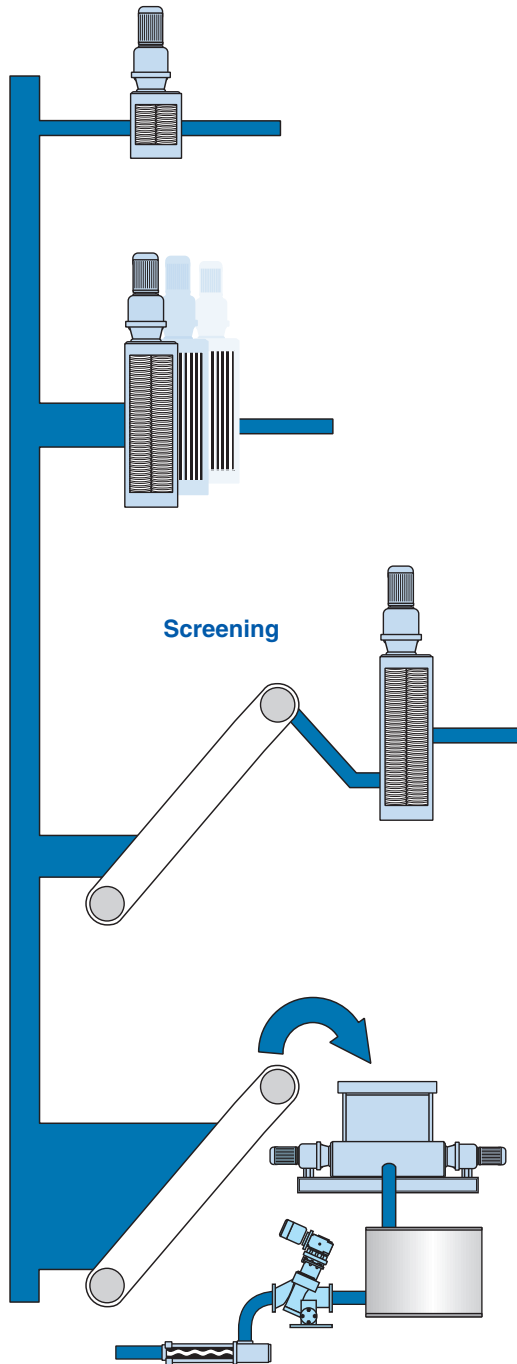
- Single Muncher protects duty/standby pumps
- Above sewage installation
- Allows use of better efficiency pumps



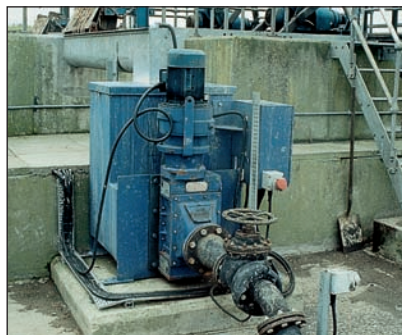
Applications - Inlet Works

SB, Series 'A' and F Munchers

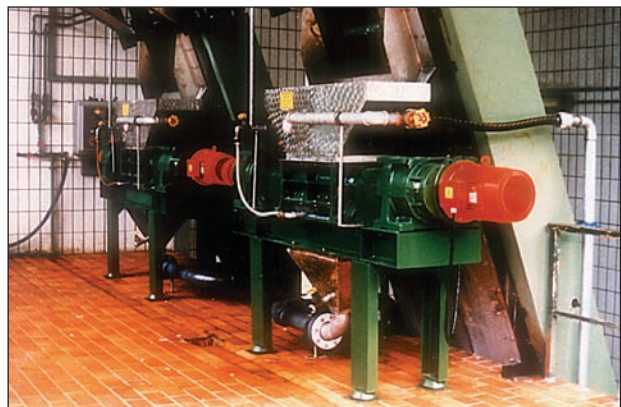
In-flow Disintegration



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

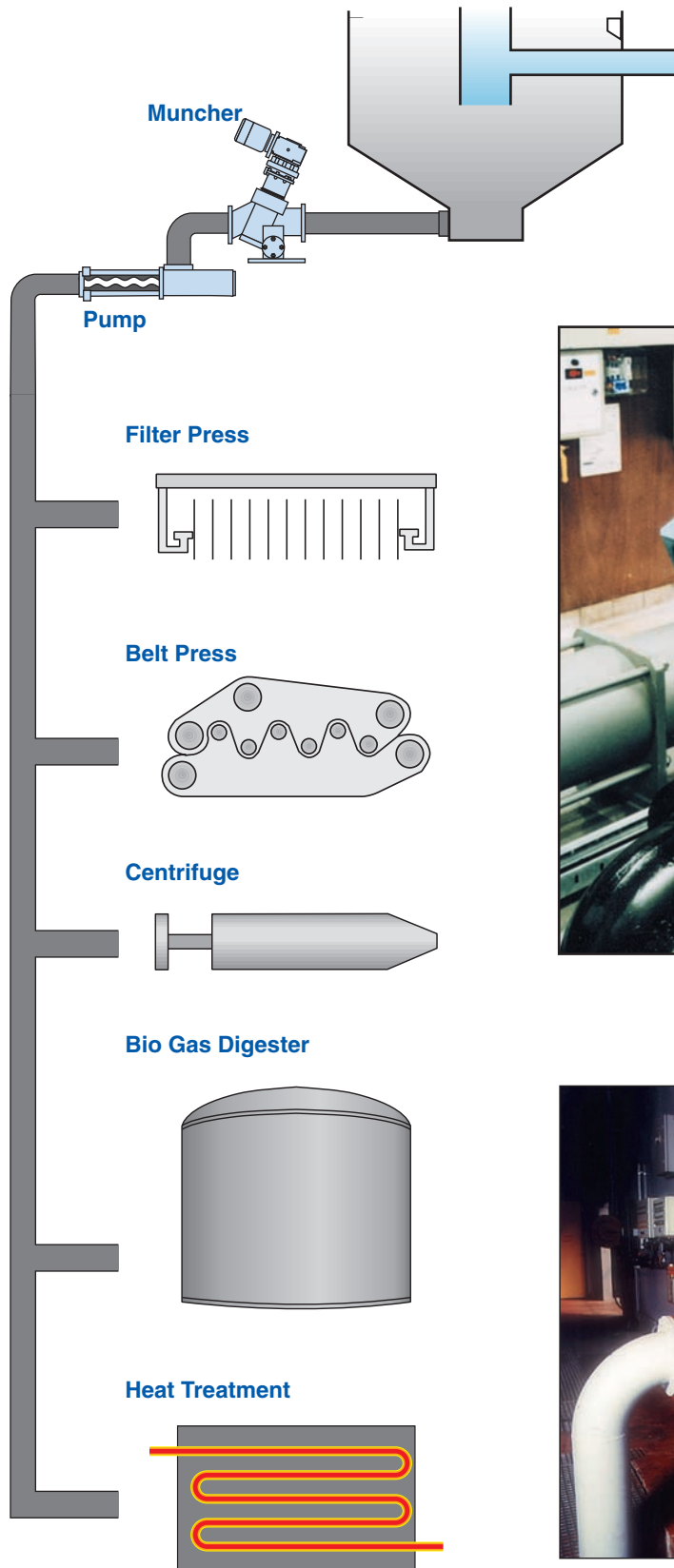


- Eliminate disposal costs
- Heavy duty capability
- Increase digester gas yield

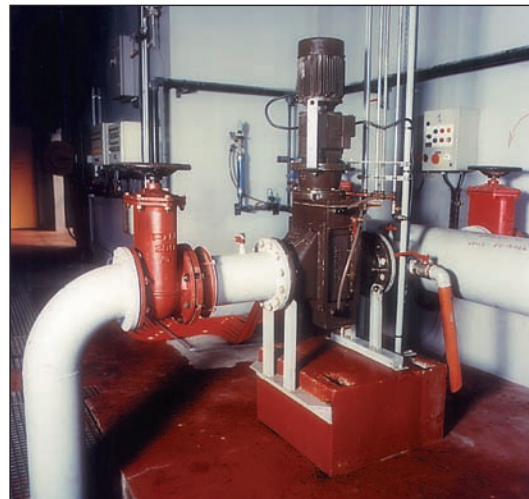
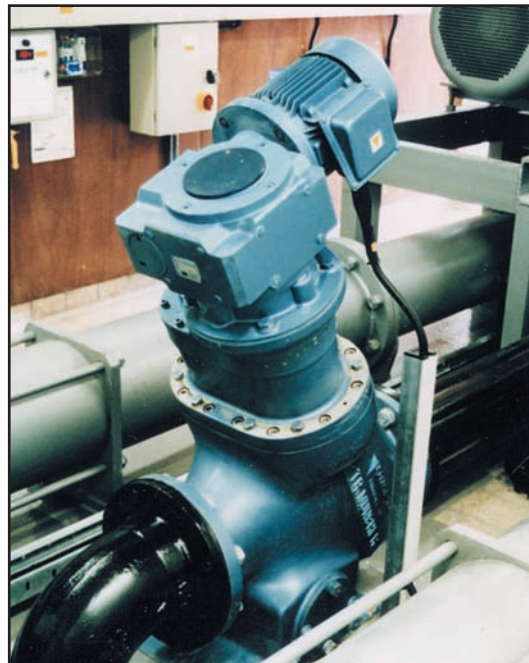


Applications - Sludge

SB, Series 'A' and TR Munchers

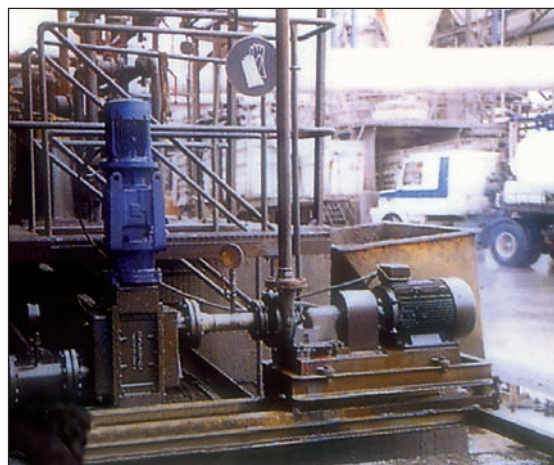
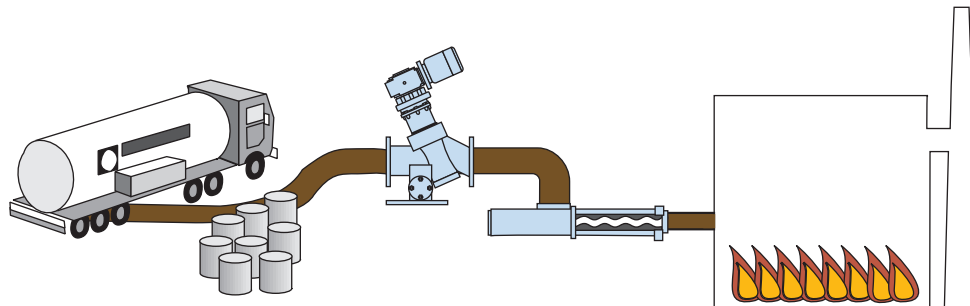


- Homogeneous sludge increases process efficiency
- Protects pumping equipment
- Prevents blockages

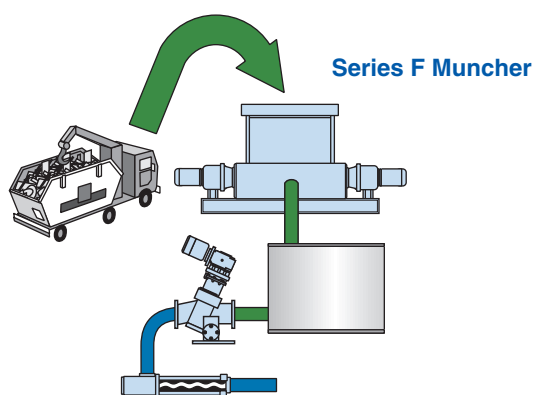


Applications - Industrial

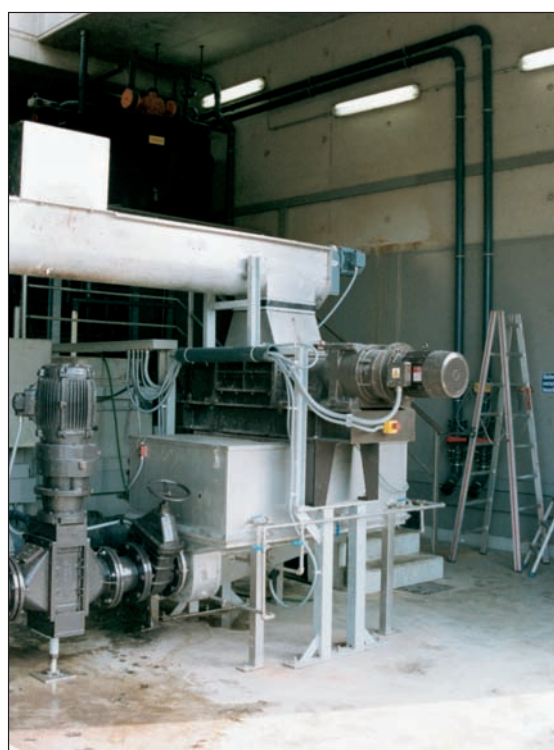
Municipal or Industrial Incineration - Series 'A', TR and F Munchers



- Profit from waste
- Bulk reduction
- Product recycling



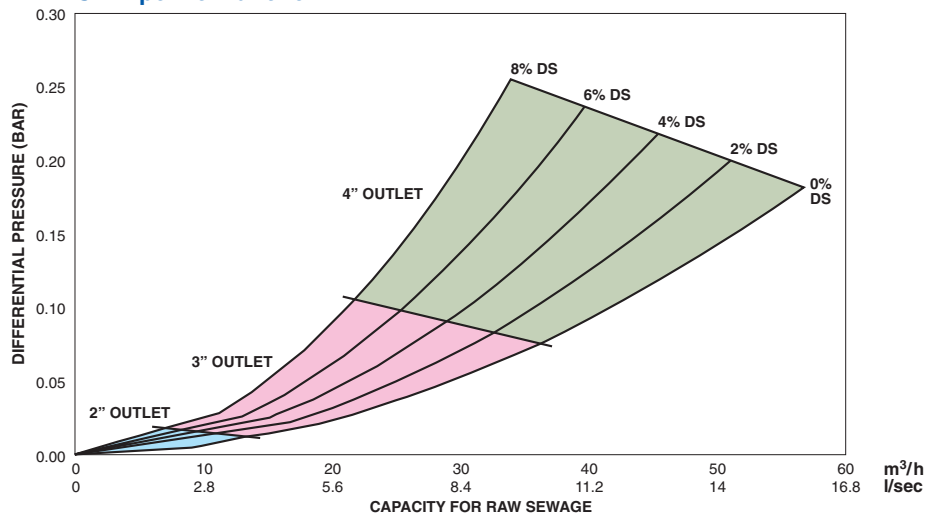
Organic Waste e.g. Food Processing Waste,
Household Waste Fractions, Plant Thinnings Waste



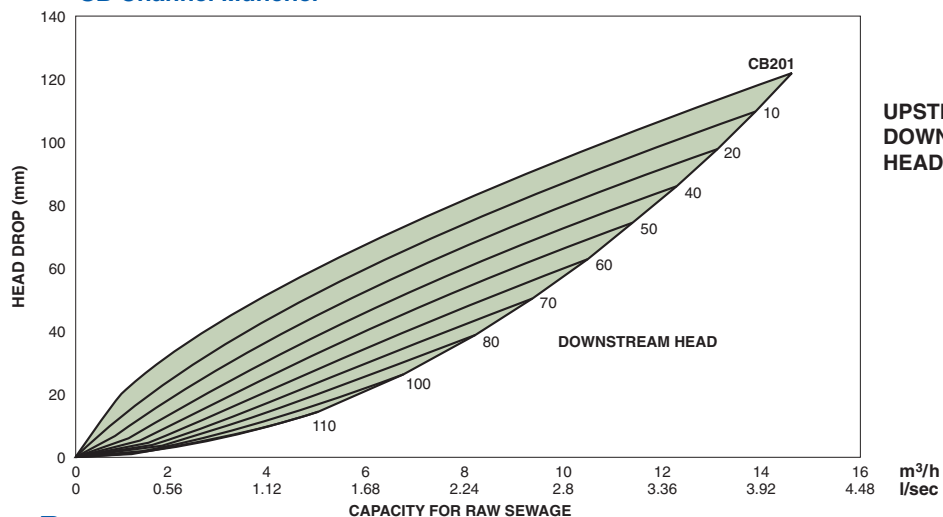
Capacities

SB Muncher Range

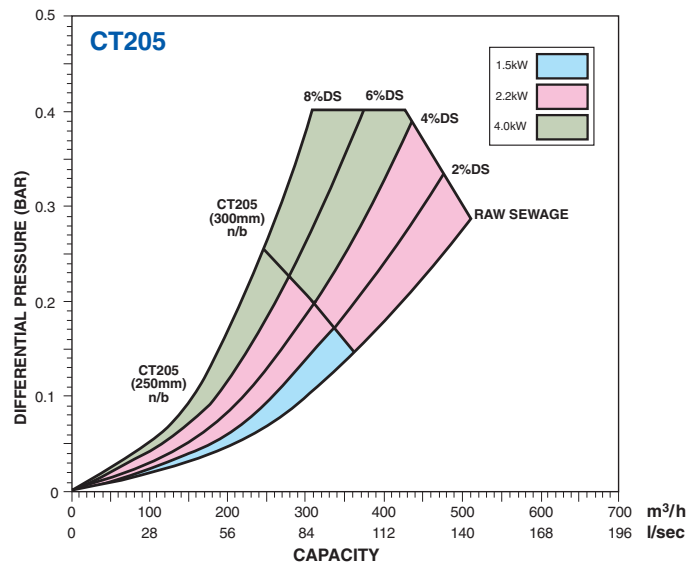
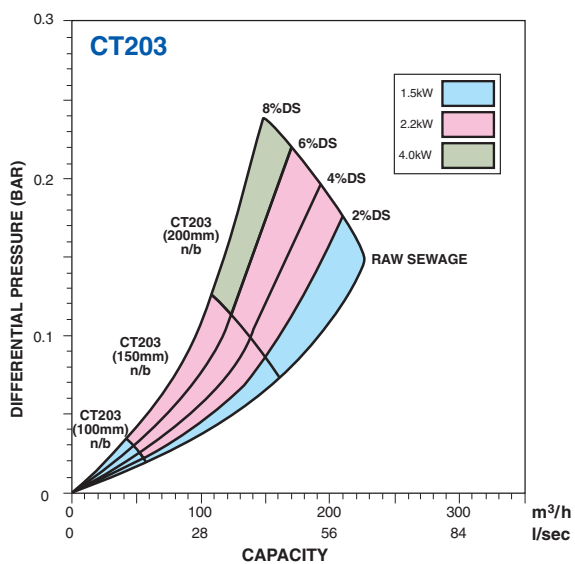
SB Pipeline Muncher



SB Channel Muncher



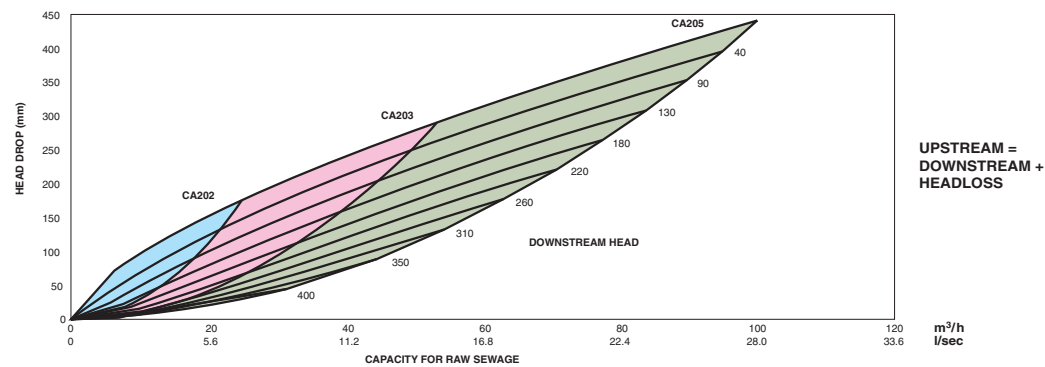
TR Muncher Range



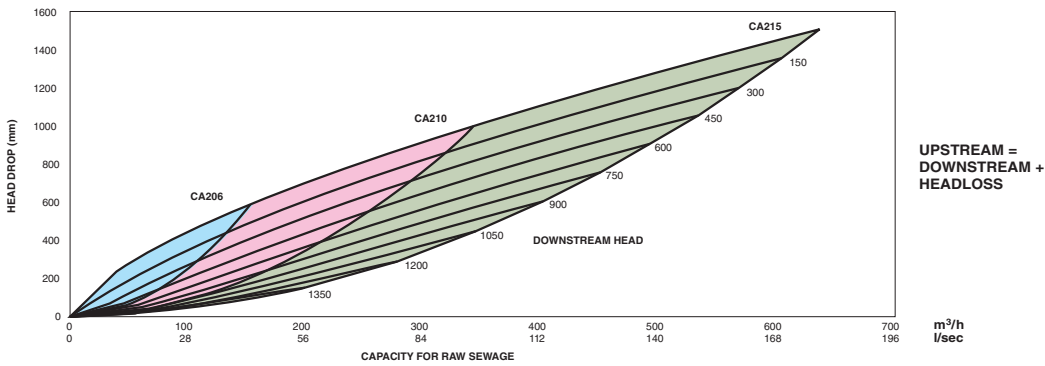
Capacities

Series 'A' Muncher Range

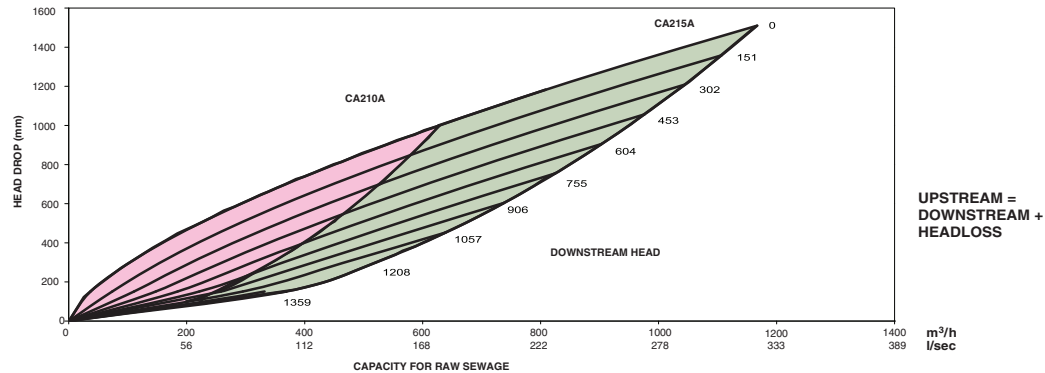
Standard Series 'A' Channel



Standard Series 'A' Channel



Extra Hi-Flow Series 'A' Channel



Series F Muncher Range

Typical Capabilities

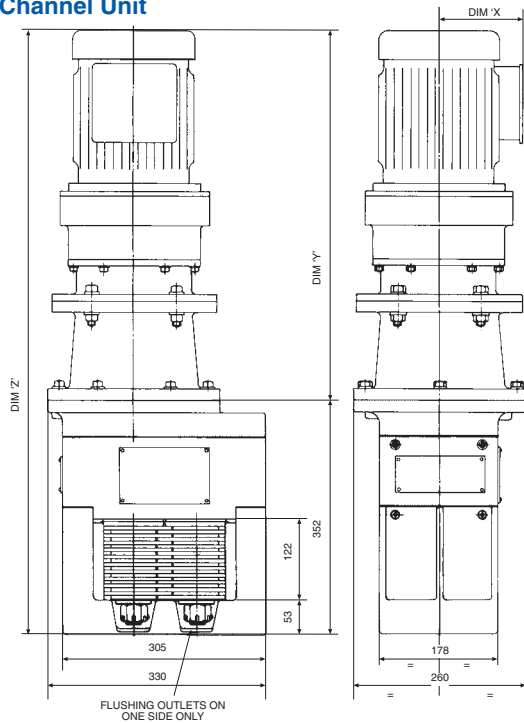
| Material | | Machine Size | |
|---------------------|------|--------------|---------------|
| | | 600mm Throat | 1000mm Throat |
| Sewage screenings | m³/h | 0-5 | 0-9 |
| Screened refuse | m³/h | 0-6 | 0-10 |
| Composting material | m³/h | 0-8 | 0-20 |
| Alloy/tin cans | m³/h | 0-2 | 0-5 |
| Bio-waste | Kg/h | 0-1200 | 0-4500 |

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

G.A. Drawings

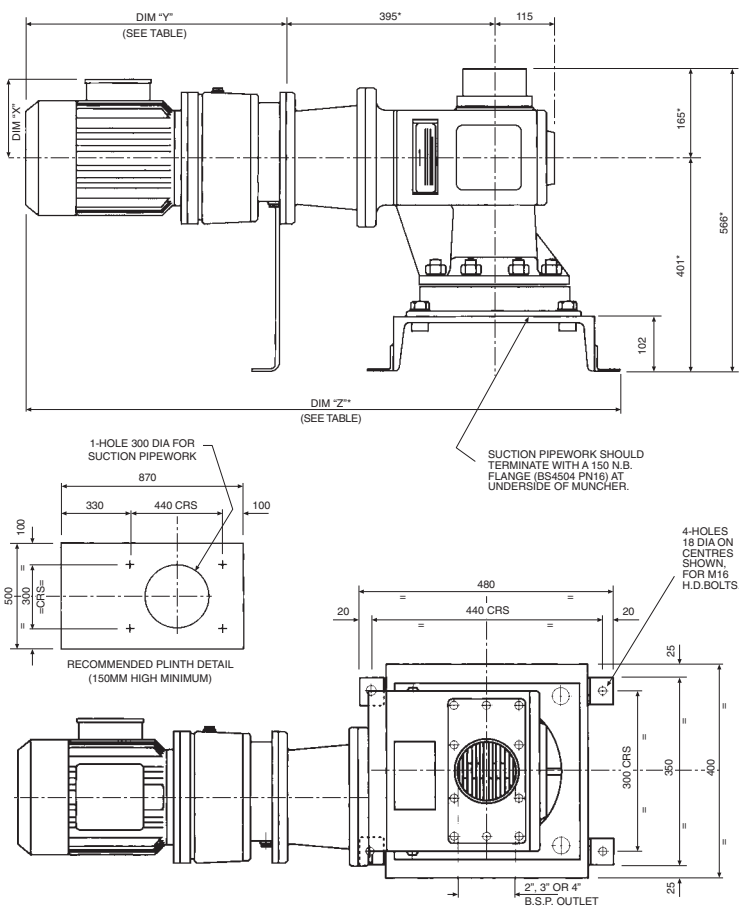
SB Muncher

Channel Unit



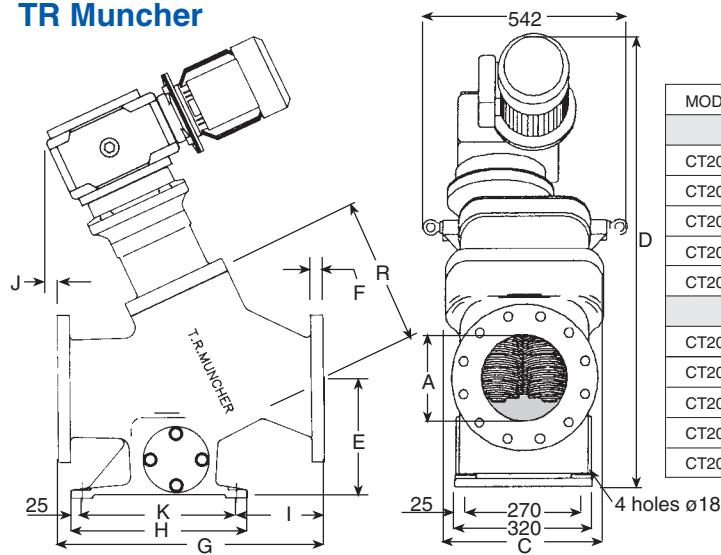
| Motor | | Dim 'X' | Dim 'Y' | Dim 'Z' | Weight kg |
|-------|---------|---------|---------|---------|-----------|
| kW | IP | | | | |
| 1.1 | 55 | 135 | 657 | 1009 | 155 |
| | 67 & 68 | 241 | 679 | 1031 | 200 |
| 1.5 | 55 | 140 | 717 | 1069 | 190 |
| | 67 & 68 | 241 | 717 | 1069 | 225 |
| 2.2 | 55 | 154 | 739 | 1091 | 195 |
| | 67 & 68 | 289 | 746 | 1098 | 260 |

Pipeline Unit with Baseplate



| Motor | Dim 'X' | Dim 'Y' | Dim 'Z' | Weight kg |
|-------|---------|---------|---------|-----------|
| 1.1kW | 135 | 507 | 1142 | 208 |
| 1.5kW | 140 | 567 | 1202 | 244 |
| 2.2kW | 154 | 589 | 1224 | 248 |

TR Muncher

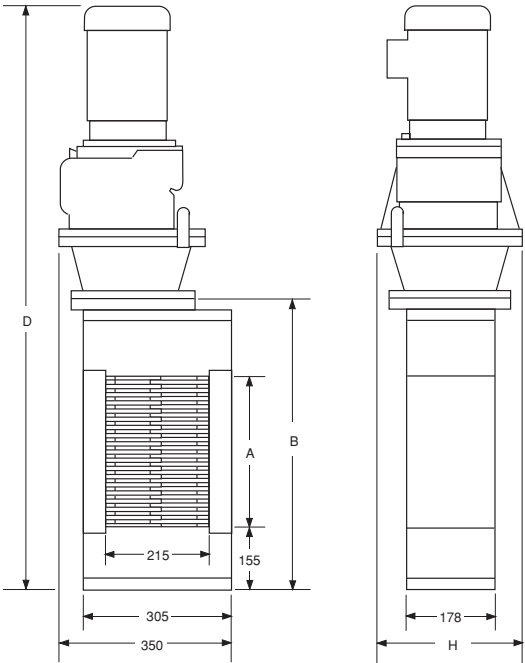


| MODEL No. | A | C | D | E | F | G | H | I | J | K | R | MAX Wt kg |
|--------------------|-----|-----|------|-----|----|-----|-----|-----|-----|-----|-----|-----------|
| 1.5 kW MOTOR | | | | | | | | | | | | |
| CT203C | 100 | 370 | 1020 | 205 | 24 | 489 | 410 | 124 | 140 | 360 | 363 | 290 |
| CT203D | 150 | 370 | 1050 | 230 | 25 | 540 | 410 | 155 | 40 | 360 | 354 | 290 |
| CT203E | 200 | 370 | 1050 | 256 | 29 | 591 | 410 | 205 | 16 | 360 | 341 | 290 |
| CT205F | 250 | 370 | 1190 | 281 | 32 | 692 | 460 | 205 | 30 | 410 | 494 | 345 |
| CT205G | 300 | 370 | 1190 | 332 | 32 | 794 | 460 | 263 | -17 | 410 | 472 | 345 |
| 2.2 & 4.0 kW MOTOR | | | | | | | | | | | | |
| CT203C | 100 | 395 | 1130 | 205 | 24 | 489 | 410 | 124 | 169 | 360 | 363 | 340 |
| CT203D | 150 | 395 | 1170 | 230 | 25 | 540 | 410 | 155 | 97 | 360 | 354 | 340 |
| CT203E | 200 | 395 | 1170 | 256 | 29 | 591 | 410 | 205 | 72 | 360 | 341 | 340 |
| CT205F | 250 | 395 | 1310 | 281 | 32 | 692 | 460 | 205 | 87 | 410 | 494 | 390 |
| CT205G | 300 | 395 | 1310 | 332 | 32 | 794 | 460 | 263 | 40 | 410 | 472 | 390 |

All dimensions in mm unless stated otherwise.

G.A. Drawings

Series 'A' Muncher



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.

1.5kW IP55 motors (dimensions in millimetres)

| Model No. | A | B | D | H | Wt. kg |
|-----------|------|------|------|-----|--------|
| CA202AA | 175 | 515 | 1080 | 260 | 220 |
| CA203AA | 290 | 629 | 1194 | 260 | 230 |
| CA205AA | 440 | 779 | 1344 | 260 | 255 |
| CA206AA | 585 | 924 | 1489 | 260 | 265 |
| CA210AA | 1000 | 1339 | 1904 | 260 | 330 |

2.2kW IP55 motors (dimensions in millimetres)

| Model No. | A | B | D | H | Wt. kg |
|-----------|------|------|------|-----|--------|
| CA202AB | 175 | 515 | 1146 | 260 | 235 |
| CA203AB | 290 | 629 | 1258 | 260 | 245 |
| CA205AB | 440 | 779 | 1408 | 260 | 265 |
| CA206AB | 585 | 924 | 1553 | 260 | 275 |
| CA210AB | 1000 | 1339 | 1970 | 260 | 350 |
| CA215AB | 1510 | 1849 | 2480 | 260 | 420 |

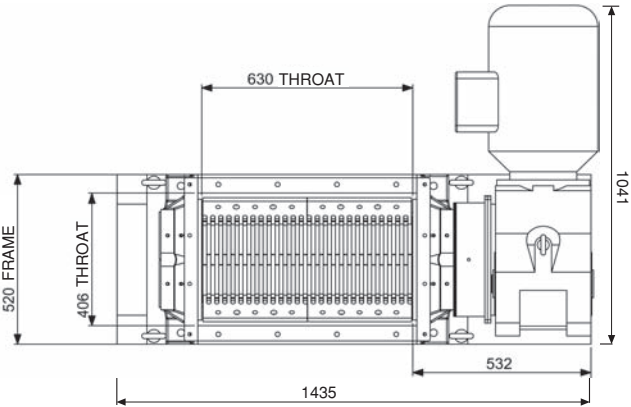
4.0kW motors IP55 (dimensions in millimetres)

| Model No. | A | B | D | H | Wt. kg |
|-----------|------|------|------|-----|--------|
| CA202AC | 175 | 515 | 1197 | 300 | 265 |
| CA203AC | 290 | 629 | 1311 | 300 | 275 |
| CA205AC | 440 | 779 | 1461 | 300 | 295 |
| CA206AC | 585 | 924 | 1606 | 300 | 305 |
| CA210AC | 1000 | 1339 | 2021 | 300 | 380 |
| CA215AC | 1510 | 1849 | 2533 | 300 | 450 |

Series F Muncher

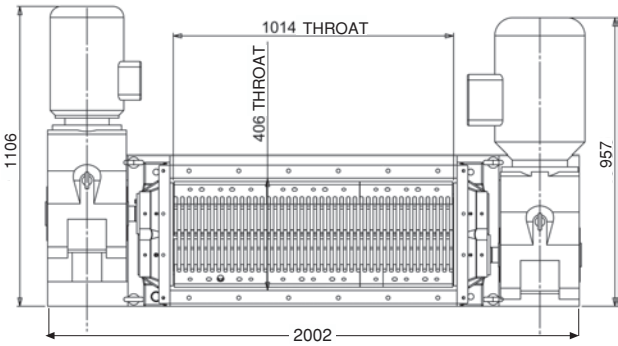
600mm Throat

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



1000mm Throat

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



ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED

Proposal Request



Request For Information

Please fax to address shown on back page.

Company _____ Name _____
Address _____ Position _____
_____ Tel. No. _____ Extension _____
_____ Post Code _____ Fax No. _____

Material/Liquid

Solids Content

Volts _____ Ph _____ Hz _____
Capacity _____

Special Electrical Requirements _____

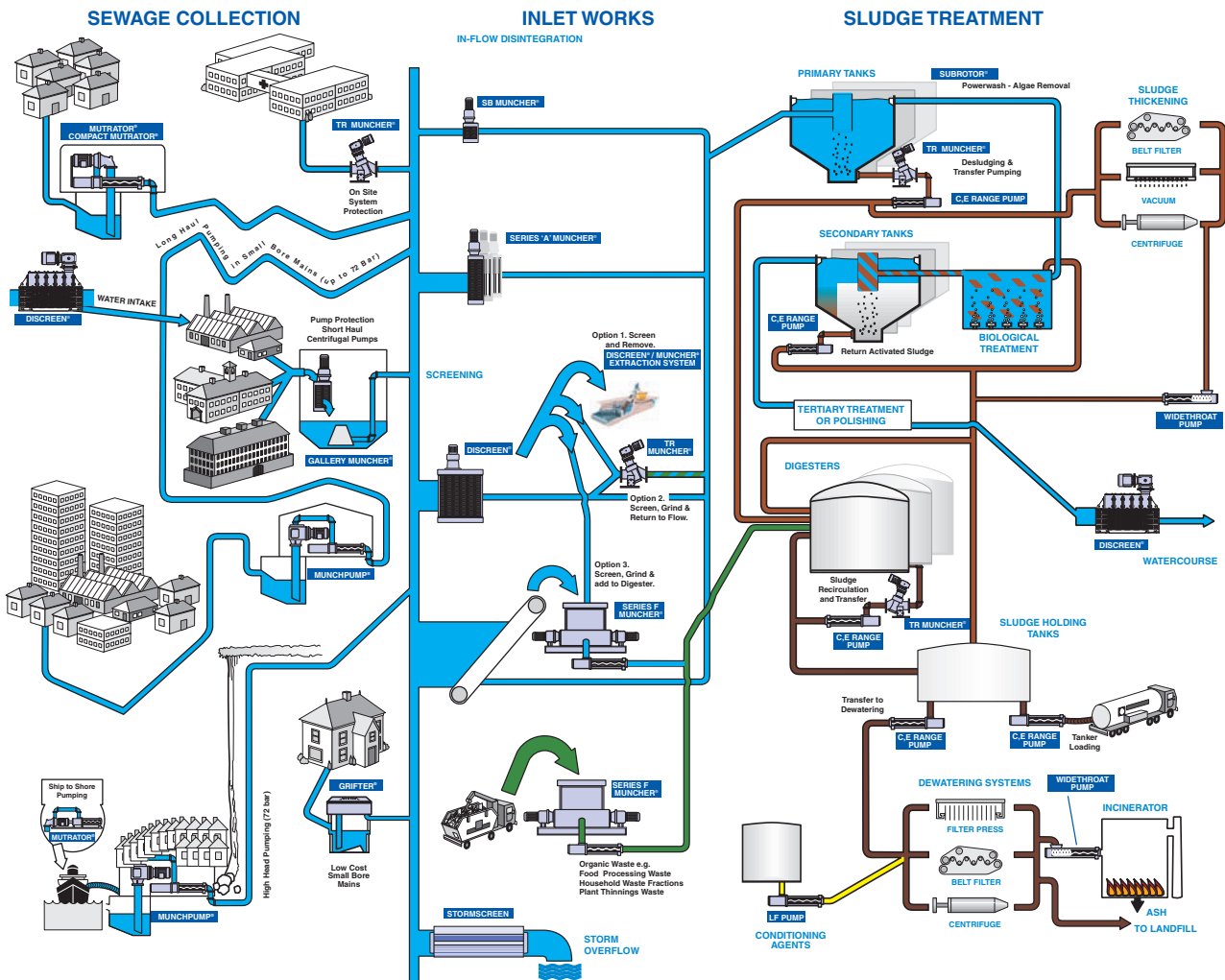
IP _____ Zone _____

Head/Pressure _____

Other Requirements/Sketch

Action (for internal use)

Processing Flowchart



Notes

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One Company, Unlimited Solutions