

**MODEL 1100Z
DRY MATERIALS FEEDER**



**OPERATION
AND
MAINTENANCE MANUAL**

Contents

1.	INTRODUCTION	1
2.	SAFETY PRECAUTIONS.....	2
2.1.	General	2
2.2	Mechanical Precautions:.....	2
2.3	Electrical Precautions:	2
3.	INSTALLATION.....	3
4.	CALIBRATION AND OPERATION	4
4.1	Calibration	4
4.2	Operational Adjustments.....	4
5.	MAINTENANCE	5
5.1	General Care	5
5.2	Drive Motor (1).....	5
5.3	Controller (A.C. or D.C.).....	5
5.4	Gear Reduction Box (4)	5
5.5	Shaft Seal Assembly (Fig. 2)	5
6.	DISMANTLING PROCEDURES.....	6
6.1	Feeder Removal.....	6
6.2	Tube Plate Removal.....	6
6.3	Metering Auger Removal	6
6.4	Conditioning Auger / Blade Removal	7
6.5	Seal Assembly : Auger Drive Shaft	7
6.6	Seal Assembly Removal : Conditioning Drive Shaft	7
6.7	Re-Assembly	7
	PARTS LIST - GENERAL ASSEMBLY	8
	FIG. 1 MODEL 1100Z DRY MATERIAL FEEDER	10
	FIG. 2 AUGER SHAFT SEAL ASSEMBLY	11
	APPENDIX	12
	EQUIPMENT DECONTAMINATION PROCEDURE	13
	EQUIPMENT DECONTAMINATION ADVICE	14

1. INTRODUCTION

Your Acromet Model 1100Z Volumetric Feeder is a Dry Material Feeder employing the new and unique principles of material control to provide exceptional metering accuracy and performance with the additional benefit of being self-emptying.

Versatility of design makes provision for the application of a variety of auger systems and other features, the selection of which is dependent on the characteristic of the product to be handled and the ease or otherwise with which an acceptable degree of feed rate accuracy is achieved.

There are over eleven (11) Metering Auger sizes available in the range for the Model 1100Z Feeder. All size Metering Augers and Discharge Cylinders devices are interchangeable on the Model 1100Z.

The Model 1100Z Volumetric Feeder is both rugged and reliable, featuring a simple clean self-supporting design that will give long service life with the minimum of maintenance.

2. SAFETY PRECAUTIONS

Please read and familiarise yourself with all Sections of this and other Equipment Manuals before proceeding with installation.

2.1. General

- Observe all standard precautions that apply to moving machinery.
- Observe all standard precautions that apply to electrical equipment, drive and controls.
- Pay particular attention to special safety "cautions" and "notes" in all Manuals.

2.2 Mechanical Precautions:

Prior to undertaking any mechanical maintenance, repairs, installation etc:

- **SWITCH OFF**, and disconnect power before proceeding.
- Remove and/or lock switch in the "**OFF**" position.
- Ensure Feeder infeeds and discharges are closed off to prevent feed material from contaminating personnel and equipment.
- Take precautions to protect openings to moving components and prevent the ingress of loose tools or parts.
- Personnel must wear the appropriate protective safety attire and remove loose clothing, jewellery, etc.

2.3 Electrical Precautions:

Before undertaking work on the electrical controls or drives;

- **DISCONNECT POWER** and place a notice to advise others of the type of work in progress.
- Ensure all necessary grounds are in place and solid.
- **DO NOT** disconnect or disable ground connections.
- Follow all electrical regulations as required by electrical engineering trades.

3. INSTALLATION

3.1 Install the Feeder on a level surface for optimum performance. Use masonry anchors or suitable bolts that remain below and flush with foundation surface or support. This will allow the Feeder to slide out for maintenance if Conditioning Chamber is to be bolted under a large permanent hopper.

NOTE: Operations 3.2 and 3.3 must be carried out by a Qualified Electrician.

3.2 Connect the drive motor/s (1) to the electrical supply. The type of drive used is often decided by customer preference and may be either:

- 3.2.1 Fixed speed motor operated by a timer.
- 3.2.2 Fixed speed A.C. Motor controlled manually or automatically by variable frequency inverter to vary the speed.
- 3.2.3 D.C. Variable Speed Motor controlled manually or automatically by SCR Controller.
- 3.2.4 Fixed speed motor for the conditioning device.

WARNING: DO NOT OPERATE THE FEEDER WITH THE FEED TUBE REMOVED OR PLACE HANDS OR ANY OTHER OBJECT WITHIN HOPPER AREA WHILST FEEDER IS IN OPERATION. THERE IS A HIGH RISK OF INJURY TO PERSONNEL AND/OR DAMAGE TO THE AUGER.

3.3 Check the Feeder rotation by a short run. The rotation **MUST BE CLOCKWISE** when facing the discharge tube or damage to the Feeder will occur. Swap the two power leads over to change the direction of rotation. Product discharge from the Feeder must fall freely and not be restricted in any way.

4. CALIBRATION AND OPERATION

4.1 Calibration

Fill the Conditioning Chamber and Hopper with material and run the Feeder for about one minute to ensure that the Metering Auger is operating with a complete supply of material. The material level must always be, at least, 100mm above the Feed Auger.

When the Feeder is fully operational, calibrating the output with the settings on the Variable Speed Drive is as follows. At each setting, collect several samples, each for a pre-determined time interval. Weigh the samples and record the weight against each selected speed setting. Repeat the procedure until the full range has been calibrated.

CAUTION:

Always use fresh material in Feeder for calibration purposes, in exactly the same condition that the material will be supplied to the hopper when the process is running continuously. Due to the "conditioning" effect on the material through the feeder, incorrect calibration values will result if materials collected as samples are returned to the hopper.

Some materials, particularly those supplied normally to the hopper in the "aerated" condition, become progressively denser each time they pass through the Feeder, resulting in "heavier" samples for the same volume output.

4.2 Operational Adjustments

If, during future operations or Plant changes, it becomes necessary to vary the flow rate beyond the nominal limits, then the following is applicable:

- For a small variation to the minimum or maximum speed setting on the Controller, please consult your Controller Manual.

Note: The minimum speed on a DC Controller is normally Factory set to approximately 5% of full speed. This ensures the Motor is protected against infrequent pulsing when the speed potentiometer is adjusted to zero and power remains on.

- For large variations to the Flow Rate then different sizes and types of Feed Augers and Conditioning Devices are available from Acromet. If your operational requirements change, necessitating a different feed rate, or your material characteristics change necessitating a different conditioning device or style of Auger, please contact Acromet for advice and parts.

5. MAINTENANCE

5.1 General Care

Periodic cleaning of the entire Feeder is recommended, especially when metering adhesive, cohesive or hygroscopic products. When cleaning **DO NOT** hose with water unless your Feeder is specially built for such cleaning methods.

Humidity can have a pronounced effect on some dry materials, so ensure that adequate ventilation or air drying/heating is available to prevent the material from clogging or caking due to moisture absorption.

5.2 Drive Motor (1)

Refer to Manufacturer's Instructions.

5.3 Controller (A.C. or D.C.)

Refer to Manufacturer's instructions.

5.4 Gear Reduction Box (4)

The worm gear reduction box is supplied with long term lubrication and is charged with a synthetic oil at time of manufacture. After approximately 7,500 hours of operation, or a period of three (3) years, (whichever is the sooner) it is recommended to drain and clean the gear unit thoroughly and recharge it with a branded synthetic lubricant. In arduous conditions it is recommended to review the replenishment on a more regular basis.

Mobil	SHC 634 or equivalent is recommended
Volume	BS50 Worm Box = 0.35 litres
	BS63 Worm Box = 0.35 litres

5.5 Shaft Seal Assembly (Fig. 2)

The seal has been designed to eliminate any necessity for lubrication and will often last several years dependent upon the abrasive properties of the product being metered. However, if abrasive particles are present, it is advisable to replace the Seal Assembly (Fig. 2) at least once every twelve (12) months. Should the seal start to fail and material manage to penetrate the inner Teflon Packing and Outer Seal Cap, this will be evidenced by a leakage deposit through the Adaptor Bracket which is located between the rear wall of the Conditioning Chamber (5) and the Reduction Gearbox (4).

(Refer to "Dismantling Procedures" for instructions on replacing seals).

6. DISMANTLING PROCEDURES

6.1 Feeder Removal

6.1.1 Run the Feeder until the hopper is empty. If a slide gate is fitted, close off the material feed from the hopper to the Conditioning Chamber (5).

6.1.2 Disconnect Motor (1) from power supply and isolate.

THIS MUST BE DONE BY A QUALIFIED ELECTRICIAN.

6.1.3 If the Feeder is provided with a circular inlet cover and a flexible connector between the cover and the bottom of the hopper, remove the flexible connector and then dismantle the cover bolts.

6.1.4 Where the Conditioning Chamber (5) is bolted directly to the bottom of a hopper, remove the bolts between the Conditioning Chamber (5) and the hopper.

6.1.5 Remove the bolts securing the Base Plate (12) to the foundation / support and slide the complete feeder out for maintenance access.

6.2 Tube Plate Removal

6.2.1 The Tube Plate is easily removed by unbolting the six fasteners securing the flange of the Tube Plate (6) to the face of the Conditioning Chamber (5).

6.2.2 Slide the Tube Plate (6) along the length of the Metering Auger (7) until clear. Care should be taken not to bend the Auger (if Auger has not already been removed), or allow spillage of material still retained in the Conditioning Chamber. Carefully remove the Tube Plate Gasket (11).

NOTE: Model 1100Z Feeders furnished with extended length Augers require the removal of the Metering Auger before the Tube Plate can be removed. This is necessary because the Metering Auger cannot support itself from the drive end only.

6.3 Metering Auger Removal

6.3.1 The Metering Auger (7) incorporates a left hand internally threaded hub and is fastened to the Auger Drive Shaft (19) at its extension within the Feed Chamber.

6.3.2 To remove the Metering Auger, rotate **CLOCKWISE** (when facing the discharge end of the Auger) until Auger is disengaged.

6.4 **Conditioning Auger / Blade Removal**

- 6.4.1 The Conditioning Auger (42) / Blade (43) can be removed after removal of the Metering Auger.
- 6.4.2 Slacken off cap head retaining screws and carefully remove them clear of the Chamber. Remove the Conditioning Unit clear of the Chamber.

6.5 **Seal Assembly Removal**

The Seal Assembly (21) is located in the end of the Housing Plate (8).

Unscrew, **anti-clockwise**, the Seal Cap (22), using a corkscrew type packing removal tool, remove the Braided Teflon Seal Rings (24). Remove the Follower (23) and the Spring (25).

NOTE: For ease of assembly, the Auger Seal is supplied as a service replacement kit (21) complete with pre-cut Braided Teflon Packing. See Parts List for Kit Numbers.

6.6 **Seal Assembly Removal : Conditioning Drive Shaft**

This Seal Assembly (112) is located in the Adaptor Plate (8) and behind the Conditioner Drive Shaft Flange. Remove the circlip at the rear of the gearbox and withdraw the Conditioning Drive Shaft into the chamber.

Unscrew, **anti-clockwise**, the Seal Cap (104) using a corkscrew type packing removal tool, remove the Braided Teflon Seal Rings (108). Remove the Follower (107) and the Spring (110).

Note: For ease of assembly the Auger Seal is supplied as a service replacement kit (21) complete with pre-cut Braided Teflon Packing. See Parts List for Kit Numbers.

6.7 **Re-Assembly**

Re-assemble in reverse order to the dismantling sequence.

MODEL 1100Z DRY MATERIAL FEEDER

PARTS LIST - GENERAL ASSEMBLY

ITEM	PART NO	DESCRIPTION	QTY REQD	NOTES
1	001- AS SPEC	DRIVE MOTOR	1	
2	002- AS SPEC	PLATE MOTOR ADAPTOR	1	#
3	1100Z	COUPLING, MOTOR	1	
4	004-AS SPEC	WORM DRIVE REDUCTION GEARBOX	1	
5	005- AS SPEC	CONDITIONING CHAMBER, +30 LTR HOPPER	1	#
5X	005X- 35931	CONDITIONING CHAMBER ONLY	1	#
6	006- AS SPEC	DISCHARGE TUBE PLATE	1	
7	007- AS SPEC	METERING AUGER	1	
8	008- 35771	SEAL HOUSING PLATE	1	
10	010- AS SPEC	GASKET, ADAPTOR BRACKET	1	
11	011- AS SPEC	GASKET, DISCHARGE TUBE PLATE	1	
12	012- 35823	BASE PLATE	1	
13	013- AS SPEC	GASKET, HOPPER – CIRCULAR INLET	1	#
14	014- AS SPEC	EXTENSION HOPPER	1	#
15	015- AS SPEC	CIRCULAR INLET	1	#
19	019- 35773	DRIVE SHAFT	1	
27	027-08/11/31	WASHER, FLAT, Ø 8mm	14	
28	028-08/02/91	SCREW, HEX, M10 (MOTOR)	4	

MODEL 1100Z GENERAL ASSEMBLY CONT.

ITEM	PART NO	DESCRIPTION	QTY REQD	NOTES
29	029-09/01/25	WASHER, FLAT, Ø 10mm	4	
32	032-08/11/26	NUT, M8	10	
35	035-08/02/110	SCREW, HEX, M8x16, (CIRCULAR INLET)	10	#
37	037-08/02/111	SCREW, HEX, M8x16, (C-C / HOPPER)	10	#
38	038-09/01/31	WASHER, FLAT, Ø 8mm	10	#
39	039-08/01/79	SCREW, CAP, M8 x 32 (COND. AUGER)	3	#
40	040-08/01/78	SCREW, CAP, M8 x 25 (COND. BLADES)	3	#
42	042- 03805	CONDITIONING AUGER (LIME)	1	#
43	043- 35084	CONDITIONING BLADES	1	#
44	044-08/11/27	NUT, M10 (MOTOR)	4	
95	095-11/01/10	CIRCLIP, EXTERNAL (DRIVE SHAFT)	2	
104	104-AS SPEC	SEAL CAP	1	⊗
107	107-AS SPEC	FOLLOWER	1	⊗
108	108-AS SPEC	PACKING	1	⊗
110	110-AS SPEC	PACKING	1	⊗
112	AFSK-1100Z	SEAL KIT	1	⊗

Notes:

⊗ Available in kit form only

When fitted

WHEN ORDERING SPARE PARTS PLEASE STATE:

- The Feeder Serial Number
- The Feeder Model Number
- The Spare Part Item Number and full description

MODEL 1100Z DRY MATERIAL FEEDER

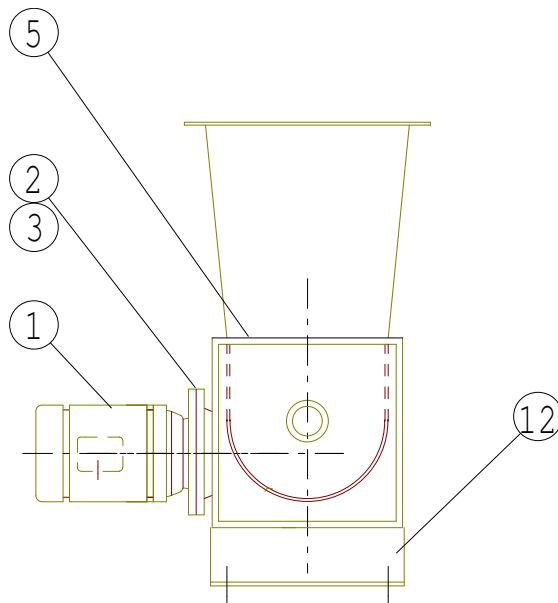
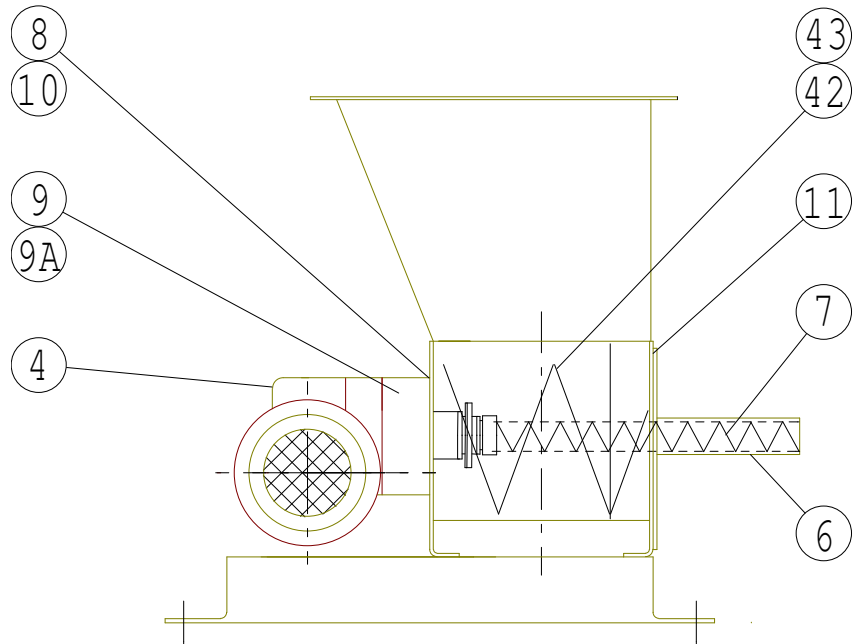


FIG. 1

AUGER SHAFT SEAL ASSEMBLY

AVAILABLE IN KIT FORM ONLY, ITEM No. 21

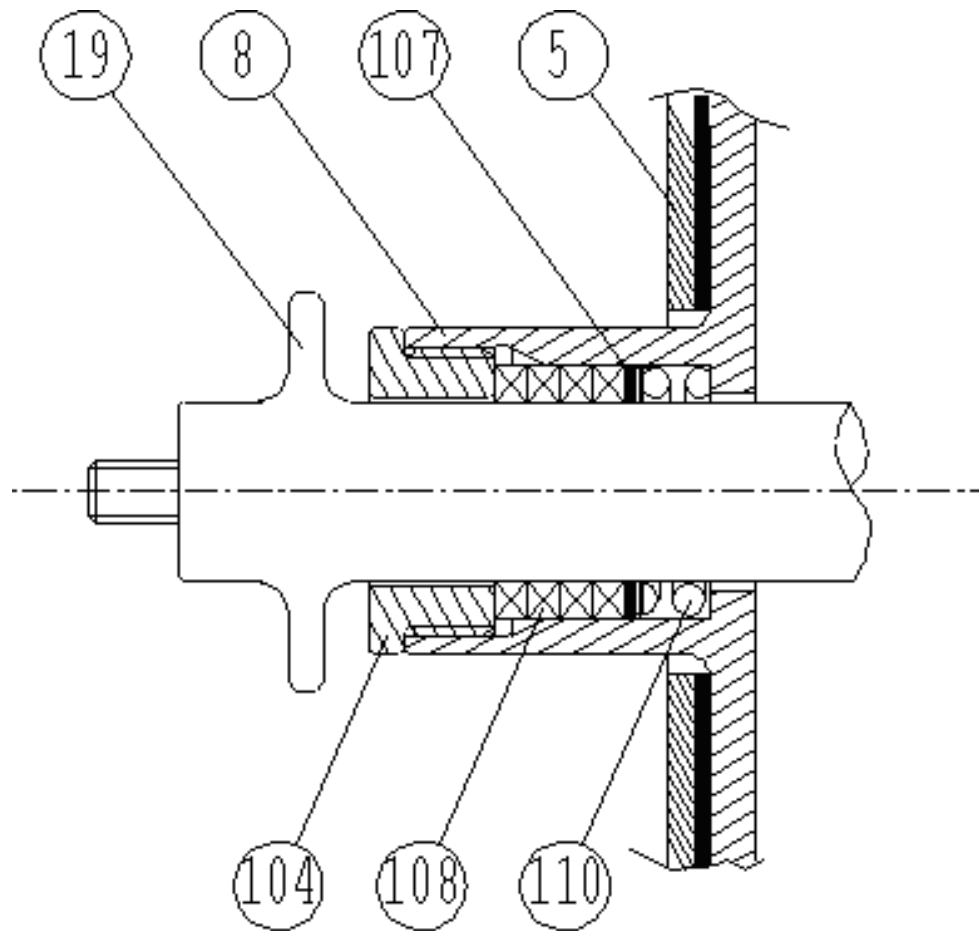


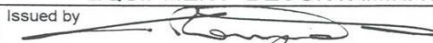
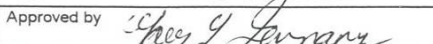
FIG. 2

APPENDIX

EQUIPMENT DECONTAMINATION PROCEDURE

UNCONTROLLED COPY

Q.A. PROCEDURE

Section	EQUIPMENT DECONTAMINATION PROCEDURE	
Issued by		
Approved by		
Document No.	QAPM-SD-19.0-1	
Issue Date: 13/12/94	REV 0	Page 19.1
Date 19.12.94	Supersedes	-----
Date 19/12/94	Valid from	19/12/94

OBJECTIVE:

The purpose of this procedure is to provide a standard method for the return of equipment in a safe decontaminated condition.

SCOPE:

All goods / equipment being returned to Acromet (Aust) Pty Ltd for service and repair.

RESPONSIBILITIES:

It is the responsibility of the customer to ensure that the correct and proper decontamination has been carried out before returning goods to Acromet (Aust) Pty Ltd.

All persons arranging or receiving goods into Acromet (Aust) Pty Ltd shall adhere to this procedure.

PROCEDURE:

1.0 BEFORE RETURN

Before any goods / equipment can be accepted for return;

1.1 The customer must be notified of Acromet (Aust) Pty Ltd equipment decontamination procedure.

1.2 Supply the customer with a copy of the Equipment Decontamination Advice form SD-19.0-1 either by fax or mail.

2.0 THE CUSTOMER IS TO PROVIDE

2.1 A completed Equipment Decontamination Advice form SD-19.0-1.

2.2 The relevant Material Safety Data sheet.

2.3 A Purchaser Order detailing work to be carried out.

3.0 UPON ACROMET RECEIPT OF DECONTAMINATED GOODS

3.1 Upon receipt of decontaminated goods / equipment with completed Equipment Decontamination Advice form and Material Safety Data sheet, a repair / tag number will be allocated and processed accordingly.

Note: Any goods / equipment received without an Equipment Decontamination Advice form will be QUARANTINED and the Acromet Product Manager notified.

4.0 RETURN OF CONTAMINATED GOODS

The Acromet Product Manager will;

4.1 Notify the customer of Quarantine procedure.

4.2 Inform the customer of their responsibility to arrange collection of contaminated goods.

RELATED DOCUMENTS:

SD-19.0-1 Equipment Decontamination Advice form

END OF DOCUMENT

ACROMET (AUST) PTY LTD

SD1901.DOC

ACROMET (AUST) PTY LTD

EQUIPMENT DECONTAMINATION ADVICE	Document No SD -19.0 -1	Issue Date: 20/3/98 REV 1
	Page No. 14	

ACROMET USE ONLY MATERIAL RETURN TAG No. _____

IMPORTANT NOTE!

ITEM RETURNED MUST HAVE THIS FORM COMPLETED, ENCLOSED IN AN ENVELOPE AND ATTACHED TO OUTSIDE OF SKID OR CRATE IN AN EASILY VISIBLE LOCATION.

The exterior of the item must be cleaned and all part(s) in contact with the Process decontaminated. A Material safety data sheet (MSDS) for the fluid handled by the item must be provided together with the shipment.

Please Return Item(s), Freight Prepaid, To: Acromet (Aust) Pty Ltd
14 Winterton Road
CLAYTON VIC 3168
AUSTRALIA

MUST BE COMPLETED AND ATTACHED TO RETURNED ITEM!

Customer Name: _____

PO Number: _____

Model Number: _____

Serial Number: _____

Description: _____

MSDS Provided _____ ☐ YES

This item has been decontaminated _____ ☐ YES

Name of Contaminate: _____

By signing this form, the undersigned certifies that the enclosed item(s) have been properly decontaminated and the appropriate MSDS is enclosed.

WARNING: A false Declaration may result in legal action.

Name: _____

Position: _____

Signature _____

Note: Gearbox must be opened and cleaned if process contamination is suspected.

If you have any questions, please contact Acromet (Aust) Pty Ltd Service Department on (03) 9544 7333. Acromet and its employees would like to thank you for your cooperation in this matter.