# MANUAL

## CK-1824

MNL-00098

⚠ **WARNING - Reliance on this Manual Could Result in Severe Bodily Injury or Death!**

This manual is out-of-date and is provided only for its technical information, data and capacities. Portions of this manual detailing procedures or precautions in the operation, inspection, maintenance and repair of the product forming the subject matter of this manual may be inadequate, inaccurate, and/or incomplete and cannot be used, followed, or relied upon. Contact Conair at info@conairgroup.com or 1-800-654-6661 for more current information, warnings, and materials about more recent product manuals containing warnings, information, precautions, and procedures that may be more adequate than those contained in this out-of-date manual.

# Contents

# 1. Introduction

This manual is for CONAIR MARTIN's granulators in the 1824 series, which includes the 1824 and 1824.

The abbreviations mean:

K = insulated against noise, U = suction blower.

The manual **should** be studied carefully before installing and using the equipment, in order to prevent personal injury and damage to the machinery.

**Always take great care when the knives are within reach, since they are very sharp and can cause personal injury.**

CONAIR MARTIN granulators are built for granulation of injection moulded, blow moulded or extruded plastic waste where the granulator’s size and performance correspond to the type of waste. For any other products or materials, approval must be obtained from the dealer or head-office in order for the conditions of the guarantee to remain valid.

The different types of granulator are designed so that maintenance and cleaning can be carried out quickly and simply, both during routine maintenance as well as when changing colour or material.

All servicing work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both handling and servicing the granulator. Chapter 7, which contains servicing instructions, is intended for service engineers. Other chapters contain instructions for the daily operator.

Delivered with the granulator are a manual, tool kit with puller tool for the rotor pulley and flywheel, knife fixture, and touch-up paint.

Any modifications, changes, or rebuilding of the granulator must be approved by CONAIR MARTIN in order to avoid personal injury and damage to machinery and to ensure that the documentation remains correct.

If you have any questions, please contact your local dealer or our head-office.

# 2. Technical specifications

## 2.1 Dimensions

See chapter 10, Layout.

## 2.2 Data

**Serial Number** _____

**Motor power** ..... _____

**V-belts** ..... _____

**Voltage** ..... _____

**Blower type** (optional) ..... _____

**Rotating knives** ..... _____

**Fixed knives** ..... _____

**Screen** ..... _____

**Weight** .....-K= 2220 kg,

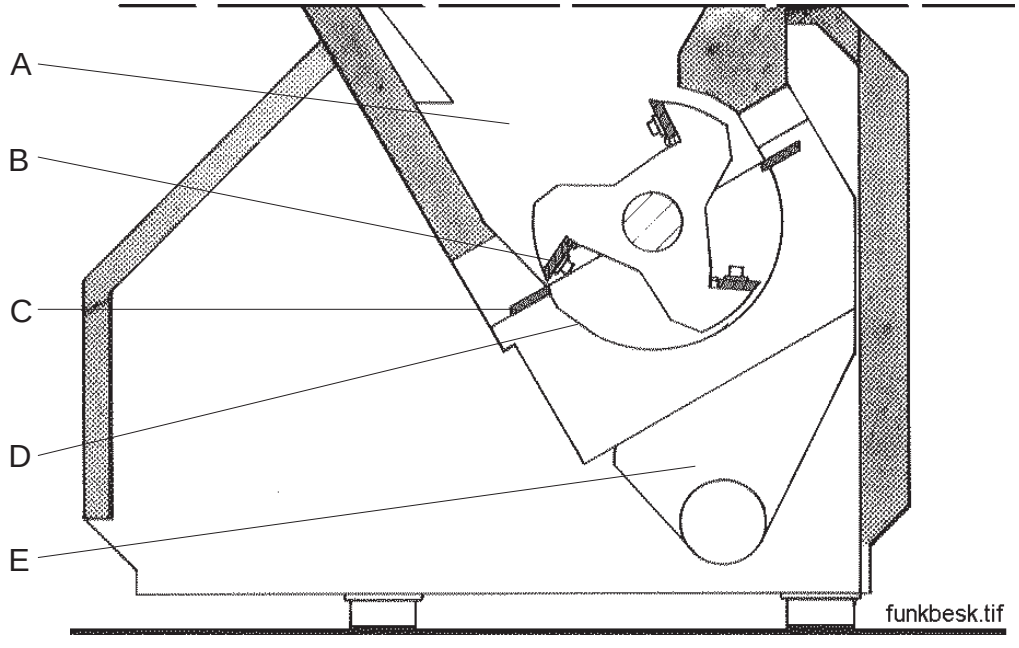
..... -KU= 2300 kg

# 3. Functional description

## 3.1 Overview

Granulators 1824 and 1824 are designed for grinding different types of plastic waste.

The granulator is controlled from the front panel with a start/stop function and an emergency stop button.




The material is fed into the hopper (A) and falls down to the rotor. The rotor's knives (B) grind the material against the fixed knives (C) in the cutter housing. Both the fixed and rotating knives can be changed or re-sharpened when necessary. The sharpening is carried out in a special fixture outside of the granulator.

Under the rotor is a screen (D) through which the granulate passes before it comes down into the granule bin. The screen is available with various hole sizes depending on the required degree of coarseness of the granulate.

The granulated material is then collected in the granule bin (E). For the 1824, the operator must open the front door to empty the granule bin. However, for the 1824, there is a suction blower which sucks the granulate out of the granule bin.

The granule bin, screen and screen box are designed to be removed so that the rotor can easily be cleaned. The hopper is constructed so that it can be opened up to allow improved access for cleaning and maintenance.

## 3.2 Safety system

Since there are rotating knives inside the granulator, there is a built-in safety system to prevent personal injury.

**Emergency stop:** The equipment is fitted with an emergency stop switch on the control panel. The emergency stop is activated by pushing the button. It is reset by turning the button in the direction of the arrow (anti-clockwise).

**Safety switches:** The safety system includes 3 safety switches. The switches are located as follows:

- 1 by the left front door
- 1 by the right front door
- 1 by the hopper

The system is designed so that you have to release a catch below the hinge side by each door to be able to open it.The catch's break screw actuates the safety switch, which cuts off the power so that the rotor stops before the door can be opened.

The hopper must be lowered and locked before the granulator can be operated. The safety switch has been installed so that it is not possible to start the granulator when the hopper is open.

# 4. Safety regulations

## 4.1 Overview

The granulator is equipped with safety switches to prevent the front door and the hopper from being opened during operation.

The following safety measures should always be observed when handling the granulator:

- **Always switch off the power supply using the main circuit-breaker (on top of the electrical cabinet) before opening the granulator.**
- **Never put any part of your body into any openings on the granulator unless the main circuit-breaker is in the "OFF" (=0) position.**
- **Always be careful when the knives are in reach since they are very sharp. When the rotor has to be rotated manually, this must be done with the greatest care!**
- **Be careful when the hopper and screenbox are opened and closed so that no part of your body gets caught.**
- **The granulator cannot be started until the doors and the hopper are locked.**

## 4.2 Sound level

- Equivalent continuous A-weighted acoustic pressure level 83 dBA

  Value measured 1 m from the surface of the machine and 1.6 m above the surface of the floor during grinding of 5 litres of PE bottles (polyethylene).

# 5. Installation

All instructions must be carried out in the order described, to prevent personal injury or damage to machinery.

**Always take great care when handling the knives since they are very sharp and can cause personal injury.**

**The granulator should be connected to the mains supply by an authorised electrician.**

## 5.1 Pre-start checks

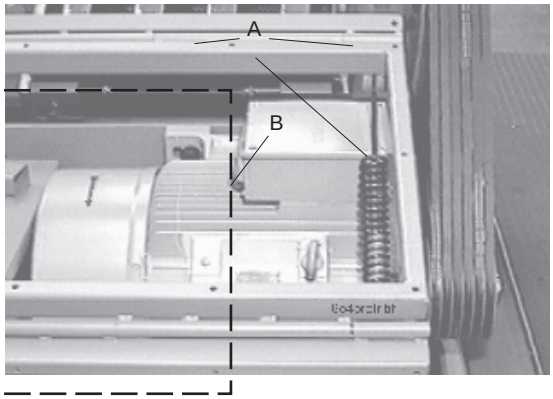
- Before the granulator is installed, the rust preventive should be carefully cleaned from the parts which are not painted or rustproof.
- Adjust the machine shoes so that the granulator stands at the correct level on the floor.

## 5.2 Electrical connection

**The granulator should be connected up by an authorised electrician.**

- Connect the granulator to the mains supply. See Electrical scheme, chapter 9.

Check the granulator motor's rotation direction as follows:




- Unscrew the 9 screws (A) which hold the protecting plate (B) and remove it.

  **NOTE:** Hold the protecting plate with a firm grip in order to prevent it from dropping and causing injury.

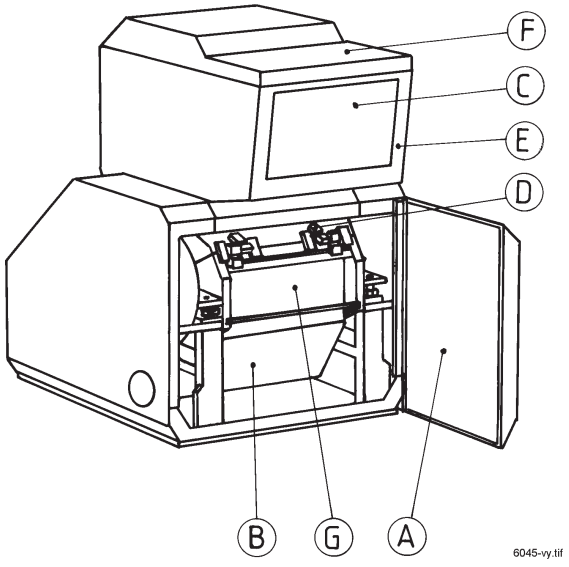
- Set the main circuit-breaker on the control box to position (1) = "On".
- Check that the emergency stop switch is not activated. It can be reset by turning the knob in the direction of the arrow (anti-clockwise).
- Check that the break screws to the doors' safety switches are completely tightened.
- Press in the change-over button "START".
- Check that the granulator motor's rotation direction is consistent with the arrow on the motor casing. The arrow is visible through the hole behind the protecting plate.

  **NOTE: Be careful not to get caught between the belt and pulley!**

If a blower is connected (1824), check that its rotation direction is consistent with the arrow on the blower hood. If the rotation direction is not correct:

- Change the incoming phases.

## 5.3 Opening and closing the hopper and screenbox




1. Unscrew the breakscrews at the bottom of each door (A) until the doors' stop cleats are released. A safety switch is then activated, which cuts off the current to prevent the machine from being started when the door is open.
2. Pull out the right door using the hand grip at the top of the right door gable. Then pull out the left door in the same way. Swing the doors open.
3. Pull out the granule bin (B).
4. When cleaning, pull out the flaps (C) by loosening the star knob at the top of the hopper.
5. Unscrew and lower the top part (F).
6. Clean the hopper (E).
7. Loosen the screws on the upper loops (D) a few turns and raise them. See also chapter 8:4.
8. Open the hopper (E).
9. Loosen the screws on the lower loops (D).
10. Raise the screenbox (G) and remove the loops.
11. Lower the screenbox and lift out the screen.

**NOTE:** The screenbox is heavy - **mind your feet!**

For other types of hopper, see chapter 11, Options.

# 6. Operation and daily maintenance

## 6.1 Starting and stopping

The start and stop functions are controlled by a change-over button on the control panel.

**NOTE:** The granulator should not be stopped until it has finished grinding all the material in the hopper and cutter housing. Any remaining material can slow down the rotor when it is re-started which can overload the motor and trigger the overload protector. (See section 6.4).

## 6.2 Inspection

There should **not** be any material in the granulator when the inspection is to be carried out.

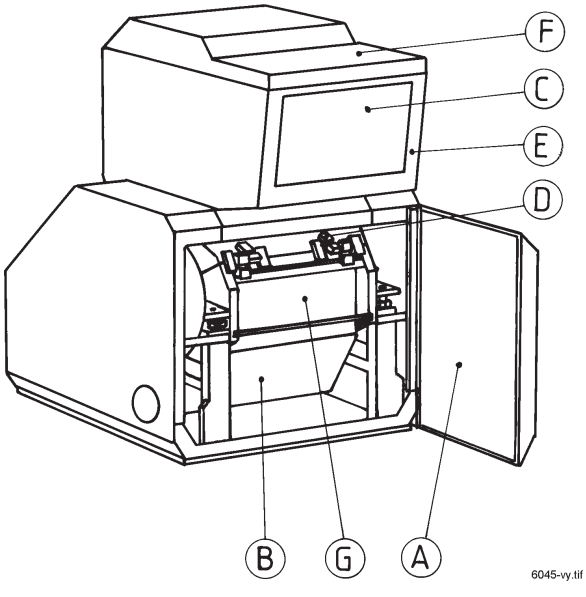
### 6.2.1 Daily inspection

- **Flaps in the hopper**. Check that the flaps are not damaged. Damaged parts should be replaced immediately to prevent bits of the flaps from falling into the cutter housing and damaging the knives.
- **Emergency stop**. Check the emergency stop function by starting the granulator and then stopping it using the emergency stop button. The emergency stop is reset by turning the emergency stop button in the direction of the arrow. The machine can then be re-started by pressing “START”.

### 6.2.2 Weekly inspection

- **Cables**. Inspect all cabling in the machine to see that there is no wear or other damage. For reasons of personal protection, damaged parts should be replaced immediately.
- **Safety switches**. There are 3 safety switches, one for each door and one for the hopper:

Front doors: Check the switch by starting the granulator and then unscrewing the star knob by the lower edge of one of the doors. The granulator should have stopped before you are able to open the door. Reset, and repeat the above with the other door.



Hopper: Open the hopper as described in chapter 5.2, but close and lock the front doors. Check the safety switch to the hopper by starting the granulator. It should not be possible to start the granulator until the hopper is lowered, the locking hooks are fastened and the screws (D) are tightened.

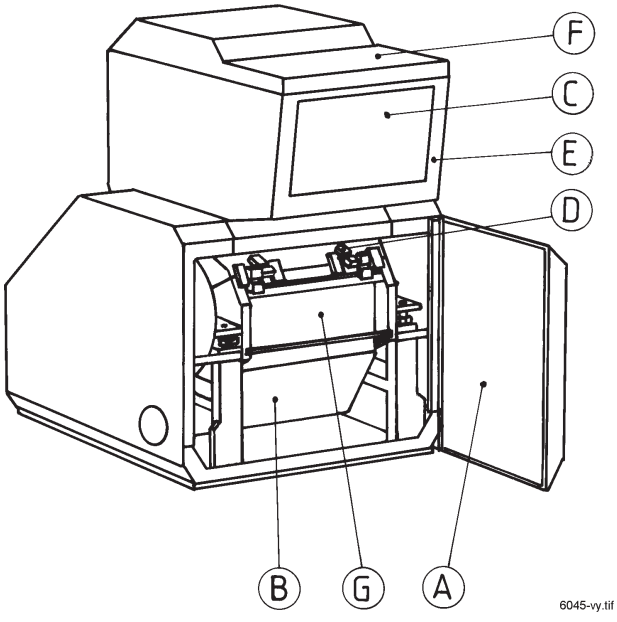
## 6.3 Cleaning

1. Open the hopper and screenbox as described in chapter 5.2.

   **Always take great care when handling the knives since they are very sharp and can cause personal injury.**

2. Clean the hopper, flaps, screen and screenbox and granule bin.
3. Clean the cutter-housing and inside the stand.
4. Replace all parts in reverse order.

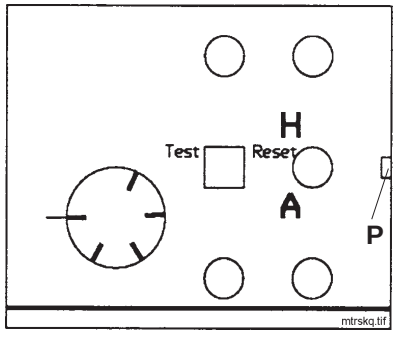
   **Note: Steps 2 - 4 should be carried out every time the machine is cleaned, or at least once every 300 hours.**




## 6.4 Trouble-shooting

### 6.4.1 If the granulator does not start

- Check that the saftey switches' star knobs are turned fully clockwise. It is not possible to start the granulator unless the star knobs are screwed in.
- Check that the emergency stop is not activated. It can be reset by turning the button in the direction of the arrow.
- The safety disconnection switches (Q2) and/ or (Q3) in the electrical cabinet, according to the diagram opposite, are released if you press stop or overload the granulator. This is indicated by the small green rectangular pin (P), which sticks up above the surface of the safety disconnection switch. When you reset by pressing the "Reset" button, the pin (P) is pushed back in so that it is level with the surface of the safety disconnection switch. The safety disconnection switch is reset automatically after approximately two minutes.




**NOTE:** Switch off the main circuit-breaker when cleaning the granulator. Empty the granulator of all material before restarting it.

# 7. Servicing

All servicing work should be carried out by a qualified service engineer and in the order described, to prevent personal injury or damage to machinery.

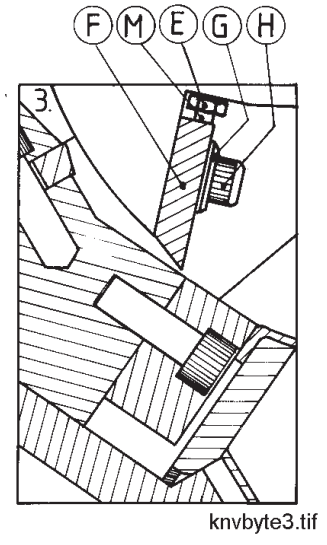
## 7.1 Changing the knives

When changing the knives, also check for any wear to the screen. For safety reasons, this should be replaced when the holes in the screen become drop-shaped.

**Always take great care when handling the knives since they are very sharp and can cause personal injury. Use protective gloves!**

### 7.1.1 Changing the rotating and fixed knives

**For safety reasons, damaged screws *must* be replaced.**



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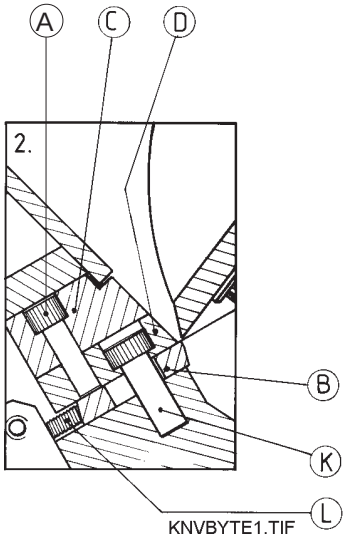
**Demounting the rotating knives (F):**

1. Remove the fastening screws (H) and washers (G).



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**Demounting the fixed knives (B)**
**NOTE**: For granulators with a third knife, see chapter 11.

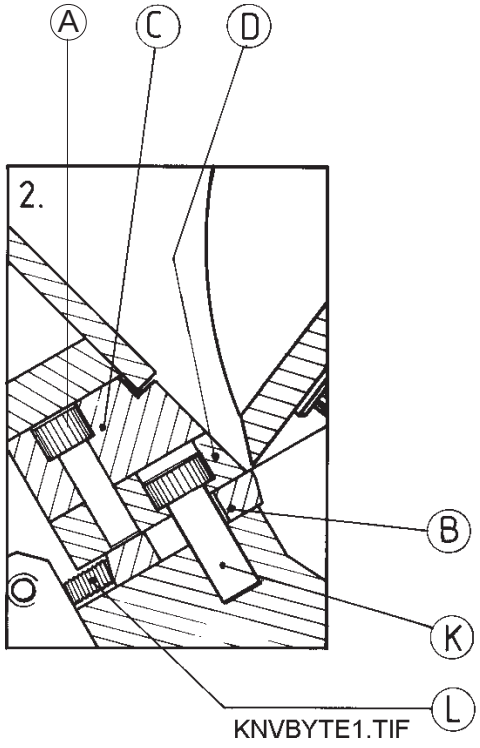
1. Loosen the stop screws (L).
2. Remove screw (A) and the ruler (C).
3. Remove the fastening screws (K) and retaining ruler (D).

### 7.1.2 Mounting the rotating and fixed knives

Replace the fastening bolts with new ones every fourth time the knives are changed.

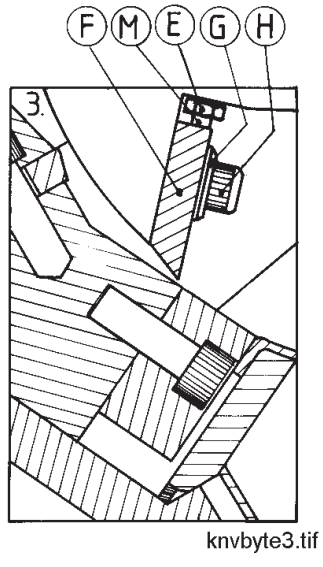
**Mounting the rear fixed knife.**

1. Clean the surfaces where the knives are to be set from plastic waste, etc.
2. Position the rear knife (B) and retaining ruler (D) using the screws (K). Tighten gently.
3. Adjust the rear knife using the stop screw (L) so that the knife bears against the shaped knife location in the cutter-housing's gable sides. Check carefully that the knife is straight.
4. Tighten the screws (K) with a torque of 400 Nm.
5. Place the ruler (C) on top of the rear knife and tighten the screws (A) with a torque of 220 Nm.




**Rotating knives**

1. Clean the surfaces where the knives are to be set from plastic waste, etc.
2. Place 2 rotating knives in line on the cutter's knife location and gently tighten the screws (H) with washers (G).
3. Adjust with the adjusting screws (M) until the correct amount of play, 0.15—0.30 mm, is obtained between the rotating knives and the rear fixed knife. Check using a feeler gauge.
4. Tighten the fastening bolts (H) with a torque of 600 Nm.
5. Tighten the nuts (E).
6. Check the knife's play, which should become less when tightening.
7. Mount the other rotating knives in the same way.




**Forward fixed knife**

8. Mount the forward fixed knife as described under 7.1.2 Mounting the rear fixed knife, points 1 - 4, with a torque of 400 Nm and with the same amount of play as for the rear fixed knife.

**Granulator fitted with a third fixed knife:**See instructions in chapter 11.

## 7.2 Sharpening the knives

⚠ **Always take great care when sharpening the knives since they are very sharp and can cause personal injury.**

### 7.2.1 Overview

**NOTE: Use the services of a skilled person when re-sharpening the knives and only sharpen the edges marked with the special sign! (see diagram under 7.2.2 and 7.2.3)**

The knives must be sharpened so that the correct grinding angles are obtained, otherwise the granulator will not operate effectively with lightly cutting knives.

During sharpening, the knife must be cooled the whole time with plenty of water and must definitely not burn or start blueing on the edge since this means that the knife lacks durability and stability. If this occurs, the knife cannot be repaired by further grinding down or grinding away of the blued or burnt colour. The tempered knife may have deep deformations with possible cracking as a consequence.

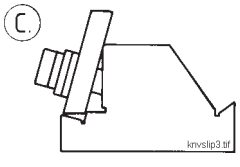
The following instructions apply only if you are using CONAIR MARTIN's sharpening fixture 1824. The sharpening fixture is intended for use in a surface grinding machine and should be fixed on a magnetic board.

### 7.2.2 Sharpening the fixed knives

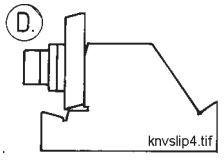
Regarding the third fixed knife, see chapter 11.

**NOTE:** Only the surfaces marked with the special sign should be sharpened. The specified measurements apply when sharpening the knives. The fixed knives can be turned so that two edges can be used before re-sharpening.

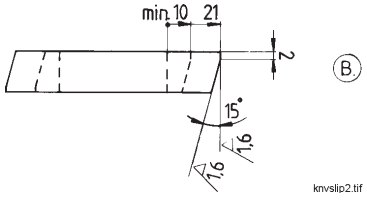
- The fixed knives are fastened on the back of the fixture as shown in figure C, and the relief angle is sharpened on both sides. The fixed knives can be turned so that two edges can be used before re-sharpening.




- Then the knife is fastened in a vertical position as shown in the figure opposite and the cutting angle is sharpened.




- The knives can be sharpened only as much as is shown in the adjacent figure. After that, they are worn out and should be replaced by new ones in order for the granulation to be effective.

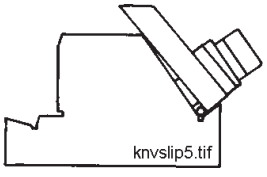


### 7.2.3 Sharpening the rotating knives

**NOTE:** All rotating knives should be sharpened equally so that the cutter does not become unbalanced. The sharpening fixture, 1824-3 blade rotor, provides the correct cutting angle easily. The fixture is fastened on a magnetic board on a surface grinding machine.

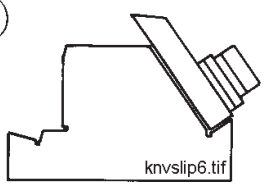
- The rotating knife is fastened with the stirrup under the lower part of the knife, as shown in figure E. Ball washers should be used when tightening. In this position the relief angle is sharpened.

E.



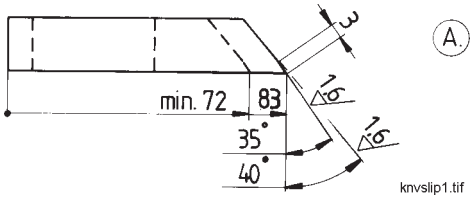

- Loosen the screws and remove the stirrup, fasten the knife as shown in figure F. In this position the cutting angle is sharpened.

F.




- The knives can be sharpened only as much as is shown in figure A. After that, they are worn out and should be replaced by new ones in order for the granulation to be effective.

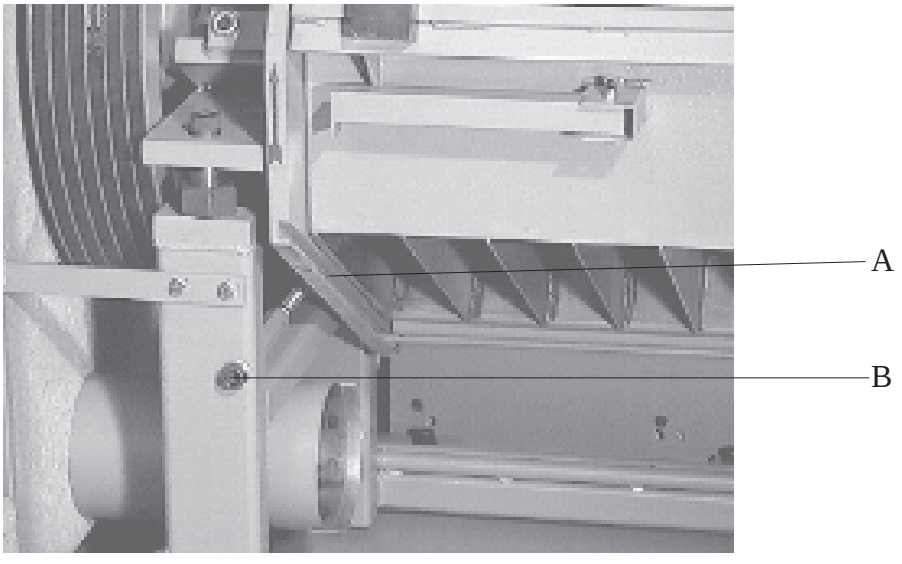
A.



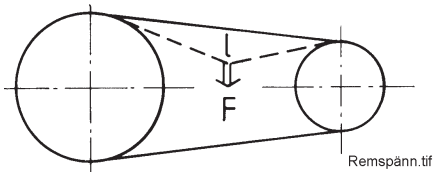
## 7.3 Inspecting and adjusting the belts

The V-belts must be inspected after 30 hours' operation.

- Open the granulator's door by following the instructions in section 5.2 Opening and closing the hopper and screenbox.




- If the V-belt needs to be tensioned, start by pulling out the granule bin, which goes in track (A). **NOTE:** Hold the granule bin with a firm grip to prevent it from droppng when it is removed from the track. **Be careful not to drop it!**
- Load one of the V-belts between the rotor pulley and the motor pulley with 75 N in the middle of and at a right angle to the belt. Measure the deflection and adjust the distance between the pulleys as necessary until the tension is correct. The V-belt should stretch 10 mm. F = 75 N; l = 10 mm




- Tension the V-belt by screwing in the flange nuts (B).

## 7.4 Lubrication

CONAIR MARTIN recommends the following for mounting and lubrication of bearings.

**Bearing housing + bearing:** SNH 218 TG + 23218 CC

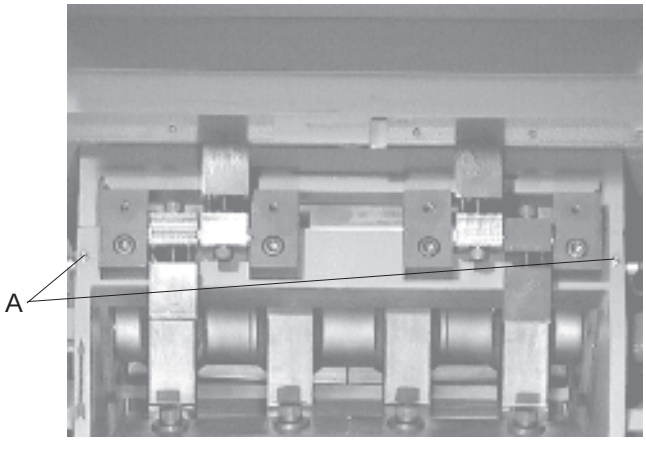
**Quantity of grease:** 850 g (when changing); grease nipple 100 g/ bearing (re-lubrication)

**Lubricant:** When delivered, the machine is filled with Spheerol APS2 from Castrol. Other suitable lubricants are:

- SKF; SKF Grease LGEP 2
- BP; BP Grease XRB2-EP
- Castrol: Spheerol APS 2
- Chevron; Alexol HMP 1 EP, Alexol HMP 2 EP; Dura-lith Grease EP2
- ESSO; Beacon EP1, Beacon EP2
- FINA; Marson HFF 2 EP
- Gulf; Synthetic Grease Gulflex MP
- Mobil; Mobilux EP2
- Nynäs; L 62 EP
- OK; Oktosol Grease EP2
- Shell; Shell Alvania EP2
- Texaco; Multifak EP2, Novotex Grease EP2

**Re-lubrication interval:** 3000 hours of operation or each year.

**Grease points:** Grease nipples (A) are indicated in the figure below. Steps 1 - 5 in section "5.2 Pre-start checks" describe how to open the granulator. **NOTE:** Be very careful when the hopper is open since the knives are now within reach.

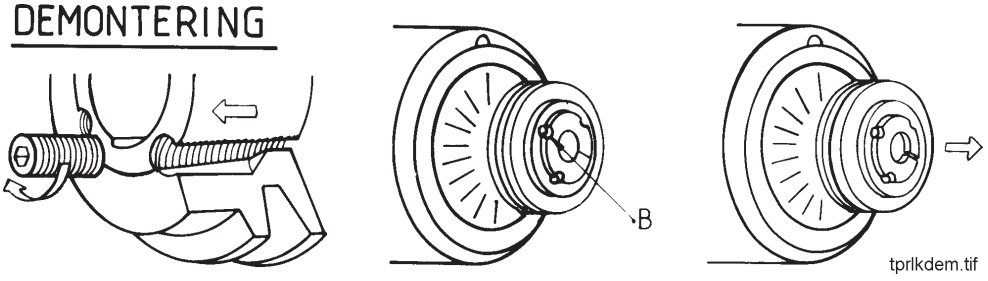


## 7.5 Mounting and demounting the Taperlock and rotor pulley

### 7.5.1 Taperlock

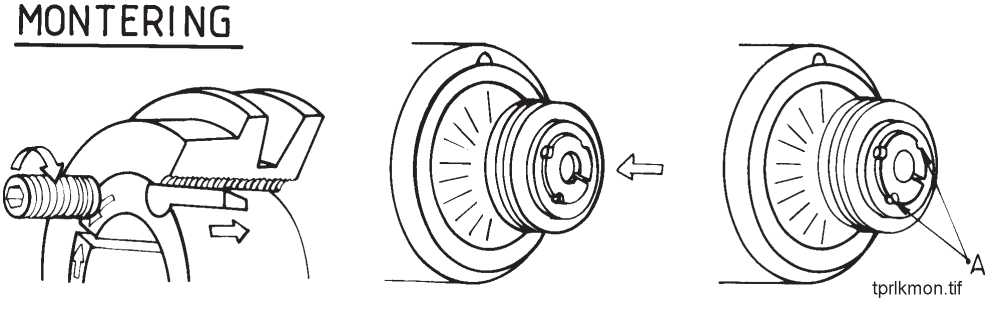
**Demounting:**

1. Thread the screws out and place one of them in the puller-tool hole (E), i.e. the half-threaded hole in the bushing, and tighten. This causes the Taperlock bushing to loosen.
2. Pull off the loose disk by hand without knocking it.




**Mounting:**

1. Clean and degrease all exposed surfaces. Mount the pulley and bushing by aligning the holes (A) and gently inserting the screws.
2. Slide the disk/bushing unit onto the axle, align it correctly and tighten the screws uniformly. The torque for tightening the motor pulley = 65 Nm.

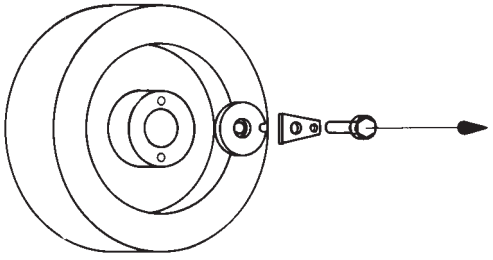


## 7.6 Demounting/mounting the rotor pulley

**Demounting:**

- Remove the end disk and locking disk.
- Fasten the puller tool with screws and tighten.
- Loosen the disk with a hard knock against the centre of the puller tool. If the disk does not move, alternately knock and tighten the puller tool.

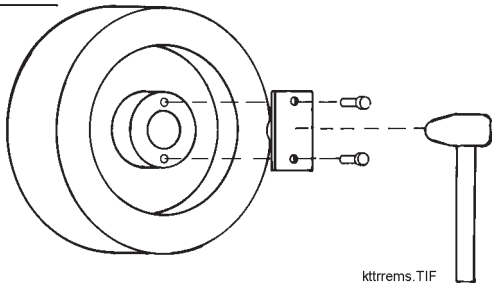
FIG. 1



**Mounting:**

- Mount the disk as shown in the figure with an end washer and a new locking washer.
- Tighten the bolt (M30) with a torque of 800 Nm.

FIG. 2



# 8. Spare parts list

## 8.1 Overview

Use only spare parts from CONAIR MARTIN when replacing machine parts.

To be as clear as possible, the spare parts list is divided into modules. Each module illustrates a particular part of the granulator.

All spare parts are specified with their article number and quantity.

The granulator is divided into the following modules:



## 8.2 Ordering spare parts

Use only spare parts from CONAIR MARTIN when replacing machine parts. Orders should go to the representative in the country where the machine was purchased.

When ordering, the following should be specified:

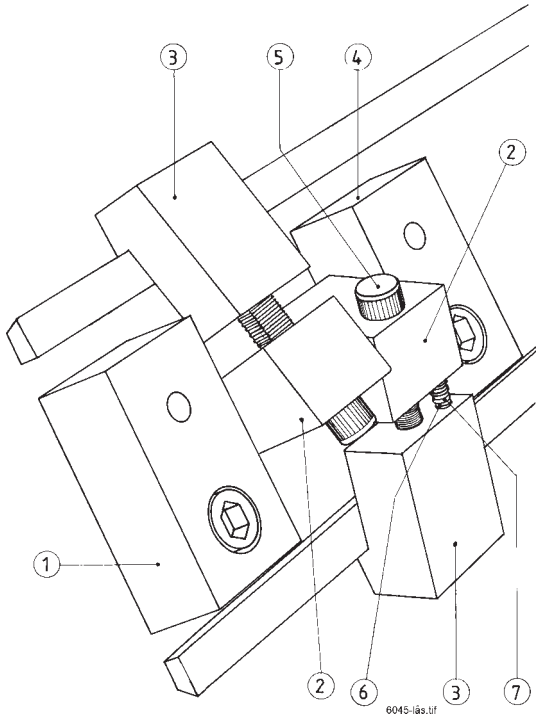
- machine designation, as specified on the machine plate
- serial number, as specified on the machine plate
- article number, as specified in the spare parts list
- quantity, as specified in this spare parts list.

### 8.1.1 1824, 3-blade rotor, table

| Pos. | Qty. | Part no. |
|---|---|---|
| 1 | 1 | 1-11497 |
| 2 | 1 | 9-50292 |
| 3 | 6 | 2-15554 |
| 4 | 1 | 3-12286 |
| 5 | 1 | 3-12285 |
| 6 | 2 | 9-60098 |
| 7 | 8 | 9-60101 |
| 8a | 1 | 3-12245 |
| 8b | 1 | 3-12216 |
| 9 | 1 | 9-60154 |
| 15 | 1 | 9-30154 |
| 16 | 6 | 9-30157 |
| 17 | 1 | 9-30156 |
| 18 | 1 | 9-10021 |
| 19 | 1 | 3-11551 |
| 20 | 1 | 1-12219 |
| 21 | 1 | 1-11570 |
| 22 | 1 | 1-18705 |
| 23 | 2 | 4-12259 |
| 24 | 1 | 2-18165 |
| 25 | 2 | 2-11572 |
| 26 | 1 | 2-11518 |
| 27 | 1 | 2-11517 |
| 28 | 1 | 2-11535 |
| 29 | 2 | 4-18688 |
| 30 | 1 | 3-18686 |
| 31 | 1 | 3-18687 |
| 32 | 1 | 2-12265 |
| 33 | 1 | 9-20509 |
| 34 | 2 | 9-90162 |
| 35 | 3 | 4-12295 |
| 36 | 1 | 4-12288 |
| 37 | 3 | 3-12289 |
| 38 | 1 | 9-10932 |
| 39 | 1 | 2-12239 |
| 40 | 1 | 2-12240 |
| 41 | 1 | 1-20953 |
| 42 | 4 | 3-11530 |
| 43 | 1 | 1-20944 |
| 44 | 4 | 9-50308 |
| 45 | 1 | 3-12292 |
| 46 | 1 | 2-11552 |
| 48 | 2 | 3-11557 |
| 49a | 1 | 2-12228 |
| 49b | 1 | 2-11560 |
| 50 | 2 | 9-40034 |
| 51 | 2 | 9-40471 |
| 52 | 1 | 1-12231 |
| 53 | 1 | 1-12232 |
| 54 | 1 | 9-10635 |
| 55 | 2 | 3-12250 |
| 56 | 2 | 3-12251 |
| 57 | 2 | 3-12252 |
| 58 | 2 | 4-12773 |
| 59 | 2 | 4-13043 |
| 60 | 2 | 4-12262 |
| 61 | 1 | 4-12284 |
| 62 | 1 | 1-12248 |
| 63 | 1 | 1-12246 |
| 64 | 2 | 9-10570 |
| 65 | 1 | 2-12234 |
| 66 | 1 | 2-12235 |
| 67 | 1 | 2-20954 |
| 68 | 1 | 2-12236 |
| 69 | 1 | 2-12237 |
| 70 | 3 | 4-12238 |
| 73 | 1 | 3-12283 |
| 74 | 1 | 4-12765 |
| 75 | 1 | 9-60104 |
| 76 | 1 | 3-12266 |
| 77 | 1 | 4-12269 |
| 78 | 1 | 6-12255 |
| 79 | 2 | 3-12771 |
| 80 | 1 | 4-17869 |
| 81 | 2 | 4-02292 |
| 82 | 2 | 4-12770 |
| 83 | 1 | 9-90161 |
| 84 | 1 | 3-20942 |
| 85 | 1 | 3-17348 |

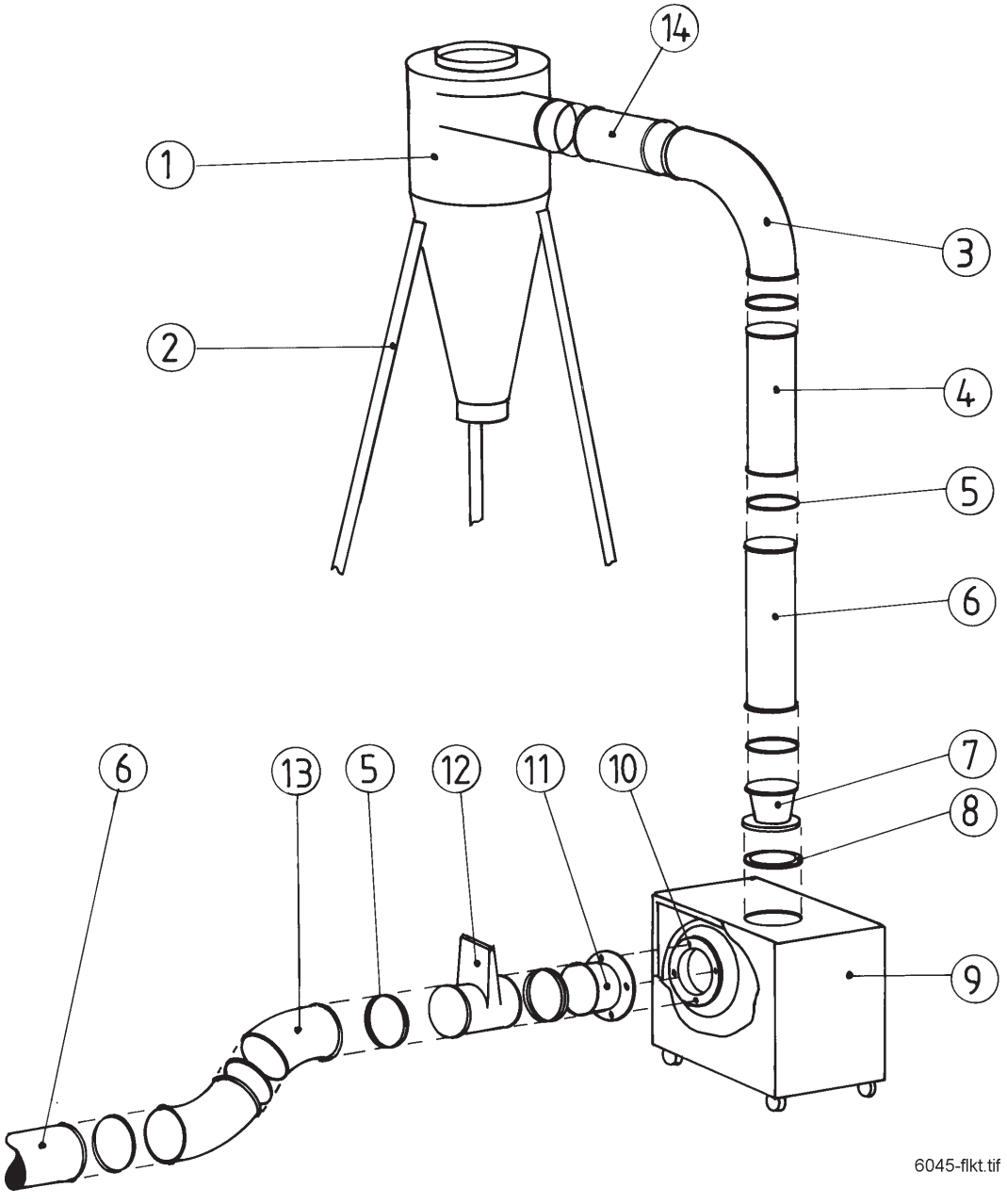
### 8.1.2 1824, 3-blade rotor, diagram

### 8.1.3 Complete lock




| Pos. | Qty. | Part no. |
|---|---|---|
| 1 | 1x2 | 4-11543 |
| 2 | 2x2 | 3-11545 |
| 3 | 2x2 | 3-11546 |
| 4 | 1x2 | 3-11544 |
| 5 | 2x2 | 9-40083 |
| 6 | 2x2 | 9-40053 |
| 7 | 2x2 | 9-50304 |
| 8 | 1x2 | 4-22547 |

### 8.1.4 Blower connection F 25



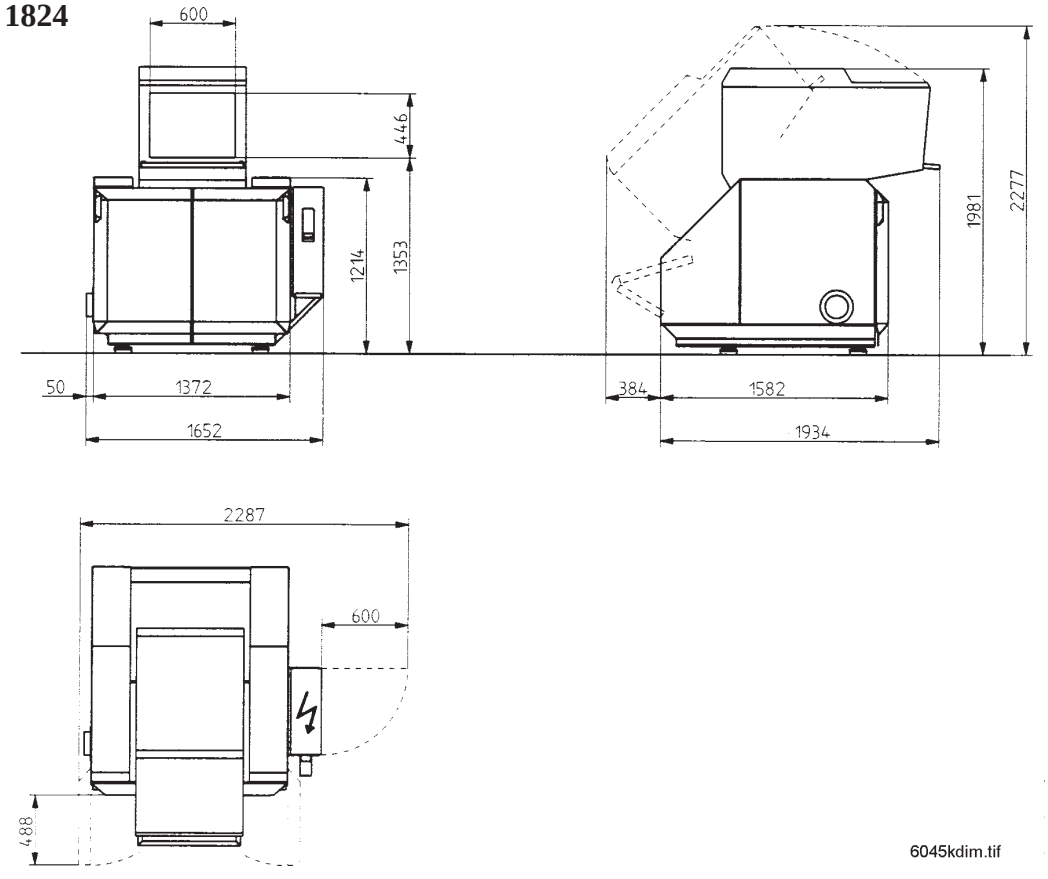

| Pos. | Qty. | Part no. | Pos. | Qty. | Part no. |
|---|---|---|---|---|---|
| 1 | 1 | 3-03037 | 8 | 2 | 9-10989 |
| 2 | 3 | 4-00448 | 9 | 1 | 2-06036 |
| 3 | 1 | 4-11769 | 10 | 1 | 9-20210 |
| 4 | 1 | 4-11766 | 11 | 1 | 2-08679 |
| 5 | 9 | 9-20107 | 12 | 1 | 9-20197 |
| 6 | 1 | 9-20105 | 13 | 2 | 4-17781 |
| 7 | 1 | 2-08684 | 14 | 1 | 4-11767 |

# 9. Electrical scheme

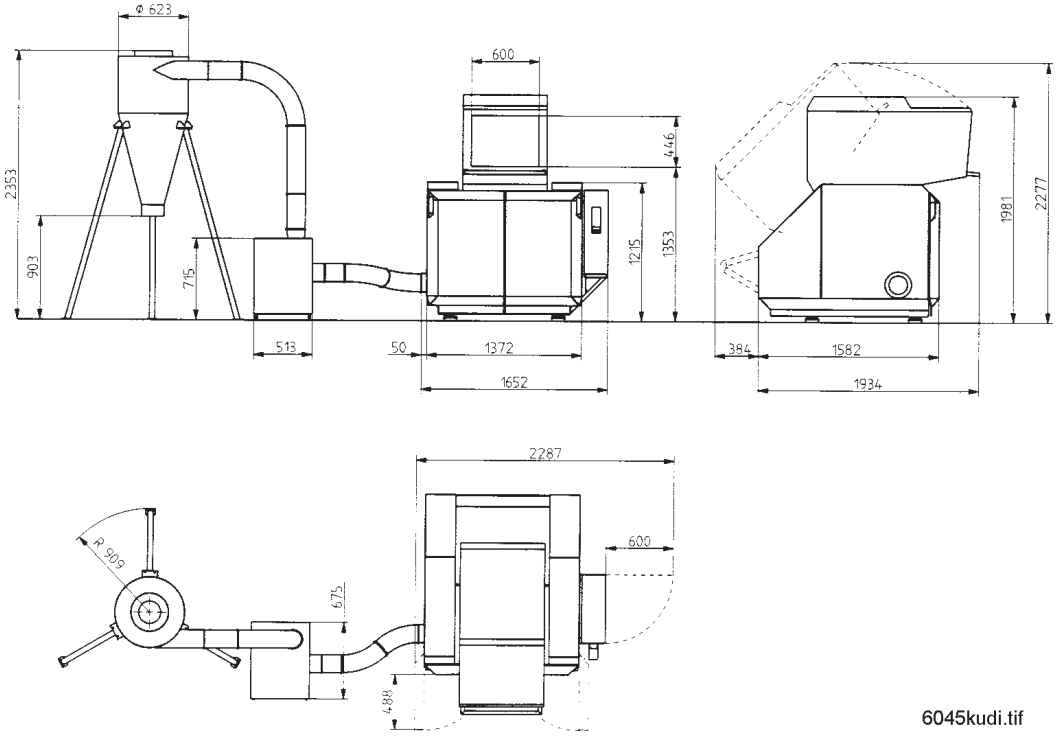
# 10. Layout

## 10.1 Dimensions

**1824**




**1824 with Blower F 25, Cyclone Ax-20**



# 11. Options

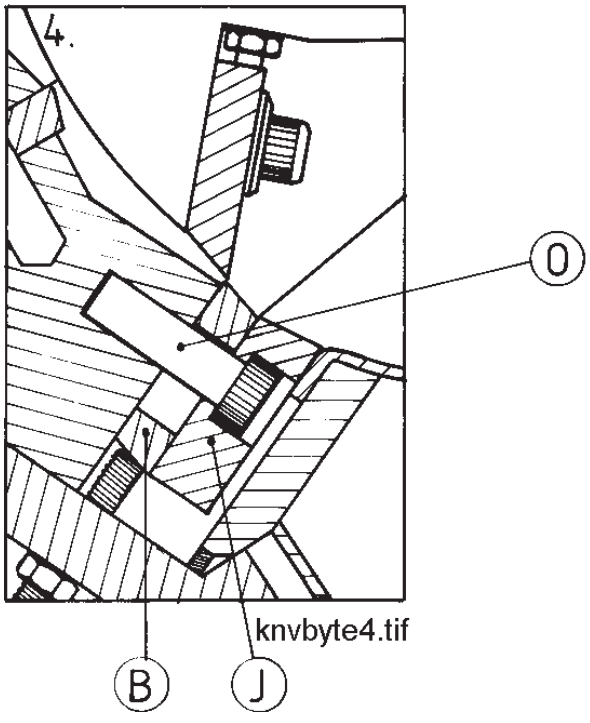
## 11.1 Overview

Use only spare parts from CONAIR MARTIN when replacing machine parts.

To be as clear as possible, the spare parts list is divided into modules. Each module illustrates a particular part of the granulator.

All spare parts are specified with their article number and quantity.

### 11.1.1 1824: Third fixed knife




| Pos. | Qty. | Part no. |
|---|---|---|
| B | 2 | 2-11572 |
| J | 1 | 2-12290 |
| O | 3 | 9-40464 |

**Demounting the third fixed knife**

1. Remove the fastening screws (O) and retaining ruler (J).
2. Remove the knife (B). If necessary, tap lightly on the top of the knife to loosen it.

**Mounting the third fixed knife**

1. Clean the surfaces where the knives are to be set of plastic waste, etc.
2. Position the fixed third knife (B) and retaining ruler (J) using the screws (O). Tighten gently.
3. Using the adjusting screws, adjust until the correct amount of play is obtained, 0.15—0.30 mm, between the rotating knives and the third fixed knife. Check using a feeler gauge.
4. Tighten screws (O) with a torque of 400 Nm.
5. Check the knife's play, which should become less when tightening.

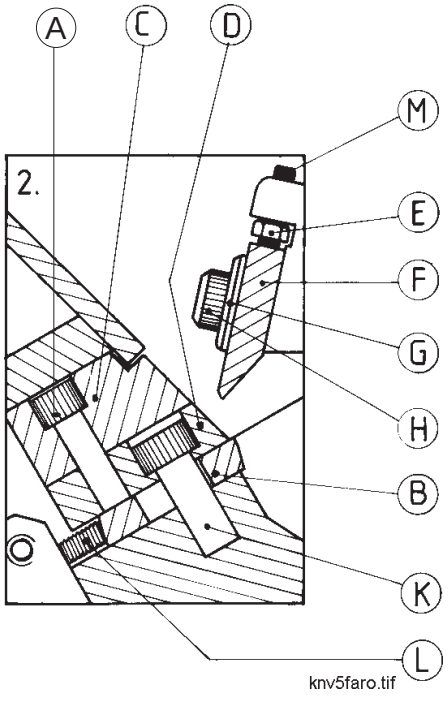
### 11.1.2 1824, 5-blade rotor, table

| Pos. | Qty. | Part no. |
|---|---|---|
| 1 | 1 | 1-11510 |
| 2 | 1 | 9-50292 |
| 3 | 6 | 2-11571 |
| 4 | 1 | 3-12286 |
| 5 | 1 | 3-12285 |
| 6 | 2 | 9-60098 |
| 7 | 8 | 9-60101 |
| 8a | 1 | 3-12245 |
| 8b | 1 | 3-12216 |
| 9 | 1 | 9-60154 |
| 15 | 1 | 9-30154 |
| 16 | 6 | 9-30157 |
| 17 | 1 | 9-30156 |
| 18 | 1 | 9-10021 |
| 19 | 1 | 3-11551 |
| 20 | 1 | 1-12219 |
| 21 | 1 | 1-11570 |
| 22 | 1 | 1-18705 |
| 23 | 2 | 4-12259 |
| 24 | 1 | 2-18165 |
| 25 | 2 | 2-11572 |
| 26 | 1 | 2-11518 |
| 27 | 1 | 2-11517 |
| 28 | 1 | 2-11535 |
| 29 | 2 | 4-18688 |
| 30 | 1 | 3-18686 |
| 31 | 1 | 3-18687 |
| 32 | 1 | 2-12265 |
| 33 | 1 | 9-20509 |
| 34 | 2 | 9-90162 |
| 35 | 3 | 4-12295 |
| 36 | 1 | 4-12288 |
| 37 | 3 | 3-12289 |
| 38 | 1 | 9-10932 |
| 39 | 1 | 2-12239 |
| 40 | 1 | 2-12240 |
| 41 | 1 | 1-20953 |
| 42 | 4 | 3-11530 |
| 43 | 1 | 1-20944 |
| 44 | 4 | 9-50308 |
| 45 | 1 | 3-12292 |
| 46 | 1 | 2-11552 |
| 48a | 2 | 3-11557 |
| 48b | 1 | 3-11556 |
| 49a | 1 | 2-12228 |
| 49b | 1 | 2-11560 |
| 50 | 2 | 9-40034 |
| 51 | 2 | 9-40471 |
| 52 | 1 | 1-12231 |
| 53 | 1 | 1-12232 |
| 54 | 1 | 9-10635 |
| 55 | 2 | 3-12250 |
| 56 | 2 | 3-12251 |
| 57 | 2 | 3-12252 |
| 58 | 2 | 4-12773 |
| 59 | 2 | 4-13043 |
| 60 | 2 | 4-12262 |
| 61 | 1 | 4-12284 |
| 62 | 1 | 1-12248 |
| 63 | 1 | 1-12246 |
| 64 | 2 | 9-10570 |
| 65 | 1 | 2-12234 |
| 66 | 1 | 2-12235 |
| 67 | 1 | 2-20954 |
| 68 | 1 | 2-12236 |
| 69 | 1 | 2-12237 |
| 70 | 3 | 4-12238 |
| 73 | 1 | 3-12283 |
| 74 | 1 | 4-12765 |
| 75 | 1 | 9-60104 |
| 76 | 1 | 3-12266 |
| 77 | 1 | 4-12269 |
| 78 | 1 | 6-12255 |
| 79a | 1 | 3-12771 |
| 79b | 1 | 3-12772 |
| 80 | 1 | 4-17869 |
| 81 | 2 | 4-02292 |
| 82 | 2 | 4-12770 |
| 83 | 1 | 9-90161 |
| 84 | 1 | 3-20942 |
| 85 | 1 | 3-17348 |

### 11.1.2 1824, 5-blade rotor, diagram

### 11.1.3 1824: 5-blade rotor, changing knives, fixed & rotating

**Demounting**




**Demounting the rotating knives (F):**

1. Remove the fastening screws (H) and washers (G).

**Demounting the fixed knives (B)**

**NOTE:** For granulators with a third knife, see chapater 11.

1. Loosen the stop screws (L).
2. Remove the screw (A) and ruler (C).
3. Remove the fastening screws (K) and retaining ruler (D).

| Pos. | Qty. | Part no. | Pos. | Qty. | Part no. |
|---|---|---|---|---|---|
| A | 1 | 2-11518 | G | 12 | 4-07390 |
| B | 2/3 | 2-11572 | H | 12 | 9-40062 |
| C | 1 | 2-11535 | K | 3 | 9-40528 |
| D | 1 | 3-11517 | L | 2 | 9-40470 |
| E | 12 | 9-40344 | M | 12 | 9-40081 |
| F | 6 | 2-11571 | O | 3 | 9-40464 |

**Mounting the rotating and fixed knives**

For safety reasons, damaged screws *must* be replaced.

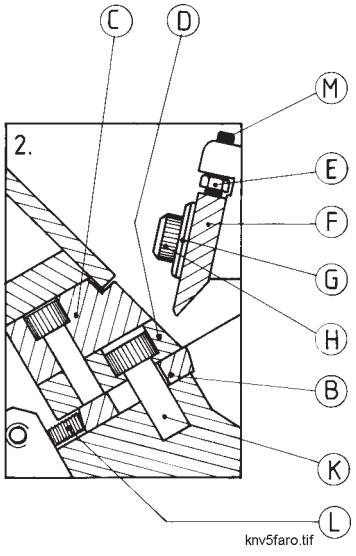
Replace the fastening bolts with new ones every fourth time the knives are changed.

**Mounting the rear fixed knife.**

1. Clean the surfaces where the knives are to be set from plastic waste, etc.
2. Position the rear knife (B) and retaining ruler (D) using the screws (K). Tighten gently.
3. Adjust the rear knife using the stop screw (L) so that the knife bears against the shaped knife location in the cutter-housing's gable sides. Check carefully that the knife is straight.
4. Tighten the screws (K) with a torque of 400 Nm.
5. Place the ruler (C) on top of the rear knife and tighten the screws (A) with a torque of 220 Nm.

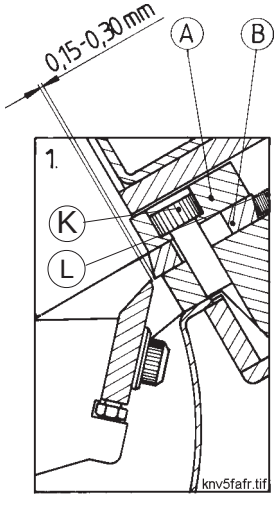
### 11.1.3 1824: 5-blade rotor, changing knives, fixed & rotating

**Rotating knives**




1. Clean the surfaces where the knives are to be set from plastic waste, etc.
2. Place 2 rotating knives in line on the cutter's knife location and gently tighten the screws (H) with washers (G).
3. Adjust with the adjusting screws (M) until the correct amount of play, 0.15—0.30 mm, is obtained between the rotating knives and the rear fixed knife. Check using a feeler gauge.
4. Tighten the fastening bolts (H) with a torque of 400 Nm.
5. Tighten the nuts (E).
6. Check the knife's play, which should become less when tightening.
7. Mount the other rotating knives in the same way.

**Forward fixed knife**




8. Mount the forward fixed knife in the same way as for the rear fixed knife, points 1 - 4, with a torque of 400 Nm and with the same amount of play as for the rear fixed knife. NOTE: Part number: L = 9-40479, Quantity = 4.

**Granulator fitted with a third fixed knife:**See instructions in chapter 11.1.5

### 11.1.4 1824: 5-blade rotor, sharpening knives, fixed & rotating

The instructions on this page apply when using CONAIR MARTIN's sharpening fixture 1824 5-blade rotor.

**NOTE:** Only surfaces marked with the special sign should be sharpened. The given measurements apply to sharpening of knives.

**Fixed knives**

- The fixed knives are fastened on the back of the fixture (left position) and sharpened as shown in figures C and D. The fixed knives can be turned so that two edges can be used before re-sharpening.

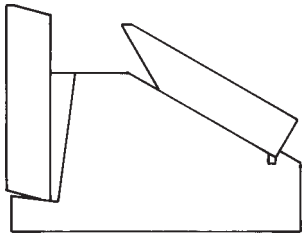


FIG. C kn5slpf1.tif

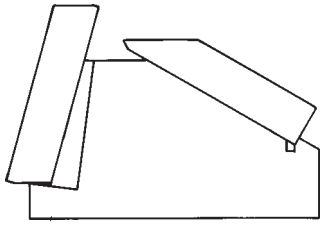
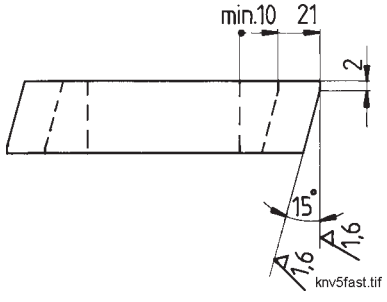


FIG. D kn5slpf2.tif

- The knives can be sharpened only as much as is shown in the adjacent figure. After that, they are worn out and should be replaced by new ones in order for the granulation to be effective.




knv5fast.tif

**Rotating knives**

- The upper side of the knife is sharpened as shown in figure C, the lower side as shown in figure D (right position) below.

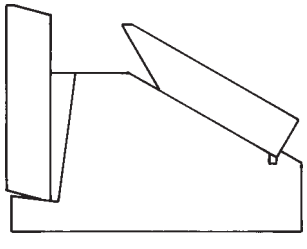


FIG. C kn5slpf1.tif

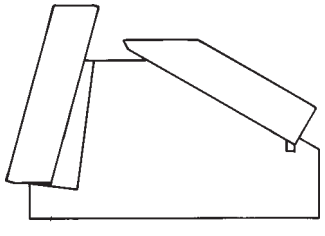
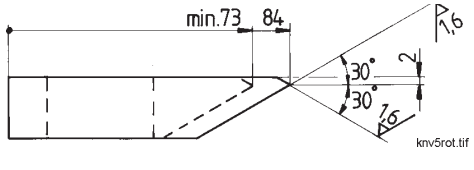


FIG. D kn5slpf2.tif

- The knives can be sharpened only as much as is shown in the adjacent figure. After that, they are worn out and should be replaced by new ones in order for the granulation to be effective.




knv5rot.tif

# 12. Transporting and storing

## 12.1 Overview

Handling and transporting of the machinery should be carried out by specially trained personnel.

The machine is packed in weather-proof and partly shock-proof plastic sheeting. It is fixed with straps to a pallet for transportation.

### 12.1.1 Unpacking and checking

- Check that the machine has not been damaged in transit. Report any damage to the forwarder.
- Do not unpack the machine until it has been moved to its installation location.
- After unpacking, check that the delivery is complete by checking against the delivery note.

### 12.1.2 Lift and transport to installation location

For information about the machine's weight, refer to chapter 2, Technical data.

For information about the space required, refer to chapter 10, Layout.

The machine can be lifted and handled using a fork-lift truck.

### 12.1.3 Placing at the installation location

See chapter 5, Installation.

## 12.2 Storing

Normally, the machine is pre-packed for transport to the installation location where it is to be put into operation immediately. Therefore, it is only protected with rust-preventive oil.

### 12.2.1 Long-term storage

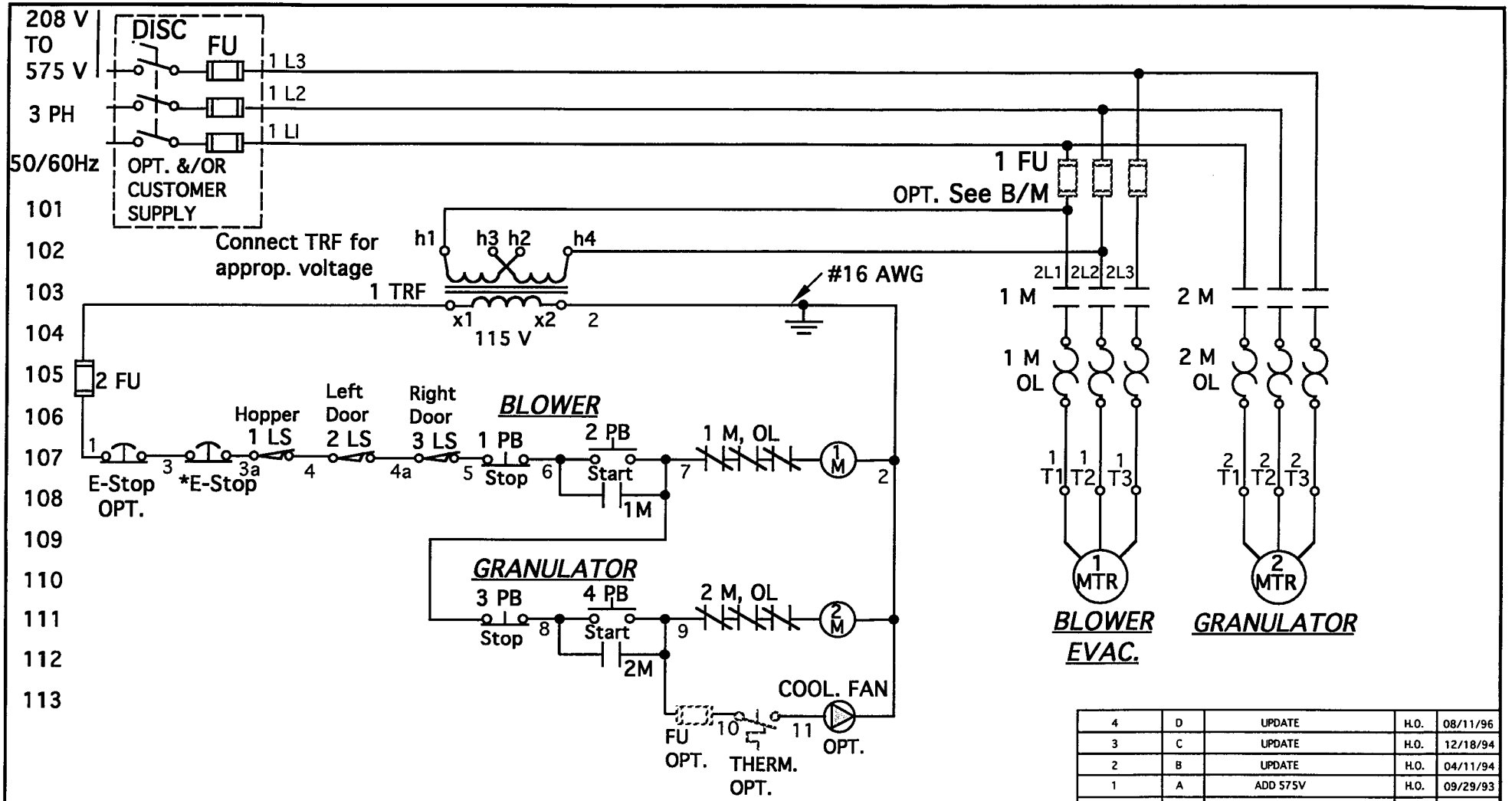
- The machine should be kept in a storage area with constant temperature and humidity.
- Before storing for a long time, the machine should be given a coating of long-term rust preventive, for example Castrol DWX 160 with durability 24 - 36 months in a suitable storage area.

### 12.2.3 Preservation

The machine is protected with rust-preventive oil Castrol DWX 22 on all surfaces which are not painted or rust-free.

### 12.2.4 Durability

The rust protection from the rust-preventive oil Castrol DWX 22 is effective for up to 12 months if the conditions described in 12.2.1 are fulfilled.




| REV NO. | LET. | DESCRIPTION | BY | DATE |
|---|---|---|---|---|
| 4 | D | UPDATE | H.O. | 08/11/96 |
| 3 | C | UPDATE | H.O. | 12/18/94 |
| 2 | B | UPDATE | H.O. | 04/11/94 |
| 1 | A | ADD 575V | H.O. | 09/29/93 |

CONAIR MARTIN
Part of The Conair Group

NAME
ELEC. SCHEMATIC

2 MTR, 208 Thru 575V, W/FAN

MACHINE SIZE
CK-1824

| DR. BY | DATE | CHK. BY | SCALE |
|---|---|---|---|
| H.O. | 10-05-92 | | NONE |

DWG NO. C-201-00-0597 | A | SHT. 1 OF 1