MANUAL

CK-1224

MNL-00097

⚠ **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This manual is out-of-date and is provided only for its technical information, data and capacities.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containing warnings, information, precautions, and procedures that may be more adequate than those contained in this out-of-date manual.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 1224

The abbreviations mean:

E = Hot melt granulation
K = Insulated against noise
I = Injector
U = Suction blower.

This manual **must** 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 corresponds 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 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 in Sweden.

2. Technical specifications

2.1 Dimensions

See chapter 10, Layout.

2.2 Data

Serial Number _____

Motor power ..... _____

Capacity ..... _____

V-belts ..... _____

Voltage ..... _____

Blower type (1224 only) ..... _____

Rotating knives ..... _____

Fixed knives ..... _____

Screen ..... _____

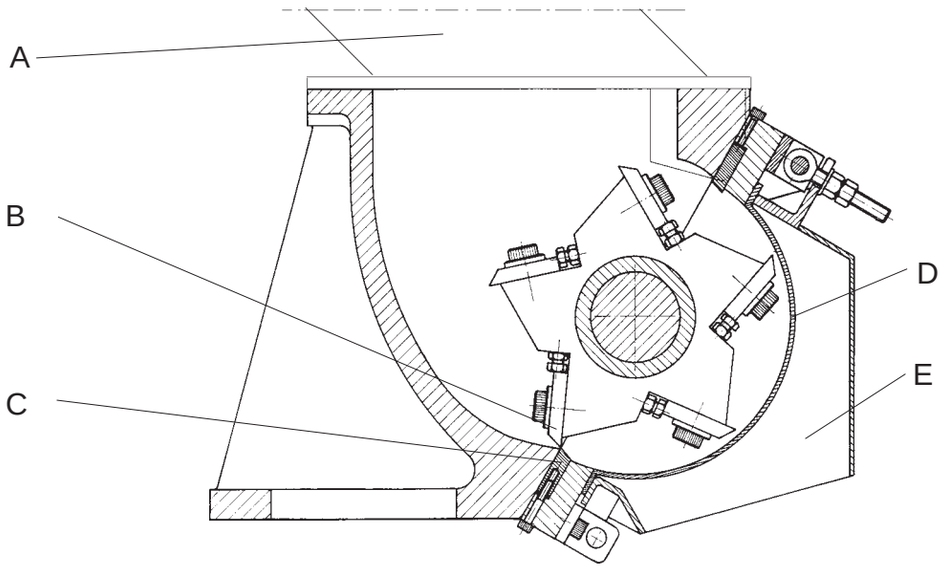
Weight .....-K = 1360 kg
.....-KE = 1450 kg
.....-KI = 1400 kg
.....-KU = 1450 kg

3. Functional description

3.1 Overview

The 1224 granulators are designed for grinding different types of plastic waste.

The granulator is controlled from an electrical cabinet 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). On the -K model, the operator must open the front door and take out the granule bin to empty it. Models -KE and -KU are equipped with a suction blower which sucks the granulate out of the granule bin. On the -KI model the granulate is blown out.

The screen box is designed to be removed so that it can easily be opened and the screen released for cleaning and maintenance. 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 (4) safety switches. The switches are located as follows:

- 2 by the hopper
- 1 by the front doors
- 1 by the granule bin (1224 only)

The system is designed so that you have to unscrew the break screw by the front doors to be able to open them. The break screw actuates the safety switch, which cuts off the power so that the rotor stops before the doors 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.

On the 1224, the granulator cannot be started without the granule bin.

4. Safety regulations

4.1 Overview

CONAIR MARTIN granulators are built for granulation of injection moulded, blow moulded or extruded plastic waste, which must not exceed the granulator's size and performance as described in chapter 2.

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:

- **WARNING! High Voltage! The electrical installation work must only be carried out by <u>authorised personnel</u>!**
- **Always switch off the power supply using the main circuit-breaker (on top of the electrical cabinet) before opening the granulator. WARNING! High voltage remains on the incoming phase's connection block and up to the main circuit-breaker!**

- **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 screenbox and the hopper are locked.**

= WARNING! High Voltage!

This sign is placed on the electrical cabinet's door and any connection boxes.

= WARNING! Risk of being cut or caught in the machinery!

This sign is placed as necessary next to dangerous parts, for example the hopper and screenbox.

As long as the instructions in this manual are followed carefully, there should be no other dangers.

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.

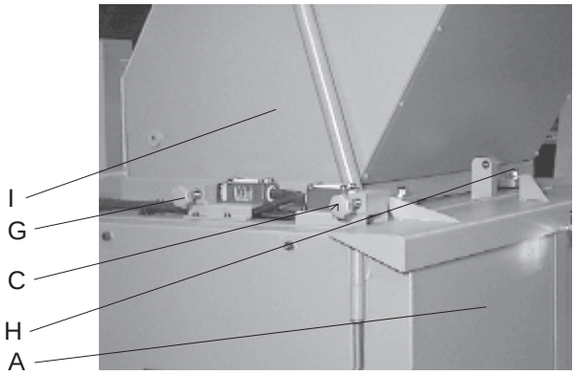
5.1 Pre-start checks

- Before the granulator is installed, the rust preventive should be carefully cleaned from the parts which are not painted or rustproof.

5.2 Opening and closing the hopper and screenbox

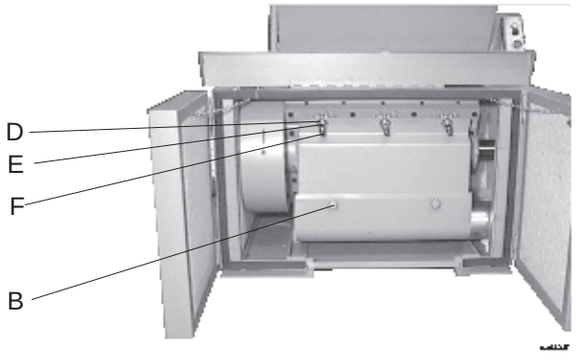
Screenbox:

1. Unscrew the breakscrew (C) until the front door's stop plate is released.
2. Raise the stop plate so that the ball engages, and open the front doors (A).
3. Pull out the granule bin (B) by first releasing the locking screws. On the -KU model, the granule bin's outlet flange must first be moved to the side. Grip and pull out the flange from the outside of the granulator.



4. Loosen the nuts (3 x 2 pcs) (D) and (E).
5. Raise the link screws (3 pcs) (F).
6. Lower the screenbox and lift out the screen.

NOTE: When mounting the screenbox the link screws' nuts (D) and (E) must be tightened equally hard to avoid only one of the link screws taking the whole load.



Hopper:

1. Unscrew the break screws (G) on the side of the hopper.
2. Loosen the nuts (2 pcs) (H).
3. Raise the hopper (I).

5.3 Electrical connection

The granulator should be connected up by an authorised electrician.

Connect the granulator to the mains supply. See Electrical scheme, chapter 9, connecting (Q1).

All connected electric motors have been set up with the intended rotation direction by setting up the internal electrical connection for clockwise rotating field.

- Using a phase-sequence indicator, check that the incoming phases are connected to the granulator so that the intended, clockwise rotating field is maintained.

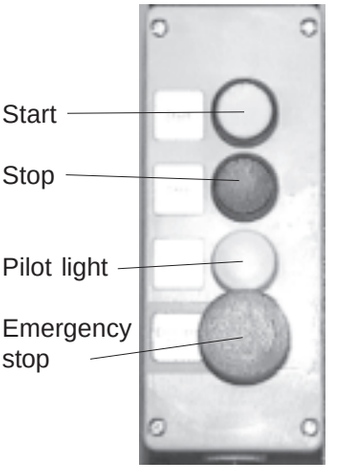
If a blower is connected (-KU), check that its rotation direction is consistent with the arrow on the blower hood.

If the rotation direction is not correct:

- Change the incoming phases.

6. Operation and daily maintenance

6.1 Starting and stopping



The start and stop functions are controlled by a push-button on the electrical cabinet.

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 6.4).

6.2 Inspection

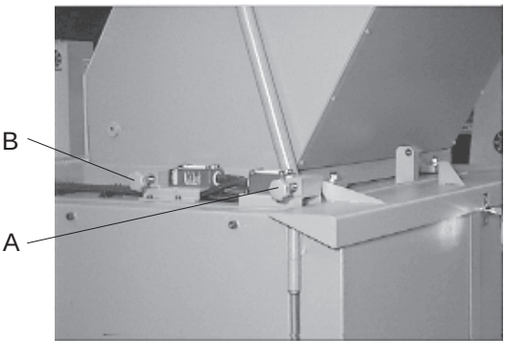
There should **not** be any material in the granulator when the inspection is to be carried out.

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. There is also a risk that damaged flaps can be thrown back by the machine.
- **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 for the hopper and front doors (4 for the 1224):



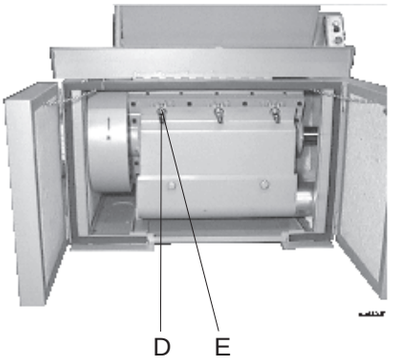
Front doors: Check the safety switch by starting the granulator and then unscrewing the break screw (A) on the front by the doors, as described in chapter 5.2. The granulator should have stopped before you are able to open the doors.

Hopper: Open the hopper as described in chapter 5.2, but close and lock the front doors. Check the safety switch (B) to the hopper by starting the granulator. It should not be possible to start the granulator until the hopper is closed and the break screw is screwed in.

6.3 Cleaning

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

1. Remove the top part of the hopper (1224 only) by loosening the four fastening screws. Lift out the flaps.
2. On the 1224 the flaps are moved aside.
3. Open the hopper and front doors as described in chapter 5.2.
4. Clean the hopper, flaps, screen and screenbox and granule bin.
5. Clean the cutter-housing and inside the stand.
6. Replace all parts in reverse order.



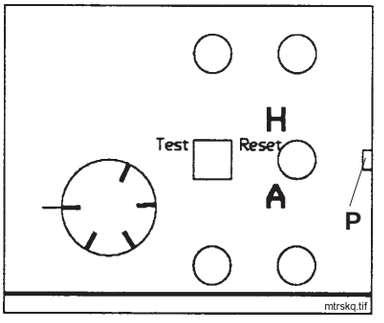
NOTE: When mounting the screenbox the link screws' nuts (D) and (E) must be tightened quite hard to avoid only one of the link screws taking the whole load.

Note: Steps 4 - 6 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' break screws are turned fully clockwise. It is not possible to start the granulator unless the break screws 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 bimetal relay F1 in the electrical cabinet, according to the diagram opposite, is 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 bimetal relay. 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 bimetal relay.



NOTE: Set the main circuit-breaker to position "0" when cleaning the granulator. Empty the granulator of all material before re-starting.

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

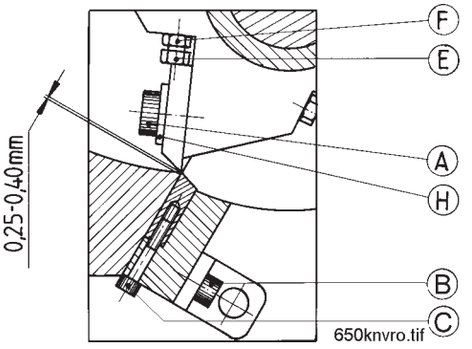
When changing the knives, also check for any wear to the screen. For safety reasons, this should be replaced when the holes in the screen become drop-shaped.

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

7.1.1 Disassembling the fixed and rotating knives

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

- Open the screenbox as described in chapter 5.2.



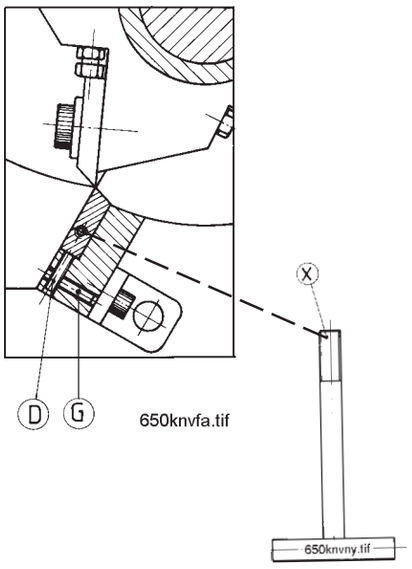
Disassembling the rotating knives:

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

Disassembling the fixed knives

- Release the right front side hood by loosening the six screws. Set the flywheel so that its holes are in front of the knife ends.

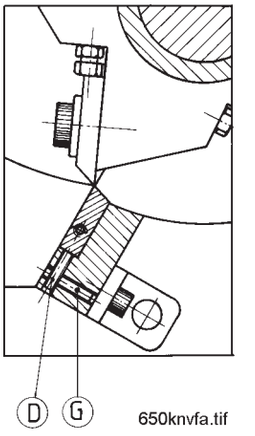
1. Loosen screws (B), 10 along each long side, and 2 on the short side opposite the belt guard, total 22 pieces.
2. Remove the screws (C) (5 on each knife).
3. Loosen the stop screws (D) (5 on each knife).
4. Separate the cutter housing by turning screws (G) (2 on each knife), a 1/4 turn clockwise.
5. Screw the extractor (X) into the threaded hole on the fixed knife's end and pull out the knife.



7.1.2 Assembling the rotating and fixed knives

Every fourth time the knives are changed the fastening screws (A) and washers (H) for the rotating knives **must** be replaced with new ones.

Assembling the lower fixed knife:



Clean the surfaces where the knives are to placed, and the knives themselves, from grease and impurities.

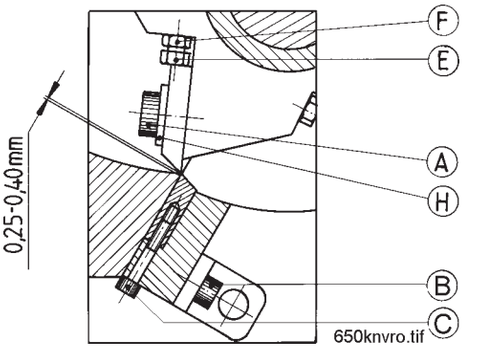
1. Push the lower fixed knife into position.
2. Move the knife forwards using the screws (D) so that it rests against the stoppers at the ends of the groove.
   NOTE: These screws should only rest against the knife's rear edge and must not be tightened so hard that the knife bends. Using a straight-edge rule placed against the edge, check that the knife is straight.

Assembling the upper fixed knife:

3. Push the upper fixed knife into its cleaned groove.
4. Unscrew the four screws (G) so that the lower part of the cutter housing bears against the uppper part of the housing.
5. Tighten the 10 screws (B) along the lower long side using a torque of 100 Nm.
6. Screw in the screws (C) and tighten.

For granulators fitted with a third fixed knife:
See instructions in chapter 11.

To continue, see steps 12 - 17



Assembling the rotating knives:

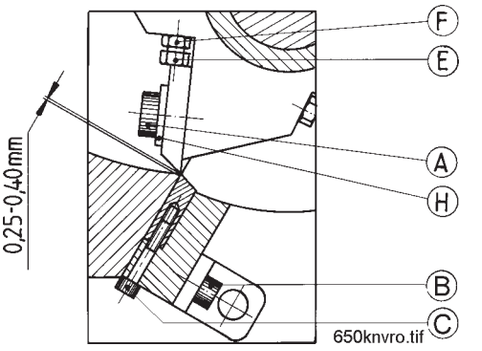
Regarding pre-set rotating knives, see chapter 11.

Clean any plastic waste, etc. from the surfaces where the knives are to be set.

7. Place 2 adjacent rotating knives in their location on the cutter and tighten with the screws (A) and washers (H). See chapter 8:4.
   NOTE: The knives should not bear against each other; there should be at least 0.5 mm play between them.
8. Using the setting screws (E), adjust until the correct amount of play, 0.25 - 0.4 mm, has been obtained between the rotating knives and the lower fixed knife. Using a feeler gauge, check the amount of play at both ends of the knife.
9. Tighten the fastening screws (A) using a torque of 300 Nm.
10. Tighten the counter nuts (F).
11. Check the amount of knife play again, which should still be 0.25 - 0.4 mm.

12. Turn the cutter so that the edges of the two rotating knives are directly in front of the upper fixed knife's edge.
13. Adjust the upper fixed knife using the setting screws (C) and (D).

    NOTE: By tightening screws (D) the knife moves towards the centre of the cutter. By tightening screws (C) the knife moves in the opposite direction. Use a 0.4 mm feeler gauge to obtain the correct knife play.



14. Check that the fixed knife is straight.
15. Using a torque of 100 Nm, tighten the 10 screws (B) along the upper long side and the two which were loosened on one short side.
16. Check that the screws (C) and (D) by the upper fixed knife are not loose. However, they should not be tightened too hard.
17. Check the amount of knife play again, which should still be 0.25 - 0.4 mm.
18. Fit the remaining rotating knives in pairs. Adjust and tighten as described in steps 7 - 11.

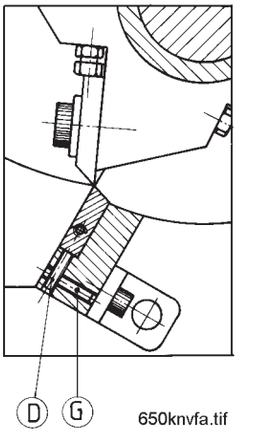


Fig. 1

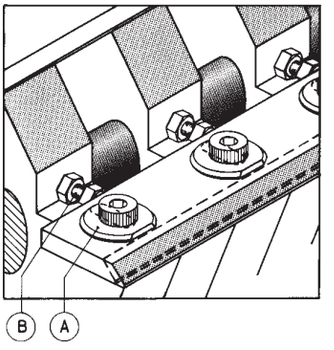
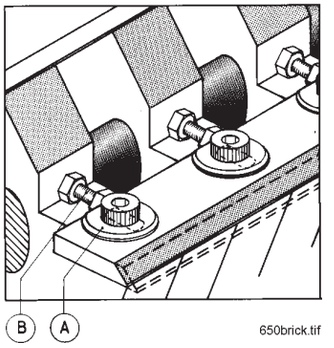


Fig. 2



Fitting the washers on the rotating knives:

When new rotating knives are fitted, the covers (A) are placed with the cut side towards the knife edge as shown in figure 1. The washer then completely covers the oblong hole in the knife and prevents any granulate from getting through.

Each time the knives are sharpened, move them slightly outwards in the direction of the knife edge using the setting screws (B).

When the knives have been re-sharpened a few times, the setting screws will touch the cylindrical part of the washer.

The washer should then be turned so that the cut side is towards the setting screws, as shown in figure 2.

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.

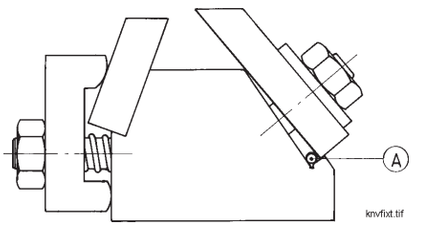
During sharpening, the knife must be cooled the whole time with plenty of water and must definitely not burn or start blueing on the edge since this means that the knife lacks durability and stability. If this occurs, the knife cannot be repaired by further grinding down or grinding away of the blued 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 SF600. The sharpening fixture is intended for use in a surface grinding machine and should be fixed on a magnetic board.

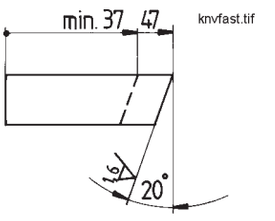
7.2.2 Sharpening the fixed knives

NOTE: Only the surfaces marked with the special sign should be sharpened. The specified measurements apply when sharpening the knives.

- The fixed knives are fastened in the left position of the fixture and sharpened as shown in the figure opposite so that the correct relief angle, 20^0, is obtained.



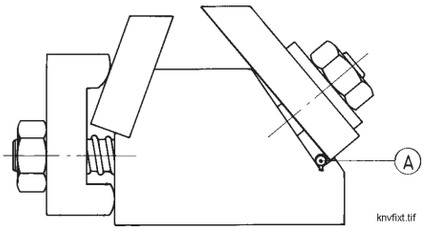
- The knives can be sharpened only as much as is shown in the adjacent figure. After that, they are worn out and should be replaced by new ones in order for the granulation to be effective.



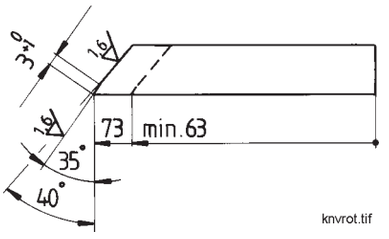
7.2.3 Sharpening therotating knives

NOTE: All rotating knives should be sharpened equally so that the cutter does not become unbalanced. The sharpening fixture SF600 easily gives the correct cutting angle. The fixture is fastened on a magnetic board on a surface grinding machine.

- The rotating knife is fastened with the stirrup (A) under the lower part of the knife, as shown in the adjacent figure, right part. Ball washers should be used when tightening. In this position the relief angle, 40^0, is sharpened.



- Loosen the screws and remove the stirrup, fasten the knife again. In this position the cutting angle, 35^0, 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.

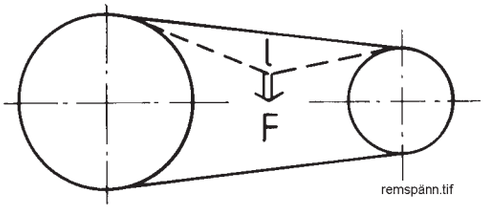


7.3 Belts, inspecting and adjusting

The V-belts must be re-adjusted 15 - 20 hours after the granulator has started operating.

Inspection:

- Release the left side hood.
- Load one of the V-belts between the rotor pulley and the motor pulley with 50 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 8 - 11 mm.



F = 50 N;
l = 8 - 11 mm

Adjusting:

- Slightly loosen the four screws which fasten the motor to the two motor rulers.
- Adjust the belt tension using the two tensioning screws until the correct tension, as described above, is obtained.
- Tighten the screws (C) using a torque of 220 Nm.

From then on, adjust the V-belts when necessary.

7.4 Lubrication

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

Bearing housing + bearing: SNH 218 TG + 23218 CC

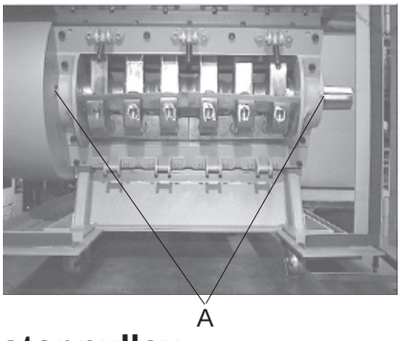
Grease quantity: 850 g (when changing); grease nipple 100 g/ bearing (re-lubrication)

Lubricant: When delivered, the bearing is filled with grease. Suitable lubricants are:

- BP; BP Grease XRB2-EP
- Castrol: Spheerol AP 2
- ESSO; Beacon 2, Beacon 3
- Gulfcrown Grease FF2E
- Mobil; Mobilux Grease 2
- Shell; Shell Alvania 3

Re-lubrication interval: 1000 hours of operation or each year.

Grease points: The grease (approximately 15 g) is applied through the grease nipples (A), located on the bearing cover.



7.5 Disassembling/assembling the rotor pulley

Disassembling:

- Remove the end disk and locking disk.
- Fasten the puller tool with screws and tighten as shown in figure 2.
- 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

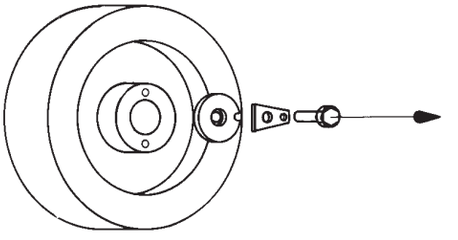
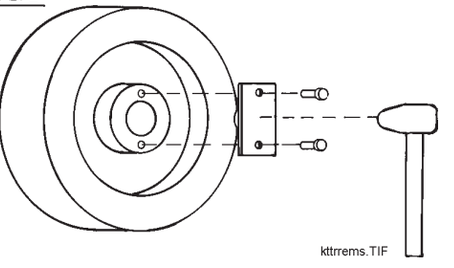


FIG. 2



Assembling:

- Fit the disk as shown in the figure with an end washer and a new locking washer.
- Tighten the bolt (M24) with a torque of 400 Nm.

8. Spare parts list

8.1 Overview

The spare parts list is divided into modules. Each module illustrates a particular part of the granulator.

The granulator is divided into the following modules:

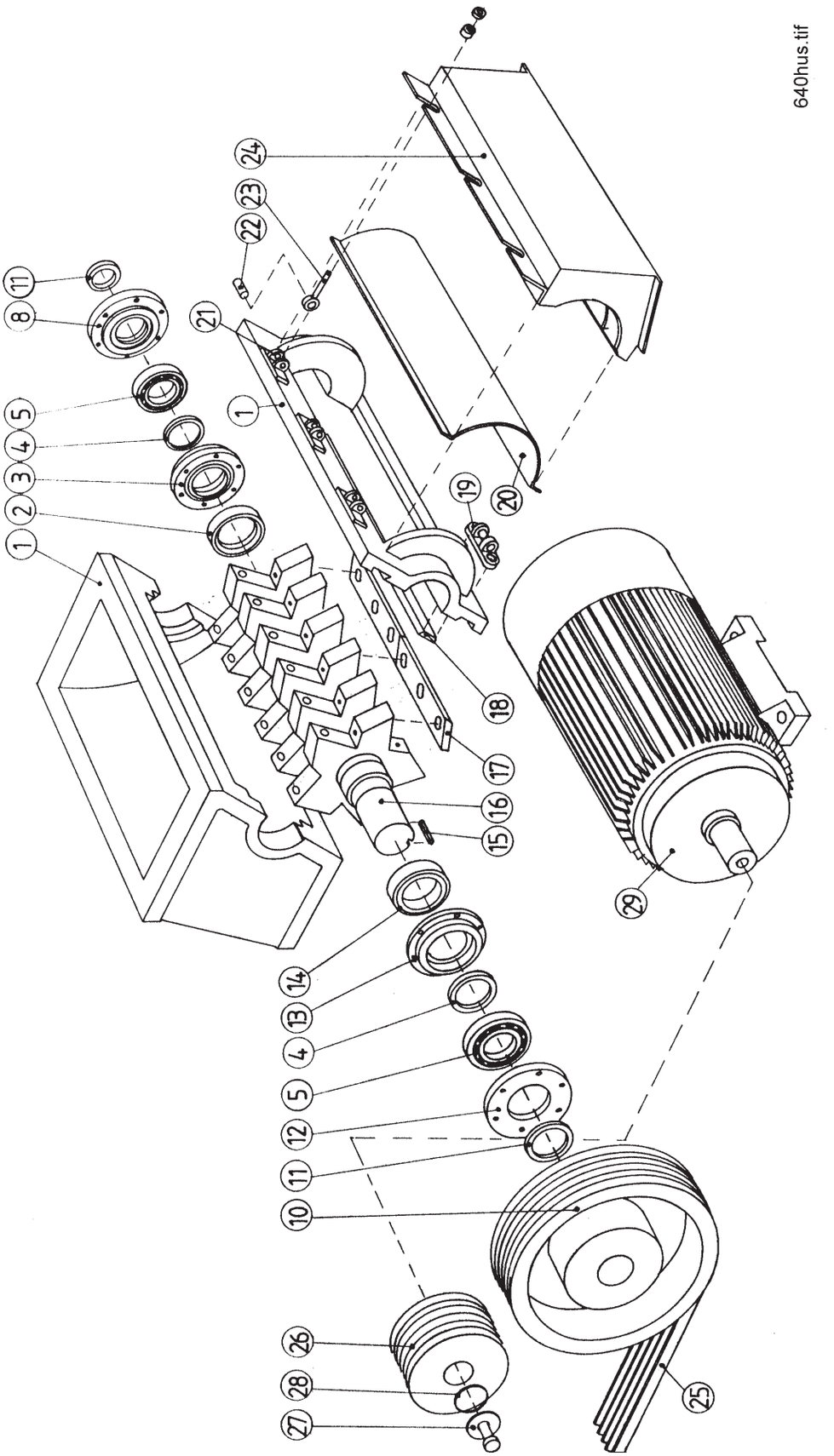
8.2 Ordering spare parts

Only use 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 1224: Cutter housing, all models, diagram

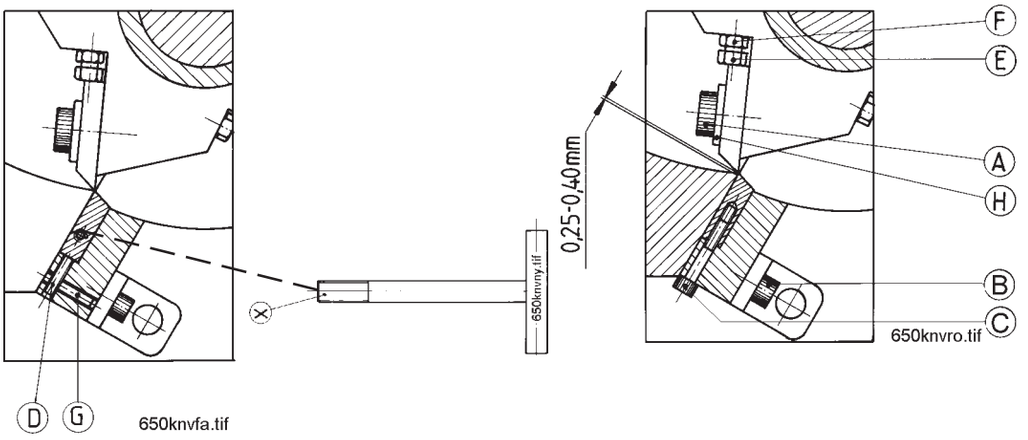


8.1.1 1224: Cutter housing, all models, table

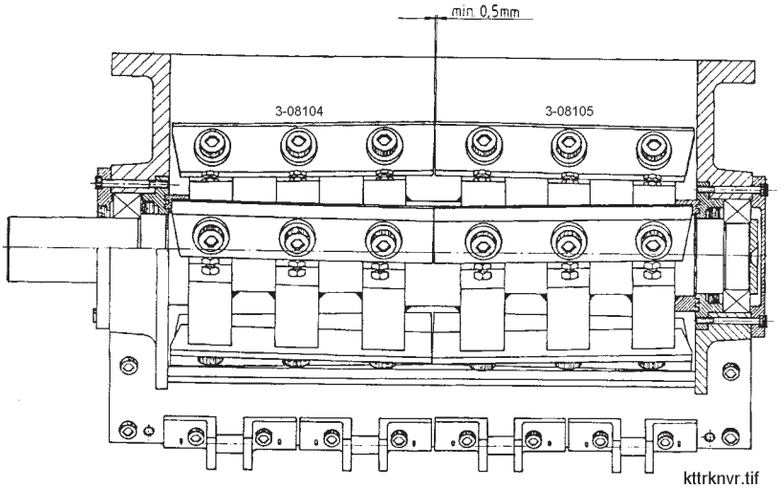
Pos.	Qty.	Part no.	Pos.	Qty.	Part no.
1	1	2-02514	17b*	5	3-08105
2	1	4-00600	18	2	3-08106
3	1	4-02457	19	4	4-02461
4	2	9-60007	20	1	3-02464
5	2	9-60008	21	3	4-10412
8	1	3-04576	22	3	4-10414
10	1	9-30131	23	3	9-50060
11	2	9-60006	24	1	1-20841
12	1	3-02454	25	5	9-30093
13	1	4-02456	26	1	9-30052
14	1	4-0059	27	1	4-01286
15	1	9-50015	28	1	4-02768
16	1	1-06280	29	1	9-10021
17a*	5	3-08104			

* See chapter 8:4 for relative location.

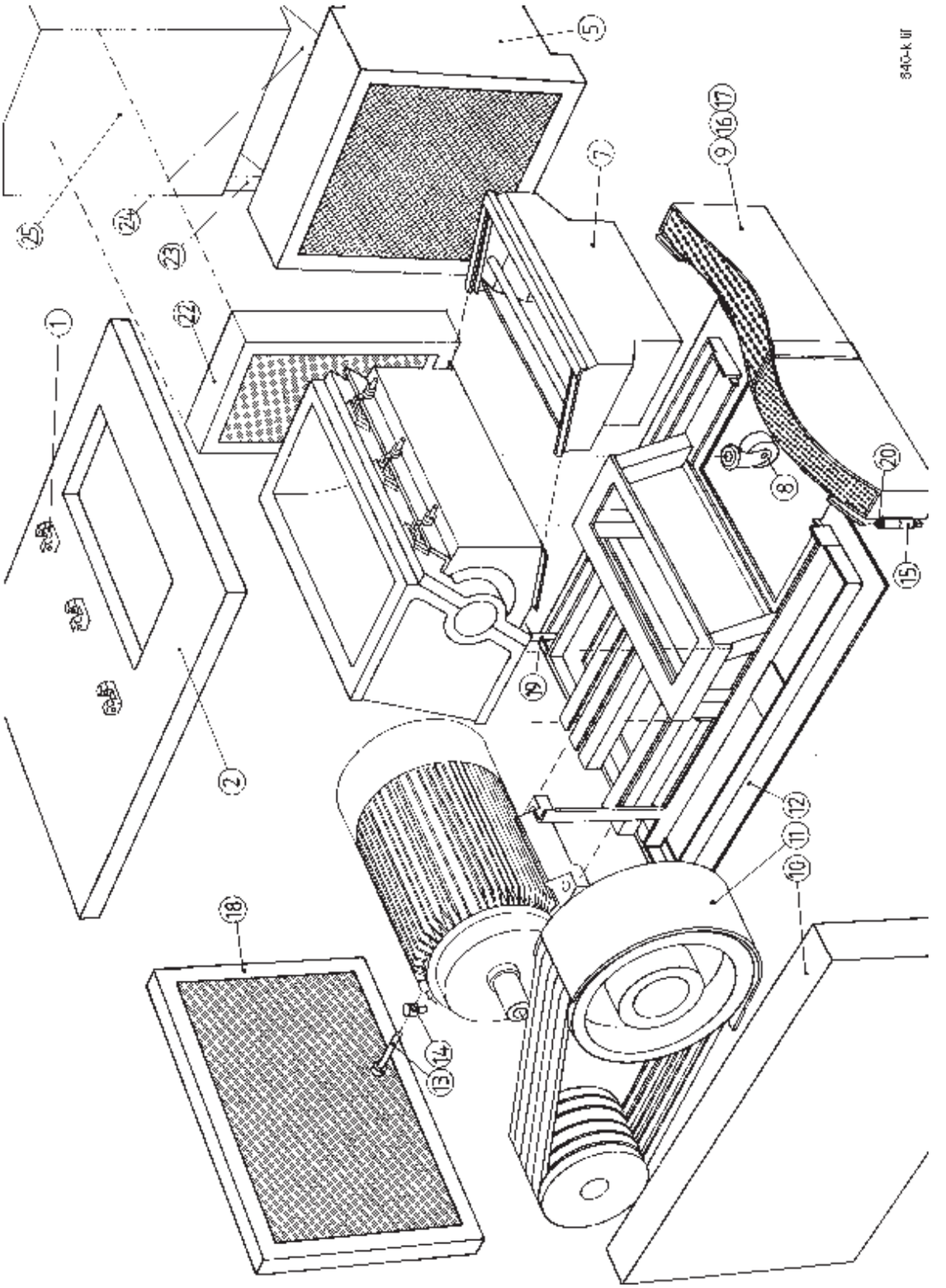
8.1.2 1224, all models: Fixed and rotating knives



Pos.	Qty.	Part no.
A	30	9-40528
B1	14	9-40154
B2	10	9-40047
C	10	9-40054
D	10	9-40172
E,F	30	4-10106
G	4	9-40058
H	30	4-07390
X	1	4-00941



8.1.3 1224, diagram

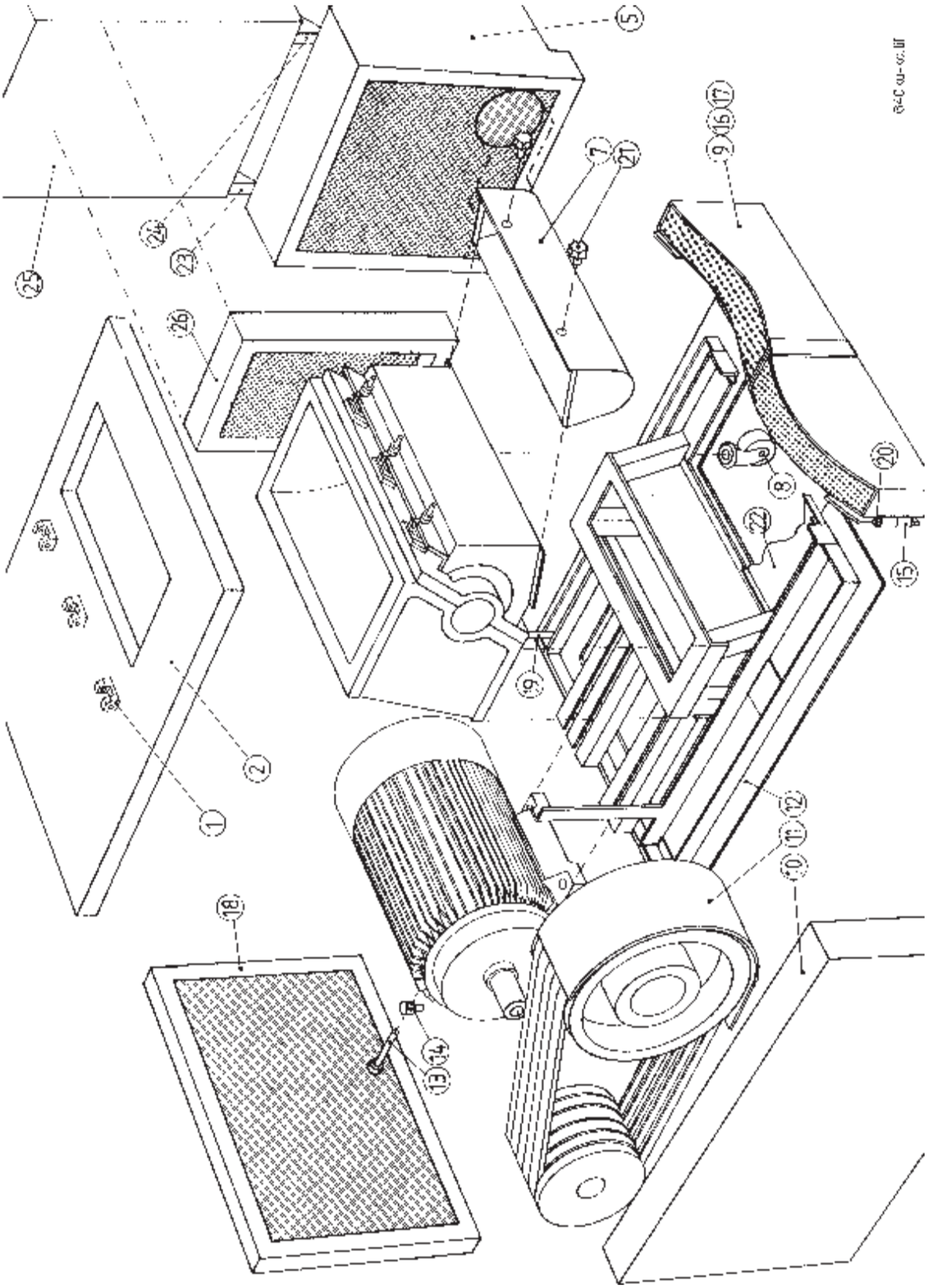


8.1.3 1224, table

Pos.	Qty.	Part no.
1	3	4-02487
2	1	2-11053
5	1	3-14372
7	1	2-04833
8	4	9-50056
9	1	2-14365
10	1	3-14371
11	1	3-02505
12	1	1-02763
13	1	4-02771
14	1	4-00920

Pos.	Qty.	Part no.
15	8	4-04321
16	1	3-05076
17	1	4-05745
18	1	3-14369
19	1	4-02782
20	4	4-04287
22	1	2-23502
23	1	2-23503
24	1	2-23504
25	1	9-10932

8.1.4 1224, diagram

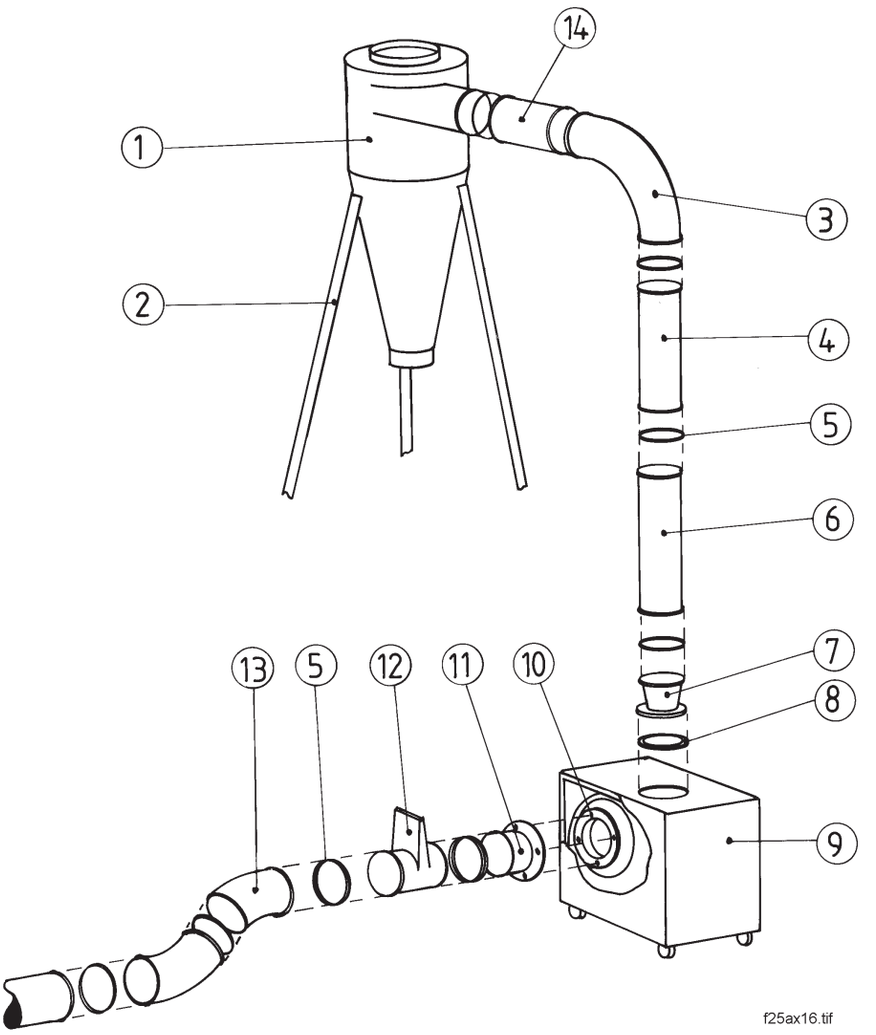


8.1.4 1224, table

Pos.	Qty.	Part no.
1	3	4-02487
2	1	2-11053
5	1	3-14372
7	1	2-23479
8	4	9-50056
9	1	2-14365
10	1	3-14371
11	1	3-02505
12	1	1-02763
13	1	4-02771
14	1	4-00920
15	8	4-04321

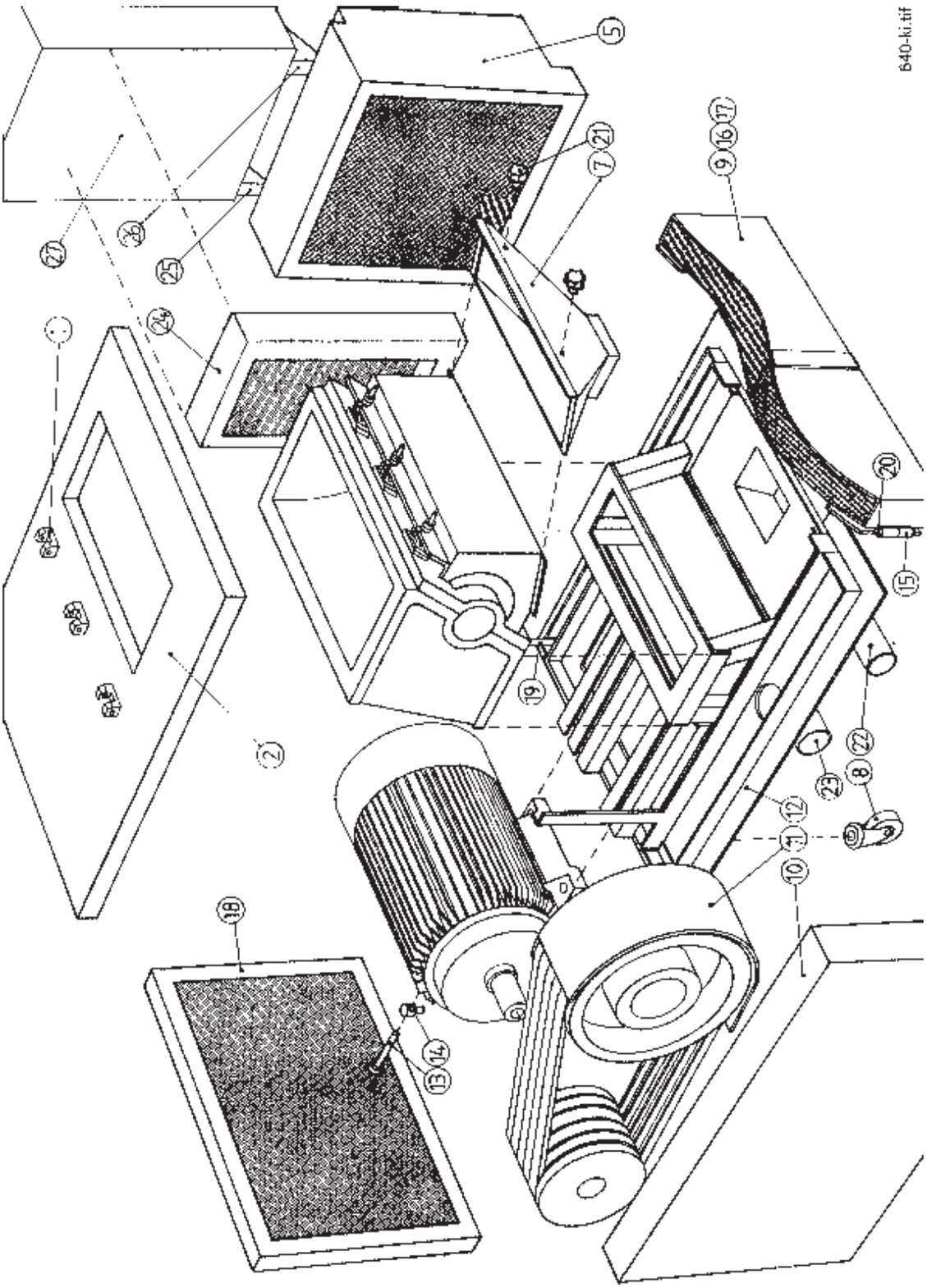
Pos.	Qty.	Part no.
16	1	3-05076
17	1	4-05745
18	1	3-14369
19	1	4-02782
20	4	4-04287
21	2	9-50004
22	1	4-02568
23	1	2-23503
24	1	2-23504
25	1	9-10934
26	1	2-23502

8.1.5 1224, Blower F25 - AX - 16



Pos.	Qty.	Part no.	Pos.	Qty.	Part no.
1	1	3-03037	8	2	9-70153
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	10	9-20107	12	1	9-20197
6	1	9-20105	13	2	4-17781
7	1	2-08684	14	1	4-11767

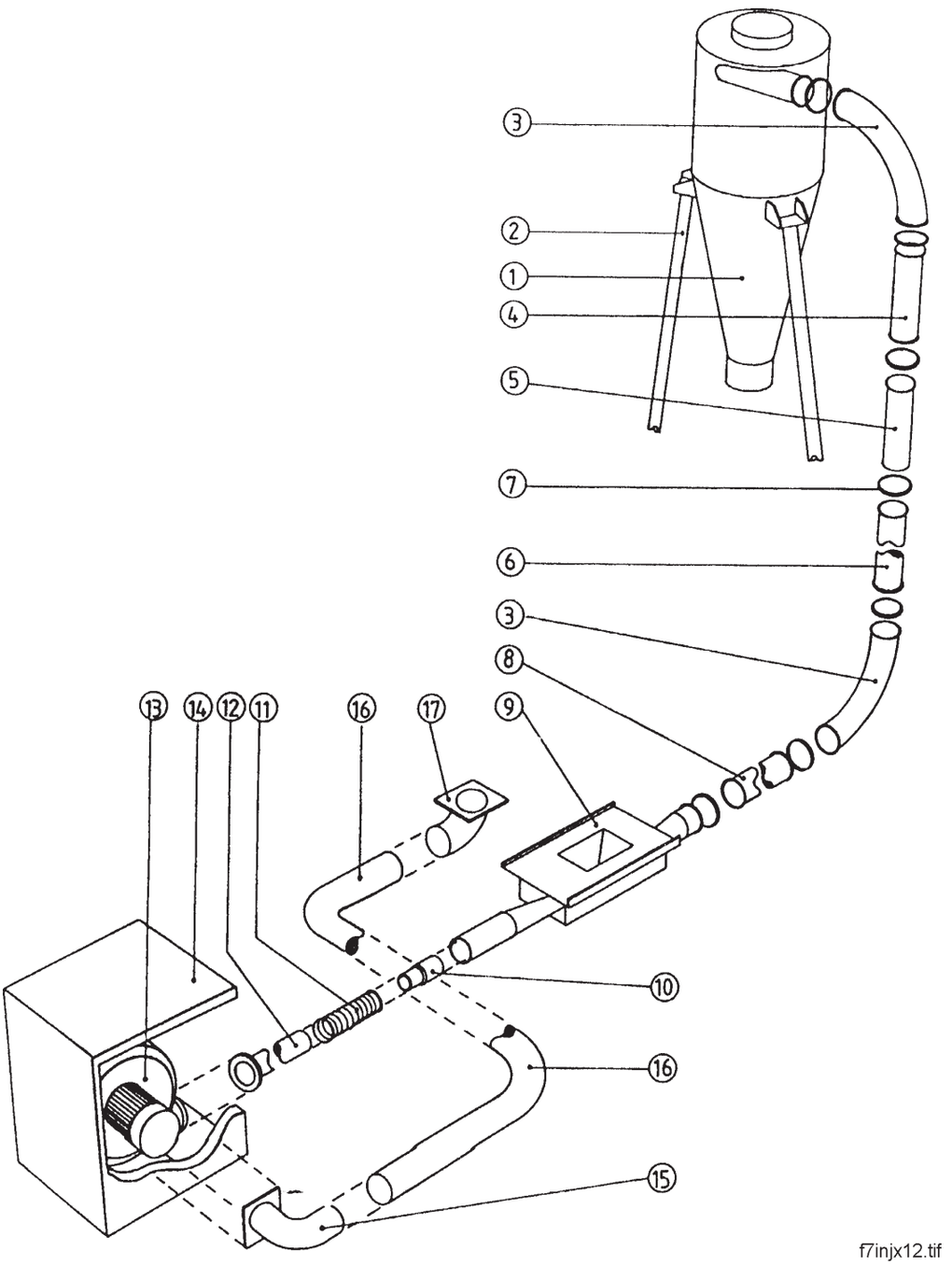
8.1.6 1224, diagram



8.1.6 1224, table

Pos.	Qty.	Part no.
1	3	4-02487
2	1	2-11053
5	1	3-14372
7	1	2-05457
8	4	9-50056
9	1	2-14365
10	1	3-14371
11	1	3-02505
12	1	1-02763
13	1	4-02771
14	1	4-00920
15	8	4-04321
16	1	3-05076
17	1	4-05745
18	1	3-14369
19	1	4-02782
20	4	4-04287
21	2	9-50004
22	1	2-02520
23	1	3-02765
24	1	2-23502
25	1	2-23503
26	1	2-23504
27	1	9-10934

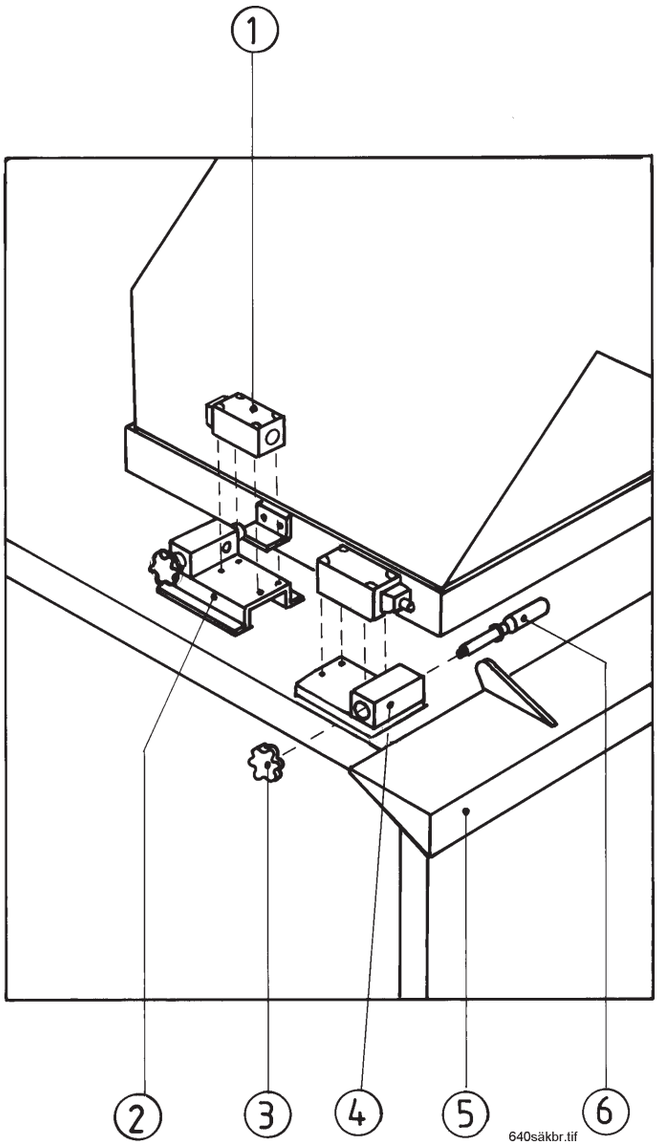
8.1.7 1224, Injector F7



f7injx12.tif

Pos.	Qty.	Part no.	Pos.	Qty.	Part no.
1	1	2-12174	10	1	4-05321
2	3	4-00487	11	1	9-20198
3	2	4-11768	12	1	4-08685
4	1	4-11763	13	1	9-20206
5	1	9-20423	14	1	3-12486
6	1	4-11761	15	1	3-02769
7	7	9-20415	16	1	9-20191
8	1	4-11762	17	1	3-02765
9	1	2-02520			

8.1.8 1224: safety switches, front doors, all models



Pos.	Qty.	Part no.
1	2	9-10570
2	1	4-04304
3	1	2-02292
4	1	3-21596
5	1	2-21592
6	1	4-04229

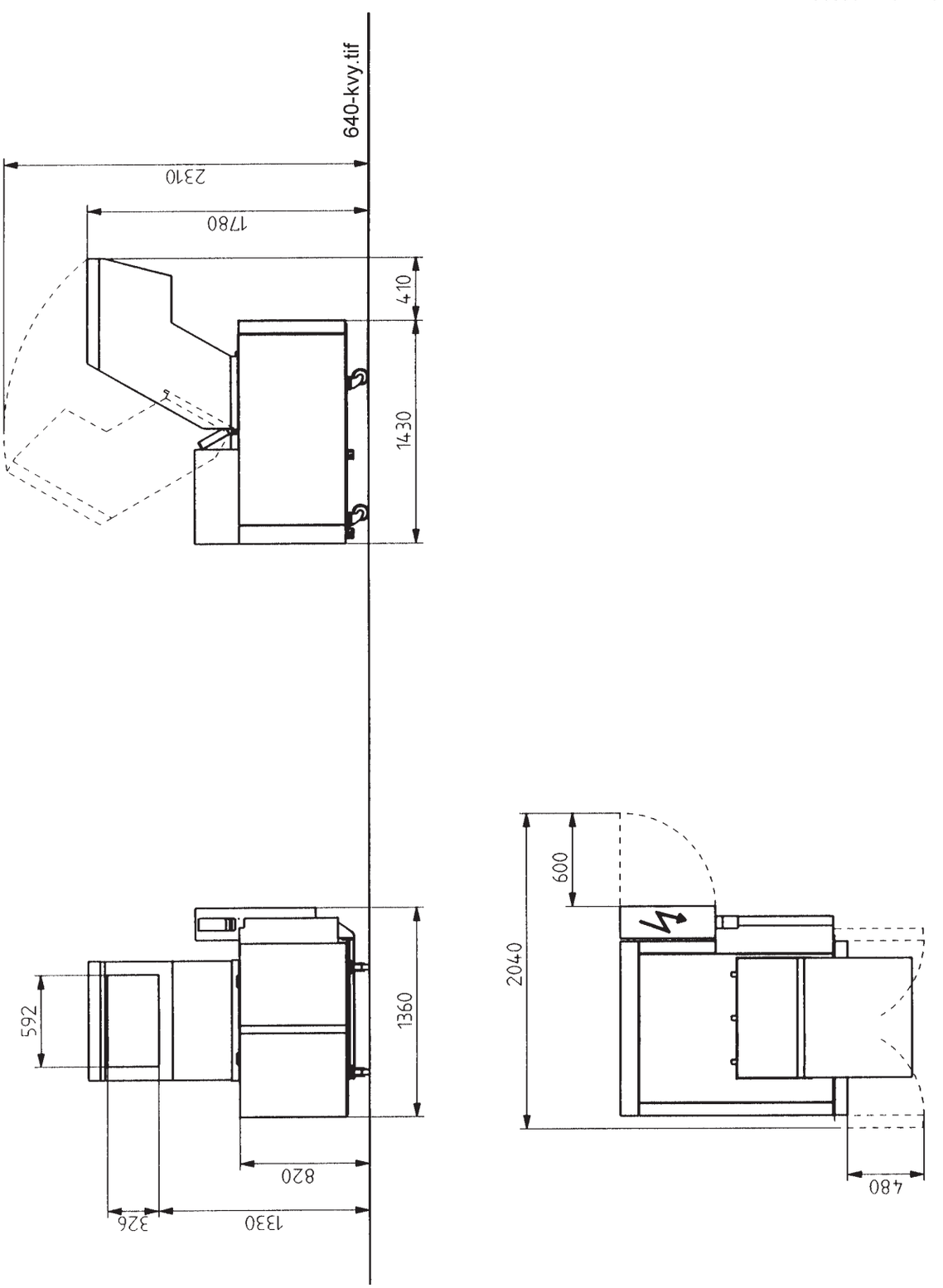
9. Electrical scheme

The following components can be included in the standard electrical equipment for granulators in the 1224 range.

F1	Over-current relay for granulator motor
F14	Automatic circuit breaker for auxiliary transformer
F15	Glass-tube circuit breaker for auxiliary supply
H1	Pilot light
K1	Line contactor
K2	Contactor Δ–position
K3	Contactor Y–position
K4	Time relay Y–Δ start
K5	Contactor for blower motor
K6	Contactor for band conveyor
K7	Over-current relay
K15	Safety relay
Q1	Main circuit-breaker
Q2	Motor protector, blower motor
Q3	Motor protector, band conveyor
S1	Emergency stop
S2	Stop button granulator
S3	Start button granulator
S4	Emergency stop
S5	Safety switch
S6	Safety switch
S7	Safety switch
T1	Auxiliary transformer
T2	Transformer
U1	Metal detector
X1	Connection blocks
X2	Adapter for blower
X3	Adapter for band conveyor
X4	Adapter for metal detector

10. Layout

1224



11. Options

11.1 Overview

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

11.2 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.

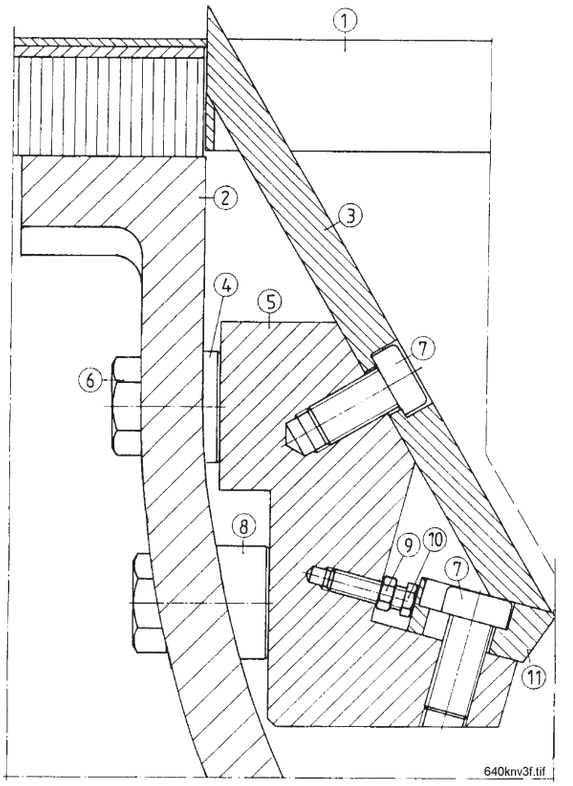
11.1.1 1224: all models: Third fixed knife

Disassembling the third fixed knife:

1. Remove the cover plate (3) by loosening the screws (7) in the plate.
2. Release the knife (11) by unscrewing the screws (7) in the knife.

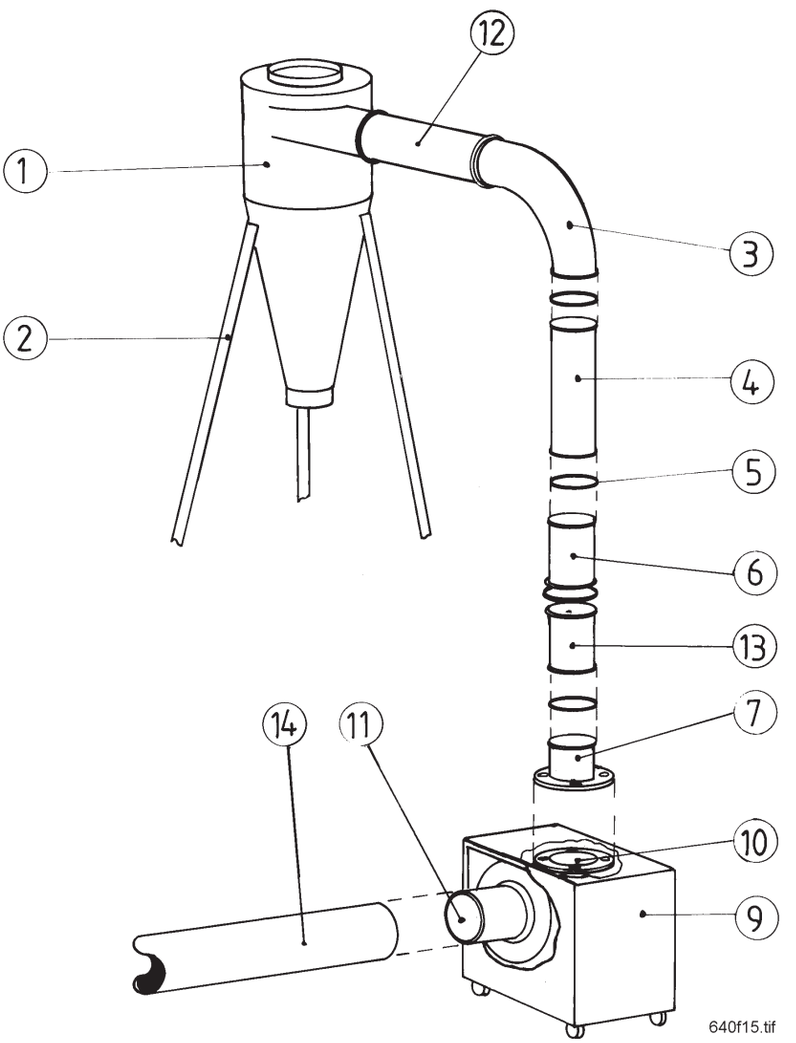
Assembling the third fixed knife:

1. Clean the knife location of all impurities.
2. Place the knife (11) in position.
3. Fit and gently tighten the screws (7).
4. Using the adjusting screws (10), adjust until the correct amount of play, 0.25 — 0.40 mm, is obtained between the fixed and rotating knives.
5. Tighten the screws which hold the knife, using a torque of 220 Nm.
6. Fit the cover plate (3) and tighten the screws (7) using a torque of 220 Nm.



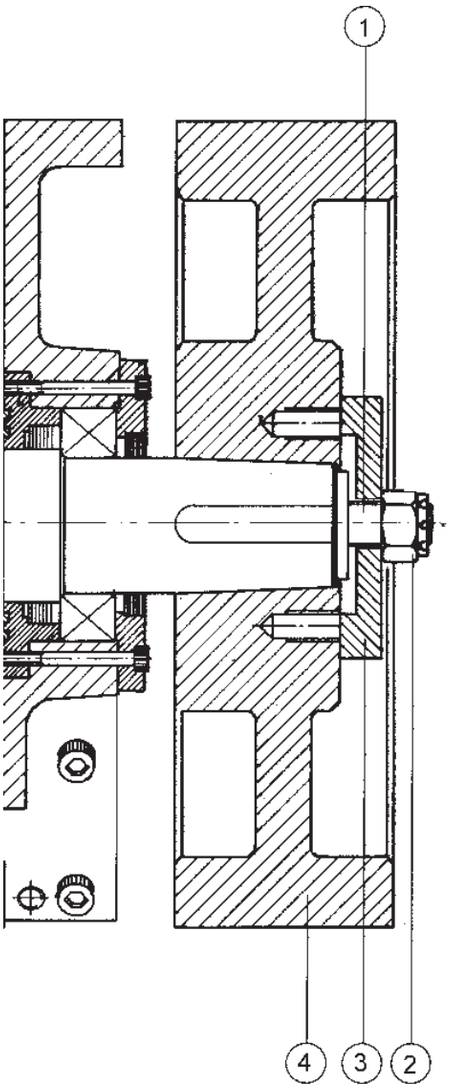
Pos.	Qty.	Part no.	Pos.	Qty.	Part no.
1	1	4-18147	7	9	9-40165
2	1	2-18141	8	4	4-18145
3	1	3-18143	9	4	9-40045
4	4	4-18144	10	4	4-18148
5	1	1-18142	11	1	3-18238
6	8	9-40193			

11.1.2 1224: Blower F15 with cyclone AX-12



Pos.	Qty.	Part no.	Pos.	Qty.	Part no.
1	1	2-12174	9	1	1-11830
2	3	4-00487	10	1	9-20421
3	1	4-11768	11	1	3-10784
4	1	4-11762	12	1	4-11761
5	7	9-20415	13	1	4-11763
6	1	9-20423	14	1	9-20191
7	1	3-10332			

11.1.3 1224: all models: Flywheel



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

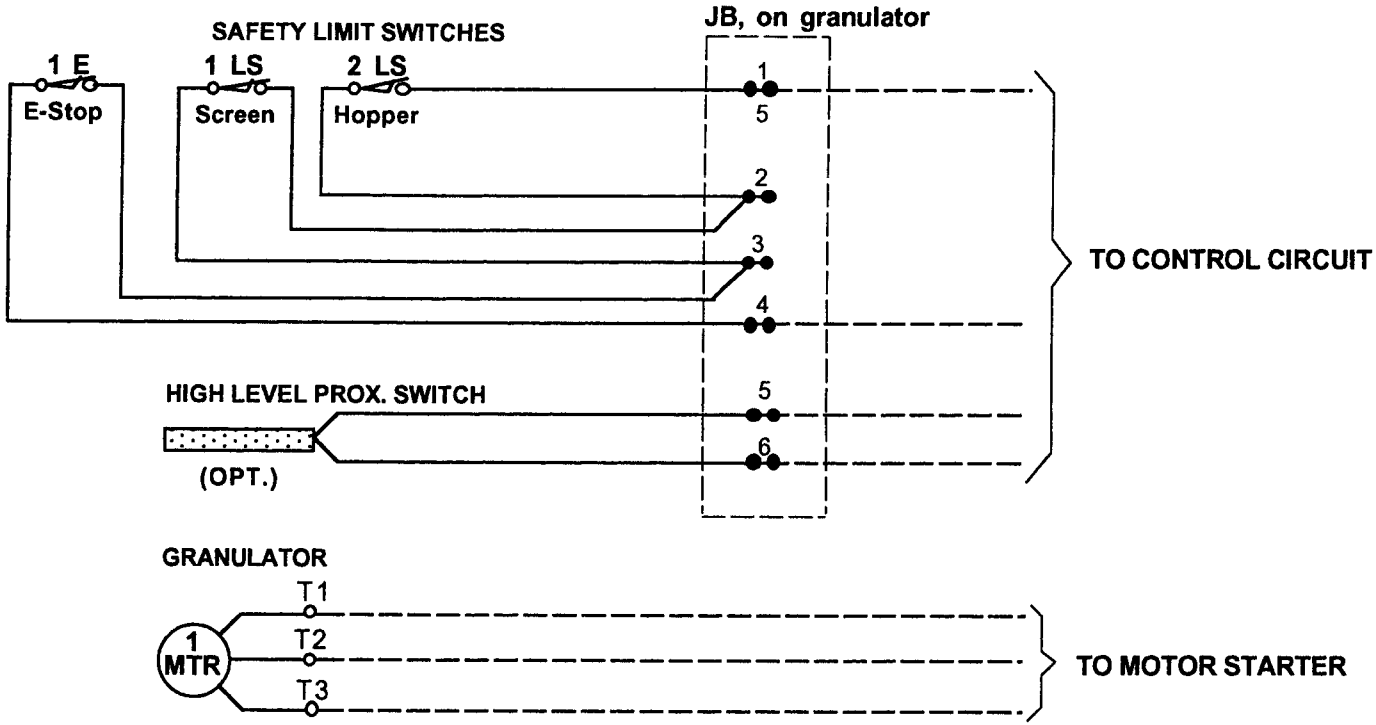
- The machine should be kept in a storage area with constant temperature and humidity.
- Before storing for a long time, the machine should be given a coating of long-term rust preventive, for example Castrol DWX 160 with durability 24 - 36 months in a suitable storage area.

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

CONAIR MARTIN
Part of the Conair Group

NAME
ELEC. SCHEMATIC

1MTR,2LS & ES, CON

MACHINE SIZE
1224C

DR. BY	DATE	CHK. BY	SCALE
HO	11-20-92		N/A

DWG NO.
C-201-00-0606

SHT. 1 OF 1