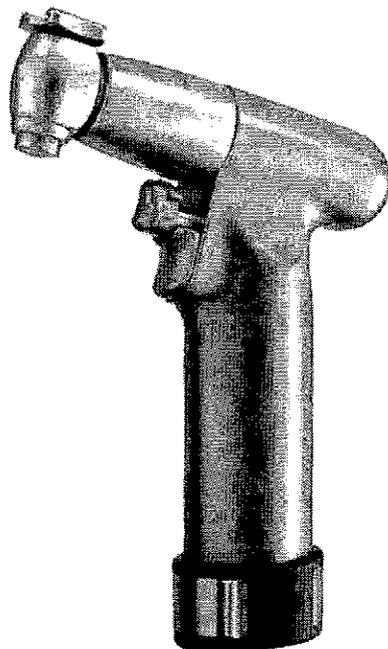


Aesculap Power Systems



GB

Service Manual
Acculan® 3Ti Oscillating Saw GA673

D

Acculan® 3Ti Sagittal - Oszillierende Säge GA673

B | BRAUN
SHARING EXPERTISE



0.0.1 Copyright information

Copyright © 2007

Aesculap AG & Co. KG

All rights reserved 07/07

This service information is copyrighted. The information contained in this service manual may not be copied or otherwise reproduced either in whole or in part without the express permission of Aesculap AG & Co. KG. This manual is intended for informational purposes only. Ownership of this manual alone does not constitute or imply authorization to service the product. The technical information, illustrations and dimensions contained in this manual are non-binding. No claims may be made on the basis of the information contained herein. We reserve the right to implement improvements without altering this documentation. We reserve the right to make technical changes without prior notice.

Main address for servicing:

Aesculap Technischer Service (ATS)

Am Aesculap-Platz

D-78532 Tuttlingen / Germany

Phone: +49 7461 95-2700

Fax: +49 7461 16-2887

E-mail: ats@aesculap.de

Other service addresses can be obtained from the address indicated above.

0.0.2 Manufacturer's liability

We hereby state that we can be held liable for the safety, reliability and performance of our medical products only if:

- users have received instruction based on the Instructions for Use and the enclosed safety-relevant information and maintenance directives for proper handling, use and operation of the medical product and for approved combined use with other medical products, items and accessories.
- the product is assembled, mounted, upgraded, readjusted, modified or repaired by persons that have, due to training and practical experience, the requisite expertise to maintain and service medical products and have access to the required localities of appropriate type, size, equipment, furnishing and other tools, and who are able to carry out such maintenance and servicing work properly and comprehensively to the required extent and standard.
- the product is used according to the Instructions for Use and the Service Manual.
- the applicable norms and standards are abided by.

Service qualifications for individual medical products can be acquired through introduction courses and training sessions with the respective product, held at Aesculap premises.

Such courses can be arranged through Aesculap Technical Service (ATS).

To ensure that your Aesculap warranty remains valid, only Aesculap-approved replacement parts may be used for any repairs. Such parts, as well as the relevant tools, can be ordered from Aesculap Technical Service (ATS).

Any unauthorized opening and/or alterations of the medical product by third parties will lead to the exclusion of our liability, as far as a fault is attributable to such unauthorized opening and/or alteration of the product. Aesculap will not accept liability if unsuitable replacement parts, tools or devices have been used in any repairs.

The product must be inspected after any repair and after it was dropped, damaged or misused.

Such inspections must be carried out by qualified personnel.

Their qualification must comprise specialist training, knowledge and experience as well as familiarity with the relevant technologies, standards and local regulations. Persons assessing the safety of the product must be aware of the possible consequences and risks caused by products that do not meet the safety requirements.

This Service Manual reflects the status at the time of its completion. Technical changes, particularly software changes, may occur at any time.

0.0.3 General notes

The products described in this document are components of the Acculan 3 Ti Power System. This Service Manual covers maintenance and repairs of the respective products, including any inspections and tests involved therein.

Product-specific information on proper handling, use and operation can be found in the respective Instructions for Use.

It is crucial to maintain extreme cleanliness during repairs of the products described below. After any repair, the medical products must undergo an inspection followed by a function test.

If, in the course of a repair, a labeled component is replaced, the labeling must be transferred to the replacement part. Either the original labeling should be applied or the replacement part must be ordered with the appropriate labels. Any such order should include the relevant information for this purpose. If not specified otherwise, all medical products must undergo annual safety inspections.

A safety inspection may be carried out only by persons who:

- can ensure, by their training, expertise and practical experience, that they will perform a proper safety inspection,
- are not under any instructions regarding their function as safety inspectors,
- have appropriate measurement and test equipment at their disposal.

The safety inspection has to be documented by an inspection report including the date and results of the inspection, listing the results of measurements, the measuring procedures and other results of the assessment.

The user is under obligation to keep the inspection report at least till the next safety inspection.

0.0.4 General information about motors and handpieces

It is critically important that ball bearings, in particular, are inspected annually. Even the slightest defects or impurities can lead to overheating during application, which would render the bearing unusable. If a ball bearing needs to be replaced in the course of repairing of e.g. a motor, it is best in most cases to replace all other bearings at the same time.

If it is necessary to heat up adhesive joints during disassembling, a heat gun is the appropriate tool. The smallest possible nozzle should be used so as to avoid damaging other components. For glue joints, make sure that the surfaces to be joined are absolutely clean and degreased. We recommend using Loctite Rapid Cleaner 7063 for this purpose (available under WS. no.520001750). Only use

adhesives listed in this manual. Follow the adhesive manufacturer's recommendations.

Lubricate components with the recommended Aesculap product only.

Following disassembling, clean all components thoroughly and inspect them for any damage. Do not install any component of uncertain condition. Every repair must be followed by a test run of several minutes' duration.

Index of contence

1	Safe handling	6
2	Tools, auxiliary materials, supplies.....	7
2.1	Tools	7
2.2	Auxiliary materials.....	7
2.3	Supplies.....	7
3	Expendable parts/Parts list	7
4	Basic preparations and maintenance	7
4.1	Preparations	7
5	Troubleshooting list	8
6	Disassembling.....	9
6.1	Disassembling the rotor	9
6.2	Disassembling the saw head	9
6.3	Disassembling the saw blade coupling with head assembly	9
6.4	Disassembling the housing (handle)	10
6.5	Disassembling the pusher unit/ finger rest	10
6.6	Disassembling the stator	10
7	Assembling	11
7.1	Preparations	11
7.2	Assembling the stator.....	11
7.3	Assembling the pusher unit/finger rest ..	11
7.4	Assembling the housing (handle).....	11
7.5	Assembling the saw blade coupling with head assembly	11
7.6	Mounting the saw head assembly	12
7.7	Assembling the rotor	13
7.8	Mounting the pre-assembled saw head ..	13
8	Postmaintenance	13
8.1	Function test.....	13
8.2	Function test procedure.....	13
9	Parts list.....	14
10	Test protocol	15



Risk of death and destruction of the product caused by electric shock!

- Mount/Dismount any parts of the unit only under dead-voltage conditions.
- Always take appropriate protective measures when carrying out any work (measurements and tests) on the open unit.

1 Safe handling

- Destruction of electronic components due to electrostatic discharge
- The workplace for working on, or processing of ESD components or circuit boards must be properly equipped with the requisite protective devices.
- When replacing cards/circuit boards, wear an antistatic wristband connected, via appropriate protective resistors, to a central grounding rail.
- Follow the instructions for use and service manuals of the respective medical products.
- Comply with applicable health and safety directives.
- Operate this product with authentic Aesculap accessories only.
- Do not heat up the rechargeable batteries to temperatures above 65°C (150°F); do not sterilize the batteries.
- Ensure that the machine is secured against inadvertent activation while attachments or tools are being coupled, a battery is being inserted or the lid is being put in its position.
- To avoid damage to the product, do not knock it against hard objects.
- Ensure that attachments, tools and other accessories are coupled properly.

2 Tools, auxiliary materials, supplies

2.1 Tools

Designation	Art. no.
Dismounting tool	W-85005036
Mounting tool or fitting surgical clamp/forceps	W-85005101
Mounting tool	W-85005035
Mounting tool	W-81005021
Extrusion sheets with punch	W-85008530
Mounting tool	W-85005023
Angled screwdriver	W-85005051
Mounting tool	W-85005017
Mounting tool	W-85005089
Mounting tool	W-85005027
Mounting tool	W-85005041
Mounting tool	W-85005030
Mounting tool	W-85005037
Press-fit device	W-81005015
Calibrating spike	W-85005022
Calibrating spike	W-07001015
Mounting tool	W-85005042
Press-fitting tool	W-81005023
Mounting tool	W-85005033
Press-fit device	W-81005019
Press-fit device	W-85005070
Mounting tool	W-85005032
Dismounting tool	W-85005124
Jaw wrench SW12	

2.2 Auxiliary materials

Designation	Art. no.
Instructions for Use	TA011868

2.3 Supplies

Designation	Art. no.
Adhesive Loctite 572	560001817
Adhesive Loctite 648	560001821
Grease Klüber-Alfa BF 83-102	537001204
Grease Barrierta L25DL	537001568

3 Expendable parts/Parts list

Designation	Art. no.
Bellows	GA672276
Bevel gear	GA673203
Annulus	GA673204
Radial ball bearing calotte 5x14x7	GA673210
Plunger	GA673227
Face seal	TA005307

Designation	Art. no.
O-seal 9 x 1	TA011614
Slide seal	TA011647
Radial ball bearing 8 x 16 x 6	TA011725
Radial ball bearing 7 x 19 x 6	TA011726
O-seal 17 x 1	TA011729
Quadring seal 26.7 x 1.78	TA011745
O-seal 19 x 1	TA011732
Gasket seal	TA011735
Radial ball bearing 10 x 19 x 5	TA011736
O-seal 16 x 1	TA011764
O-seal 60 x 1,5	TA011773
O-seal 10 x 1	TA011790
Radial ball bearing 6 x 16 x 5 2Z	TA011863

4 Basic preparations and maintenance

4.1 Preparations

Prior to any repair, ensure that the product is sterile.

- Remove the cover.
- Check the silicone plate.
- Check the cover for proper functioning.
- Remove the battery.
- Check the charge state of the battery.
- Carry out visual inspection for any damage.

Function test

- Check that the trigger is moving smoothly.
- Check the saw blade coupling for proper functioning.
- Check oscillating saw GA673 for untypical running noises indicating defective bearings or gearing components.
- Run the device at different speeds (low, medium, max.).

Maintenance

To ensure reliable operation, servicing has to be carried out according to the information on the maintenance label.



2012 - 02

5 Troubleshooting list



Malfunction	Cause	Finding	Remedy
Motor running too slow, rough or with insufficient torque or power.	Rotor ball bearings worn, dirty or defective.	Rotor ball bearings not free-moving.	Replace worn or defective parts.
	Stator defective.	Insufficient power/speed.	Replace worn or defective parts.
	Battery discharged or defective.	Insufficient power/speed.	Charge/test the battery.
	Trigger mechanism worn, dirty or defective.	Trigger cannot be pushed through/ Trigger jammed.	Replace worn or defective parts.
	Saw blade blunt.	Worn teeth on saw blade.	Couple a new saw blade.
Saw blade cannot be coupled/uncoupled.	Coupling components worn, dirty or defective.	Coupling not functioning properly/Coupling components deformed.	Replace worn or defective parts.
	Saw blade defective.	Saw blade bent or broken in coupling region.	Couple a new saw blade.
Cover lids not locking correctly on the machine.	Lids or bolts on machine worn/defective.	Bolts and/or lids worn, dirty or defective.	Replace worn or defective parts.

6 Disassembling

6.1 Disassembling the rotor

- Remove saw head assembly GA673801. To do this, heat up and loosen the thread of housing assembly GA673803. Use dismounting tool W-85005036.
- Remove saw head assembly GA673801 with its attached parts. Caution: O-seal TA011722, gasket TA010566, parallel key GA674232 and compression spring TA011473 may drop out or have to be taken out subsequently.
- Extract rotor complete GA674803 from stator assembly GA673802.
- Caution: The rotor is highly magnetic. It must not be brought into contact with other magnetic steel components.
- If necessary, the ball bearing of rotor complete GA674803 can be replaced. Slide of ball bearing TA011863 from rotor complete GA674803. Rotor pre-assembled GA674804 is not dismantled/repared any further.

6.2 Disassembling the saw head

- Remove special circlip GA673218.
- Extract bearing ring GA673209 with attached parts from the saw blade coupling with head assembly GA673820.
- Remove retaining ring TA010380 from bevel GA673203.
- Extract bevel GA673203 from ball bearing TA011725.
- Remove circlip TA005803 from bearing ring GA673209.
- Extract ball bearing TA011725 from bearing ring GA673209.
- Remove O-seal TA011733 and O-seal TA011764 from bearing ring GA673209.
- Lift retaining ring GA673211 out of its groove. Use mounting tool W-85005101 or a surgical clamp/forceps.
- Extract annulus GA673204 with attached parts from the saw blade coupling with head assembly GA673820. Use mounting tool W-85005035.
- Remove C-ring TA003131 from annulus GA673204.
- Extract calotte ball bearing GA673210 from annulus GA673204.
- Remove snap ring TA003131 from annulus GA673204.

- Extract ball bearing TA011726 from annulus GA673204.
- Extract distance sleeve GA673208 from annulus GA673204.
- Extract ball bearing TA011726 from annulus GA673204.
- Remove circlip GA673211 from annulus GA673204.
- Push down the ring/compression spring through the slots inside housing assembly GA673803 and fixate the components in the assembly position. Use mounting tool W-81005021.
- Remove stop pin short GA673213 (2x) and stop pin long GA673212 (1x) from saw head GA673202. Use mounting tool W-81005021 or dismounting tool W-85005124 and mounting tool W-81005021.
- Remove mounting tool W-81005021.
- Remove housing assembly GA673803 from saw head GA673202.
- Remove Quadring seal TA011745 from housing assembly GA673803.
- Remove gasket TA011735 (2x) from housing assembly GA673803. Housing assembly GA674811 is not dismantled/repared any further.

6.3 Disassembling the saw blade coupling with head assembly

- Heat up guide ring GA673226 and unscrew it from saw head GA673202. Caution: Balls TA003629 (6x) and compression spring TA011727 may drop out at this step. Use appropriate clamping tongs.
- Remove guide ring GA673226 from push button GA673225.
- Remove slide seal TA011647 and O-seal TA011729 from guide ring GA673226.
- Remove O-seal TA011732 from guide ring GA673226.
- Remove washer TA005464 from ram GA673227.
- Remove thrust ring GA673224 from ram GA673227.
- Heat up ball contact ring GA673223 and unscrew it from saw head GA673202. Use mounting tool W-85005023.
- Remove O-seal TA011764 from ball contact ring GA673223.
- Remove snap ring TA010364 from saw blade collet GA673220.

- Press out saw blade collet GA673220 with its attached parts from oscillating arm GA673221. To do this, press on the ring surface of saw blade collet GA673220 with the axis in correct alignment. Caution: Spacer ring GA673214, spacer ring GA673215 and oscillating arm GA673221 may drop out at this stage. Use extrusion sheets with punch W-85008530.
- Remove ball bearing TA011726 from saw head GA673202.
- Remove O-seal TA011732 from saw head GA673202.
- Remove circlip TA008359 from saw head GA673202.
- Remove ball bearing TA011736 from saw head GA673202.
- Remove face seal TA005307 from saw head GA673202.
- Remove parallel pin TA011728 from ram GA673227.
- Extract ram GA673227 with its attached parts from saw blade collet GA673220.
- Slide off compression spring TA008358 from ram GA673227.
- Remove O-seal TA011721 from ram GA673227.

6.4 Disassembling the housing (handle)

- Slightly heat up remove fillister head screw TA011616. Use angled screwdriver W-85005051.
- Loosen central screw GA674240. Use mounting tool W-85005017.
- Remove O-seal TA011790 from central screw GA674240.
- Remove the old servicing date from central screw GA674240.
- Remove housing GA672201.
- Heat up bolt GA672206.
- Unscrew bolt GA672206 from housing GA672201.

6.5 Disassembling the pusher unit/ finger rest

Finger rest:

- Loosen nut GA672275 with jaw wrench SW 12.
- Remove finger rest GA674271 from mounting plate GA674270.
- Remove special seal GA674276.
- Remove O-seal TA011614 from finger rest GA674271.

Pusher unit:



- Remove pusher bridge GA674273 from pusher unit assembled GA674850.
- Loosen nut GA672275 with jaw wrench SW 12.
- Extract pusher unit speed GA674850 with mounting parts from trigger plate GA674270.
- Remove O-seal TA011614 from pusher guide saw GA674274.
- Remove union sleeve GA672274 from pusher unit speed GA674850.
- Remove pin TA011724 from pusher guide saw GA672271.
- Detach pusher guide saw GA674274 from pusher unit assembled GA674850.
- Remove bellows GA672276 from pusher unit speed GA674850.
- If necessary, crank GA674275 at pusher unit speed GA674850 can be replaced. To do this, heat up and loosen distance bolt GA620287 at the crank GA674275. Caution: Compression spring TA009159 may drop out.
- Remove compression spring TA009159 from crank GA674275.
- Pusher unit speed GA674850 is not dismantled/repared any further.

6.6 Disassembling the stator

- Heat up and remove threaded ring GA673206. Use mounting tool W-85005089.
- Extract stator assembled GA673802 from mounting plate GA674270.
- The O-seal TA011764 on stator assembled GA673802 can be replaced, if necessary. Stator assembled GA673802 is not dismantled/repared any further.

7 Assembling

7.1 Preparations

- Rethread every thread, using a taper, and/or clean the threads.
- Clean all components, remove all silicone and Loctite residues, and degrease.
- Clean all surfaces.

7.2 Assembling the stator

- Insert O-seal TA011764 in Stator assembled GA673802.
- Insert stator assembled GA673802 in mounting plate GA674270.
- Secure stator assembly GA673802 with threaded ring GA673206 in mounting plate GA674270. Use mounting tool W-85005089.

7.3 Assembling the pusher unit/finger rest

Pusher unit:

- Position crank GA674275 with compression spring TA009159 in the pocket of the trigger cap of pusher unit assembled GA674850 and fasten it with distance screw GA620287. Secure the thread with Loctite 648. Test the crank for proper functioning only after the adhesive has cured completely.
- Pull bellows GA672276 over pusher unit assembled GA674850. Use mounting tool W-85005027.
- Install pusher guide saw GA674274 on pusher unit saw GA674850.
- To align pusher guide saw GA674274, insert pin TA011724.
- Pull bellows GA672276 over pusher guide saw GA672271.
- Install union sleeve GA672274 on pusher unit assembled GA672850.
- Apply O-seal TA011614 on pusher guide saw GA674274.
- Insert pusher unit assembled GA674850 with attached parts in mounting plate GA674270 and fasten it with nut GA672275. Secure the thread with Loctite 572. Use jaw wrench SW12. To facilitate the assembling procedure, lubricate the O-seal with Klüber-Alfa BF 83-102 grease prior to assembling. Make sure the pusher is aligned correctly.

- Mount pusher bridge GA674273 in pusher unit assembled GA674850.

Finger rest:

- Mount O-seal TA011614 and special seal GA674276 on finger rest GA674271.
- Position nut GA672275 under pusher bridge GA674273.
- Insert finger rest GA674271 with its attachments in mounting plate GA674270.
- Fasten finger rest GA674271 on mounting plate GA674270 with nut GA672275. Secure the thread with Loctite 572. Use jaw wrench SW12. To facilitate the assembling procedure, lubricate the O-seal with Klüber-Alfa BF 83-102 grease prior to assembling.

7.4 Assembling the housing (handle)

- Insert O-seal TA011773 in the groove on mounting plate GA674270.
- Screw bolt GA672206 into housing GA672201. Secure/seal the thread with Loctite 648.
- Install housing GA672201 on mounting plate GA674270. To facilitate the assembling procedure, lightly lubricate the O-seal with Klüber-Alfa BF 83-102 grease.
- Insert O-seal TA011790 in its groove on central screw GA674240.
- Screw central screw GA674240 with attached parts into stator assembled GA673802 and fixate housing GA672201. Secure/seal the thread with Loctite 572. To facilitate the assembling procedure, lightly lubricate the O-seal with Klüber-Alfa BF 83-102 grease. Use mounting tool W-85005017.
- Insert fillister head screw TA011616 from inside the housing GA672201. Use angled screwdriver W-85005051. Secure the thread with Loctite 572.

7.5 Assembling the saw blade coupling with head assembly

- Insert O-seal TA011721 in its groove on ram GA673227.
- Install compression spring TA008358 on ram GA673227.
- Install ram GA673227 with its attached parts in saw blade collet GA673220. Before that, slightly lubricate the O-seal and friction surfaces of the ram with Klüber-

- Alfa BF 83-102 grease. Make sure the components are in correct alignment.
- Position ram GA673227 with parallel pin TA011728 in saw blade collet GA673220.
- Insert face seal TA005307 in saw head GA673202. Use mounting tool W-85005041.
- Insert ball bearing TA011736 in saw head GA673202. Use mounting tool W-85005030.
- Secure ball bearing TA011736 with circlip TA008359 in saw head GA673202. Use mounting tool W-85005030.
- Insert O-seal TA011732 in saw head GA673202.
- Slightly lubricate face seal TA005307 with Klüber-Alfa BF 83-102 grease.
- Insert saw blade collet GA673220 with its attached parts in saw head. Install spacer ring GA673215 and oscillating arm GA673221 on saw blade collet GA673220. Make sure the components are in correct alignment. Use mounting tool W-85005037. Now press oscillating arm GA673221 down to the stop on saw blade collet GA673220. Use press-fit tool W-81005015.
- Install spacer ring GA673214 on saw blade collet GA673220.
- Insert ball bearing TA011726 in saw head GA673202. To facilitate the assembling procedure, lightly lubricate the O-seal with Klüber-Alfa BF 83-102 grease.
- Secure ball bearing TA011726 with snap ring TA010364 on ram GA673227.
- Insert O-seal TA011764 in ball contact ring GA673223.
- Secure ball bearing TA011726 with ball contact ring GA673223 in saw head GA673202. Secure the thread with Loctite 572. Use mounting tool W-85005023.
- Put thrust ring GA673224 on ram GA673227.
- Secure thrust ring GA673224 with washer TA005464 on ram GA673227.
- Insert the six balls TA003629.
- Fill 2/3 of the spaces between the balls with Barrierta L25DL grease.
- Insert O-seal TA011732 in the groove of guide ring GA673227.
- Insert O-seal TA011729 and slide seal TA011647 in guide ring GA673226. Observe the correct position of the chamfer of slide seal TA011647.



- Slightly lubricate slide seal TA011647 and O-seal TA011732 Klüber-Alfa BF 83-102 grease. Calibrate slide seal TA011647. Use calibration punch W-85005022.
- Insert push button GA673225 in guide ring GA673226.
- Position compression spring TA011727 on thrust ring GA673224.
- Firmly screw in, by hand, guide ring GA673226 with attached parts in saw head GA673202. Secure the thread with Loctite 572.

7.6 Mounting the saw head assembly

- Insert frontal gasket TA011735 in housing assembly GA673803. Use calibration spike W-07005081.
- Insert Quadring seal TA011745 in housing assembly GA673803.
- Install housing assembly GA673803 with attached parts on saw head GA673202. Before that, slightly lubricate the Quadring seal with Klüber-Alfa BF 83-102 grease.
- Push down the ring/compression spring through the slots inside housing assembly GA673803 and fixate the components in the assembly position. Use mounting tool W-81005021.
- Insert stop pin long GA673212 in saw head GA673202. Use mounting tool W-85005101.
- Insert stop pin short GA673213 in saw head GA673202. Use mounting tool W-85005101.
- Remove mounting tool W-81005021.
- Insert rear gasket TA011735 in housing assembly GA673803. Use mounting tool W-85005042.
- Press ball bearing TA011726 onto annulus GA673204. Use press-fit tool W-81005023.
- Install distance sleeve GA673208 on annulus GA673204.
- Press ball bearing TA011726 onto annulus GA673204. Use press-fit tool W-81005023.
- Secure ball bearing TA011726 with snap ring TA010364 on annulus GA673204.
- Press calotte ball bearing GA673210 onto annulus GA673204. Use press-fit tool W-81005023.
- Secure calotte ball bearing GA673210 with C-ring TA003131 on annulus GA673204.

- Insert O-seal TA011732 in the groove of saw head GA673202. To facilitate the assembling procedure, lightly lubricate the O-seal with Klüber-Alfa BF 83-102 grease.
- Lubricate the outer ring of calotte ball bearing GA673210 with Klüber-Alfa BF 83-102 grease.
- Insert annulus GA673204 with attached parts in saw head GA673202.
- Secure annulus GA673204 with retaining ring GA673211 in saw head GA673202. Use mounting tool W-85005101. In case of mounting difficulties, use mounting tool W-85005033.
- Press ball bearing TA011725 onto bevel GA673203. Use press-fit tool W-81005019.
- Secure ball bearing TA011725 with snap ring TA010364 on bevel GA673203.
- Insert O-seal TA011764 and O-seal TA011733 in the grooves of bearing ring GA673209 and slightly lubricate it with Klüber-Alfa BF 83-102 grease.
- Insert bevel GA673203 with attached parts in bearing ring GA673209.
- Secure bevel GA673203 with circlip TA005803.
- Slightly lubricate the gear teeth of bevel GA673203 and annulus GA673204 with Barrierta L25DL grease.
- Mount bearing ring GA673209 with attached parts in saw head GA673202.
- Secure annulus GA673204 with circlip GA673218 in saw head GA673202.

7.7 Assembling the rotor

- **Caution:** The rotor is highly magnetic. It must not be brought into contact with other magnetic steel components.
- Press ball bearing TA011863 onto rotor pre-assembled GA674804. Use press-fit tool W-85005070.
- Install compression spring TA011473 on rotor pre-assembled GA674803.
- Insert parallel key GA674232 in the groove of rotor complete GA674803.
- Carefully insert rotor complete GA674803 in stator assembled GA673802. **Caution:** Avoid impact strain on the ball bearings.

7.8 Mounting the pre-assembled saw head

- Lightly lubricate the spindle end of rotor complete GA674803 and borehole of bevel

GA673203 with Klüber-Alfa BF 83-102 grease.

- Position O-seal TA011722 on mounting plate GA674270. To facilitate the assembling procedure, lightly lubricate the O-seal with Klüber-Alfa BF 83-102 grease prior to assembling.
- Shift the saw head out of the housing assembly and fixate it in its mounting position. Use mounting tool W-85005032.
- Install saw head assembly GA673801 on stator complete GA673802 and firmly screw it, by hand, onto housing assembly GA673803. Secure/seal the thread with Loctite 572.
- Remove mounting tool W-85005032.

8 Postmaintenance

- Apply a laser inscription showing a new servicing date on central screw GA674240 of oscillating saw GA673.

 2012 - 02	Specify the end date of the next maintenance cycle. (plus 12 months) Year - Month
---	--

- Test functions
- Carry out a function test.
- Refer to the technical specifications listed in the instructions for use, if necessary.

8.1 Function test

- Check the triggers/pushers for smooth movement.
- Check the saw blade coupling for proper functioning.
- Check cover GA675 for proper functioning on the machine.

8.2 Function test procedure

- Install cover GA675 on the Acculan® 3Ti motor unit.
- Run the machine with a fully charged battery.
- Run the unit at different speeds (low, medium, max.).
- Couple a sharp tool and saw into a piece of wood.
- Remove saw blade.
- Run the unit "idle" without a saw blade for 4 x 20 sec., pausing for 1 min. between each of the 4 cycles.
- The temperature must not exceed 41 ° C anywhere on the unit.

Oscillating saw GA673

- Check the current intake of the unit. The maximum current intake is 10A at U=10 Volt.
- Reciprocating speed: 15,000 1/min ±15%
- Check the unit for untypical running noises indicating defective bearings or couplings.



9 Parts list

Designation	Art. no.
Housing	GA672201
Bolt	GA672206
Union sleeve	GA672274
Nut M10x0.75	GA672275
Bellows	GA672276
Saw head	GA673202
Bevel	GA673203
Annulus	GA673204
Threaded ring	GA673206
Distance sleeve	GA673208
Bearing ring	GA673209
Radial ball bearing calotte 5x14x7	GA673210
Retaining ring internal circlip 19	GA673211
Stop pin long	GA673212
Stop pin short	GA673213
Spacer ring	GA673214
Spacer ring	GA673215
Stop ring	GA673216
Ring internal circlip special 23	GA673218
Collet saw blade	GA673220
Oscillating arm	GA673221
Ball contact ring	GA673223
Thrust ring	GA673224
Push button	GA673225
Guide ring	GA673226
Ram	GA673227
Pusher bridge	GA673273
Stator assembled	GA673802
Housing assembled	GA673803
Parallel key	GA674232
Central screw	GA674240
Mounting plate	GA674270
Finger rest	GA674271
Pusher guide for saw	GA674274
Seal special silicone	GA674276
Rotor pre-assembled	GA674804
Pusher unit assembled	GA674850
C-ring for GB130	TA003131
Ball Ø4	TA003629
Face seal	TA005307
Washer 3.2 DIN6799 1.4310	TA005464
C-ring internal circlip 16	TA005803
Compression spring 0.7x5.3x14	TA008358

Snap ring internal circlip 19	TA008359
Snap ring shaft 7mm, WSR 7	TA010364
Shaft retaining ring WSR 8	TA010380
O-seal 9x1 EPDM 7502	TA011614
Screw fillister head Torx M3 x 4 stainless	TA011616
Seal slide special Turcon Stepseal 16	TA011647
Seal O-seal 5x1 HNBR coated	TA011721
Seal O-seal 34x1 EPDM E7502	TA011722
Spring compression 0.7 x 6.1 x 21.8 5.5	TA011723
Pin ceramics D2 x 7.6	TA011724
Radial ball bearing 8 x 16 x 6	TA011725
Radial ball bearing 7 x 19 x 6	TA011726
Spring compression 0.6 x 9.0 x 15.5	TA011727
Parallel pin 1.5H9 x 6.5	TA011728
Seal O-seal 17x1 HNBR coated	TA011729
Spring compression 1.80x26.4x69.1x3.5	TA011730
Seal O-seal 19x1 EPDM E7502	TA011732
Seal O-seal 20x1 EPDM E7502	TA011733
Seal gasket Turcite 26	TA011735
Radial ball bearing 10 x 19 x 5	TA011736
Seal Quadring 26.7 x 1.78 EPDM E7502	TA011745
O-seal 16x1 EPDM 7502	TA011764
Seal O-seal 60x1.5 EPDM 7502	TA011773
O-seal 10x1 EPDM 7502	TA011790
Radial ball bearing 6 x 16 x 5 2Z	TA011863

10 Test protocol

		<h3>Inspection protocol / Safety Inspection</h3>			
Refer to Service Manual and instructions for Use.					Inspection interval: 12 months
Aesculap Acculan3® Ti					
Manufacturer:	Aesculap AG & Co. KG, Am Aesculap-Platz, 78532 Tuttlingen/Germany				
Device/Model	GA671 <input type="checkbox"/>	GA672 <input type="checkbox"/>	GA673 <input type="checkbox"/>	GA674 <input type="checkbox"/>	Serial no.:
Applied part: BF					
Accessories: (model, serial no.) <hr/>					
Organization responsible: <hr/>					
Tests:				Finding:	
1. Visual inspection (damage, dirt, loose parts)				Good	Inadequate
1.1 Accessories:					
• Cover GA675 (especially condition of silicone plate GA675204)				<input type="checkbox"/>	<input type="checkbox"/>
• Battery (readability of safety-relevant labels and inscriptions)				<input type="checkbox"/>	<input type="checkbox"/>
1.2 Device:					
• Readability of safety-relevant labels and inscriptions				<input type="checkbox"/>	<input type="checkbox"/>
• General condition				<input type="checkbox"/>	<input type="checkbox"/>
2. Function test (proper functioning of all moving operating elements acc. to Instructions for Use)				Good	Inadequate
2.1 Accessories:					
• Cover GA675				<input type="checkbox"/>	<input type="checkbox"/>
• Rechargeable battery				<input type="checkbox"/>	<input type="checkbox"/>
2.2 Device:					
• Leak test, check all seals (to be replaced if necessary)				<input type="checkbox"/>	<input type="checkbox"/>
• Functioning of the trigger safety catch				<input type="checkbox"/>	<input type="checkbox"/>
• Adjustability of the saw head (only for GA673)				<input type="checkbox"/>	<input type="checkbox"/>
2.3 Unit in combination with accessories:					
• Smooth movement of attachment and tool couplings				<input type="checkbox"/>	<input type="checkbox"/>
• Smooth movement of triggers with a battery inserted				<input type="checkbox"/>	<input type="checkbox"/>
• Switching between clockwise and counterclockwise running mode (only for GA671 and GA672)				<input type="checkbox"/>	<input type="checkbox"/>
• Switching between oscillation mode and clockwise mode (only for GA671)				<input type="checkbox"/>	<input type="checkbox"/>
Test result:					
The test revealed faults that could put at risk patients, users or third parties.				No <input type="checkbox"/>	Yes <input type="checkbox"/>
<input type="checkbox"/> Repair	<input type="checkbox"/> _____			Next date of safety inspection:	
Place / Date	Inspector / Signature			Organization responsible:	

Oscillating saw GA673



AESCULAP®



CE-Kennzeichnung gemäß Richtlinie 93/42/EWG
CE marking according to directive 93/42/EEC

Technische Änderungen vorbehalten
Technical alterations reserved

TA No. 012247

09/07

B | BRAUN
SHARING EXPERTISE

AESCULAP AG & CO. KG
Am Aesculap-Platz
78532 Tuttlingen
Germany

Phone +49 (74 61) 95-0
Fax +49 (74 61) 95-26 00
www.aesculap.de