

EX SERIES

600 / 750 / 1000 / 1200

Electric Cassette Steps



series
AVS STEPS

Owners Manual

EXE600HZ

EXE750HZ

EXE1000HZ



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AVS STEPS

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About your step

DESCRIPTION

Electrically operated slide in-slide out cassette step providing safe access to passenger vehicles by halving entrance step heights
Quiet, powerful, smooth easy action
Operated by the driver/attendant or automatically on the door. (See options)
Closes automatically when door closes for safety
Step will stop if it encounters an object (See special option)
Control boxes fitted with thermal cut-out to prevent motor damage
Rubber buffers for "soft-landing" at end of travel
Magnetic reed switches control stow and deploy
Step platform is 600, 750 & 1000mm x 300mm 12" deep
2mm Galvanised steel case
Weather proof protection strip at front of step cassette
Self cleaning side arm action
Emergency stow facility and retention
Anodised aluminium tread assembly
Stainless steel runners with nylon rollers
12v electric motor.
Twin arm drive delivering evenly spread force to the step tread
Maintenance should be every year depending on use
To maintain: clean and lubricate with silicone spray every 30 days or as required.
Wiring loom consists of a loom to the dash from control box, loom to the step from control box (body loom), control box with water proof plugs to step. Dash mounted switch, bezel and red flashing warning light. Zero battery drain when stowed..

THE MOTOR UNIT

The "H" type motor designed specifically for AVS to AVS's specification.
Tested to an equivalent of 20 years operation!
Operates at just 2amp and peaks at 10amps.
Tested to 10 hours at full amps against a solid obstruction.
Installed in the T Type step as a single arm.
Installed in the EX Type step with a twin arm mechanism.

TECHNICAL

Voltage 12V
Current Approx. 2 amps during deploy and stow.
Deploy time: 3 seconds
Stow time: 3 seconds
Tread width 600,750 & 1000mm
Tread depth 300mm 12"
Deploy reach: 250mm 10"
Tested to: 250Kg 550Lbs
SWL: 150 Kg 300Lbs
Weight: 26Kg 57lbs (600mm step only)

TYPICAL USES:

Sliding side door entrances
Minibuses Ambulances
Utility vehicles School buses

OPTIONS:

Widths: 600, 750, 1000mm
Fully auto operation - simply swap the control box and switch to change to fully automatic operation on the door. This is a no cost option when ordered with the step.

CERTIFICATION

Cycle test
Dirt Ingress Test
Dirt Compaction Test
EMC Test

INSTALLATION

Easily mounts to the vehicle cill or step box section support at front and to chassis member at rear. Full fitting instructions and wiring plans. On line assistance if required.
Fitting kit options include Mercedes Sprinter, VW LT and Crafter, Freightliner and Dodge Sprinter
Universal kits will fit most other vehicles
Unique serial number making all AVS step fully traceable
Individual service pack and maintenance record

SPECIAL OPTIONS:

Touch sensitive edge - stops power to motor on encountering any obstruction

Automatic operation on the door

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For those of a sensitive nature.....



As specified on all steps for Mercedes Benz, the EX is fitted with a bright yellow sensitive edge that stop the step if it make contact with any obstruction

The step operation is reset by simply pressing or releasing the switch in the cab. The EX is very reliable and sensitive at the same Time.

Sensitive edge strip is an option on all EX



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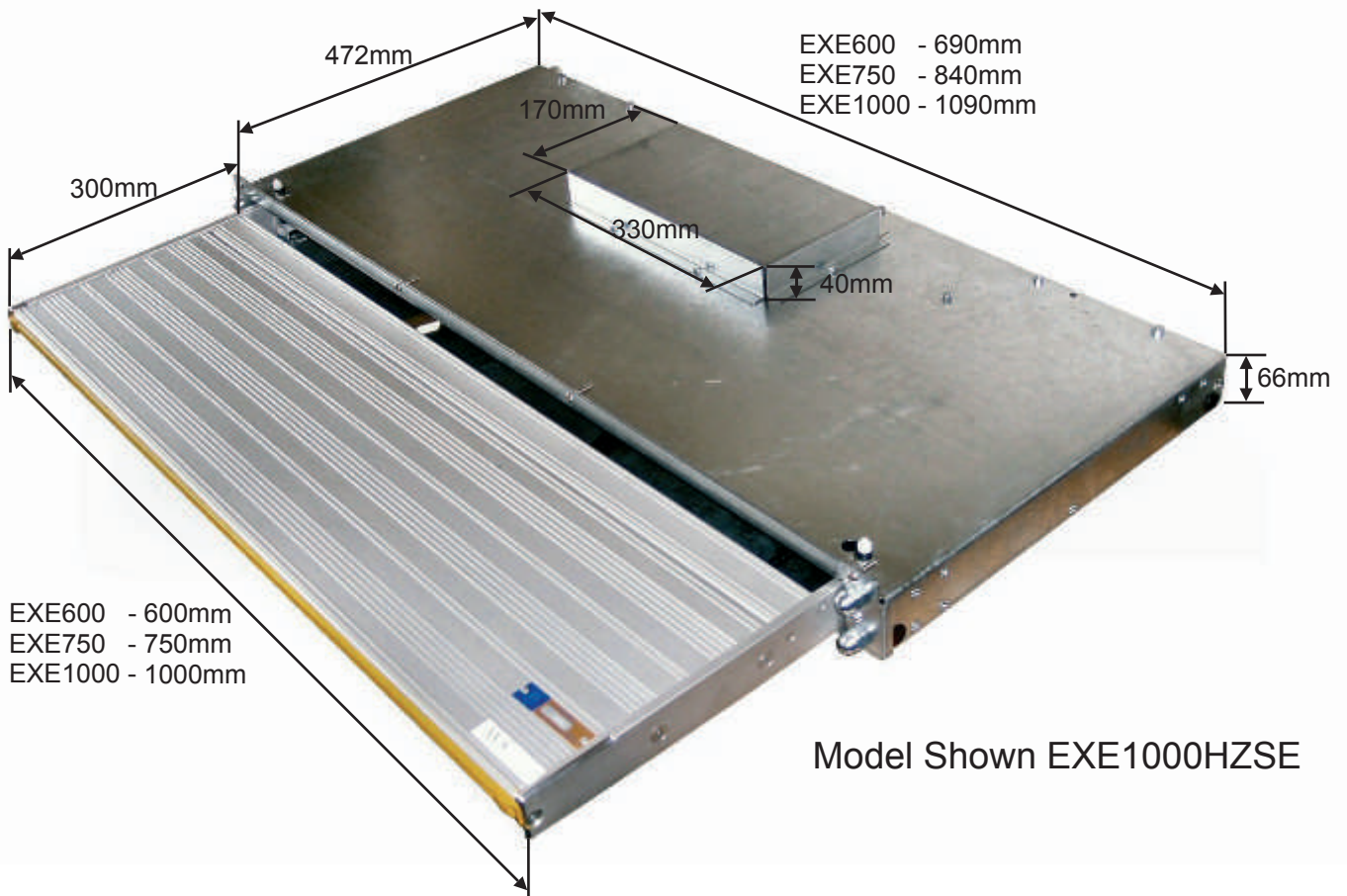
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STEP DIMENSIONS



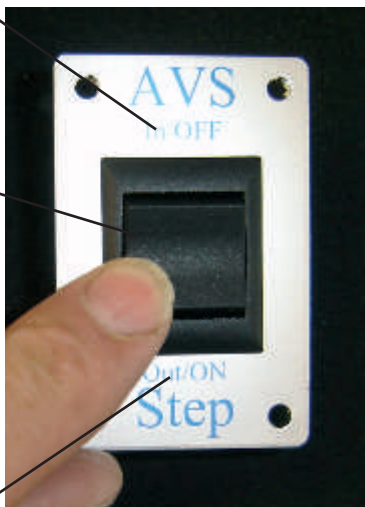
OPERATING INSTRUCTIONS

STEP TYPE	AVS Electric steps	Last Updated	09/07/06
VEHICLE TYPE		Revision no:	0
SIDE			
ENTRANCE			
COUNTRY			

Operating AVS Electric Steps

In

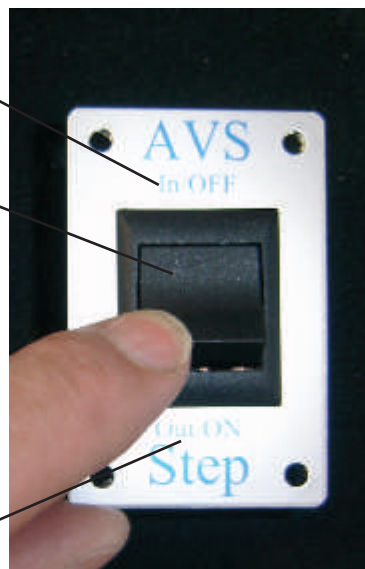
Rocker switch



Out

OFF

On/Off switch



ON

There are 2 main types of electric step operation.

1. **FAIL SAFE** - The step opens (deploys) and closes (Stows) using a rocker switch usually mounted near the driver with an AVS aluminium coloured bezel. Sometimes there is a switch near the door and sometime in both places. By pressing the switch one way the step will deploy and a red light will flash on the dash board. By pressing the switch the other way the step will retract and the red light will stop flashing.

The step will stop automatically at either end of travel.

If the step is deployed it will stow automatically when:

A) The side door is closed OR

B) The hand brake is released.

In other words the step will make its self **SAFE** if the driver **FAILS** to stow the step. Whether it is side door or hand brake operated depends on the way the coach builder has connected the AVS wiring harness.

2. **FULLY AUTO** - The step opens and closes as the nearest door is opened and closed. The step can be switched off in the deployed or stowed position by using the on/off switch usually mounted on the dash board. By switching the step off it will not stow or deploy when the door is opened and closed. The red warning light will continue to flash if the step is not stowed even if the on/off switch is in the off position.

(You may wish to isolate the step in the open position with the door closed to allow it to be cleaned.



CLEANING INSTRUCTIONS

STEP TYPES All

Last Updated

09/07/06

Version:

2

Cleaning AVS Steps

Steps should be cleaned at least once per month and more often if conditions dictate.

By using a power hose or even a standard hose frequently ensure no build up of material inside the step. The step will "self-clean" if the mud and dirt is lubricated with a power wash.

Remember to clean not just the tread (the bit you stand on) but the side of the step too.

After cleaning the step should be allowed to dry. When dry, a day or two later perhaps, apply silicone spray to help lubricate the movement of the step.

DO NOT USE GREASE. Avoid use of oil, it will simply wash away.

If the conditions are particularly bad daily cleaning may be required.

Every 6 months the bottom cover should be removed completely and the inside of the step physically cleaned particularly either side the stainless steel tubular runners. This can be done as part of the service routine.

Failure to clean the steps regularly or to service the steps may result in the failure of the step in service. This will not be covered under warranty.

We recommend that mud flaps are fitted to your vehicle.

Your step serial number is on the front RHS of the tread. This will tell AVS exactly what type of step you have.

For more information contact AVS on:

	SALES:	AFTERSALES
Tel	01948 880010	01948 780238
Fax	01948 880020	01948 780458



Silicone Spray is supplied by Rocol on 0113 232 2700
www.rocol.com

Applying Silicone Spray after the step has dried.



STEP SERVICE ROUTINE

STEP TYPE	All AVS steps	Last Updated	19/6/06
TITLE	Service Routine	Revision no:	1

AVS Service Routine - EVERY 12 MONTHS

AVS Electric or Manual Steps.

1. Note step serial no and start report
2. Disconnect electrical connections where possible
3. Remove step from vehicle
4. Remove tread plate and lower panel
5. Remove guide rods(Cassette steps only)
6. Clean inside of case
7. Inspect micro switches and clean/lube or replace
8. Inspect tread plate linkage to motor. Check nylon bearings.
9. Inspect and clean/replace stainless steel tubes and rollers as necessary
10. Check nylon guides for wear. Replace as necessary
11. Inspect connections to micro switches and motor including grommets in case
12. Inspect and clean tread plate.
13. Supply and fit weatherproofing kit if not fitted
14. Replace side arm mounting bolts and Loctite as required.
14. Lubricate all parts.
15. Replace cover
16. Refit step. Leave fitting hand tight only.
17. Connect electrics as required. Use waterproof connections is required
18. Operate step approx. 10 times
19. Refit lower panel and tighten fittings
20. Test again and weight test. 150Kg
21. Compile report.
22. Update customer Service Record book (In blue pack provided with Step)

For details of other service agents in your area contact AVS or see details on our web site www.avssteps.co.uk.

We recommend SILICONE SPRAY be used as a lubricant. **DO NOT USE GREASE.**

Service interval is recommended 6 months maximum.

Steps should be cleaned monthly or more frequently depending on operating conditions. Cleaning instructions are available on request, on our web site and in the SERVICE DOCUMENTS provided with every step.

TEL 01948 880010
AFTER SALES 01948 780238
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www.avssteps.co.uk



FAULT FINDING INSTRUCTIONS

STEP TYPE	Electric T and E	Last Updated	25/06/07
TITLE	Step Failure Diagnostics	Revision	1

AVS STEP FAILURE IN OPEN POSITION

Test 1: With side door **open** / hand brake **on**/ ignition **on**/ step switch **on** (fully auto):

Listen closely to step underneath the vehicle when someone tries to close it by operating the rocker switch (fail safe) or closing the side door (fully auto). (For fully auto steps make sure the side door is open for at least five minutes first to allow the motor thermal switch to cool if the step is jammed in any way and the motor has been trying to close the step. The switch will automatically switch off the motor and needs to cool before it will reconnect.)

If no noise from the step – go to test 2

If step makes a noise but does not move – go to test 3

Test 2: Check 10 amp fuse in power lead to / in control box.

If blown - replace and recheck step operation.

If fuse does not blow again immediately or has not failed proceed to test 4:

If fuse blows immediately on attempted operation of the step:

Pull apart the loom connection plug at back of step unit and check state of the internal pin connectors.

If pins show signs of water contamination clean and re-connect plug and retest step operation.

If pins OK - retry operating step with 5 pin plug still disconnected – if fuse still blows there is a short in the loom from the step plug back to the control box - check loom wires back to control box have not been trapped or become frayed anywhere obvious.

If fuse does not blow with plug disconnected – the short is between the step plug and the step motor unit. - test with a circuit tester earthed to step case and the other lead to each of the power pins in the step loom plug in turn as shown in diagram below:

If there is a circuit from either pin to the step case – there is a short in one of the step motor wires probably within the step unit – remove lower cover of step and check the wires from the motor have not been trapped or become frayed and are shorting out on the case.

Test 3: If step motor is making a noise and continues to make a noise for as long as rocker switch is held down or door closed (fully auto) – check that there is no obstruction in the step unit preventing it closing such as a piece of gravel trapped in the slides / gear mesh of twin arm types. – remove lower cover and disconnect the link arm/s from the tread. Check that the tread can slide in and out easily and check gear meshing point of gear arms on twin arm units are free of any particles that could be jamming them. - If it is clear that there is no external contamination preventing the step moving then the gearbox of the motor has failed and a new motor unit will be required.

Test 4: Unplug step from body loom at plug at rear of step unit. With a circuit tester and step unit still deployed, check that there is no circuit between the stowed micro-switch pin and the micro-switches common return pin in the step loom plug. (see diag below).

If there is a circuit – the stowed micro-switch has stuck closed or has failed closed. Remove bottom cover of step and check the stowed micro-switch (the one that would be activated when the step is closed) is not damaged, if damaged it will need replacing



Test 5: At the unplugged step loom plug at the back of the step unit or inside vehicle on BA type steps apply a 12v supply across the two power pins (see diag below).

If the step remains dead - it is likely that the motor has failed. Check first that the leads from the plug to the motor are OK particularly within the step unit – if OK then the motor has failed and will require replacing.

If the motor starts to buzz but the step does not move – reverse the polarity across the power pins and see if the step then closes. If the step can be deployed and stowed by applying the direct 12v supply across the power pins (reversing it to change the step direction) – the fault lies either in the control unit, rocker switch (fail safe), or in the vehicle loom. Go to test 6.

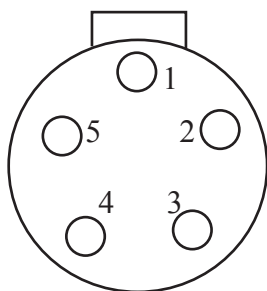
Test 6: (Fail safe only) First check the wire terminal connections of the blue wires to the rocker switch. If they appear to be OK, unplug the two blue wires or blue and blue/white wires from the rocker switch and with a piece of wire connect them together.

If the step closes - then there is a fault with the switch and it will have to be replaced.

If the step still does not close - Do a thorough check on the multi-plug connectors to the control unit – if these are in order it is likely that the control unit has failed.

Diag 1

View of pins in plug from step



No	Function
1	Power to motor
2	Stow m/switch
3	Deploy m/switch
4	Power to motor
5	M/switch common return



FAULT FINDING INSTRUCTIONS

STEP TYPE	Electric T and E	Last Updated	25/06/07
TITLE	Step Failure Diagnostics	Revision	1

STEP FAILURE IN STOWED POSITION

Test 1: With side door open / hand brake on/ ignition on/ step switch on:

Check 10 amp fuse in power lead to / in control box.

If blown - replace and recheck step operation.

If fuse does not blow again immediately or has not failed proceed to test 2:

If fuse blows immediately on attempted operation of the step:

Pull apart the loom connection plug at back of step unit and check state of the internal pin connectors.

If pins show signs of water contamination clean and re-connect plug and retest step operation.

If pins OK - re try operating step with plug still disconnected - if fuse still blows there is a short in the loom from the step plug back to the control box - check loom wires back to control box have not been trapped or become frayed anywhere obvious.

If fuse does not blow with plug disconnected - the short is within the step unit. - test with a circuit tester earthed to step case and the other lead to each of the power pins in the step loom plug in turn as shown in diagram below:

If there is a circuit from either pin to the step case - there is a short in one of the step motor wires within the step unit - remove lower cover of step and check the wires from the motor have not been trapped or become frayed and are shorting out on the case.

Test 2: Do a visual check on all wire connections to the rocker switch, (fail safe) multi plug connectors to the control unit, power switch (fully auto) and also check the door switch is earthing when the door is opened / hand brake is earthing when applied. Also check the main power lead and earth leads from the control unit are connected properly. If these all appear to be correct proceed to Test 3.

Test 3: With someone listening close to the step underneath the vehicle - check for any sound coming from the step motor when the rocker switch is pressed / door is opened to deploy the step. (make sure door is open / handbrake applied / ignition on / step power switch is on (fully auto only) . (Note if the step is wired up as fully auto 1- close the door for 1 mins before carrying out this test to allow the thermal switch on the step motor to cool and reconnect if the motor has been trying to deploy the step for some time but has been prevented by some obstruction. It will have switched off automatically and will not reconnect until the thermal switch has cooled down.)

If step motor is making a noise and continues to make a noise for as long as rocker switch is held down or door open (fully auto) - check that there is no obstruction in the step unit preventing it deploying such as a piece of gravel trapped in the slides / gear mesh of twin arm types. - remove lower cover and disconnect the link arm/s from the tread. Check that the tread can slide out easily and check gear meshing point of gear arms on twin arm units are free of any particles that could be jamming them. - If it is clear that there is no external contamination preventing the step moving then the gearbox of the motor has failed and a new motor unit will be required.



If step motor starts then cuts out with a small movement of the tread - Check that the door / handbrake lead is connected properly to the switches and these are earthing when the door is open / handbrake applied. (make sure ignition is also switched on). - If these are correct then the control unit is faulty and will need replacing.

If step motor is silent - unplug the step loom plug at the rear of the step unit and apply a separate 12v supply across the two power pins in the step loom plug (see diag below).

If the step motor remains silent - the motor has failed and will have to be replaced.

If step motor makes a noise but the step does not move - reverse the polarity and check that the step deploys. If the step does not deploy but the motor still makes a noise go back to stage above to check for objects that may be trapped in the step mechanism above.

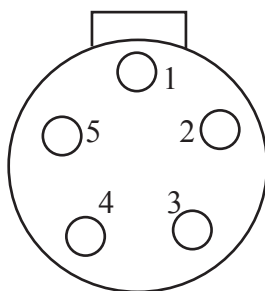
If step can be deployed and stowed by applying a direct 12v supply to the step power pins but ceases to operate when the plug is reconnected and operated by normal methods - deploy step using the direct power supply to the pins then reconnect the plug and see if the step will close. - If the step will close but does not deploy - the deployed micro-switch may have failed. (this is the micro switch that is activated by the motor arm when the step is fully deployed).

With the step in any position other than fully deployed - use a circuit tester and check for a circuit across the deployed microswitch pin and common return pin - see diag below. If there is a circuit - the micro-switch is operating correctly and there is a fault in the step control box. This will have to be replaced.

If there is no circuit - the deployed micro-switch has failed and will have to be replaced.

Diag 1

View of pins in plug from step



No	Function
1	Power to motor
2	Stow m/switch
3	Deploy m/switch
4	Power to motor
5	M/switch common return



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AVS STEPS

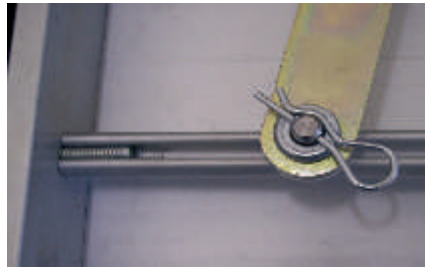
EXE600, 750 & 1000HZ Emergency Stow Procedure

In the unlikely event that your step should stop in the out position, please follow the procedure detailed below

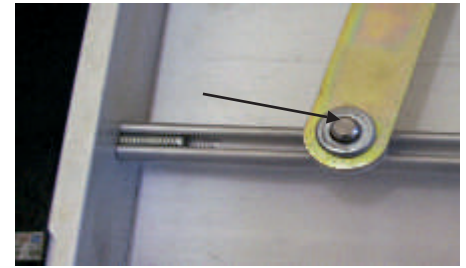
On the underside of the step, you will find 2 arms attached to the aluminium tread



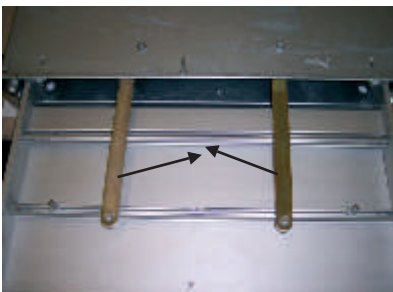
Pull the "R" clips out and retain them, you will need them later.



Remove the steel and nylon washers



Remove the arms and fold them in and under the step



The arms need to be crossed over to fully stow inside the case



Push the step in and insert the "R" clip into the holes in underside of the case on both sides



The "R" clip needs to be fully pushed through the holes



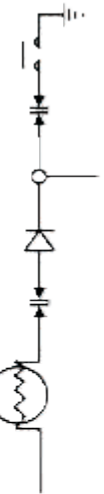
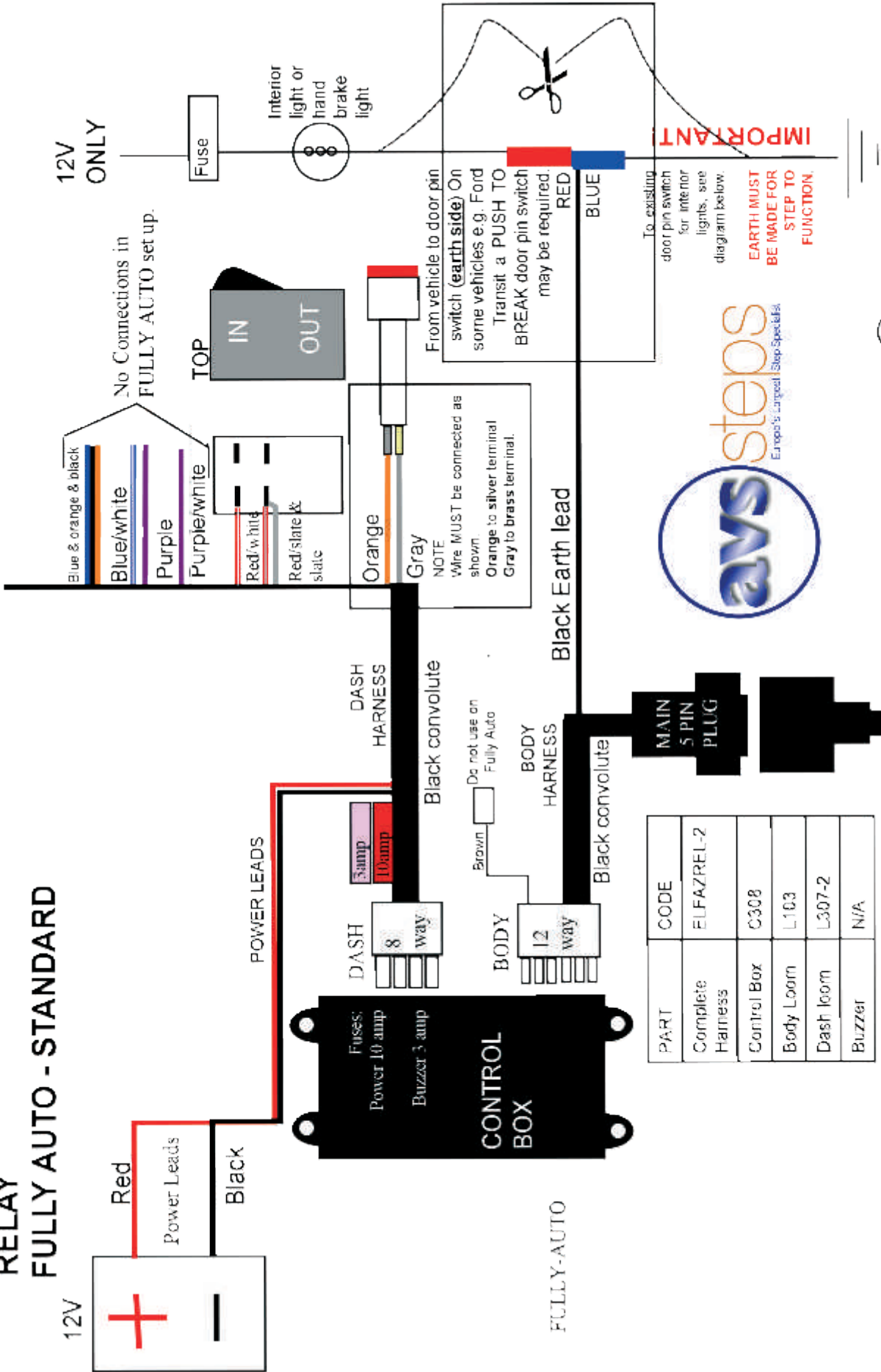
When fully through the holes the pins will hold in the tread



IMPORTANT NOTE: This is a temporary fix to get you home only, your step should be repaired by your nearest agent as soon as possible.

FULLY AUTOMATIC - BASIC

RELAY FULLY AUTO - STANDARD



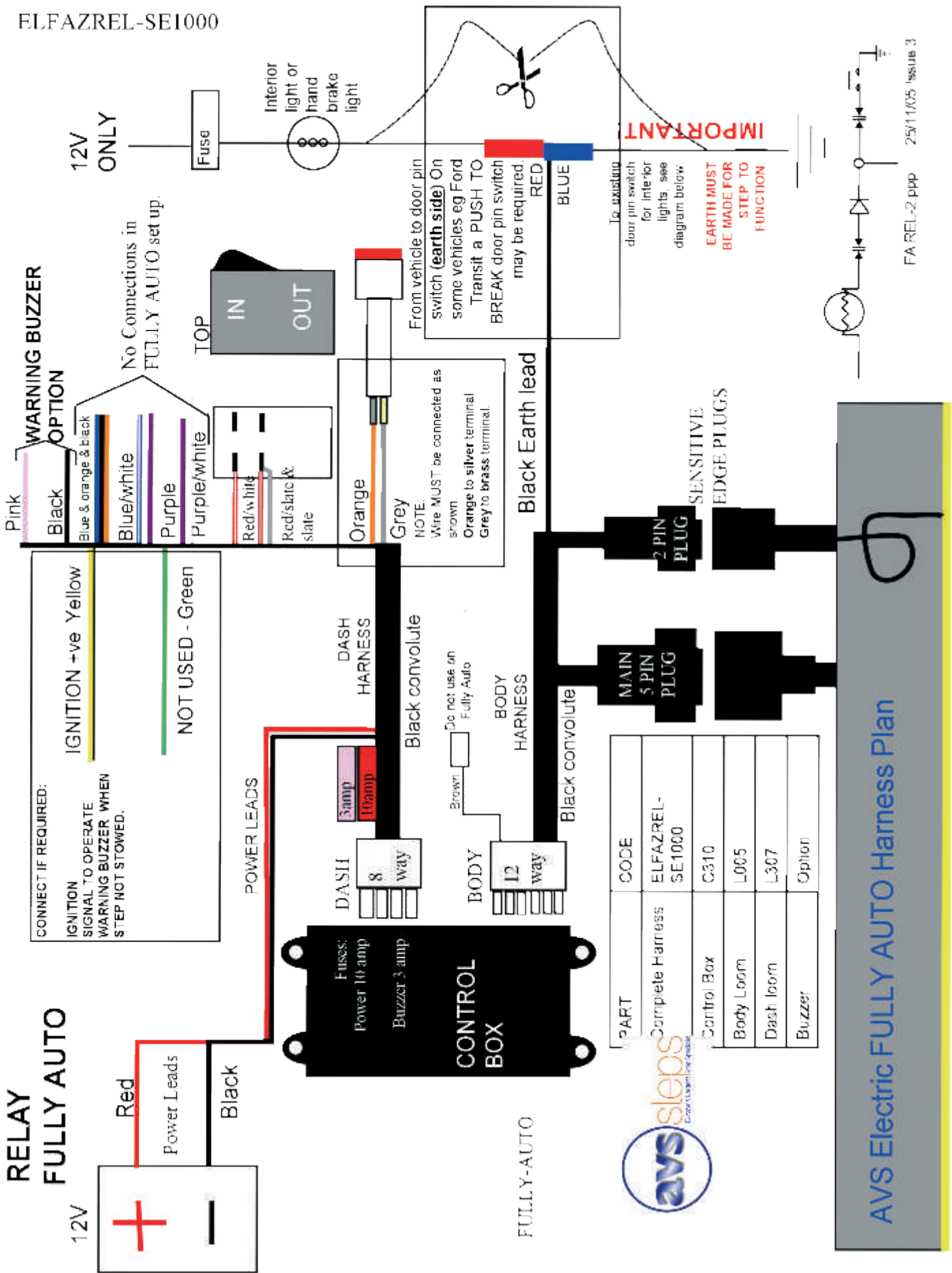
ELFAZREL-2.app 05/02/07 Issue 1

AVS Electric FULLY AUTO Harness Plan

PART	CODE
Complete Harness	ELFAZREL-2
Control Box	C308
Body Loom	L103
Dash loom	L307-2
Buzzer	N/A

FULLY AUTOMATIC WITH SENSITIVE EDGE

ELFAZREL-SE1000



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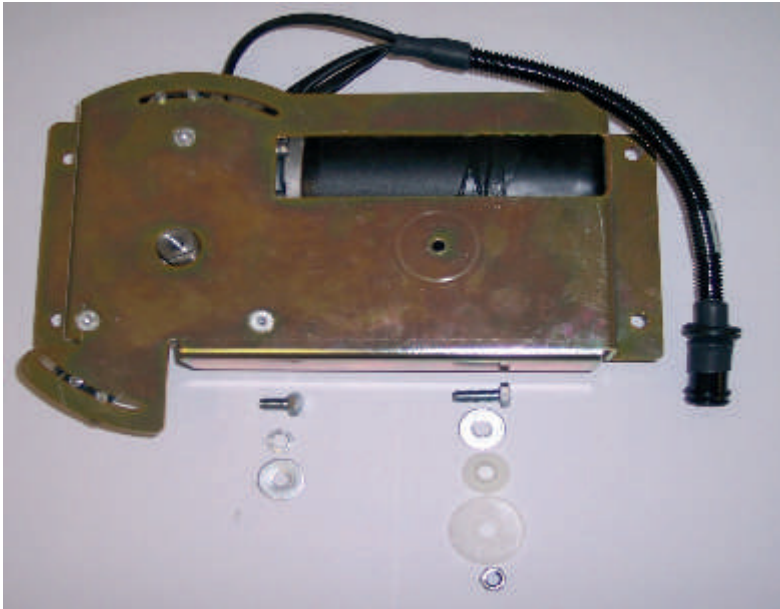
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EXE600, 750 & 1000HZ Replacement Motor

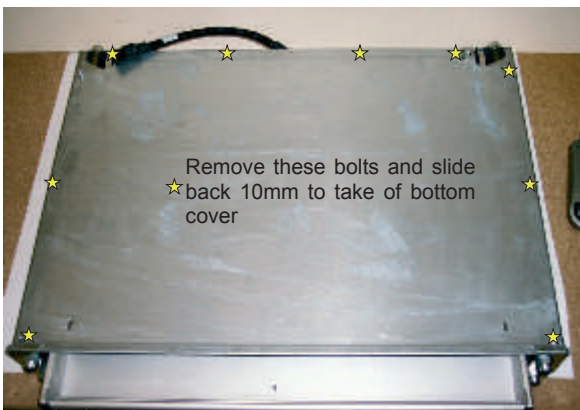


Parts Supplied

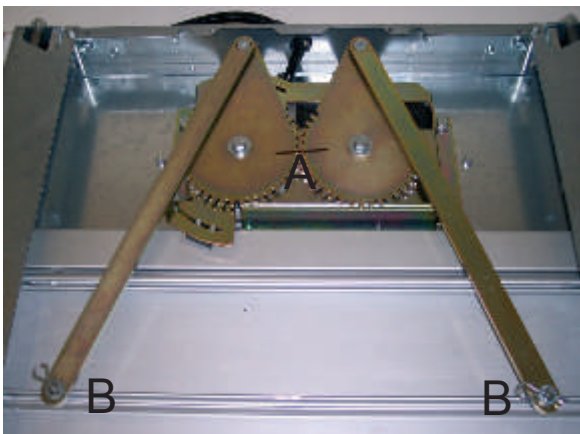
1 x Motor unit inclusive of sensors and plug in loom

- 1 x M8 Nyloc
- 1 x M8x25 Bolt (slave side)
- 1 x M8x15 Bolt (into motorshaft)
- 2 x M8 x24 steel washers
- 1 x M8 Spring washer
- 1 x M8x40 Nylon Washer
- 1 x M8 x25 Nylon Bush

Removing the old Motor

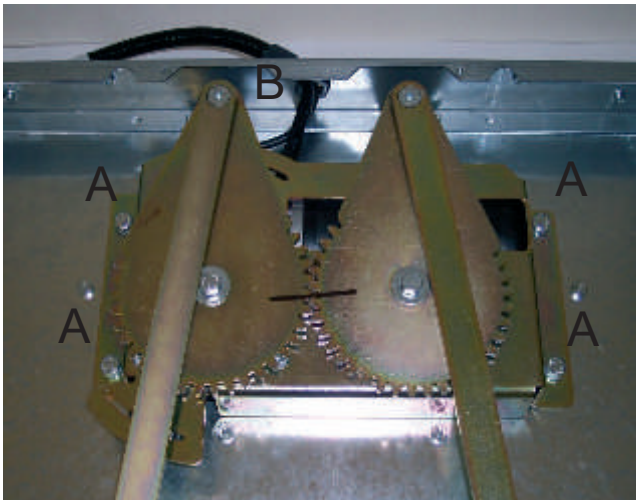


Unplug the step from the rear and remove the bottom cover from the step to gain access to the motor unit.



Put a mark across the junction of the toothed arms (as indicated by "A") as this will save time later in lining them up when putting them back.

Remove "R" clips "B" securing the arms to the tread and push the tread forward to give more room to work

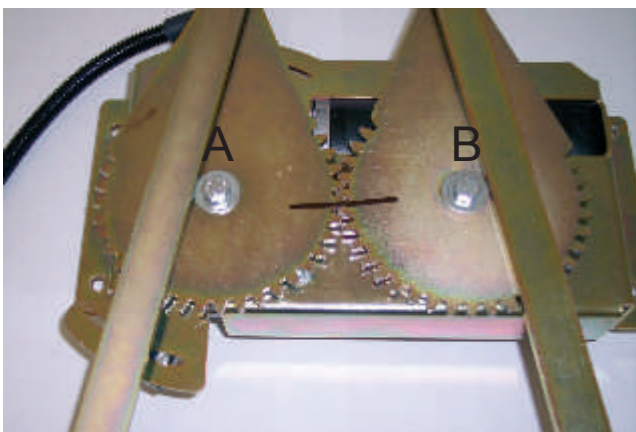


Remove the 4 bolts and spring washers "A" holding the motor housing to the case

Remove the "P" clip "B" securing the wiring to the case

Push the loom through the back of the case.

The whole motor assembly can now be removed



Remove the 2 bolts and washers holding the toothed gear arms to the motor shaft "A" and casing "B".

There is a nyloc retaining nut that you will have to remove from the underside of "B" .

Installing the new motor

You will now have to build up the new motor replacing the arms etc in reverse order - it is recommended that you use the replacement bolts and washers included with the motor as the ones that have just been taken of may be worn.

Motor Shaft Side

Start on the left with the bare motor shaft



Replace the toothed motor arm



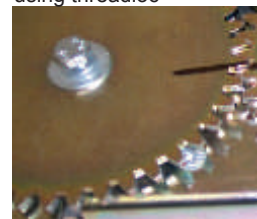
Replace the M8 washer



Place the spring washer on top of the M8 washer



Finally the M8x15 bolt using threadloc



Motor Idler arm side

(Be sure to line up gears with the marks put on earlier)

Place the M8x40 washer over the hole in the bracket



Place the idler arm on top of the washer



Place the M8 bush inside the hole

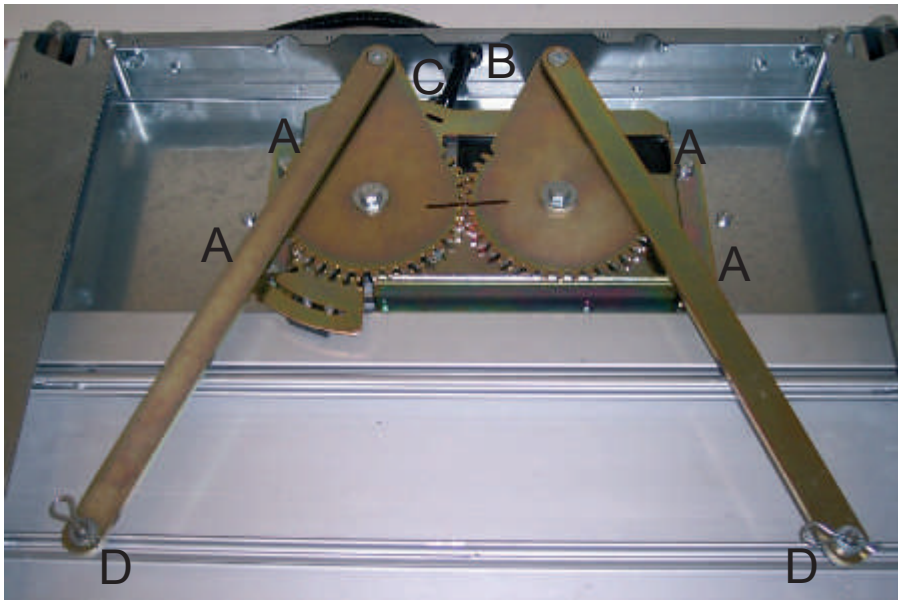


Place M8 steel washer on top of the bush



Tighten down bolt, take back a quarter turn and secure with nyloc on the back





Position motor assembly back in the case

Screw assembly back into step with the 4 bolts "A"

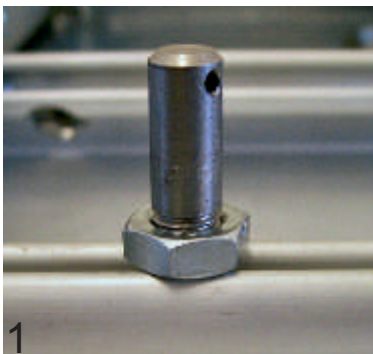
Push loom through back of step, not forgetting to replace grommet securely in the back of the case "B"

Secure wiring with "P" clip "C"

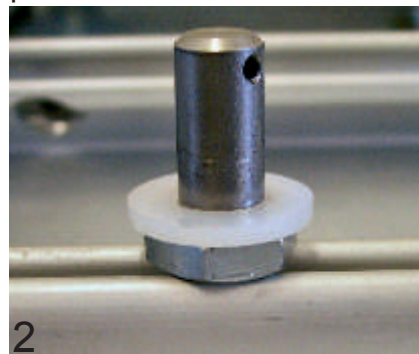
Secure the motor arms back onto the tread using the "R" clips "D"

Refitting the Motor Arm to the Tread

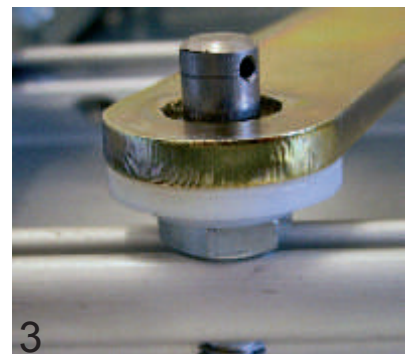
Tread Pin



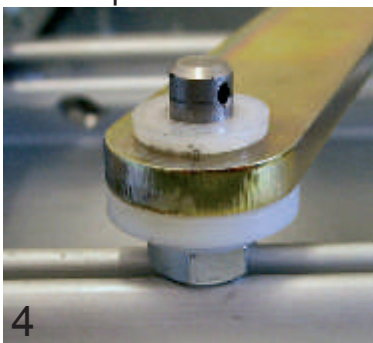
Place nylon washer on tread pin



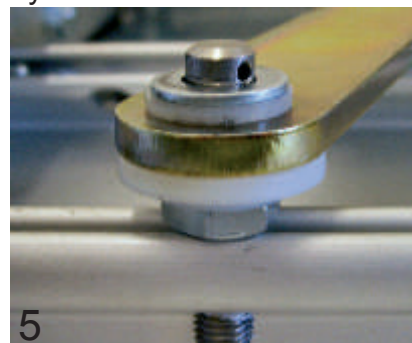
Put arm on top of washer, arm has a bush built in.



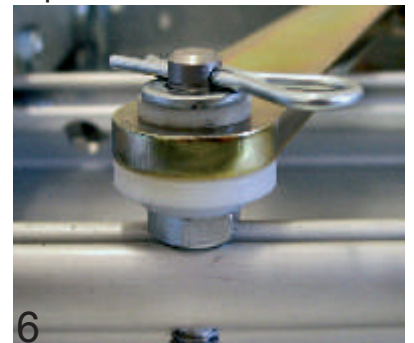
Place another nylon washer on top of arm



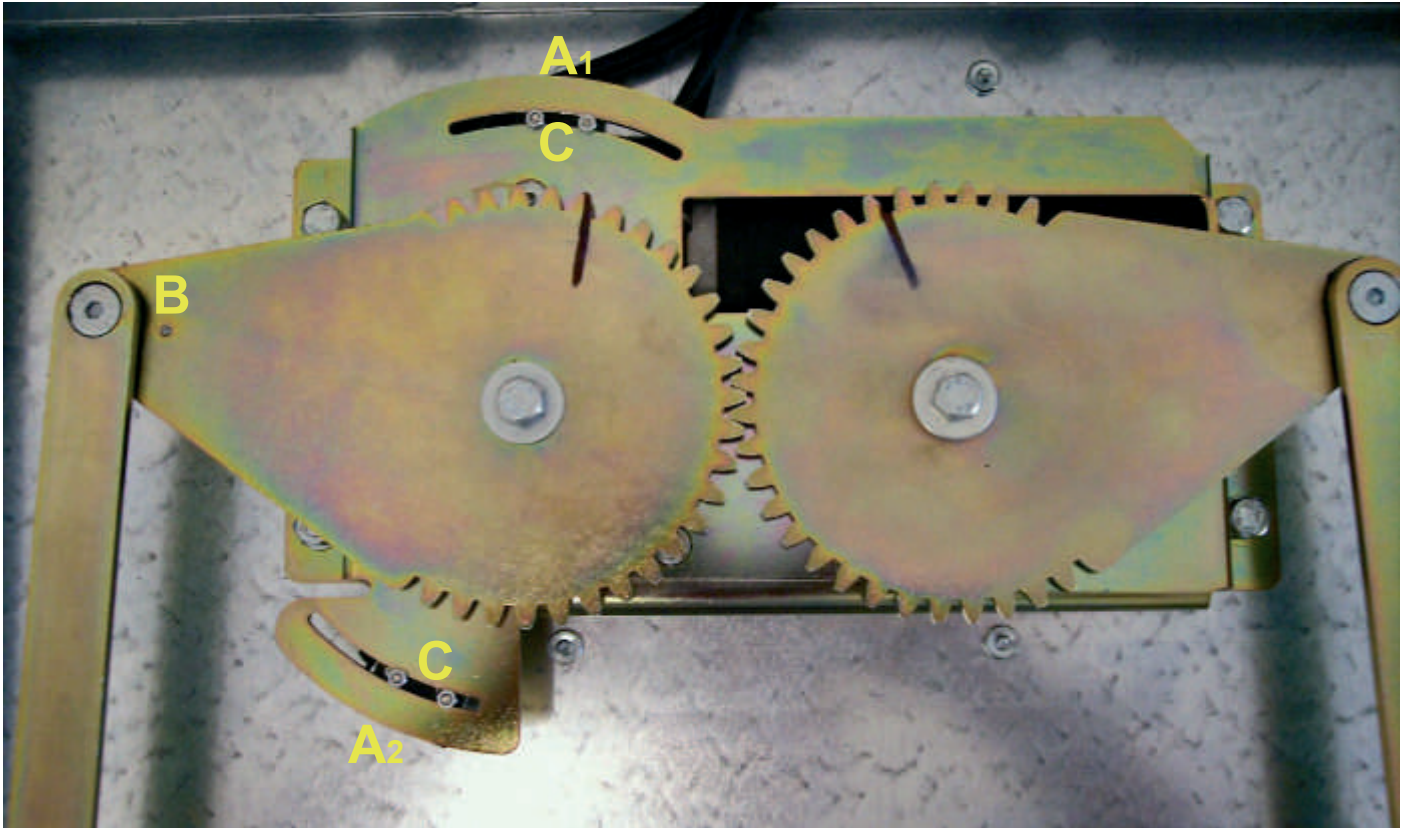
Place steel washer on top of nylon washer



Finally secure all with "R" clip



Setting the micro switches



- A1 Stow micro switch
- A2 Deploy micro switch
- B Actuator magnet (on underside of motor arm)
- C Micro switch adjustment bolts.

1. Ensure all wiring is pinned back out of the way and will not foul the movement of the motor arm
2. Plug the step back in.
3. Deploy the step.

|

In the deployed position the tread should be fully extended, if it is stopping short adjust the deploy micro switch A2 to the right until the tread stops in the correct position and vice versa if hitting the front stops too hard

4. Stow the step.

When fully stowed the back of the side arms should be up against the rubber stops in the back of the case, if they are stopping short adjust stow microswitch A1 to the right until the tread stops in the correct position and vice versa if hitting the rear stops too hard.

5. If you have a buzzer or warning light, check that when stowed the light/buzzer goes off. If the light/buzzer does not go off it means that microswitch A1 is set too far around and will need to be readjusted back anti clockwise.

Fault Finding



Testing the Motor

To test if your motor is working or not, you can apply a direct 12v current to pins 1 and 4 and reverse to make the motor go the other way - but be careful as the motor will only stop when you remove the current.

Testing the Stow micro switch

With the step stowed, use a circuit tester on pins 2 and 5, you will not get continuity

With the step deployed you will get continuity

With the step in the half way out position you will get continuity

Testing the Deploy micro switch

With the step stowed, use a circuit tester on pins 3 and 5, you should get continuity

With the step deployed you will not get continuity

With the step in the half way out position you will get continuity

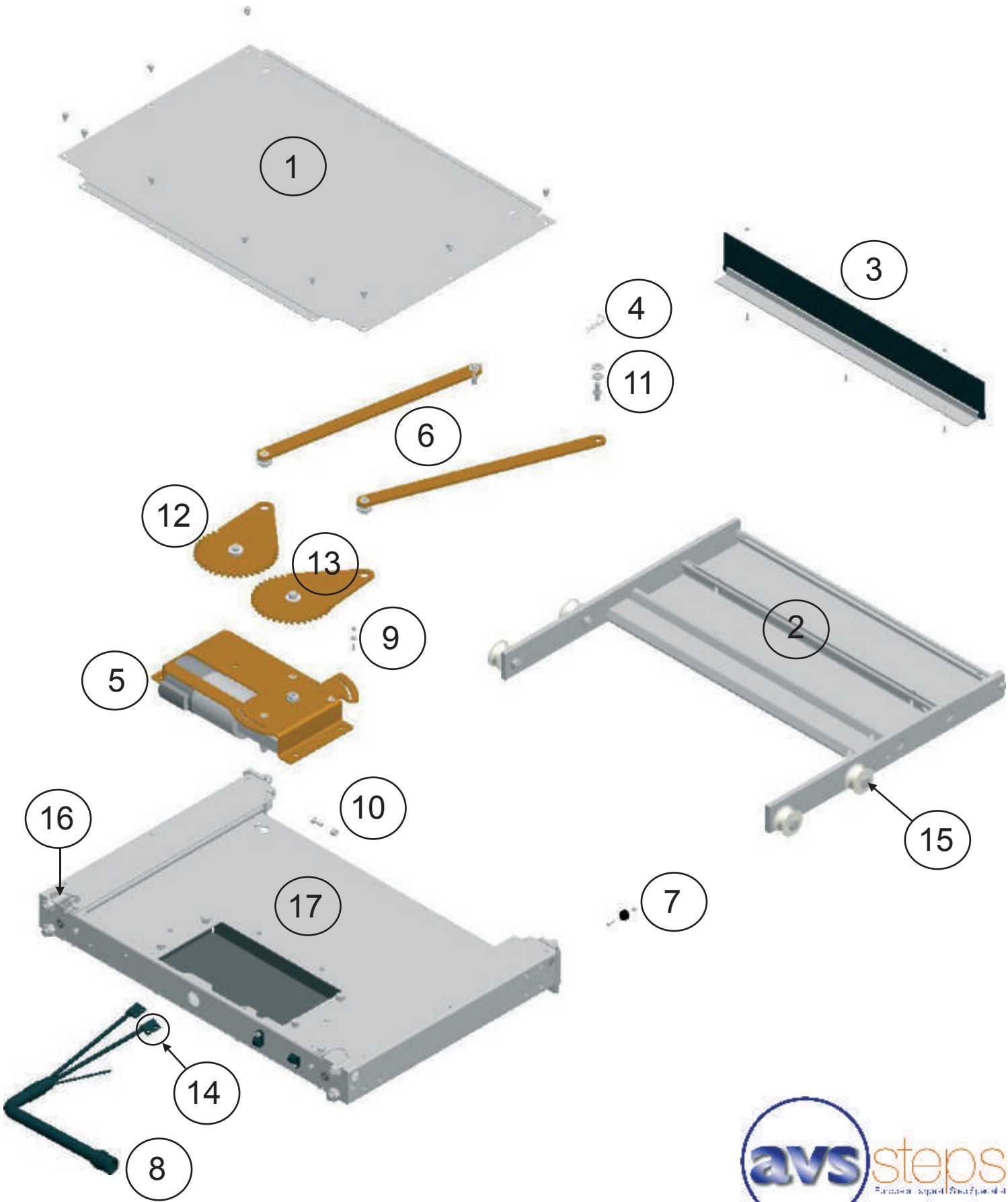


Spare Parts List

Diag No	Part No	Description	Comments
1	SPEX12010001	Lower cover Assembly for EXE600HZ	Includes all bolts and washers
1	SPEX12010002	Lower cover Assembly for EXE750HZ	Includes all bolts and washers
1	SPEX12010003	Lower cover Assembly for EXE1000HZ	Includes all bolts and washers
2	SPEX12010004	Full Tread Assembly for EXE600HZ	
2	SPEX12010005	Full Tread Assembly for EXE750HZ	
2	SPEX12010006	Full Tread Assembly for EXE1000HZ	
3	SPEX12010007	Weatherproofing seal for EXE600HZ	Includes replacement screws
3	SPEX12010008	Weatherproofing seal for EXE750HZ	Includes replacement screws
3	SPEX12010009	Weatherproofing seal for EXE1000HZ	Includes replacement screws
4	SPEX4010126	"R" Clip	Fixes motor arm to tread
5	SPEX12010010	Motor Assembly	
6	SPEX12010011	Crank Arm assembly	
7	SPEX12010012	Front tread stop Assembly	
8	SPEX12010013	Step Loom Kit	Full loom including m/switches
9	SPEX12010014	Magnet Assembly	To activate m/switches
10	SPEX12010015	Nylon Guide Assembly	
11	SPEX12010019	Tread Pin Assembly	
12	SPEX12010016	Idler Arm Assembly	
13	SPEX12010017	Motor Arm Assembly	
14	SPEX12010018	Micro switch (Universal)	
15	SPEX12010020	Tread Roller Assembly	
16	SPEX12010021	Tread Runner Assembly	
17	SPEX8010218	Cassette EXE600HZ	
18	SPEX8010223	Cassette EXE750HZ	
19	SPEX8010217	Cassette EXE1000HZ	



Spare Parts Exploded View



CERTIFICATION

This is to certify that AVS Steps have met the following specification and EU Directives



DECLARATION OF CONFORMITY



Product: AVS Steps.
 Product Codes: EE, EX, G, LX, K, SL, T.
 CE Mark: All steps.
 Serial No: All steps. Identifies product.
 Directives: All AVS Steps are manufactured to the relevant EU directives.
 2001/85/EC Bus and Coach Directive
 98/37/EC Mechanical Handling Directive
 72/245/EC Radio Interference Suppression

Legal load Requirement: 136Kg
 SWL: 150Kg x 50,000 cycles
 Tested Maximum: 225Kg x 25,000 cycles
 Specification of Materials:

Step Material	Data
Aluminium	6063-T6 AA15
Nylon	Nylon 66
Fixing grade	8.8 & stainless steel
Steel case	Galvanised
Steel internal	Stainless

Recycling: Materials listed will require separating prior to recycling under current legislation.
 Cycle Test: Minimum cycle test is 100,000 operations under a load of 2.5Kg force.
 Decals: All steps have operation labels applied
 Additional label for application to the vehicle for maintenance
 Additional label for application to vehicle for foot operation
 Declaration: We hear by certify the above information to be correct.

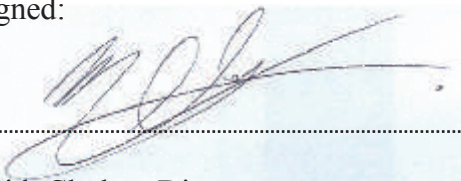
Mr K Clarke - Director/Representative for AVS

AVS TEST CERTIFICATE

The following certification is supplied by AVS to confirm that the products and test listed below have been carried out and documented. Each test carried out by AVS is individually recorded and documented. Further details, including photographs, may be available on some test by contacting AVS.

Applicable Standard	Details
AVS Bench Mark EU 2001/85/EC	250Kg (550lbs) applied 100,000 times to 100mm diameter steel pad at front centre of tread. Maximum deflection allowed 8mm.

Step Type/Range	Standard	Details	Result	Summary	Date
EXE600	AVS Bench Mark	As above	240,000 cycles	Pass	19/04/07

Signed:


 Keith Clarke - Director

Test Carried By:	Date
Shaun Connolly	19th April 2007

AVS Steps
 Alders Farmhouse
 Alders Lane
 Whixall
 Whitchurch
 SY13 2PZ
 UK
 0044 1948 880010
 0044 1948 880020
 www.avssteps.co.uk



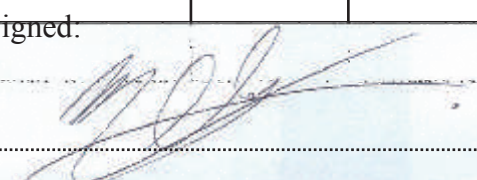
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Applicable Standard	Details
AVS Bench Mark None	Dirt Compaction Test



Step Type/Range	Standard	Details	Result	Summary	Date
EXE1000HZ	AVS Bench Mark	20Kg of mud (clay based) compacted into the step artificially. Mud compacted around motor and side arms in stowed position. Operate.	Operates	Pass	21/12/06
		Repeat from open position. Operate.	Operates	Pass	21/12/06
		Continue Operation	10 cycles	Pass	21/12/06

Signed:

 Keith Clarke - Director

Test Carried By:	Date
Mr KM Higgins Chief Engineer	21st December 2006
Test Number	27

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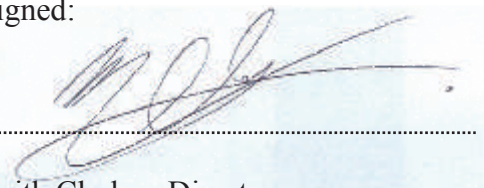
AVS TEST CERTIFICATE

The following certification is supplied by AVS to confirm that the products and test listed below have been carried out and documented. Each test carried out by AVS is individually recorded and documented. Further details, including photographs, may be available on some test by contacting AVS.

Applicable Standard	Details
AVS Bench Mark No standard applies	Bench mark is 100,000 cycles. Cycle Test against a 2.5N force restricting both stow and deploy
NOTE:	Interim certificate. Test is continuing

Step Type/Range	Standard	Details	Result	Summary	Date
"H" type Motor. Twin arm.	AVS Bench Mark	As above	115,320 Cycles to date	Pass	30/1/07

Signed:



Keith Clarke - Director

Test Carried By:	Date
AVS Test Rig Mr Shaun Connolly	From 19th Dec 2006 to 2nd Jan 2007
Test Number	25

AVS Steps
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EX SERIES

600 / 750 / 1000 / 1200

Electric Cassette Steps



series
AVS STEPS

Useful Information to Keep

Step Serial No

Model

Nearest Service Agent

Next Service Due

Other details

