



## System Safety Checks for A-dec Dental Equipment Service Reference

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## Document Overview

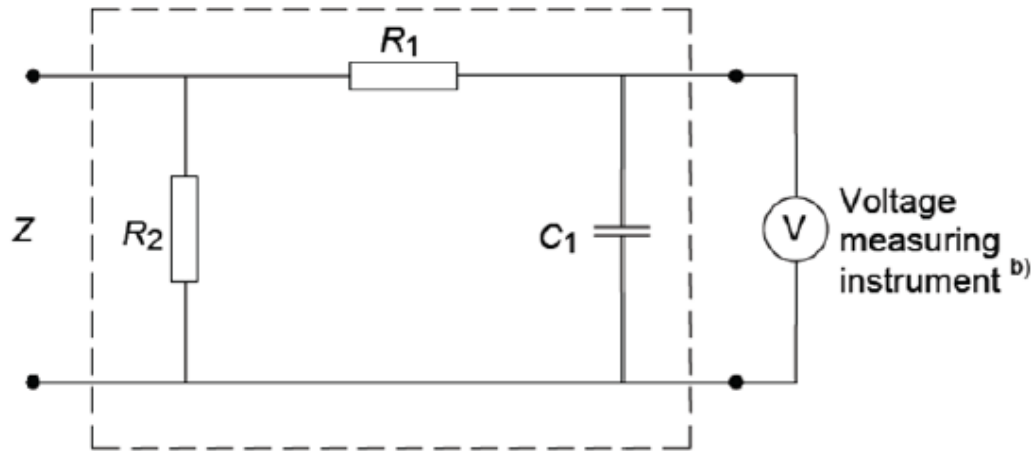
This document provides information about how to perform system safety checks on A-dec dental systems. Detailed are the system locations for testing and the approved values.

These system safety checks are to be performed by a service technician as needed after servicing, or annually if required.

# MEASURING DEVICE FOR LEAKAGE CURRENT MEASUREMENTS



See page 13 for instructions on using electrical safety test units, such as SecuTest or SecuLife.



$R_1$  10 k $\Omega$   $\pm$  5 %<sup>a)</sup>

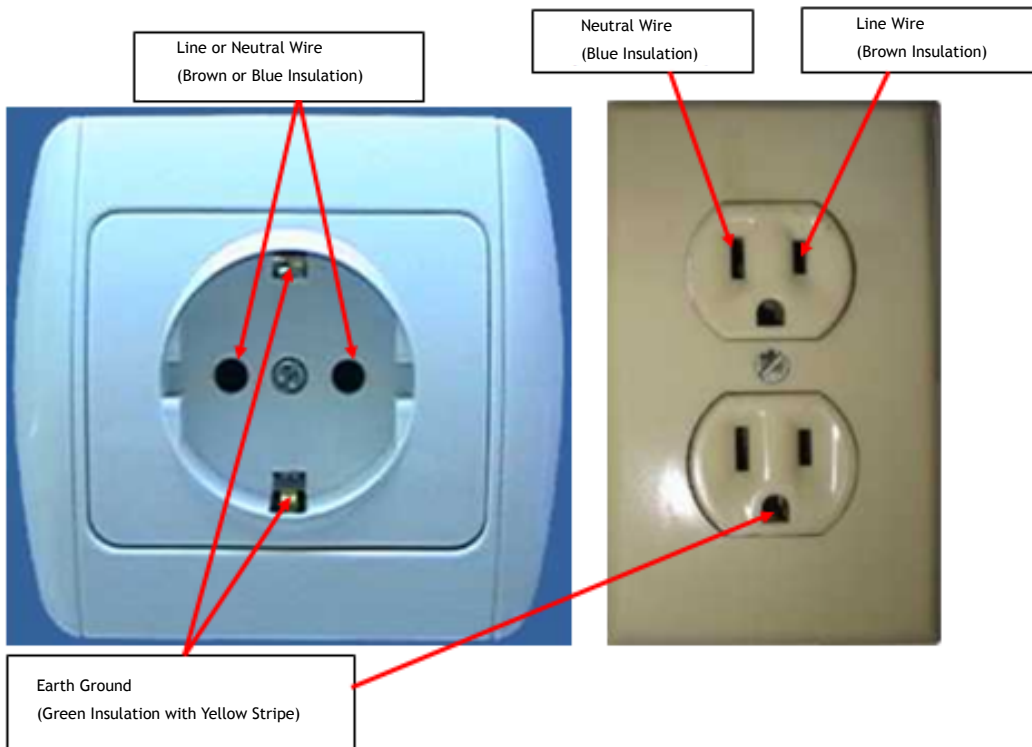
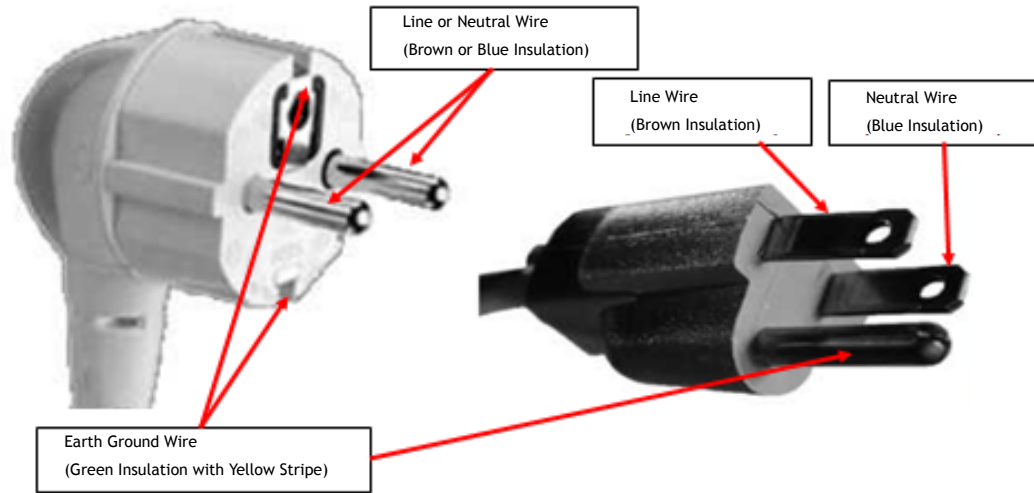
$R_2$  1 k $\Omega$   $\pm$  5 %<sup>a)</sup>

$C_1$  0,015  $\mu$ F  $\pm$  5 %

a) Non-inductive components

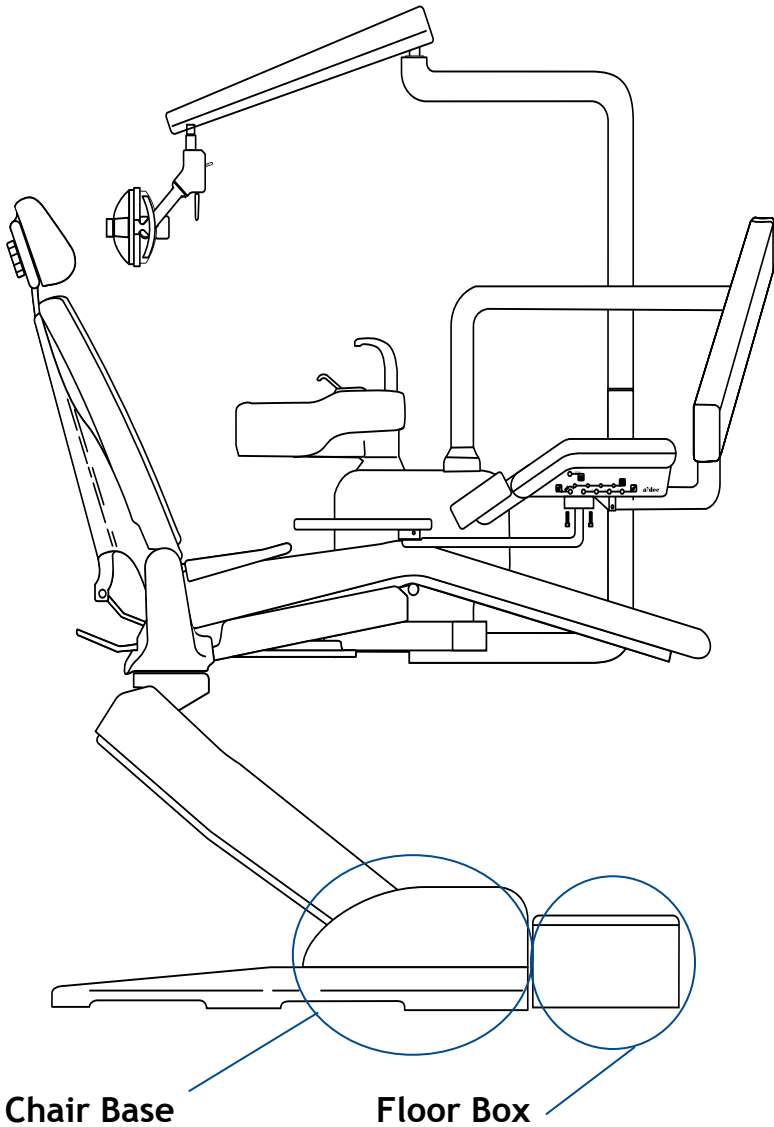
b) Resistance  $\geq$  1 M $\Omega$  and capacitance  $\leq$  150 pF

# EUROPEAN TO NORTH AMERICAN PLUG AND SOCKET COMPARISON



# SAFETY CHECKS ON A-DEC 200, 1040, 1221, 8000 SYSTEMS

## Test 1 (limit > 1 MΩ)

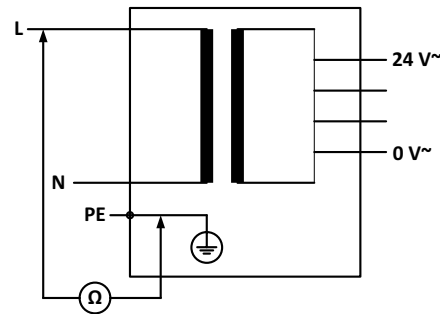


Chair Base

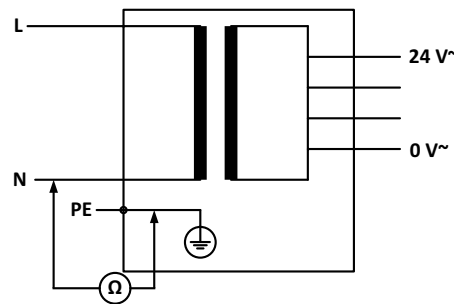
Floor Box

Tests 1, 2, 3, 6, 7, 8

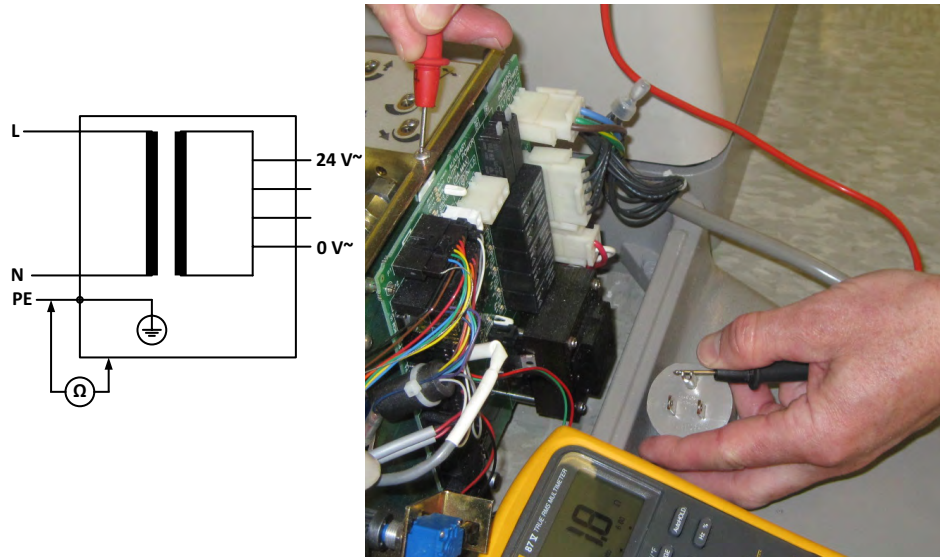
Tests 1, 2, 3, 4, 5, 6, 7, 8



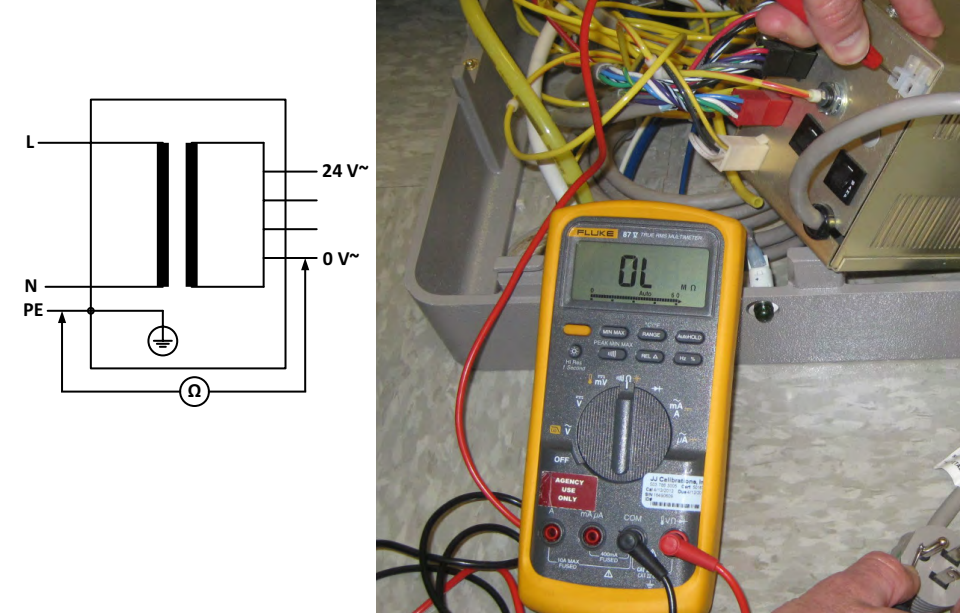
## Test 2 (limit > 1 MΩ)



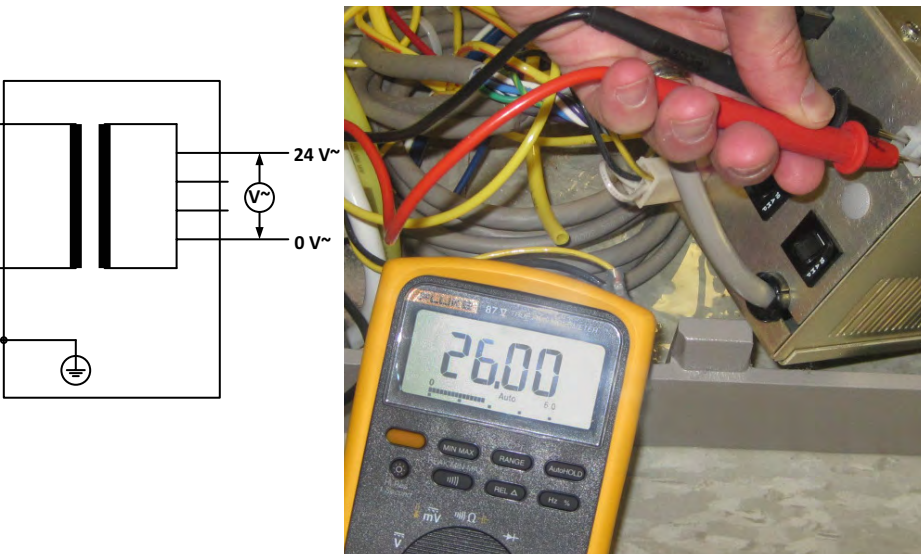
**Test 3 (limit < 5 Ω)**



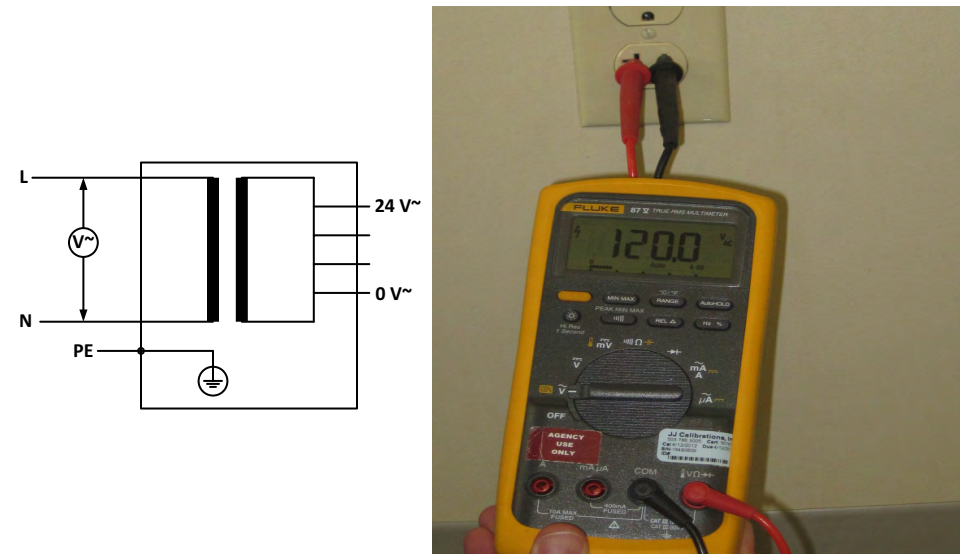
**Test 4 (limit > 1 MΩ)**



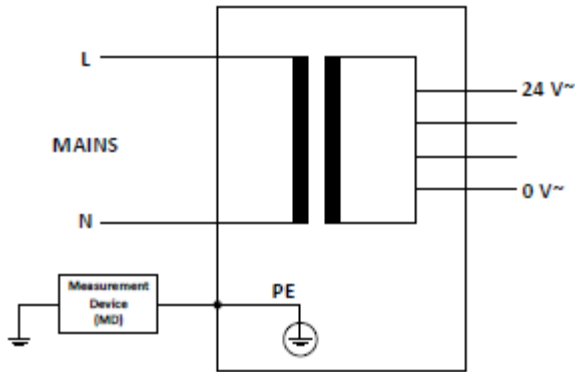
**Test 5 (limit ≈ 26 V~ with no load)**



**Test 6 (limit = Mains ± 10%)**

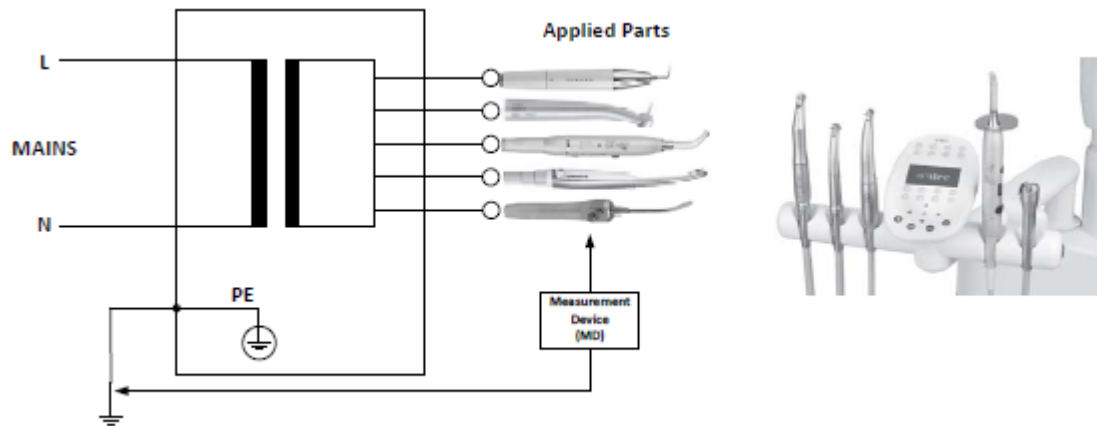


## Test 7 (Limit < 0.5 mA)



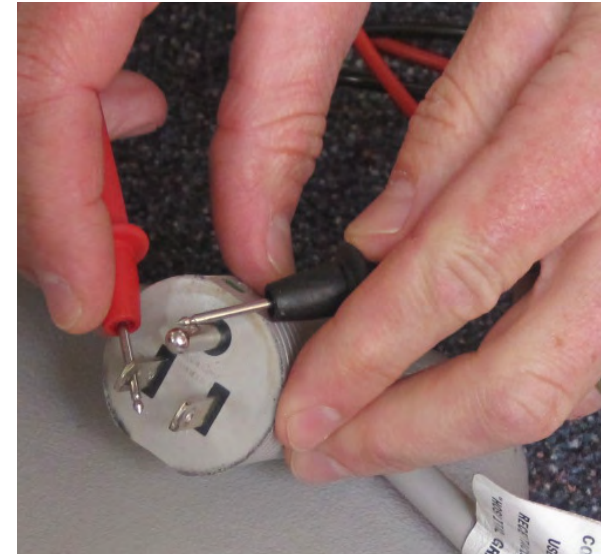
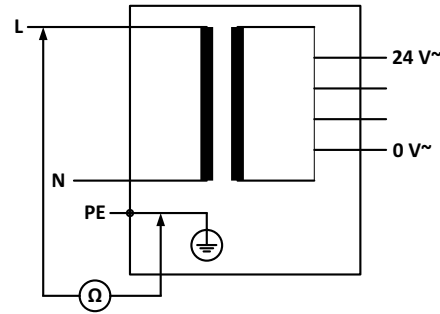
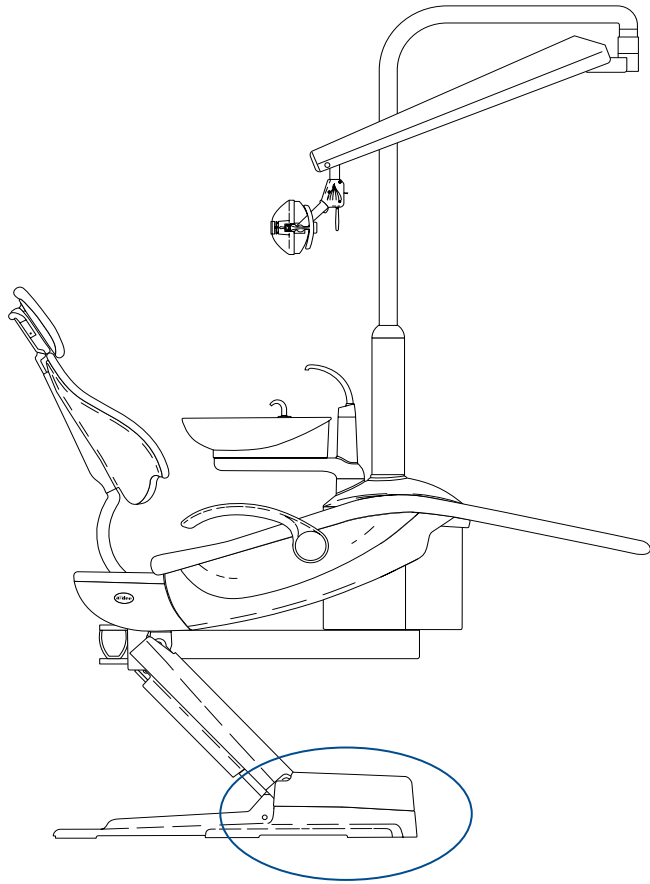
## Test 8 (limit < 0.1 mA AC, < 0.01 mA DC)

**!** Note: Measure each applied part separately.

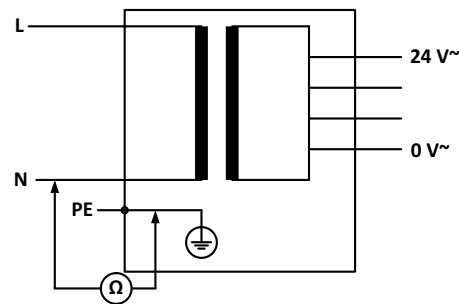


# SAFETY CHECKS ON A-DEC 500 SYSTEMS

## Test 1 (limit > 1 MΩ)



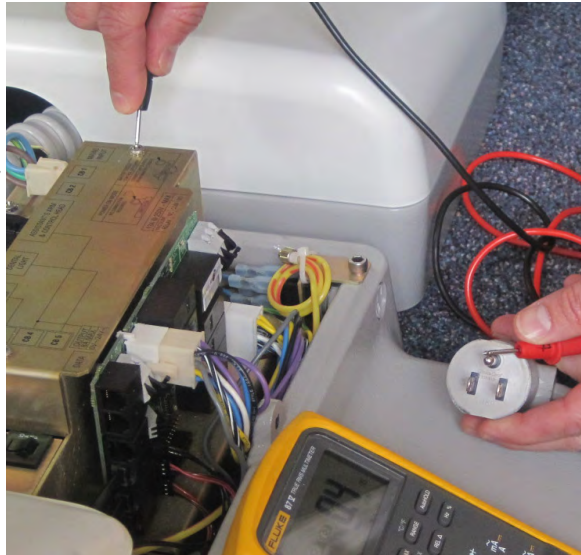
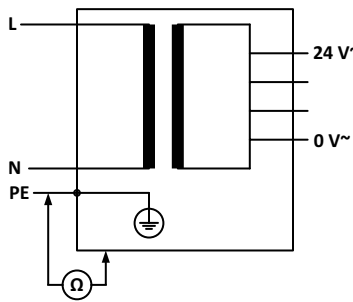
## Test 2 (limit > 1 MΩ)



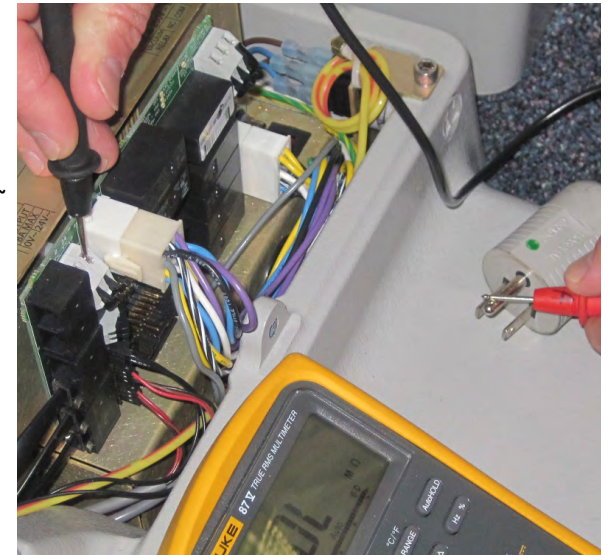
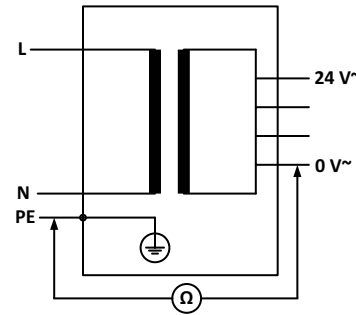


# Safety Checks on A-dec 500 Systems

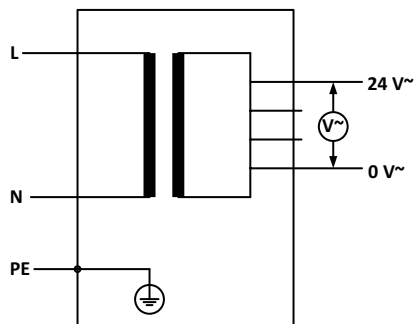
## Test 3 (limit < 5 Ω)



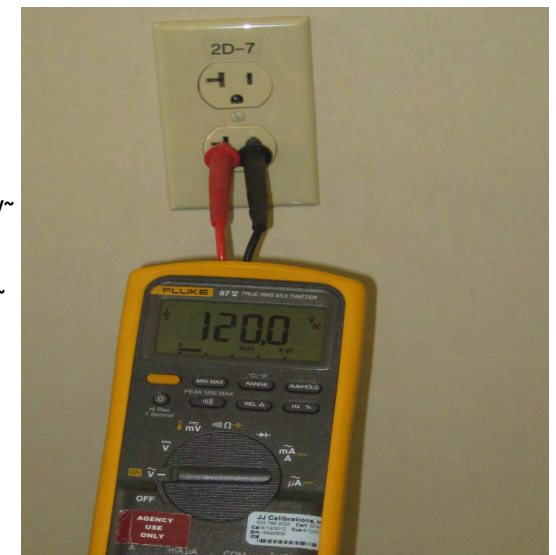
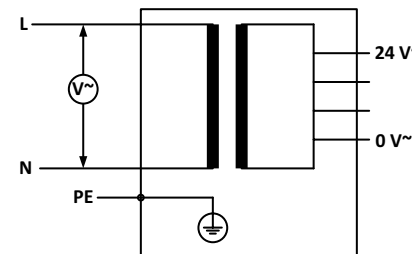
## Test 4 (limit > 1 MΩ)



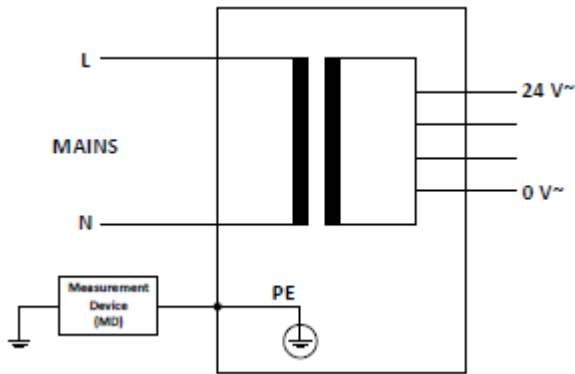
## Test 5 (limit ≈ 26 V~ with no load)



## Test 6 (limit = Mains ± 10%)

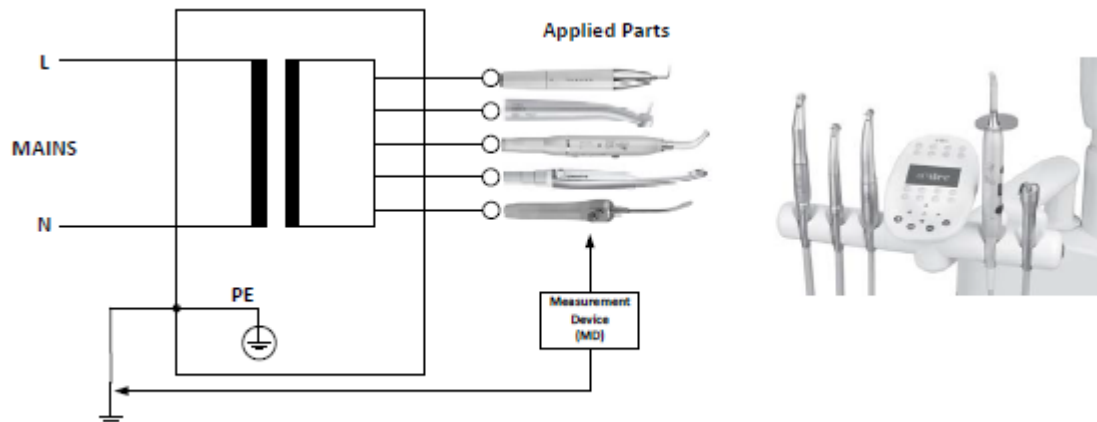


## Test 7 (Limit < 0.5 mA)



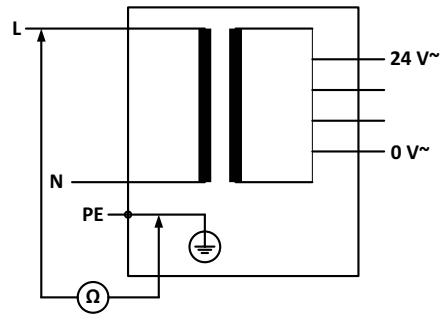
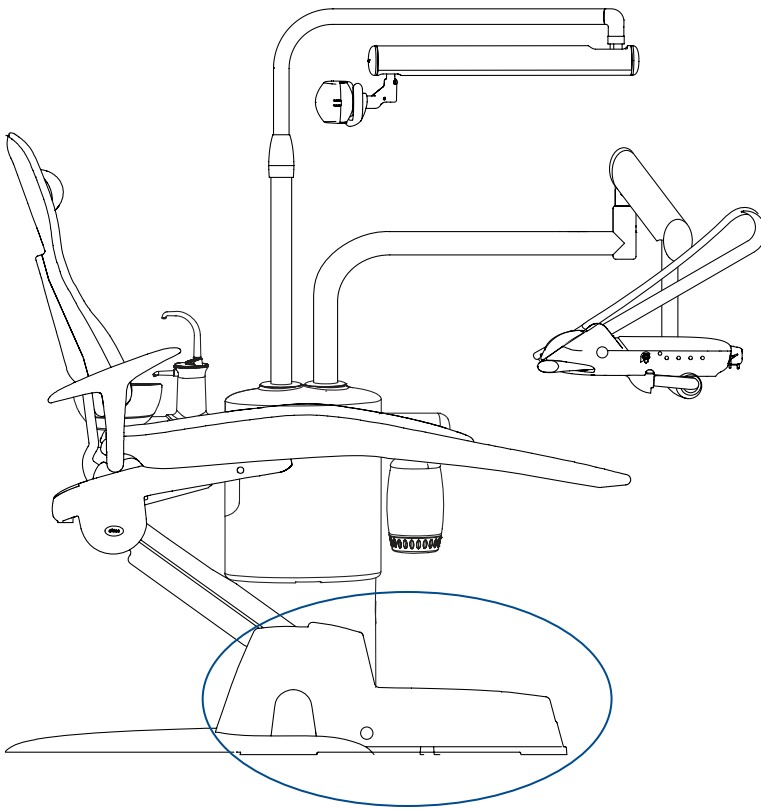
## Test 8 (limit < 0.1 mA AC, < 0.01 mA DC)

Note: Measure each applied part separately.

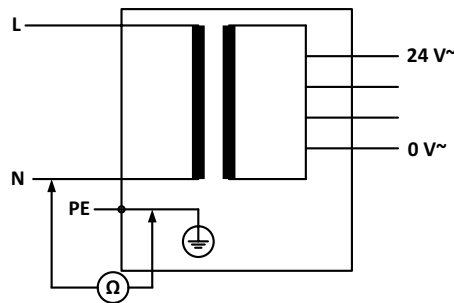


# SAFETY CHECKS ON A-DEC 300 AND 400 SYSTEMS

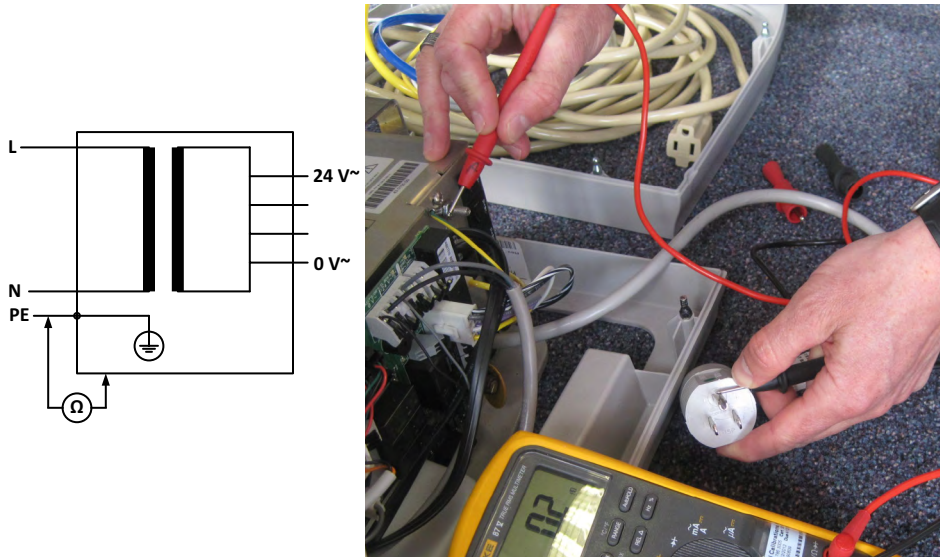
## Test 1 (limit > 1 MΩ)



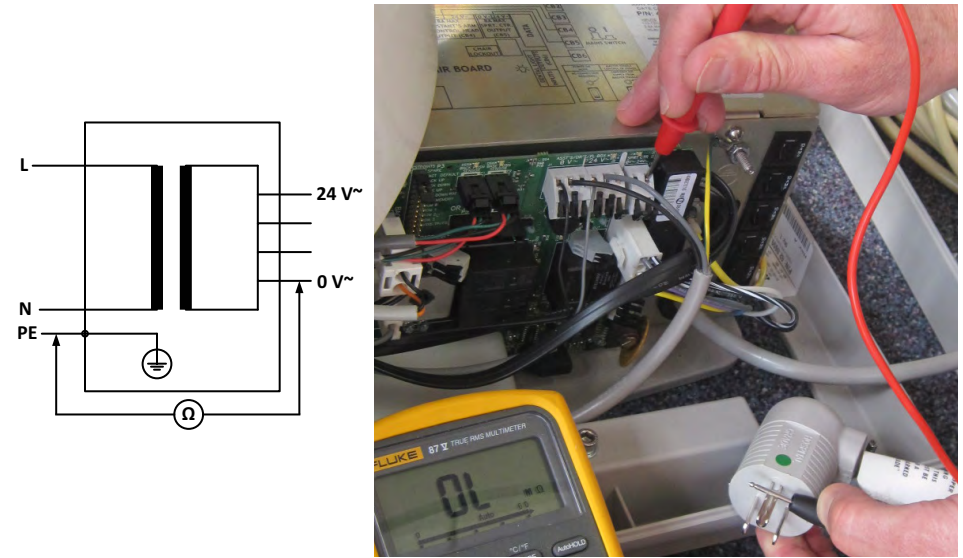
## Test 2 (limit > 1 MΩ)



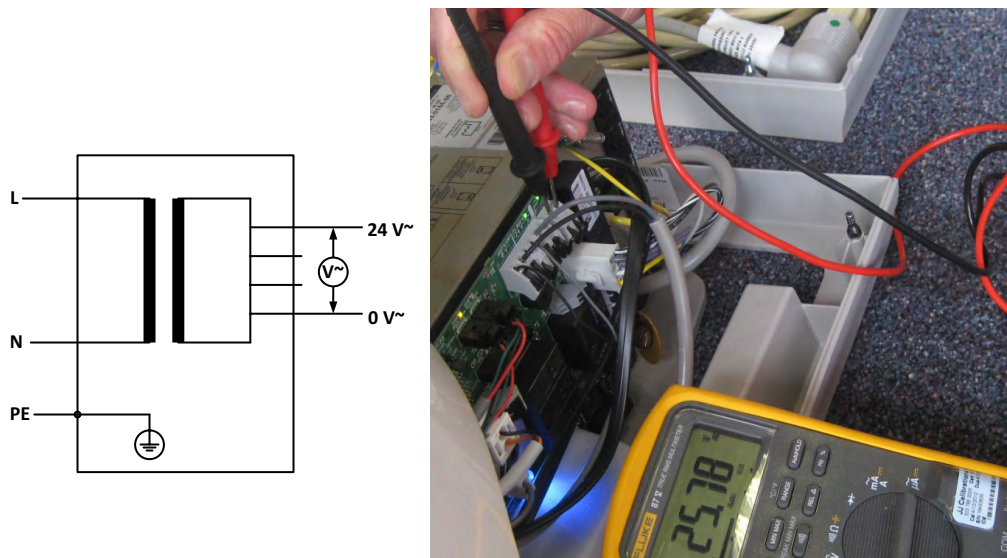
**Test 3 (limit < 5 Ω)**



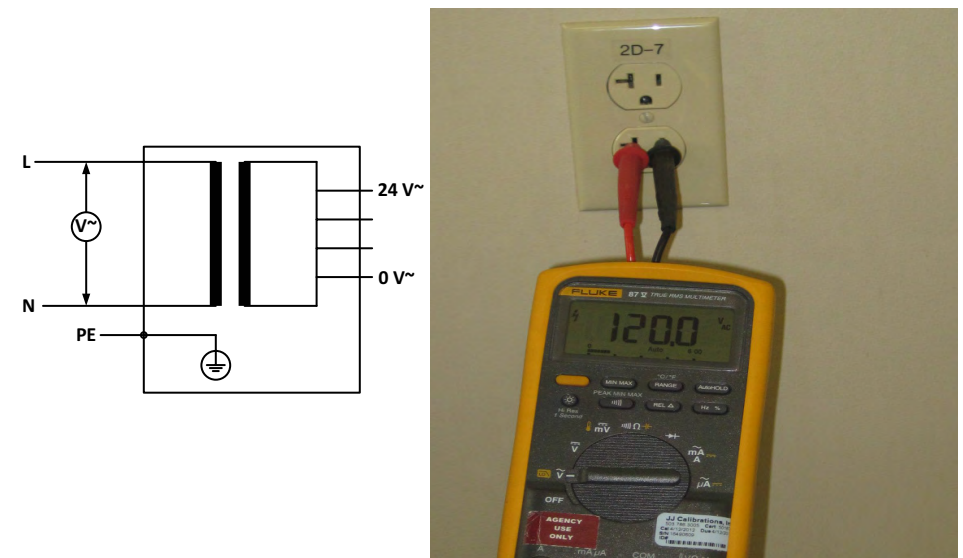
**Test 4 (limit > 1 MΩ)**



**Test 5 (limit ≈ 26 V~ with no load)**

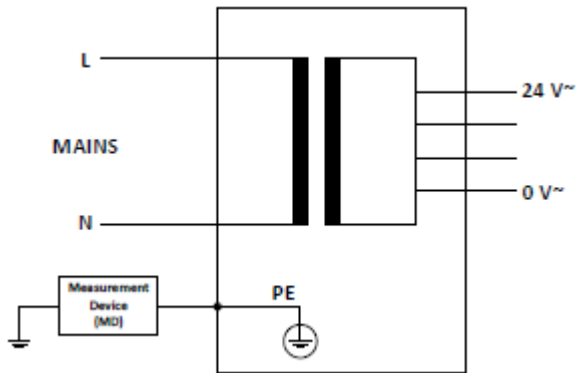


**Test 6 (limit = Mains ± 10%)**



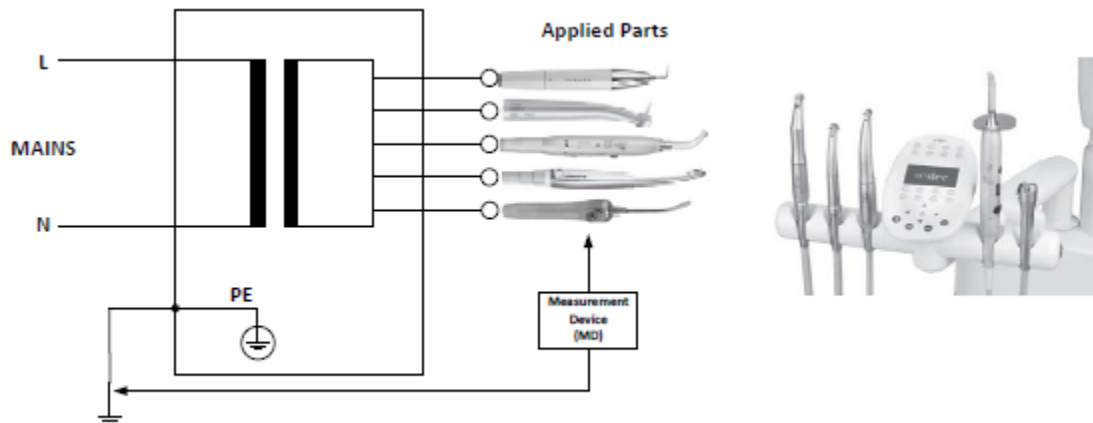
## Safety Checks on A-dec 300 and 400 Systems

### Test 7 (Limit < 0.5 mA)



### Test 8 (limit < 0.1 mA AC, < 0.01 mA DC)

Note: Measure each applied part separately.



# System Safety Checklist

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

| Date | Test 1<br>Limit > 1 M $\Omega$ | Test 2<br>Limit > 1 M $\Omega$ | Test 3<br>Limit < 5 $\Omega$ | Test 4<br>Limit > 1 M $\Omega$ | Test 5<br>Limit $\approx$ 26 V <sub>-</sub> with no load | Test 6<br>Limit = Mains $\pm$ 10% | Test 7<br>Limit < 0.5 mA) | Test 8<br>Limit < 0.1 mA AC,<br>< 0.01 mA DC |
|------|--------------------------------|--------------------------------|------------------------------|--------------------------------|--|-----------------------------------|---------------------------|--|
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |
|      |                                |                                |                              |                                |  |                                   |                           |  |

 If a system safety check indicates that there may be a problem with the equipment, contact A-dec Customer Support.

## Electrical Safety Test Unit Procedure

### This procedure is for testing units such as SecuTest or SecuLife

1. Select the appropriate testing options:
  - Standard: IEC 62353 - Medical Electric Equipment (recurrent test and test after repair of medical equipment)
  - Equipment Class: Class 1
  - Type: General
  - Applied Parts: Type B (if applicable)
  - If prompted for a Leakage Current test method, select either:
    - Direct Method** if the equipment is plugged into the tester
    - Alternative Method** if the equipment is hard-wired
2. Follow the instructions that accompany your test unit to continue testing the dental equipment.
3. Print or record the test results.

### IEC 62353 Limits

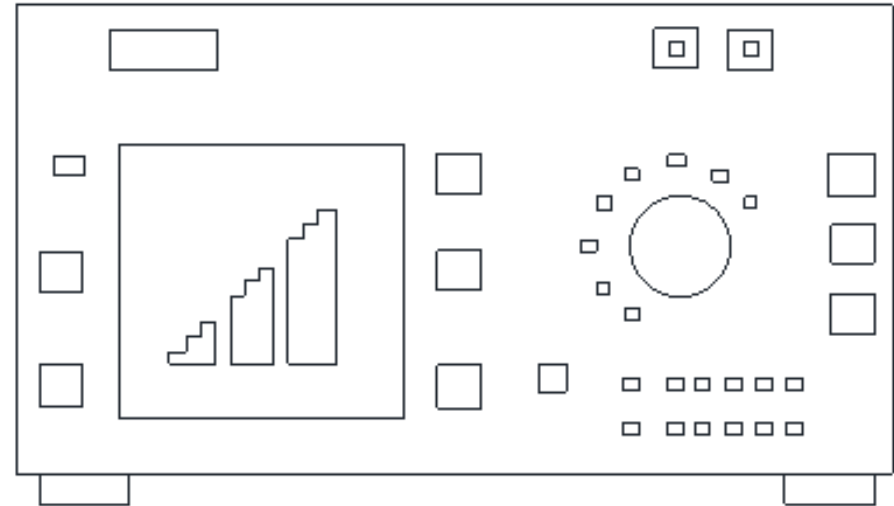
Protective Earth Measurement:  $\leq 300\text{m}\Omega$

Leakage Current Equipment:

- Direct Method:  $\leq 500\mu\text{A}$
- Alternative Method:  $\leq 1000\mu\text{A}$

Insulation Resistance:  $\geq 2\text{M}\Omega$

Example of a SecuTest Unit



### Before you Leave

- Reinstall all parts of the dental equipment.
- Check all covers to ensure there are no pinched wires.
- Test the unit to ensure all features and options are functioning.



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