

## AUTODESK FUSION - SET UP DESIGN RULES

Fusion released an updated version that looks a little different in the PCB Design Rules setup. The DRC rules must be set up at the start of switching into PCB mode, from Schematic mode.

- 1) Check the installed version of Fusion on your computer. On the top right corner, click on the question mark symbol ( ? ) then click on **About**.

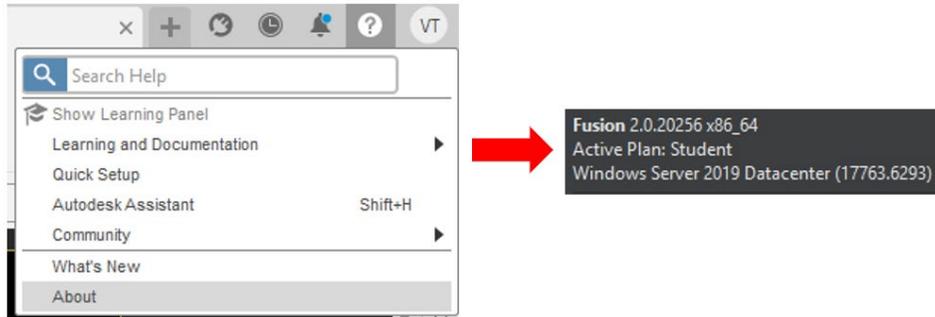


Figure 1. Checking Fusion installed version.

- a. If the version is **2.0.20256 x86\_64** or **newer**, **skip** Step 2 and **continue** to Step 3 (pg.3).
- b. If the version is **older** than mentioned above, **continue** with Step 2 and **skip** Step 3.

- 2) On the menu bar, select **RULES DRC/ERC > DRC**. Note: If the symbols are not the same as Figure 2, skip this step and go to Step 3 on page 3.

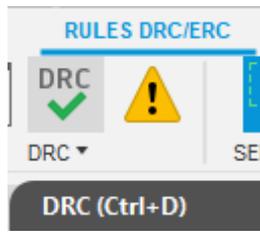


Figure 2. DRC option.

- a. Click on tab **Clearance** then set the rules as Figure 3 below.



Figure 3. Clearance tab in DRC rules.

b. Click on tab **Sizes** then set the rules as Figure 4 below.

| Property             | Value  |
|----------------------|--------|
| Minimum Width        | 20mil  |
| Minimum Drill        | 0.5mm  |
| Min. Micro Via       | 9.99mm |
| Min. Blind Via Ratio | 0.5    |

**Figure 4. Sizes tab in DRC rules.**

c. Click on tab **Annular Ring** then set the rules as Figure 5 below then check on the **Diameter** box.

|      |        | Min    | %  | Max    | Diameter                            |
|------|--------|--------|----|--------|-------------------------------------|
| Pads | Top    | 20 mil | 50 | 40 mil | <input type="checkbox"/>            |
|      | Inner  | 20 mil | 25 | 20 mil | <input checked="" type="checkbox"/> |
|      | Bottom | 20 mil | 50 | 40 mil | <input type="checkbox"/>            |

**Figure 5. Annular Ring tab in DRC rules.**

d. Click on tab **Supply** and set the rules as Figure 6 below.

|   |       |
|---|-------|
| Thermal isolation                                   | 20mil |
| <input type="checkbox"/> Generate thermals for vias |       |

**Figure 6. Supply tab in DRC rules.**

e. Click **Apply** then close the window.

In the latest version, you will need to set the Design Rules and the Design Preferences.

3) On the menu bar, click **RULES > Design Rules**.



Figure 7. Design Rules option.

a. Change the rules as the figure below.

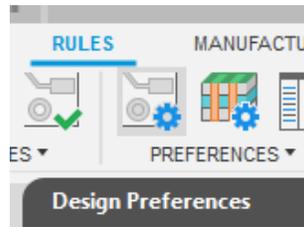
| General Rules                     |           | Custom Rules                        |
|-----------------------------------|-----------|-------------------------------------|
| Search                            |           |                                     |
| Name                              | Rule      | Enabled                             |
| Wire - Wire Clearance             | 14 mil    | <input checked="" type="checkbox"/> |
| Wire - Pad Clearance              | 14 mil    | <input checked="" type="checkbox"/> |
| Wire - Via Clearance              | 14 mil    | <input checked="" type="checkbox"/> |
| Pad - Pad Clearance               | 14 mil    | <input checked="" type="checkbox"/> |
| Pad - Via Clearance               | 14 mil    | <input checked="" type="checkbox"/> |
| Via - Via Clearance               | 6 mil     | <input checked="" type="checkbox"/> |
| SMD - Pad Clearance               | 6 mil     | <input checked="" type="checkbox"/> |
| SMD - Via Clearance               | 6 mil     | <input checked="" type="checkbox"/> |
| SMD - SMD Clearance               | 6 mil     | <input checked="" type="checkbox"/> |
| Board Outline Clearance           | 40 mil    | <input checked="" type="checkbox"/> |
| Copper - Restrict Clearance       | 0 mil     | <input checked="" type="checkbox"/> |
| Via - Restrict Clearance          | 0 mil     | <input checked="" type="checkbox"/> |
| Soldermask - Silkscreen Clearance | 0 mil     | <input type="checkbox"/>            |
| Drill Clearance                   | 6 mil     | <input checked="" type="checkbox"/> |
| Component Exclude Clearance       | 0 mil     | <input checked="" type="checkbox"/> |
| Unconnected Lines                 | N/A       | <input checked="" type="checkbox"/> |
| Copper Width                      | 20 mil    | <input checked="" type="checkbox"/> |
| Drill Size                        | 19.69 mil | <input checked="" type="checkbox"/> |
| Acute Angle                       | N/A       | <input type="checkbox"/>            |
| Wire Stub                         | N/A       | <input checked="" type="checkbox"/> |
| Air Wire                          | N/A       | <input checked="" type="checkbox"/> |

Enter "0.5 mm". It will convert to "mil" automatically.

Figure 8. General Rules tab in Design Rules.

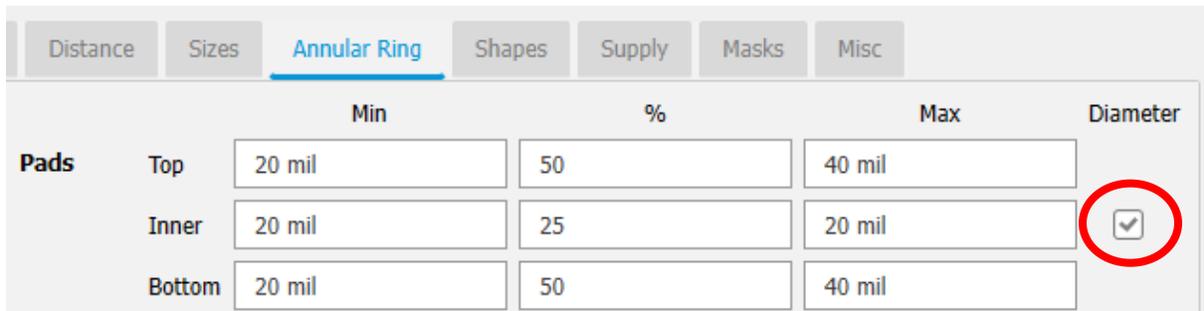
b. Click **OK**.

c. On the menu bar, select **RULES > Design Preferences**.



**Figure 9. Design preferences option.**

d. Select tab **Annular Ring** and set the rules for **Pads** as the figure below then check on the **Diameter** box.



**Figure 10. Annular Ring tab in Design Preferences.**

e. Click on tab **Supply** and set the rule for **Thermal isolation** to **20 mil**.



**Figure 11. Supply tab in Design Preferences.**

f. Click **OK**.