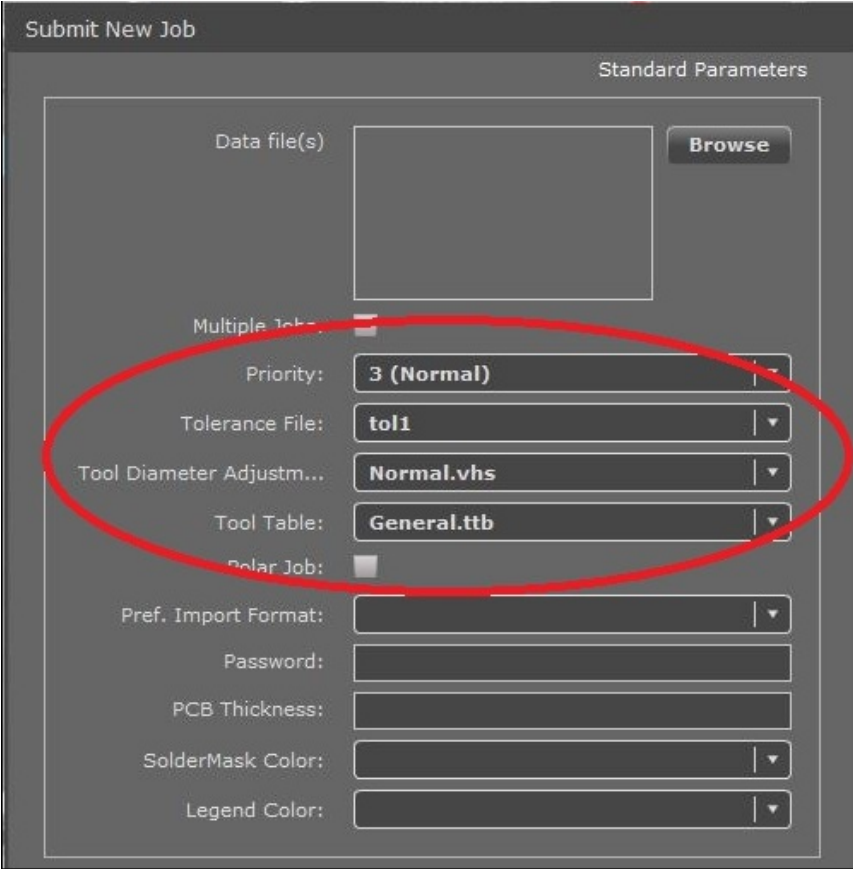


# Drill Tool Compensated Perspective

## Features

- The Drill Tool Compensated perspective automates the calculation of drill tool sizes based on your own rules, practices and sophistication
- Perspective in which the job analysis is done using drill tool diameters rather than customer finished hole sizes in order to establish the available tolerances in production
- It allows for additional input parameters at Job submit time, necessary to convert finished sizes to drill tool sizes automatically
  - Tool Diameter Adjustment (vhs) – incorporate your own UcamX VHS scripts to calculate the required drill tool diameter based on the size, function and characteristics of the hole diameter
  - Tolerance File – set up a generic or customer-specific hole tolerance file and take into account the requested plus and minus tolerances to exactly calculate the correct drill tool diameter
  - Tool Table – post-adjust the calculated tool diameter to cater for certain types of surface finish like hot-air solder leveling



The screenshot shows a 'Submit New Job' dialog box with a 'Standard Parameters' section. A red circle highlights the following fields:

- Priority: 3 (Normal)
- Tolerance File: tol1
- Tool Diameter Adjustm...: Normal.vhs
- Tool Table: General.ttb

Other visible fields include:

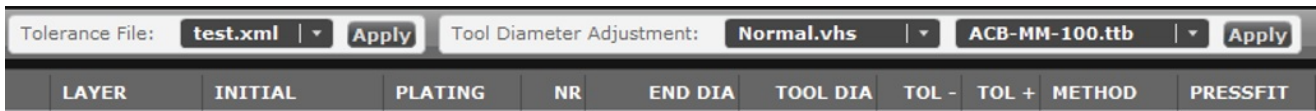
- Data file(s) with a Browse button
- Multiple Job:
- Polar Job:
- Pref. Import Format: [dropdown]
- Password: [text field]
- PCB Thickness: [text field]
- SolderMask Color: [dropdown]
- Legend Color: [dropdown]

- In combination with the Drill Tool Compensated perspective, Drill Editor features an additional section where the results of Integr8tor's automatic drill tool analysis can be completed or corrected:
  - - (Re)define via holes
    - Define via hole filling
    - Define pressfit holes
    - Set up or adjust unsymmetrical drill hole tolerances
    - .....

Any of these characteristics can then be queried to calculate the correct drill tool diameter

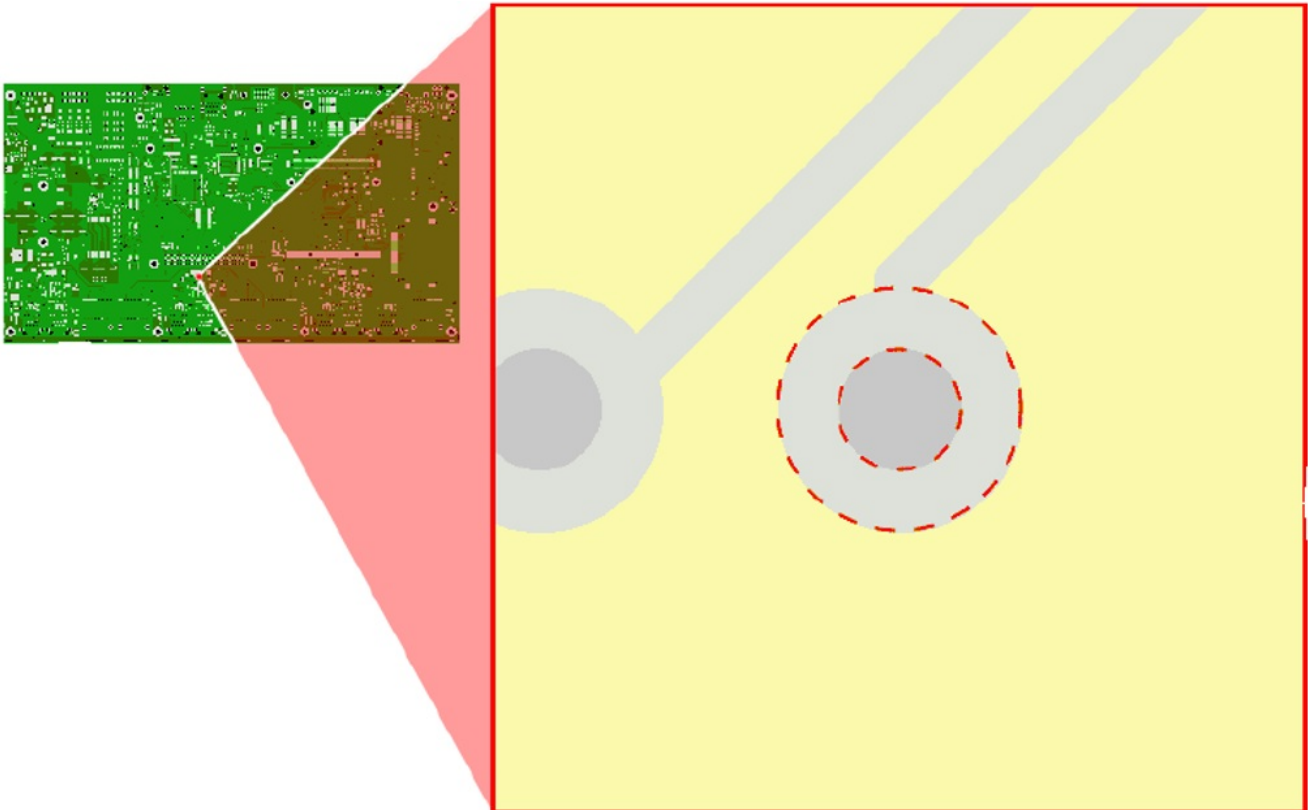
	LAYER	INITIAL	NR	PLATING	FILLED VIA	END DIA ▲	TOOL DIA	TOL -	TOL +	METHOD	FUNCTION	PRESSFIT
<span style="color: red;">■</span>	zzyxxx60	NC_DRL.dpf	1	plated		0.3	0.4	0.1	0.1	drill	Via	<input type="checkbox"/>
<span style="color: red;">■</span>	zzyxxx60	NC_DRL.dpf	2	plated		0.5	0.6	0.1	0.1	drill	Via	<input type="checkbox"/>
<span style="color: red;">■</span>	zzyxxx60	NC_DRL.dpf	3	plated		0.8	0.95	0.1	0.1	drill	Component	<input checked="" type="checkbox"/>
<span style="color: red;">■</span>	zzyxxx60	NC_DRL.dpf	4	plated		2.2	2.25	0.1	0.1	drill	Mechanical	<input type="checkbox"/>
<span style="color: red;">■</span>	zzyxxx60	NC_DRL.dpf	5	plated		3	3.05	0.1	0.1	drill	Mechanical	<input type="checkbox"/>
<span style="color: green;">■</span>	zzyxxx60	NC_DRL.dpf	6	non-plated		3.3	3.35	0.1	0.1	drill	Mechanical	<input type="checkbox"/>

- Additional Drill Editor toolbar allows to change the initial choice of Tool Diameter Adjustment script, Tolerance Table or Tool Table and to recalculate the new tool diameter in real time.



## Benefits

- **Manufacturability:** view the job and the analysis results with the modified drill tool diameters in DFM Classes, DFM Review or Checkpoint and find out with ease how tight your manufacturing tolerances really are
- **Versatility:** the Drill Tool Compensated Perspective produces a valuable, drill-oriented view on the job, offering Engineering or CAM departments a timely alert to anticipate to potential restring or critical registration issues
- **Automation:** for every job submitted, the Drill Tool Compensated Perspective automatically calculates the correct drill tool sizes – No need to do anything extra



Summary - Sequences - After Tool Compensation

Type	Sequences	Tools	Min. End Dia.	Max. End Dia.	Holes	Min. Ring on Outer
			mm	mm		mm
Blind	0					!!!
Buried	0					
PTH	1	6	0.400	3.350	1949	0.099
Plated (Total)	1	6	0.400	3.350	1949	0.099
NPTH	0					
Total	1	6	0.400	3.350	1949	0.099

- Consistency: customer rules for drill tool calculation are embedded within Integr8tor, ensuring consistent results time after time, regardless of the skills level of an operator
- Customization: use VHS scripting within the Drill Tool Compensated Perspective to fully mold the drill tool calculation rules to your own practices and specific production requirements
- Sophistication: combine all three – VHS Script, Tolerance tables and Tool Tables – to reach the highest levels of sophistication in your calculation rules

- Compatibility: all correlated data from the Drill Tool Compensated Perspective is transferable to Ucamco for further use in Drill Tool Manager. Any changes made there will flow back to Integr8tor transparently
- Compatibility: Drill Tool Compensated PCB layout data can be exported to DPF, ODB++ or Gerber for further use on any CAM system

**Drill Tool Manager**

Tools Setup

Job name : SMA\_40-A026614\_LP      Diameter adjustment script : Normal      Plating type : HASL

Layer	Apenr	Toolnr	Cust dia	Slot	+ Tol	- Tol	Plating	Function	Method	Pressfit	Tool dia	# Holes	Symbol	Comment
zzyxx...	1	1	0.3		0.1	0.1	Plated	Via	drill	no	0.4	2482	1	Old dia=0.3
zzyxx...	2	2	0.4		0.1	0.1	Plated	Via	drill	no	0.5	659	2	Old dia=0.4
zzyxx...	3	3	0.5		0.1	0.1	Plated	Via	drill	no	0.6	1	3	Old dia=0.5
zzyxx...	4	4	0.6		0.1	0.1	Plated	Via	drill	no	0.7	379	4	Old dia=0.6
zzyxx...	5	5	0.7		0.1	0.1	Plated	Component	drill	no	0.85	26	5	Old dia=0.7
zzyxx...	6	6	0.8		0.1	0.1	Plated	Component	drill	no	0.95	24	6	Old dia=0.8
zzyxx...	7	7	0.85		0.1	0.1	Plated	Component	drill	no	1.0	120	7	Old dia=0.85
zzyxx...	8	8	0.9		0.1	0.1	Plated	Component	drill	no	1.05	121	8	Old dia=0.9
zzyxx...	9	9	1		0.1	0.1	Plated	Component	drill	no	1.15	64	9	Old dia=1.0
zzyxx...	10	10	1.1		0.1	0.1	Plated	Component	drill	no	1.25	11	10	Old dia=1.1
zzyxx...	11	11	1.4		0.1	0.1	Plated	Component	drill	no	1.55	14	11	Old dia=1.4
zzyxx...	12	12	1.5		0.1	0.1	Plated	Component	drill	no	1.65	28	12	Old dia=1.5
zzyxx...	13	13	1.6		0.1	0.1	Plated	Component	drill	no	1.75	28	13	Old dia=1.6
zzyxx...	14	14	1.8		0.1	0.1	Plated	Component	drill	no	1.95	4	14	Old dia=1.8
zzyxx...	15	15	2		0.1	0.1	Plated	Mechanical	drill	no	2.05	10	15	Old dia=2.0
zzyxx...	16	16	2.3		0.1	0.1	Plated	Component	drill	no	2.45	4	16	Old dia=2.3
zzyxx...	17	17	2.7		0.1	0.1	Plated	Component	drill	no	2.85	4	17	Old dia=2.7
zzyxx...	18	18	2.9		0.1	0.1	Plated	Component	drill	no	3.05	2	18	Old dia=2.9
zzyxx...	19	19	3.2		0.1	0.1	Plated	Mechanical	drill	no	3.25	2	19	Old dia=3.2
zzyxx...	20	20	3.6		0.1	0.1	Plated	Component	drill	no	3.75	13	20	Old dia=3.6