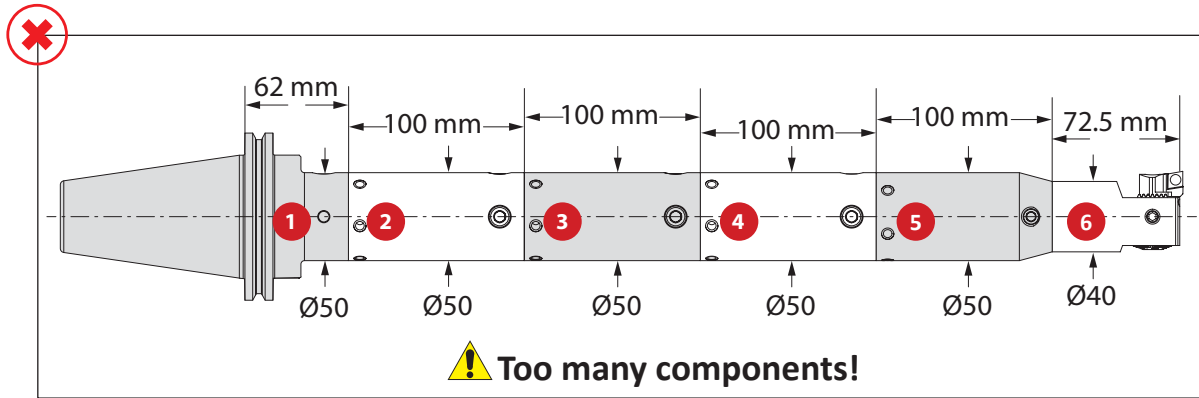


Guidelines for not Exceeding Recommended Length-to-Diameter Ratio

To calculate, see graphics below:



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.

NOTE: Do not exceed recommended 10xD length-to-diameter ratio or exceed four total components (including shank).

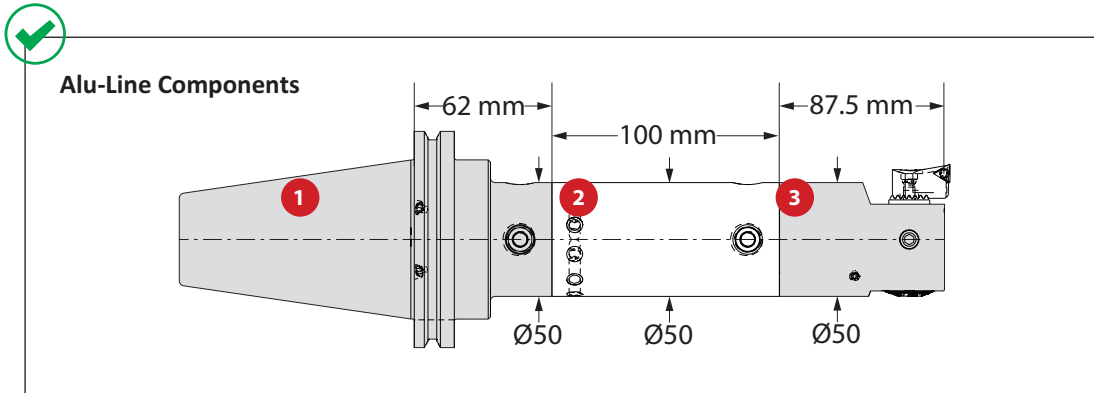
Step 1: Find L : D by component

- 1 1.2 = 62/50
- 2 2.0 = 100/50
- 3 2.0 = 100/50
- 4 2.0 = 100/50
- 5 2.0 = 100/50
- 6 1.8 = 72.5/40

Step 2: Add each L : D Average

- 1.2
- 2.0
- 2.0
- 2.0
- 2.0
- 2.0
- + 1.8
- 11.0 = L : D ratio**

Too long with too many components!



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.

NOTE: Do not exceed recommended 5xD length-to-diameter ratio when using Alu-Line (Aluminum) components or exceed four total components (including shank).

Step 1: Find L : D by component

- 1 1.2 = 62/50
- 2 2.0 = 100/50
- 3 1.8 = 87.5/50

Step 2: Add each L : D average

- 1.2
- 2.0
- + 1.8
- 5.0 = L : D ratio**

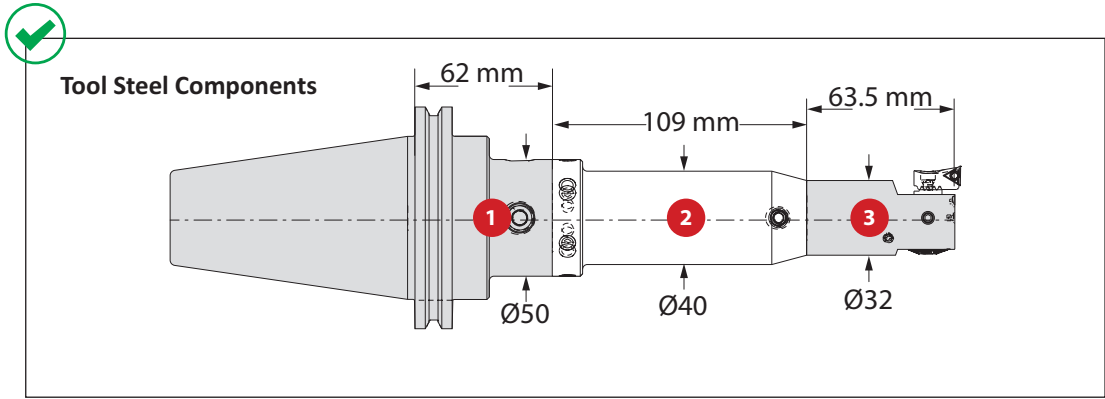
WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 10xD length-to-diameter ratio or exceed four total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
- When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
- When using a heavy metal components, do not exceed recommended 8xD length-to-diameter ratio
- When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
- When using a NOVI^{TECH} module, do not exceed recommended 10xD length-to-diameter ratio

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Guidelines for not Exceeding Recommended Length-to-Diameter Ratio

To calculate, see graphics below:



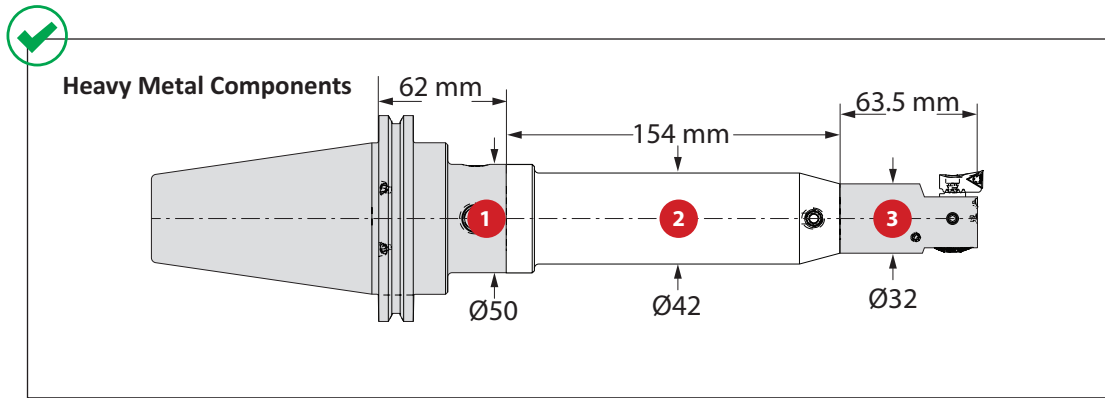
NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.
NOTE: When using steel components, do not exceed recommended 6xD length-to-diameter ratio or exceed four total components (including shank).

Step 1: Find L : D by component

- 1 1.2 = 62/50
- 2 2.7 = 109/40
- 3 2.0 = 63.5/32

Step 2: Add each L : D average

1.2	→	1.2
2.7	→	2.7
2.0	→	+ 2.0
		5.9 = L : D ratio



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.
NOTE: When using a heavy metal component, do not exceed recommended 8xD length-to-diameter ratio or exceed four total components (including shank).

Step 1: Find L : D by component

- 1 1.2 = 62/50
- 2 3.6 = 154/42
- 3 2.0 = 63.5/32

Step 2: Add each L : D average

1.2	→	1.2
3.6	→	3.6
2.0	→	+ 2.0
		6.8 = L : D ratio

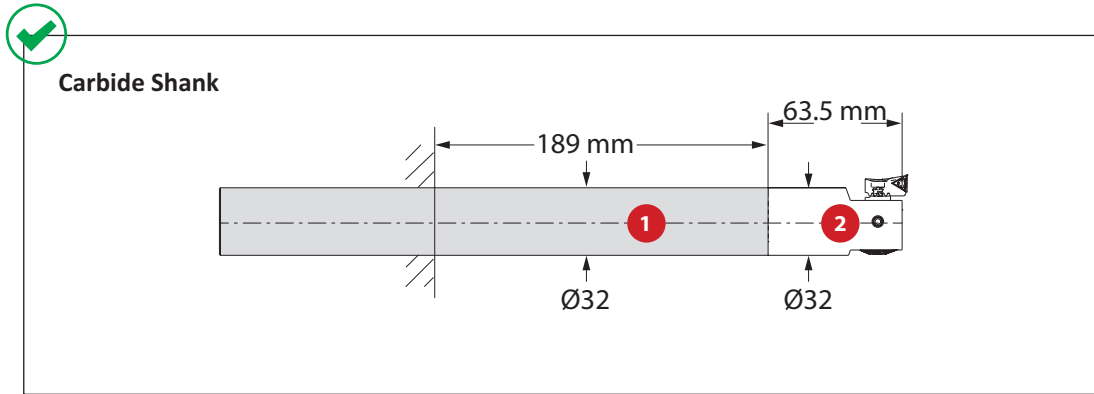
⚠ WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 10xD length-to-diameter ratio or exceed four total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
- When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
- When using a heavy metal components, do not exceed recommended 8xD length-to-diameter ratio
- When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
- When using a NOVI^{TECH} module, do not exceed recommended 10xD length-to-diameter ratio

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Guidelines for not Exceeding Recommended Length-to-Diameter Ratio

To calculate, see graphics below:



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.
NOTE: When using carbide shank components, do not exceed recommended 9xD length-to-diameter ratio or exceed four total components.

Step 1: Find L : D by component

1 8.1 = 189/32

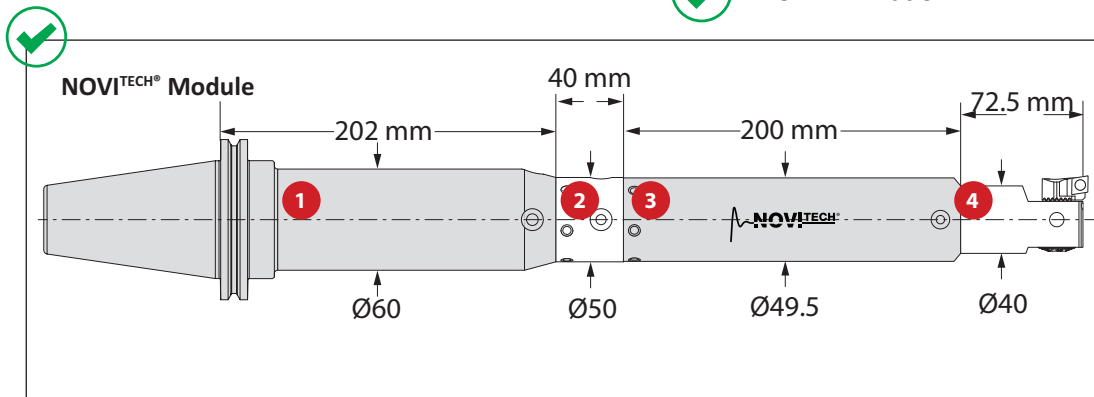
2 2.0 = 63.5/32

Step 2: Add each L : D average

5.9

+ 2.0

7.9 = L : D ratio



NOTE: Length-to-diameter ratio is calculated using body diameters not cutting diameter.
NOTE: Do not exceed recommended 10xD length-to-diameter ratio when using NOVI^{TECH} intermediate modules or exceed four total components (including shank).
NOTE: The NOVI^{TECH} intermediate module should always be assembled as close as possible to the cutting edge (i.e. the next component behind the boring head).

Step 1: Find L : D by component

1 3.2 = 202/60

2 0.8 = 40/50

3 4.0 = 200/49.5

4 1.8 = 72.5/40

Step 2: Add each L : D average

3.2

0.8

4.0

+ 1.8

9.8 = L : D ratio

Component	Length to Diameter Ratio
Alu-Line	5xD
Tool Steel	6xD
Heavy Metal	8xD
Carbide	9xD
NOVI ^{TECH} *	10xD

⚠ WARNING Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 10xD length-to-diameter ratio or exceed four total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
- When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
- When using a heavy metal components, do not exceed recommended 8xD length-to-diameter ratio
- When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
- When using a NOVI^{TECH} module, do not exceed recommended 10xD length-to-diameter ratio

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