



# ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing



Drilling



Reaming



Burnishing



Threading



Specials



## Wohlhaupter®

► *BORING*

Large Diameter Boring Tools

**WOHLHAUPTER®**



SECTION

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# B10-G

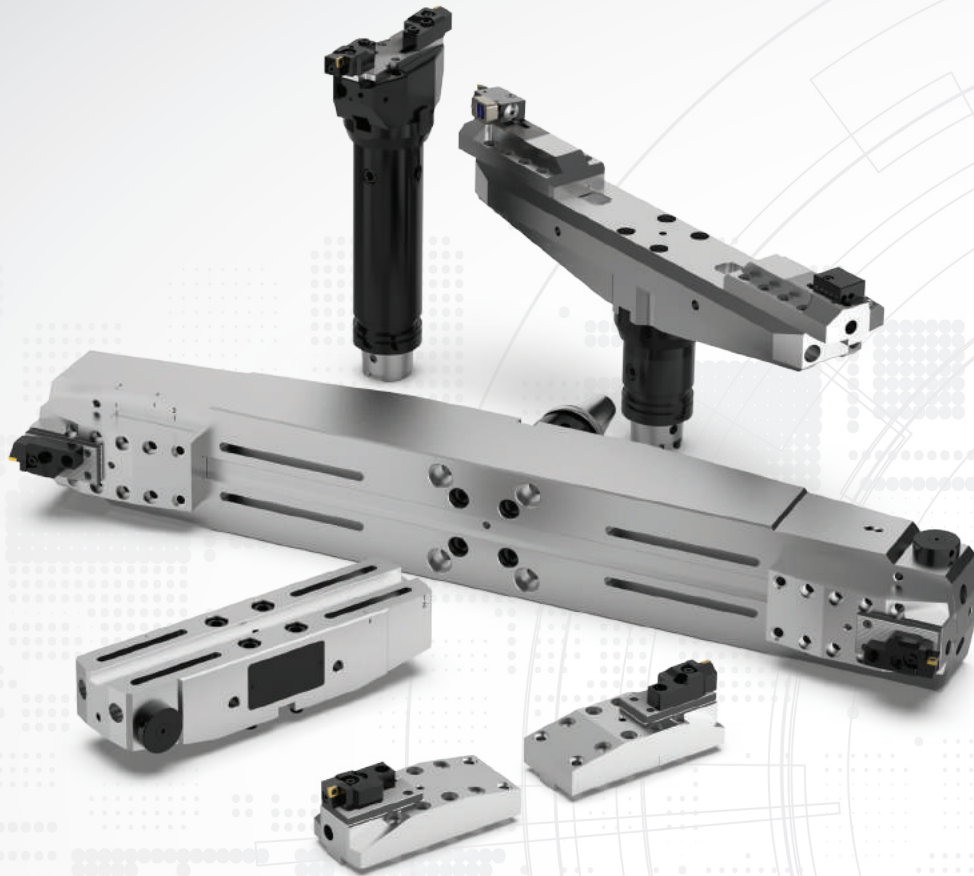
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Large Diameter Boring

# Wohlhaupter® Large Diameter Boring

Basic D 40 | Basic D 60 | Eco D 60 | Flex D 60

▶ Diameter Range: 7.874" - 128.150" (200.00 mm - 3255.00 mm)



## Boring Big?

Wohlhaupter has continued to expand our large diameter boring capabilities with Alu-Line. Our Alu-Line serrated slides and tool bodies are made of lightweight aluminum alloy to minimize the weight while still getting the heavy boring job done. The versatile serrated slides and serrated tool bodies allow for boring 7.874" (200.00 mm) up to 128.150" (3255.00 mm), offering the most powerful and versatile tool ranges to our customers.

Your safety and the safety of others is very important. This catalog contains important safety messages. Always read and follow all safety precautions.



This triangle is a safety hazard symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalog, look for a related safety message that may be near this triangle or referred to in the nearby text.

There are safety signal words also used in the catalog. Safety messages follow these words.

### **WARNING**

**WARNING** (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

**NOTICE** means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

**NOTE** and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit [www.alliedmachine.com](http://www.alliedmachine.com) for the most up-to-date information and procedures.

## Applicable Industries



Aerospace



Agriculture



Automotive



Firearms



General  
Machining



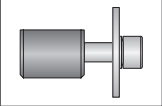
Oil & Gas

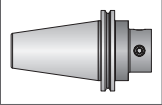


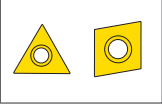
Renewable  
Energy

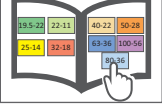
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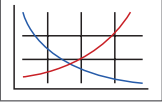
**Reference Icons**  
The following icons will appear throughout the catalog to help you navigate between products.


 **Clamping Elements**  
For use with insert holders and boring heads

 **Shanks**  
A variety of shanks for different machines

 **Inserts**  
For use with insert holder boring heads and boring bars using indexable inserts

 **MVS Connection Color Guide**  
Detailed instructions and information regarding the MVS connection(s)

 **Recommended Cutting Data**  
Speed and feed recommendations for optimum and safe boring

 **Coolant-Through Option**  
Indicates that the product is coolant through

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Series	Diameter Range	
	Imperial (inch)	Metric (mm)
Basic D 40 Slides	7.874 - 20.472	200.00 - 520.00
Basic D 60 Slides	7.874 - 19.882	200.00 - 505.00
Eco D 60 Slides	18.307 - 40.157	465.00 - 1020.00
Flex D 60 Slides	19.685 - 128.150	500.00 - 3255.00



# Large Diameter Boring Product Overview

## Large Diameter BORING

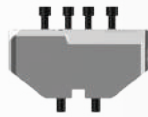
### Boring big? We've got you covered.

Our versatile tooling system can provide the power and precision your large diameter boring jobs demand. The large diameter boring system offers four different Alu-Line serrated slides, a wide range of rough and finish boring insert holders, vernier and digital cassettes, and combined rough and finish insert holders.

- Diameter range: 7.874" - 128.150" (200.00 mm - 3255.00 mm)
- Basic, Eco, and Flex serrated slides
- Roughing, finishing, or combined roughing and finishing can be achieved in one pass
- Digital readout cassettes available for quick and easy adjustments
- Alu-Line serrated slides and tool bodies are made of lightweight aluminum



► **Basic D 40 Serrated Slides for Finish Boring**



**350021 (349021)**  
 Ø 7.874" - 11.023"  
 (Ø 200.00 mm - 280.00 mm)



**350023 (349023)**  
 Ø 14.173" - 17.322"  
 (Ø 360.00 mm - 440.00 mm)

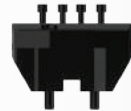


**350022 (349022)**  
 Ø 11.023" - 14.173"  
 (Ø 280.00 mm - 360.00 mm)

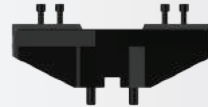


**350024 (349024)**  
 Ø 17.322" - 20.472"  
 (Ø 440.00 mm - 520.00 mm)

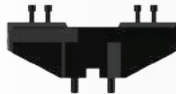
► **Basic D 60 Serrated Slides for Rough and Finish Boring**



**350051 (349051)**  
 Ø 7.874" - 11.023"  
 (Ø 200.00 mm - 280.00 mm)



**350053 (349053)**  
 Ø 13.779" - 16.929"  
 (Ø 350.00 mm - 430.00 mm)



**350052 (349052)**  
 Ø 10.826" - 13.976"  
 (Ø 275.00 mm - 355.00 mm)



**350054 (349054)**  
 Ø 16.732" - 19.881"  
 (Ø 425.00 mm - 505.00 mm)

► **Eco D 60 Serrated Slides for Rough and Finish Boring**



**350005 (349005)**  
 Ø 18.307" - 29.330"  
 (Ø 465.00 mm - 745.00 mm)



**350014 (349014) / 350015 (350015)**  
 Serrated slide for base slides  
 350005 (349005) / 350006 (349006)



**350006 (349006)**  
 Ø 29.133" - 40.157"  
 (Ø 740.00 mm - 1020.00 mm)

► **Flex D 60 Serrated Slides for Rough and Finish Boring**



**350031 (349031)**  
 Ø 19.685" - 41.535"  
 (Ø 500.00 mm - 1055.00 mm)



**350035 (349035)**  
 Serrated slide for base slides  
 350031 (349031) | 350032 (349032)  
 350033 (349033) | 350034 (349034)



**350032 (349032)**  
 Ø 29.724" - 63.188"  
 (Ø 755.00 mm - 1605.00 mm)



**350036 (349036)**  
 Serrated slide for base slides  
 350031 (349031) | 350032 (349032)  
 350033 (349033) | 350034 (349034)



**350033 (349033)**  
 Ø 52.165" - 95.669"  
 (Ø 1325.00 mm - 2430.00 mm)



**350037 (349037)**  
 Serrated slide for base slides  
 350032 (349032) | 350033 (349033)  
 350034 (349034)



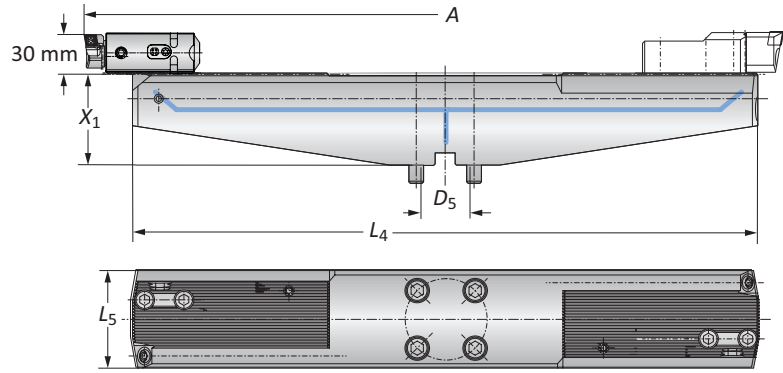
**350034 (349034)**  
 Ø 84.645" - 128.149"  
 (Ø 2150.00 mm - 3255.00 mm)



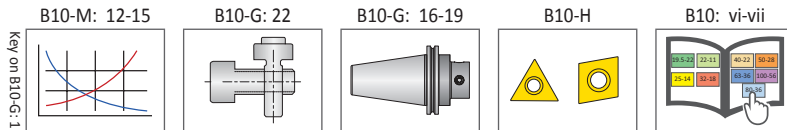
**350038 (349038)**  
 Serrated slide for base slides  
 350033 (349033) | 350034 (349034)

## Alu-Line Basic D 40 Serrated Slides

Diameter Range: 7.874" - 20.472" (200.00 mm - 520.00 mm)



	Connection	Boring Range	Serrated Slide			Weight	Part No.
			$D_5$	$A$	$X_1$		
i	D 40	7.874 - 11.024	2.953	7.480	3.149	6.173 (lbs)	350021
	D 40	11.024 - 14.173	2.953	10.620	3.149	8.377 (lbs)	350022
	D 40	14.173 - 17.323	2.953	13.770	3.149	11.023 (lbs)	350023
	D 40	17.323 - 20.472	2.953	16.320	3.149	13.228 (lbs)	350024
m	D 40	200.00 - 280.00	75.00	190.00	80.00	2.80 (kg)	349021
	D 40	280.00 - 360.00	75.00	270.00	80.00	3.80 (kg)	349022
	D 40	360.00 - 440.00	75.00	350.00	80.00	5.00 (kg)	349023
	D 40	440.00 - 520.00	75.00	430.00	80.00	6.00 (kg)	349024



i = Imperial (in)  
m = Metric (mm)

**1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**

- Consult machine tool builder for machine's weight limitations.
- Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

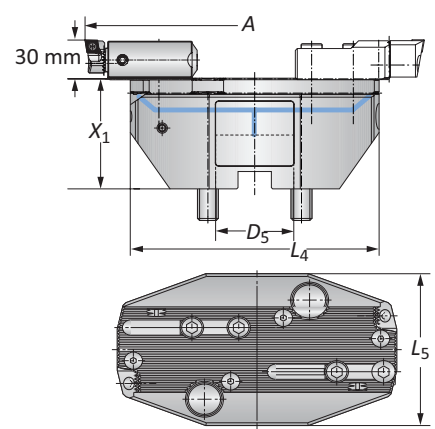
**1. WARNING Tool failure can cause serious injury. To prevent:**

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
- Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)



### Alu-Line Basic D 60 Serrated Slides

Diameter Range: 7.874" - 19.882" (200.00 mm - 505.00 mm)



	Connection	Boring Range	Serrated Slide			Weight	Part No.
	$D_5$	$A$	$X_1$	$L_4$	$L_5$		
i	D 60	7.874 - 11.024	3.346	7.520	4.330	9.038 (lbs)	350051
	D 60	10.827 - 13.976	3.346	10.394	4.330	11.464 (lbs)	350052
	D 60	13.780 - 16.929	3.346	13.346	4.921	15.211 (lbs)	350053
	D 60	16.732 - 19.882	3.346	16.299	4.921	17.637 (lbs)	350054
m	D 60	200.00 - 280.00	85.00	191.00	110.00	4.10 (kg)	349051
	D 60	275.00 - 355.00	85.00	264.00	110.00	5.20 (kg)	349052
	D 60	350.00 - 430.00	85.00	339.00	125.00	6.90 (kg)	349053
	D 60	425.00 - 505.00	85.00	414.00	125.00	8.00 (kg)	349054

Key on B10-G-1

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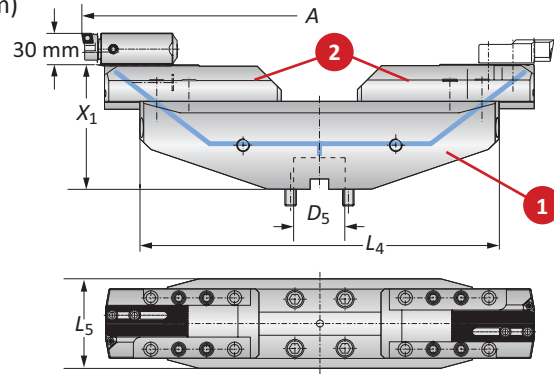
i = Imperial (in)  
m = Metric (mm)

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

## Alu-Line Eco D 60 Serrated Slides

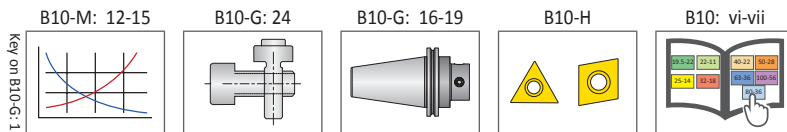
Diameter Range: 18.307" - 40.157" (465.00 mm - 1020.00 mm)



	Connection		Serrated Slide			1 Base Slide		2 Serrated Slide (Alu-Line)*		2 Serrated Slide (steel)**	
	$D_5$	Boring Range	$X_1$	$L_4$	$L_5$	Weight	Part No.	Weight	Part No.	Weight	Part No.
i	D 60	18.307 - 29.331	6.102	17.590	5.078	26.010 (lbs)	350005	4.850 (lbs)	350015	12.560 (lbs)	350014
	D 60	29.134 - 40.157	6.102	28.420	5.078	39.680 (lbs)	350006	4.850 (lbs)	350015	12.560 (lbs)	350014
m	D 60	465.00 - 745.00	155.00	447.00	129.00	11.80 (kg)	349005	2.20 (kg)	349015	5.70 (kg)	349014
	D 60	740.00 - 1020.00	155.00	722.00	129.00	18.00 (kg)	349006	2.20 (kg)	349015	5.70 (kg)	349014

\*Finish boring: serrated slide in Alu-Line

\*\*Rough boring: serrated slide in steel



i = Imperial (in)  
m = Metric (mm)

**1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**

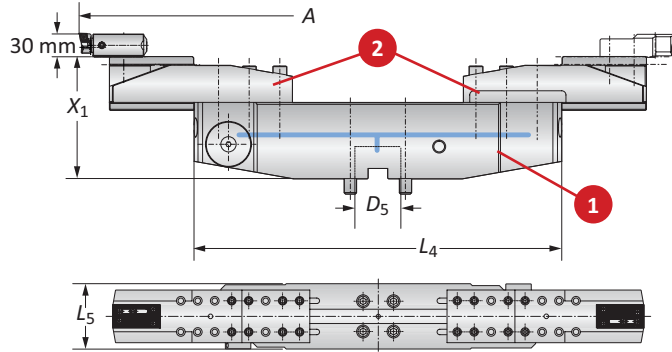
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
  - Consult machine tool builder for machine's weight limitations.
  - Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**1. WARNING Tool failure can cause serious injury. To prevent:**

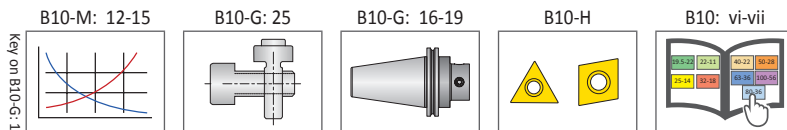
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
  - When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
  - When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
  - When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

## Alu-Line Flex D 60 Serrated Slides

Diameter Range: 19.685" - 128.150" (500.00 mm - 3255.00 mm)



	Connection	Boring Range	Serrated Slide			Part No.		
	D <sub>5</sub>	A	X <sub>1</sub>	L <sub>4</sub>	L <sub>5</sub>	Weight (1 + 2)	1 Base Slide	2 Serrated Slide
i	D 60	19.685 - 30.709	6.299	18.898	5.118	53.360 (lbs)	350031	350035
	D 60	37.402 - 41.535	7.283	18.898	5.118	91.060 (lbs)	350031	350036
	D 60	30.512 - 41.535	7.283	29.724	6.102	93.710 (lbs)	350032	350035
	D 60	41.339 - 52.362	8.268	29.724	6.102	131.400 (lbs)	350032	350036
	D 60	56.772 - 63.189	8.858	29.724	6.102	190.200 (lbs)	350032	350037
	D 60	52.165 - 63.189	8.268	51.378	7.283	194.400 (lbs)	350033	350035
	D 60	52.165 - 74.016	9.252	51.378	7.283	232.100 (lbs)	350033	350036
	D 60	62.992 - 84.843	9.843	51.378	7.283	291.000 (lbs)	350033	350037
	D 60	78.346 - 95.669	10.039	51.378	7.283	374.400 (lbs)	350033	350038
	D 60	84.646 - 95.669	9.252	83.858	8.858	424.400 (lbs)	350034	350035
	D 60	84.646 - 106.496	10.236	83.858	8.858	462.100 (lbs)	350034	350036
	D 60	84.646 - 117.323	10.827	83.858	8.858	520.300 (lbs)	350034	350037
	D 60	84.646 - 128.150	11.024	83.858	8.858	604.100 (lbs)	350034	350038
m	D 60	500.00 - 780.00	160.00	480.00	130.00	24.20 (kg)	349031	349035
	D 60	950.00 - 1055.00	185.00	480.00	130.00	41.30 (kg)	349031	349036
	D 60	775.00 - 1055.00	185.00	755.00	155.00	42.50 (kg)	349032	349035
	D 60	1050.00 - 1330.00	210.00	755.00	155.00	59.60 (kg)	349032	349036
	D 60	1442.00 - 1605.00	225.00	755.00	155.00	86.30 (kg)	349032	349037
	D 60	1325.00 - 1605.00	210.00	1305.00	185.00	88.20 (kg)	349033	349035
	D 60	1325.00 - 1880.00	235.00	1305.00	185.00	105.30 (kg)	349033	349036
	D 60	1600.00 - 2155.00	250.00	1305.00	185.00	132.00 (kg)	349033	349037
	D 60	1990.00 - 2430.00	255.00	1305.00	185.00	169.80 (kg)	349033	349038
	D 60	2150.00 - 2430.00	235.00	2130.00	225.00	192.50 (kg)	349034	349035
	D 60	2150.00 - 2705.00	260.00	2130.00	225.00	209.60 (kg)	349034	349036
	D 60	2150.00 - 2980.00	275.00	2130.00	225.00	236.00 (kg)	349034	349037
	D 60	2150.00 - 3255.00	280.00	2130.00	225.00	274.00 (kg)	349034	349038



i = Imperial (in)  
m = Metric (mm)

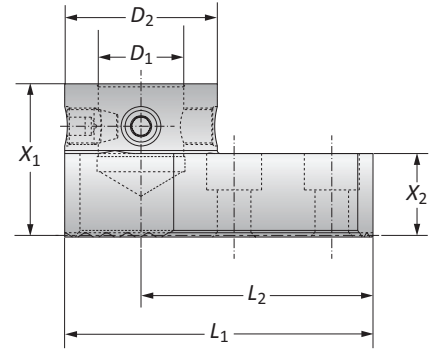
**⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**  
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 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**⚠ WARNING Tool failure can cause serious injury. To prevent:**  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
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## Serrated Adapter with MVS Connection

### Mounting Adapter

MVS Connection	Mounting Adapters				Weight	Part No.
$D_2$   $D_1$	$X_1$	$X_2$	$L_1$	$L_2$		
<b>i</b> 50 - 28	1.969	1.063	3.976	2.992	2.866 (lbs)	<b>349046</b>
<b>m</b> 50 - 28	50.00	27.00	101.00	76.00	1.30 (kg)	<b>349046</b>



### Inside Boring

Slide	Boring Heads	ID Bore Range	
		inch	mm
349/350051	320005/465006/565045	8.465 - 12.323	215.00 - 313.00
349/350052	320005/465006/565045	11.417 - 15.276	290.00 - 388.00
349/350053	320005/465006/565045	14.370 - 18.228	365.00 - 463.00
349/350054	320005/465006/565045	17.323 - 21.181	440.00 - 538.00
349/350005 with 349/350015	320005/465006/565045	18.898 - 30.630	480.00 - 778.00

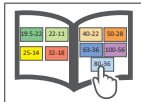
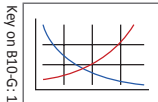
### Outside Boring

Slide	Boring Heads	OD Bore Range	
		inch	mm
349/350051	320005/465006/565045	2.638 - 6.496	67.00 - 165.00
349/350052	320005/465006/565045	5.591 - 9.449	142.00 - 240.00
349/350053	320005/465006/565045	8.543 - 12.402	217.00 - 315.00
349/350054	320005/465006/565045	11.496 - 15.354	292.00 - 390.00
349/350005 with 349/350015	320005/465006/565045	13.071 - 24.803	332.00 - 630.00

**NOTE:** LH only spindle rotation

B10-M: 12-15

B10: vi-vii



**i** = Imperial (in)  
**m** = Metric (mm)

**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

-Consult machine tool builder for machine's weight limitations.

-Refer to example on page B10-M: 11 for calculating tool assembly weight

Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

-Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio

-Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio

Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

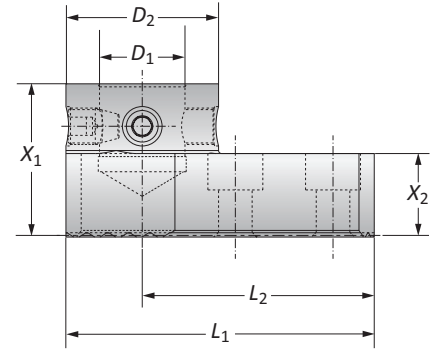




## Serrated Adapter with MVS Connection

### Mounting Adapter

	MVS Connection	Mounting Adapters				Weight	Part No.
	$D_2$   $D_1$	$X_1$	$X_2$	$L_1$	$L_2$		
<b>i</b>	50 - 28	1.969	1.063	3.976	2.992	2.866 (lbs)	<b>349046</b>
<b>m</b>	50 - 28	50.00	27.00	101.00	76.00	1.30 (kg)	<b>349046</b>



### Inside Boring

Slide	Boring Heads	ID Bore Range	
		inch	mm
349/350051	320005/465006/565045	2.559 - 5.039	65.00 - 128.00
349/350052	320005/465006/565045	4.134 - 7.992	105.00 - 203.00
349/350053	320005/465006/565045	7.087 - 10.945	180.00 - 278.00
349/350054	320005/465006/565045	10.039 - 13.898	255.00 - 353.00
349/350005 with 349/350015	320005/465006/565045	11.614 - 23.346	295.00 - 593.00

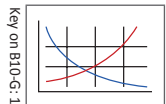
### Outside Boring

Slide	Boring Heads	OD Bore Range	
		inch	mm
349/350051	320005/465006/565045	-	-
349/350052	320005/465006/565045	0.000 - 2.165	0.00 - 55.00
349/350053	320005/465006/565045	1.260 - 5.118	32.00 - 130.00
349/350054	320005/465006/565045	4.213 - 8.071	107.00 - 205.00
349/350005 with 349/350015	320005/465006/565045	5.787 - 17.520	147.00 - 445.00

**NOTE:** LH only spindle rotation

B10-M: 12-15

B10: vi-vii



**i** = Imperial (in)

**m** = Metric (mm)

**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

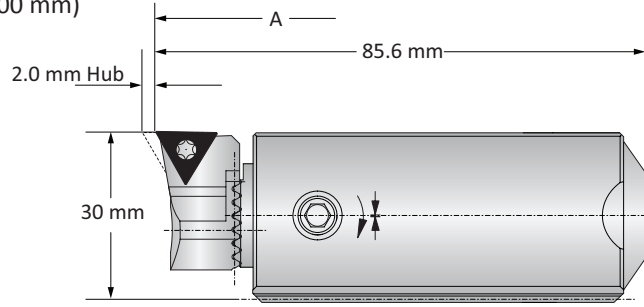
**⚠ WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)  
 -When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio  
 -When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio  
 -When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

## 538 (537) Analog Cassettes

Diameter Range: 3.937" - 128.150" (100.00 mm - 3255.00 mm)

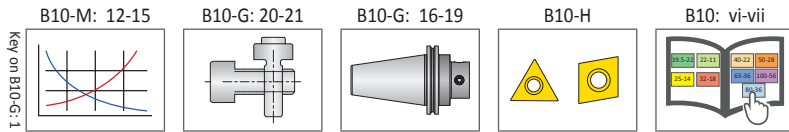


Form 101



Form 20

Slide Type	Boring Range		Insert Form	Insert Holder	Part No.	
	A	Weight			Clamping Piece	Cassette
Serrated Tool Bodies	3.937 - 8.071	1.323 (lbs)	20	210020	137026	538051
	3.937 - 8.071	1.323 (lbs)	101	210063	137026	538051
	3.937 - 8.071	1.323 (lbs)	103	210064	137026	538051
Basic / Eco Slides	7.874 - 40.157	1.323 (lbs)	20	210020	137027	538051
	7.874 - 40.157	1.323 (lbs)	101	210063	137027	538051
	7.874 - 40.157	1.323 (lbs)	103	210064	137027	538051
Flex Slides	19.685 - 128.150	1.323 (lbs)	20	210020	137019	538051
	19.685 - 128.150	1.323 (lbs)	101	210063	137019	538051
	19.685 - 128.150	1.323 (lbs)	103	210064	137019	538051
Serrated Tool Bodies	100.00 - 205.00	0.60 (kg)	20	210020	137026	537051
	100.00 - 205.00	0.60 (kg)	101	210063	137026	537051
	100.00 - 205.00	0.60 (kg)	103	210064	137026	537051
Basic / Eco Slides	200.00 - 1020.00	0.60 (kg)	20	210020	137027	537051
	200.00 - 1020.00	0.60 (kg)	101	210063	137027	537051
	200.00 - 1020.00	0.60 (kg)	103	210064	137027	537051
Flex Slides	500.00 - 3255.00	0.60 (kg)	20	210020	137019	537051
	500.00 - 3255.00	0.60 (kg)	101	210063	137019	537051
	500.00 - 3255.00	0.60 (kg)	103	210064	137019	537051



**i** = Imperial (in)  
**m** = Metric (mm)

Inserts sold separately

**1. WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**

- Consult machine tool builder for machine's weight limitations.
- Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**1. WARNING Tool failure can cause serious injury. To prevent:**

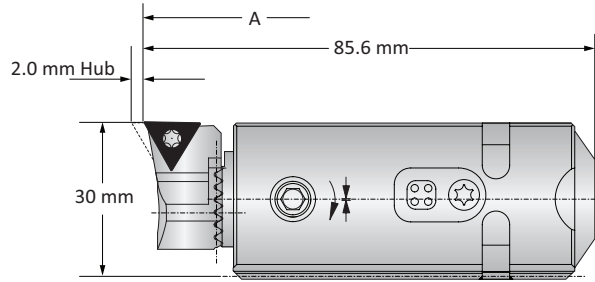
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
- When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
- When using heavy 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
- Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

### 538 (537) Cassettes with 3E<sup>TECH+</sup>

Diameter Range: 3.937" - 128.150" (100.00 mm - 3255.00 mm)



Form 101



Form 20

Slide Type	Boring Range		Insert Form	Part No.		
	A	Weight		Insert Holder	Clamping Pieces	Cassette
Serrated Tool Bodies	3.937 - 8.071	1.323 (lbs)	20	210020	137026	538052
	3.937 - 8.071	1.323 (lbs)	101	210063	137026	538052
	3.937 - 8.071	1.323 (lbs)	103	210064	137026	538052
Basic / Eco Slides	7.874 - 40.157	1.323 (lbs)	20	210020	137027	538052
	7.874 - 40.157	1.323 (lbs)	101	210063	137027	538052
	7.874 - 40.157	1.323 (lbs)	103	210064	137027	538052
Flex Slides	19.685 - 128.150	1.323 (lbs)	20	210020	137019	538052
	19.685 - 128.150	1.323 (lbs)	101	210063	137019	538052
	19.685 - 128.150	1.323 (lbs)	103	210064	137019	538052
Serrated Tool Bodies	100.00 - 205.00	0.60 (kg)	20	210020	137026	537052
	100.00 - 205.00	0.60 (kg)	101	210063	137026	537052
	100.00 - 205.00	0.60 (kg)	103	210064	137026	537052
	200.00 - 1020.00	0.60 (kg)	20	210020	137027	537052
	200.00 - 1020.00	0.60 (kg)	101	210063	137027	537052
	200.00 - 1020.00	0.60 (kg)	103	210064	137027	537052
	500.00 - 3255.00	0.60 (kg)	20	210020	137019	537052
	500.00 - 3255.00	0.60 (kg)	101	210063	137019	537052
	500.00 - 3255.00	0.60 (kg)	103	210064	137019	537052

#### 3E<sup>TECH+</sup> Digital Readout Module

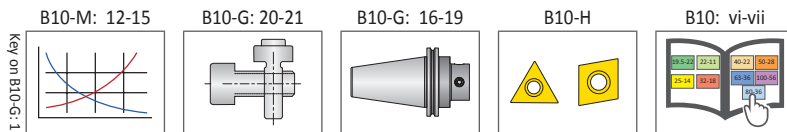
Part No.	Charging Unit*
536015	536016

NOTE: WEEE-Reg.-Nr. DE 15820388

\*Charging unit sold separately



NOTE: 3E<sup>TECH+</sup> adjustment accuracy of 0.0001" or 0.001 mm on diameter



ⓘ = Imperial (in)  
Ⓜ = Metric (mm)  
Inserts sold separately

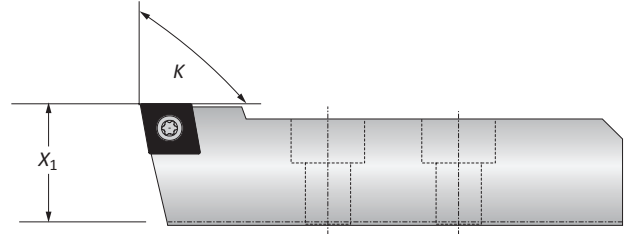
**⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**⚠ WARNING Tool failure can cause serious injury. To prevent:**  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

## Insert Holders for Rough Machining

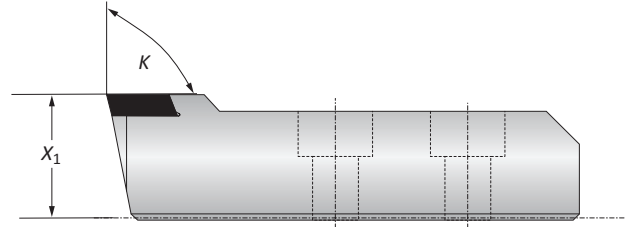
### 90° Insert Holders

Insert Holder		Weight	ISO Code	Insert Form	Part No.	
K	X <sub>1</sub>					
i	90°	1.180	1.322 (lbs)	CC..09T3..	103	149090
	90°	1.180	1.322 (lbs)	CC..1204..	104	149099
	90°	1.150	1.322 (lbs)	CC..1204..	104	149083
	90°	1.180	1.322 (lbs)	CC..1605..	105	149093
m	90°	30.00	0.60 (kg)	CC..09T3..	103	149090
	90°	30.00	0.60 (kg)	CC..1204..	104	149099
	90°	29.30	0.60 (kg)	CC..1204..	104	149083
	90°	30.00	0.60 (kg)	CC..1605..	105	149093



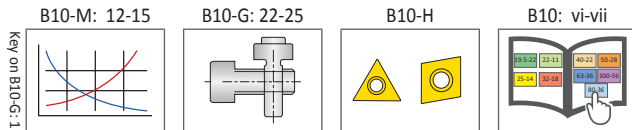
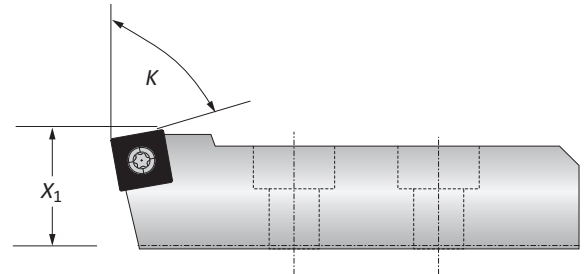
### 90° Tangential Insert Holders

Insert Holder		Weight	ISO Code	Insert Form	Part No.	
K	X <sub>1</sub>					
i	90°	1.180	1.322 (lbs)	Tangential	05	149010
	90°	1.150	1.322 (lbs)	Tangential	05	149020
m	90°	30.00	0.60 (kg)	Tangential	05	149010
	90°	29.30	0.60 (kg)	Tangential	05	149020



### 80° Insert Holders

Insert Holder		Weight	ISO Code	Insert Form	Part No.	
K	X <sub>1</sub>					
i	80°	1.180	1.322 (lbs)	SC..1204..	113	149089
	80°	1.180	1.322 (lbs)	SC..150512	114	149094
	80°	1.180	1.322 (lbs)	SN..1506..	134	149096
m	80°	30.00	0.60 (kg)	SC..1204..	113	149089
	80°	30.00	0.60 (kg)	SC..150512	114	149094
	80°	30.00	0.60 (kg)	SN..1506..	134	149096



i = Imperial (in)  
m = Metric (mm)

Inserts sold separately

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Consult machine tool builder for machine's weight limitations.
- Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
- Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

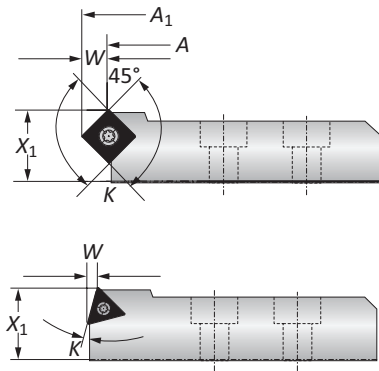




## Insert Holders for Rough Machining | Boring Range Example

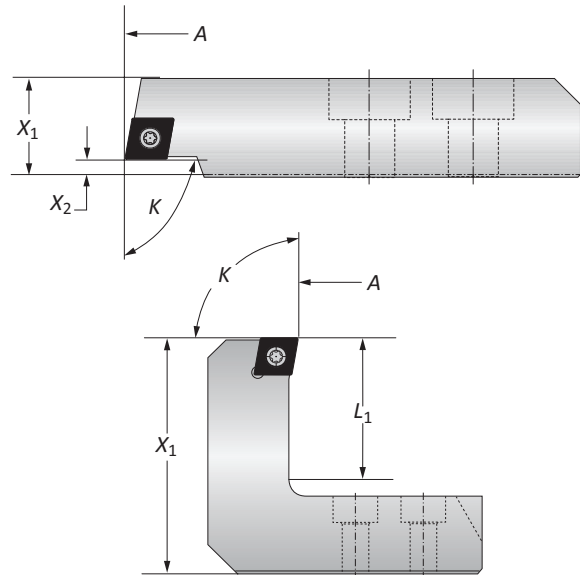
### Chamfering Insert Holders

		Insert Holder				Weight	ISO Code	Insert Form	Part No.
		K	X <sub>1</sub>	A/A <sub>1</sub>	W				
i	15°	1.180	+0.275	0.157	1.322 (lbs)	TC..16T3..	163	201065	
	20°	1.180	+0.354	0.208	1.322 (lbs)	TC..16T3..	163	201025	
	30°	1.180	+0.551	0.303	1.322 (lbs)	TC..16T3..	163	201075	
	45°	1.180	+0.787	0.389	1.322 (lbs)	SC..1505..	114	201015	
m	15°	30.00	+7.00	4.00	0.60 (kg)	TC..16T3..	163	201065	
	20°	30.00	+9.00	5.30	0.60 (kg)	TC..16T3..	163	201025	
	30°	30.00	+14.00	7.70	0.60 (kg)	TC..16T3..	163	201075	
	45°	30.00	+20.00	9.90	0.60 (kg)	SC..1505..	114	201015	



### Back-Boring Insert Holders

		Insert Holder				Weight	ISO Code	Insert Form	Part No.
		K	X <sub>1</sub>	X <sub>2</sub>	A				
i	90°	3.540	0.196	+1.574	1.763 (lbs)	CC..1204..	104	251010	
	90°	3.540	0.196	+2.952	1.984 (lbs)	CC..1204..	104	251011	
m	90°	30.00	5.00	+40.00	0.80 (kg)	CC..1204..	104	251010	
	90°	30.00	5.00	+75.00	0.90 (kg)	CC..1204..	104	251011	



### OD Turning Insert Holders

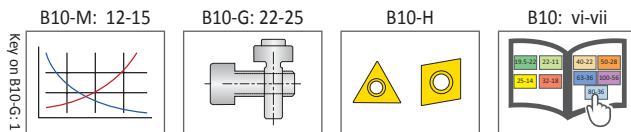
		Insert Holder				Weight	ISO Code	Insert Form	Part No.
		K	X <sub>1</sub>	L <sub>1</sub>	A				
i	90°	198.400	2.440	-1.968	2.204 (lbs)	CC..1204..	104	149040	
m	90°	90.00	62.00	-50.00	1.00 (kg)	CC..1204..	104	149040	

### Boring Range Example

		Serrated Slide		Insert Holder		Total Bore Range
		Part No.	Bore Range	Part No.	Modified Bore Range	
i		350051	7.874 - 11.023	201065	+0.280	8.150 - 11.300
		350051	7.874 - 11.023	251010	+1.600	9.450 - 12.600
		350051	7.874 - 11.023	149040	-2.000	5.900 - 9.055
m		349051	200.00 - 280.00	201065	+7.00	207.00 - 287.00
		349051	200.00 - 280.00	251010	+40.00	240.00 - 320.00
		349051	200.00 - 280.00	149040	-50.00	150.00 - 230.00

NOTE: Boring range for serrated slides or base slides are found on pg. B10-G: 4 - 7

NOTE: Additional insert holders available upon request



i = Imperial (in)  
m = Metric (mm)

Inserts sold separately

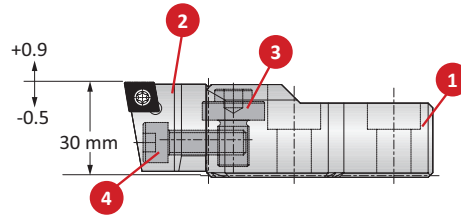
**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Consult machine tool builder for machine's weight limitations.
  - Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

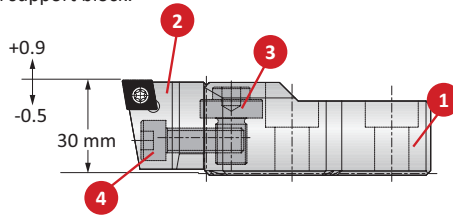
## Insert Holders for Height Adjustments and Axial Grooving



Insert Form 103

Boring Range	1 Support		2 Insert Holder		3 Adjusting Screw		4 Fixing Screw	
	Part No.	Insert Form	Part No.	Part No.	Service Key	Part No.	Service Key	
<b>i</b> 7.874 - 128.150	149055	103	149058	315355	s6 / B	070369	s6 / B	
<b>m</b> 200.00 - 3255.00	149055	103	149058	315355	s6 / B	070369	s6 / B	

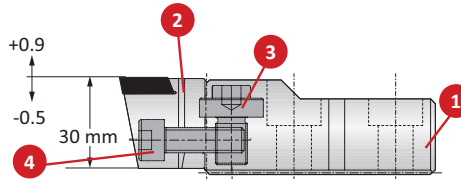
NOTE: Adjusting and fixing screws will be received with support block.



Insert Form 104

Boring Range	1 Support		2 Insert Holder		3 Adjusting Screw		4 Fixing Screw	
	Part No.	Insert Form	Part No.	Part No.	Service Key	Part No.	Service Key	
<b>i</b> 7.874 - 128.150	149055	104	149056	315355	s6 / B	070369	s6 / B	
<b>m</b> 200.00 - 3255.00	149055	104	149056	315355	s6 / B	070369	s6 / B	

NOTE: Adjusting and fixing screws will be received with support block.



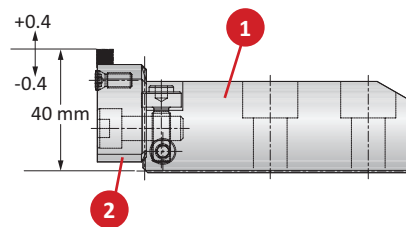
Insert Form 05

Boring Range	1 Support		2 Insert Holder		3 Adjusting Screw		4 Fixing Screw	
	Part No.	Insert Form	Part No.	Part No.	Service Key	Part No.	Service Key	
<b>i</b> 7.874 - 128.150	149055	05	149085	315355	s6 / B	070369	s6 / B	
<b>m</b> 200.00 - 3255.00	149055	05	149085	315355	s6 / B	070369	s6 / B	

NOTE: Adjusting and fixing screws will be received with support block.

### Insert Holders for Axial Grooving

Insert Holder	1 Support		2 Insert Holder	
	Part No.	Part No.	Weight	Insert Form
<b>i</b> 1.574	226014	226031	0.661 (lbs)	304
<b>m</b> 40.00	226014	226031	0.30 (kg)	304



**i** = Imperial (in)  
**m** = Metric (mm)

Inserts sold separately

**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

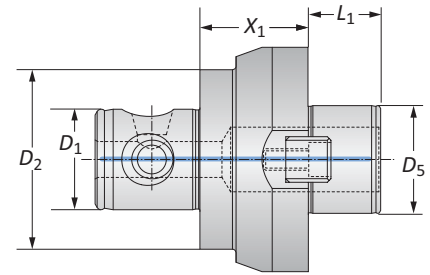
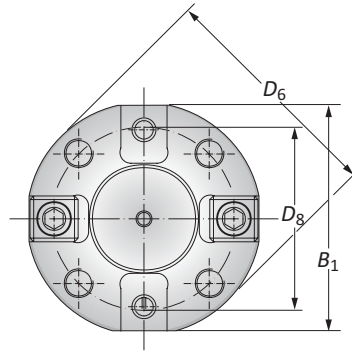
- Consult machine tool builder for machine's weight limitations.
- Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
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- When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
- Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)



## MVS Holding Arbors



	MVS Connection	Holding Arbor Connection	Holding Arbor						Weight	Part No.
			$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$		
<b>i</b>	$D_2   D_1$									
	80 - 36	D 40 Alu-Line	0.748	1.181	1.575	3.503	2.625	3.150	1.102 (lbs)	309001 <sup>(1)(2)</sup>
	80 - 36	D 60	2.362	1.574	2.362	5.082	4.000	4.921	9.038 (lbs)	209060 <sup>(1)</sup>
	100 - 56	D 40 Alu-Line	1.181	1.181	1.575	3.503	2.625	3.149	2.204 (lbs)	309041 <sup>(2)</sup>
	100 - 56	D 60	2.362	1.575	2.362	5.082	4.000	4.921	13.880 (lbs)	209043
	100 - 56	D 60 Alu-Line	2.362	1.575	2.362	5.082	4.000	4.921	4.850 (lbs)	309043 <sup>(2)</sup>
<b>m</b>	80 - 36	D 40 Alu-Line	19.00	30.00	40.00	89.00	66.70	80.00	0.50 (kg)	309001 <sup>(1)(2)</sup>
	80 - 36	D 60	60.00	40.00	60.00	129.10	101.60	125.00	4.10 (kg)	209060 <sup>(1)</sup>
	100 - 56	D 40 Alu-Line	30.00	30.00	40.00	89.00	66.70	80.00	1.00 (kg)	309041 <sup>(2)</sup>
	100 - 56	D 60	60.00	40.00	60.00	129.10	101.60	125.00	6.30 (kg)	209043
	100 - 56	D 60 Alu-Line	60.00	40.00	60.00	129.10	101.60	125.00	2.20 (kg)	309043 <sup>(2)</sup>

(1) For light machining only

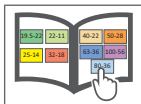
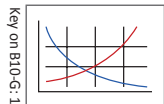
(2) Lightweight aluminum construction only in connection with our serrated slides

Basic D 40 Serrated Slides:  $\varnothing$  7.874" - 20.472" (200.00 - 520.00 mm) (Page B10-G: 4)

Basic D 60 Serrated Slides:  $\varnothing$  7.874" - 19.882" (200.00 - 505.00 mm) (Page B10-G: 5)

B10-M: 12-15

B10: vi-vii



**i** = Imperial (in)

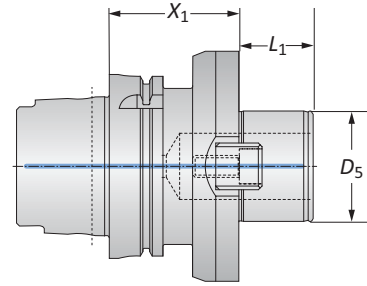
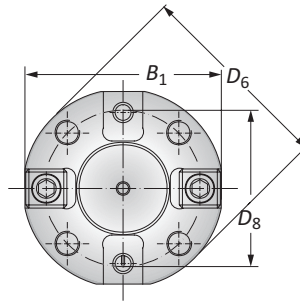
**m** = Metric (mm)

**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**⚠ WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
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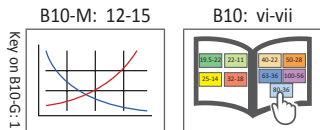
## Master Shanks D 40 / D 60

HSK-A (DIN 69 893) Shanks



HSK-A (DIN 69 893) Shanks

Taper Size	Connection	Shank							Weight	Part No.
		$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$			
i	63	D 40	2.362	1.181	1.575	3.504	2.626	3.150	4.200 (lbs)	358015
	100	D 40	2.362	1.181	1.575	3.504	2.626	3.150	7.900 (lbs)	258021
	100	D 60	2.756	1.575	2.362	5.083	4.000	4.921	11.500 (lbs)	258061
	100	D 60	2.756	1.575	2.362	5.083	4.000	4.331	11.000 (lbs)	258098
m	63	D 40	60.00	30.00	40.00	89.00	66.70	80.00	1.90 (kg)	358015
	100	D 40	60.00	30.00	40.00	89.00	66.70	80.00	3.60 (kg)	258021
	100	D 60	70.00	40.00	60.00	129.10	101.60	125.00	5.20 (kg)	258061
	100	D 60	70.00	40.00	60.00	129.10	101.60	110.00	5.00 (kg)	258098



i = Imperial (in)  
m = Metric (mm)

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

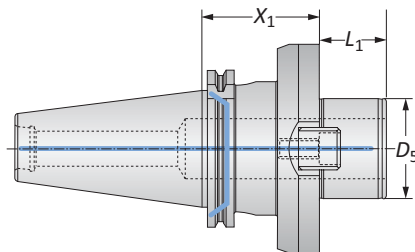
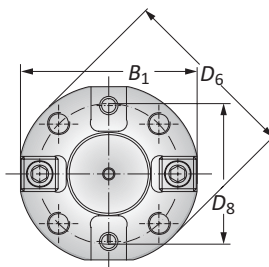
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
  - When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
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  - When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
  - When using a NOVI<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
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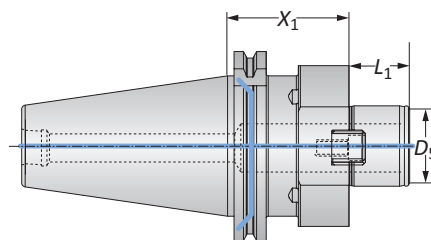
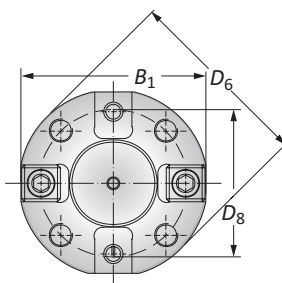
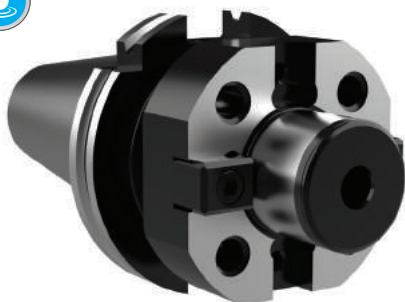
## Master Shanks D 40 / D 60

CAT 40 / 50 Shanks with Imperial Threads | CAT 50 Shank with Metric Threads



### CAT 40 / 50 Shanks with Imperial Threads

Taper Size	Connection	Shank							Weight	Part No.
		$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$			
i	40	D 40	1.970	1.181	1.575	3.504	2.626	3.150	4.000 (lbs)	357004
	50	D 40	1.970	1.181	1.575	3.504	2.626	3.150	8.400 (lbs)	357001
	50	D 60	2.756	1.575	2.362	5.083	4.000	4.331	11.700 (lbs)	357002
	50	D 60	2.756	1.575	2.362	5.083	4.000	4.921	12.100 (lbs)	357003

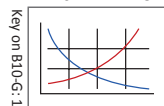


### CAT 50 Shanks with Metric Threads

Taper Size	Connection	Shank							Weight	Part No.
		$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$			
m	50	D 40	60.00	30.00	40.00	89.00	66.70	80.00	4.60 (kg)	326083

B10-M: 12-15

B10: vi-vii



i = Imperial (in)

m = Metric (mm)

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

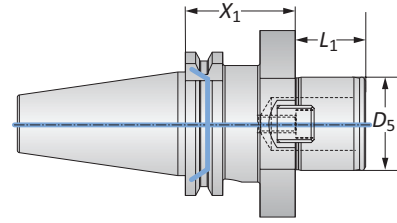
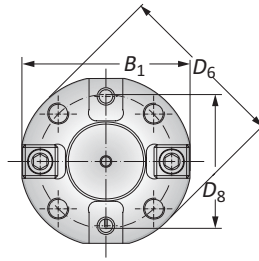
- Consult machine tool builder for machine's weight limitations.
  - Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
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## Master Shanks D 40 / D 60

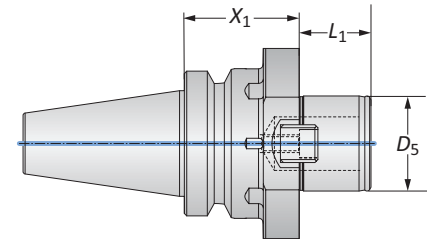
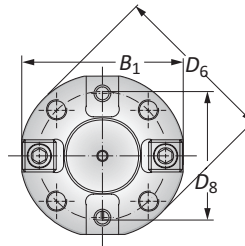
SK (DIN 69 871-AD/B) | BT / JIS B 6339 Shanks



### SK (DIN 69 871-AD/B) Shanks

	Taper Size	Connection	Shank						Weight	Part No.
			$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$		
i	40	D 40	1.969	1.181	1.575	3.504	2.626	3.150	4.190 (lbs)	326080*
	50	D 40	1.969	1.181	1.575	3.504	2.626	3.150	9.040 (lbs)	326081
	50	D 60	2.756	1.575	2.362	5.083	4.000	4.921	12.790 (lbs)	198054T019539
	50	D 60	2.756	1.575	2.362	5.083	4.000	4.331	12.130 (lbs)	198081T019539
m	40	D 40	50.00	30.00	40.00	89.00	66.70	80.00	1.90 (kg)	326080*
	50	D 40	50.00	30.00	40.00	89.00	66.70	80.00	4.10 (kg)	326081
	50	D 60	70.00	40.00	60.00	129.10	101.60	125.00	5.80 (kg)	198054T019539
	50	D 60	70.00	40.00	60.00	129.10	101.60	110.00	5.50 (kg)	198081T019539

\*For light machining only

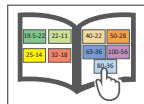
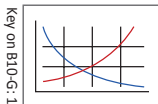


### BT / JIS B 6339 Shanks

	Taper Size	Connection	Shank						Weight	Part No.
			$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$		
i	40	D 40	1.969	1.181	1.575	3.504	2.626	3.150	4.000 (lbs)	326084
	50	D 40	2.165	1.181	1.575	3.504	2.626	3.150	9.900 (lbs)	326082
	50	D 60	3.150	1.575	2.362	5.083	4.000	-	17.600 (lbs)	326062
m	40	D 40	50.00	30.00	40.00	89.00	66.70	80.00	1.80 (kg)	326084
	50	D 40	55.00	30.00	40.00	89.00	66.70	80.00	4.50 (kg)	326082
	50	D 60	80.00	40.00	60.00	19.10	101.60	-	8.00 (kg)	326062

B10-M: 12-15

B10: vi-vii



i = Imperial (in)  
m = Metric (mm)

**1. WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Consult machine tool builder for machine's weight limitations.
- Refer to example on page B10-M: 11 for calculating tool assembly weight

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**1. WARNING** Tool failure can cause serious injury. To prevent:

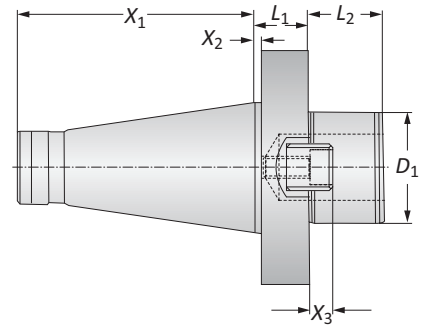
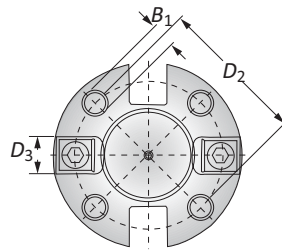
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
- When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
- When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
- When using heavy 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
- Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio

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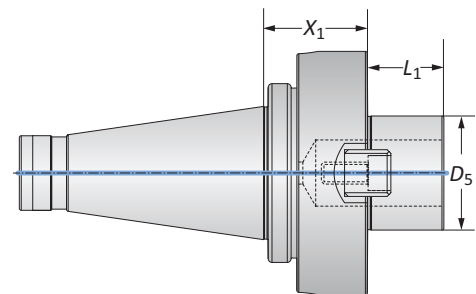
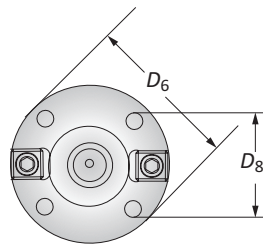
## Master Shanks D 40 / D 60

NMTB Shanks | DIN 2080 Shanks



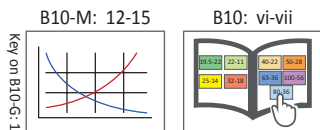
### NMTB Shanks

	Taper Size	Connection	Shank								Weight	Part No.	
			$X_1$	$X_2$	$L_1$	$L_2$	$D_1$	$X_3$	$D_2$	$D_3$			$B_1$
<b>i</b>	50	D 60	4.992	0.126	1.142	1.575	2.362	0.492	4.000	1.000	M16	17.637 (lbs)	198051T004480
<b>m</b>	50	D 60	126.80	3.20	29.00	40.00	60.00	12.50	101.60	25.40	M16	8.00 (kg)	198051T004480



### DIN 2080 Shanks

	Taper Size	Connection	Shank						Weight	Part No.
			$X_1$	$L_1$	$D_5$	$D_6$	$D_8$	$B_1$		
<b>i</b>	50	D 60	2.165	1.575	2.362	5.039	4.000	-	14.991 (lbs)	326035
<b>m</b>	50	D 60	55.00	40.00	60.00	128.00	101.60	-	6.80 (kg)	326035



**i** = Imperial (in)  
**m** = Metric (mm)

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**⚠ WARNING** Tool failure can cause serious injury. To prevent:  
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 -When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio  
 -When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

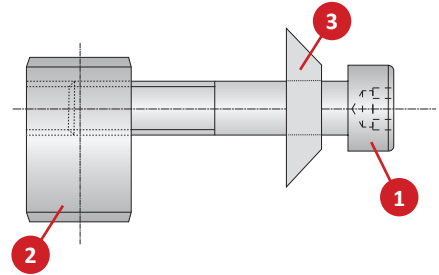
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INDEX

## 538 (537) Accessories

Clamping Pieces | Counter Weight | Insert Holders for Abrasive Materials

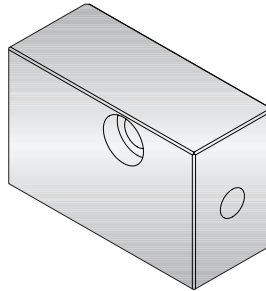
### 538 (537) Clamping Pieces

Slide Type	Complete Part No.	Service Key	Replacement Components			
			1 Cap Screw	2 Clamping Nut	3 Disk Spring	
Serrated Tool Bodies	<b>137026</b>	115578	s6 / B	215101	140118	337105
Basic and Eco Slides	<b>137027</b>			215102	215105	337105
Flex Slides	<b>137019</b>			415900	215105	337105



### 538 (537) Counter Weights

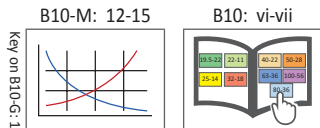
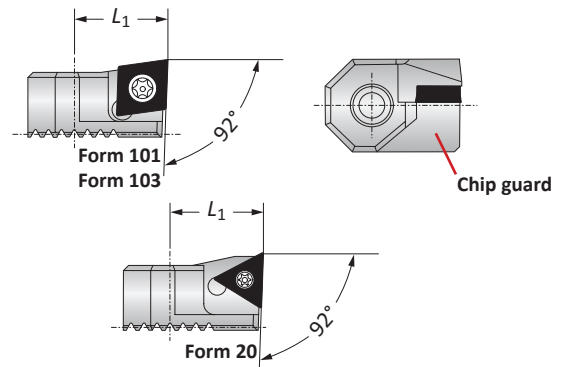
Boring Range	Part No.
<b>i</b> 3.937 - 128.15	<b>538055</b>
<b>m</b> 100.00 - 3255.00	<b>537055</b>



NOTE: Clamping piece sold separately

### Insert Holders for Abrasive Materials

Boring Range	L <sub>1</sub>	Weight	Insert Form	Part No.
<b>i</b> 3.937 - 128.150	0.708	0.066 (lbs)	20	<b>211061</b>
<b>i</b> 3.937 - 128.150	0.708	0.066 (lbs)	101	<b>211063</b>
<b>i</b> 3.937 - 128.150	0.708	0.066 (lbs)	103	<b>211065</b>
<b>m</b> 100.00 - 3255.00	18.00	0.03 (kg)	20	<b>211061</b>
<b>m</b> 100.00 - 3255.00	18.00	0.03 (kg)	101	<b>211063</b>
<b>m</b> 100.00 - 3255.00	18.00	0.03 (kg)	103	<b>211065</b>



**i** = Imperial (in)  
**m** = Metric (mm)

Inserts sold separately

**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Consult machine tool builder for machine's weight limitations.
  - Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

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

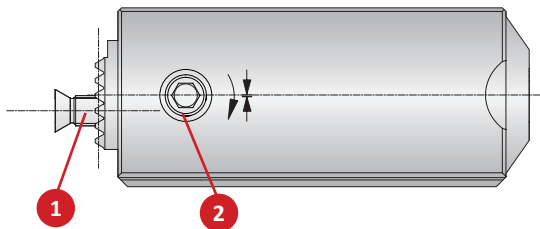
- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)
  - When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio
  - When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio
  - When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)



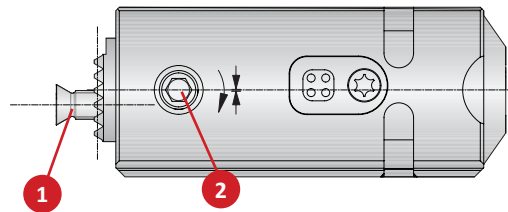


## 538 (537) Accessories | 3E<sup>TECH+</sup> Accessories

### Accessories



538 (537) Analog Cassette



538 (537) Cassette

### 538 (537) Accessories

Cassette Part No.	1 Countersunk Screw		2 Clamping Screw	
	Part No.	Service Key	Part No.	Service Key
i 538051	215462	T20 / H	115249	s4 / F
	538052	215462	315789	s4 / F
m 537051	215462	T20 / H	115249	s4 / F
	537052	215462	315789	s4 / F

### 3E<sup>TECH+</sup> Accessories

1 Charging Unit Part No. 536016
--



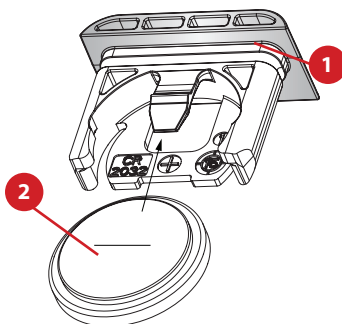
NOTE: Charging unit sold separately from 3E<sup>TECH+</sup>

NOTE: 3E<sup>TECH+</sup> adjustment accuracy of 0.0001" or 0.001 mm on diameter

### 3E<sup>TECH</sup> (Old Display) Accessories

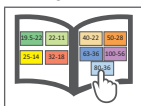
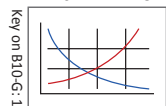
1 Sealing Ring Part No. 215483	2 Battery CR2032 Part No. 515491
---	---

NOTE: Not required for 3E<sup>TECH+</sup> (New Display)



B10-M: 12-15

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i = Imperial (in)  
m = Metric (mm)

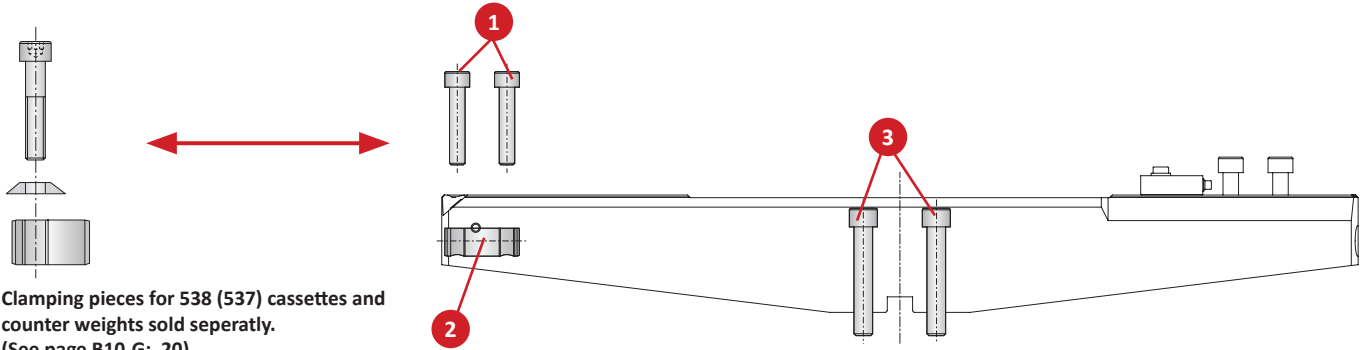
Inserts sold separately

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

## Serrated Slide Basic D 40 Accessories

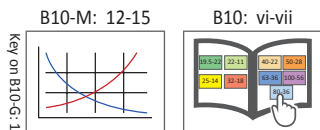
### Clamping Pieces



Clamping pieces for 538 (537) cassettes and counter weights sold separately. (See page B10-G: 20)

### Clamping Pieces

Connection	Serrated Slide Part No.	1 Cap Screw		2 Clamping Nut Part No.	3 Thread Pin		Cap Screw		
		Part No.	Service Key		Part No.	Service Key	Part No.	Service Key	
i	D 40	350021	115118	s8 / B	115669	349010	s4 / F	315186	s10 / C
	D 40	350022	115118	s8 / B	115669	349011	s4 / F	315186	s10 / C
	D 40	350023	115118	s8 / B	115669	349012	s4 / F	315186	s10 / C
	D 40	350024	115118	s8 / B	115669	349013	s4 / F	315186	s10 / C
m	D 40	349021	115118	s8 / B	115669	349010	s4 / F	315186	s10 / C
	D 40	349022	115118	s8 / B	115669	349011	s4 / F	315186	s10 / C
	D 40	349023	115118	s8 / B	115669	349012	s4 / F	315186	s10 / C
	D 40	349024	115118	s8 / B	115669	349013	s4 / F	315186	s10 / C



i = Imperial (in)  
m = Metric (mm)

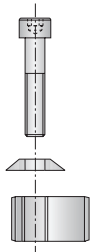
**⚠ WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**⚠ WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

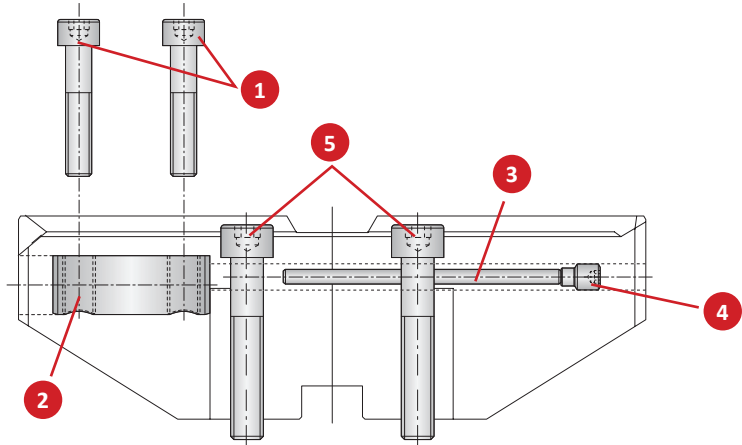


## Serrated Slide Basic D 60 Accessories

Clamping Pieces | Cover Plates



Clamping pieces for 538 (537) cassettes and counter weights sold separately. (See page B10-G: 20)

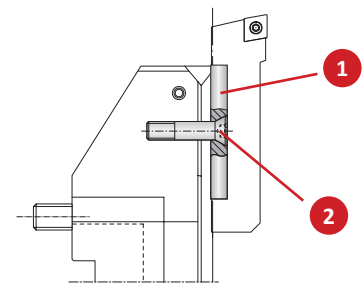


### Clamping Pieces

	Connection	Serrated Slide Part No.	1 Cap Screw		2 Clamping Nut Part No.	3 Adjustment Pin Part No.	4 Thread Pin		5 Cap Screw	
			Part No.	Service Key			Part No.	Service Key	Part No.	Service Key
i	D 60	350051	115118	s8 / B	115669	141112	115196	s4 / F	115170	s14 / C
	D 60	350052	115118	s8 / B	115669	141113	115196	s4 / F	115170	s14 / C
	D 60	350053	115118	s8 / B	115669	141114	115196	s4 / F	115170	s14 / C
	D 60	350054	115118	s8 / B	115669	141115	115196	s4 / F	115170	s14 / C
m	D 60	349051	115118	s8 / B	115669	141112	115196	s4 / F	115170	s14 / C
	D 60	349052	115118	s8 / B	115669	141113	115196	s4 / F	115170	s14 / C
	D 60	349053	115118	s8 / B	115669	141114	115196	s4 / F	115170	s14 / C
	D 60	349054	115118	s8 / B	115669	141115	115196	s4 / F	115170	s14 / C

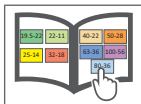
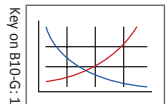
### Cover Plates for Basic D 60 Serrated Slides

	Connection	Serrated Slide Part No.	1 Cover Plate		2 Countersunk Screw Part No.	Service Key
			Part No.	Service Key		
i	D 60	350051	349016	063106	s4 / B	
	D 60	350052	349017	063106	s4 / B	
	D 60	350053	349017	063106	s4 / B	
	D 60	350054	349017	063106	s4 / B	
m	D 60	349051	349016	063106	s4 / B	
	D 60	349052	349017	063106	s4 / B	
	D 60	349053	349017	063106	s4 / B	
	D 60	349054	349017	063106	s4 / B	



B10-M: 12-15

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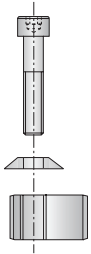
i = Imperial (in)  
m = Metric (mm)

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

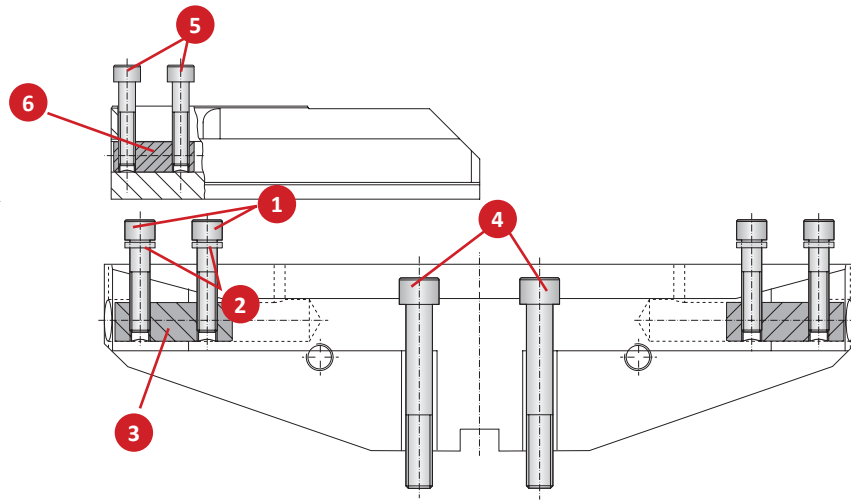
**WARNING** Tool failure can cause serious injury. To prevent:  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 total components (including shank)  
 -When using Alu-Line components, do not exceed recommended 5xD length-to-diameter ratio  
 -When using tool steel components, do not exceed recommended 6xD length-to-diameter ratio  
 -When using 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: appeng@alliedmachine.com

## Serrated Slide Eco D 60 Accessories

### Clamping Pieces



Clamping pieces for 538 (537) cassettes and counter weights sold separately. (See page B10-G: 20)

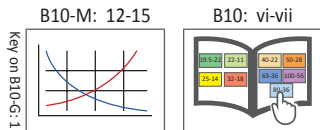


### Base Slide Clamping Pieces

Connection	Base Slide Part No.	1 Cap Screw		2 Disc Part No.	3 Clamping Nut Part No.	4 Cap Screw		
		Part No.	Service Key			Part No.	Service Key	
i	D 60	350005	115771	s10 / C	115737	415181	077128	s14 / C
	D 60	350006	115771	s10 / C	115737	415181	077128	s14 / C
m	D 60	349005	115771	s10 / C	115737	415181	077128	s14 / C
	D 60	349006	115771	s10 / C	115737	415181	077128	s14 / C

### Serrated Slide Clamping Pieces

Serrated Slide Part No.	5 Cap Screw		6 Clamping Nut Part No.
	Part No.	Service Key	
i	350014	115118	115669
	350015	115118	115669
m	349014	115118	115669
	349015	115118	115669



i = Imperial (in)  
m = Metric (mm)

**WARNING** Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:

- Consult machine tool builder for machine's weight limitations.
  - Refer to example on page B10-M: 11 for calculating tool assembly weight
- Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

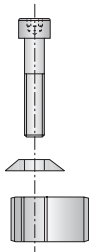
**WARNING** Tool failure can cause serious injury. To prevent:

- Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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<sup>TECH</sup> module, do not exceed recommended 10xD length-to-diameter ratio
  - Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
- Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

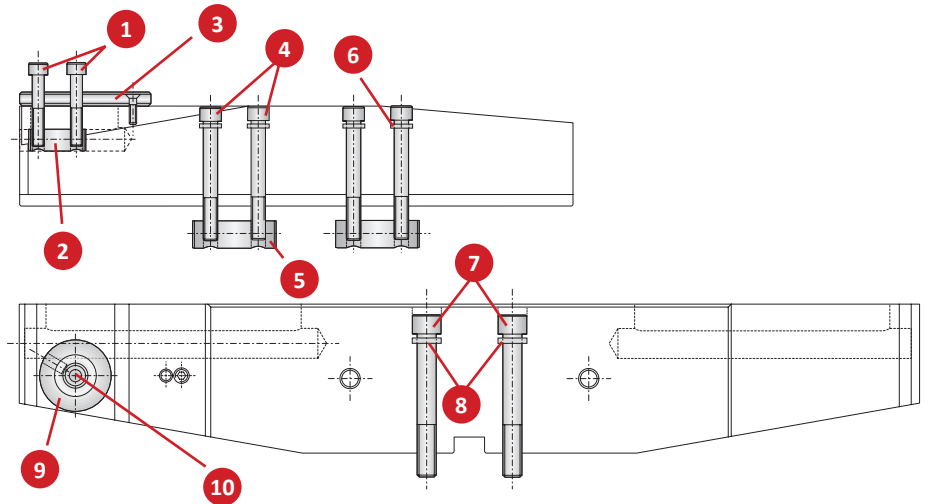


## Serrated Slide Flex D 60 Accessories

### Clamping Pieces



Clamping pieces for 538 (537) cassettes and counter weights sold separately. (See page B10-G: 20)



### Serrated Slide Clamping Pieces

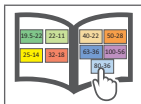
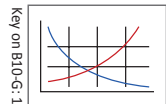
	Serrated Slide	1 Cap Screw		2 Clamping Nut	3 Adapter		4 Cap Screw		5 Clamping Nut	6 Disk
	Part No.	Part No.	Service Key	Part No.	Part No.	Service Key	Part No.	Service Key	Part No.	Part No.
i	350035	115307	s8 / B	115669	349043	s4 / B	315186	s10 / C	349202	115737
	350036	115307	s8 / B	115669	349043	s4 / B	077110	s10 / C	415181	115737
	350037	115307	s8 / B	115669	349043	s4 / B	315403	s10 / C	415181	115737
	350038	115307	s8 / B	115669	349043	s4 / B	315415	s10 / C	415181	115737
m	349035	115307	s8 / B	115669	349043	s4 / B	315186	s10 / C	349202	115737
	349036	115307	s8 / B	115669	349043	s4 / B	077110	s10 / C	415181	115737
	349037	115307	s8 / B	115669	349043	s4 / B	315403	s10 / C	415181	115737
	349038	115307	s8 / B	115669	349043	s4 / B	315415	s10 / C	415181	115737

### Base Slide Clamping Pieces

	Connection	Base Slide	7 Cap Screw		8 Disk	9 Injector	10 Countersunk Screw	
		Part No.	Part No.	Service Key	Part No.	Part No.	Part No.	Service Key
i	D 60	350031	115736	s14 / C	068168	349201	415898	s6 / B
	D 60	350032	415913	s14 / C	068168	349201	415898	s6 / B
	D 60	350033	215509	s14 / C	068168	349201	415898	s6 / B
	D 60	350034	415636	s14 / C	068168	349201	415898	s6 / B
m	D 60	349031	115736	s14 / C	068168	349201	415898	s6 / B
	D 60	349032	415913	s14 / C	068168	349201	415898	s6 / B
	D 60	349033	215509	s14 / C	068168	349201	415898	s6 / B
	D 60	349034	415636	s14 / C	068168	349201	415898	s6 / B

B10-M: 12-15

B10: vi-vii



i = Imperial (in)  
m = Metric (mm)

**⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:**  
 -Consult machine tool builder for machine's weight limitations.  
 -Refer to example on page B10-M: 11 for calculating tool assembly weight  
 Factory technical assistance is also available for specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)

**⚠ WARNING Tool failure can cause serious injury. To prevent:**  
 -Do not exceed recommended 10xD length-to-diameter ratio or exceed 4 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 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 NOVITECH module, do not exceed recommended 10xD length-to-diameter ratio  
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio  
 Factory technical assistance is available for your specific applications through our Application Engineering department. ext: 7611 | email: [appeng@alliedmachine.com](mailto:appeng@alliedmachine.com)



# Guaranteed Test / Demo Application Form

Distributor PO # \_\_\_\_\_

The following must be filled out completely before your test will be considered

**IMPORTANT:** For processing, send Purchase Order to your Allied Field Sales Engineer (FSE). Please clearly mark the paperwork as "Test Order."

## Distributor Information

Company Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Account Number: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

## End User Information

Company Name: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Industry: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

**Current Process** List all tooling, coatings, substrates, speeds and feeds, tool life, and any problems you are experiencing

\_\_\_\_\_

\_\_\_\_\_

**Test Objective** List what would make this a successful test (i.e. penetration rate, finish, tool life, hole size, etc.)

\_\_\_\_\_

\_\_\_\_\_

## Application Information

Hole Diameter: _____ in/mm	Tolerance: _____	Material: _____ (4150 / A36 / Cast Iron / etc.)
Preexisting Diameter: _____ in/mm	Depth of Cut: _____ in/mm	Hardness: _____ (BHN / Rc)
Required Finish: _____ RMS	State: _____	(Casting / Hot rolled / Forging)

## Machine Information

Machine Type: _____ (Lathe / Screw machine / Machine center / etc.)	Builder: _____ (Haas, Mori Seiki, etc.)	Model #: _____
Shank Required: _____ (CAT50 / Morse taper, etc.)	Power: _____ HP/KW	
Rigidity: _____	Orientation: _____	Tool Rotating: _____
<input type="checkbox"/> Excellent	<input type="checkbox"/> Vertical	<input type="checkbox"/> Yes
<input type="checkbox"/> Good	<input type="checkbox"/> Horizontal	<input type="checkbox"/> No
<input type="checkbox"/> Poor		Thrust: _____ lbs/N

## Coolant Information

Coolant Delivery: _____ (Through tool / Flood)	Coolant Pressure: _____ PSI / bar
Coolant Type: _____ (Air mist, oil, synthetic, water soluble, etc.)	Coolant Volume: _____ GPM / LPM

## Requested Tooling

QTY	Item Number	QTY	Item Number



**Allied Machine & Engineering**  
 120 Deeds Drive  
 Dover, OH 44622

Telephone: (330) 343-4283  
 Toll Free USA & Canada: (800) 321-5537  
 Fax: (330) 602-3400  
 Email: info@alliedmachine.com

## Warranty Information



Allied Machine & Engineering ("Allied Machine") warrants to original equipment manufacturers, distributors, industrial and commercial users of its products for one year from the original date of sale that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's sole and exclusive obligation under this warranty is limited to, at its option, without additional charge, replacing or repairing this product or issuing a credit. For this warranty to be applied, the product must be returned freight prepaid to the plant designated by an Allied Machine representative and which, upon inspection, is determined by Allied Machine to be defective in material and workmanship.

Complete information as to operating conditions, machine, setup, and the application of cutting fluid should accompany any product returned for inspection. This warranty shall not apply to any Allied Machine products which have been subjected to misuse, abuse, improper operating conditions, improper machine setup or improper application of cutting fluid or which have been repaired or altered if such repair or alteration, in the judgement of Allied Machine, would adversely affect the performance of the product.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Allied Machine shall have no liability or responsibility for any claim, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein.

Allied Machine shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for economic losses of any kind or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform this agreement.

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**Phone:**  
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[www.alliedmachine.com](http://www.alliedmachine.com)

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Wohlhaupter GmbH is registered to **ISO 9001:2015** by QTA TECHNIC



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