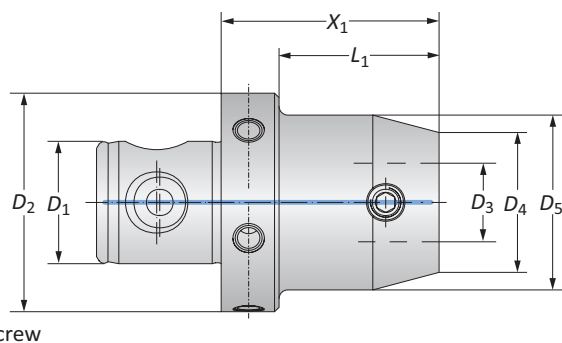
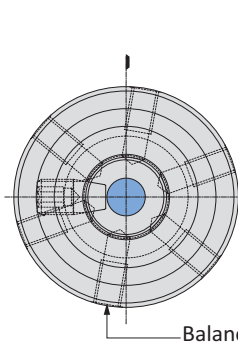


Reducers

Balanced

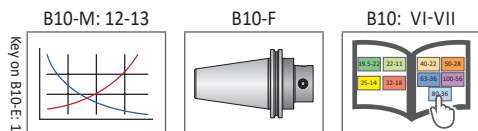


Balancing Screw

MVS Connection		Reducer				Weight	Balancing Screw	Part No.
D ₂ D ₁	D ₄ D ₃	X ₁	L ₁	D ₅				
25 - 14	19.5 - 11	30.00	21.00	-	0.10 (kg)	-	219034	
25 - 14	22 - 11	30.00	21.00	-	0.20 (kg)	-	219035	
32 - 18	22 - 11	12.00	0.50	-	0.10 (kg)	-	219036	
32 - 18	25 - 14	30.00	21.00	-	0.10 (kg)	-	219037	
40 - 22	22 - 11	12.00	0.50	-	0.20 (kg)	-	219038	
40 - 22	25 - 14	30.00	21.00	-	0.20 (kg)	-	219039	
40 - 22	32 - 18	30.00	-	40.00	0.50 (kg)	-	219040	
50 - 28	19.5 - 11	54.00	41.00	-	0.40 (kg)	M6 x 1 x 10	219051	
50 - 28	22 - 11	14.00	0.50	-	0.30 (kg)	M6 x 1 x 10	219041	
50 - 28	22 - 11	54.00	41.00	-	0.40 (kg)	M6 x 1 x 10	219052	
50 - 28	25 - 14	14.00	0.50	-	0.30 (kg)	M6 x 1 x 7	119094	
50 - 28	25 - 14	59.00	46.00	-	0.40 (kg)	M6 x 1 x 10	119054	
50 - 28	25 - 14	59.00	46.00	32.00	0.50 (kg)	M6 x 1 x 10	119055	
50 - 28	25 - 14	119.00	106.00	32.00	0.90 (kg)	M6 x 1 x 10	119010	
50 - 28	25 - 14	119.00	106.00	36.00	1.00 (kg)	M6 x 1 x 10	219030*	
50 - 28	32 - 18	49.00	36.00	35.00	0.90 (kg)	M6 x 1 x 10	219085	
50 - 28	32 - 18	109.00	96.00	35.00	1.00 (kg)	M6 x 1 x 10	219086	
50 - 28	32 - 18	109.00	96.00	40.00	1.10 (kg)	M6 x 1 x 10	119012	
50 - 28	32 - 18	109.00	96.00	46.00	1.30 (kg)	M6 x 1 x 10	219032*	
50 - 28	40 - 22	40.00	27.00	-	0.50 (kg)	M6 x 1 x 10	219087	
50 - 28	40 - 22	100.00	87.00	47.00	1.30 (kg)	M6 x 1 x 10	219088	
50 - 28	63 - 36	50.00	-	-	1.00 (kg)	M6 x 1 x 10	119059	

*Reinforced reducer

NOTE: Balance refers to a specific residual imbalance of ≤ 10 g mm/kg



Ⓜ = Metric (mm)

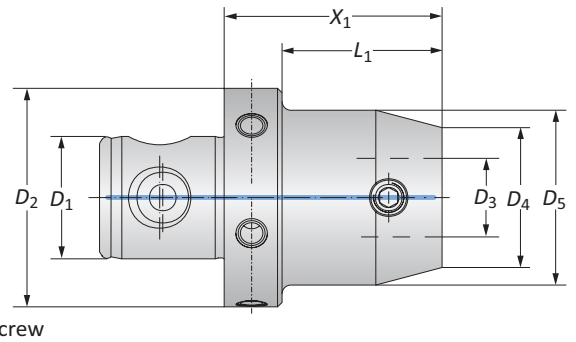
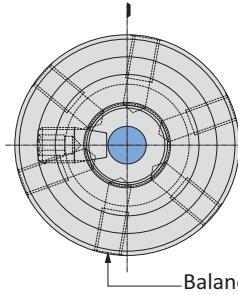
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⚠ WARNING Exceeding weight capacity for machine tool spindle and tool changer can cause machine damage and/or serious injury. To prevent:
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 -Do not exceed recommended 10xD length-to-diameter ratio 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
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Reducers

Balanced

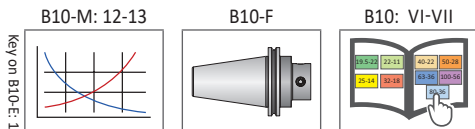


MVS Connection		Reducer			Weight	Balancing Screw	Part No.
D ₂ D ₁	D ₄ D ₃	X ₁	L ₁	D ₅			
63 - 36	19.5 - 11	54.00	41.00	-	0.60 (kg)	M6 x 1 x 10	219053
63 - 36	22 - 11	14.00	0.50	-	0.60 (kg)	M6 x 1 x 10	219042
63 - 36	22 - 11	54.00	41.00	-	0.70 (kg)	M6 x 1 x 10	219054
63 - 36	25 - 14	14.00	0.50	-	0.60 (kg)	M6 x 1 x 10	119095
63 - 36	25 - 14	59.00	46.00	-	0.70 (kg)	M6 x 1 x 10	119060
63 - 36	25 - 14	59.00	46.00	32.00	0.80 (kg)	M6 x 1 x 10	119061
63 - 36	25 - 14	119.00	106.00	32.00	1.10 (kg)	M6 x 1 x 15	119019
63 - 36	25 - 14	119.00	106.00	36.00	1.30 (kg)	M6 x 1 x 10	219031*
63 - 36	32 - 18	49.00	36.00	35.00	0.70 (kg)	M6 x 1 x 10	219089
63 - 36	32 - 18	109.00	96.00	35.00	1.20 (kg)	M6 x 1 x 10	219090
63 - 36	32 - 18	109.00	96.00	40.00	1.40 (kg)	M6 x 1 x 10	119021
63 - 36	32 - 18	109.00	96.00	46.00	1.60 (kg)	M6 x 1 x 10	219033*
63 - 36	40 - 22	40.00	27.00	-	0.80 (kg)	M6 x 1 x 10	219091
63 - 36	40 - 22	100.00	87.00	47.00	1.60 (kg)	M6 x 1 x 15	219092
63 - 36	40 - 22	150.00	137.00	50.00	2.40 (kg)	M6 x 1 x 15	119067
63 - 36	50 - 28	40.00	-	63.00	1.00 (kg)	M6 x 1 x 10	119064
63 - 36	50 - 28	40.00	27.00	-	0.80 (kg)	M6 x 1 x 10	119096**
63 - 36	50 - 28	100.00	-	63.00	2.40 (kg)	M6 x 1 x 15	119025
63 - 36	50 - 28	100.00	87.00	-	1.70 (kg)	M6 x 1 x 10	119097**
80 - 36	63 - 36	50.00	-	80.00	1.60 (kg)	M6 x 1 x 15	119098
100 - 56	80 - 36	70.00	52.00	-	3.60 (kg)	M8 x 1.25 x 20	219066

* Reinforced reducer

**For milling applications

NOTE: Balance refers to a specific residual imbalance of ≤ 10 g mm/kg



 = Metric (mm)

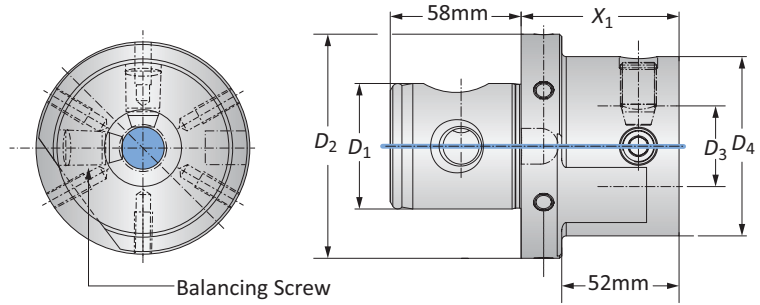
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 -When using heavy metal components, do not exceed recommended 8xD length-to-diameter ratio
 -When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
 -When using a NOVITECH® module, do not exceed recommended 10xD length-to-diameter ratio
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
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Reducer

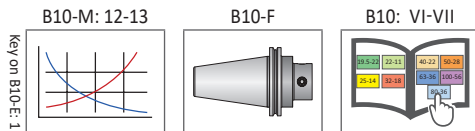
Balanced Alu-Line



Balancing Screw

MVS Connection	Reducer		Weight	Balancing Screw	Part No.	
	$D_2 D_1$	$D_4 D_3$				X_1
m 100 - 56	80 - 36	70.00	52.00	1.30 (kg)	M8 x 1.25 x 20	319013

NOTE: Balance refers to a specific residual imbalance of $\leq 10 \text{ g mm/kg}$



m = Metric (mm)

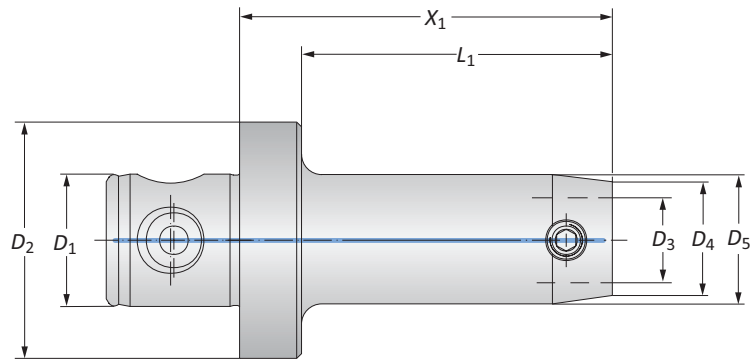
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 -When using heavy metal components, do not exceed recommended 8xD length-to-diameter ratio
 -When using a carbide shank, do not exceed recommended 9xD length-to-diameter ratio
 -When using a NOVITECH® module, do not exceed recommended 10xD length-to-diameter ratio
 -Refer to examples on pages B10-M: 8-10 for calculating length-to-diameter ratio
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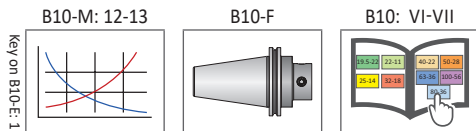
Heavy Metal Reducers

Vibration Reduction



MVS Connection		Heavy Metal Reducer			Weight	Part No.
D_2 D_1	D_4 D_3	X_1	L_1	D_5		
50 - 28	19.5 - 11	90.00	77.00	–	1.00 (kg)	219055
50 - 28	22 - 11	110.00	97.00	23.00	1.30 (kg)	219056
50 - 28	25 - 14	124.00	111.00	28.00	1.70 (kg)	219057
50 - 28	25 - 14	144.00	131.00	32.00	2.30 (kg)	219058
50 - 28	25 - 14	164.00	151.00	35.00	2.90 (kg)	219059
50 - 28	32 - 18	154.00	141.00	37.00	2.90 (kg)	219093
50 - 28	32 - 18	154.00	141.00	42.00	3.70 (kg)	219060

NOTE: Heavy metal reducers are used to reduce vibration when machining deep boring applications. When using heavy metal reducers, the maximum cutting speed (V_c) is 200 M/min. If steel extensions are also used, reduce the cutting speed by 50% and use replaceable inserts where $r = 0.10$ mm.



 = Metric (mm)

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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 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
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A
B
C
D
E
F
G
H
I
J
K
L
M
INDEX