


# Pulleys for Round Belts

## Set Screw




Trapezoidal Groove		U Groove		Material	Surface Treatment
A Shape	B Shape	A Shape	B Shape		
MBRDF	MBRD	MBRF	MBR	1045 Carbon Steel or Equivalent	Black Oxide
MBRDFM	MBRDM	MBRFM	MBRM		Electroless Nickel Plating
	MBRDS		MBRS	304 Stainless Steel	
MBRDA		MBRFA	MBRA	Aluminum Alloy 5000 series	Clear Anodize

**Shaft Hole Specifications**

**Trapezoidal Groove**  
**A Shape**: MBRDF, MBRDFM, MBRDFA  
**B Shape (With Hub)**: MBRD, MBRDM, MBRDS, MBRDA

**U Groove**  
**A Shape**: MBRF, MBRFM, MBRFA  
**B Shape (With Hub)**: MBRM, MBRS, MBRA

1 Part Number  Not RoHS compliant

1 Trapezoidal grooves suppress slipping of round belts. Refer to next page for details.  
 2 Set screws are not included. Refer to P.2409.  
 \*For details of Keyway Dimensions P.1338.

Part Number	Belt Radius	R	Shaft Bore Specifications, Inner Diameter			D <sub>1</sub>	D <sub>2</sub>	h	W	L	T	ℓ	d	m	Applicable Belt Diameter	Available Types									
			H / P (H7)	N (New JIS)	C (Old JIS)											MBRDF	MBRDFM	MBRDA	MBRDF	MBRDM	MBRDS	MBRDA			
Trapezoidal Groove A Shape MBRDF, MBRDFM, MBRDFA B Shape MBRD, MBRDM, MBRDS, MBRDA U Groove MBRF, MBRFM, MBRFA	1	1	4-7	8, 10, NK10		17	13	2.2	5	11	3	12	16	M3	2	-	-	-	-	-	-				
						22	18									32	28	42	38	22	17	32	27	42	37
	1.5	5-12	8, 10, NK10	10	22	17	1.5	3.3	10	16	3	20	M3	3	-	-	-	-	-	-	-				
					32	27									42	37	47	42	20	5	25	M4	-	-	-
		2	5-12	8, 10, NK10		20	14	2	4.4	10	16	3	20	M3	4	-	-	-	-	-	-	-			
						25	19									30	24	42	36	47	41	50	44	62	56
	2.5	5-12	8, 10, NK10	10	30	23	2.5	5.5	10	16	3	20	M3	5	-	-	-	-	-	-	-				
					42	35									50	43	52	45	62	55	77	70			
		3	5-20	8-20 (8-15), NK10	10	52	45	3	6.6	10	20	5	25	M4	6	-	-	-	-	-	-				
						62	55									77	69	82	74	97	89				
4			5-20	8-20 NK10	10	102	94	4	8.8	12	24	6	30	M4 (M5)*1	8	-	-	-	-	-	-				
						102	92									122	112	142	130						
5	5-20	8-20 NK10	10	62	50	5	11	15	27	6	30	M4 (M5)*1	10	-	-	-	-	-	-						
				82	70									102	90	122	110								
	120	80	100	100	142	130																			

1 Shaft Hole Dia. 6.35 is available for Shaft Bore Specification H and P. 2 Values in ( ) are for B shape. 3 Shaft Bore Dia. 9 is not available for Shaft Bore specification N.  
 4 Sizes marked with \* are only for B Shape 5 \*1: When shaft diameter is 15 mm or more, set screw size is M5.

**Part Number Example**  
 Part Number - Belt Radius - R - Shaft Bore Specifications, Inner Diameter  
 MBRDF30 - 1.5 - H5  
 MBR60 - 2 - N12

**Part Number Alterations**  
 Part Number - Belt Radius - R - Shaft Bore Specifications, Inner Diameter - (DC)  
 MBRD40 - 1.5 - H6 - DC

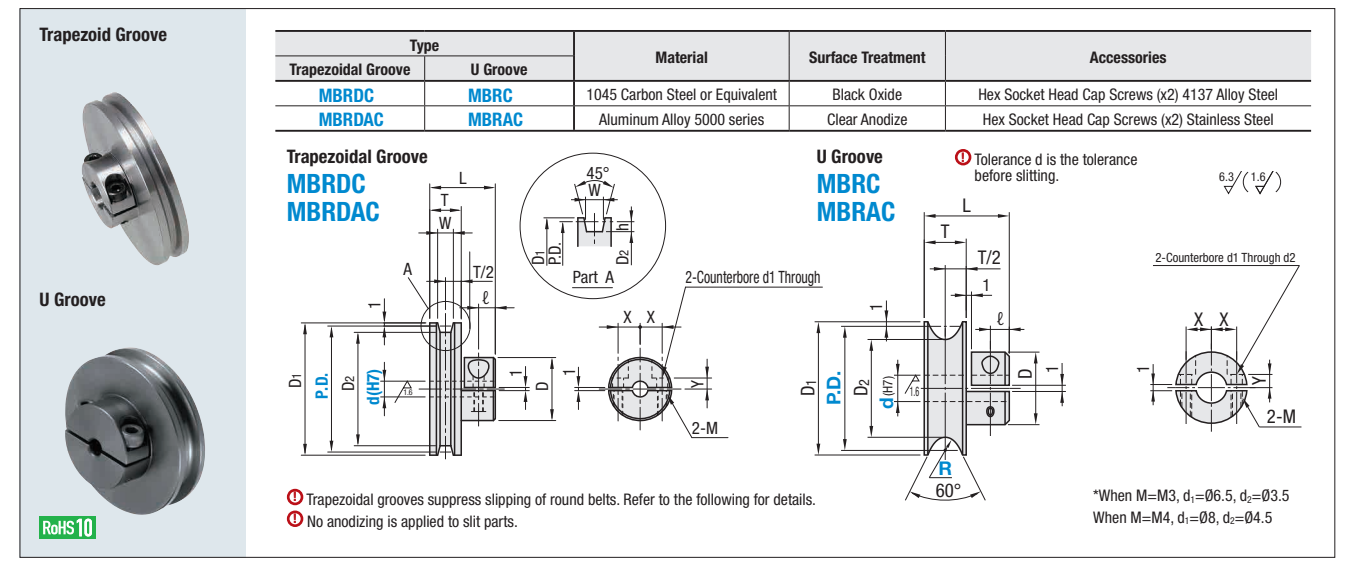
**Alteration Code**  
 DC: Reduces D<sub>1</sub> diameter by cutting. Ordering Code: DC

Applicable Belt Diameter	DC
2	PD.+0.8
3	PD.+1.2
4	PD.+1.6
5	PD.+1.8

1 Only applicable to the products of Applicable Belt Diameter 2, 3, 4, 5  
 2 Surface Treatment may not be applied to the machined area.

# Pulleys for Round Belts

## Clamping



Type	Material	Surface Treatment	Accessories
Trapezoidal Groove MBRDC MBRDAC	1045 Carbon Steel or Equivalent	Black Oxide	Hex Socket Head Cap Screws (x2) 4137 Alloy Steel
U Groove MBRC MBRAC	Aluminum Alloy 5000 series	Clear Anodize	Hex Socket Head Cap Screws (x2) Stainless Steel

1 Trapezoidal grooves suppress slipping of round belts. Refer to the following for details.  
 2 No anodizing is applied to slit parts.

\*When M=M3, d<sub>1</sub>=06.5, d<sub>2</sub>=03.5  
 When M=M4, d<sub>1</sub>=08, d<sub>2</sub>=04.5

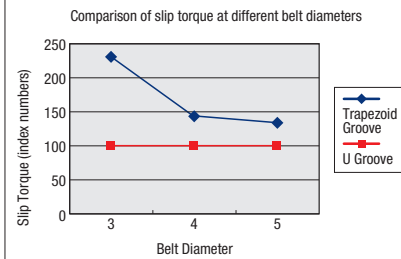
Part Number	Belt Radius	R	d <sub>Ø7</sub>								D	D <sub>1</sub>	D <sub>2</sub>	h	W	L	T	ℓ	X	Y	M	Applicable Belt Diameter	
			4	5	6	6.35	8	10	11	12													
Trapezoidal Groove MBRDC, MBRDAC U Groove MBRC, MBRAC	1	1	20	22	18					16	22	18	1	2.2	11	5	2.5	7	3.5	M3	2		
			30	32	28	42	38	20	32	27	42	37										47	42
	1.5	5-12	8, 10, NK10	20	22	17				20	22	17	1.5	3.3	16	10	2.5	7	3.5	M3	3		
				30	32	27	42	37	47	42	62	57											
		2	5-20	8-15 (8-15)	20	22	17				20	22	17	2	4.4	16	10	2.5	7	3.5	M3	4	
					25	25	19	30	24	42	36	47	41										50
	2.5	5-12	8, 10, NK10	20	30	23				20	30	23	2.5	5.5	20	10	4.5	9	4.5	M4	5		
				40	42	35	50	43	52	45	62	55										77	70
		3	5-20	8-20 (8-15), NK10	20	30	22				20	30	22	3	6.6	20	10	2.5	7	3.5	M3	6	
					30	32	27	40	32	50	42	52	44										62
			100	80	100	102	94				102	94											

**Part Number Example**: MBRDC30 - 2 - 5  
 MBRDC60 - 2.5 - 6

**Part Number Alterations**

**Application Example**

**Difference of Slip Torque for Trapezoidal & U Grooves**  
 \*Index numbers as compared with values for U groove as base value (100)



**Test Conditions**  
 Size: P.D.60  
 Material: Aluminum Alloy 5000 Series  
 Surface Treatment: Black Oxide  
 Belt: MBT3, 4, 5 (Refer to P.1324)

1 Slip torque is improved with a trapezoidal-grooved pulley, as it contacts belts with three surfaces, while U-grooved pulley contacts belts with one surface.