High Torque Timing Pulleys

5GT Type

Feature: Circular Tooth Profile Pulleys with little backlash, suitable for positioning. For Super High Torque Timing Belts (compatible with EV5GT belts), **P.1432**, for Idlers with Teeth **P.1424**.

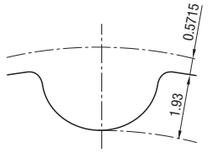
High Torque Timing Pulleys – 5GT Type

RoHS 10

Belt Width 9 mm	Belt Width 12 mm	Belt Width 15 mm	Material		Surface Treatment	Accessories Set Screws
A: 10.3 W: 14.0 L: 22.0	A: 13.3 W: 17.0 L: 25.0	A: 16.3 W: 20.0 L: 28.0	Pulley	Flange		
GPA__GT5090	GPA__GT5120	GPA__GT5150	2000 Series Aluminum Alloy	Aluminum Alloy	Clear Anodize	304 Stainless Steel
GPT__GT5090	GPT__GT5120	GPT__GT5150	1045 Carbon Steel or Equivalent	Low Carbon Steel	—	Chrome Molybdenum Steel (Black Oxide)
GPM__GT5090	GPM__GT5120	GPM__GT5150			Black Oxide	

ⓘ Flanges are installed. Set screws are included with P & N bore hole specification.

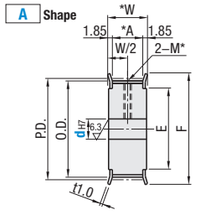
Standard Tooth Profile



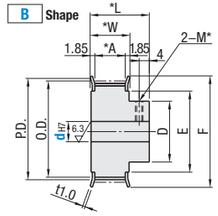
Tooth groove dimensions slightly change according to No. of teeth.
(Pitch: 5.0 mm)

Pulley Shape

A Shape



B Shape



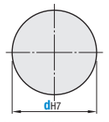
Tapped Hole Dimensions (Shaft Bores: P, N)

d_{H7} Shaft Bore Inner Dia.	M (Coarse)	Accessory Set Screw
6–12	M4	M4 x 3
13–30	M5	M5 x 4
31–45	M6	M6 x 5 (A Shape Only)

*For Shaft Bore Specifications H (Round Hole), V and F (Stepped Hole) and Y (Both Sides Stepped Hole), no tapped hole is machined.

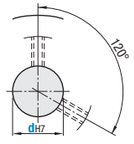
Shaft Bore Specs. ⓘ The shaft bore may not have surface treatment.

H Round Hole



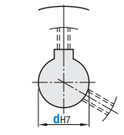
* No tapped holes and set screws

P Round Hole + Tap



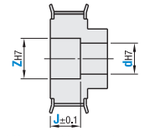
* For A Shape pulley, the set screw hole is set at around 120° to keep away from peaks

N New JIS Keyawaed Bore + Tap



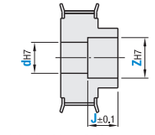
* For Keyway Dimension Details, refer to **P.1338**.

V Stepped Hole



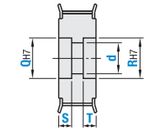
* No tapped holes and set screws

F Stepped Hole (counterbored holes on the hub side)



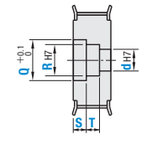
* Applicable to B Shape only
* No tapped holes and set screws

Y Both End Stepped



* Applicable to A Shape only
* Shaft Bore Dia. D is general tolerance
* No tapped holes and set screws

WB Two-Stepped Hole



* Applicable to Shape A only.
* No tapped holes or set screws.
* Formulas

Part Number Type	Teeth	Type Nom. Width	Pulley Shape	Shaft Bore Specs	Shaft Bore Spec. (1 mm Increment) H d_{H7} A Shape	H d_{H7} B Shape	P d_{H7} A Shape	P d_{H7} B Shape	N d_{H7} A Shape	N d_{H7} B Shape	V / F d_{H7} A Shape	V / F d_{H7} B Shape	V / F Z_{H7} A Shape	V / F Z_{H7} B Shape	V / F J (0.1 mm Inc.) A Shape / B Shape	Y / WB d A Shape	Y / WB Q_{H7} / R_{H7} A Shape	Y / WB S / T A Shape	P.D.	O.D.	D	F	E
2017 Aluminum Alloy GPA 1045 Carbon Steel or Equivalent GPT 1045 Carbon or Equivalent Steel+ Black Oxide GPM	14	GT5090 *A: 10.3 *W: 14.0 *L: 22.0	A B	H P N V F Y	6–12	6–8	6–8	—	—	—	6–10	6	8 12	8	2-18 For A Shape 2.0≤J≤W-2.0 For B Shape 2.0≤J≤L-2.0 2-26	6–10	8–12	3–14 S+T≤W-3	22.28	21.14	12	26	16
	15				6–13	6–10	6–8				6–11	6 7	8–13	8 9		6–11	8–13		23.87	22.73	13	27	17
	16				6–15	6–12	6–10	6	8		6–13	6–9	8–15	8–11		6–13	8–15		25.46	24.32	15	29	19
	18				6–18	6–14	6–13	6–9	8 10		6–16	6–12	8–18	8–14		6–16	8–18		28.65	27.51	18	32	22
	20				8–20	8–16	8–14	8–10	8–12	8	8–18	8–14	10–20	10–16		8–18	10–20		31.82	30.69	20	35	24
	22				8–23	8–19	8–17	8–12	8–12	8	8–21	8–16	10–23	10–18		8–21	10–23		35.01	33.87	22	39	27
	24				8–26	8–22	8–18	8–16	8–14	8 10	8–24	8–20	10–26	10–22		8–24	10–26		38.20	37.06	26	42	30
	25				8–28	8–24	8–20	8–16	8–16	8–12	8–26	8–22	10–28	10–24		8–26	10–28		39.79	38.65	28	43	32
	26	GT5120 *A: 13.3 *W: 17.0 *L: 25.0			10–29	10–24	10–21	10–16	10–17	10–13	10–27	10–22	12–29	12–24		10–27	12–29		41.38	40.24	28	45	33
	28				10–32	10–27	10–24	10–20	10–19	10–15	10–30	10–25	12–32	12–27		10–30	12–32		44.56	43.42	30	48	36
	30				10–35	10–28	10–26	10–22	10–20	10–16	10–33	10–26	12–35	12–28		10–33	12–35		47.75	46.61	32	51	39
	32				10–38	10–30	10–30	10–22	10–23	10–17	10–36	10–28	12–38	12–30		10–36	12–38		50.93	49.79	34	55	42
	34	GT5150 *A: 16.3 *W: 20.0 *L: 28.0			12–42	12–32	12–32	12–24	12–26	12–18	12–40	12–30	14–42	14–32		12–40	14–42		54.11	52.97	36	58	46
	36				12–45	12–34	12–34	12–26	12–30	12–20	12–43	12–32	14–45	14–34		12–43	14–45		57.30	56.16	38	61	49
	40				12–51	12–36	12–36	12–26	12–30	12–22	12–49	12–34	14–51	14–36		12–49	14–51		63.66	62.52	40	67	55
	44				12–58	12–38	12–42	12–26	12–30	12–23	12–56	12–36	14–58	14–38		12–56	14–58		70.03	68.89	42	74	62
	48				12–64	12–42	12–45	12–30	12–30	12–26	12–62	12–40	14–64	14–42		12–62	14–64		76.39	75.25	46	80	68
	50				12–67	12–42	12–45	12–30	12–30	12–27	12–65	12–40	14–67	14–42		12–65	14–67		79.58	78.44	46	83	71
	60				12–83	12–44	12–45	12–30	12–30	12–30	12–81	12–46	14–83	14–48		12–81	14–83		95.49	94.35	52	99	87

ⓘ Z-d≥2 for shaft bore specification V and F. ⓘ Q(R)-d≥2 for shaft bore specification Y. ⊗ Shaft Bore Dia. 9 is not available for Shaft Bore specification N.
ⓘ Shaft Bore Dia. 6.35 is selectable for Shaft Bore specifications H, P, V and F.

Part Number Example

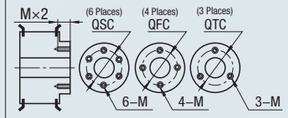
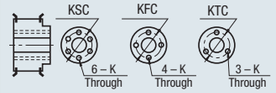
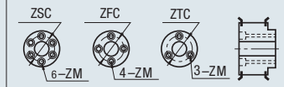
Part Number	-	Pulley Shape	-	Shaft Bore Spec. / Inner Dia.	-	Z	-	J	-	Q	-	R	-	S	-	T
Shaft Bore: H / P / N GPA20GT5090	-	A	-	N10												
Shaft Bore: V / F GPA36GT5120	-	B	-	V20		Z22	-	J10.0								T7
Shaft Bore: Y GPA40GT5150	-	A	-	Y25					-	Q27	-	R35	-	S5	-	

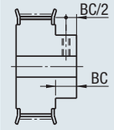
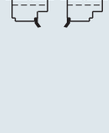
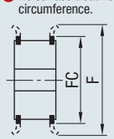
High Torque Timing Pulleys

5GT Type, *continued*

Part Number Alterations

Part Number	-	Pulley Shape	-	Shaft Bore Spec. / Inner Dia.	-	Z	-	J	-	Q	-	R	-	S	-	T	-	(KC90 / QSC / QFC / QTC / KSC / KFC / KTC / BC / NFC / RFC / LFC / FC)
GPA20GT5090	-	A	-	N10													-	KC90

Alterations	Set Screw Angle	Side Tapped Hole	Side Through Holes	Side Counterbore Holes
Code	KC90	QSC / QFC / QTC	KSC·KTC·KFC	ZTC·ZFC·ZSC
Spec.	Changes an angle of set screw to 90°. ⓘ For A shape pulley, the set screw hole is set at around 90° to keep away from peaks. 	Machines tapped hole on the side surface of hub side. (QSC, QFC, QTC: 0.5 mm Increment) ⓘ Thickness required: minimum 2mm A Shape: d+M+4≤QSC(QFC / QTC)≤E-(M+4) B Shape: d+M+4≤QSC(QFC / QTC)≤D-(M+4) ⓘ d=Z when the Shaft Bore Specifications is V. ⓘ Specify KC90 when selecting QFC for Shaft Bore specifications P, PU, HU, N, and C. ⓘ The pilot hole for tapping may go through. ⊗ Not applicable to Shaft Bore Specifications F or Y. ⊗ When the Shaft Bore Specifications are P, PU, HU, N or C, QSC is not applicable. ⊗ Not applicable to K Shape. M Selection: M3, M4, M5, M6, M8 **Ordering Code:** QFC28-M4 	Machines through hole on the side surface of hub side. **Ordering Code:** KTC28-K4.5 **K, C Selection:** Please specify the hole's manufacturing position (P.C.D.) **K Specification:** K4.0-11.0 (0.5mm increments) Application Notes ⊗ Not available for K shape 	Machines countbore holes on the side surface of the hub side. **Ordering Code:** ZTC28-ZM4 **Z/C Selection:** Please specify the hole's manufacturing position (P.C.D.) **ZM Selection:** ZM3, ZM4, ZM5, ZM6, ZM8 Application Notes ⊗ Not applicable for 1.5GT ⓘ Minimum thickness is 2mm ⓘ Conditions vary depending on the shaft hole specifications 

Alterations	Hub Shortening	Flange Not Swaged	Flange Swaged on One Side	Flange Cut
Code	BC	NFC	RFC / LFC	FC
Spec.	Cuts the hub length in 0.5mm increments **Ordering Code:** BC6.5 Application Notes ⓘ Shaft Bore specification H, V, F: 3≤BC≤L-W ⓘ Shaft Bore specification P, N, C: M+3≤BC≤L-W ⊗ Not available for K, A shape 	Flange is not Installed. (Flange included) 	Flange installed on the hub side (RFC) or the opposite side (LFC) only. ⓘ Same on A Shape 	Cuts the outer diameter of the flange in 0.5mm increments **Ordering Code:** FC17 Application Notes ⓘ FC ≥ (O.D.) + 1 ⓘ FC ≤ F - 2 ⓘ No surface treatment applied on flange circumference.