

Assembly	Component Optimized Parameters	Type	Optimized Dimensions	Units
Shaft Knee	Large diameter	Str.	$15.0 < D_{S_K} < 24.5$	mm
	Small diameter	Str.	$11.0 < d_{S_K} < 20.5$	mm
	Length of shaft	Str.	$90.9 < L_{S_K} < 126.2$	mm
Shaft Hip	Large diameter	Str.	$21.5 < D_{S_H} < 39.5$	mm
	Small diameter	Str.	$17.5 < d_{S_H} < 35.5$	mm
	Length of shaft	Str.	$153.5 < L_{S_H} < 232.1$	mm
Shaft Hip Knee	Large diameter	Str.	$19.5 < D_{S_{HK}} < 35.0$	mm
	Small diameter	Str.	$15.5 < d_{S_{HK}} < 31.0$	mm
	Length of shaft	Str.	$90.9 < L_{S_{HK}} < 126.2$	mm
Leg	Length of lower tibia	Geo.	$228.4 < r_3 < 542.5$	mm
	Length of upper tibia	Geo.	$91.4 < r_2 < 217.0$	mm
	Length of thigh	Geo.	$76.1 < r_1 < 180.8$	mm
	Radius of bend	Geo.	$27.1 < r_{bend} < 66.2$	mm
	Outer tube diameter	Str.	$16.0 < D_{tube} < 44.0$	mm
	Inner tube diameter	Str.	$12.8 < d_{tube} < 40.8$	mm
Pulley & Belt	Pitch diameter	Str.	$50.9 < D_{pulley} < 188.4$	mm
Springs Knee	Coil Diameter	Str.	$42.0 < D_{sp_K} < 89.0$	mm
	Wire Diameter	Str.	$4.0 < d_{w_K} < 8.4$	mm
	Number of Turns	Str.	$2 < n_{sp_K} < 2$	quantity
Spring Hip	Coil Diameter	Str.	$35.0 < D_{sp_H} < 80.0$	mm
	Wire Diameter	Str.	$4.8 < d_{w_H} < 10.2$	mm
	Number of Turns	Str.	$2 < n_{sp_H} < 2$	quantity
Motor Hip	Outer Diameter	Geo.	$52.9 < D_{m_H} < 145.1$	mm
	Thickness	Geo.	$30.6 < t_{m_H} < 55.3$	mm
Motor Hip Knee	Outer Diameter	Geo.	$45.7 < D_{m_{HK}} < 110.7$	mm
	Thickness	Geo.	$29.2 < t_{m_{HK}} < 43.5$	mm
Harmonic Drive Hip	Outer Diameter	Geo.	$73.0 < D_{HD_H} < 145.1$	mm
	Thickness	Geo.	$15.0 < t_{HD_H} < 28.5$	mm
Harmonic Drive Hip Knee	Outer Diameter	Geo.	$68.8 < D_{HD_{HK}} < 110.7$	mm
	Thickness	Geo.	$14.2 < t_{HD_{HK}} < 22.0$	mm
Battery	Width	Geo.	$93.2 < w_B < 149.0$	mm
	Length	Geo.	$93.2 < l_B < 149.0$	mm
Hip Bracket	Height	Geo.	$93.2 < h_{br} < 199.9$	mm