

Sub-assembly name	part #	Part name	# parts	source	prototype Material	prototype stock/ hardware specs	prototyping process	recommended part material	recommended manufacture process
<b>Armrest</b>									
<b>A: parts</b>	A1	armrest attachment bracket tube	2	OEM	Aluminum	NA	OEM	1018 steel	cut/drill
	A2	armrest attachment bracket plate	2	OEM	Aluminum	NA	OEM	1018 steel	stamp
	A3	left armrest tube	1	HERL	1018 steel	25mm OD, 2mm WT	cut/ bend	1018 steel	cut/ bend
	A4	right armrest tube	1	HERL	1018 steel	25mm OD, 2mm WT	cut/ bend	1018 steel	cut/ bend
	A5	armrest foam pad	2	OEM	foam rubber	NA	OEM	foam rubber	NA
	A6	armrest tube plug	2	HERL	6061 Aluminum	NA	turn/ mill	6061 aluminum	cast
<b>A: hardware</b>	ah1	armrest bolts	4	NA	NA	6 mm	NA	NA	NA
	ah2	armrest endcap	2	NA	plastic	NA	turn	plastic	injection mold
	ah3	armrest locknuts	4	NA	steel nylon locking	6 mm	NA	NA	NA
<b>A: assembly</b>	aa1	left armrest bracket assembly	x	x	x	x	x	x	x
	aa2	right armrest bracket assembly	x	x	x	x	x	x	x
	aa3	armrest bracket exploded	x	x	x	x	x	x	x
	aa4	armrest assembly exploded	x	x	x	x	x	x	x
<b>Backrest</b>									
<b>B: parts</b>	B1	backrest tube	2	HERL	1018 steel	25mm OD, 1mm WT	cut	1018 steel	cut
	B2	backrest plug	2	HERL	1018 steel	25mm steel round	lathe	1018 steel	turn or cast
	B3	adjustment plate	2	HERL	1018 steel	3mm plate	mill	1018 steel	stamping
	B4	adjustment plate plug	2	HERL	1018 steel	30mm steel round	turn/ mill	1018 steel	turn or cast
	B5	push handle tube	2	HERL	1018 steel	1" OD, 1 mm WT	cut	1018 steel	cut
	B6	push handle grip	2	OEM	foam rubber	NA	NA	foam rubber	NA
<b>B: hardware</b>	bh1	backrest pivot screw	2	NA	1018 steel	6mm	NA	1018 steel	NA
	bh2	backrest angle adjust screw	2	NA	1018 steel	6mm	NA	1018 steel	NA
	bh3	backrest angle adjust nut	2	NA	steel nylon locking	6mm	NA	steel nylon locking	NA
	bh4	backrest endcap	2	NA	plastic	NA	NA	plastic	NA
<b>B: assembly</b>	ba1	right backrest tube assembly	x	x	x	x	x	x	x
	ba2	left backrest tube assembly	x	x	x	x	x	x	x
	ba3	backrest tube assembly exploded	x	x	x	x	x	x	x
<b>Caster</b>									
<b>C: parts</b>	C1	eccentric caster bushing	2	HERL	6061 Al	38 mm round	turn/ mill	6061 Al	cast
	C2	caster plate	2	HERL	1018 steel	3 mm plate	mill	1018 steel	stamp
	C3	caster plate standoffs	4	HERL	1018 steel	25mm OD, 1mm WT	mill	1018 steel	cut
	C4	caster stem housing	2	HERL	1018 steel	30 mm round	turn	1018 steel	turn
	C5	caster bushings	2	HERL	bronze	30 mm round	turn	bronze	turn
	C6	caster bearings	2	McM	sealed steel ball	12 mm ID	NA	sealed steel ball	NA
	C7	caster stem spacer	2	HERL	6061 Aluminum	30 mm round	turn	6061 Aluminum	turn
	C8	caster fork	2	ALIMCO	1018 steel	NA	stamped	1018 steel	stamped
	C9	caster stem	2	HERL	1018 steel	12 mm round	turn/ weld	1018 steel	turn
<b>C: hardware</b>	ch1	top adjustment bolt	2	NA	alloy steel	6 mm	NA	1018 steel	NA
	ch2	bottom adjustment bolt	2	NA	alloy steel	6 mm	NA	1018 steel	NA
	ch3	adjustment bolt lock nuts	4	NA	nylon insert locking	6 mm	NA	alloy steel	NA
	ch4	caster axle bolt	2	NA	hardened steel	6 mm	NA	alloy steel	NA

<b>C: assembly</b>	ch5	caster axle nut	2	NA	nylon insert locking	6 mm	NA	nylon insert locking	NA
	ch6	caster wheel washers	4	NA	zinc plated steel	6 mm	NA	zinc plated steel	NA
	ch7	caster stem end cap	2	HERL	plastic	30 mm round	turn	plastic	injection mold
	ch8	caster stem nut	2	NA	nylon insert locking	12 mm	NA	nylon insert locking	NA
	ca1	left caster assembly	x	x	x	x	x	x	x
	ca2	right caster assembly	x	x	x	x	x	x	x
	ca3	caster assembly exploded	x	x	x	x	x	x	x
<b>Foot rest</b>									
<b>D: parts</b>	D1	foot plate tube	2	HERL	1018 steel	25 mm tube	cut	1018 steel	cut
	D2	foot plate	2	HERL	6061 Aluminum	cast	mill	6061 Aluminum or plastic	cast or injection mold
	D3	foot plate top pinch clamp	4	HERL	6061 Aluminum	13 mm bar	mill	6061 Aluminum	cast
	D4	foot plate bottom pinch clamp	4	HERL	6061 Aluminum	13 mm bar	mill	1018 steel	stamp
	D5	foot plate bracket	4	HERL	1018 steel	23 mm flat stock	mill	1018 steel	stamp
	D6	foot plate tube plug	2	HERL	6061 Aluminum	23 mm round	turn	6061 Aluminum	turn or cast
	D7	heel strap	2	OEM	nylon	NA	NA	nylon	NA
	D8	heel strap bolts	4	OEM	zinc plated steel	NA	NA	zinc plated steel	NA
<b>D: hardware</b>	dh1	hinge bolt	2	OEM	1018 steel	6 mm	NA	steel	NA
	dh2	hinge lock nut	2	OEM	nylon insert locking	6 mm	NA	nylon insert locking	NA
	dh3	tube plug adjustment bolt	2	OEM	1018 steel	6 mm	NA	steel	NA
	dh4	pinch clamp bolts	8	OEM	1018 steel	6 mm	NA	steel	NA
	dh5	pinch clamp lock nuts	8	OEM	nylon insert locking	6 mm	NA	nylon insert locking	NA
<b>D: Assembly</b>	da1	right foot rest tube assembly	x	x	x	x	x	x	x
	da2	foot rest tube exploded	x	x	x	x	x	x	x
	da3	foot rest exploded	x	x	x	x	x	x	x
	da4	foot rest assembly	x	x	x	x	x	x	x
<b>Cross Brace</b>									
<b>E: parts</b>	E1	cb frame clamps	2	HERL	1018 steel	14 guage	cut, bend, drill	1018 steel	stamp
	E2	cb plastic spacers	2	HERL	delrin	25 mm x 100 mm bar	mill	delrin	injection mold
	E3	cb main tube	2	HERL	1018 steel	25 mm 1 mm WT	cut, drill	1018 steel	cut
	E4	cb seat tube	2	HERL	1018 steel	25 mm 1 mm WT	cut, drill	1018 steel	cut
	E5	cb pivot plug	2	HERL	6061 aluminum	23 mm round	cut	6061 aluminum	turn or cast
	E6	linkage arm	4	HERL	1018 steel	14 guage	EDM	1018 steel	stamp
	E7	linkage clamp	4	HERL	1018 steel	2 mm sheet	EDM	1018 steel	stamp
	E8	linkage split plastic bushing	2	HERL	delrin	40 mm round	turn	delrin	injection mold
<b>E: hardware</b>	eh1	pivot bolt	1	OEM	hardened steel	6 mm	NA	hardened steel	NA
	eh2	pivot lock nut	1	OEM	nylon insert locking	6 mm	NA	nylon insert locking	NA
	eh3	seat tube endcaps	4	OEM	plastic	25 mm round	turn	plastic	injection mold
	eh4	clamp bolts	4	OEM	zinc plated steel	6 mm	NA	zinc plated steel	NA
	eh5	clamp lock nuts	4	OEM	nylon insert locking	6 mm	NA	nylon insert locking	NA
	eh6	linkage pivot bolt	4	OEM	zinc plated steel	6 mm	NA	zinc plated steel	NA
	eh7	linkage pivot locknut	4	OEM	nylon insert locking	6 mm	NA	nylon insert locking	NA
	eh8	linkage pivot washer	4	OEM	zinc plated steel	6 mm	NA	zinc plated steel	NA

<b>E: Assembly</b>	eh9	linkage clamp bolt		4	OEM	zinc plated steel	4 mm	NA	zinc plated steel	NA
	eh10	linkage clamp nut		4	OEM	nylon insert locking	4 mm	NA	nylon insert locking	NA
	eh11	upholstery attachment screws			OEM	zinc plated steel	4 mm	NA	zinc plated steel	NA
	ea1	cross brace assembly ortho	x	x	x	x	x	x	x	x
	ea2	cross brace assembly exploded	x	x	x	x	x	x	x	x
	ea3	linkage clamp	x	x	x	x	x	x	x	x
<b>Frame</b>										
<b>F: parts</b>	F1	eccentric bushing housing		2	HERL	1018 steel	38 mm round	turning	1018 steel	turn
	F2	caster adjustment spacer tube		2	HERL	1018 steel	10 mm round	turn	1018 steel	turn
	F3	seat down tube		2	HERL	1018 steel	25 mm OD, 1 mm WT	cut, bend, drill	1018 steel	cut, bend, drill
	F4	frame upright tube		2	HERL	1018 steel	25 mm OD, 1 mm WT	cut, bend, drill	1018 steel	cut, bend, drill
	F5	frame support tube		2	HERL	1018 steel	25 mm OD, 1 mm WT	cut, drill	1018 steel	cut, drill
	F6	axle plate		4	HERL	1018 steel	3 mm plate	cut, drill	1018 steel	stamp
	F7	axle plate spacer tubes		8	HERL	1018 steel	16 mm OD round	cut, turn	1018 steel	turn
	F8	back rest frame pivot plug		2	HERL	1018 steel	25 mm round	turn	1018 steel	turn/ mill
	F9	cb plastic seat spacers		4	HERL	delrin	40 mm x 50 mm bar	mill, drill	plastic	injection mold
<b>Frame hardware</b>	fh1	seat down tube endcap		2	HERL	delrin	25 mm	turning	plastic	injection mold
	fh2	cross brace clamp stop bushing		4	HERL	delrin	10 mm	turning	plastic or aluminum	injection mold or turn
	fh3	cross brace clamp stop screw		4	OEM	steel	6 mm	NA	steel	NA
	fh4	axle plate attachment bolts		8	OEM	steel	6 mm	NA	steel	NA
	fh5	axle plate attachment nuts		8	OEM	steel nylon locking	6 mm	NA	steel nylon locking	NA
	fh6	seat spacer bolts		4	OEM	steel	6 mm	NA	steel	NA
	fh7	seat spacer nuts		4	OEM	steel nylon locking	6 mm	NA	steel nylon locking	NA
<b>F: assembly</b>										
	fa1	axle plate assembly	x	x	x	x	x	x	x	x
	fa2	axle plate assembly exploded	x	x	x	x	x	x	x	x
	fa3	Wheelchair assembly	x	x	x	x	x	x	x	x
	fa4	side frame assembly	x	x	x	x	x	x	x	x
<b>Wheels</b>										
	G1	axle bolt		2	OEM	steel	NA	NA	alloy steel	turn
	C9	caster wheels		2	ALIMCO	plastic	NA	injection molded	plastic	injection molded
	C10	caster tire		2	ALIMCO	soft plastic	NA	injection molded	soft plastic	injection molded