

## Bill of Materials – Metals

### 7-inch Tesla Turbogenerator



Material	Description	Diameter (in)	Thickness (in)	Length (in)	Part Name	Optional Materials
6061 aluminum	round rod	0.7500	N/A	6.0000	stator standoffs	
6061 aluminum	round rod	0.8750	N/A	5.3750	nozzle	
6061 aluminum	round rod	1.0000	N/A	17.0000	case spacers	
6061 aluminum	round rod	1.2500	N/A	9.0000	inlet tube a & b	
6061 aluminum	round rod	2.0000	N/A	2.0000	oil nut	brass
6061 aluminum	round rod	2.5000	N/A	7.0000	bearing case, inlet flange a & b	heavy wall tubing (bearing case) 2.5" diameter x 1.5" I.D. x 5" long
6061 aluminum	round rod	3.5000	N/A	2.0000	outlet, type 2	
6061 aluminum	round rod	5.0000	N/A	0.5000	magnet rotor	
6061 aluminum	standard tubing	1 1/4" OD x 0.984" ID	N/A	2.5000	upper & lower shaft spacer	bronze, brass, steel, 6061 aluminum round rod
6061 aluminum	standard tubing	7"ID x 7.5"OD	N/A	10.0000	inlet ring, lower case ring	
6061 aluminum	plate	4.0000	0.1875	4.0000	oilseal cover - round plate	
6061 aluminum	plate	10.0000	0.5000	9.0000	bottom plate	
6061 aluminum	plate	10.0000	0.5000	9.0000	lower hot rotor plate	
6061 aluminum	plate	10.0000	0.5000	9.0000	top plate	
6061 aluminum	plate	10.0000	0.5000	9.0000	stator plate	
6061 aluminum	plate	5.0000	0.6250	5.0000	oilseal flange - round plate	
stainless steel	flat sheet stock, laser cut part	12.0000	0.0313	12.0000	(3) hotrotor star	
stainless steel	flat sheet stock, laser cut disc	7.0000	0.0625	7.0000	(2) hotrotor disc-b	
stainless steel	flat sheet stock, laser cut disc	7.0000	0.1875	7.0000	(1) hotrotor disc-a	
stainless steel	flat sheet stock, laser cut disc	7.0000	0.1875	7.0000	(1) hotrotor disc-c	
stainless/alloy steel	round rod	0.1250	N/A	0.3750	nozzle pin	brass, aluminum
stainless/alloy steel	4140 cold rolled round rod	1.2500	N/A	12.0000	main shaft	

## Bill of Materials – Hardware

### 7-inch Tesla Turbogenerator

Qty	Part	Material	Description	Length (in)
1	case compression rod	stainless steel	threaded rod 1/2" - 13 tpi	17.5000
1	power studs	brass/stainless	threaded rod #10-32 x 36" long, cut to length	36.0000
1	inlet bolt	stainless/alloy steel	1/4"-20 tpi	1.5000
3	oilseal cover screws	stainless steel	#10-32 tpi x 3/8" thread	
3	oilseal flange screws	stainless steel	#10-32 tpi x 3/4" thread	
3	stator mount screws	stainless/alloy steel	#10-32 tpi x 1.5" button head cap screw	
12	magnet retaining screws	stainless/alloy steel	#5-40 x 3/4" flathead cap screw	
3	standoff mount screws	stainless/alloy steel	1/4" - 20 tpi x 1.5" socket head cap screw	
2	shaft washers	6061 aluminum/steel	5/8" ID x 2" OD x 1/4" thick	
36	hotrotor washers	stainless steel	#10L x 0.031" thick round washer	
3	stator mount washers	stainless steel	0.188" ID, 0.382" OD	
4	inlet washers	stainless steel	#12 flat round washer	
3	standoff mount washers	stainless/alloy steel	#12 round washer	
12	case compression washers	stainless/alloy steel	0.5" ID x 1.25" OD	
26	power stud washers	brass	#10 brass washers	
12	case compression nut	stainless/alloy steel	1/2" - 13 tpi heavy duty	
12	magnet retaining nut	alloy steel	#5-40 hexagonal nut	
2	optional shaft nut	alloy steel	5/8" - 18 tpi slotted nut	
2	shaft nut	alloy steel	5/8" - 18 tpi castle nut	
40	power stud nut	brass/stainless	#10-32 tpi hexagonal nut	
12	power stud nut	brass/stainless	#10-32 tpi hexagonal nut	
2	cotter pins	stainless/alloy steel	1/8" diameter x 1" long	
1	wave spring	stainless/alloy steel	1.051" ID x 1.351" OD x 0.99" thick	
3	drain fitting, hosebarb	brass	1/8" NPT x 1/4" tubing	
5	oil and drain fittings	brass	1/8" NPT x 1/4" flare tubing - brass fitting	
2	oil fitting 90deg	brass	1/8" NPT, M-F right angle	
2	oil fitting hosebarb	brass	1/8" NPT x 1/4" tubing	

3	oil pipe plug	brass	1/8" NPT
1	optional part	brass	3/4" NPT oil nut
1	pipe plug	brass	1/8" NPT
10	wire eye, ring tongue	brass/nickel plate	#14 wire size
	oil tubing	clear vinyl	1/4" ID x 3/8" OD clear vinyl
	rectifier	electronic	1000 PIV, 35 Amp bridge rectifier
	felt oil seal	hard felt	1/8" thick hard gray
	transformer	iron core	110/220 step-down transformer (oil pump)
	stator core	iron, copper	6 5/8" OD x 4 3/4" ID x 2" thick - Chrysler type with 4.75" ID clearance
	main bearing	n/a	JEM 6005 25mm ID x 47mm OD x 12mm w.
	super magnet	neodymium	3/4" round x 1/8" thick x 1/8" cs hole
	inlet gasket	neoprene	12" x 12" x 0.0625" spring rubber
	power stud insulator	nylon	#10 nylon shoulder washers
	power stud insulator	nylon	#10 nylon shoulder washers
	oil filter	plastic/metal	small engine gasoline filter
	oil pump	plastic/metal	145 gph fountain pump 20" - 60" head
	contact cement / epoxy cement	synthetic	to bond magnets to the magnet rotor
	sealant	synthetic	high temperature RTV silicone sealer
	thread lock	synthetic	Green (wicking) Loctite #290, 10ml
	thread lock	synthetic	Blue - medium strength Loctite #242, 10ml
	thread lock	synthetic	Red - high strength Loctite #271, 10ml
	oil (turbine)	synthetic oil	Mobil Velocite #6