

SCAMP, the little loco with a big heart.

Shopping list for the Mk4 version.

April 2025. Copyright Colin Edmondson



We supply this loco kit in good faith. As we have no input once the kit has been delivered you build it and use it at your own risk. If you have any doubts please ask, my email address is at the top.

Part of the design ethos of the loco is to use easily available commercial parts for all the items which may wear out, so that spares can be easily and cheaply obtained. The only spare that you will not be able to buy on-line is the motor sprocket, one is included and a spare one can be supplied by CMD on request. Almost all the parts below are available from Ebay, otherwise I have stated or suggested suppliers. Prices given are intended simply as a guide to what you should expect to pay, correct as of date of publication, where two or more items are required the price given is for all the items, not just one.

Suffolk Mower engine version.

You need the engine from a Suffolk lawnmower as shown, preferably with the engine mounted fuel tank rather than the one mounted on the handle. If you get the latter you will have to modify it to mount it on the engine, not a hard job, covered in the instructions. You can discard the rest, but not until you have stripped it for the 'it will come in useful one day' box. Keep hunting and you should find one for sale for about £25.



This is the engine that the loco was designed to take. The preferred fuel tank is shown on the left, it has a greater capacity, but either can be used.



New engine options;

Loncin or Lifan LC152F vertical cylinder 1.8hp engine

(This is the engine that the Scamp was originally designed to take, now becoming difficult to locate as it doesn't meet modern emission regulations).

1 off



LONCIN 154F, sloping cylinder, often listed as 2.1hp.

(This is the Loncin replacement for the engine above, it will fit but the Lifan engine on the next page is preferred).

1 off



PREFERRED CHOICE

Lifan 152F-3 S, vertical cylinder, 15mm shaft.
(This will now become the 'standard' engine).
Try 'Westbank Wholesale'.

1 off

Oil to suit engine, see engine instructions
(engines arrive 'dry') Tesco

1litre



Chains, sprockets, axles etc.

My pulleys, chains and sprockets were mostly bought from either 'Belting on line' or Ebay, the former is often cheaper.

Engine related parts,

taperlock pulley Z section 80mm SPZ 080/1

1 off



For Suffolk engines check if your engine shaft
is 19mm, 20mm or 3/4" (19.1mm) and get the correct
1210 bush to suit. Mine was 3/4".

taperlock bush 1210-19, -20 or -3/4

1 off

For the Loncin and Lifan engines check if your engine shaft
is 15mm, 16mm or 5/8" (15.89 mm) and get the correct
1210 bush to suit.

1210-5/8", 15 or 16

1 off



Drive belt Z section, (plus spare)

Suffolk, Lifan and Loncin 152f, Loncin 154,
Lifan 152-3

SPZ 590

1 off

SPZ 575

1 off



Layshaft and axles are supplied as welded assemblies by CMD.

Layshaft welded assembly (CMD Engineering)

1 off

Wheel and axle assemblies (CMD Engineering)

1 pair

Turning pulley parts for dynamo (CMD Engineering)

(optional)

For 5mph and maximum pulling power get;

27 tooth taperlock sprocket 06B1 31-27

2 off

taperlock bush 1210-20

2 off

OR

For a good compromise get;

24 tooth taperlock sprocket 06B1 31-24

2 off

taperlock bush 1210-20

2 off

OR

For a fast speeder get;

20 tooth taperlock sprocket 06B1 31-20

2 off

taperlock bush 1008-20

2 off

bearings 20 x 42 x 12 rubber sealed

4 off

bearings 15 x 35 x 11 rubber sealed

2 off



Shaft collars, 20mm

4 off



Chain

06B, you need 1500mm, order 2m
(This often comes with at least one connecting link)

06B connecting link You need at least 3 off



Brake shoes are available from PNP, www.pnp-railways.co.uk
Pack of four 7 1/4" narrow gauge brake shoes PNR 1-E



Springs - vibration isolators 30 dia x 20 thick 4 off
with male M8 thread one side only.
Search for 'vibration mounts'. (These often come from China,
delivery times of a few weeks are not uncommon)



Motors, Unite 36v 800w ZY 1020 2 off
(Ideally try to get the ones with the built in
mounting foot, although alternative brackets
can be supplied on request)
If you can't get these try to get a pair of
Unite 24v 800W instead.



Electric motor reversing switch, 32amp 1 off



200W DC Controller
(check against photos)

12-50V 2000W MAX 40A
PWM DC Controller 1 off



If you are intending to let children drive then
you may want to fit a 'deadman's pedal', which isolates the drive if the driver
takes their foot off the pedal.

12v heavy duty engine start push button switch 1 off



Head and tail lights, get 1 red and 1 white



Bicycle brake cable for throttle 1 off



'Vintage motorcycle heavy duty universal cable set' 1 off
for brakes as per photo



Expanded wire mesh, A4 size,
(get two if using Scamp or Ruston type bonnets) 1 or 2 off



Connector block, 30 amp to suit 6mm² cables
(often called a 'chocolate block' connector) 6 way



2 pin spade connector, 6.3mm terminals
(You may want to get a spare, as disconnecting
is easily overlooked resulting in breakage) 1 off



Screwed type cable nipple 1 off



Bicycle brake cable adjuster 1 off



Heatshrink tubing for brake lever, 25mm red, 100mm



Seat cushion, (plywood, foam, material), estimate
(These can be supplied finished, please ask for a price)

Slatted seat option,
45 x 20 (2" x 1") planed all round softwood, 360mm, 9 off
9mm ply, 272mm x 212mm
Material (stall on local market?)
Foam (ditto)

Brake lever spring and Throttle return spring
available from CMD 1 set

20mm x 2mm wall steel tube
(2 x 360mm and 1 x 100mm) 1m

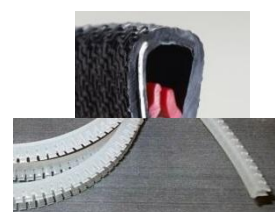
2mm or 3mm by 12 to 20mm self adhesive foam strip

M6 Well nuts 16mm long 8 off
(also known as motorcycle fairing nuts)
You need the 13mm diameter ones with parallel sides.



Spray can of chain lubricant. 1 off

Bicycle hooter or chosen horn	1 off
Wire, 4mm ² multi-strand, red and black,	1.5m of each
25mm diameter black plastic knob, 8mm hole (or buy M8 and drill out, not one with brass insert)	1 off
16mm diameter black plastic knob M5 hole	1 off
End bungs (caps) for 20mm tube (Brake lever and derailing bars)	5 off
Cable ties, 2mm	10 off
Rubber floor mat (car) (or buy one square metre of 1mm rubber sheet)	1 off
Edge trim, 14mm x 8.5mm to suit 2mm sheet	2m
Grommet strip, to suit 3mm panel	1m
Clear sticky back plastic	small piece
Lifting eye bolts M6 male thread (optional)	4 off



Fixings and fastenings (quantities are sufficient, please don't hold me to the exact number)
'st st' means 'stainless steel', BZP means bright zinc plated.

4mm x 10mm aluminium blind pop-rivets (200 if building the battery box as well)	150 off
M4 x 20 socket head screw	3
M4 nyloc nut BZP	3
M4 washer BZP	6
M5 x 25 button head screw	2
M5 nyloc nut BZP	2
M6 x 16 st st button head	100, (150 better)
M6 x 25 hex screw BZP	30
M6 x 35 hex screw BZP	20
M6 x 40 hex screw BZP	2
M6 wing nut BZP	2
M6 nyloc nut BZP	150 (thin or thick, kit accepts both)
M6 st st form B washers BZP	150
M6 spring washer	1
M6 x 35 flanged st st button screws for slatted seat option, st st	20 off
M8 x 25 hex screw BZP	15 (20 if fitting deep 'Ruston style') buffers)
M8 x 35 hex screw BZP	20
M8 x 40 hex screw BZP	4 (only if fitting Suffolk or Lifan 152F-3 S)
M8 nyloc nut BZP	50
M8 washer BZP	50
M10 x 75 screws BZP	2 (coupling pins)

Painting

I clean the metal with thinners and a scouring pad to give a key for the paint followed by panel wipe to degrease it thoroughly. You could paint by brush, use spray cans or get all the parts powder coated. If you can find a local powder coating firm who will take folding beer tokens you may get a good deal. If you decide to spray the parts yourself, even if you are spraying outdoors you need to buy a proper paint spraying mask, particularly for two-pack paints. Buy one at the same shop that you buy the paint from and get some latex gloves as well, and don't be afraid to ask them for advice.

Tin of thinners.

Tin of panel wipe.

1 litre of acid etch primer, I used about half of it.

1 litre of gloss, I used about half of it.

Extra spray cans of gloss, depending on your colour scheme, eg red for buffers.

To freshen the Suffolk engine, spray cans of Fiat burnt orange and light grey gloss.

Masking tape and newspaper.

I spent about **£100 on paint and accessories.**

Optional battery box shopping list, choose the voltage to match your motor.

for the **24 volt** version

PAIR of 12v 33AH mobility scooter batteries

Maximum size 195 x 130 x 155 tall

Pair



24v MOBILITY SCOOTER WHEELCHAIR Charger



OR

for the **36 volt** version

Three off 12v 15-18Ah mobility scooter batteries 3 off

Maximum size L 180mm x W 76mm x H 167mm



36v MOBILITY SCOOTER WHEELCHAIR Charger



Both versions

12V DC 50 AMP Car Audio Inline Circuit Breaker 1 off

50A



Terminals Crimp On ring Connector, yellow 6.4mm. 8 off



20mm Black Rubber Blanking Closed Grommets, 2 off



Edge trim, 2mm, 1m



Cable tidy 1.5mm – 7mm 500mm



2 pin spade connector, 6.3mm terminals 1 off



Rubber matting, a cheap car floor mat

You will need to add additional quantities to these items in the main shopping list;

4mm x 10 long aluminium pop rivets, 100
M3 x 20 screws with washers and nyloc nuts 2 off
4mm² multi strand wire, 0.5m each of red and black