Plug weld all self-jigging slots

Weld

Upright back

Upright tab

Upright sides
See Dxf files for lasercutting or CAD editing this part

Position in Upright

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QTY 2off

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Mtl: Mild steel plate 3mm

UPRIGHT INNER
See Dx files for lasercutting or CAD editing this part

Position in Upright

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Mtl: Mild steel plate 3mm

UPRIGHT SIDE

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Position in Seat

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Mtl: Board/Plywood 1.2mm

SEAT SIDE
TIP: Epoxy countersunk machine screws in place before upholstering to allow for fastening with nuts from below.
Position in Seat

885mm 34.84"

220mm 8.66"

QTY 1 off

Mtl: FOAM (Density of your choice)

SEAT CUSHION
TIP: Screw boards together with epoxy to ensure a strong seat frame.
NOTE: Similar parts are available as weldments or as a complete assemblies (see links page)

Tolerance to a press fit for a 26x10x8mm bearing (6000)

Alternative construction from a 32x3mm tube and internal circlips

SECTION A-A

Position in Spindle

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Mtl: 32mm Bright mild steel (78mm)

SPINDLE TUBE
This angle is called king pin inclination (KPI) it reduces the scrub radius and thereby your steering effort

Weld all round

Spindle tube

Spindle arm

Plug weld all self jigging slots

Weld all round

Spindle stub axle

NOTE: Similar parts are available as weldments or as a complete assemblies (see links page)

NOTE: Right hand side is a mirrored copy

NOTE: This angle is called king pin inclination (KPI) it reduces the scrub radius and thereby your steering effort.

Finish: Have corrosion resist plated after welding

SPINDLE left hand side
The idea behind this style of disk is to clear mud and debris from pad and at the same time allow for good cooling—disadvantage will be much greater pad wear.

OPTIONS:
1: Have this or simple version lasercut
2: Buy a genuine kart disk
3: Source a scooter disk from junkyard

See Dxf files for lasercutting or CAD editing this part

Material: Wear resist steel 6mm (Bennox)

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NOTE: this part is not required if you are using front wheels with integral hubs— in which case you will have to come up with a way of attaching the front Disks.

TIP: Tack weld and spin to check if true before final welding. Weld head of bolts to rear of plates to simplify wheel changing.

- Front hub plate
- Front brake plate
- Front hub tube
- 17x35x10 Sealed bearing
- M8x20 hex bolts

Weld all round-on inside only if possible (welds near the bearing pocket will cause distortion)

**Specifications:**

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Finish: Have corrosion resist plated after welding.

HUB (front)
Position in Steering column

4mm hole for split pin at bottom

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Mtl: 25 x2mm Rnd tube (760mm)

STEERING SHAFT
Weld all round

Align visually

Plug weld all self jiggging slots

Weld all round -top only (bottom to act as thrust surface)

Finish: Have corrosion resist plated after welding
Position in Steering column

See Dxf files for lasercutting or CAD editing this part

DON'S DIY DEN

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HANDLEBAR MOUNT

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Position in Steering column

HANDLEBAR BRACE

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Mtl: Mild steel plate 3mm
Position in Steering column

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Mtl: Mild steel plate 5mm

PITMAN ARM
Position in Steering column

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<td>Mtl: Mild steel plate 3mm</td>
<td>HANDLEBAR SEAT</td>
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TIP: Use a washer to pack top split steering block to prevent bind on steer shaft

Use U-bolts to attach handle bar to Steering column

Position in Steering assembly

Saw 1 block only in half for split top steering block

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STEERING BLOCK

Material: Nylon/ suitable engineering plastic

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QTY 2off

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NOTE:
If you don't wish to make this part- similar parts are available from karting suppliers (see links page)
Race karts use tierods with a left hand thread and corresponding rod end on one end, this enables you to adjust toe in without unbolting the rod end from the spindle.
Drill and tap for M8 bolt or equivalent

NOTE: This part needs to fit into the Wishbone bush- ensure a good tolerated slide fit with your bushes for smooth and slop free movement!
NOTE: This part needs to fit over the Wishbone pivot shafts - ensure a good tolerated slide fit with your shafts for smooth and slop free movement!

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Mtl: Nylon/ suitable engineering plastic

WISHBONE POLY BUSH
NOTE: This part needs to fit into the Wishbone bush—ensure a good tolerated slide fit with your bushes for smooth and slop free movement!
REAR AXLE

QTY 1 off

Material: 30mm axle grade steel (EN8)

Keyways 3mm deep - tolerance to suit 6mm key steel

Position on Rear axle assembly

NOTE:
If you don't wish to have this part machined - similar axles are available from kart part suppliers, keyway position may need to be altered (see links page)
TIP:
Tack and spin to check if true before final welding.
This is very important to ensure smooth bind free operation
NOTE: If you don't wish to have this part machined similar parts are available as weldments or as a complete assemblies (see links page).
**OPTION 1:** To suit rims with a 4" bolt hole circle

TIP- tack and spin to check if true before final welding. Weld head of bolts to rear of 2 plates to simplify wheel changing.

**OPTION 2:** To suit rims with a 85mm, 2-13/16", or 3-1/2" bolt hole circle

Position in Rim hub (see also Brake hub)

See DXF files for lasercutting

---

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QTY 3off

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Mtl: Mild steel plate 5mm

RIM/BRAKE PLATE
TIP:
Tack weld and spin to check if true before final welding. This is very important to prevent chain jumping off at speed.

Weld right round

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<td>SPROCKET HUB</td>
<td>Finish: Have corrosion resist plated after welding</td>
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Adapt to suit your sprocket- illustrated option to suit certain kart sprockets only!
See DXF files for CAD editing and lasercutting

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Material: 3mm mild steel

SPROCKET PLATE
OPTIONS:
1: Have this part lasercut
2: Buy a genuine kart disk
3: Source a scooter disk from junkyard

Material: Wear resist steel 6mm (Bennox)

See DXF files for CAD editing and lasercutting

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Material: Wear resist steel 6mm (Bennox)
BRAKE DISK SIMPLE (rear)
The idea behind this optional style of disk is to clear mud and debris from pad and at the same time allow for good cooling—disadvantage will be much greater pad wear.

OPTIONS:
1: Have this or simple version lasercut
2: Buy a genuine kart disk
3: Source a scooter disk from junkyard

See Dxf files for lasercutting or CAD editing this part

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Material: Wear resist steel 6mm (Bennox)

BRAKE DISK TRICK (rear)
OPTIONS:
1: Have this or trick version lasercut
2: Buy a genuine kart disk
3: Source a scooter disk from junkyard

See Dxf files for lasercutting or CAD editing this part

Material: Wear resist steel 6mm(Bennox)

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BRAKE DISK SIMPLE (front)
See Dxf files for lasercutting or CAD editing this part

NOTE: This part including all holes within red dotted box needs to be adapted to suit your chosen brake caliper and brake disk. Mounting holes shown will work for only a few race kart calipers.
TIP- tack and spin to check if true before final welding.

Position in Front hub

See DXF files for lasercutting

Mtl: Mild steel plate 3mm

BRAKE PLATE (front)
Material: 5mm Mild steel plate

Position in Spindle

See Dxf files for lasercutting or CAD editing this part
NOTE:
If you don't wish to have this part machined
similar parts are available as weldments or as
a complete assemblies (see links page)

Low cost alternative- Use a simple 17mm
shaft and use washers and split pins through
drilled holes to prevent wheel from sliding off

Material: 20mm Axle grade steel (EN8)
Dummy tank can be constructed with the same "stitch and glass" technique described on the fender pages.

**OPTIONAL:** Commercial plastic components can be adapted to fit the Buzzard

*Low cost option:* If you are using a bike motor, use a bike tank from a junkyard (you may need to alter the top frame to suit)

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**DUMMY TANK**
Position in Seat

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Mtl: Board/Plywood 12mm

SEAT BACK
Position in frame

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Mtl: Mild steel plate 5mm
Material: Marine Plywood 6mm

Position in Dummy tank

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DUMMY TANK FRONT
Material: Marine Plywood 6mm
Material: Marine Plywood 6mm
REAR FENDER BASE

Position in Rear fender

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Copyright remains the property of the DIY DEN and may not be reproduced without permission.
Fender is constructed with a technique called "stitch and glass" popular with dinghy boat builders. plywood panels are cut and drilled then lightly joined with loops of wire. the inside of the joints is then covered with fiberglass tape and resin, when set the wire loops on the outside are trimmed and the outside of the joints are then "glassed".

**OPTIONAL:** Commercial quad plastic components can be adapted to fit the Buzzard

*Low cost option* - Trim rubbermaid or similar 45 gal garbage cans into a suitable shape.

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<td>Finish: Paint in colour of your choice</td>
<td>REAR FENDER</td>
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REAR FENDER MIDDLE

QTY 1 off

Material: Marine Plywood 6mm

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REAR FENDER TOP

Position In Rear fender

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---|---|---
Copyright remains the property of the DIY DEN and may not be reproduced without permission | Material: Marine Plywood 6mm | REAR FENDER TOP
FENDER RUBBER (rear)

QTY 2off

Material: Rubber 4mm

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FENDER RUBBER (rear)
Fender is constructed with a technique called "stitch and glass" popular with dinghy boat builders- plywood panels are cut and drilled then lightly joined with loops of wire- the inside of the joints is then covered with fibreglass tape and resin, when set the wire loops on the outside are trimmed and the outside of the joints are then "glassed"

**OPTIONAL:** Commercial plastic components can be adapted to fit the Buzzard  
**Low cost option:** Rubbermaid or similar 45 gal garbage cans trimmed into a suitable shape

**NOTE:** Left hand side is a mirrored copy
Material: Marine Plywood 6mm

Position in Front fender
FRONT FENDER TOP

QTY 2off

Material: Marine Plywood 6mm

Position In Front fender
FRONT FENDER BRACE

QTY 2off

Material: Marine Plywood 6mm

Position in Front fender
FRONT FENDER JOINER

QTY 1 off

Material: Marine Plywood 6mm

Position In Front fender assembly

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Front Fender Joiner
FENDER RUBBER (front)

Position In Front fender

QTY 2off

Material: Rubber 4mm

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MATERIAL

DON'S DIY DEN

BULZARD

FENDER RUBBER (front)
NOTE: If you are using a motorbike engine you will have to adapt the mounts shown to suit your chosen engine. Position the engine (on wooden blocks) in the frame with the drive sprocket as close to the swingarm pivot as possible. Ensure the engine is level (in the same attitude as in the donor bike). Use stiff card to fashion templates, then transfer the design to CAD (for lasercutting) or directly to the steel plate.

- Spacers may be required
- Position In Frame

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<td>Material: Mild steel plate 5mm</td>
<td>GENERIC MOTOR MOUNTS</td>
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Additional items required

Motor
I recommend using the Robin EX series which is a Overhead Cam engine (EX21-7hp), alternatively any horizontal shaft 4 stroke industrial engine up to a max of around 18hp
Motorbike engine between 200 and 500cc

CVT
Comet torque convertor to suit your motor (not needed for a motorbike engine)

Rims
Rear: 10" x 8.0" wide
Front: 10" x 5.0" wide

Tires
Rear: 22x12.00-10 (22" outer diameter x 12.00" wide - to fit a 10" rim) Tread to suit your terrain
Front: 21x10.00-10(21" outer diameter x 10.00" wide - to fit a 10" rim)

Shocks (hydraulic are preferable)
Rear: 345mm(13.6") eye to eye (extended)- 295mm/11.6” eye to eye (compressed)
Front-2 off: 370mm(14.4”) eye to eye (extended)- 300mm(11.8”) eye to eye (compressed)

Chain
#40 (½ pitch) commonly used on bikes and substantially stronger than #35 or #41

Bearings
30mm Insert bearings (2off) with flangettes - For rear axle
17x35x10mm bearings (6003 ZZ) (4off) for front hubs Your front rims may come with these already installed
10x26x8mm bearings (6000 ZZ) (4off) for front spindles

Brakes
Hydraulic units from motorbikes, scooters or go karts (2 for front wheels and 1 for rear axle)

GOOD LUCK! And drive carefully!
PS:Send jpeg pics of your progress for the builders gallery