

GRAVITY RACER WORKSHEET – CHASSIS PREPARATION

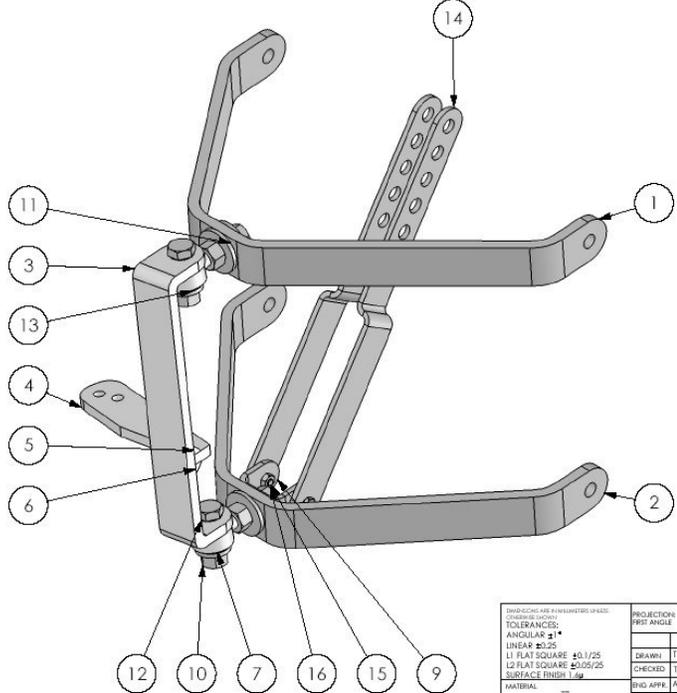
Clean up and prepare chassis for painting

Rub down, de-grease and **PAINT CAREFULLY** with hammerite

GRAVITY RACER WORKSHEET - WISHBONE MANUFACTURE UPPER AND LOWER

Using drawings, jigs and photographic sequence produce upper and lower wishbones

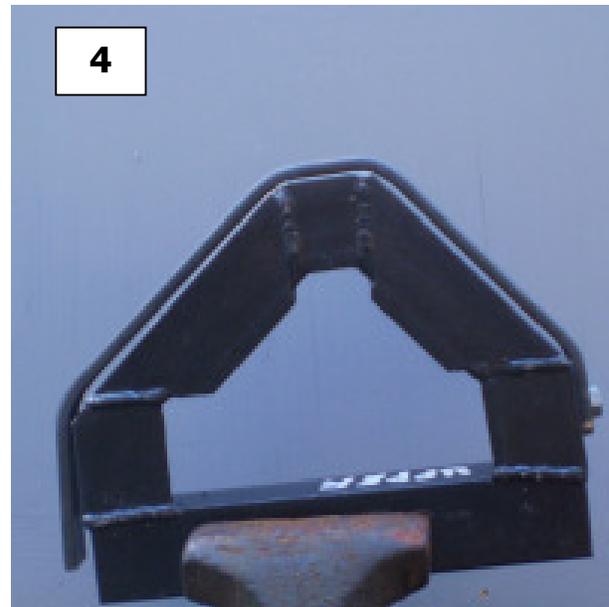
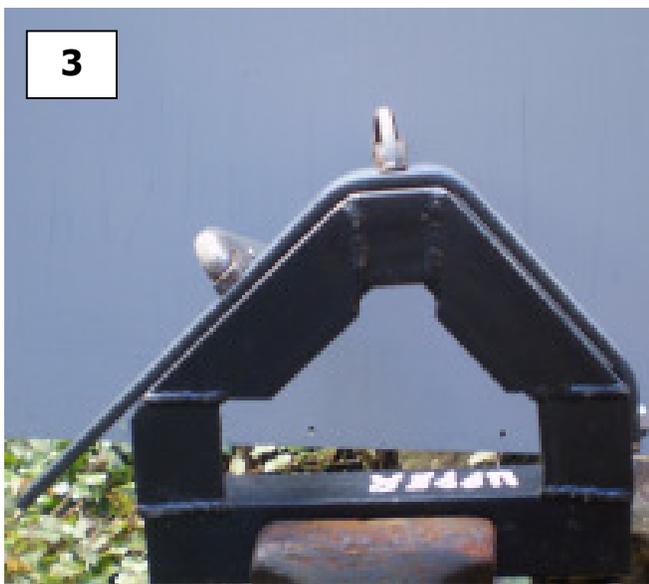
a) upper wishbone	b) lower wishbone
Material: hot rolled steel 25x6.	Material: hot rolled steel 25x6.
Cut blank 410mm long	Cut blank 410mm long
Note: drill hole to bolt material onto jig	Note: drill hole to bolt material onto jig
Bend to photographic sequence	Carefully finish with full radii and de-burr
Carefully finish with full radii and de-burr	Pass to painting team
Pass to painting team	



ITEM NO.	PART NUMBER	QTY.
1	UPPER WISHBONE	1
2	lower wishbone	1
3	upright	1
4	steering arm	1
5	bead9	1
6	bead10	1
7	rose joint m8 outer	2
8	rose joint m8 inner	2
9	front bottom link	1
10	Hexagon Nut ISO - 4034 - M8 - C	6
11	B T8.22M - Plain washer, 8 mm, regular	3
12	ISO 4017 - M8 x 30-C	2
13	B T8.22M - Plain washer, 8 mm, narrow	2
14	front adjust strut	2
15	ISO 4017 - M4 x 10-N	2
16	Hexagon Nut ISO - 4032 - M4 - D - C	2

<small>INDICATIONS ARE BY NUMBERS UNLESS OTHERWISE STATED</small> TOLERANCES: ANGULAR: $\pm 0.1^\circ$ LINEAR: ± 0.25 L1 FLAT SQUARE: $\pm 0.1/25$ L2 FLAT SQUARE: $\pm 0.05/25$ SURFACE FINISH: μ MATERIAL: --- FINISH: --- (DO NOT SCALE DRAWING)	PROJECTION:  FIRST ANGLE	 OXFORD HERWELL VALLEY <small>EST. 1973</small>										
	<table border="1"> <thead> <tr> <th>NAME</th> <th>DATE</th> <th>TITLE</th> </tr> </thead> <tbody> <tr> <td>DRAWN: T.COX</td> <td>12/11/07</td> <td rowspan="3">FRONT SUSPENSION ASSY</td> </tr> <tr> <td>CHECKED: T.COX</td> <td>12/11/07</td> </tr> <tr> <td>ENG APPR: A.NEEDHAM</td> <td>12/11/07</td> </tr> </tbody> </table>	NAME	DATE	TITLE	DRAWN: T.COX	12/11/07	FRONT SUSPENSION ASSY	CHECKED: T.COX	12/11/07	ENG APPR: A.NEEDHAM	12/11/07	
	NAME	DATE	TITLE									
	DRAWN: T.COX	12/11/07	FRONT SUSPENSION ASSY									
CHECKED: T.COX	12/11/07											
ENG APPR: A.NEEDHAM	12/11/07											
COMMENTS:	SIZE: A DWG. NO.: FRONT SUSPENSION ASSY	REV: A										
	SCALE: 1:2 WEIGHT:	SHEET 1 OF 1										

ENGINEERING
YOUR FUTURE
One Vision....Several Initiatives



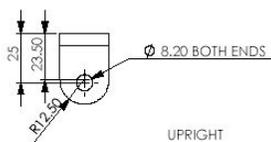
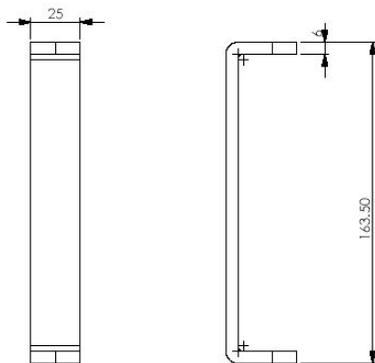
GRAVITY RACER WORKSHEET - STEERING UPRIGHT

Material hot rolled 40x6

Cut using pattern part, fold then drill

Weld in steering arm – ask staff or technician before doing this

Carefully finish with full radii and de-burr



GRAVITY RACER WORKSHEET – WHEEL PREPARATION

Strip old bicycle wheels of tyres, inner tubes and bearings.

Place bearing, nuts, spindles in plastic bag and label, these will be needed later

Clean up and consider painting wheels if appropriate

GRAVITY RACER WORKSHEET - STEERING COLUMN AND SUPPORT

Cut and fabricate these components to the pattern parts supplied



GRAVITY RACER WORKSHEET - SEATING AND SAFETY HARNESS

Devise simple system for attaching the seat to the chassis

Check with teaching staff before proceeding with manufacture

Decide how the safety harness will be attached to chassis to ensure it is in the correct position relative to the seat

Important note: harness must be adjustable for different drivers to securely hold driver in place.

ENGINEERING
YOUR *FUTURE*
One Vision....Several Initiatives
