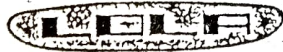




LOLA T90/50  
FORMULA 3000  
INFORMATION PACK

F 3 0 0 0  
LOLA CARS LIMITED



TECHNICAL SPECIFICATION SHEET — LOLA T90/50  
FORMULA 3000 CAR

**CHASSIS:** A 100% carbon/honeycomb composite monocoque autoclaved for increased structural integrity and superior surface finish constructed from an upper and lower section moulded to form the aerodynamic profile.

The two sections are bonded, riveted and bolted to the internal bulkheads of machined aluminium and composite construction to give optimum torsional stiffness, resistance to fatigue and increased driver protection. The revised driver position with moulded seat back significantly improves the aerodynamics, and provision has been made to allow the easy accommodation of a range of different size drivers.

The engine is used as a fully-stressed member with the rear suspension mounted on the Lola one-piece bellhousing/transmission case.

**DRIVER SAFETY:** A totally new chassis design has enabled the revision of key safety areas:

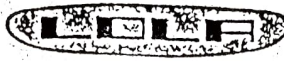
- a) The construction is such that the bottom section is a one-piece carbon unit integral with the floor, thus eliminating the stress concentration area in the "step" floor design of the previous T89/50 car.
- b) Revisions in bulkhead location and design have further increased chassis integrity.
- c) The nose section and chassis are designed to meet the mandatory impact tests as a minimum requirement.
- d) Electrically operated fire extinguisher and life support system, six-point seat harness and safety fuel cell all meet or exceed mandatory FIA regulations.

**BODY-WORK:** Full bodywork including engine cover with integral airbox in thermovacuum-formed composite materials.

Revised tall, narrow-entry side pods for improved aerodynamics with redesigned internal ducting to increase cooling efficiency.

Front and rear wings are of carbon fibre construction to very advanced design.

A range of multi-element rear wing configurations is available to optimise aerodynamic performance at the vastly different circuits raced on during F3000



- FRONT SUSPENSION:** Independent by unequal length upper and lower wishbones with inboard Koni integral gas-oil damper/spring units operated by pushrods. All components manufactured in streamlined tube.
- Spring/damper units mounted longitudinally on top of chassis moulding with excellent accessibility via a removable hatch.
- Fabricated alloy steel uprights with steel "live" hubs. Independent camber (by means of shims) and toe adjustment.
- STEERING:** Lola rack and pinion with adjustments for steering wheel height and length, and alternative pinion ratios.
- REAR SUSPENSION:** Independent by upper and lower wishbones and track control links with Koni integral gas-oil damper/spring units mounted inboard and operated by pushrods. Revised rocker ratio and rocker mounting frames to cope with increased stress loadings due to improved vehicle performance.
- All components manufactured in streamlined tube.
- Fabricated alloy steel uprights with steel "live" hubs. Independent camber (by means of shims) and toe adjustment.
- BRAKES:** Front and rear: outboard-mounted Brembo hydraulic 4-piston radially-mounted calipers acting on cast-iron ventilated and grooved floating discs. Separate front/rear master cylinders with driver-adjustable brake bias and adjustable pedal mountings. Cooling ducts front and rear with adjustable cooling flow.
- WHEELS:** Cast-magnesium alloy, single hexagon nut fixing.
- Front: 13" x 10"  
Rear: 13" x 14.75"
- TRANSMISSION:** Lola cast-magnesium integral transmission/bellhousing with FGC Salisbury differential and Hewland 5-speed FGB internals, plus oil pump and filter.
- Oil cooler.
- Small diameter driveshafts with inboard and outboard



Revised DFV oil system to take advantage of engine air/oil separator.

CWP ratio 10:31.

**ELECTRICAL SYSTEM:**

"Uninyvin" fire-resistant wiring.  
"Honeywell" aircraft spec switches.  
12V battery.

Modular loom specification designed in conjunction with engine loom to simplify the installation.

**INSTRUMENTS:** Electronic rev counter, oil pressure/oil temperature and fuel pressure/water temperature gauges, oil pressure warning light.

**OPTIONAL:**

Lola-Pi "Black Box" mark IV Intelligent Instrumentation System incorporating full digital driver display and segment-type tachometer, warning alerts and "instant" chassis/engine performance analysis printouts via off-line printer buffer.

**COOLING SYSTEM:**

Twin side-pod-mounted aluminium water radiators with header tank and alloy pipes. Setrab oil cooler.

**ENGINE INSTALLATION:**

Chassis mounting points and exhaust system venting through under body, to suit Ford Cosworth DFV and Mugen 3-litre V8 engines.

**FUEL SYSTEM:**

Single central safety fuel cell with integral collector and separate filter.

Capacity: 130 litres.

**LUBRICATION SYSTEM:**

Dry sump oil tank integral with transmission maincase.



TECHNICAL DATA — LOLA T90/50  
FORMULA F3000 CAR

HUBS	Tightening Torques	lb ft
	Wheel Nuts	450
	Front Hub bearing Clamp Nut	190
	Rear Drive Peg Bolts	40

The Hubs have

Right-hand thread on right hubs with Red nuts and  
Left-hand thread on left hand hubs with Blue nuts.

With this system the nut is not self-loosening

The nut should remain tight providing:

- 1 Sufficient tightening torque is used
- 2 Both the wheel and nut cones are true
- 3 The wheel centre has adequate stiffness in compression

However, as a safety measure an R-pin is provided and should be fitted at all times.

When tightening the 6-off rear hub retaining bolts, hold the bolt with the two flats provided. This will prevent the single flat (passing under the Timkin cones) from distorting the bearings by cam action.

The front and rear hub units are set up ex-factory with .005" pre-load in the bearings.

**GEARBOX:** If a gearbox oil cooler is required one can be plumbed in between the plug on the top of the end cover and a modified pinion oil feed plug. Both contain a 9/16" UNF thread (-6). To modify the pinion oil feed plug drill down from 9/16" UNF thread dia 0.312" to break out into cross drillings. Finally plug the end cover to maincase oil feed gallery with a 3/8" UNF plug into the end cover. If you subsequently revert to running without an oil cooler remember to remove the 3/8" UNF plug from the end feed gallery, or no oil can reach the pinion or pinion bearing.

**ADJUST**  
**SHIMS:** For camber setting each 0.063" shim is worth 0.5 degrees, front and rear.

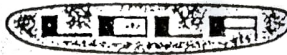


DIMENSIONS: Track: front 67.4" (1712 cm)  
rear 62.4" (1585 cm).

Wheelbase: 103.5" (2629 cm).

Weight with engine approx to regulation min (540 Kg).

We reserve the right to vary the specification to suit the requirements of motor racing.



**WINGS:** On all wings minimum/lowest flap or wing position is nominated hole 1.

The front wing has 20 holes of adjustment.

The 3-piece high downforce rear wing has 5 holes of adjustment.

The 3-piece standard rear wing has 8 holes of adjustment.

The 2-piece low downforce rear wing has 5 holes of adjustment.

The rear lower flap has no holes of adjustment.

**LUBRICATION  
AND**

**CAPACITY:** Engine Dry Sump Oil Tank capacity 10.5 pints/6litres  
10.5"/267mm below filler cap in tank tower.

Gearbox and Differential capacity 3.5 pints/2litres.

Wheel Bearing: Grease Castrol FCB  
or Grease Castrol BNS

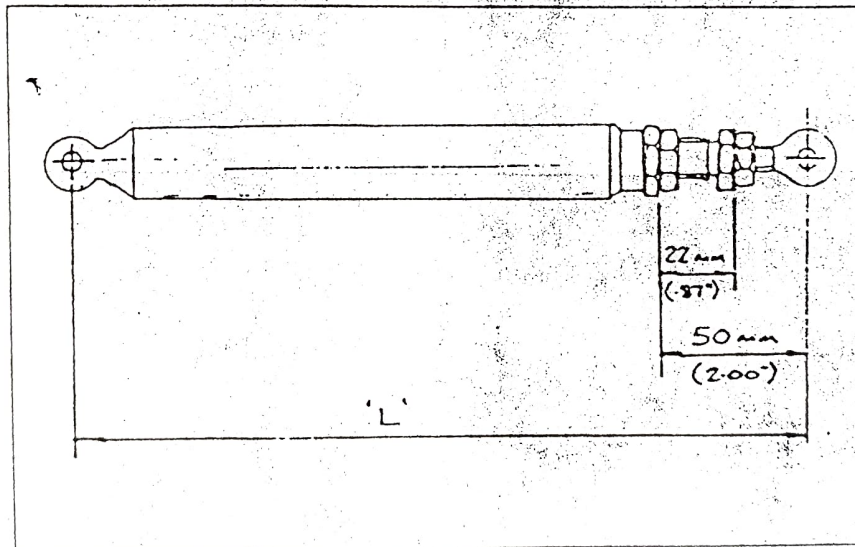
CV Joints: Grease Duckhams Q5795



## F3000 Chassis specification sheet

### JAPANESE

Wheelbase	103.5"	2629mm
Front track	67.5"	1714.5mm
Rear track	62.4"	1585mm
Front damper (open)	244mm	(73 VALVE)
Rear damper (open)	274mm	(75 VALVE)
Front pushrod 'L'	26.75"	679.45mm
Rear pushrod 'L'	13.09"	332.49mm

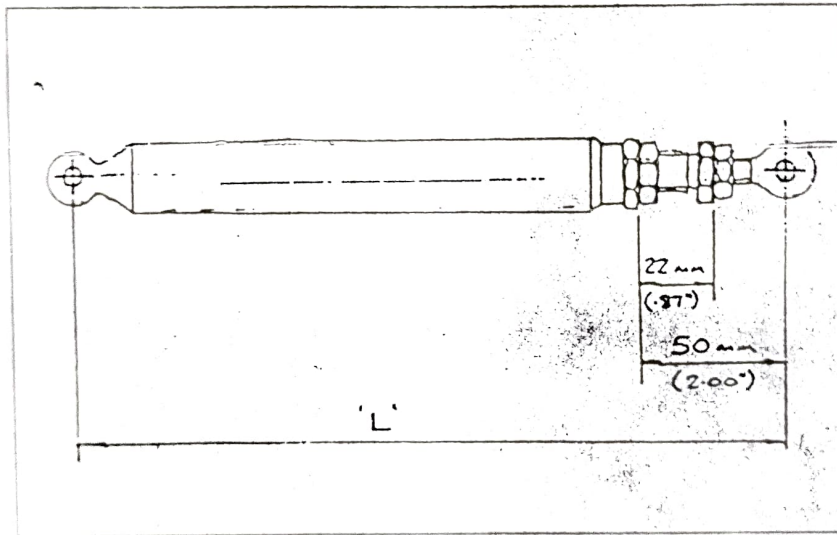




# F3000 Chassis specification sheet

## EUROPEAN

Wheelbase	103.5"	2629mm
Front track	67.4"	1712mm
Rear track	62.4"	1585mm
Front damper (open)	244mm	(93 VALVE)
Rear damper (open)	274mm	(93 VALVE)
Front pushrod 'L'	26.94"	684.28mm
Rear pushrod 'L'	13.50"	342.90mm





Not any other than this locknut should be fitted in all circumstances, also when different bumpstops are being used.

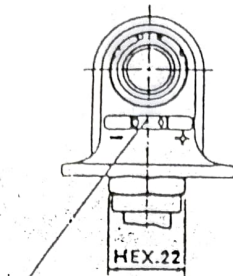


Fig. 1

REBOUND ADJUSTER

From left to right, or anti clockwise - increase 1 sweep = 1/4 turn.

Never machine damper body in this area, otherwise damper can't be serviced anymore.

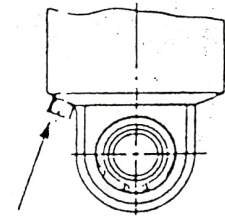
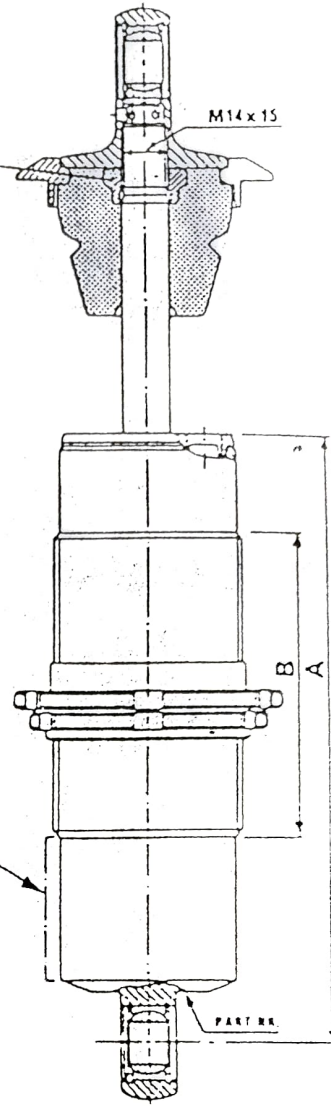


Fig. 3

Filler plug must not be damaged



The top eye 71-52-04-070-0 has a rebound adjustment window set at 90° to axis of eye and is 5 mm longer than the standard eye 71-52-07-002-0. A damper equipped with this special top eye has a 5 mm longer Lmax and Lmin and will show an uneven number.

NOTE:  
Dampers with an even type number and dampers with the next odd type number have the same stroke and dimensions A and B.

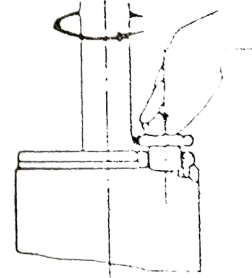
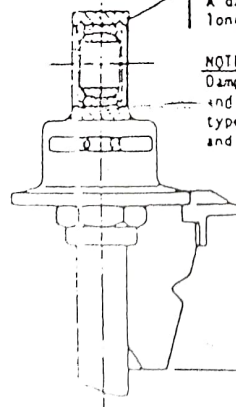
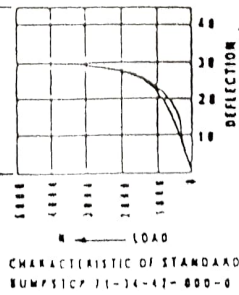
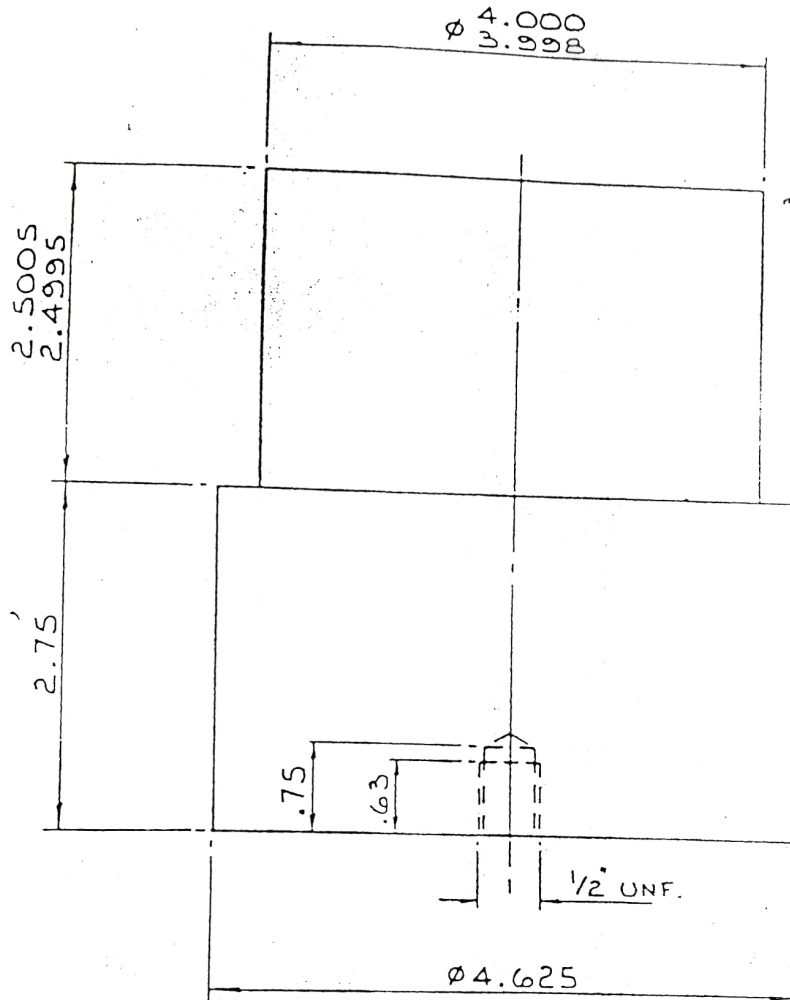


Fig. 2



LOLA F3000

GAS - HYDRAULIC DAMPERS

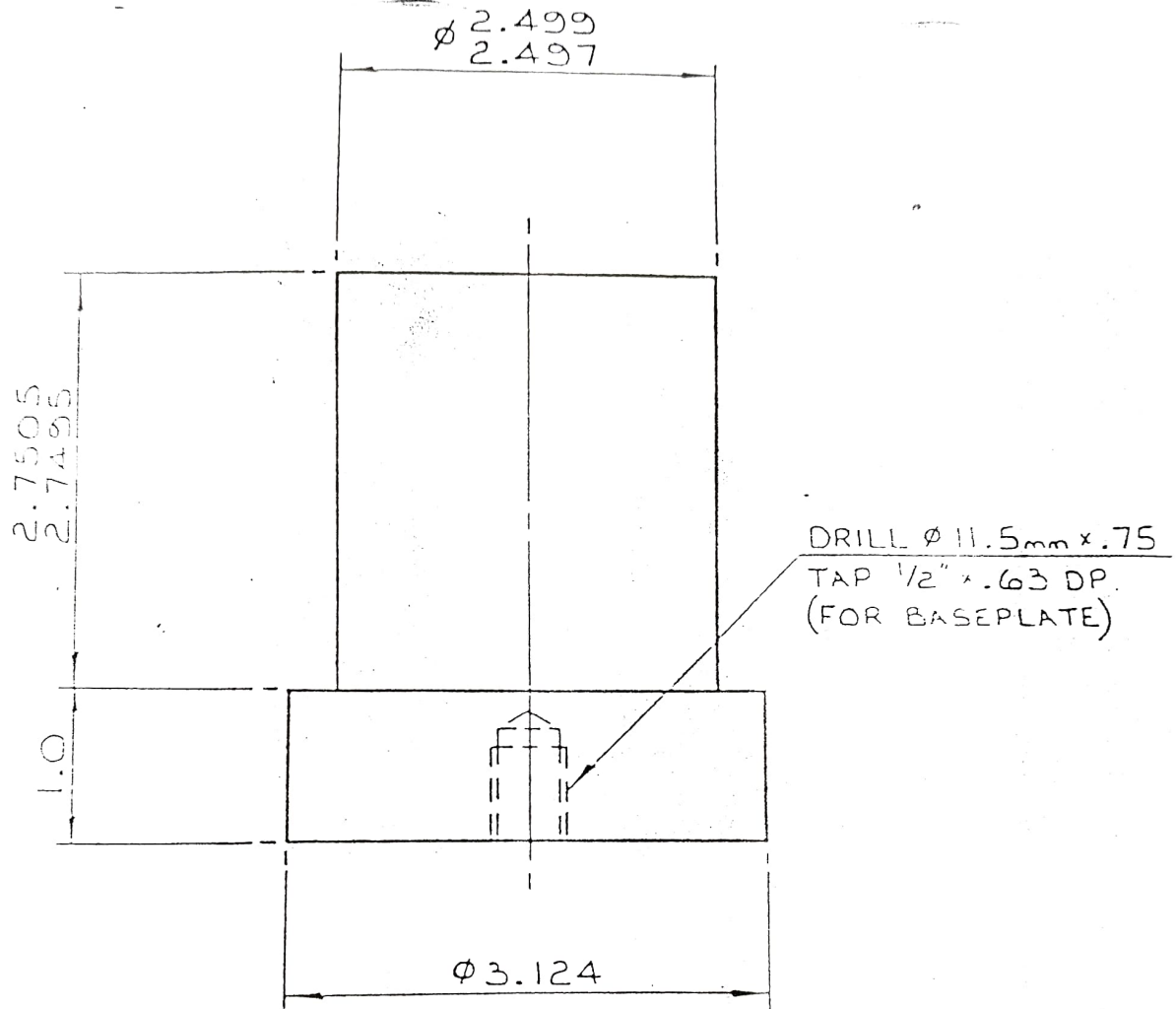
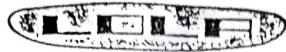


F.3000 RR. WHEEL BEARING, DUMMY AXLE FOR PRE-LOAD SET-UP.

MAT<sup>L</sup> ~ HS 15

LOLA F3000

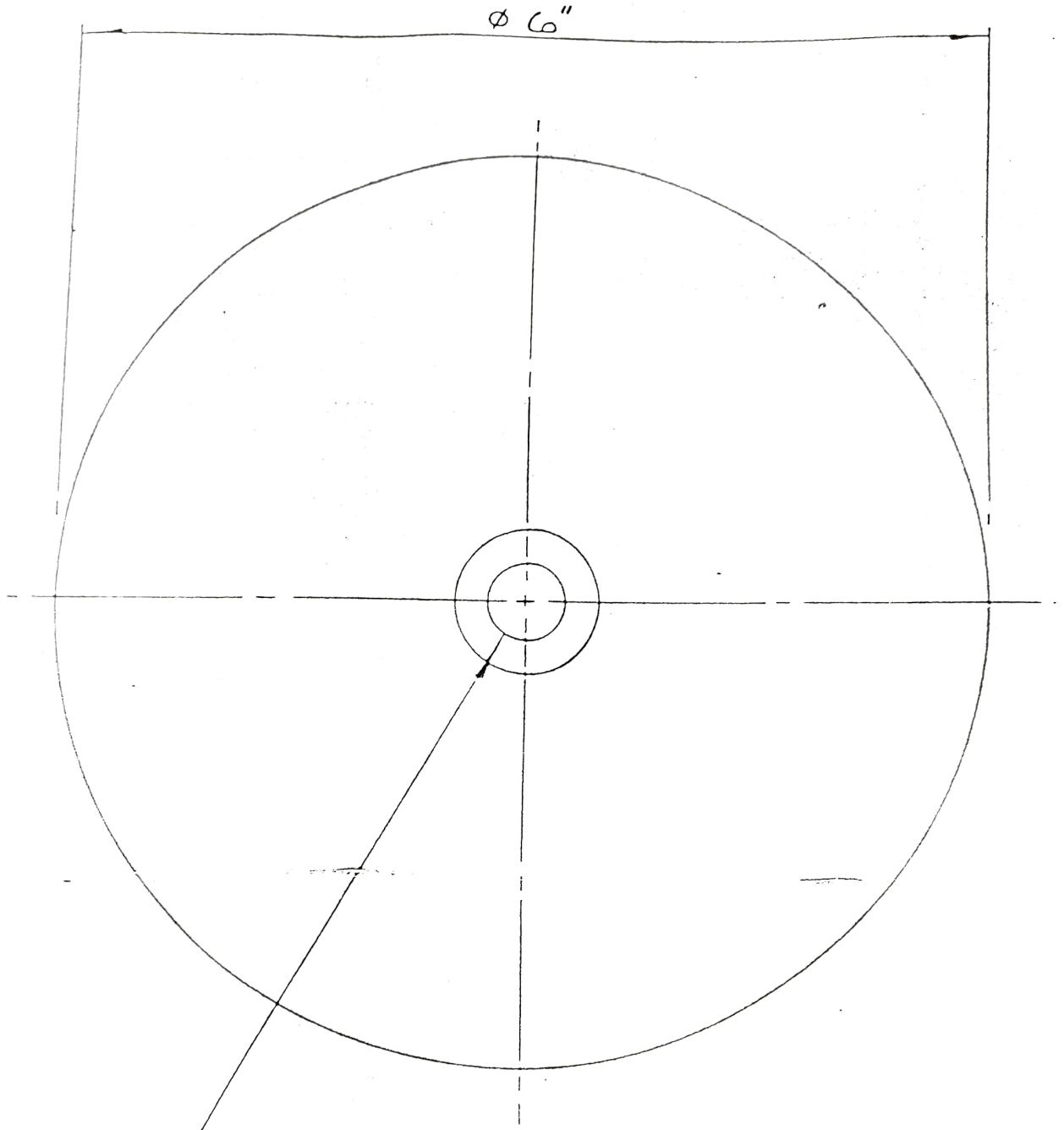
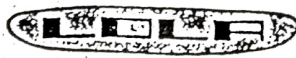
RR. WHEEL BEARING,  
DUMMY AXLE FOR  
PRE-LOAD SET-UP



F3000 FT. WHEEL BEARING, DUMMY AXLE FOR  
PRE-LOAD SET-UP.

MAT<sup>L</sup> ~ HS 15

LOLA F3000
FT. WHEEL BEARING, DUMMY AXLE FOR PRE-LOAD SET-UP



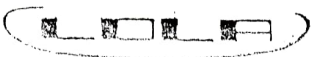
DRILL & CSK TO SUIT 1/2" CSK SCREW

F3000 BASEPLATE - PRE-LOAD SET-UP

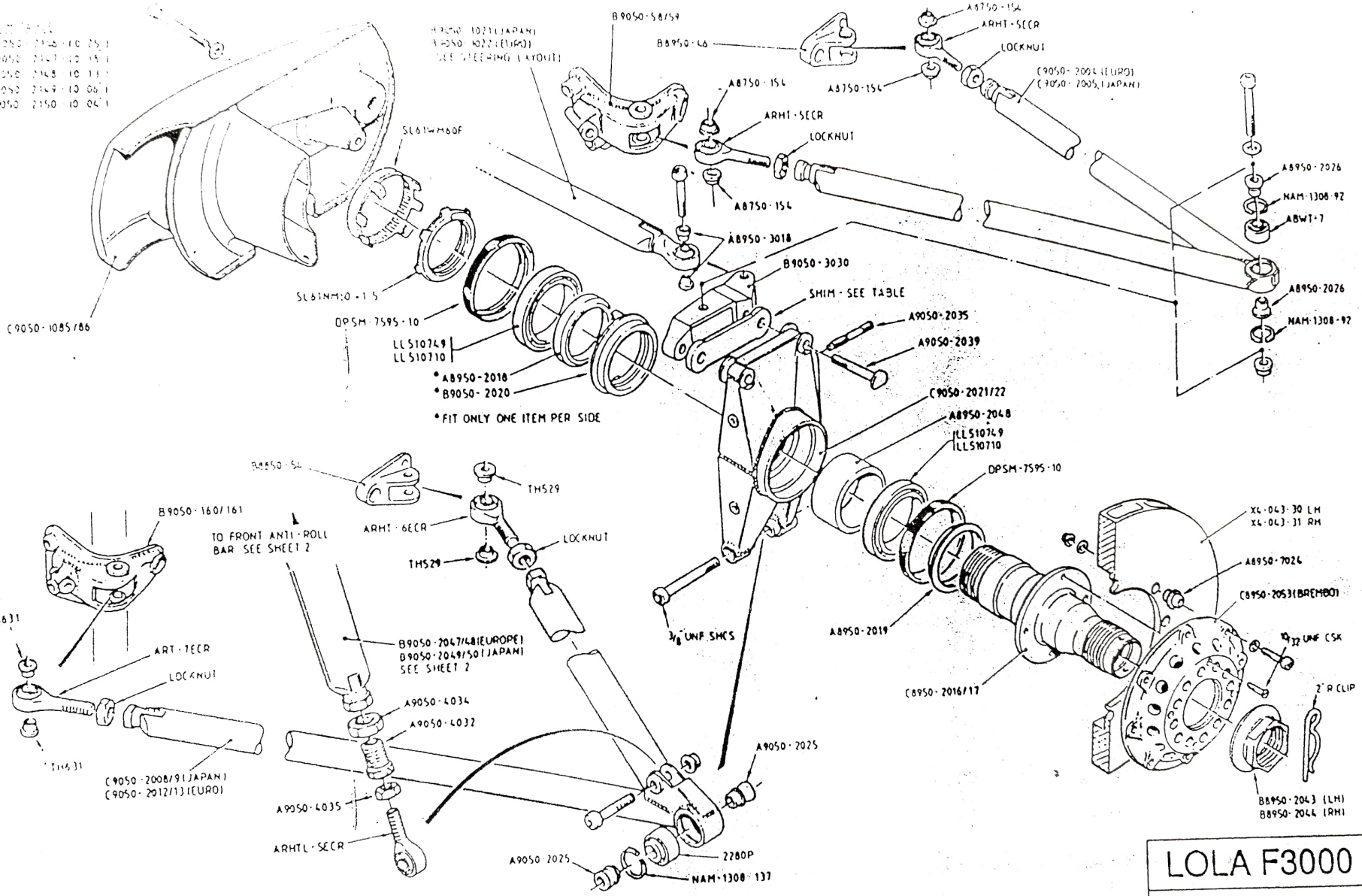
MATL. ~ HS 15 3/8" OR 10mm THICK

LOLA F3000

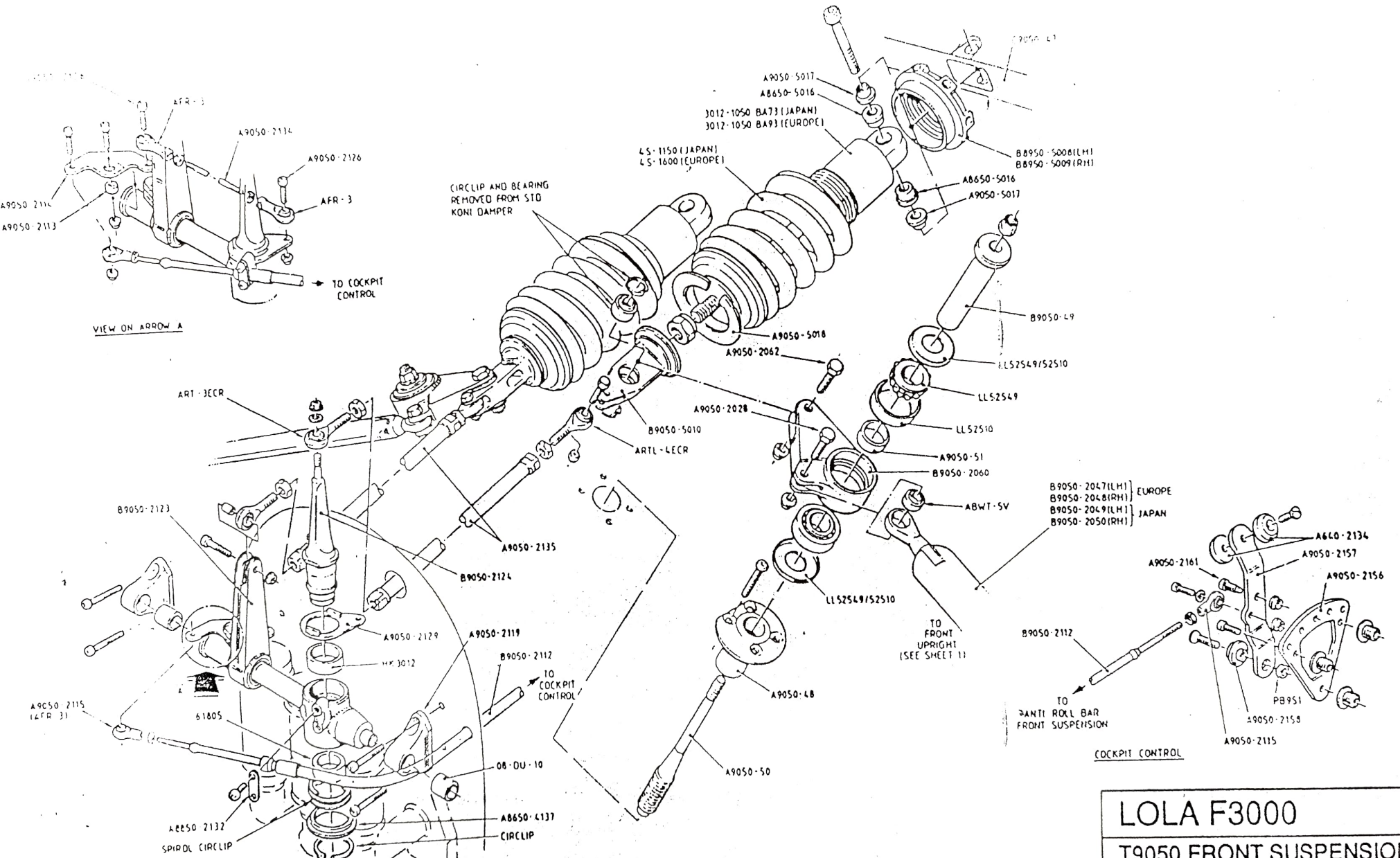
BASEPLATE - PRE-LOAD  
SET-UP



A9050-2145 (10 25)  
 A9050-2147 (10 15)  
 A9050-2148 (10 11)  
 A9050-2149 (10 06)  
 A9050-2150 (10 04)



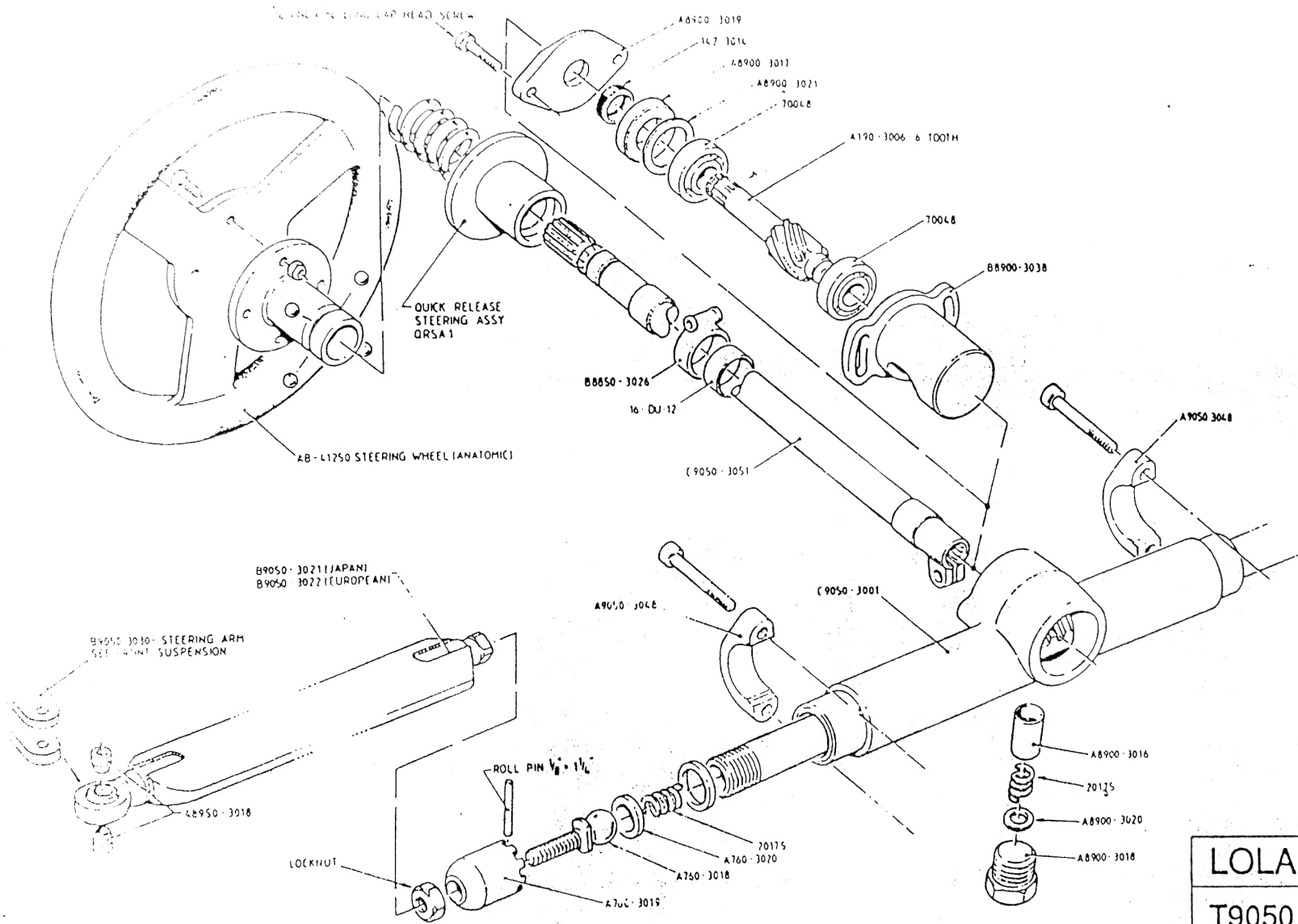
**LOLA F3000**  
**T9050 FRONT SUSPENSION**  
**LAYOUT (SHEET 1)**



**LOLA F3000**  
**T9050 FRONT SUSPENSION**  
**LAYOUT (SHEET 2)**  
**ANTI ROLL BAR**



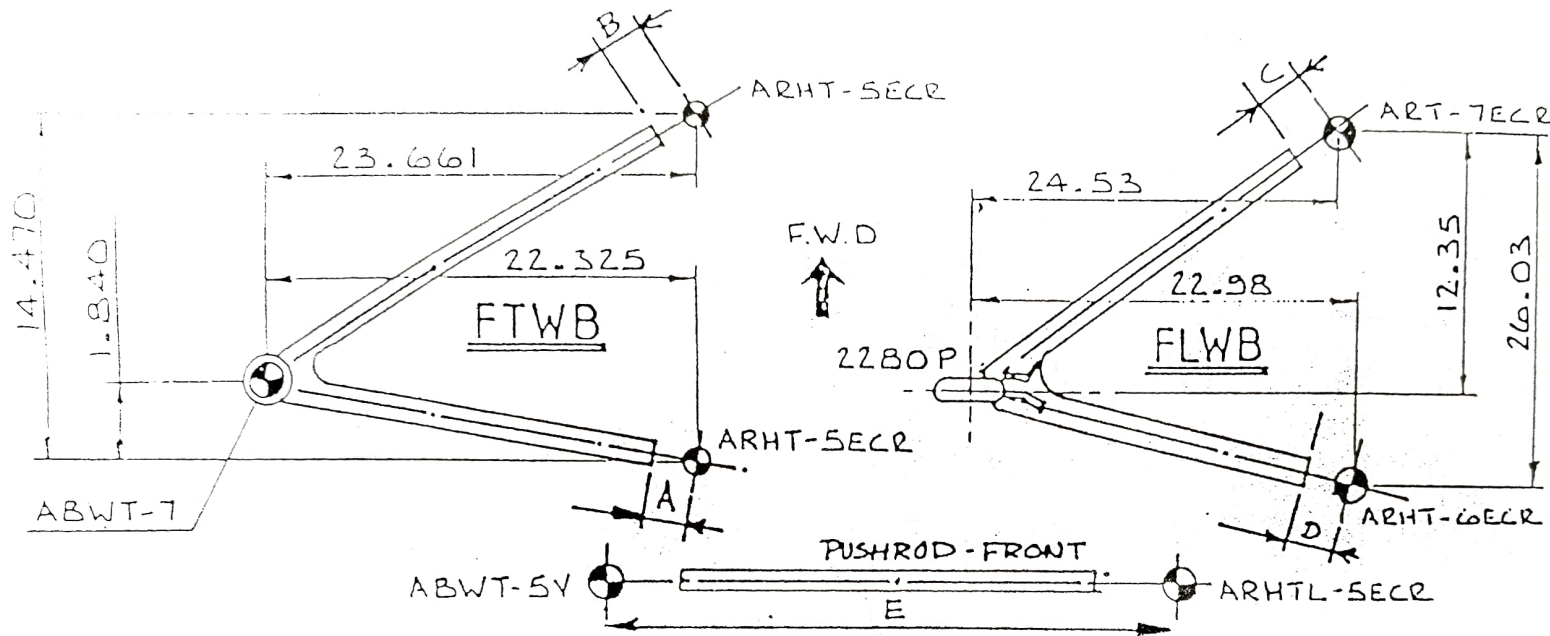




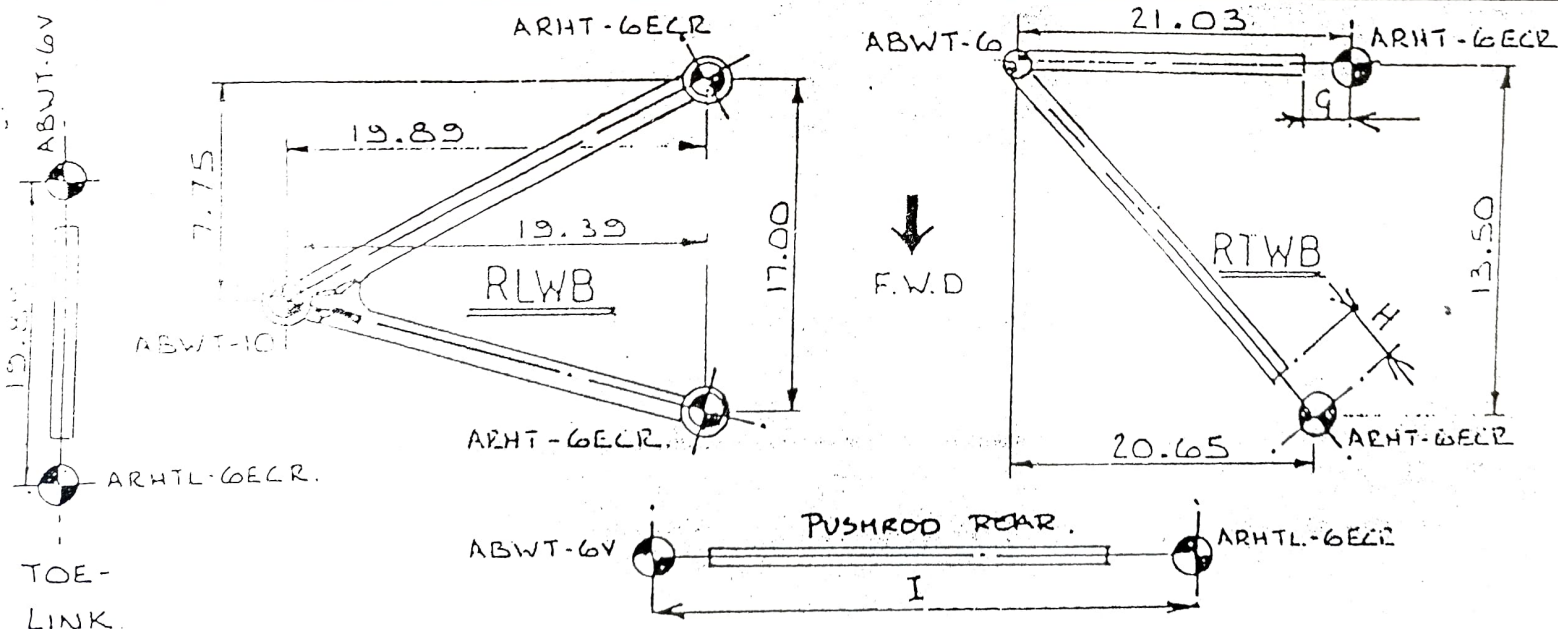
**LOLA F3000**  
**T9050 STEERING**  
**LAYOUT**



LOLA



DIM.	LENGTH
A	1.06
B	1.06
C	1.38
D	1.25
E	26.94
G	1.25
H	1.25
I	13.50

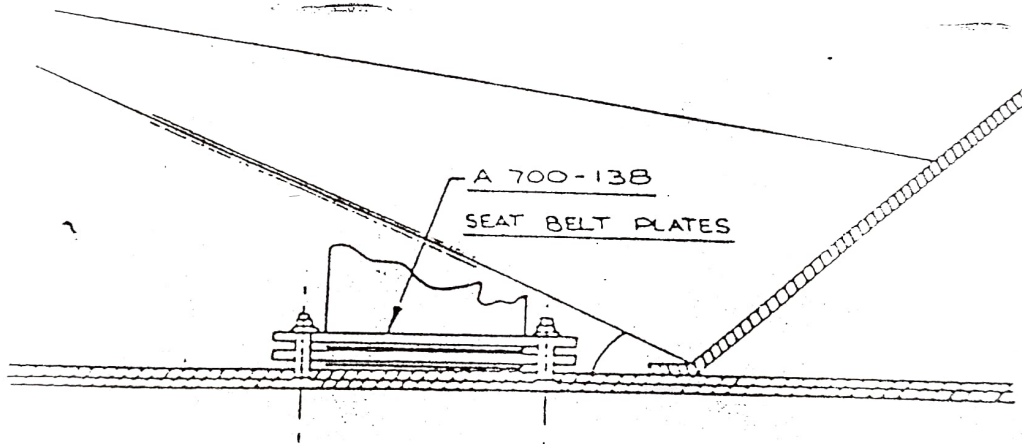


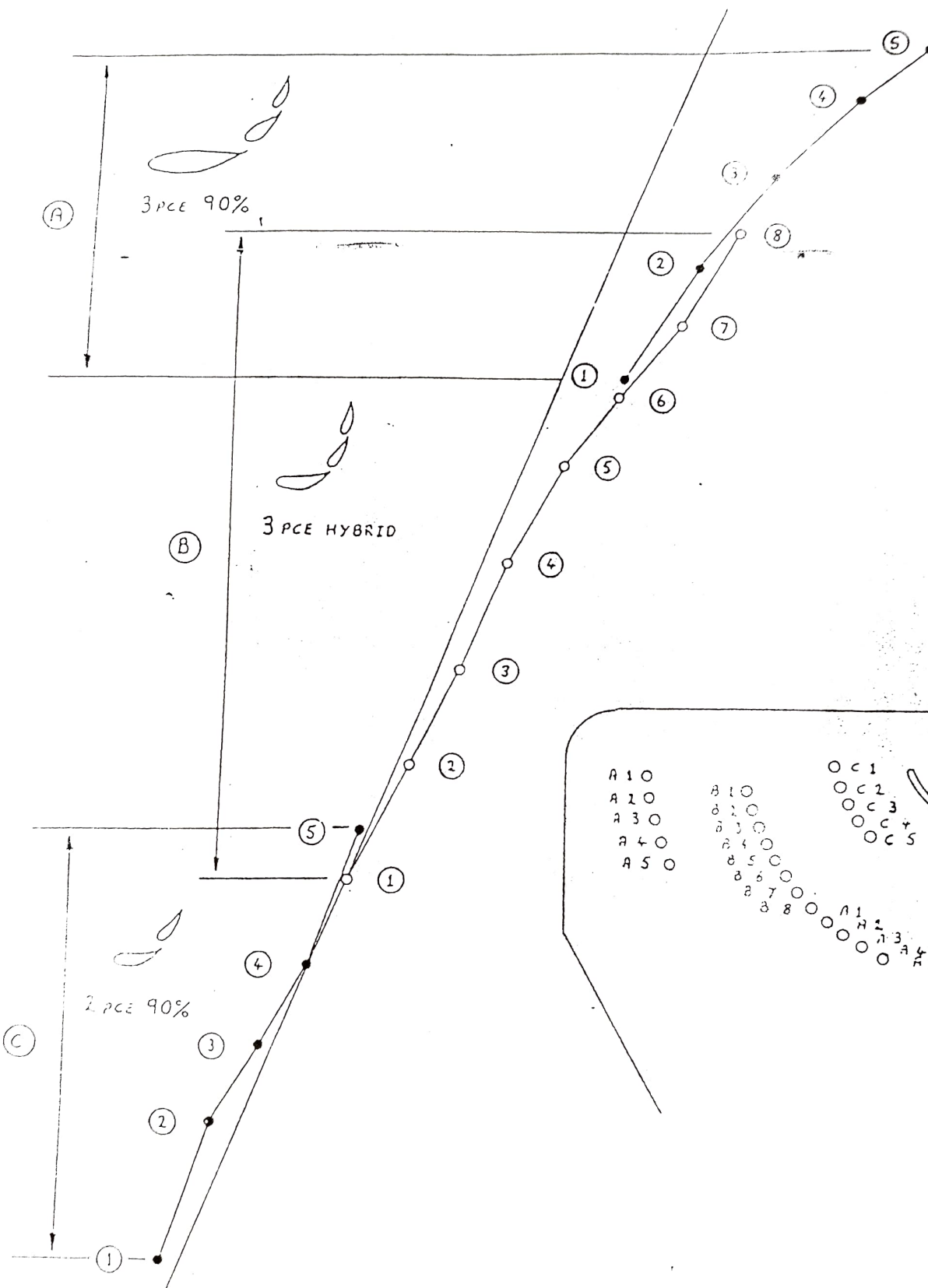
LOLA F3000(EURO)  
JOINT IDENTIFICATION  
SETTINGS



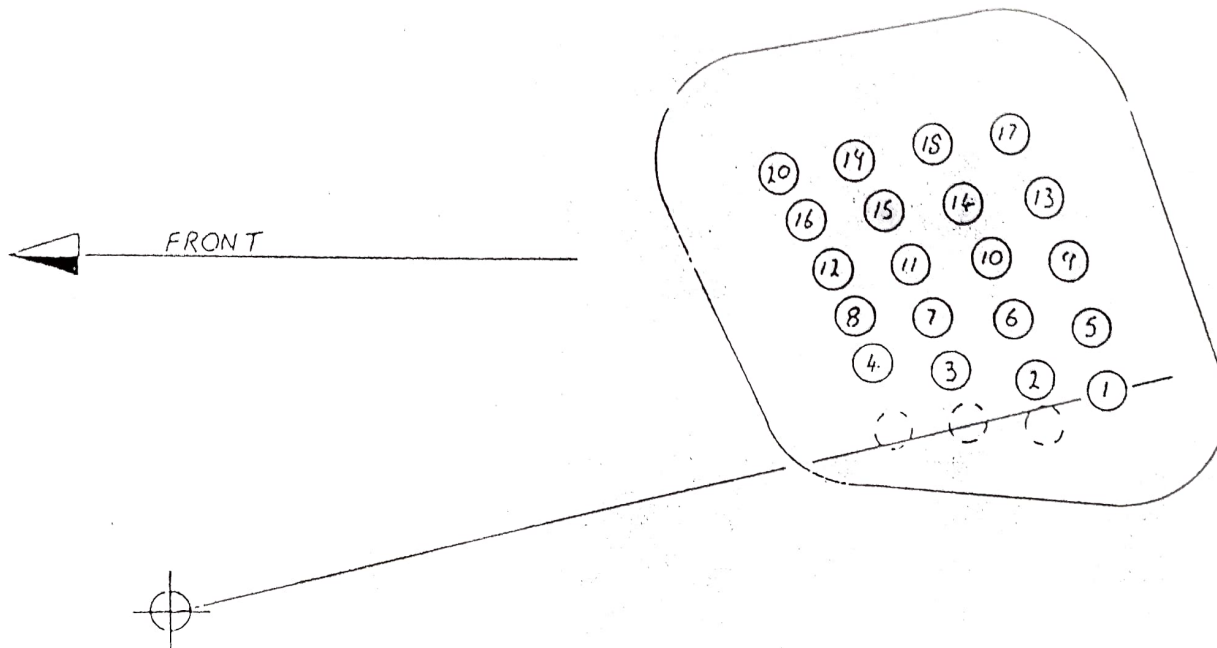
## PLEASE NOTE

SEAT BELT LAP STRAP BRACKETS ARE LEFT UNFITTED TO ENABLE  
SUITABLE DRIVER POSITIONING. USING THE FOUR PLATES  
PROVIDED, DRILL FLOOR PANEL AND CLAMP SEAT BELT DOWN  
USING COUNTER SUNK BOLTS THROUGH FLOOR PANEL AND  
REINFORCING EDGE OF SIDE SKIN, SEE SKETCH BELOW.





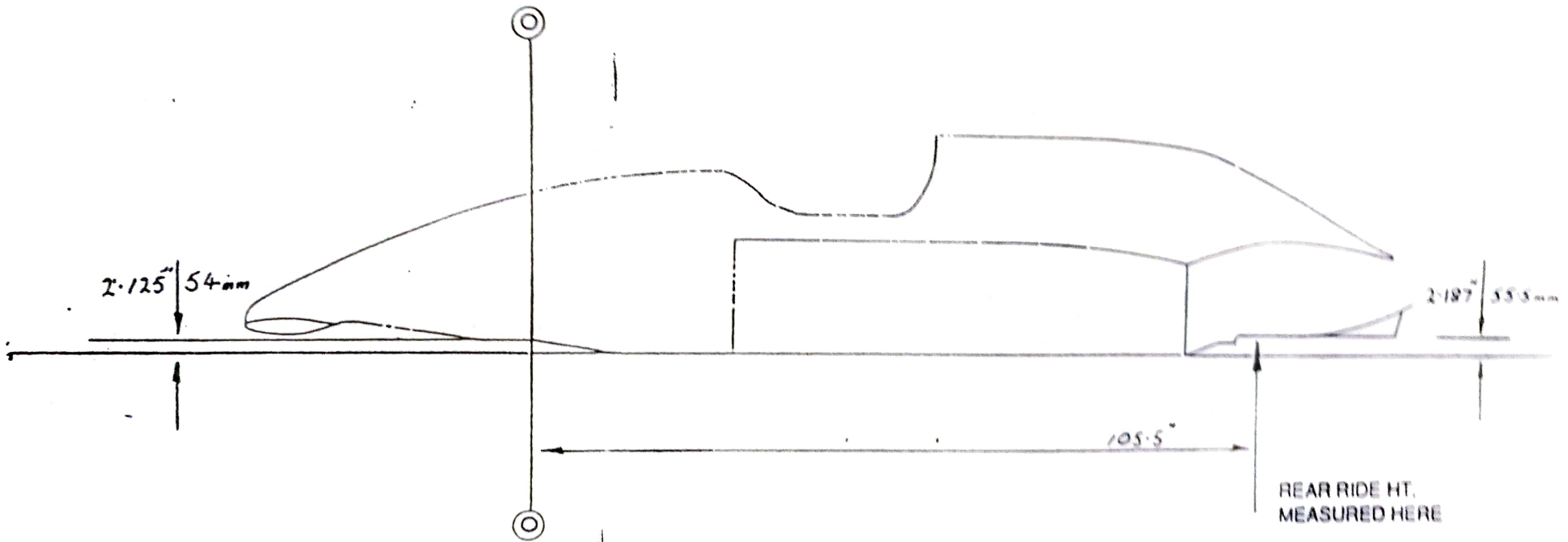
LOLA F3000  
 T90/50 WING GRAPH  
 OF LIFT AND DRAG



VIEW ON LEFT-HAND SIDE  
FRONT WING AS 20 HOLES

LOLA F3000
FRONT WING FLAP ADJUSTMENT

FOR TRUE RIDE HEIGHT  
 FRONT SUBTRACT 2.125" or 54mm  
 REAR SUBTRACT 2.187" or 55.5mm



Front ride HT. = 61 - 54 = 7" / 178  
 Rear " " = 92 - 55.5 = 36.5" / 928

LOLA F3000
LOLA 9050 RIDE HEIGHT POSITION





Front hub set up

Date:

UPRIGHT No.	LH	UPRIGHT No.	RH
Dummy Axle =	2.750	Dummy Axle =	2.750
Depth to Bearings =		Depth to Bearings =	
Subtract		Subtract	
Bearing Thickness x2 =		Bearing Thickness x2 =	
Subtract		Subtract	
Pre Load =		Pre Load =	
Subtract		Subtract	
— Bearing spacer DIM =		— Bearing Spacer DIM =	

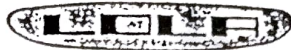
Rear hub set up

Date:

UPRIGHT No.	LH	UPRIGHT No.	RH
Dummy Axle =	2.500	Dummy Axle =	2.500
Depth to Bearings =		Depth to Bearings =	
Subtract		Subtract	
Bearing Thickness x2 =		Bearing Thickness x2 =	
Subtract		Subtract	
CV Joint Thickness =		CV Joint Thickness =	
Subtract		Subtract	
Pre Load =		Pre Load =	
Subtract		Subtract	
— Bearing spacer DIM =		— Bearing Spacer DIM =	

Compiled By: \_\_\_\_\_

NOTE: A New Sheet MUST be obtained from Drawing Office every time an upright is assembled. Uprights should be individually numbered sheets TO BE RETURNED to Drawing Office.



### F3000 Chassis setup sheet

Date	18-1-90	Driver
Circuit	JAPAN	Engine
Chassis	90/50	Confn. No.

Gear ratios	1st	2nd	3rd	4th	5th	6th
-------------	-----	-----	-----	-----	-----	-----

Fuel  
 Differential 60/30  
 CWP 10:31  
 Oil cooler  
 Radiator  
 Steering Pinion

SETTING	FRONT	REAR
Suspension	STD	STD
Springs	1150 PRELOAD	1400
Anti-roll bars	PART No.2123	PART No.4102
Anti-roll bar blds	PART No.2124	
Dampers	73	75
Rebound		
Bump		
Bump rubbers		
Packers		
Ride Ht.		
Castor		
Toe		
Brakes		
Wing		
Angle		

Tyre codes  
 $\phi$

↑
—
↓

Cambers

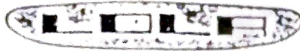
↑
—
↓

Tyre pressure  
 Hot (Cold)

( )	↑	( )
—		—
( )	↓	( )

Corner weights

↑
—
↓



### F3000 Chassis setup sheet

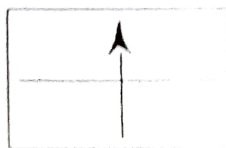
Date	18-1-90	Driver
Circuit	EURO	Engine
Chassis	90/50	Conf. No.

Gear ratios	1st	2nd	3rd	4th	5th	6th
-------------	-----	-----	-----	-----	-----	-----

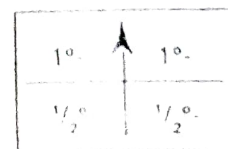
Fuel  
 Differential 60/30  
 CWP 10:31  
 Oil cooler  
 Radiator  
 Steering Pinion

SETTING	FRONT	REAR
Suspension	STD	STD
Springs	1600 PRELOAD 5T	1900 PRELOAD —
Anti-roll bars	—	—
Anti-roll bar blds	—	—
Dampers	93	93
Rebound	4	3
Bump	2	7
Bump rubbers	STD KONI	STD KONI
Packers	—	—
Ride Ht.	61mm	92mm
Castor	3.5°	0°
Toe	20' OUT	20' IN
Brakes	BREMBO	BREMBO
Wing		
Angle		

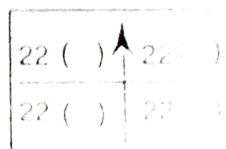
Tyre codes  
 $\phi$



Cambers



Tyre pressure  
 (psi) (Cold)



Corner weights





### F3000 Chassis setup sheet

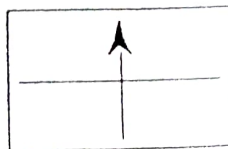
Date	18-1-90	Driver	
Circuit	EURO	Engine	
Chassis	90/50	Confn. No.	

Gear ratios	1st	2nd	3rd	4th	5th	6th
-------------	-----	-----	-----	-----	-----	-----

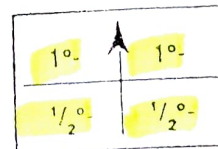
Fuel  
 Differential 60/30  
 CWP 10:31  
 Oil cooler  
 Radiator  
 Steering Pinion

SETTING	FRONT		REAR	
Suspension	STD		STD	
Springs	1600	PRELOAD 5T	1900	PRELOAD —
Anti-roll bars	—		—	
Anti-roll bar blds	—		—	
Dampers	93		93	
Rebound	4		3	
Bump	2		7	
Bump rubbers	STD KONI		STD KONI	
Packers	—		—	
Ride Ht.	61mm		92mm	
Castor	3.5°		0°	
Toe	20' OUT		20' IN	
Brakes	BREMBO		BREMBO	
Wing				
Angle				

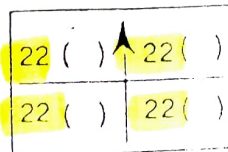
Tyre codes  
∅



Cambers



Tyre pressure  
Hot (Cold)



Corner weights

