

F1200 Specs

Oil

For initial engine start up (after rebuild) fill crankcase to 1/4" above dipstick full mark. Use mineral base 10W30 or 10W40 for initial start to seat rings.

For initial start up have spark plugs removed and crank engine until oil pressure shows on gauge. Install plugs and start engine. Run for 1 – 2 minutes at 1500 – 2000 rpm then shut down. More oil will need to be added to bring the level back to 1/4" above the sticks full mark. After the oil level is correct the engine can be run again to set timing, etc. but should never run more than 2 min max when the car is not moving. Run at least one 20 minute track session before changing to synthetic oil 10W30 or 10W40.

Oil Pressure

Start up cold 60 – 80 psi

Warmed oil minimum 20 – 25 psi at 1500 rpm

Oil Temp

180° F minimum

220°F optimum

Synthetic will operate up to 260 - 280° F but this is very risky on these engines and leaves no safety zone 280° F stop engine – determine cooling problem.

Ignition Timing

Check point gap at .016" - .018" or 48" – 52" dwell

Always adjust timing dynamically

Bring engine rpm to 3200 – 3500

Set timing at 37° max. **NO MORE**

To retard turn distributor clockwise

To advance turn distributor counter clockwise

Fuel

Do not exceed 100 octane – power will drop off (7:1 cr)

Race fuel or premium pump fuel works fine

Always run a fuel filter and change every 3 – 4 race dates

Fuel Additives – octane boost, etc. can damage fuel cell bladders

Valve Adjustment

Engine must be cold

Remove distributor cap – crank engine (wrench on pulley bolt) until rotor points to cylinder #1 plug wire position and TDC mark on pulley is aligned with split in engine case. Remove valve covers – check lash at cylinder #1 – adjust lash on both intake and exhaust to .006" – crank engine 180° backwards (counterclockwise facing pulley) – valves on #2 are in position to be adjusted – crank engine 180° backwards again – valves on #3 cylinder can be adjusted – crank engine 180° backwards – valves on #4 cylinder can be adjusted.

Valve Cover

Check gasket – if not secure all the way around replace

Clean the cover thoroughly – remove old gasket and silicone – check gasket size on clean cover – stretch gasket as needed. Apply a 3/16" bead of silicone to clean cover and press gasket into place.

Be sure valve cover bale snaps into place when installed.

Bale can be bent to tighten cover seal.

If cover tends to leak smear a small amount of silicone on gasket to head surface before installing.

Engine Condition Test

Compression Test – 110 – 130 psi

Cranking compression will vary with ring combinations

Leak down test optimum 1 – 5% can be as high as 10 – 15% depending on ring combination

Oil filter inspection – small amounts of aluminum or brass are OK

Any copper colour material means further testing should be done.

Cylinder Head Temperature

Keep as cool as possible 375° F to 425° F is average but the cooler the better – more power

Intake Manifold

A very fragile part – handle with care

The manifold must have a support from the carb stud to the back.

When installing put a small bead of silicone around the outside of the flange to head mating surface before setting in place.

Tighten nuts equally side to side until snug – do not over tighten.

Poor idle or no idle can indicate a leak at the manifold to head junction.

Spray WD40 around manifold to head junction - if idle speed increases or smooths out manifold seal is leaking.

Chassis set up Front End

Camber – use offset bushing 1.25° – 1.75° negative

Toe – tight – twisty (Shannonville) 0 – 1/8” total out

Fast – sweeping (Mosport) 0 – 1/8” total in

Tire pressure (Falken) 13 – 16psi cold

Chassis set up Rear End

Camber 4.5 - 6° negative

Droop limiting ½ of camber setting - eg. 5° camber 2.5 at droop limit

Toe 0 – 1/8” in total – never toe out

Tire pressure 15 – 18 psi cold

Rear Shock

Canister – compression – changes spring rate

Controls speed of wheel movement upward going over bumps

Control 1 – 6 higher the number the more resistance to move

Adjustment is made by turning the knob on the canister

Rebound – Control rate that wheel returns to track surface after rising during bump

Adjustment is needle and seat style

0 – 21 flats of shaft bolt RH thread

Closer to 0 (closed) more resistance

Closer to 21 (open) less resistance

Brake Adjustment

There are 2 brake adjusters in each drum – One for each shoe

All brake adjusters are right hand thread

A star shaped nut is turned to lengthen or shorten the adjuster

Adjust each shoe until it just contacts the drum then back off 1 – 2 clicks

Be sure to pump brake pedal while adjusting to centre brake shoes in the drum

Bleed brake system before each race weekend

Clutch Adjustment

Clutch adjustment is made by lengthening or shortening the lower rod end in the slave cylinder

There should be 1/8” – 3/16” free play at the top of the clutch arm

Bleed the clutch after adjustment and before race weekends.

Transaxle

Gear oil should be approx. ½" below fill plug hole

Check before each race weekend

Be sure vent hose is positioned to drain fully – gear oil blocking vent tube can cause axle seal and input shaft seals to leak

Spec Sheet

Maximum engine rpm 6500 – 6700

Rear axle nut 250 lb – go to next hole

Ignition wires – wire core not carbon core

Plugs Bosch W5BC

Points Bosch for 009 dist – black and white feed wire for strongest spring

Condensor Bosch

Wheel bolt 55 lbs/ft

Plug gap .028 - .035"

Point gap -.016" - -.018"

Dwell 48° - 52°

Gear oil 80 – 90 G5

Brake Fluid Dot 4 – minimum

Notes

F1200 series steel wheels (Diamond Wheels) must be counter sunk at bolt holes for proper thread depth

Spec Sheet Chassis

Wheel bolt torque	55 – 60 ft/lbs
Rear axle nut for drum	250 ft/lbs or to next hole
Transaxle gear oil	80w90 G5
Brake Fluid	Dot 3 or Dot 4
Clutch Fluid	Dot 3 or Dot 4
Spec tire	Falken Azenis RT615K+
Tire pressure front	13 – 16 psi cold
Tire pressure rear	15 – 18 psi cold

Note

All new F1200 series wheels (made by Diamond Wheels) must be counter sunk at bolt holes for proper thread depth.

Fuels containing alcohol can damage fuel cell bladders.

Fuel cell foam should be replaced every 3 years.

Spec Sheet Engine

Oil – mineral base for initial startup	10w30 or 10w40
– synthetic after break-in	5w30 or 10w40
Oil pressure cold	60 – 80 psi
Oil pressure warm	25 – 25 psi @ 1500 rpm
Oil temperature minimum	180°F
Oil temperature maximum	240°F
Ignition point gap	.016" - .018"
Ignition point dwell	48" * 52"
Ignition points Bosch for 009 distributor (blackwire with white stripes)	
Ignition condenser Bosch for 009 distributor	
Ignition timing at 3500 rpm	37° MAX BTDC
Fuel requirements	90 – 100 octane
Valve adjustment (cold)	.005" - .007"
Engine cranking compression	110 – 130 psi
Engine leak down	5% - 15%
Cylinder head temperature	425°F or lower
Spark plugs Bosch	W5BC
Spark plug gap	.028" - .035"
Ignition wires – use wire core (do not use carbon core)	
Firing Order	1 4 3 2

Engine Rebuilding

The engine should be taken apart after 1 season of use or approx. 18-24 hours of running. Normal wear items – bearings, gaskets, seals, rings will need to be replaced.

Transaxle Rebuilding

If the transaxle is not damaged it will work for 3 – 4 race seasons without a rebuild – proper gear oil will increase longevity.



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