

rolled the metal into cones for a proper expansion chamber. That forced them to change the rules."

On Influences...

"In racing the person I most admire is Dave Webster because he's got what I'm getting. He pushed things forward. People watch the scooters racing now and the front runners are flying and it looks good. People crawling round is no good – that's not racing."

On business...

"I've got enough work that I can pick and choose. I don't sell parts, I only want to build complete packages and to develop stuff. I can build a customer a 32.5hp race motor including pipe, crank, modified 34mm carb, gearbox, ignition and drive-train for about £3500-4000. James Campen races one of those engines. He has had a very reliable season and only changed the piston once all year."

On the new Tino Sacchi kit...

"It will be an alloy-Nicasil reed valve 225 kit – but it can be a 200cc as well. You could say elements are similar to the RB kit, but I've been working on this since January – way before the RB came out. At the moment it's bolted to a bog stock Indian casing with no matching and it's already putting out 31hp with a straight-line pipe and 28mm carb. With the 34 carb it has 33hp and 21ft-lb torque which is massive. That'll probably yield another 2hp. I should think once the pipe is coiled up you should have 29-30hp with the small carb and 31-32hp with the big carb as a pure bolt-on."

"With this kit I'm trying to make sure that everything is matched – the ignition, the port timing, the pipe and the compression ratio. Everything is doing what it should within the specified rpm range. The kit will be for all-round use – designed to work with a 28mm carb and filter all under the sidepanel so that you aren't

using gallons of fuel. Peak power will be at 8000rpm but low and midrange will still be phenomenal, with peak torque at 6500rpm. It won't have a lot of over-rev though so you cannot bully the engine, which is what breaks them.

"I'm also designing new cylinder heads for Tino's kit with a centre squish and room for eight bolts, but it will still take a normal spark plug. There will also be options for a centre plug head and a choice of two different compression ratios.

"I don't know how the exhaust will be constructed yet because it's still under development, but I think the plan is to make it in Italy. It's a very fat pipe but I'm sure it can be made to fit a road-going scooter. The complete kit should be on sale next year through Cambridge Lambretta in the UK. **SC**

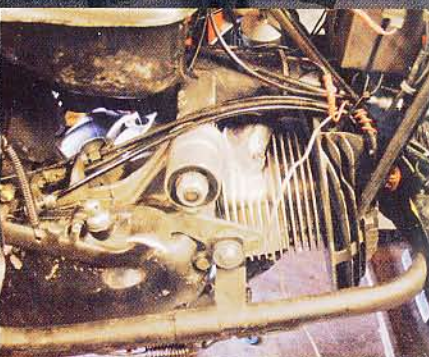
■ To contact Performance Tuning call 01604 765425 or email performancetuning@btinternet.com



All the sections of the exhaust are designed in computer software. Charlie first makes the pipe in paper – then in cardboard – while trying to formulate a layout.



The main chamber actually sits where the flywheel cowling would have been.



At the core of the racer is a humble two-transfer Mugello cylinder. Note the length of the removable exhaust stinger. This exhaust layout makes for easy gearing changes.

Inside the beast



Carb: Dell'Orto VHSB – D-shaped to 39.5mm
Ignition: Varitronic flywheel with the weight removed and boss welded to prevent the rivets breaking. A Malossi-based ignition was also tried but suffered reliability problems.

Crankshaft: Modified Tino 'Supercrank' webs fitted with a long Japanese con rod and welded pin.

Cylinder: A normal Nicasil-lined Mugello cylinder at 67mm with two ports and the larger (V2) transfer openings. There's a lot of controversy about it, but it is a two-port not a three-port cylinder. They've been hard to get but CLW are restocking them for '08.

Cylinder head: From one of the last of the Yamaha 400cc motocrossers, machined to take removable domes. It's two days' work on the cylinder head alone. Domes are sealed to the heads with special heat transfer sealant.

Pistons: 67mm cast piston with a Japanese Teflon coating using different piston ring and gudgeon pin. The piston gets changed every two meetings.

Transmission: Eight-plate clutch with aluminium plates. Gear cluster made using gears pinched from other Lambretta boxes. These are pressed on and TIG welded in position.

Chassis: Serveta Jet 200 frame, GP legshields, no lower rebound bushes in the forks and an extended rear shock to raise the scooter by about 25mm to improve ground clearance.

Forks: GP forks with modified disc brake links – the fork feet have been modified to take larger link bolts, Bitubo front shocks for Indian forks used as dampers with the springs removed and heavier weight oil.

Front brake: Innocenti disc brake hub and backplate converted to hydraulic. The disc is a thin EBC ATV disc that mounts to a floating carrier and uses matching EBC pads which are specially machined to suit so that they can't rotate.

Rear brake: Standard drum with heel-operated pedal.

Tyres: Dunlop TT91 in the dry, Sava in the wet on standard narrow rims.