



# Inside **The GP mechanic's toolkit**

Your name is Alex Briggs. Your job is prepping and tweaking Valentino Rossi's pair of factory Yamaha M1 MotoGP bikes, at a different track nearly every weekend. This is what it takes...

Words Simon Hargreaves Photography Chippy Wood



## The Essentials

These are the tools Alex can't do without; the ones he plucks from a carbon tray

### COTTON GLOVES

**1** 'These aren't special factory gloves - they're cheap, general purpose gloves from a supplier in a Japan. They cope with heat well - they don't melt on hot engine parts - and they're brilliant for things you wouldn't normally think of. Like, you can use them to wipe the bike or the wheels down, like a rag, or for scooping gravel out of stuff. Obviously they've got no grip, so they're perfect for spinning T-bars.'

### BRAKE PLATES

**2** 'These are simple plates (hidden under gloves) for clipping into the brakes to hold the pads apart while we do wheel changes. It's so we can get the wheels back in without worrying about the pads fouling the brake discs.'

### RADIO HEADSET

**3** 'It's so we know when the rider is coming in, or information can be shared easily while we work. The four-strokes are so loud these days you just cannot hear a thing. Two-strokes used to be much quieter.'

'The worst thing about the headsets is the team often take the Mick out of each other over the radio. So, if you get spotted talking to someone in the pitlane, all you get in the headphones is abuse.'

### 10MM LONG REACH SOCKETS

**4** 'For undoing the front axle pinch bolts. And anything else recessed and 10mm.'

### 12MM SOCKET

**5** 'This fella's for undoing the brake caliper bolts. Every single driver in my kit is a torque wrench.'

'It's probably fair to say that many home mechanics don't even have a torque wrench. However, for us, every critical fastener on a factory bike is torqued to the correct setting so the torque wrench is vital.'

### 30MM SOCKET

**6** 'This is for the rear axle nut. The reason some of the wrenches have tape on them is because the gloves we wear for spinning T-bars have no grip. But sometimes we need grip. So, we wrap grippy plumbers tape around the sockets and handles.'

whenever Rossi appears in pitlane (on his bike)

### FUEL TANK BOLTS

**7** 'The tank comes off with four bolts, which makes things easier. They're 10mm. Better still Yamaha are pretty good at standardising their bolt head sizes so one socket or spanner will undo a number of different parts.'

### WHEEL SPACERS

**8** 'These are for the front wheel. It's not rocket science. Having a tray to drop bits into so you don't lose them is a good idea too.'

### 27MM SPANNER

**9** 'For wheel changes - it undoes the front wheel axle.'

## Tools for the job

Some old favourites for fixing factory Yamaha M1s and coffee machines. Plus Rossi's favourite bar grips...



### TWISTS AND TURNS

Like nearly all race mechanics, Alex likes nothing better than twirling and snipping with the lockwire pliers.

'I think, out of all the tools, the lockwire pliers are the most special. Lockwiring stuff still gives me a buzz.'



### UNLIKELY ALLIES

Various tools including telescopic magnetic reach, centre punches, impact driver, wire brush, ruler, marker pens and tape. And a Ducati cigarette lighter...

'The lighter is for sealing up stray ends of fabric. The other tools are bits and bobs that come in handy. I've fixed coffee machines and stuff in motorhomes using this drawer.'

Precision screwdriver set: 'I would make a terrible electrician because I don't understand electricity. I'd kill myself in a week.'

Spare tubing: 'Just comes in handy.' VR stickers: 'So we can tell which bits go with which bike.' Hammers and chisel: 'For when you need a hammer and chisel.'



### HEAVY LIFTING GEAR

Block and tackle and suspension blocks: 'This lot is for lifting the engine in and out. With three people we can do an engine swap in about an hour and a half. The black arms are substitutes for the rear shock. Having these means that when the shock is out we can still move the bike on its wheels.'

'You might notice there's a pair of bar grips at the back of the drawer. Little secret: Valentino always uses CBR600 grips. Always has, on every bike he's ridden. I guess he used them once, found he liked them, and he's used them ever since. Why change if you like something?'

# 'Mechanics see simple things'

From working on buses to serial winner with Rossi via Doohan

**A**LLEX BRIGGS IS 44, and has worked in MotoGP for 20 years. He started out as a motocross racer, funding his habit with an apprenticeship as a bus mechanic. By 1992 he'd given up his dream of becoming motocross world champion and instead became a much in demand motocross race team mechanic.

So sought-after in fact, he was contacted by Jeremy Burgess, who'd heard through the racing grapevine about Briggs' desire to work in Europe. Burgess was working for Rothmans Honda Grand Prix team, who were expanding with new Aussie rider Daryl Beattie alongside Mick Doohan. By 1994, Burgess and Briggs were working with Doohan, forming the nucleus of a team that would collect five rider's titles in a row between 1994 and 1998.

After Doohan's career-ending crash in 1999, Briggs moved with Burgess to work with Valentino Rossi ('the rider' as he respectfully refers to him), first for Honda (three world titles), then Yamaha (four), then Ducati (none) and now back at Yamaha again.

Ask Briggs exactly how the job has changed over the years, and you get the

impression he hankers after the old days of two-strokes, and the time before electronics entered the sport.

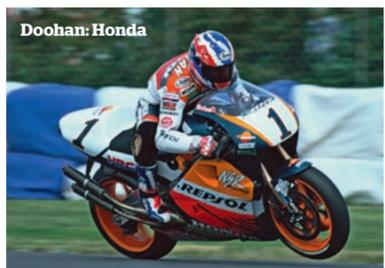
'In terms of workload, I preferred the two-strokes because it was constant work, all day. You'd do a fresh engine, you'd stop, you'd take the heads off, put new pistons and rings in, and all session you'd be changing main jets. That doesn't happen now – don't get me wrong, you're still really busy. You always do whatever you can in the time you've got allotted. So if today we mostly have suspension and chassis work to do, we just do more of that – in an effort to make our rider go round and round in circles faster than the other riders. So it's still busy.'

Everything changed when a new face joined Honda in 2000 – 125 and 250 World Champ Valentino Rossi.

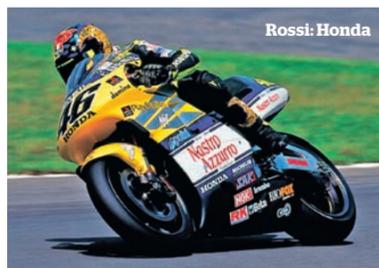
'Almost always the first thing anyone asks is, "What's Valentino really like?," says Briggs. 'And it's always the same answer: he's an ordinary, nice bloke with this extraordinary ability to ride a bike faster than anyone else. We've been motocrossing and go-karting, gone to discos, driven rental cars, had parties in his home town, eaten in restaurants and



'There are so many bits and bobs to deal with – once upon a time there used to be four exhausts, a seat and an engine'



Doohan: Honda



Rossi: Honda



Rossi: Ducati



Rossi: Yamaha

special functions. Normal fun stuff. He's got a fantastic sense of humour and it's always a laugh. He tells a fantastic story. He once dragged a blind drunk mechanic out of a pub by himself, and got him back to his hotel. That's a normal, bloke thing, looking after your mates.'

And if that's the answer to the first most-asked question, what about the second one: what's Jeremy Burgess really like? As a boss, he looks pretty scary...

'Oh, his bark is worse than his bite. No, he's been really great, from the day I started working with him. He's one of those guys people don't really know – an enigma. He looks at things differently to other people, and I think that's one of the reasons he's so good at his job. It's like that story of the kid who sees the bus stuck under the bridge and everyone running around trying to get it out, and the kid says, 'just let some air out

of the tyres.' JB sees the simple, but hidden, things normal people miss. I think there's a bit of that in all mechanics.'

In terms of his day job, the move from two-stroke NSRs to four-stroke RCVs and M1s had a big impact on Briggs' role.

'At first the sheer number of hours it takes to build a four-stroke MotoGP engine necessitated specialists. The first couple of years we had them in the team, mechanics like we were, who specialised in the engine because it'd take so much longer. But it evolved so in the end the engines just come from Japan. So, as mechanics, it became that we swapped the engines in and out and that's how it is now.'

Briggs says it'd take around an hour and a half to completely remove a four-stroke motor from a chassis and fit another. But that's not his biggest problem: 'Crashes are

much worse now, for us, because there are so many bits and bobs to deal with – sensors and electronics all over – where once upon a time there used to be four exhaust pipes, a seat and an engine.'

That sounds like a lot of work. 'People like to talk about mechanics burning the midnight oil to get a crashed bike race ready again, but the truth is it rarely happens. In 20 years I've never spent a whole night on a bike – late ones, sure, but not all nighters. It's just not necessary.'

After Yamaha's success, the two barren years at Ducati are a fresh memory. Briggs sounds less comfortable talking about the experience for no other reason, it seems, than he's simply being polite. He's not the kind to gossip or dish any sort of dirt, and he probably wouldn't have the respect he does in MotoGP if he did. But he offers a

very interesting glimpse into why things didn't go to plan...

'There's nothing wrong with the engine, nothing wrong with the frame, in my opinion,' he says. 'It's not about V-angle or that stuff. The engine is fast, no problem there. Maybe it's not the most easy to control, but that's all detail. I think the best way to describe it is you can measure and measure and measure some things, but if you don't listen to what people are telling you, you won't fix anything. The one thing there's just no room for in a race team, in a pit garage, is politics. It's got to be all about making the bike right for the rider.'

'But what do I know?' he adds, laughing. 'I'm just a bus mechanic!'

Four days after we spoke to Briggs, 'the rider' won at Assen – his first victory since Sepang, Malaysia, in 2010. **BIKE**