CLASSIC TECHNIQUES

Photos by Morgan Rue

THE POWER OF POWDER

Frames need some special attention prior to their refinishing. In this case, the original paint has been removed from the frame number, which will be masked to prevent the new powder coating rendering the number invisible. No one wants to scrape off their brand-new coating…

Where motorcyclists of the classic persuasion gather, there are certain topics which inevitably pop up, generate lively debate, then climb back into the toy box, unresolved. Hardy perennials include: 'Which oil is best for your classic?', 'Points will always get you home' and 'You can't beat real stove enamelling. I felt that some research was warranted on the latter point. After all, there's no feeling better than placing the frame of your pride'n'joy onto an upturned beer crate when it is resplendent in its new coat of paint.

Infinite possibilities for concours rebuilds exist, if only this standard can be maintained for the rest of the build. Once you start using lengths of ironmonger-grade 8mm threaded rod as engine mounting hardware, it's game over with those pesky concours judges. So is powder-coating still the cheap and cheerful new kid on the block, or is it a credible and proven technology for a quality finish on your vintage steed? Investigating this question involved a trip to Maldon Shot Blasting and Powder Coating Limited, in darkest Essex.

Part of the preparation involves sealing off those areas where blasting and coating would not be helpful…

The sealing-off business is considerably important. Observe the sundry bungs used on this BSA fork slider

MSBPCL, as it is snappily known, have a justified reputation for knowing their way around a powder-coat gun. Chris and Graham Lodge are second-generation powder-coaters, following in Trevor's footsteps. They kindly agreed to process my BSA B44 frame and bits in one session, obligingly stopping every few minutes for pictures or to explain a technical point.

We started with the obvious question: what is the difference between old-fashioned 'stove enamelling' or paint, and modern powder-coating? Wet paint processes involve either spraying primers and paints from a spray gun, or, as at the BSA factory, dipping the whole part into a large vat of enamel and allowing the excess to drip off.

Powder-coating differs in that the medium is in the form of a fine dry powder, which is electrostatically discharged from a wand as a fine cloud of dust. This drifts towards the components because the wand and the parts are electrically oppositely charged. Wastage is reduced and the powder, once attracted to the frame, fuses together under heat to form a gloss coat.

'In the beginning,' Chris explains, 'the finish was available in limited colours, and had a plasticky appearance, but all that has improved immeasurably. Nowadays, some customers have their motorcycle tanks powder-coated'. With over 6500 colours available including pseudo-chrome (of which more later), the choice is almost unlimited. MSBPC hold around 1000 colours in stock, including wrinkle and satin blacks for engine cases. Powder coat will NOT tolerate cylinder head or exhaust temperatures, so the brothers offer a wet process known as Ceracist in satin black, good for 1090°C. (If you need better than that, maybe your ignition timing is a tad retarded...)

My interest was principally in black for my B44 frame and cycle parts, and I wasn't even vaguely tempted by bright green. But if I had a Kawasaki…

FRAME PREPARATION ON

Most powder-coaters will expect your frame to be bare and clean. They do not take kindly to frames full of grease being dumped outside the blasting room, as oily residues ruin the blasting media which is recycled. For the B44, I denuded the frame of all its parts including the swinging arm, and removed the headstock bearings. The bare frame was wiped with degreaser, then washed with soapy water.

The same was done for all the smaller parts, and when all were clean they were laid out for photography in my workshop. The first thing MSBPCL did was to unpack all the parts, and lay them out for front-of-house Val to photograph – to avoid disputes later when that irreplaceable left-side footrest needs to be replaced. A good powder-coater will insist on an agreed parts inventory before the off.

The frame was then masked on all threads, the headstock capped off with two large discs and a screwed thread, and the chassis number exposed by sanding.

'Some frame numbers are not deeply stamped,' explained Chris, 'and our process might render the number illegible.' To avoid the owner's agony of having to sand off first-rate powder-coat, MSBPCL's policy is ➤

A decent blaster will have a wide selection of bungs to blank off holes and threaded areas in items to be refinished. Here's a few now

Finally, the frame is ready for a little blasting. The nice man is poised!

Job done. One blasted Beezer frame

The noble art of primer application

The freshly blasted kit is hung from a conveyor which carries it through the next stages

Primer nobly applied!

to mask the number from blasting, re-mask for powder coating, and leave it bare and visible. 'Most customers paint the area with aerosol black as a waft-coat afterwards,' Graham added.

Naturally, if the customer wants the whole frame coated, then they will. As the B44's frame number is situated on the front engine-mount, I opted for the visible route to avoid future issues; especially as the Shooting Star has matching numbers which I'd like to be able to prove.

While the frame was being blasted inside the main blasting room by Carl, the ancillary parts were cleaned in smaller blast cabinets using a variety of media. Every screw thread was protected by silicone rubber plugs and duct tape. The technicians have hundreds of conical tapered plugs to keep threads clear of blast media and powder-coat.

The only pattern part among my BSA components was a replacement chainguard, new and in black. 'That's been powder-coated,' said Chris, 'directly onto the metal'. Here lies the problem: powder-coating takes well even to badly-prepped surfaces… for a while. Then breaches cause it to spall off in large pieces.

Chris has a chemical stripping tank into which previously powder-coated parts are left for an hour. When he removed my chainguard, all the black coating slid off into it the tank, leaving a shiny part with no evidence of it ever having been blasted.

It was dispatched to the blast cabinet, and then joined the other parts on the conveyor. Just as well, as not all blacks are the same shade of black. The advice was to get all your parts done at once. If that's not ➤

The frame gets its top coat applied

Top coated!

The frame trundles out of the oven, freshly baked and refreshingly shiny

Time to remove all the plugs which have protected threads and other delicacies

possible then at least go back to the same fella who did the first batch…

ON OIL-BEARING FRAMES

The fear of getting blasting media into the main oil-bearing tube is enough to spoil anyone's day, and some restorers will hand-strip and hand-repaint their late BSA/ Triumph oil-bearing frames rather than take the risk. I asked Chris Lodge what their policy was.

'We need the frame tube clean and dry of oil,' he said. 'Otherwise under heat in the oven, the residue will emerge despite the masking.'

To underline this point, one of my B44 front mudguard stays seeped oil out onto the primer – oil I never knew was even in there! Chris also asks owners to supply the main frame sump plate, so he can seal the bottom of the frame. I were doing an OIF, I would make a rubber gasket and dummy sump plate.

INTO THE OVEN

Once every part was plugged and / or masked, they were suspended from a conveyor line above Graham, the powder-coater. The conveyor advances past the painter, turns through 180 degrees and passes into the oven at 200°C, whereupon the white primer powder turns into a primer coat.

There is a remarkably wide range of finishes available

Morgan, ever the conservative, chose an adventurous shade of black

It is far from an unskilled process and the brothers have been doing this a long time, so they know how to vary the 'push time' according to the density of the metal parts. Graham also tweaks the potential difference between the wand and the job to optimise coverage. 'The difference between this and wet painting,' he explained wryly, 'is that if I overcoat, I won't see the runs till it's too late, when it emerges at the end!'

The standard black coating was originally called 'agricultural quality'. This has nothing to do with why so many Harleys are black, but reflects the fact that it is a robust bright gloss coating that can be achieved on one pass. The primer followed by the black is a perfectly serviceable approach for a daily driver as the build-up is plenty thick enough, although some customers ask for a second coat of clear powder to increase shine further.

Note that the powder coat layer follows exactly the metal below, so if you've got rust pits, revealed in all their glory after the blasting process, expect to see them under the shiny coating. For badly-pitted frames, maybe thinking about re-tubing might be better – I have heard of conkers veteran frames cracking due to loss of integrity.

It was a joy to see my conveyor track of parts emerging one by one from the exit point of the oven. After being raised to 200°C, the parts cool naturally and can be wrapped and loaded. MSBPCL recommend that owners collecting parts bring towels and such for wrapping of the bigger parts, though the parts are bubble-wrapped by front-of-house Val. From there on in, the concours rebuild is in your hands…

Morgan refitted the original bearing track, having checked it for absence of damage. Note that the areas of yoke masked off are now in bare shot-blast finish. Judicious application of grease will make future dismantling a breeze. Now is the time for those stainless fasteners!

One of the available finishes is 'chrome'. Morgan's view is that this is perfectly good for car wheels…

CHROME COATING

The powder coat finish called 'chrome', er, isn't. It's very shiny, for a paint finish, and looks great on MGB wire wheels at a tiny percentage of the cost of buying chrome wire rims. Equally, if you fancy the look of a Rickman-type nickelled frame, then the chrome powder finish works well. But if you are in two minds about rechroming that iffy front guard and have considered swapping to a 'chrome effect' powder-coat, you may prefer to pay for the full, proper re-chroming process.

The paint 'chrome' finish on your front mudguard will look very silver and very shiny; like a polished alloy guard which has tarnished a little. But there's no cut-price route to chrome, only to disappointment.

TIME & MONEY

For a typical classic bike owned by an enthusiast, MSBPCL offers a five-year guarantee (limited to reasonable use). They need the parts for a couple of weeks and a basic frame and swinging arm set-up will set you back £125. Chris said that turnaround times could be flexible if the customer is in a tight spot for an upcoming deadline, so speaking to them in good time will help.

For me, the robustness of the powder coating over stove enamel outweighs any perceived difference in lustre. And if I needed hyper-shiny, I'd pay for an extra coat of clear on top of the standard black powder. The process generates little pollution, is replicable, and can be touched-in with conventional wet paint.

Modern automotive paint finishes are incredibly thin because, beyond an optimum depth, thick coats become more fragile. I recall working for a stove enameller decades ago, and he could lay down very thick coats of primer, which the owner could wet-sand to hide imperfections due to rust pits, then return the frame for black gloss. The result was a thin hard black crust on top of a softer thick primer layer, and often the stone-chip resistance was meagre…

So for a museum restoration, never to be used in anger, maybe the best of the stove enamels gives a shine that powder coat will only achieve by using clear over gloss. For my own bikes, powder-coating ticked all the boxes. Rc