

Convert to injection

For those wishing to convert a US TR6 to a real (PI) one, here are some pointers which may help. Essentially, the vehicles differ in five main areas: **1) Camshafts** **2) Cylinder Heads** **3) Manifolds and injection equipment** **4) Ignition System** **5) Exhaust System.**

1 Camshafts

A number of different camshafts were used during the production of the 2000/2500 motors. The following table lists some of the more common varieties plus a couple of locally available after market units.



PART#	APPLICATION	TIMING	VALVE LIFT	IDENTIFICATION
?	Carburettor	24-64/64-24	0.345"	
311 399	Carburettor (LATE)	18-58/58-18	0.360"	3 rings
307 689	TR5/Early TR6(150BHP)	35-65/65-35	0.375"	2 Rings
311 399	Late TR6 PI (124BHP)	18-58/58-18	0.360"	3 Rings
308 778	EarlyPI Sedan 132BHP	25-65/65-25	0.345	Groove
154C	Wade Road Cam	31-70/70-31	0.398"	
5569	ACE Road Cam	30-70/70-30	0.402"	

It is possible to simply bolt PI equipment onto an ex carb. motor with a considerable amount of success as the carb cams are usually similar to the late TR6 Sedan PI cams. Power output will be in the range of 120 135 BHP depending on the other components used.

If you want 150 BHP or so then you'll have to use camshaft 307689 or an equivalent regrind if you can find one. As an alternative you could use one of the aftermarket road cams which will give similar performance. An advantage with the two aftermarket cams listed is that they exhibit smoother idle characteristics as a result of the smaller amount of valve overlap than the original TR5 camshaft. Production cams are identified by a part no. engraved on the shaft (not the one cast into it) and/or by a number of grooves/rings between the timing gear mounting face and the keeper plate groove. Avoid cams with no identification rings/grooves as these will more than likely be early 2000 cams with very tame timing.

2 Cylinder Heads

There are 4 things to look out for here: 1) compression ratio 2) intake port spacing 3) Valve size 4) Valve spring set-up

All PI heads use a compression ratio of 9.5:1 whereas most carb. heads use a 8.5:1 (some US heads use even lower). Some of the early US TR6 heads employed different spacing of the intake ports and the PI manifolds will not line up with these. If port spacing is OK you can have your head machined to lift the compression ratio to 9.5:1 (You need to take something like 0.060" off on a 8.5:1 head). Another area to watch is valve size. Earlier heads tended to have larger valves. The hottest production set-up uses a 1.44" intake and a 1.28" exhaust valve.

Finally make sure your head uses twin valve springs as you may experience valve bounce with singles at high speeds (which the PI vehicles can more readily achieve). If you run an alternative cam, make sure that you have enough lift available with the spring set-up used. If all this seems a bit much you should be able to pick up a head off an early (pre 1973) PI sedan which will do the job perfectly.

3 Manifold and Injection Equipment

Metering units, pumps, filters etc. can usually be located off another model. The metering unit for the late model TR6 PI is the same as the late model sedans. The early TR6 metering unit employs different calibration springs to all other models. However, it should be possible to adjust any metering unit to give reasonable fuel consumption with best performance.

Intake manifolds varied slightly between models. Late model TR6's and sedans use manifolds that are not appropriate if you want 150 BHP or more. The early manifolds were used on TR5s, early TR6s, Mk I PI & early Mk II sedans. The early manifolds have fully circular ports and far better gas flow characteristics. If you only want 130BHP or so then the late model manifolds will do.

Another area to watch is the throttle linkage assemblies. Only the linkages as used on the original TR5/early TR6s or Mk I sedans will bolt straight onto your TR6. The problem with the Mk II sedan linkages (early intake manifolds only) is that they are slightly bulkier and foul on the exhaust manifold (only the twin pipe variety). All is not lost as there is a simple tweak to make the Mk II sedan linkages work. You have to use spacers to mount the linkages an extra 1/4" or so off the manifolds. With a bit of careful adjustment and light grinding of the linkage where they foul, the set-up can be made to work. This is convenient as Mk II linkages are easier to get hold of. The linkages on the late model manifolds are very simple and do not pose any problems.

4 Ignition System

In order to get maximum performance from the set-up, you will find it necessary to alter the distributor advance characteristics. The ideal set-up is to try and get hold of an original early TR6 distributor (Lucas part # 41219). You may even be able to get Lucas to rebuild your unit to this spec. Alternatively you could use an early 2000 sedan distributor as the curve is very close to that of the 41219. (Lucas part # 41543 or 41582) If you are building a TR6 to the late PI spec then you could use the late PI sedan distributor (Lucas part #41502). You will find that you will have to use your original distributor body as the sedan distributors do not have a mechanical tach drive.

5 Exhaust System

Two types of system were employed. (Single and twin pipe) For maximum performance you need the twin pipe exhaust manifold set-up (or even better extractors). The single pipe set-up will yield a system very similar to the PI sedan.

Quite a few TR5/6ers in Australia have successfully done this conversion due to the easy availability of the PI systems from 2500 PI sedans.