Supplemental Information & Instructions
for
837-120 or 214479 Pulley/Damper, 3/8 Inch Belt
TR 5, 250 & 6

A Little History

When Austin Rover Group discontinued these, our English division took on the project of getting them reproduced. Unfortunately, the factory made two versions of the pulley, one for the US and one for the Home (non-US) Market. The low sales volume combined with the need to make two versions of the pulley made this project very impractical. It was only feasible by making one pulley/damper without any timing marks at all. The good news is there is a pulley available at a reasonable cost. The bad news is there are no timing marks.

So What Do I Need to Do?

Why can't I just put some timing tape on the pulley?

The pulley/damper is 6.5 inches in diameter, and we have not found a tape for a damper of this size. If you find one, please let us know.

Finding Top Dead Center

The fastest way to mark top dead center (TDC) on the pulley is to use a piston stop and a degree wheel Pull the plugs, and get a suitable sized socket and long handle to make it easy to rotate the engine.

Mount the degree wheel on the pulley/damper.
Attach a pointer on the block that will point at the numbers on the degree wheel.

If the cylinder head is still in place: It will be necessary to use a piston stop that screws in the spark plug hole. You can make one by knocking the center out of an old spark plug and securing (JB Weld works) a suitable length of aluminum or brass rod running through the middle of the spark plug. The rod needs to stick into the cylinder far enough to stop the piston as it comes up in the cylinder. The exact length of the stop does not matter so long as the end is round and smooth and it touches the piston away from the edges.
If the head is off: You can use a plate-style stop or a dial indicator.

Rotate the engine slowly "by hand" clockwise until the piston comes to rest against the stop.
Write down the number on the degree wheel under the pointer.
Rotate the engine counter-clockwise until the piston comes to rest against the stop again.
Write down the number on the degree wheel under the pointer.
Find the mid point between the two numbers you just wrote down.
Mark it on the pulley/damper with yellow paint (do not make a permanent mark yet).
That is Top Dead Center, or TDC.
Rotate the degree wheel so the zero on the wheel lines up with TDC on the pulley/damper.
Remove the piston stop.
Rotate the engine to the correct TDC point on the degree wheel and the pulley/damper.
Zero (TDC) will be directly above the center of the keyway.
Unless you have an adjustable timing light, you need to mark two other points to the left of TDC, which is before TDC (BTDC). Left, as in left side of the engine when viewed from the cockpit

The damper is 6.50" in diameter, so we can calculate that
4 degrees is 0.2269" (about ¼")
10 degrees is 0.5672" (about 9/16 inch)

Before you make the marks permanent we suggest you do a quick check to make sure you are on TDC for #1 piston.

Confirming Your TDC

Spark plugs should still be out.
First, set the valve clearances using the correct sequence as listed in the manuals, i.e., with 1 and 3 open, set 10 and 12, and so on (pg 43 of the 031 Haynes Manual for example).

Move the #1 piston to TDC. (Ignore the pointer and pulley/damper for the time being)
Put your thumb over the #1 spark plug hole.
Rotate the crankshaft.
You will feel the air pressure in #1 cylinder build up as the piston comes up on the compression stroke.

To get a reasonable approximation of TDC without using the piston stop, you can insert a short length of wooden dowel through the spark plug hole. You do not want to use anything that will mar the top of the piston, and you don't want anything left behind in the combustion chamber when you are done either.

Around TDC, a few degrees either way, you should see valves 11 and 12 "rock", meaning the exhaust closes and intake opens.

You can get very close (within a few degrees) to determining TDC by checking the piston this way. Check the pointer and see if the pulley/damper is close to 0 degrees – it should be. If it is, make permanent marks on the pulley/damper at 0, 4° and 10°. A spring loaded center punch works pretty well. You can put a paint mark over the dimple so you can see the mark easily with a timing light. If you have an adjustable timing light you only need the TDC mark.

If the pointer is not on the zero you marked using the degree wheel and the piston stop, you have a problem that needs to be sorted out.

If the valves 11 and 12 are not rocking, your timing chain may be off on the cam gear. The cam gear works out to be about 8.6 degrees per tooth.

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