

Dr. Vanos Dual Vanos Removal and Installation Procedure

Tools needed:

Long nose pliers, diagonal cutters

19mm combo wrench, 2 flathead screwdrivers, Philips screwdriver

13mm socket 1/2", 13mm socket 3/8", 11mm socket 3/8", 10mm socket 3/8", 8 mm socket 1/4", 8mm hex bit socket 3/8", T30 torx bit socket 3/8", T25 torx bit socket 1/4"

Necessary prerequisites...

Remove electric fan

Remove 2 top valve covers

Remove coil packs

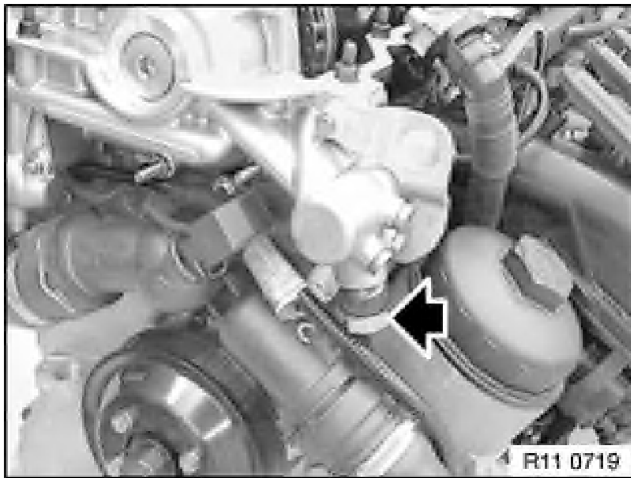
Remove 15 10mm nuts holding valve cover on

Remove cylinder head cover

It's a good idea to replace the valve cover gasket/spark plug gaskets if it has not been done already.

While it's not necessary to put the engine at TDC when replacing the vanos, it's always good practice when dealing with engine timing.

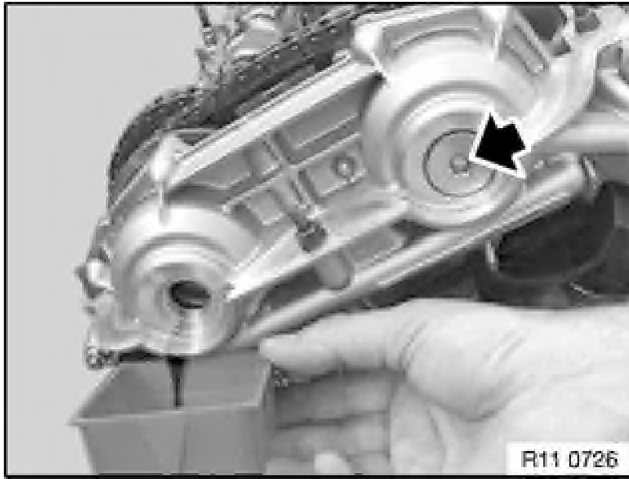
Remove bolt from oil line (19mm).



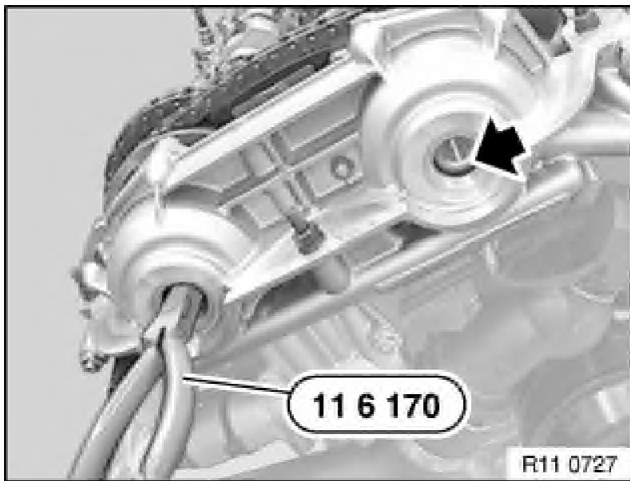
Cover area below vanos with shop rags to prevent oil from leaking onto accessory belts.

Remove plugs from the front of the vanos. Using an 8mm allen socket will allow for more leverage. These covers may be very tight and extra leverage may be needed.

Some oil will escape, use a small container to catch it.



Remove dust plugs using short needle nose pliers.

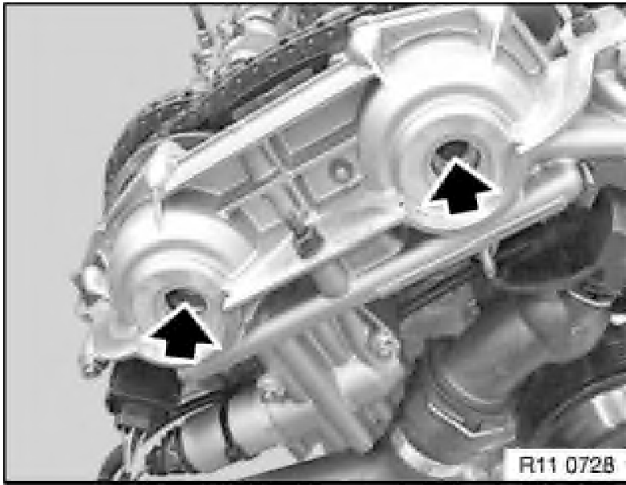


Replace small O-rings on plastic plugs with new O-rings (supplied).

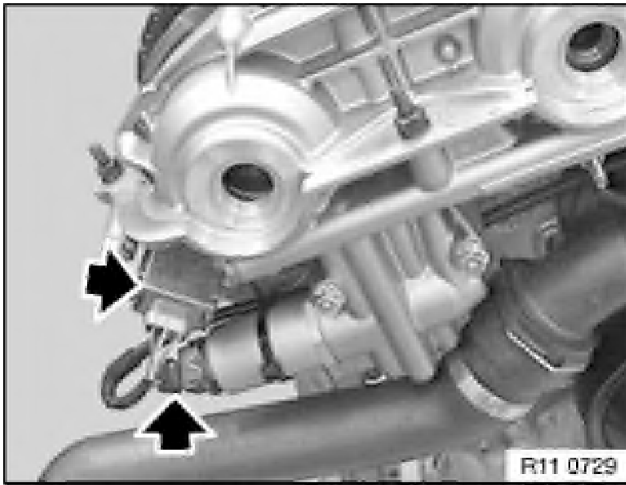
Remove torx screws from each side using T30 (male) torx socket.

Note that these are **LEFT HAND THREADS**. Turn **clockwise** to loosen.

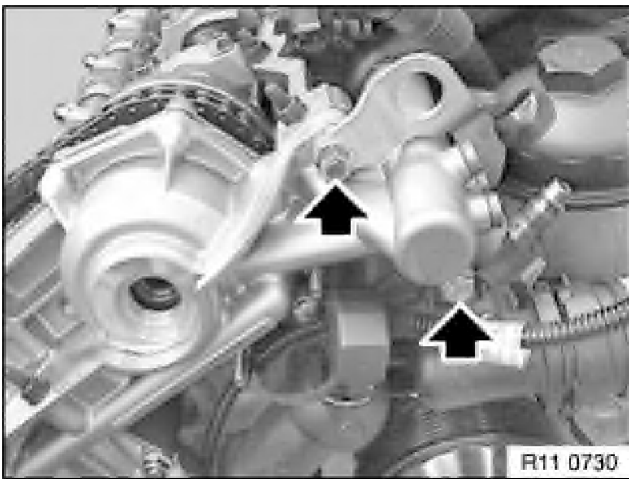
If you happen to break one of these bolts, contact me for a replacement at support@drvanos.com



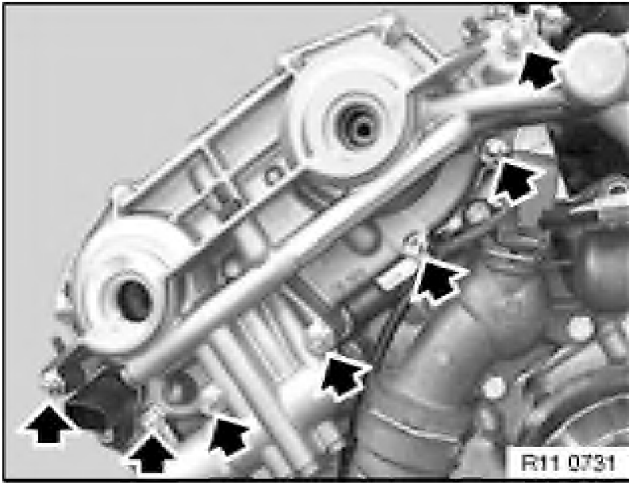
Remove connectors from cam position sensor and from solenoids on each side of the vanos.
Remove connector from top of thermostat.



Remove two 13mm bolts from engine bracket.

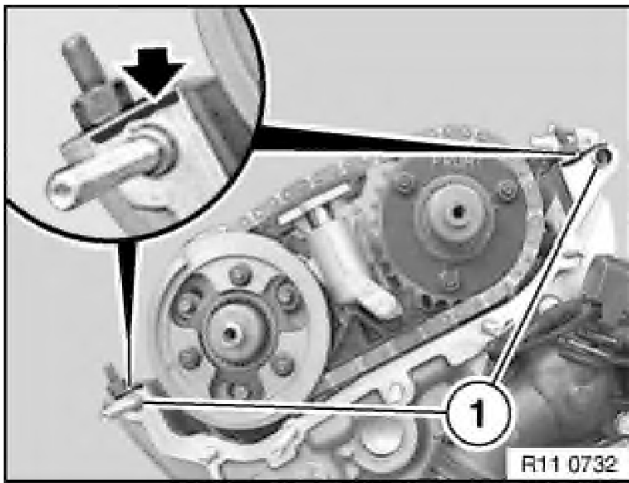


Remove 10mm nuts from mounting studs.



Remove vanos.

Remove vanos gasket and clean mating surfaces from oil and any RTV sealant.



Place a **small** amount of sealant at surface edges as shown.

Install new vanos gasket.

Install vanos, and secure with 10mm nuts and 13mm bolts through engine bracket. Note: Route electrical harness to engine side of bracket before mounting the lift bracket.

Install and tighten T30 torx screws to approx 6ft/lbs

Install plastic caps with new O-rings (installed previously)

Install 2 front cover bolts and tighten to 37ft/lbs

Install vanos exhaust solenoid electrical connector.

Install vanos exhaust CPS sensor electrical connector.

Install Thermostat electrical connector.

Install vanos intake solenoid electrical connector.

Connect oil line, using new crush washers (1 on each side of banjo bolt)



Place a thin coat of RTV sealant at 2 engine vanos/head contact points, and at vanos/head front and rear half moon corners. Allow sealant to set for ~2 minutes before installing valve cover. Reinstall valve cover, coil packs, and related parts.