

Technical Bulletin

Model
6 Cyl.

Group
1

Subject: Refacing Cylinder Heads
with Use of Tool 9526

Part Identifier
1570

Number
9404

ATTENTION: Service Manager / Service Technician

This bulletin replaces Technical Bulletin Group 1, Number 9202, Book I, pages 13-16.

Models Affected: *911 Carrera 2/4 Model Years '89 (K), '90 (L) and '91 (M) up to engine number:
62 M06836, M64.01 - Manual Transmission
62 M52757, M64.02 - Tiptronic*

Concern: Oil leakage between cylinder and cylinder head. Oil "leakage" in the case of 911 Carrera 2/4 engines means oil leaking (drops forming) from the cylinder to cylinder head mating area, resulting in oil wetness on the lower area of the cylinder head or on the exhaust heat exchangers. Due to higher operational temperatures of the Carrera 2/4 engines, some blackening (carbonizing) of oil at the lower sealing area is possible. If there is only a small discolored area on the bottom of the cylinder head without wetness, this can be considered normal and no repairs are necessary.

General Information: When repairing oil leaks from the cylinder to cylinder head sealing area on engines prior to the above engine numbers, all cylinders and pistons should be replaced and all cylinder head sealing surfaces refaced. **Cylinder head nuts are reusable.**

IMPORTANT: Replacement piston and cylinder sets have a groove to accommodate a seal between the cylinder head and cylinder mating surface (Figure 1). Effective immediately, only the steel sealing ring, Part Number 964 104 115 20 is to be used during repairs. This information also applies to engines produced after the above mentioned engine numbers.

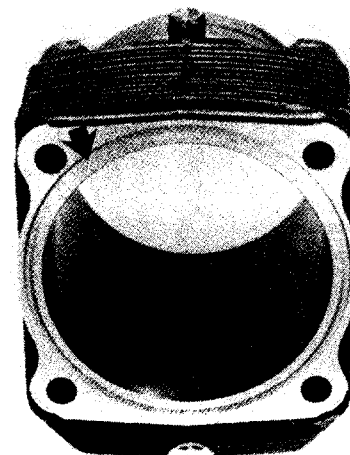


Figure 1

When installing the cylinder head to the cylinder, the steel sealing ring must be fully installed in the groove of the cylinder. Sparingly use light grease to hold the ring in the cylinder during installation.

The above subject repair will require **PRIOR** District Service Manager authorization until further notice (this includes dealers on the self-authorization program). All subsequent repairs needing to be done,



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General Information (cont.):

in addition to the cylinder head re-machining, piston and cylinder replacement, exceeding \$100 will also require a **PRIOR** District Service Manager authorization.

The cylinder heads must be refaced to accommodate the dimension of the new cylinders. Refacing can be done without cylinder head disassembly. Refacing of the sealing surface requires a lathe and use of special tool 9526. Tool 9526 can be rented free of charge from Porsche Cars N.A. Technical Support Department at phone number (702) 348-3253 or (702) 348-3254.

If no reputable machine shop is available to the dealer, cylinder heads may be sent for resurfacing to:

Porsche Cars North America, Inc.
Technical Service Center
4775 Air Center Circle
Reno, NV 89502

When sending cylinder heads to the above address, be certain to provide proper shipping protection. Packing cylinder heads correctly will reduce the risk of heads being damaged in shipment. Do not send cylinder heads with cam housing and gears, only send complete cylinder heads. Also, enclose a clear copy of the work order with the heads.

We suggest packing the cylinder head three to a package and send two packages total. Also, install short lengths of rubber hose over the exposed studs of the cylinder heads. This will prevent damage caused by the studs touching the other heads in the package.

Parts Information:

When ordering parts (piston/cylinder and gaskets) use part numbers for engines from '91 (91—) or from engine numbers:

M62 M 06837, M64.01 - Manual Transmission
M62 M 52758, M64.02 - Tiptronic

Piston and cylinder sets are sold individually due to different height and weight groups. A quantity of six per engine is required. Different cylinder height groups can be used in one engine as long as the same height group is used per cylinder bank.

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Parts Information (cont.):

Any one of the four different piston/cylinder set part numbers can be ordered:

- 964 103 915 22 - piston/cylinder set
- 964 103 915 23 - piston/cylinder set
- 964 103 915 24 - piston/cylinder set
- 964 103 915 25 - piston/cylinder set

Any of the above part numbers can be used; check parts availability of each number before ordering. The following parts are also required:

964 100 902 00 - gasket set (qty 1)

Due to the fact that some old inventory of head set 964 100 902 00 may contain the old version head gasket Part Number 964 104 115 00 (composition), make sure to use only new version head gasket Part Number 964 104 115 20 (steel).

Repair Information:

Refacing Cylinder Heads with Use of Special Tool 9526

1. Clean cylinder heads (do not sandblast assembled cylinder heads).
2. Install special tool 9526 on the short 8mm cylinder head studs. Tool cut-out faces intake valve (Figure 2).

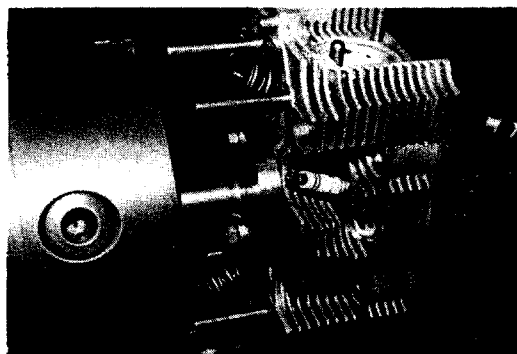


Figure 2

Before installation into the lathe, be certain special tool 9526 is not damaged or bent (ie. shipping damage, dropping, nicks, etc.).

3. Mount special tool 9526 with assembled cylinder head in lathe.



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Repair Information (cont.):

4. Check lateral and radial cylinder head run-out with dial gauge (Figure 3). If necessary, lateral run-out must be adjusted on lathe. Radial run-out can be adjusted by loosening the mounting nuts and repositioning the cylinder head on special tool 9526 as required.

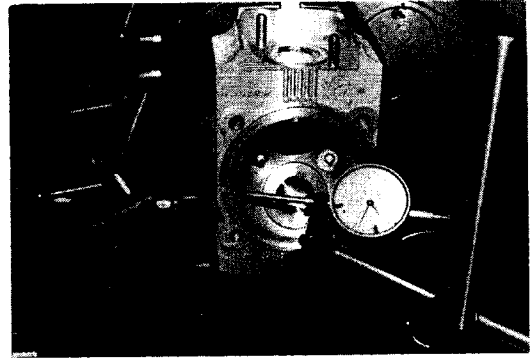


Figure 3

5. Machine $0.10 \pm 0.02\text{mm}$ from inner surface (arrow 2 in Figure 4). The diameter of the machined surface must be 145mm (Figure 4). A surface quality standard of 32 micro-inches must be maintained. Machining should be done with a cutting tool at right angle to the work. The cylinder head surface may only be machined a maximum of 0.20mm.

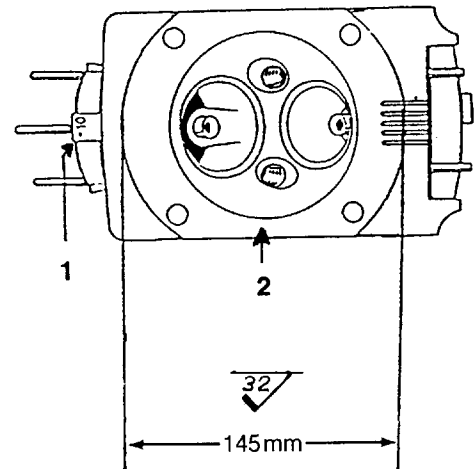


Figure 4

When machining is complete, the mating surface of the cylinder head to cylinder must be 145mm in diameter.

6. Mark cylinder head with -10 or -20 appropriately on intake flange (arrow in Figure 4).

For additional information on refacing cylinder heads, refer to 911 Carrera 2/4 Workshop Manual, Volume 1, page 15-10e.



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Warranty Claim Information: Damage Code: 1570500002

Sublet Labor for machine shop as needed.
(Consult District Service Manager for authorization above \$100.)

Labor Operations	Time Units	
	C2	C4
1001 1901 R&R engine	640	810
1570 2076 R&R cylinder heads	1320	1320
1310 2050 R&R all pistons	100	100
3435 2750 Detach and re-attach trans. at flange (manual trans.)	80	80
3735 2750 Detach and re-attach trans. at flange (Tiptronic)	130	

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