

Propeller shaft 41



41 Propeller shaft

Job No.

Propeller shaft

Removal and installation of propeller shaft 41-050

Reconditioning of propeller shaft

Removal and installation of propeller shaft Intermediate bearing,
replacement of radial ball bearing 100

Replacement of centering sleeve 200

41-050 Removal and installation of propeller shaft

E. Model 201

Lubricants

Centering sleeve, per sleeve approx. 6 g

refer to Specifications for service products page 266.2

Clamp connection

Tightening torques

Nm

Self-locking hex. nuts for
fastening companion plates

45

Hex. screws on propeller shaft intermediate bearing

25

Clamping nut on propeller shaft

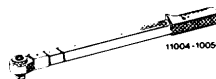
30-40

Hex. screws for fastening rear engine
carrier on frame floor

45

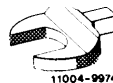
Special tools

Torque wrench 25-130 Nm with
plug-in ratchet 1/2" square



001 589662100

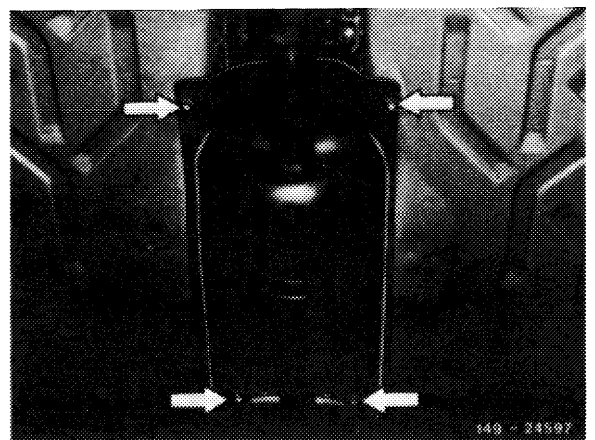
Open-end wrench element 41 mm for
plugging into torque wrench



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Removal

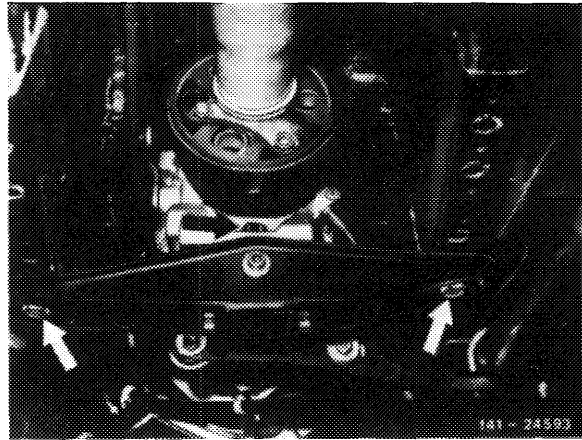
1 Unscrew exhaust shield.



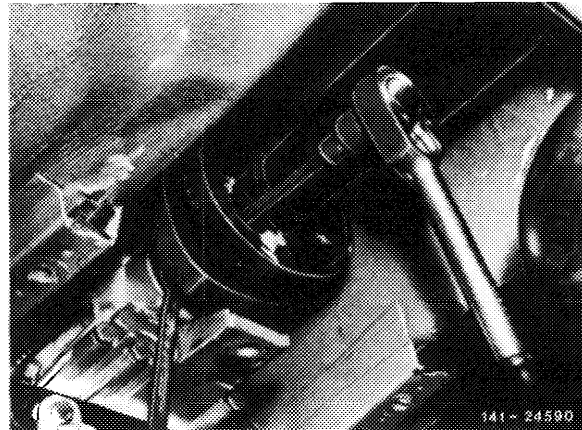
2 Lift transmission and place jack underneath.

3 Unscrew hex. head screws of rear engine carrier on frame floor and remove (arrows).

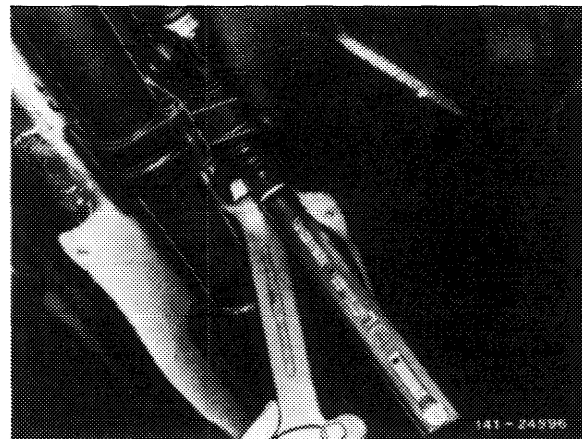
4 Loosen hex. nut from engine mounting and remove complete with engine carrier (arrow).



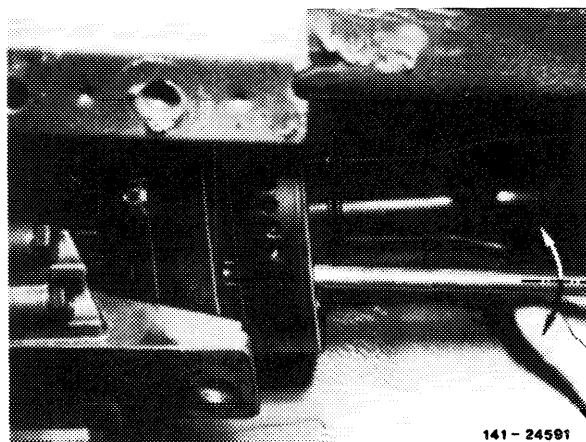
5 Unflange propeller shaft on transmission.



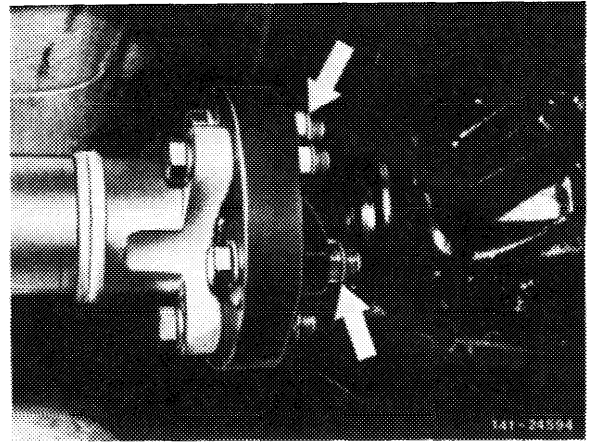
6 Loosen clamping nut of propeller shaft for approx. 2 turns without sliding back rubber sleeve (slides along).



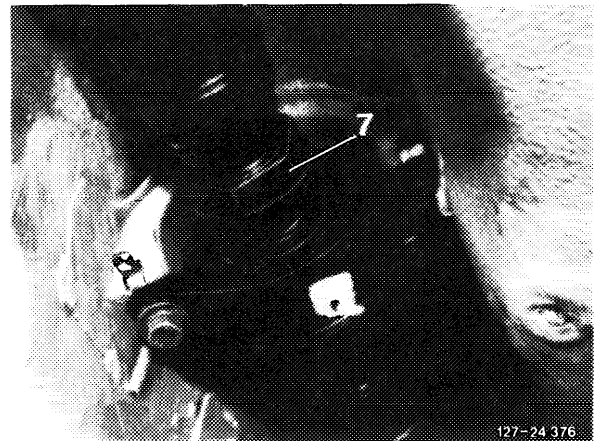
7 On tangentially soft companion plate installed at transmission end, loosen vulcanized fitted sleeves in universal flange by means of a mandrel prior to sliding back propeller shaft. For this purpose, use a cylindrical mandrel of 10 mm dia. and approx. 150 mm in length.



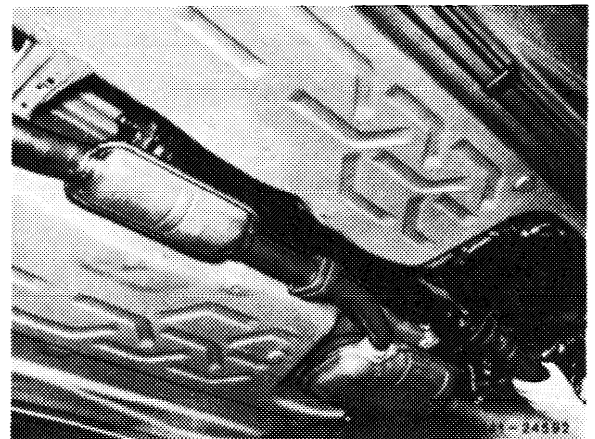
8 Unflange propeller shaft from rear axle.



9 Unscrew hex. head screws for fastening propeller shaft intermediate bearing on frame floor.

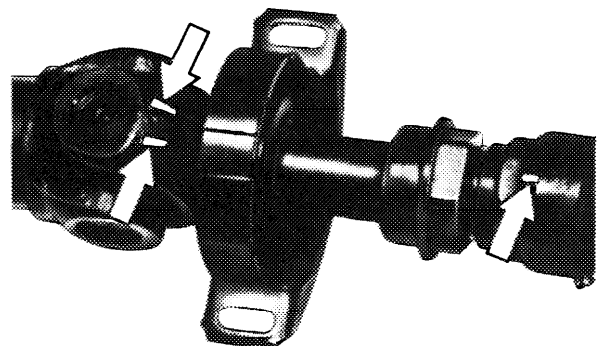


10 Force propeller shaft from centering pin of rear axle drive pinion and remove toward the rear.



Attention!

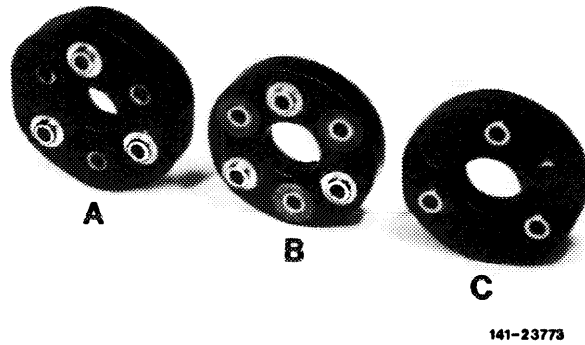
If separation of propeller shaft is required, reassemble parts again as drawn. The front shaft is provided with a hump and the yoke of the rear shaft with two arrow-like humps. The hump of the front shaft should be located between the two arrows on yoke (arrows).



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11 Check companion plates, centering sleeves, vibration eliminator and propeller shaft intermediate bearing for damage, if any. Renew damaged parts.

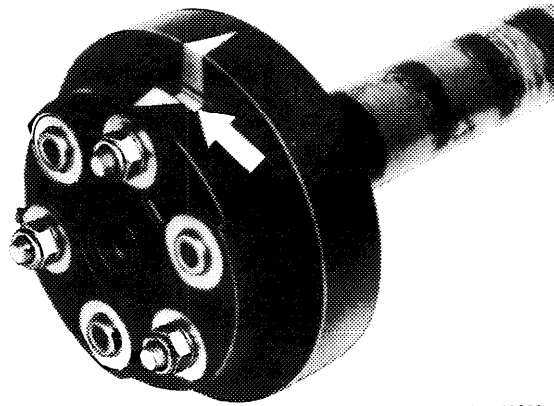
Note: Model 201.024 is provided with an accel-decel (tangentially) softer companion plate (A) at transmission end. On this version, special attention must be paid to damage, if any, particularly in range of vulcanized centering bushings.



A Soft accel-decel companion plate at front, model 201.024
 B Front companion plate model 201.022
 C Rear companion plate model 201.022/024

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12 If during renewal of companion plate the vibration eliminator is separated from propeller shaft, mark vibration eliminator and three-arm flange in relation to each other.



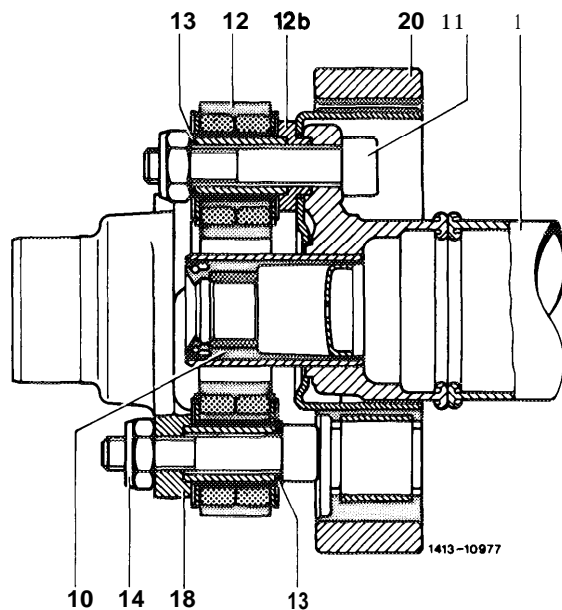
141-10859

Installation

13 Grease cavities of the two centering sleeves with specified grease (approx. 6 g per sleeve).

14 Slip propeller shaft with companion plates on centering pins on transmission and on rear axle.

15 Fasten propeller shaft intermediate bearing to frame floor, but do not yet tighten.



Model 20 1.022

- 1 Front propeller shaft
- 10 Centering sleeve
- 11 Hex. socket screw
- 12 Companion plate
- 12b Centering bushing
- 13 Washer
- 14 Self-locking hex. nut
- 18 Universal flange
- 20 Vibration eliminator

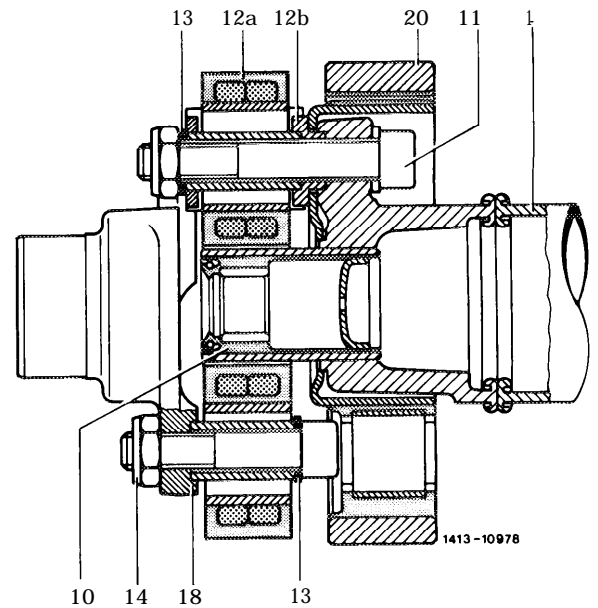
16 Fasten propeller shaft to transmission and rear axle. Tightening torques of self-locking hex. nuts 45 Nm.

Attention!

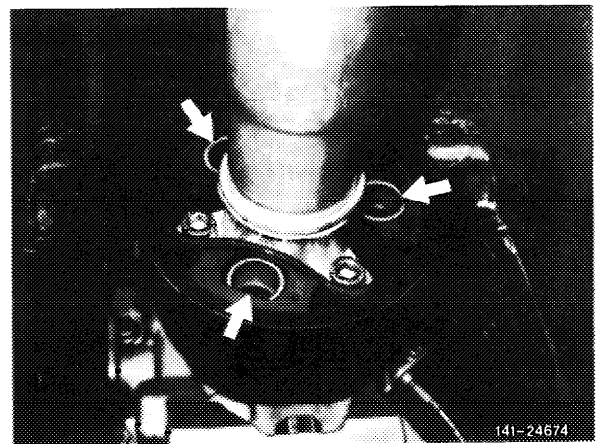
Renew self-locking hex. nuts on principle after one-time use.

Model 201.024

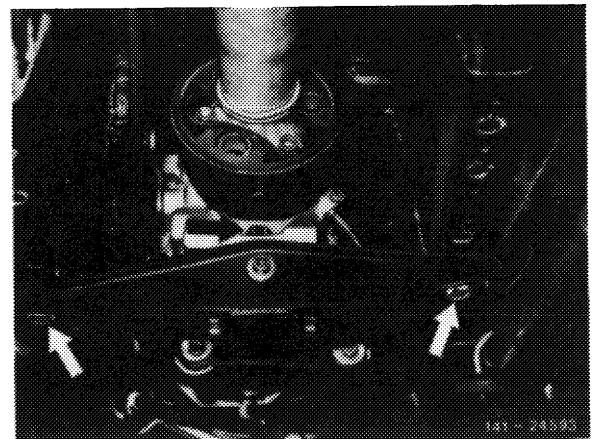
- 1 Front propeller shaft
- 10 Centering sleeve
- 11 Hex. socket screw
- 12a Soft acceldecel companion plate
- 12b Centering bushing
- 13 Washer
- 14 Self-locking hex. nut
- 18 Universal flange
- 20 Vibration eliminator



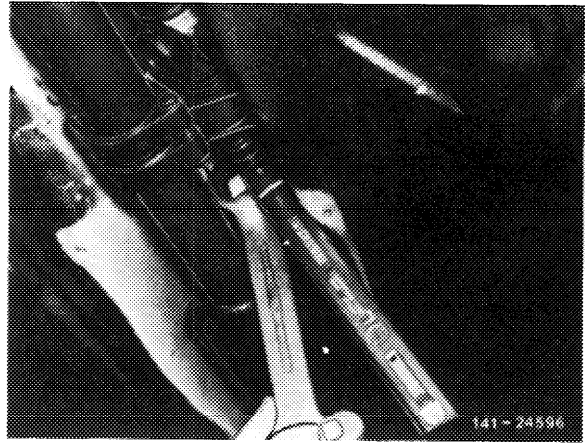
17 On vehicles with manual transmission pay attention to correct seat of rollers in vibration eliminator after tightening transmission-propeller shaft connection and push in rollers, if required (arrows).



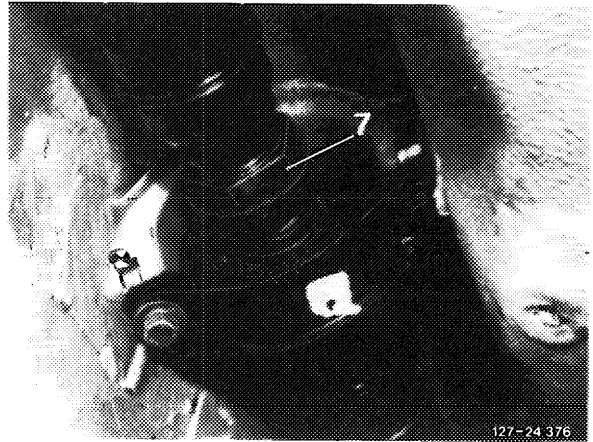
18 Mount rear engine carrier on frame floor, tightening torque of hex. head screws 45 Nm.



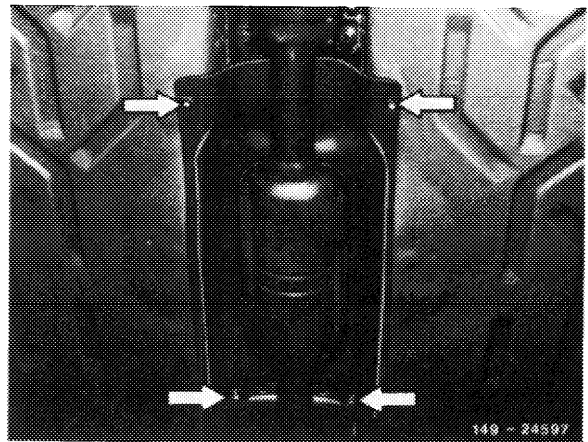
19 Tighten clamping nut on propeller shaft to 30-40 Nm while paying attention to good seat of sleeve.



20 Tighten hex. head screws for fastening propeller shaft intermediate bearing to frame floor to 25 Nm.



21 Mount exhaust shielding plate.



41-100 **Removal and installation of propeller shaft intermediate bearing,
replacement of radial ball bearing**

B. Model 201

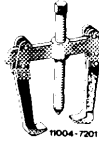
Lubricant

Clamp connection

refer to Specifications for service products page 266.2

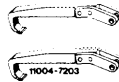
Special tools

Two-arm puller



000589883300

Pulling arms (2 each)



116589033300

Remover and installer for
radial ball bearing



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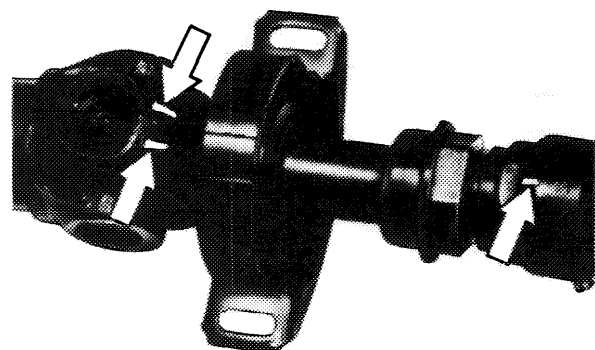
Mandrel for assembly of propeller shaft intermediate
bearing and of protective cap



201 58907 1500

Note

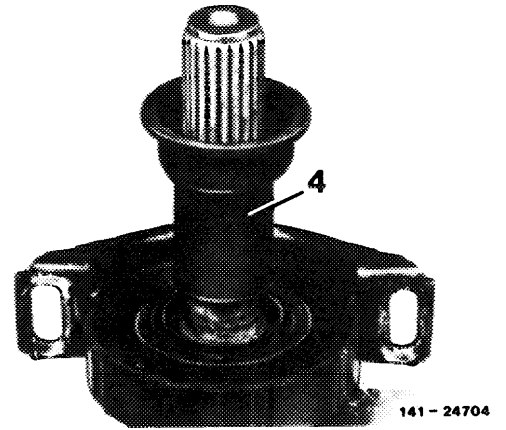
The front and the rear propeller shaft are provided with a mark ex factory. Separation will therefore make the identification ineffective.



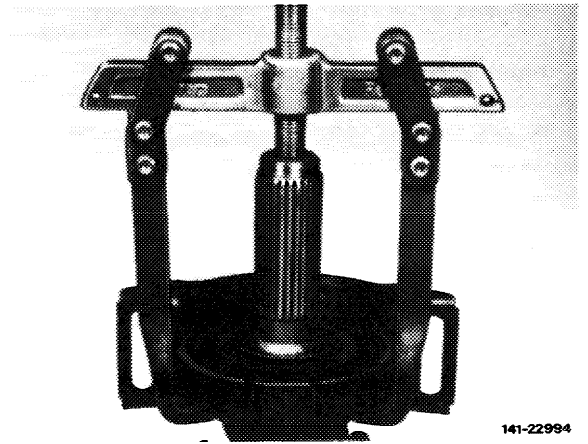
141-23660

Removing propeller shaft intermediate bearing

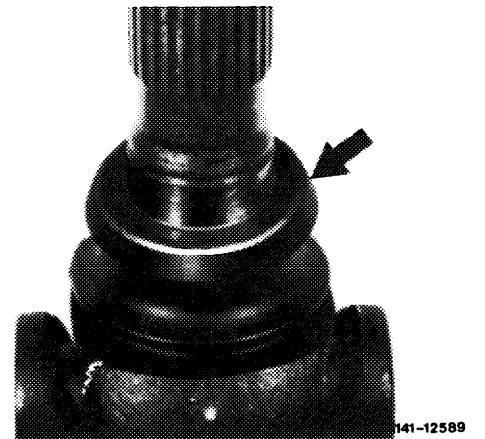
- 1 Separate front and rear propeller shaft at clamp connection.
- 2 Pull off rubber sleeve (4) over splining.



- 3 Pull rubber mount with radial ball bearing and protective cap together from yoke by means of two-arm puller.

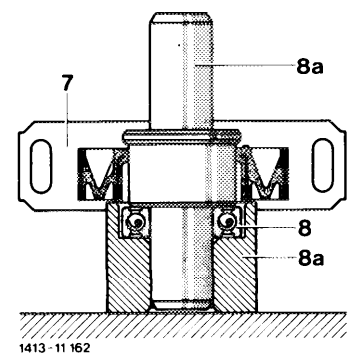


- 4 Remove rear protective cap from yoke (arrow).



Renewing radial ball bearing

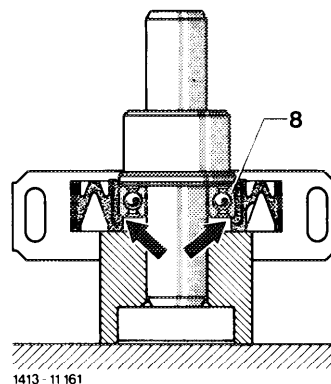
- 5 Press radial ball bearing (8) out of rubber mount (7) by means of remover and installer (8a).
- 6 Check rubber mount and radial ball bearing for damage and renew, if required.



7 Slowly press radial ball bearing (8) into rubber-coated bearing seat to contact surface (arrows).

Attention!

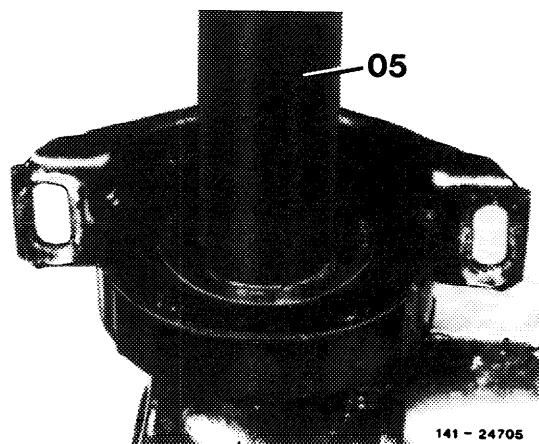
Pay attention to good seat of radial ball bearing.



Installing propeller shaft intermediate bearing

8 Insert protective cap.

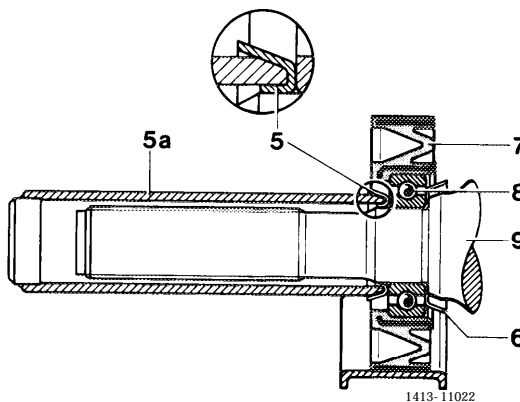
9 Press rubber mount with pressing-on sleeve (05) on yoke while paying attention to correct location of V-fold.



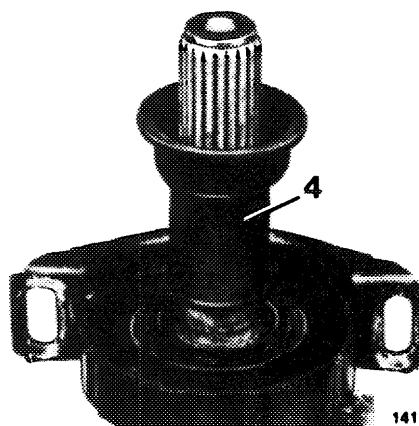
10 Mount self-locking protective cap (5) with pressing-on sleeve while making sure that the protective cap rests well against radial ball bearing.

Attention!

Use pressed-on protective cap only once.



11 Pull rubber sleeve (4) over splining of yoke. Pay attention to correct seat of sleeve at small diameter.

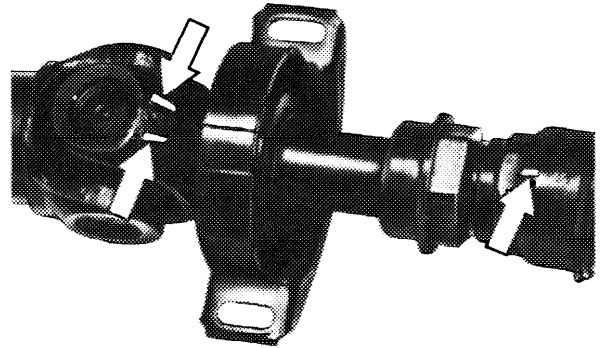


12 Coat splining with specified grease.

13 Plug front and rear propeller shaft together as shown on drawing.

Attention!

The front and the rear propeller shaft are correctly plugged together if the hump of the front shaft is located between the two arrows of the rear humps (arrow).



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41-200 Replacement of centering sleeve

Pressing-in dimension for centering sleeve from upper edge to contact surface of three-arm flange

Model	At front "a"	At rear "b"
201.022	31 mm	24 mm
20 1.024	33 mm	

Lubricant

Centering sleeve, approx. 6 g per sleeve

refer to Specifications for service products page 266.2

Tightening torques

Self-locking hex. nuts for fastening companion plates

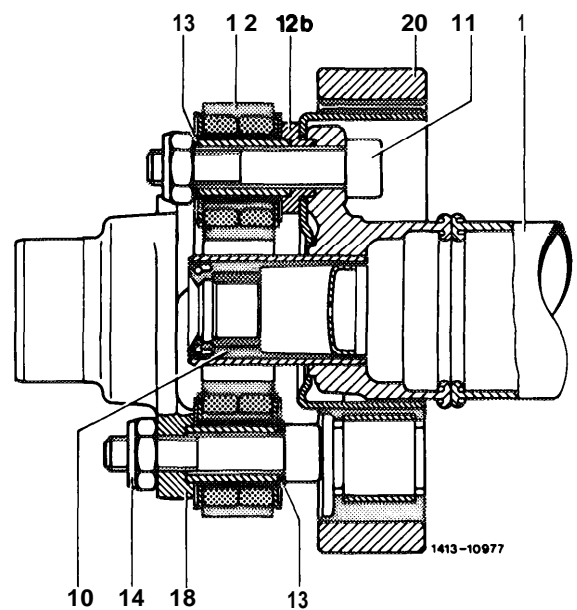
	Nm
M 10	45

Note

In the event of wear or damage of sealing lip in centering sleeve (10) on front or rear propeller shaft, exchange of complete propeller shaft is not necessary. The centering sleeve can be individually replaced.

Layout of model 201.022 with manual 4-speed transmission

- 1 Front propeller shaft
- 10 Centering sleeve
- 11 Hex. socket screw
- 12 Companion plate normal version
- 12b Centering bushing
- 13 Washer
- 14 Self-locking hex. nut
- 18 Transmission-universal flange
- 20 Vibration eliminator

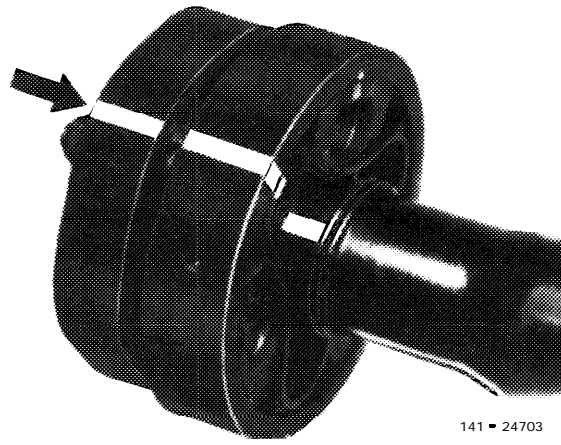


Removal

1 Unscrew hex. socket screws with self-locking hex. nuts and remove.

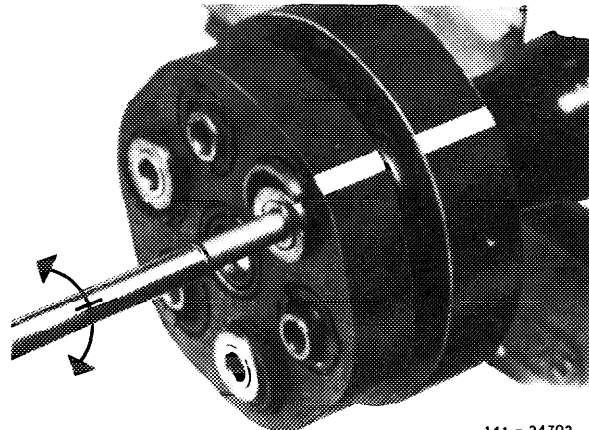
Attention!

Prior to removing vibration eliminator, mark vibration eliminator in relation to front propeller shaft and companion plate.



141 - 24703

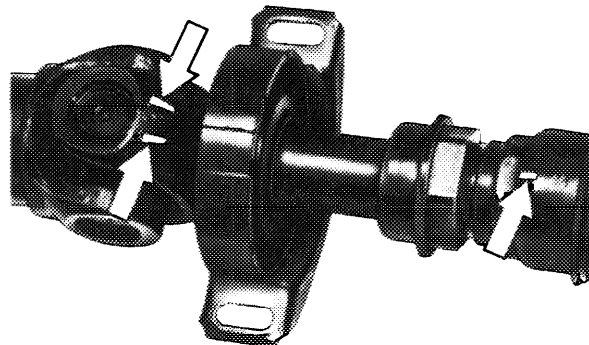
2 On vehicles with tangentially soft companion plates, loosen the vulcanized fitted sleeves of companion plate in three-arm flange of propeller shaft. For this purpose, use a cylindrical mandrel of 10 mm dia. and approx. 150 mm in length.



141 - 24702

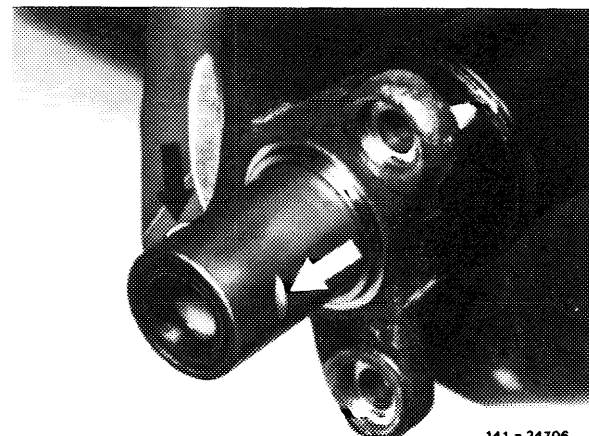
3 Remove companion plate and vibration eliminator.

4 For separating front and rear propeller shaft, components are marked in relation to each other.



141-23660

5 Knock centering sleeve uniformly out of propeller shaft by means of a flat chisel (arrows).

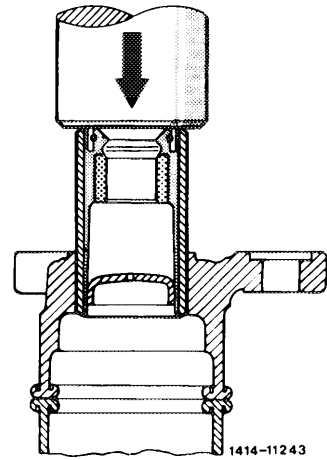


141 - 24706

Installation

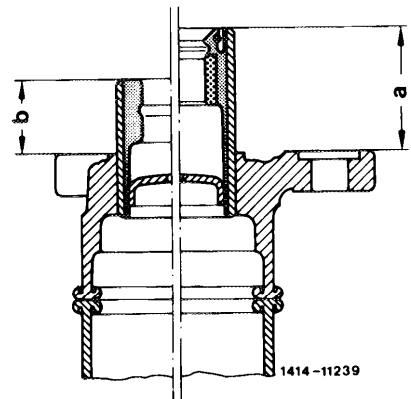
6 Force in new centering sleeve by means of a suitable mandrel.

Centering sleeve front

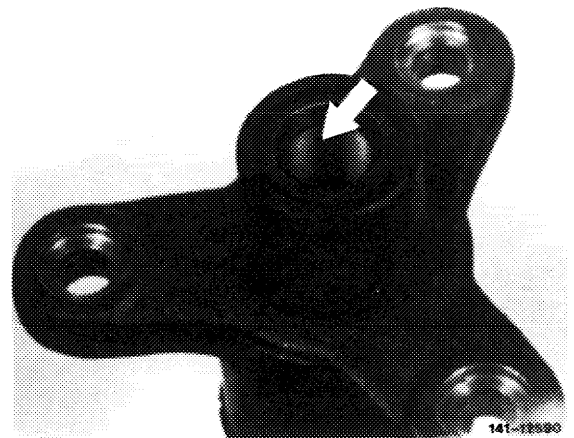


7 Pay attention to pressing-in dimension for centering sleeve.

Model	At front "a"	At rear "b"
20 1.022	31 mm	24 mm
201.024	33 mm	24 mm



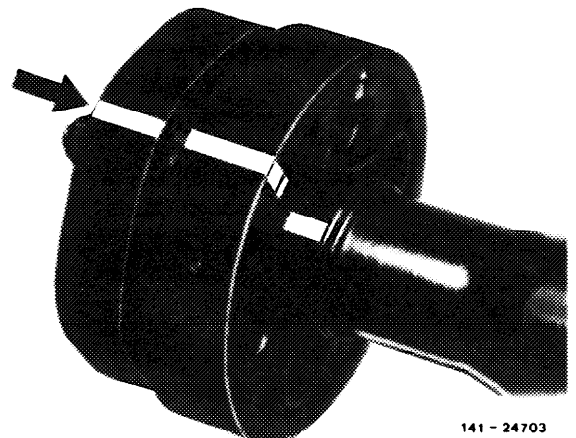
8 Coat cavity of centering sleeve with specified grease (quantity per sleeve approx. 6 g).



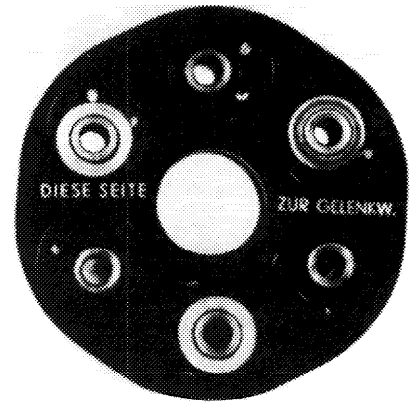
9 Mount vibration eliminator and companion plate with hex. socket screws. Tightening torque of self-locking hex. nuts 45 Nm.

Attention!

Pay attention to identification applied prior to disassembly (arrow). Renew self-locking hex. nuts on principle.



10 Mount tangentially soft companion plates (on vehicles with 5-speed transmission) according to lettering "DIESE SEITE ZUR GELENKWELLE" ("This side toward propeller shaft").



Lettering on companion plate:
DIESESEITE ZUR GELENKWELLE
(This side toward propeller shaft)

141-21695