



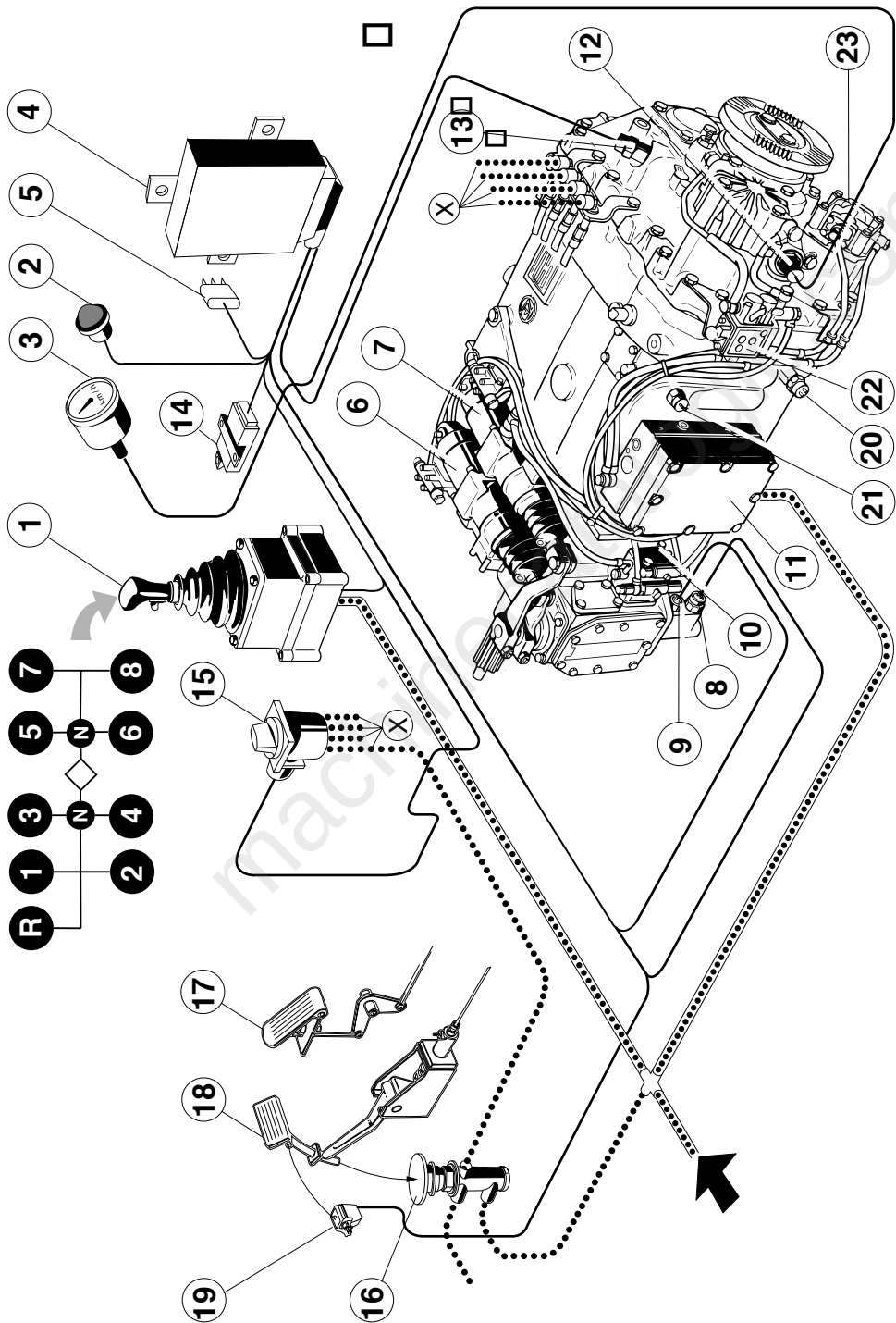
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ZF-ECOSPLIT[®]

Easyshift I shift system

6038 751 104a

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|---|---|----|---------------------------------|----|-------------------------------------|
| 1 | Gear selector switch | 9 | Display switch „Gear engaged“ | 17 | Accelerator pedal |
| 2 | Warning buzzer for excessive engine speed | 10 | Shift cylinder for reverse gear | 18 | Clutch pedal |
| 3 | Electrical tachograph | 11 | Central valve block | 19 | Clutch switch |
| 4 | Electronic control unit | 12 | Tachograph speed sensor | 20 | Splitter group switch |
| 5 | Vehicle circuit | 13 | Output speed sensor | 21 | Range-change group switch |
| 6 | Shift cylinder for gears 3/4 and 7/8 | 14 | Signal booster | 22 | Range-change group changeover valve |
| 7 | Shift cylinder for gears 1/2 and 5/6 | 15 | Emergency switch | 23 | Splitter group valve |
| 8 | Display switch „Transmission Neutral“ | 16 | „Emergency shift“ valve | X | Central emergency connection |

01. Electronic transmission control unit

01.01 Removal

NOTE: Ignition off.

01.02 Installation

In reverse order.

01.02.01 Tightening torque for hex screws

M6 $T_{AN} = 9,5 \text{ Nm}$

NOTE: The transmission control unit is adapted to suit each individual type of vehicle. It contains vehicle-specific data and cannot be swapped indiscriminately. Refer to parts list number.

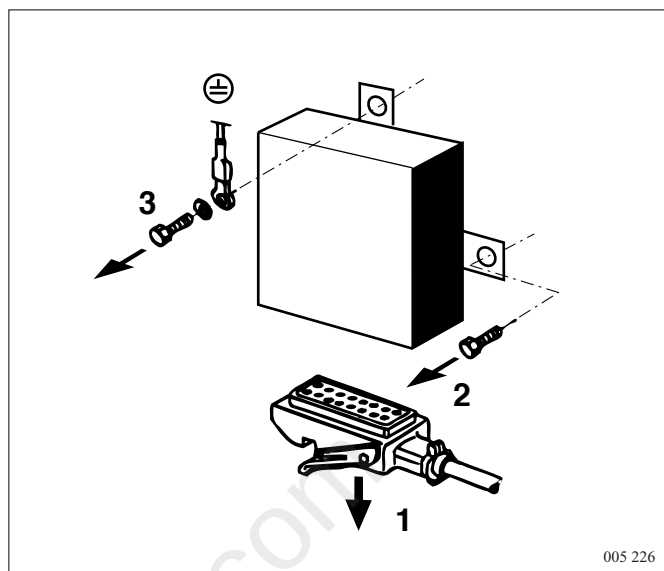
01.03 Setting

None

01.04 Function check

Observe during test run.

Function check in accordance with Easyshift inspection manual 6038 756 002 for the PR 76/III tester.



08. Output speed sensor

08.01 Removal

NOTE: Unscrew and remove speed sensor using **1X56 137 844** socket wrench.

Figure **A** shows the transmission without ZF secondary retarder.

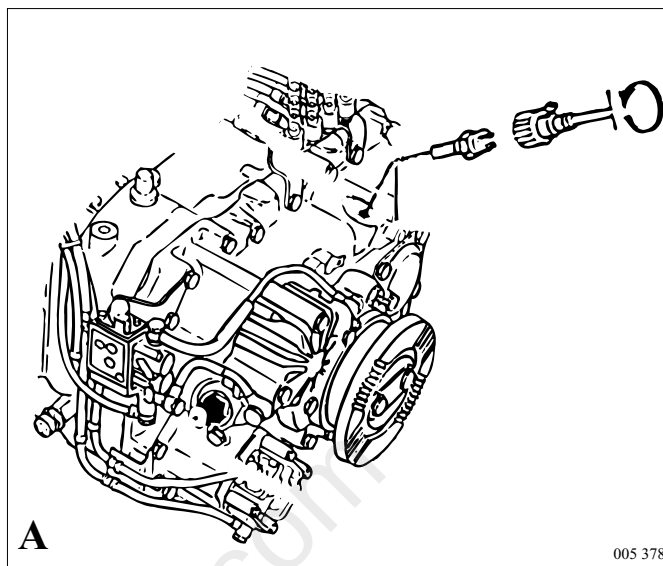


Figure **B** shows the transmission with ZF secondary retarder.

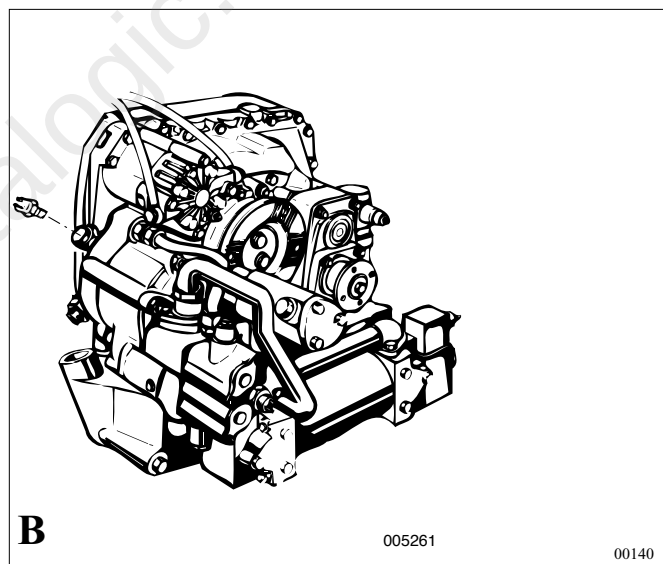
08.02 Installation

In reverse order.

08.02.01 Tightening torque - speed sensor

M18 $T_{AN} = 50 \text{ Nm}$

- NOTE:**
- Check connectors for leaks and pins for jamming and corrosion.
 - Fasten in speed sensor with socket wrench **1X56 137 844**.
 - Fit connector with slack wiring and press in retainer.



11. Switch operation

11.01 Adjustment (ZF specification 6038 107 020)

NOTE: To adjust the unit for switch operation, the following steps must be taken:

- Display switch „gear engaged“ and „transmission neutral“ must be removed.
- Fit housing (1) with no internal components - just with gasket.

NOTE: blocking units are wearing parts!

If there are functional defects, always replace them.

11.01.01 Insert measuring fixture **1P01 137 816** firmly home in housing (1).

11.01.02 Press down on blocking units (with measuring drift) until gear 1 or gear 2 can be engaged.

11.01.03 Secure measuring drift with knurled screw.

11.01.04 Establish dimension „X“ in gears 1 and 2 with depth gauge.

11.01.05 Adjust pin to dimension $X_{\min} + 4.8_{-0.2}$ mm and lock off with hex nut.

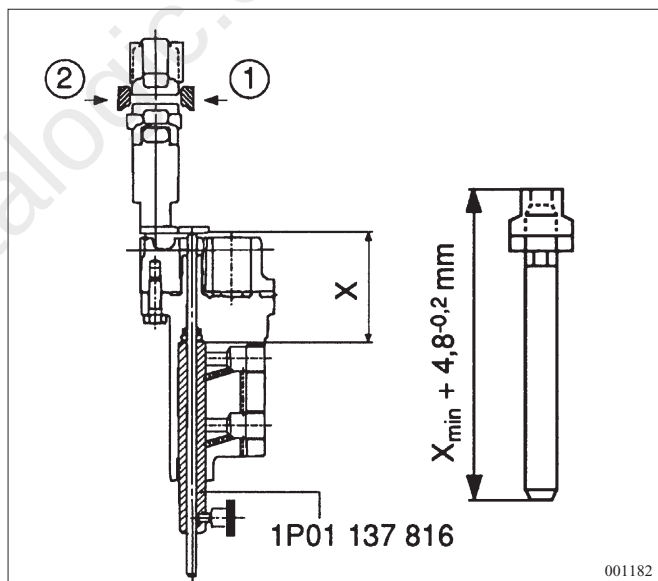
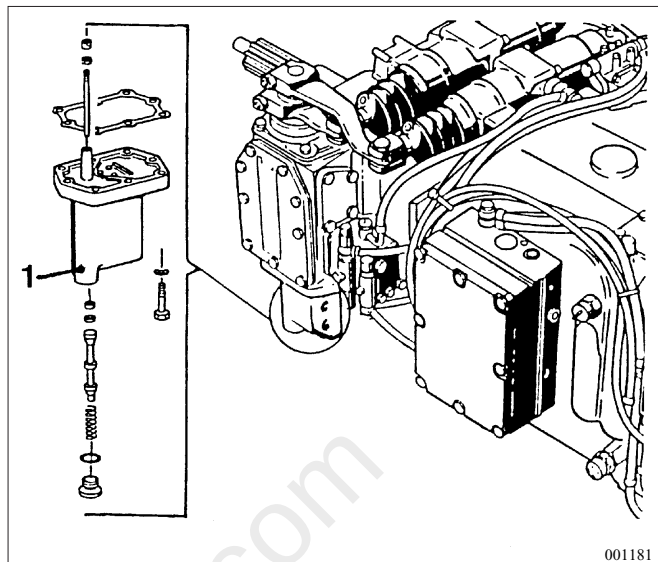
11.01.06 Install pin in housing and fit to shift housing with gasket.

11.01.07 Install all internal components.

11.01.08 Adjust switch as described in Chapters 10.03 and 11.03.

11.02 Function check

In accordance with Easyshift inspection manual 6038 756 002 for the PR 76/III tester.



17. Gearshift mechanism

17.01 Checking the fulcrum pads

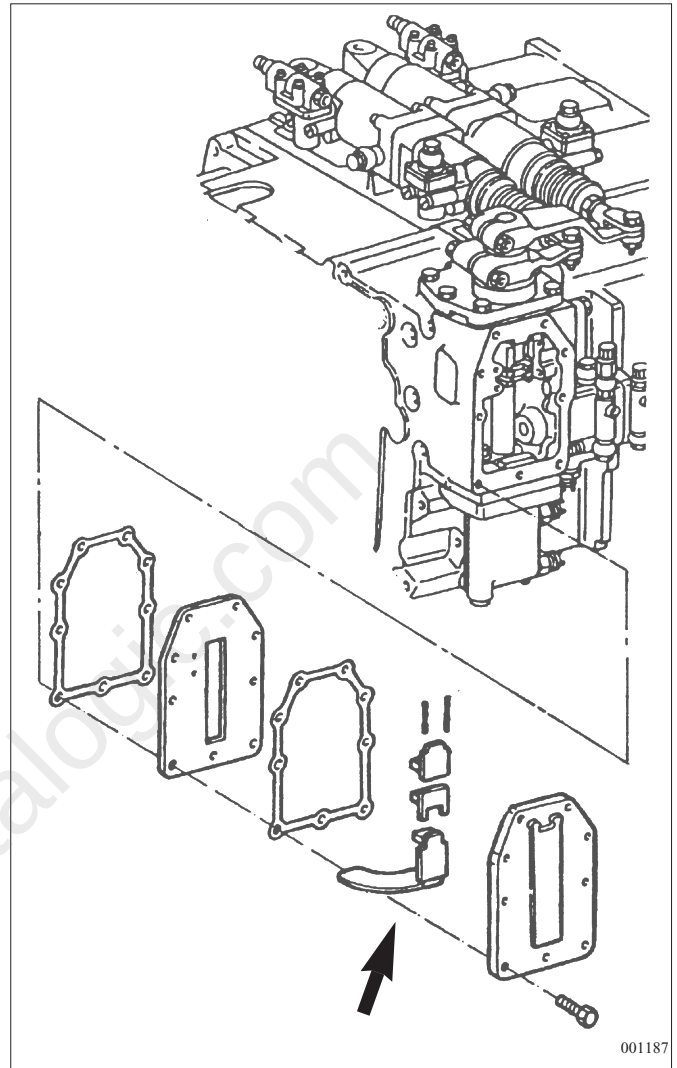
Removal

17.01.01 Remove cover with gasket, three fulcrum pads and two compression springs.

17.01.02 Remove plate with fulcrum pads and gasket.

NOTE: Fulcrum pads and compression springs are mounted loose in the cover.

NOTE: Check that pressure piece for gear selected/neutral display is at right angles.(see arrow)



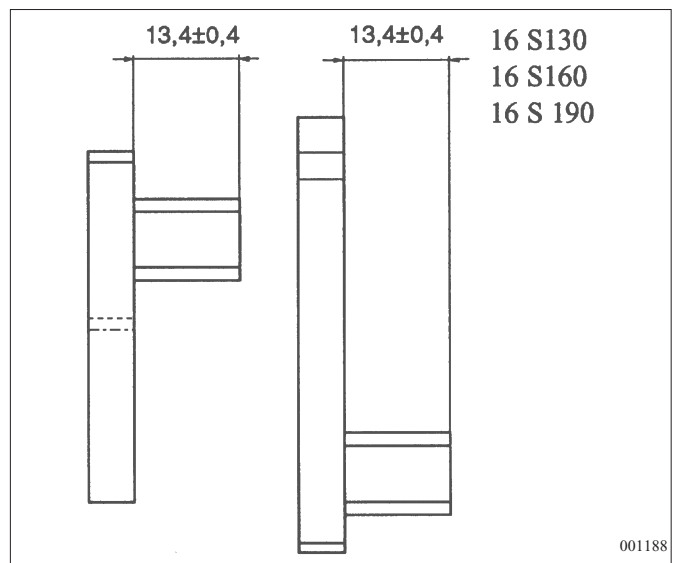
17.01.03 Check fulcrum pads.

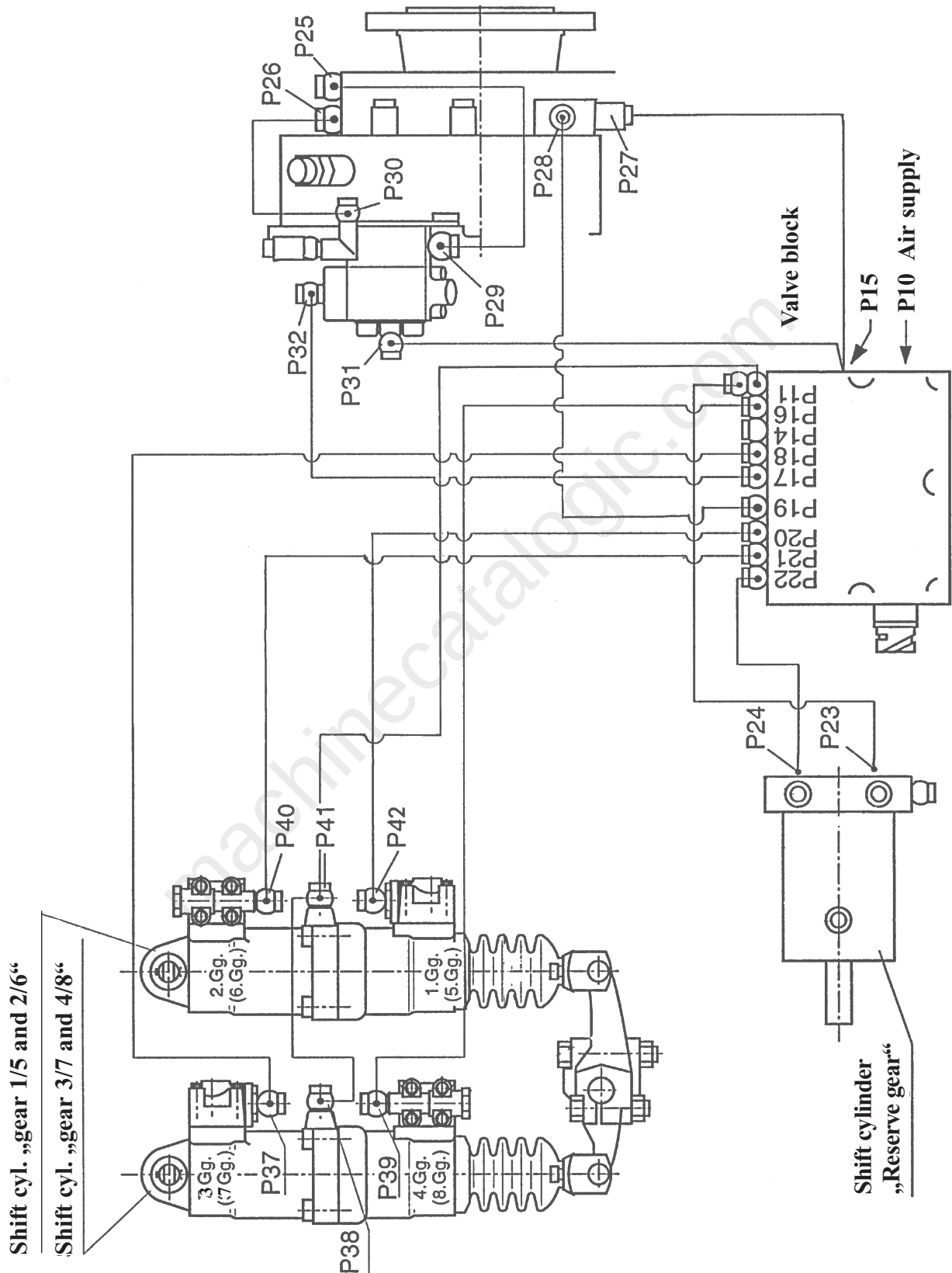
CAUTION

Dimensions of fulcrum pads are type-dependent.

17.01.04 Check dimensional accuracy of fulcrum pads and replace if necessary.

Dimensions for **16 S 130 / 160 / 190** = $13,4 \pm 0,4$ mm





Full Version Available

ZF WSK 400 and WSK 440 Transmission Service Manual

ZF WSK 400, WSK 440 transmission service manual with Easyshift I repair procedures, adjustments and checks. 50-page English PDF. Instant PDF download.

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