

Voith Turbo

**VOITH**

## Voith DIWA® automatic transmissions in Volvo city buses



**More than 150 000 buses worldwide have one thing in common: a DIWA automatic transmission.**

DIWA means economy as a result of superior technology. DIWA automatic transmissions are ideal for applications in all city and long-distance buses.

DIWA transmissions are optimally suited for the full range of modern combustion engines. They are adapted to the environmentally friendly, low-emission combustion engines per Euro-3-/4 norm.

### Your advantages:

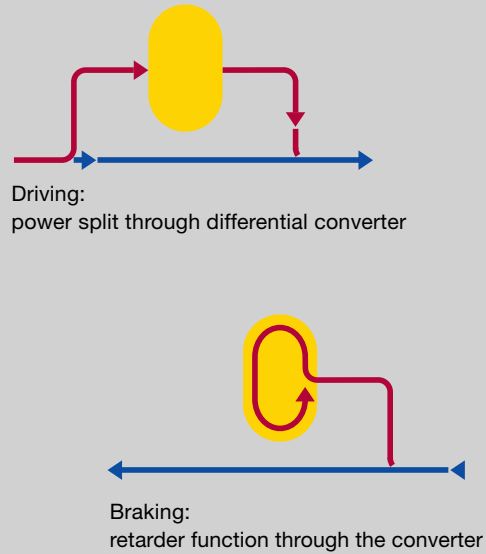
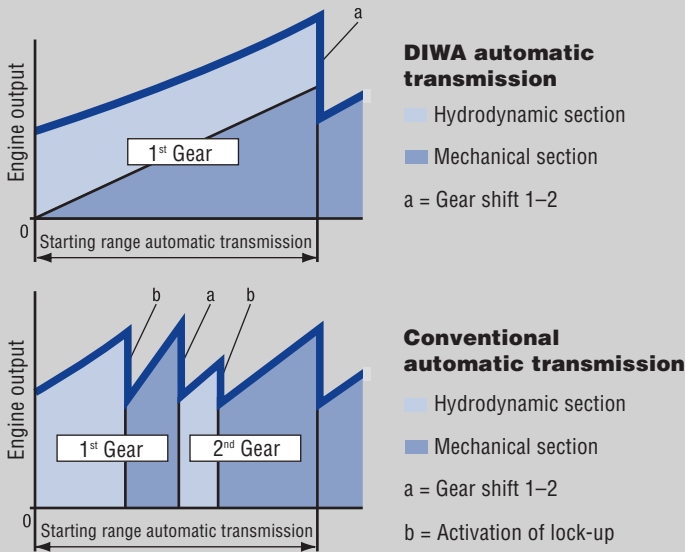
- High efficiency by mechanical-hydrodynamic power split
- High availability by superior cooling concept
- Low fuel consumption by automatic movement into neutral gear stage
- Series-fitted ANS: complete separation of transmission (including converter) and engine
- Optimum overdrive without compromise:
  - low engine speeds in city traffic
  - in long distance-traffic part-load on level routes, traction reserves on ascending roads
- Protection of the drive line by significantly reduced amount of gear-shifts, especially in the lower speed range
- Efficient retarder: always instantly available, no impairment by frequent downward shifts
- Maximum driving comfort by stepless acceleration
- Optimum maintenance back-up by PC-based diagnosis system
- Maximum gear-shifting comfort, even under extreme conditions
- Low maintenance costs by long maintenance intervals
- High reliability and long service life

# DIWA®.5 – the evolution of modern bus transmissions

The proven DIWA power-split principle allows smooth acceleration, where other transmissions require two to three gear-shifts. This, plus the unique combination of transmission, E 300 electronic control and ALADIN diagnosis software, make DIWA.5 a byword for economical bus transmissions. Up to 50% fewer gear-shifts reduce wear and increase driving comfort.

*Reduced wear and comfort become visible – one gear replaces two conventional gears*

*The Voith principle: driving and braking with one hydraulic circuit*



## DIWA.5 is the consistent further development of a technology that has proven itself world-wide

The shortening of the transmission, the elimination of external pipes or tubes for oil circulation, a heat exchanger that is integrated into the output and the further developed hydrodynamic converter are only a few characteristics of this new transmission. Operators benefit from even higher availability as well as further reduced maintenance and operating costs.

## E 300 – New-generation transmission control: From failure to events storage

- Recognises topography and axle ratio
- Optimises gear-shifting points
- Minimises fuel consumption
- Easy failure localisation and elimination
- Supports preventive maintenance and early failure detection
- Operating data recording of the second generation

## ALADIN – the quantum leap in diagnosis technology

- Comprehensive range of functions, low complexity
- Can be integrated into diagnosis system of vehicle manufacturer
- Intuitive operation
- Detailed operating data evaluation

# Success needs reliable partners

Benefit from our close partnership with vehicle manufacturers and our overall systems competence.



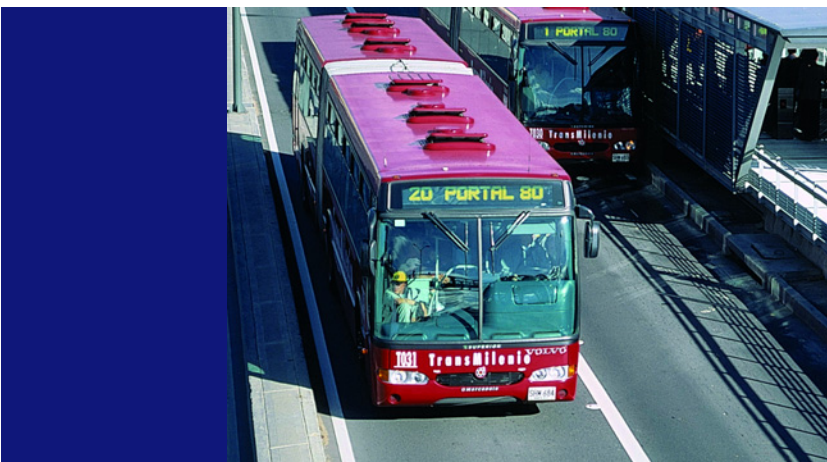
## Further advantages of DIWA automatic transmissions

- Choice of several gear-shifting programmes as standard
- Can be linked with CAN-J1587 for on-board diagnosis
- DIWA.5 now available in B9TL
- DIWA.5 as standard in all Volvo buses from Euro 4

## With the Voith Turbo service programme you are on the safe side

Across the entire service life of your transmissions, we accompany you with our comprehensive DIWA service package – starting with the joint configuration of your vehicles over the optimisation of daily operation up to maintenance and repair.

*We are here for you – no matter when and where you need us*



# DIWA transmissions in Volvo city buses

| Vehicle type                   | Enginetype           | Output/<br>Nominal speed<br>[kW]/[rpm] | Version | Transmission<br>type | Tyre size   | r dyn<br>[m] | V <sub>x</sub> in [km/h] |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
|--------------------------------|----------------------|--|---------|----------------------|-------------|--------------|--------------------------|------|------|------|------|------|------|------|------|--|--|--|--|-----|--|
|                                |                      |  |         |                      |             |              | Axle ratio               |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
|                                |                      |  |         |                      |             |              | 6.21                     | 6.20 | 5.77 | 5.74 | 5.63 | 5.29 | 5.27 | 5.13 | 4.63 |  |  |  |  |     |  |
| <b>DIWA®.5</b>                 |                      |  |         |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>Volvo 8700/<br/>B7R/RLE</b> | D7E290 EC01          | 213/1900                               | Euro 3  | D864.5               | 275/70R22.5 | 0.466        |                          |      |      |      |      | 81   | 86   |      |      |  |  |  |  | 99  |  |
|                                | D7E290 EC06          |  | Euro 4  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>Volvo 7700/<br/>B9L</b>     | D9B260/310 EC06      | 192/228/1900                           | Euro 4  | D864.5               | 275/70R22.5 | 0.466        | 74                       | 79   |      |      |      |      |      |      |      |  |  |  |  | 87  |  |
|                                | G9A260/300 EC06      | 192/223/1900                           | Euro 4  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>Volvo 7700A/<br/>B9LA</b>   | D9B310/360 EC06      | 228/265/1900                           | Euro 4  | D864.5               | 275/70R22.5 | 0.466        | 74                       | 79   |      |      |      |      |      |      |      |  |  |  |  | 87  |  |
|                                | G9A300 EC06          | 223/1900                               | Euro 4  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>B9S</b>                     | D9B310/360 EC01      | 228/265/1900                           | Euro 3  | D864.5               | 275/70R22.5 | 0.466        |                          | 74   | 80   |      |      |      |      |      |      |  |  |  |  |     |  |
|                                | D9B310/360 EC06      |  | Euro 4  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>B9TL</b>                    | D9A300/340 EC01      | 220/250/1900                           | Euro 3  | D864.5 - W52         | 275/70R22.5 | 0.466        |                          | 74   | 80   |      |      |      |      |      |      |  |  |  |  | 89  |  |
| <b>B9TL</b>                    | D9B260/310/360 EC06  | 192/228/265/1900                       | Euro 4  | D864.5 - W53         | 275/70R22.5 | 0.466        |                          | 74   | 80   |      |      |      |      |      |      |  |  |  |  |     |  |
|                                | D9B260/310/360 EC06B | 192/228/265/1900                       | Euro 5  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>Volvo 8700/<br/>B12M/B</b>  | DH12E340 EC01        | 250/1900                               | Euro 3  | D864.5               | 295/80R22.5 | 0.506        |                          |      |      |      |      |      | 88   | 94   |      |  |  |  |  | 107 |  |
|                                | DH12E340 EC06        |  | Euro 4  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>DIWA®.3E</b>                |                      |  |         |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
| <b>B7TL</b>                    | D7C215               | 158/2200                               | Euro 3  | D864.3E - W22        | 275/70R22.5 | 0.466        |                          | 74   | 80   |      |      |      |      |      |      |  |  |  |  |     |  |
|                                | D7C250               | 184/2200                               | Euro 3  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |
|                                | D7C275               | 202/2200                               | Euro 3  |                      |             |              |                          |      |      |      |      |      |      |      |      |  |  |  |  |     |  |

**VOITH**  
Engineered reliability.

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