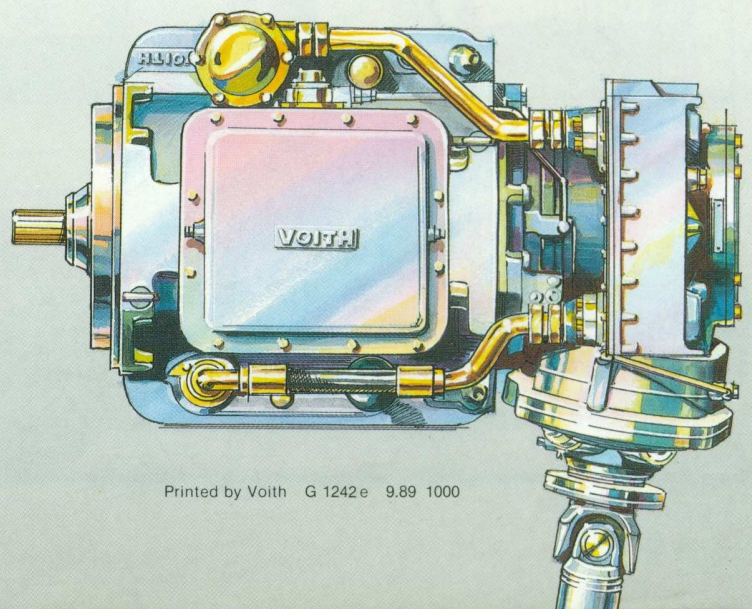
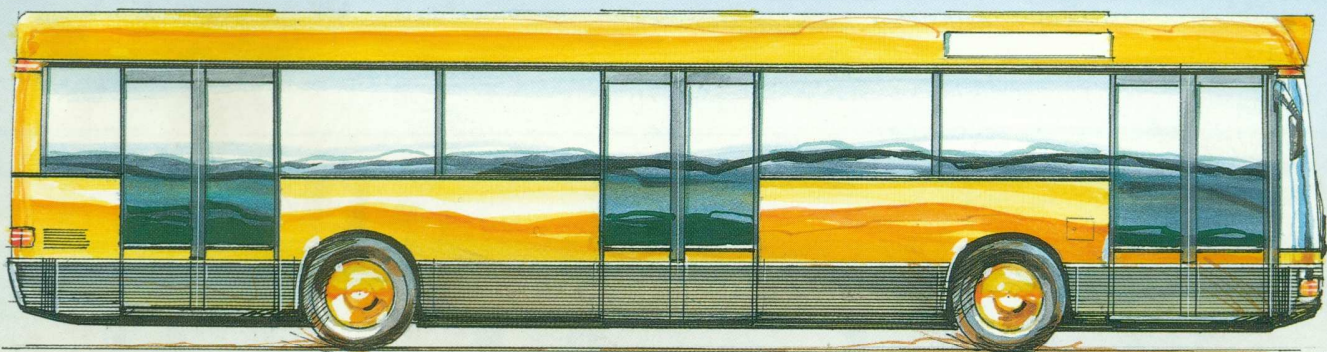




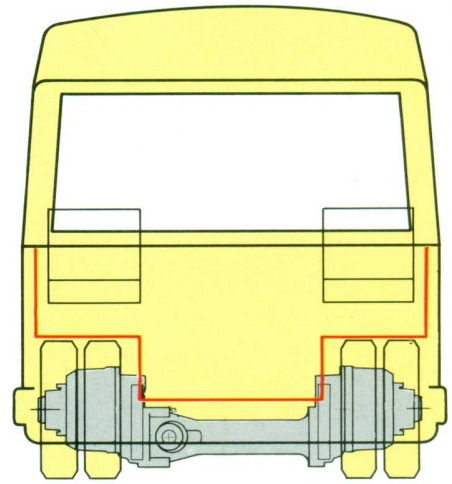
**Automatic transmissions for
low-floor city buses**

**Voith DIWA trans-
missions with special
angle drives**



Design and arrangement

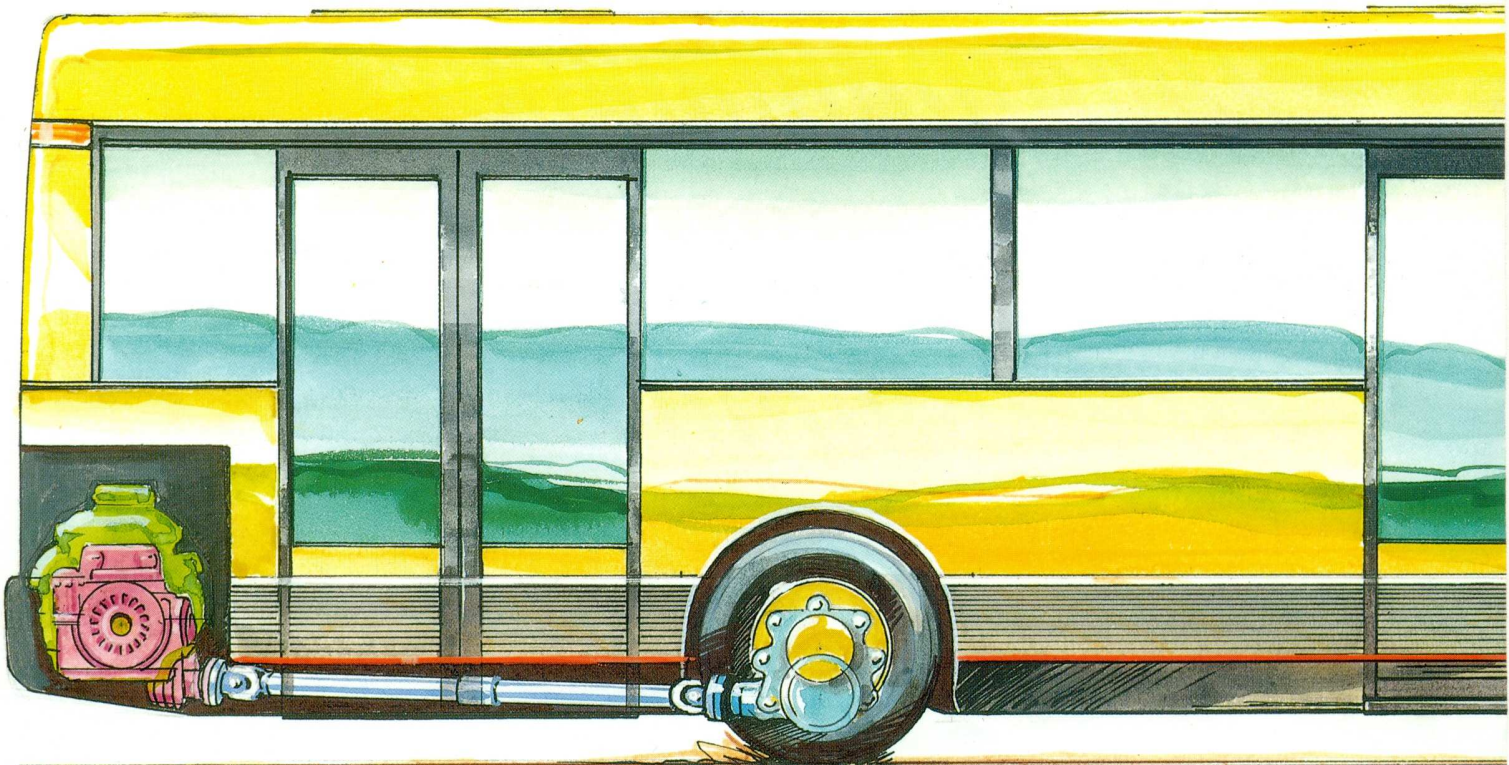
The automatic transmissions are standard 3- or 4-speed transmissions with an angle drive on the output side especially developed for low-floor vehicles. In addition to a 65° or 80° bevel gear set, the angle drive has a cylindrical gear stage designed in such a way that the output flange and consequently the cardan shaft are located on a low level. This results in open areas in one plane at the rear making a third door possible behind the axle. Engine and transmission are directly connected with each other, forming one transversely arranged assembly in the vehicle.

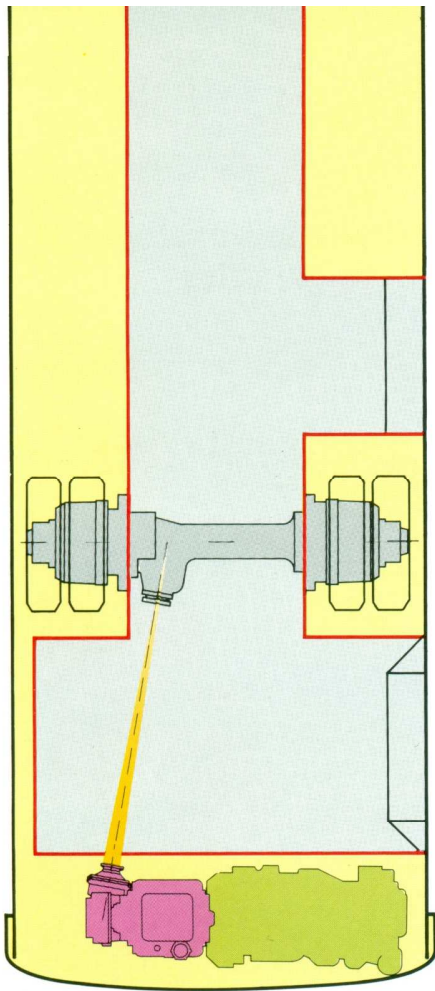


The cardan shaft connects the transmission to an offset drop axle with 65° or 80° drive.

The Voith solution is suitable for the common low-floor axles and engines.

Voith offers automatic transmissions with angle drives and in cooperation with GRAZIANO Trasmissioni S.p.A. (Italy) drop axles.





The low-floor arrangement and its advantages for the passengers:

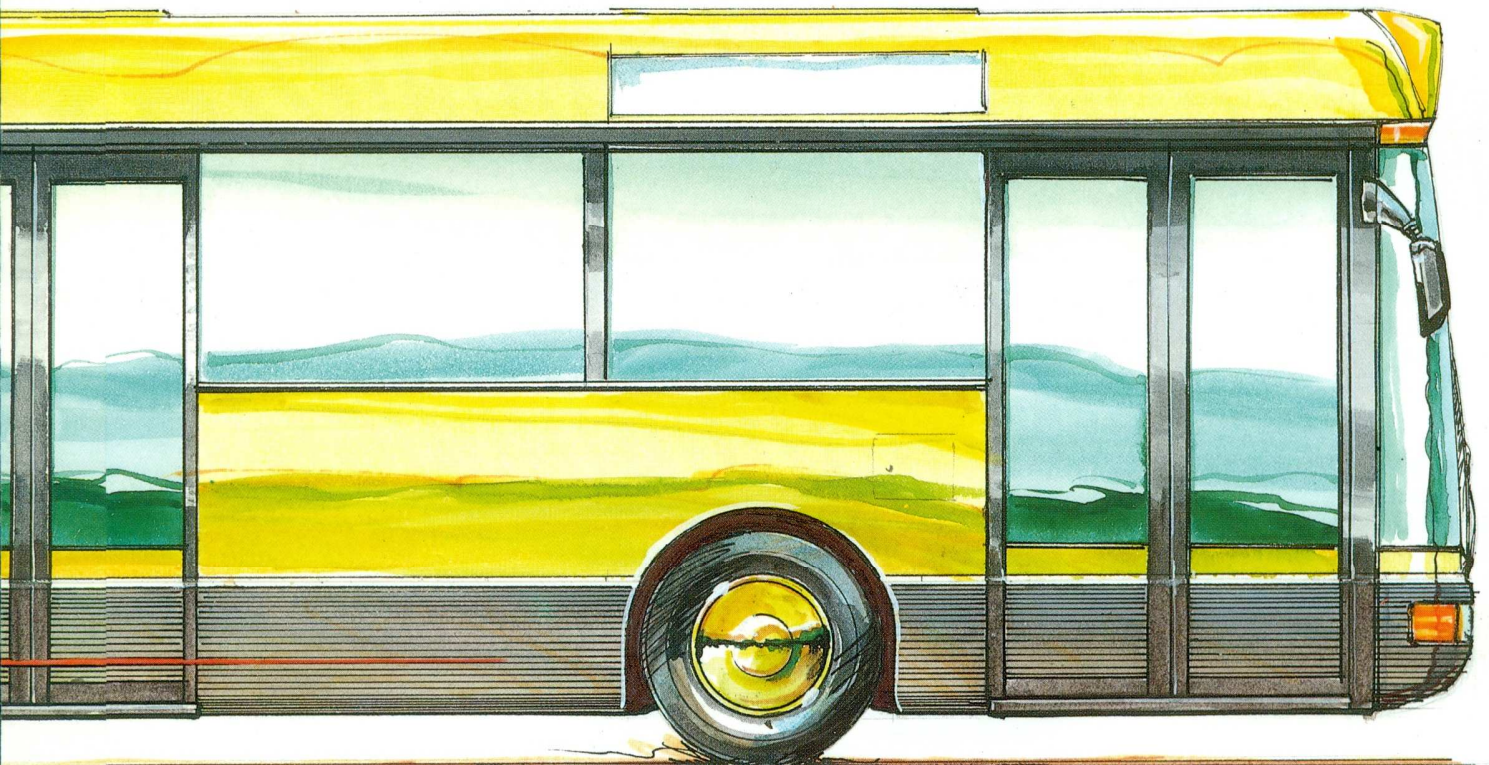
- Low entrance height
- Uniformly low floor straight into the back without steps
- More headroom for standing passengers
- With a ramp suitable for wheelchair users
- Boarding and alighting at the rear possible.

Advantages for bus manufacturers:

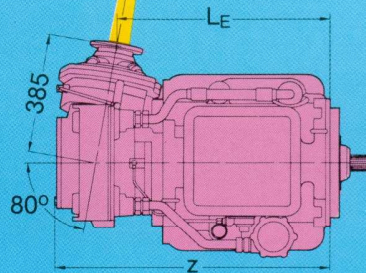
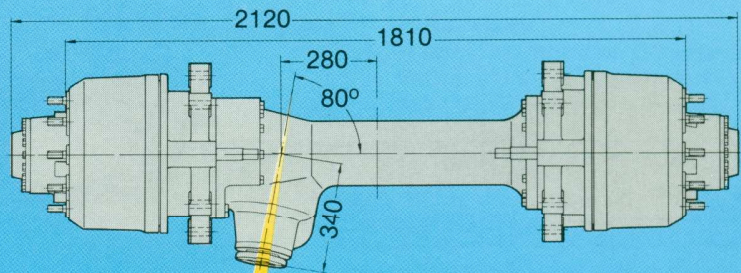
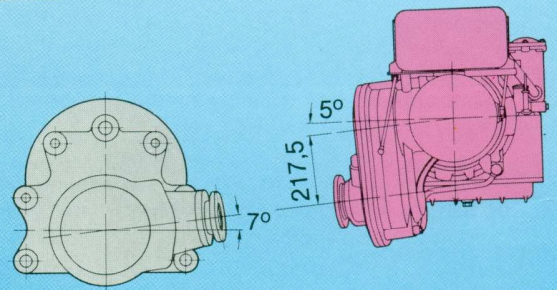
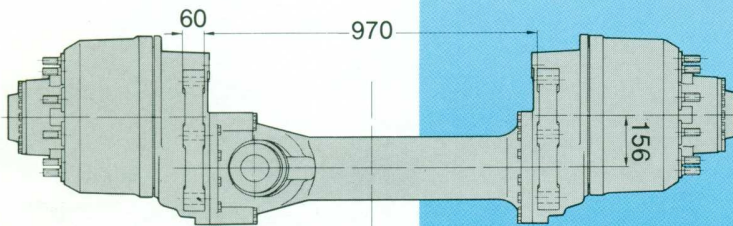
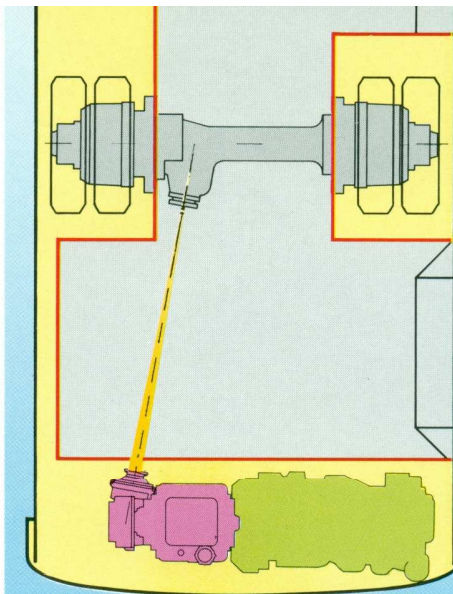
- Drive concept especially designed for low-floor vehicles
- Use of standard components
- Compatible with all common axles for the low-floor arrangement
- Optimum cardan shaft angle

Installation

A torsional vibration damper connected with the engine flywheel mass feeds the torque into the transmission. The transmission is flanged directly on the engine. A possible alternative for the 80° angle drive is a 65° angle drive and 5° inclination also with dimension 217.5.



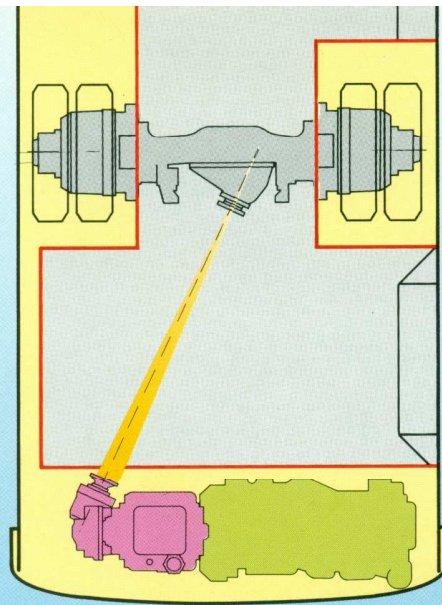
**Installation example
80° angle drive**



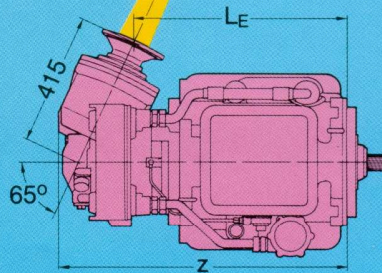
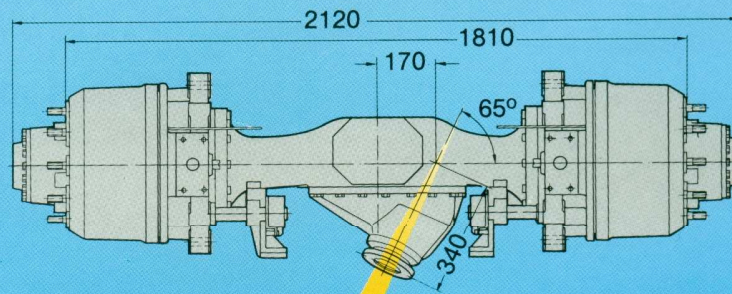
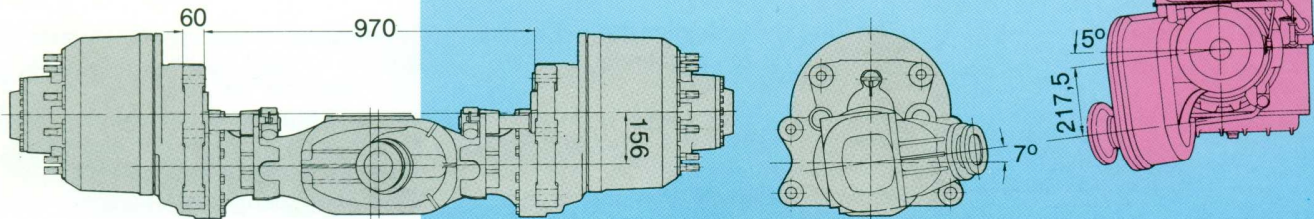
W15 angle drive (80°)
suitable for installation on:

Transmission	Length L_E	Length z
D 851.2	662	852
D 854.2	741	930
D 863	662	852
D 864	741	930

Application in buses



Installation example
65° angle drive



Max. gross vehicle weight [t] 24
Driving axle capacity [t] 13
Max. engine output [kW] 235

Drop axles from GRAZIANO
Trasmissioni S.p.A.
for 80° type BRA 130 DC 80°
for 65° type BRA 130 DC 65°

Available ratios
3.93 – 4.3 – 4.53 – 4.75 – 5.10 –
5.28 – 5.66 – 6.01 – 6.34 – 11.26

Tyre options
10.000.20 – 11 R 22.5 –
D 22.5 Pilot x – E 22.5
Pilot 315/80 R 22.5 –
275/70 R 22.5 – 305/70 R 22.5

Features of the drop axles

- Ground gears
- High contact ratio of bevel gears
- Low overall noise level
- Suitable for fitting anti-skid systems

Automatic transmissions

DIWA standard transmissions D 851.2
and D 864 (3-speed)
D 854.2 and D 864 (4-speed)
Technical data overleaf
Description in leaflet G 1050e.

W15 angle drive (65°)

suitable for installation on:

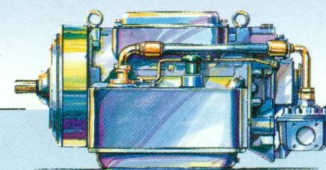
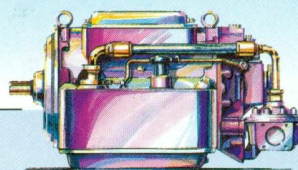
Transmission	Length L _E	Length z
D 851.2	643	910
D 854.2	721	988
D 863	643	910
D 864	721	988

The Voith automatic —
 Technical data of the
 DIWA® transmissions



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 Telex: 71479980 vh d
 Fax: (07321) 373104
 Telegrams:
 Voithwerk Heidenheimbrenz

Types		D 851.2	D 863	D 854.2	D 864
Input power P_1	[kW]	125-205	170-245	125-205	170-245
Input torque M_1	[Nm]	500-1000	900-1300	500-1000	900-1300
Input speed $n_{1 \max}$	[min ⁻¹]	2800	2800	2300	2300
Number of gears		3	3	4	4



Types		D 851.2	D 863	D 854.2	D 864
Torque ratio Output/Input drive	Differential/ pump impeller	Ratio			
1st gear (stall point)	3 N	6.1	—	6.1	—
	3 S	5.8	5.8	5.8	5.8
	4 N	5.3	5.3	5.3	5.3
	4 S	5.2	5.2	5.2	5.2
2nd gear	3 N/3 S	1.43	1.43	1.43	1.43
	4 N/4 S	1.36	1.36	1.36	1.36
3rd gear	3 N/3 S	1.0	1.0	1.0	1.0
	4 N/4 S	1.0	1.0	1.0	1.0
4th gear	3 N/3 S	—	—	0.7	0.7
	4 N/4 S	—	—	0.73	0.73
Reverse gear (Stall point)	3 N	5.2	—	5.2	—
	3 S	4.7	4.7	4.7	4.7
	4 N	4.3	4.3	4.3	4.3
	4 S	3.8	3.8	3.8	3.8
Weight of basic transmission (dry) including converter brake without oil [kg]		275	280	310	315
Heat exchanger [kg]		20	20	20	20
Oil filling [l]		28	28	28	28
Oil brand as per Voith lubrication list G 607					

Speedo drive DIN 75532 E2 $n_{\text{speedo cable}} = 11:17 \times n_{\text{cardan shaft}}$