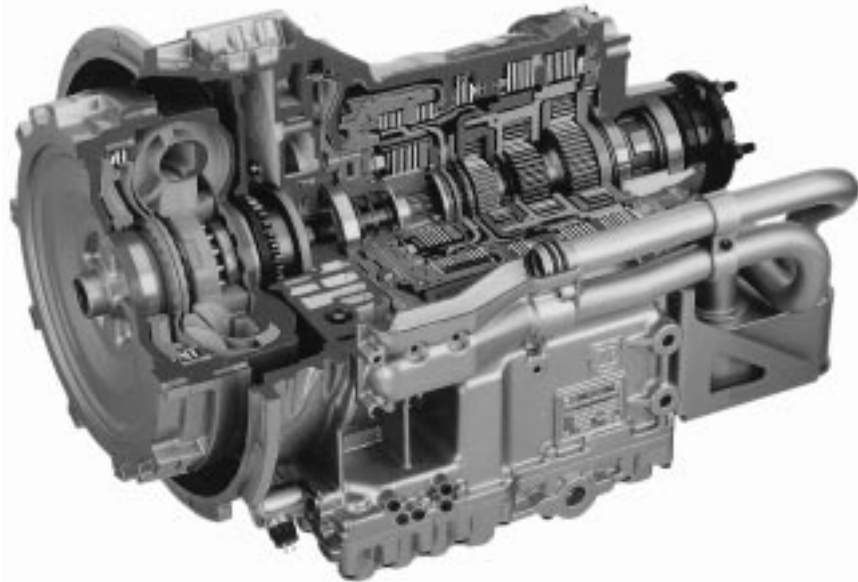




ZF-ECOMAT 2



ZF automatic transmission HP 502 C, HP 592 C, HP 602 C for city buses, line service buses and coaches



- **ZF-ECOMAT 2 – a modern transmission system for city buses, line service buses and coaches.**
- **The new CAN-capable (C) electronic shift modules (EST 46 / EST 47) provide the system with maximum possible shift comfort, safety, economy and service life.**
- **The Ecomat 2 range is designed for use in buses with a total weight not exceeding 28 t.**

Special features

- Smooth moving off, no clutch wear
- Torque converter only operates when moving off
- Close ratio steps in planetary transmission
- Shift points are load and acceleration-dependent
- Consistent level of shift comfort with pressure regulation during gear-shifts
- Electronic control unit communicates with other electronic systems, such as CAN, SAE J 1939, etc.
- Improved safety due to integrated retarder with continuously variable control
- Increased road safety due to easy operation; operating errors are excluded
- Easy installation due to central wiring system
- Fast, straightforward system diagnosis on vehicle with new diagnostic system with menu logic
- Automatic “Neutral at Bus Stop” (NBS) as special option for city buses: automatically selects neutral when stationary

ZF - Auxiliary units

- Various angle drives can be installed
-

Technical data

Type	No. of gears	Max. perm. input-speed (min ⁻¹)	Max. weight (t) at eng. torque DIN 70020/ISO 1585 [Nm]			Ratios							Weight ³⁾ (ca. kg)	
			City bus	Artic. bus	Coach	1st	2nd	3rd	4th	5th	6th	Rev		
HP 502 C	4	2 800	19 t 1100 Nm	28 t 1050 Nm	26 t 1100 Nm	3.43	2.01	1.42	1.00	–	–	4.84	300	
	5					3.43	2.01	1.42	1.00	0.83	–		310	
	6	2 800 ¹⁾				3.43	2.01	1.42	1.00	0.83	0.59		310	
HP 592 C	4	2 800	19 t 1250 Nm	28 t 1250 Nm	26 t 1250 Nm	3.43	2.01	1.42	1.00	–	–	4.84	300	
	5					3.43	2.01	1.42	1.00	0.83	–		315	
	6	2 800 ¹⁾				3.43	2.01	1.42	1.00	0.83	0.59		315	
HP 602 C	4	2 650	19 t 1400 Nm	28 t 1400 Nm	26 t 1600 Nm ²⁾	3.43	2.01	1.42	1.00	–	–	4.84	320	
	5					3.43	2.01	1.42	1.00	0.83	–		330	
	5	2 650 ¹⁾				2.81	1.84	1.36	1.00	0.80	–		3.97	330
	6					3.43	2.01	1.42	1.00	0.83	0.59		330	

1) For ratio = 0.59; max speed = 1600 min⁻¹ - only after consultation with ZF

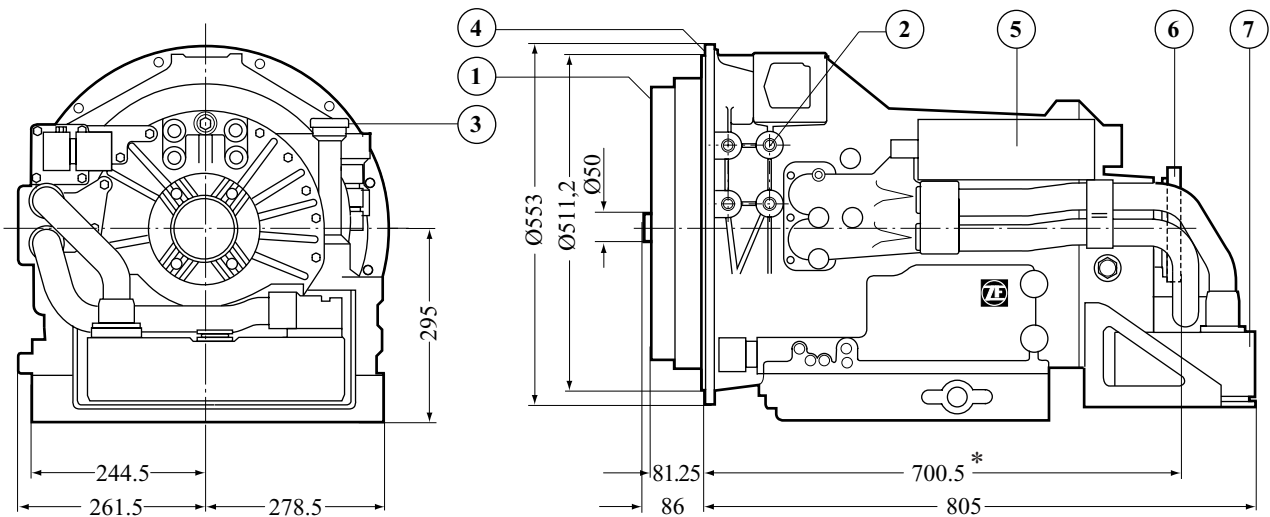
2) Only after consultation with ZF

3) Transmission with retarder and oil cooler (without oil)

Oil fill quantity for initial fill: approx. 30 dm³

NOTE:

HP 502, HP592, HP 602 transmissions can also be used with CAN-incapable engines – contact ZF



Key to drawing

- ① Input
- ② Side mounting faces
- ③ Oil filler tube with dipstick
- ④ SAE 1 engine mounting flange
- ⑤ Retarder accumulator
- ⑥ DIN 165 output flange (various flange versions possible)
- ⑦ Oil cooler

* Depending on output flange type

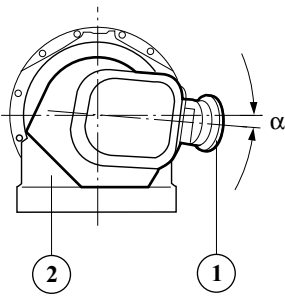
60°, 65°, 80° angle drives

For transverse installation of engine/transmission unit, the following angle drives (WTR) are available:

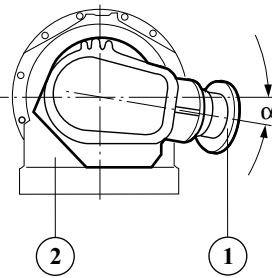
WTR	Ratios	Engine torque max. (Nm)	Weight (~ kg)	Position	
				right	left
60°	0.97	1 400	97	○ ($\alpha = 5^\circ$)	○ ($\alpha = 5^\circ$)
65°	1.03	1 400	97	○ ($\alpha = 3.5^\circ; 10^\circ$)	○ ($\alpha = 5^\circ$)
80°	0.97	1 400	97		○ ($\alpha = 3^\circ; 6^\circ; 9^\circ$)
80° LHD with offset axle	0.91	1 250	125		○ ($\alpha = 5^\circ$)
80° RHD with offset axle	0.98	1 250	125	○ ($\alpha = 5^\circ$)	

max. permissible input speed = 2 400 min⁻¹

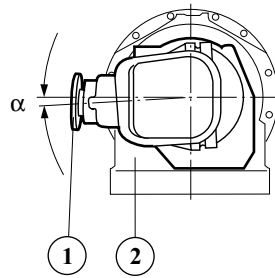
60° WTR



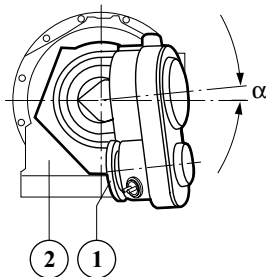
65° WTR



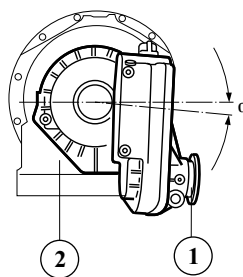
80° WTR



80° LHD angle drive with offset axle



80° RHD angle drive with offset axle



Key to drawing

- ① Output (various flange types available)
- ② Ecomat transmission

Subject to technical change without notice. For installation investigation purpose, please request installation drawings; only the data contained therein is binding.

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