

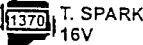


CLUTCH

		Boxer engines	Turbodiesel engines		T. Spark 16V engines
			 TD	 JTD	
Thickness of the plate	New	7.1 ÷ 7.7 mm	7.1 ÷ 7.7 mm	-	7.1 ÷ 7.7 mm 6.7 ÷ 7.3 mm (*)
	Almost worn out	6.1 mm	6.1 mm	-	6.3 mm 5.9 mm (*)
Cylinder cap stroke of clutch control		16.15 ÷ 18.2 mm	13.5 mm	13.5 mm	-

(*): Specific for engine  T. SPARK 16V with gearbox C.513.5

GEARBOX

RATIOS (Specific for Boxer and Turbodiesel engines)

	Gear	Ratio	Inserted gearshift	Gear ratio	Total ratio
930 A3 (before mod.)	C.802.5	9/37 1 : 4.111	1^	1 : 3.545	1 : 14.576
930 A2 (before mod.)			2^	1 : 2.050	1 : 8.428
930 A1 (before mod.)			3^	1 : 1.323	1 : 5.437
			4^	1 : 1.027	1 : 4.222
			5^	1 : 0.854	1 : 3.509
			RM	1 : 3.091	1 : 12.707
930 A3 (after mod.)	C.802.5	10/43 1 : 4.3	1^	1 : 3.545	1 : 15.246
			2^	1 : 2.050	1 : 8.815
			3^	1 : 1.323	1 : 5.687
			4^	1 : 1.027	1 : 4.416
			5^	1 : 0.854	1 : 3.671
			RM	1 : 3.091	1 : 13.291
930 A2 (after mod.)	C.802.5	11/45 1 : 4.091	1^	1 : 3.545	1 : 14.503
			2^	1 : 2.050	1 : 8.387
			3^	1 : 1.323	1 : 5.412
			4^	1 : 1.027	1 : 4.201
			5^	1 : 0.854	1 : 3.494
			RM	1 : 3.091	1 : 12.645
930 A2A	C.802.5	9/35 1 : 3.888	1^	1 : 3.545	1 : 13.782
			2^	1 : 2.050	1 : 7.970
			3^	1 : 1.323	1 : 5.143
			4^	1 : 1.027	1 : 3.992
			5^	1 : 0.854	1 : 3.320
			RM	1 : 3.091	1 : 12.017
930 A4	C.510.5	18/57 1 : 3.166	1^	1 : 3.909	1 : 12.376
			2^	1 : 2.238	1 : 7.085
			3^	1 : 1.440	1 : 4.559
			4^	1 : 1.029	1 : 3.258
			5^	1 : 0.794	1 : 2.514
930 A4A			RM	1 : 3.909	1 : 12.376

ROLLING TORQUES (Specific for Boxer engines)

False pinion:	for reused bearings	0.29 ÷ 0.59 Nm
	for new bearings	1.17 ÷ 1.47 Nm
Pinion with gears:	for reused bearings	0.39 ÷ 0.69 Nm
	for new bearings	1.27 ÷ 1.57 Nm

RATIOS (Specific for T. Spark engines)

	Gearbox	Ratios	Inserted gearshift	Gear ratio	Total ratio
930 A5	C.510.5	16/57 1 : 3.562	1^	1 : 3.545	1 : 12.631
			2^	1 : 2.238	1 : 7.973
			3^	1 : 1.520	1 : 5.415
			4^	1 : 1.156	1 : 4.119
			5^	1 : 0.946	1 : 3.370
			RM	1 : 3.909	1 : 13.926
930 A3A	C.510.5	15/58 1 : 3.866	1^	1 : 3.909	1 : 15.112
			2^	1 : 2.238	1 : 8.652
			3^	1 : 1.520	1 : 5.876
			4^	1 : 1.156	1 : 4.469
			5^	1 : 0.919	1 : 3.553
			RM	1 : 3.909	1 : 15.112
930 A3A	C.513.5	15/59 1 : 3.933	1^	1 : 3.909	1 : 15.374
			2^	1 : 2.238	1 : 8.802
			3^	1 : 1.520	1 : 5.978
			4^	1 : 1.156	1 : 4.546
			5^	1 : 0.919	1 : 3.614
			RM	1 : 3.909	1 : 15.374
930 A2B	C.510.5	16/57 1 : 3.562	1^	1 : 3.909	1 : 13.924
			2^	1 : 2.238	1 : 7.972
			3^	1 : 1.520	1 : 5.414
			4^	1 : 1.156	1 : 4.118
			5^	1 : 0.971	1 : 3.459
			RM	1 : 3.909	1 : 13.924
930 A2C	C.510.5	17/57 1 : 3.353	1^	1 : 3.909	1 : 13.107
			2^	1 : 2.238	1 : 7.504
			3^	1 : 1.520	1 : 5.096
			4^	1 : 1.156	1 : 3.876
			5^	1 : 0.971	1 : 3.256
			RM	1 : 3.909	1 : 13.107
930 A1A	C.510.5	15/56 1 : 3.733	1^	1 : 3.909	1 : 14.592
			2^	1 : 2.238	1 : 8.354
			3^	1 : 1.520	1 : 5.674
			4^	1 : 1.156	1 : 4.315
			5^	1 : 0.946	1 : 3.531
			RM	1 : 3.909	1 : 14.592

DIFFERENTIAL (Specific for 1929 Turbodiesel and T. Spark 16V engines)

Bearings preloading (unloaded) = 0.12 mm

Play between crown wheels and side pinions ≤ 0.10 mm

RATIOS (Specific for 99s models)

TO BE PUBLISHED SOON

WHITE

BRAKES

BRAKE DISC







		FRONT			REAR
		Suction brake (*)	Suction brake	Non-suction brake	
Diameter	(mm)	284	257	257	240
Limit utilisation thickness	(mm)	20.2	18.2	10.2	9.2
Minimum thickness after grinding	(mm)	21.1	19.1	11.1	10.1
Nominal thickness	(mm)	21.8 ÷ 22.1	19.8 ÷ 20.1	11.8 ÷ 12.1	10.8 ÷ 11.1

(*): Specific for engines  T. SPARK 16V  T. SPARK 16V

BRAKE PADS

	FRONT	REAR
Limit utilisation thickness of friction brake shoe	1.5 mm (Shown by a sensor for brake pads wear)	1.5 mm

REAR BRAKE DRUMS

	BOXER ENGINES  T.S. 16V  T.S. 16V	 T.S. 16V  T.S. 16V  TD  JTD
Nominal diameter	228.7 mm	203 mm
Max diameter after grinding	229.1 mm	-
Limit utilisation thickness	230 mm	-

REAR DRUM BRAKE SHOES

Limit utilisation thickness of friction gaskets	1.5 mm
---	--------

ENTRER OF INDUCTIVE SENSORS - A.B.S. PHONIC WHEELS

Front wheels	0.3 ÷ 1.05 mm
Rear wheels	0.2 ÷ 1.15 mm

FRONT SUSPENSIONS

HELICAL SPRINGS (Specific for Boxer and T. Spark 16V engines)

Engines	Boxer 8V	Boxer 16V	1970 T. SPARK 16V		1370 T. SPARK 16V	1598 1747 T. SPARK 16V
			Before mod.	After mod.		
Wire's diameter	13.8 mm	13.8 mm	13.8 mm	13.7 mm	13.7 mm	13.8 mm
Internal diameter	150 mm	150 mm	150 mm	150 mm	150 mm	150 mm
Loose length	366 mm	369 mm	384 mm	370 mm	384 mm	386.5 mm

NOTICE: Helical springs are divided according to hardness classification and marked with different paint colours so to be easily detected. In case of replacement of one or both springs, check that the new springs are marked with the same colour of the replaced ones.

SHOCK ABSORBERS (Specific for Boxer and T. Spark 16V engines)

	Boxer	T. Spark 16V
Stem diameter	22 mm	22 mm
Stroke	145 mm	167 mm

STABILIZER BAR (Specific for Boxer and T. Spark 16V engines)

Bar diameter	22 mm	23 mm (*)
--------------	-------	-----------

(*): Specific for engines  T. SPARK 16V  T. SPARK 16V

HELICAL SPRINGS (Specific for Turbodiesel engines)

Versions	Conditioned	Non-conditioned
Wire's diameter	14 mm	13.8 mm
Internal diameter	150 mm	150 mm
Loose length	416 mm	386 mm

NOTICE: Helical springs are divided according to hardness classification and marked with different paint colours so to be easily detected. In case of replacement of one or both springs, check that the new springs are marked with the same colour of the replaced ones.

SHOCK ABSORBERS (Specific for Turbodiesel engines)





Stem diameter	22 mm
Stroke	155 mm

STABILIZER BAR (Specific for Turbodiesel engines)

Bar diameter	23 mm
--------------	-------

REAR SUSPENSIONS

HELICAL SPRINGS

	BOXER TURBODIESEL	 T. SPARK 16V	 T. SPARK 16V	  T. SPARK 16V
Wire's diameter	12.3 mm	12.1 mm	12.6 mm	12.1 mm
Internal diameter	100 mm	100 mm	100 mm	100 mm
Loose length	305 mm	305 mm	299 mm	295 mm

NOTICE: Helical springs are divided according to hardness classification and marked with different paint colours so to be easily detected. In case of replacement of one or both springs, check that the new springs are marked with the same colour of the replaced ones.

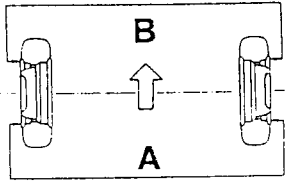
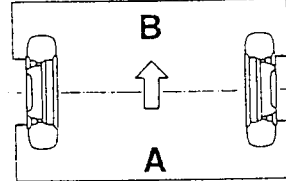
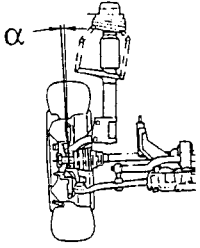
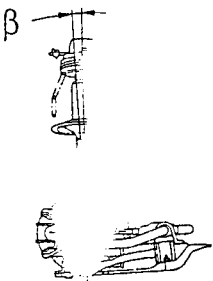
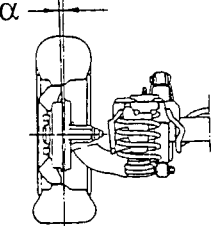
SHOCK ABSORBERS

Stem diameter	11.5 mm
Stroke	96.5 mm

STABILIZER BAR

Bar diameter	16 mm
--------------	-------

WHEELS' POSITIONS AND CHARACTERISTIC ANGLES (*)

Features	Versions	Boxer	Turbodiesel 1.4 T.Spark 16V 1.6 T.Spark 16V	1.8 T.Spark 16V 2.0 T.Spark 16V
Front position (B - A)	See GROUP 44	40 ± 5 mm	- 13 ± 5 mm	- 26 ± 5 mm
Rear position (C - D)	See GROUP 44	7 ± 5 mm	- 2 ± 5 mm	- 2 ± 5 mm
Toe-in/Toe-out front wheels (A - B)		3.5 ± 1 mm	- 1 ± 1 mm 0 ± 1 mm (●)	0 ± 1 mm
Toe-in rear wheels (A - B)			- 0.5 ± 2 mm 2.0 ± 2 (▲)	
Camber of front wheels "α"		- 1° ± 20'	- 1°10' ± 20'	- 1°30' ± 20'
Caster "β"			2°40' ± 30'	
Camber of rear wheels "α"			- 1° ± 20' - 45' ± 30' (▲)	

(*): Values measured in running gear (with prescribed supplies) and with tyres with prescribed pressure.

(●): Specific for JUNIOR versions

(▲): From chassis number 4.058.043 - 2.076.237.