

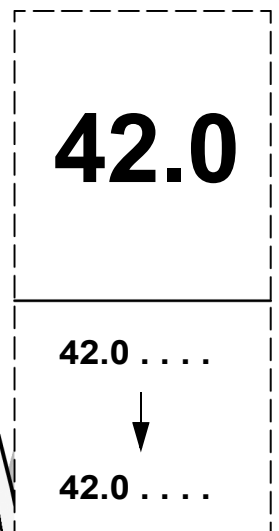
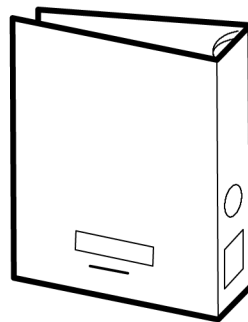
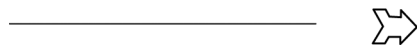
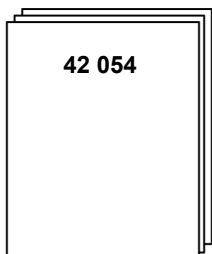
42 054 - GB - 01/2005

ADJUSTMENTS TO AXLES / DRIVE AXLES

RANGE	FAMILY	VARIANT	
RENAULT KERAX	-	13102/03	
RENAULT MAGNUM		12919/23	
RENAULT MAGNUM DXi 12 440 - 480	17RD	-	
	17SD		
	17TD		
RENAULT MASCOTT dCi	-	12911/13/15	
RENAULT MIDLUM 12 -16 t Euro 2		13102/03	
RENAULT MIDLUM 12-16 t Euro 3			
RENAULT MIDLUM 16-18 t			
RENAULT MIDLUM 4x4			47XA
			47XC
RENAULT MIDLUM 7-12 t			-
RENAULT PREMIUM			



The above information may change in the course of time. Only the "Consult" section of the workshop manuals repertory in standard N° 10320 serves as reference.



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GENERALITIES

Warnings

In this document, safety instructions are symbolized as follows:



DANGER! NON-OBSERVANCE OF THE PROCEDURE DESCRIBED OR LACK OF CARE OR ATTENTION, RISK CAUSING SERIOUS INJURY OR EVEN DEATH.



WARNING! Any different or inappropriate working method risks causing damage to the product.



NOTE! Draws attention to particular or important points of the method.



Comply without fail with the regulations in force relative to the recovery and treatment of used parts and waste.

Identification

MASCOTT		
Family	Variant	Unit
52 A / 54 A / 54 B		E 22 AB

MIDLUM		
Family	Variant	Unit
44 C1	168BW	E 42 BC
44 V	168CL	E 42 BD
42 B1 / B2 / B3 / B4	168BV	E 46 AB
43 C2	168CG	E 62 AD
44 C2 / 44 T / 44 V	168CG	E 62 AD
43 E1 / 43 E2 / 45 D2 / 45 E2	168BY	E 63 BC
45 D3	168CH	E 72 AB
47 XA	168CI	PA 610
47 XC	168CJ	PA 611

PREMIUM		
Family	Variant	Unit
22 C / AA / AB	168BM	E 81 NO
22 AA / AB / QQ	168BE	E 81 EO
22 C / CC	168BL	E 81 NQ
22 C / CC / AA / AB / JJ / RR	168BF	E 82 CN
22 AA / AB / EE / HA / HB / QQ	168BG	E 82 JN
22 AA / AB		E 86 LR
22 EE	168BS	E 81 NS
22 HA / HB	168CC	E 81 B
22 QQ	16906	AUSTERAS

KERAX		
Family	Variant	Unit
33 G / H / K / L / P / Q / GG / HH / II / PP / QQ	168CF	E 83 OL
33 G / H / P / GG / HH / II / KK / LL / PP / QQ	168AL	E 83 KL
33 A / AA / BB / CC / DD	168CS	E 83 OP
33 A / AA / BB / CC / DD	168BO	E 83 ML
33 A / AA / BB / CC / DD	168CT	E 83 PM
33 A / AA / BB / CC / DD	168BZ	E 83 OM
33 M / N / R / MM / NN / RR / SS	168BH	PA 941
33 M / N / R / MM / NN / RR / SS	168AN	PA 945

MAGNUM		
Family	Variant	Unit
11 E	16839	E 81 AC
11 F / H	16845	E 81 EC
11 F	168AX	E 81 EP
11 F	16906	AUSTERAS

MAGNUM DXI		
Family	Variant	Unit
17 TD		FA 71 A
17 TD		FA 81 A
17 RD / SD		FA 71 B
17 RD / SD		FA 81 B
17 TD		E 81 PNG

Generalities

Preliminary checks

Before carrying out any work, proceed with the following checks:

- Condition and pressure of tyres.
- Condition and height of suspension.
- Efficiency of shock absorbers.
- Play of front axle wheel hub bearings, swivel pins and joints.

With the front wheels in the "straight ahead" position, check the wheel alignment.

Check that the steering is in the "mid-point" position. For power-assisted steering systems, make sure there is no hydraulic pressure when the steering is in the "mid-point" position.

Carry out a road test after making adjustments found to be necessary during the above checks. If necessary, check the front axle geometry angles.

Inspection conditions:

- Vehicle unladen and in running order.
- Cab in "road" position (for vehicles with tilt cab).
- Vehicle on flat ground, steering axle wheels on pivoting plates.
- Vehicle equipped with lift-up axle: the axle must be lowered.
- Front axle geometry checking apparatus.

Adjusting the mechanical steering lock stops

With the wheel alignment adjusted, screw the steering lock stops fully home.

Turn the steering wheel carefully to the right until the required steering lock angle is obtained, without exceeding the angle so as not to maladjust the hydraulic lockover limitation stops on the steering box.

Unscrew the mechanical steering lock stop in question until contact is made with the axle stop shoulder. Tighten the locknut (depending on the assembly).

Turn the steering wheel to the left and adjust the other steering lock stop in the same way.

Check that the tyres do not enter into contact with the chassis mechanical elements.



Steering box with automatic adjustment hydraulic stops: Do not manoeuvre the steering box when its mechanical deflection is not limited (risk of maladjustment of hydraulic stops).

E1 - First axle

E2 - Second axle (in front of drive axle)

E3 - Third axle (behind drive axle)

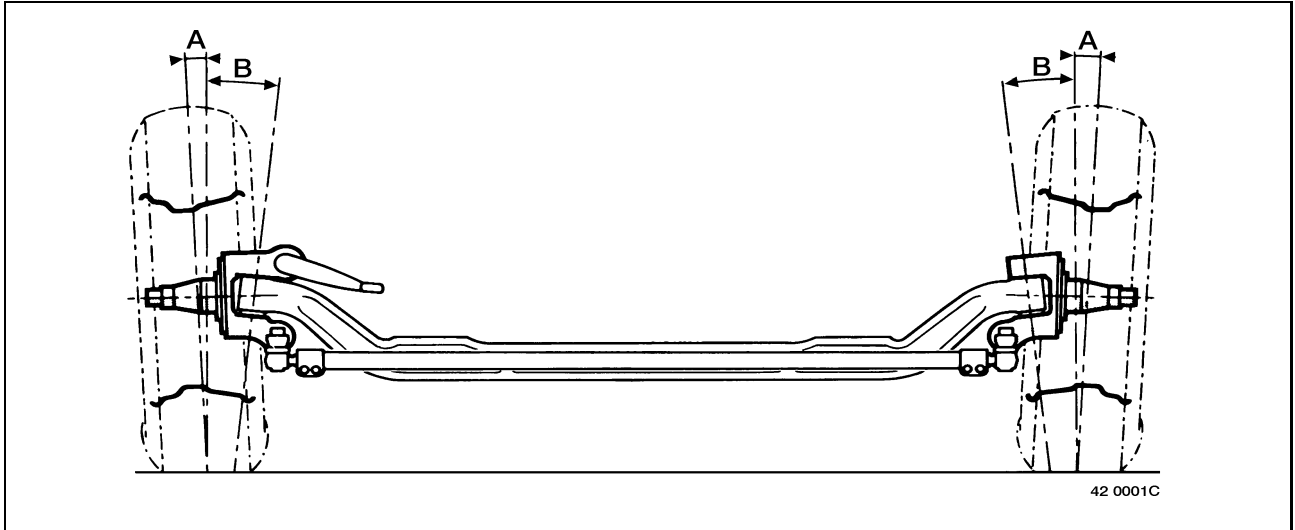
Inspection

The angles are given in degrees (°) and minutes (') with a tolerance of $\pm 30'$.

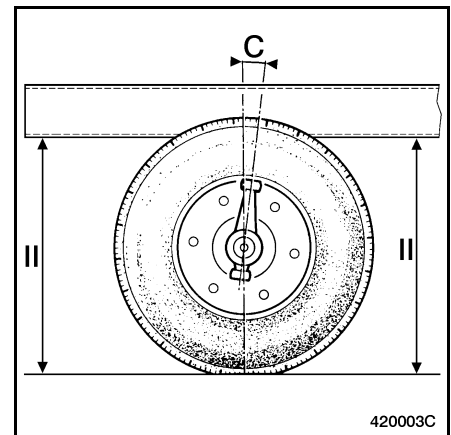
The load is given in kilograms (kg). The zero (0) corresponds to the vehicle unladen and in running order.

A - Camber angle

B - Kingpin angle



C - Caster angle



Inspection

D / E - Turning angle

Inner wheel

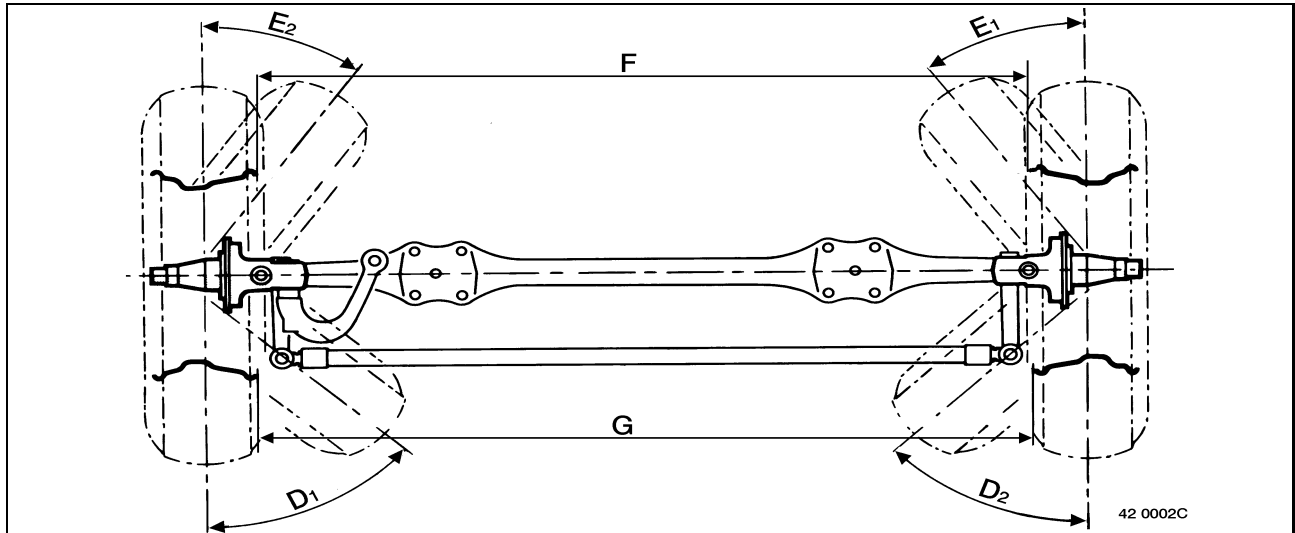
D¹ - Turning angle (to the left)

D² - Turning angle (to the right)

Outer wheel

E¹ - Turning angle (to the left)

E² - Turning angle (to the right)



Wheel alignment (toe-in) (**F** → **G**) mm/m ± 0.44 mm/m

Wheel alignment (toe-in) + (**F** < **G**)

Wheel alignment (toe-out) - (**F** > **G**)

INSPECTION

MASCOTT

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	E 22 AB	≤ 4700	-	1°	6° 45'	6° 20'	52°	52°	40°	40°

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	1540	2200	-	-	-	-
E 22 AB	- 2.2	- 2.9	-	-	-	-

MIDLUM

4x2

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	E 42 BC	≤ 4700	-	1°	6° 45'	4° 30'	50°	50°	35° 20'	35° 20'
-	E 42 BD	≤ 4700	-	1°	6° 45'	4° 30'	50°	50°	35° 20'	35° 20'
-	E 46 AB	≤ 4700	-	1°	6° 45'	4° 30'	50°	50°	35° 20'	35° 20'
-	E 62 AD	≤ 4700	-	1°	6° 45'	4° 30'	50°	50°	35° 20'	35° 20'
-	E 63 BC	≤ 4700	-	1°	6° 45'	4° 30'	50°	50°	35° 20'	35° 20'
-	E 72 AB	≤ 4700	-	1°	6° 45'	4° 30'	44°	44°	36°	36°
-	E 72 AB	> 4700	-	1°	6° 45'	4° 30'	50°	50°	36°	36°

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	3000	3170	4200	4500	6000	7100
E 46 AB	0.5	-	- 0.8	-	-	-
E 42 BC	0.5	-	-	- 1.2	-	-
E 42 BD	0.5	-	-	- 1.2	-	-
E 62 AD*	- 3.1	-	-	-	- 0.7	-
E 62 AD**	0.3	-	-	-	- 1.8	-
E 63 BC	- 0.9	-	-	-	- 2	-
E 72 AB	-	1.2	-	-	-	- 1.5

MIDLUM

4x4

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	PA 610	≤ 4700	-	1°	8°	4° 30'	38°	38°	30°	30°
-	PA 611	≤ 4700	-	1°	8°	4° 30'	38°	38°	30°	30°

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	3000	5300	-	-	-	-
PA 610	- 5.9	- 2.5	-	-	-	-
PA 611	- 5.9	- 2.5	-	-	-	-

PREMIUM

4x2

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	E 81 EO	> 4700	-	1°	6° 45'	3° 40'	50°	50°	36°	36°
-	E 81 NO	≤ 4700	315/ 60R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 81 NO	≤ 4700	315/ 70R22,5	1°	6° 45'	3° 40'	43° 30'	43° 30'	36° 40'	36° 40'
-	E 81 NO	≤ 4700	315/ 80R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 81 NO	≥ 4700	315/ 70R22,5	1°	6° 45'	3° 40'	44°	44°	37° 10'	37° 10'
-	E 81 NO	≥ 4700	315/ 80R22,5	1°	6° 45'	3° 40'	45°	45°	37° 40'	37° 40'
-	E 81 EQ	> 4700	13R22,5	1°	6° 45'	3° 40'	50°	50°	36°	36°
-	E 81 NQ	≤ 4700	315/ 60R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 81 NQ	≥ 4700	315/ 70R22,5	1°	6° 45'	3° 40'	43° 30'	43° 30'	36° 40'	36° 40'
-	E 81 NQ	≤ 4700	315/ 80R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 82 CN	≥ 4700	315/ 60R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 82 CN	≥ 4700	315/ 70R22,5	1°	6° 45'	3° 40'	43° 30'	43° 30'	36° 40'	36° 40'
-	E 82 CN	≥ 4700	315/ 80R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 82 CN	≥ 4700	13R22,5	1°	6° 45'	3° 40'	44°	44°	37°	37°
-	E 82 JN	> 4700	315/ 60R22,5	1°	6° 45'	3° 40'	50°	50°	36°	36°
-	E 82 JN	> 4700	315/80 R22,5	1°	6° 45'	3° 40'	50°	50°	36°	36°
-	E 86 LR	≥ 4700	315/ 60R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
-	E 86 LR	≥ 4700	315/ 70R22,5	1°	6° 45'	3° 40'	43° 30'	43° 30'	36° 40'	36° 40'
-	E 86 LR	≥ 4700	315/ 80R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'

6x2

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
E1	E 82 JN	> 4700	315/ 60R22,5	1°	6° 45'	3° 30'	46°	46°	38° 30'	38° 30'
E1	E 82 JN	> 4700	315/70 R22,5	1°	6° 45'	3° 30'	43° 30'	43° 30'	36° 50'	36° 50'
E1	E 82 JN	> 4700	315/ 80R22,5	1°	6° 45'	3° 30'	46°	46°	38° 30'	38° 30'
E3	AUSTE	-	-	-	-		13°	13°	-	-
E1	E 81 EO	> 4700	315/ 60R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
E1	E 82 EO	> 4700	315/ 70R22,5	1°	6° 45'	3° 30'	43° 30'	43° 30'	36° 50'	36° 50'
E1	E 81 EO	> 4700	315/ 80R22,5	1°	6° 45'	3° 40'	46°	46°	38° 30'	38° 30'
E3	AUSTE	-	-	-	-		13°	13°	-	-

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	4500	8000	3000	7700	-	-
E 81 EO	- 2.5	- 0.2	-	-	-	-
E 81 NO	- 2.5	- 0.2	-	-	-	-
E 81 NQ	- 2.5	- 0.2	-	-	-	-
E 82 CN	- 2.5	- 0.2	-	-	-	-
E 82 JN	- 2.5	- 0.2	-	-	-	-
E 86 LR	0.2	- 1.7	-	-	-	-
AUSTERAS	-	-	2.5	± 1	-	-

PREMIUM

6x2/4

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
E1	E 82 JN	> 4700	-	1°	6° 45'	3° 30'	46°	46°	38° 30'	38° 30'
E2	E 81 NS	> 4700	-	1°	6° 45'		10° 30'	10° 30'	10° 30'	10° 30'

6x2/4H

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
E1	E 82 JN	≤ 4700	-	1°	6° 45'	4°	46°	46°	38° 30'	38° 30'
E3	E 81 B	≤ 4700	-	1°	6° 45'	3° 30'	19° 50'	19° 50'	16° 20'	16° 20'

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	4500	8000	4100	7100		
E 82 JN	1.2	-1.7	-	-	-	-
E 81 NS	- 2.5	- 0.2	-	-	-	-
E 81 B	-	-	0.2	- 1.3	-	-

KERAX

4x2 / 6x4

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	E 83 KL	> 4700	-	1°	6° 45'	3° 20'	41°	41°	35° 20'	35° 20'
-	E 83 KL	> 4700	1200 R24	1°	6° 45'	3° 20'	36° 50'	36° 50'	32° 20'	32° 20'
-	E 83 ML	> 4700	-	1°	6° 45'	3° 20'	41°	41°	35° 20'	35° 20'
-	E 83 ML	> 4700	1200 R24	1°	6° 45'	3° 20'	36° 50'	36° 50'	32° 20'	32° 20'
-	E 83 OL	≤ 4700	-	1°	6° 45'	3° 20'	46° 30'	46° 30'	35° 30'	35° 30'
-	E 83 OL	≤ 4700	1200 R24	1°	6° 45'	3° 20'	37° 30'	37° 30'	30° 30'	30° 30'
-	E 83 OP	≤ 4700	-	1°	6° 45'	3° 20'	46° 30'	46° 30'	35° 30'	35° 30'
-	E 83 OP	≤ 4700	1200 R24	1°	6° 45'	3° 20'	37° 30'	37° 30'	30° 30'	30° 30'

8x4

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
E1	E 83 OP	≤ 4700	-	1°	6° 45'	3° 20'	41°	41°	35° 20'	35° 20'
E2	E 83 PM	≤ 4700	-	1°	6° 45'	3° 30'	31°	31°	28°	28°
E1	E 83 ML	> 4700	-	1°	6° 45'	3° 20'	43° 30'	43° 30'	33° 30'	33° 30'
E2	E 83 OM	> 4700	-	1°	6° 45'	3° 30'	28°	28°	25°	25°

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	4500	7500	-	-	-	-
E 83 KL	- 2.7	- 3.5	-	-	-	-
E 83 ML	- 2.7	- 3.5	-	-	-	-
E 83 OL	- 2.7	- 3.5	-	-	-	-
E 83 OM	- 2.7	- 3.5	-	-	-	-
E 83 OP	- 2.7	- 3.5	-	-	-	-
E 83 PM	- 2.7	- 3.5	-	-	-	-

KERAX

4x4 / 6x6

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
-	PA 941	-	-	2°	8°	3°	42°	42°	32° 50'	32° 50'
-	PA 941	-	1200 R24	2°	8°	3°	32° 10'	32° 10'	27°	27°
-	PA 941	-	395/85 R20	2°	8°	3°	32° 10'	32° 10'	27°	27°
-	PA 945	-	-	2°	8°	3°	42°	42°	32° 50'	32° 50'
-	PA 945	-	1200 R24	2°	8°	3°	32° 10'	32° 10'	27°	27°
-	PA 945	-	395/85 R20	2°	8°	3°	32° 10'	32° 10'	27°	27°

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	4500	8000	-	-		
PA 941	7.6	6.5				
PA 945	7.6	6.5				

MAGNUM

AXLE		WHEEL BASE	TYRE	ANGLE						
				A	B	C	D ¹	D ²	E ¹	E ²
E1	E 81 AC	-	-	1°	6° 45'	3°	50°	50°	32°	32°
E1	E 81 EC	-	-	1°	6° 45'	3°	47°	47°	38°	38°
E1	E 81 EP	-	-	1°	6° 45'	3°	47°	47°	38°	38°
E3	AUST	-	-	-	-	-	13°	13°	-	-

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	5000	8000	3000	7700	-	-
E 81 AC	0	- 1.3	-	-	-	-
E 81 EC	- 1.5	- 0.3	-	-	-	-
E 81 EP	- 2.6	- 0.5	-	-	-	-
AUSTERAS	-	-	2.5	± 1	-	-

MAGNUM DXI

AXLE	ANGLES								
	A		B		C	D ¹	D ²	E ¹	E ²
	(1)	(2)	(1)	(2)					
FA 71/81 A E 81 PNG	1°	0.25°	5.5°	6.25°	5.2°	48°	48°	34°	34°
FA 71/81 B	1°	0.25°	5.5°	6.25°	5.2°	46°	46°	36.4°	36.4°

(1): steering side

(2): side opposite steering

AXLE	WHEEL ALIGNMENT IN RELATION TO LOAD					
	5000	7000	8000	-	-	-
FA 71/81 A/B E 81 PNG	0	-0.5	-0.75	-	-	-

