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**T.R.**
**MINISTRY OF INDUSTRY AND TRADE**
**Directorate General for Industry**

**Vehicle Type Approval Certificate**
(For Full/completed ([1]) ([2]) vehicles)

This certificate is the notification about a vehicle type of;

- Giving Type Approval ([1]), /seal/
- ~~Expanding the scope of Type Approval ([1]),~~
- ~~Rejection of Type Approval ([1]),~~
- ~~Withdrawing of Type Approval ([1]),~~

According to Motor Vehicles and Their Trailers Type Approval (MARTOY).

Type Approval Number : 37A.İ.T.M./M.A.R.T.O.Y.99/386/00
Reason of Expansion : ---

| | | |
|---|---|---|
| 0 | GENERAL | |
| 01 | Trademark (Registered trademark of Manufacturer): | **ISUZU** |
| 02 | Type and general commercial definition (/definitions): | **MD.27S – SA – SL. MD 27B – 22B, MD27 A/S** |
| 03 | If type introduction form is marked on vehicle: | **On Label** |
| 0.3.1 | Location of this mark: | **On rear right and front left** |
| 04 | Class of the vehicle: | **M3** |
| 05 | Name and address of base vehicle manufacturer: | **ANADOLU ISUZU OTOMOTİV SANAYİ VE TİCARET A.Ş. Yedıpınarlar Mevkii Şekerpınar Köyü Gebze 41400 -KOCAELİ** |
| | Name and address of manufacturer who manufactures final stage of vehicle: | **Same** |
| 06 | Name and address (addresses) of Assembly Facility (Facilities): | **Same** |

Signatory certifies that one test sample (samples) of vehicle (vehicles) completed above was selected by approval body and was delivered as prototype (prototypes) of vehicle type by manufacturer and manufacturer definitions stipulated in introduction document affixed and test results given conform to vehicle type.

Vehicle Type meets / ~~doesn't meet~~ all technical conditions in all relevant regulation stipulated in MARTOY and A.T.İ.M. ([1])

Type approval was given. / ~~rejected. / withdrawn.~~ ([1])

_____ 18 JUNE 1999
(Place) (Date)

/signature/
(Signature)
Necati SARIBAY
On behalf of President
General Director of Industry

([1]) Cross out the inappropriate one.
([2]) See. Back side.

Digitally signed by
Date: 2020.09.06 19
Reason: MoldSign S
Location: Moldova

T.R.
MINISTRY OF INDUSTRY ABD TRADE
Directorate General for Industry

# VEHICLE TYPE APPROVAL CERTIFICATE

(For completed vehicles)

| | | |
|---|---|---|
| Stage 1: | Manufacturer of base vehicle: | **ANADOLU ISUZU OTOMOTİZ SANAYİ VETİCARET A.Ş.** |
| | Type Approval Number: | **37 A.İ.TM./M.A.R.T.Y. 99/386/00** |
| | Date: | **18 June 1999** |
| Stage 2: | Manufacturer of base vehicle: | |
| | Type Approval Number: | |
| | Date: | |
| Stage 3: | Manufacturer of base vehicle: | |
| | Type Approval Number: | |
| | Date: | |

## ANNEX-1
## DOCUMENTS NECESSARY FOR VEHICLE TYPE APPROVAL

0. GENERAL

0.1 TRADEMARK (Trademark of Manufacturer): ISUZU

0.2. Type and general commercial definition: MD 27 S

0.3. Type introduction form, if marked on vehicle: TYPE AND VARIANT CODE

0.3.1 Location of this mark: REAR RIGHT AND FRONT LEFT OF VEHICLE

0.4. Vehicle Class: M3

0.5. Name and address of Manufacturer: ANADOLU ISUZU OTOMOTİV SAN. VE TİC. A.Ş. ANKARA ASFALT ÜZERİ KARTAL İSTANBUL

0.6. Location of compulsory labels and writings, and determination method:

0.6.1. Chassis: IMPRESSED STAMP ON RIGHT CHASSIS SIDE MEMBER IN LINE WITH FRONT AXLE

0.6.2. Vehicle Body: IN LINE WITH FRONT RIGHT OF BONNET WITHIN MOTOR CABIN

0.7. In component and separate technical units, location of (EC) approval marking and determination method:

0.8. Address of assembly of factory: ANADOLU ISUZU OTOMOTİV SAN. VE TİC. A.Ş. ANKARA ASFALT ÜZERİ KARTAL İSTANBUL

1. GENERAL STRUCTURE FEATURES OF VEHICLE

1.1. Photographs and/or drawings of sample vehicle: GIVEN IN FILE ANNEX.

1.2. Scaled drawing of whole vehicle: GIVEN IN FILE ANNEX.

1.3. Number of axle and wheels: TWO AXLE SHAFT, 6+1 WHEELS

1.3.1. Number and place of two-wheeled axle: 1 REAR AXLE

1.3.2. Number and place of steering axle: 1, FRONT AXLE

1.3.3. Driven axles (Number, place, interrelation): 1, REAR AXLE

1.4. Chassis (if any) (drawing of general view): GIVEN IN FILE ANNEX.

1.5. Material used in chassis side rail: St-42.2

1.6. Position and installation of engine: FLAT-INSTALLED ON FRONT

1.7. Driver's Cab: integrated with main volume of bus

1.8. Right/left steering wheel location: LEFT

/seal/

/seal/

/signature/

Elvan YILMAZ
Engineer

2. MASSES AND DIMENSIONS (in kg and mm)

2.1. Distance of chassis (fully laden): 3365

2.3. Chassis track and width:

2.3.1. Track width of each chassis steered: Front chassis: 1780

2.3.2. Track width of other all chassis: Rear chassis: 1525

2.3.3. Width of widest rear chassis: 2000

2.3.4 Width of backmost chassis: 2000

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2.4. Dimensions of whole vehicle:

2.4.1. Bare chassis:

2.4.1.1. Length: 6920

2.4.1.2. Width: 2210

2.4.1.2.1. Maximum width: 2210

2.4.1.2.2. Minimum width: 2000

2.4.1.3. Height (unloaded) (normal cruising height will be specified in suspensions whose height are adjusted): 2925

2.4.1.4 Front height: 1445

2.4.1.4.1. Front overhang angle: 12.7 degree /seal/ Elvan YILMAZ

2.4.1.5 Rear height: 2110 /seal/ Engineer

2.4.1.5.1 Departure angle: 11.6 degree /signature/

2.4.1.6. Clearance height

2.4.1.6.1. Below front chassis: 210

2.4.1.6.2. Below rear chassis: 230

2.4.1.7. Ramp angle: 10.4 degree

2.5. Mass of bare chassis (without cab, coolant, fuel, spare tyre, tool kit and driver): 1900

2.5.1 Distribution of this mass among chassis: Front: 1074 Rear: 826

2.6. Mass of vehicle in superstructure and traffic or if manufacturer does not assemble superstructure, cabin mass of chassis (including coolant, oils, fuels, tool kits, spare tyre and driver) (maximum and minimum values for each version): 4690

2.6.1. Distribution of this mass among chassis (maximum and minimum values for each version): Front: 2140 Rear: 2540

2.7. Minimum mass of vehicle which specified by manufacturer: 4670

2.7.1 Distribution of this mass among chassis: Front 2130 Rear 2530

2.8. Maximum load mass which is possible from technical aspect specified by manufacturer (maximum and minimum values for each version): 6875

2.8.1. Distribution of this mass among chassis: Front 2618 Rear 4257

2.9. Maximum technical permissible laden mass in each chassis:
Front: 2700 (for MD 27B, MD 22B. MD 50B-17 and MD 50-20: 3100) Rear: 5600

2.13. Covered road in turning: 15700 (It is diameter drawn by outmost point of vehicle)

2.14. Engine power/Maximum mass ratio: 0.0128 Kw/kg

2.15. Hill hold ability: 33%

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13. SPECIAL CONDITIONS FOR BUSES

13.1. Class of Bus: Class III (MD X B series vehicle Class I)

13.2. Standing passenger Number: (MD 27B:10 person, MD 22B: 21 person; MD 50 B- 17:33 person

13.3 MD 50 B-20:30 person)

13.4. Seating capacity for passenger and cabin attendant: 27 (MD 22 B: 22 person) + 1 DRIVER

13.3.1 Attendant Seat: yes/no: No

13.4. Number of Service doors: 2 doors on right

13.5. Number of safety exit: two doors on right, two doors on lift fragile glass equivalent

13.6. Capacity of luggage compartment: 2 cubic meter

13.7. Ceiling baggage handling area: No

13.8 Technical equipment making the entrance to bus easier (access ramp, lifting platform, careening system): No

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/seal/ Elvan YILMAZ
Engineer
/signature/

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**ANNEX- 3**
**INTRODUCTION DOCUMENT FOR VEHICLE TYPE APPROVAL**

| | |
|---|---|
| 3. | ENGINE |
| 3.1. | Manufacturer: ISUZU |
| 3.1.1. | Engine code of manufacturer (marked on engine or by another introduction way): 4HF1 |
| | ENGINE NO IS AT THE RIGHT SIDE OF BLOCK IN LINE WITH ITS REAR |
| 3.2. | Internal combustion engine: |
| 3.2.1.1. | Working principle: compression ignition, 4 stroke |
| 3.2.1.2. | Number and system of barrel: 4 piece flat base housed |
| 3.2.1.3. | Engine volume: 4334 $cm^3$ |
| 3.2.1.8 | Peak net power: 88 Kw İN 3200 rpm (ISO 1585) |
| | (Maximum Moment: 285 N.m in 1920 rpm) |
| 3.2.2. | Fuel: Diesel fuel |
| 3.2.4. | Fuel supply: |
| 3.2.4.1. | By carburettor: No |
| 3.2.4.2. | By fuel injection (only compressive ignition): Yes |
| 3.2.4.2.1. | System definition: |
| 3.2.4.2.2. | Working principle: Direct injection |
| 3.2.4.3. | By fuel injection (only compressive ignition): Yes |
| 3.2.7. | Coolant system (liquid) |
| 3.2.8. | Air intake system NATURAL ASPIRATION |
| 3.2.8.1. | Supercharging: -- |
| 3.2.12. | Measures taken against air pollution:-- |
| 3.2.12.2. | Other equipments preventing pollution: |
| 3.2.12.2.1. | Catalytic converter: No |
| 3.2.12.2.2. | Oxygen sensor: No |
| 3.2.12.2.3. | Air injection: No |
| 3.2.12.2.4. | Exhaust gas return: No |
| 3.2.12.2.5 | Control system of evaporation emission: No |
| 3.2.12.2.6 | Particulate trap: No |
| 3.2.12.2.7. | Other systems – |
| 3.2.13. | Absorption coefficient symbol place (only compressive ignition engines): ON MANUFACTURER |
| | INTRODUCTION LABEL (K0 1.54 $M^{-1}$) |

/seal/ Elvan YILMAZ
/Signature/ Engineer

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3.3. Electrical engine

3.3.1 Type (winding, feed/drive system): -

3.3.1.1. Maximum output power in an hour: Kw

3.3.1.2 Operating voltage: -

3.3.2. Power supply

3.3.2.4. Place: ON CHASSIS RIGHT SIDE MEMBER (12X2 V, 65 Ah)

4. DRIVELINE ELEMENTS

4.2. Type: Mechanical

4.5. Gear box

4.5.1. Type: Mechanical

4.6. Transmission box gear ratio:

/seal/ Elvan YILMAZ

/seal/ Engineer

/signature/

| Gear | Gear box gear rations (Ratio of engine speed to gear box output shaft speed) | Axle ratio (ratio of gear box output shaft speed to live wheel speed ratio) | Total gear ration |
|---|---|---|---|
| 1 | 4.987 | 6.142 | 30.630 |
| 2 | 2.870 | 6.142 | 17.627 |
| 3 | 1.594 | 6.142 | 9.790 |
| 4 | 1.000 | 6.142 | 6.142 |
| 5 | 0.728 | 6.142 | 4.471 |
| Reverse | 4.774 | 6.142 | 29.322 |

4.7. Maximum speed of vehicle and gear reaching this speed (km/hour): 103, GEAR 5

6. SUSPENSION

6.2. Type and design of suspension of each axle and wheel:

Front: SEMI-ELLIPTICAL LEAF SPRING. HYDRAULIC DOUBLE-ACTING TELESCOPIC SHOCK ABSORBER

Rear: SEMI-ELLIPTICAL LEAF SPRING. HYDRAULIC DOUBLE-ACTING TELESCOPIC SHOCK ABSORBER

(FOR MD 27 A/S: REAR: AIR CUSHIONED, HYDRAULIC DOUBLE-ACTING TELESCOPIC SHOCK ABSORBER)

6.2.1. Level adjusting: NO (FOR MD 27 A/S: REAR YES)

6.6.1. Combination of tyre and wheel (dimension definition, minimum load capacity index, minimum speed category symbol, rim size and hub of wheel is specified.)

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6.6.1.1. Axle 1: DIMENSION: 215 R 17.5 12 PR. LOAD INDEX: 121. SPEED CODE: M. RIM: (6.0).

HUB: 127

6.6.1.2. Axle 2: DIMENSION: 215 R 17.5 12 PR. LOAD INDEX: 121. SPEED CODE: M. RIM: (6.0).

HUB: 127

6.6.2. Upper and lower limits of rolling radius

6.6.2.1. Axle 1:370/380

6.6.2.2. Axle 2:370/380

7. STEERING

7.2. Mechanism and control:
7.2.1. Mechanism type: Ball WORM GEAR
7.2.2. Connection to wheel: TWO-EDGED BALL-AND SOCKET LINKING ROAD (DRAG LINK)
7.2.3. Booster type, if any: HYDRAULIC
8. BRAKES

8.5. Antiblock brake system: NO

8.9. Short description of brake assembly (According to Directive 71/320/EEC Appendix IX Article 1.3.) VACUUM BOOSTER HYDRAULIC.

9. BODYWORK (BODY)

9.1. Type of bodywork: COMPACT (MONOCOQUE) BODY

9.3. Driver and passenger doors, lock and hinges:

9.3.1. Number and arrangement of doors: RIGHT 2 DOORS, LEFT SAFETY EXITS

9.10. Interior equipment

9.10.3. Seats:

9.10.3.1. Number: Driver Seat + 27 (MD 22 B: 22 passenger) passenger

9.10.3.2. Location and order: DOUBLE GROUPS ON RIGHT AND LEFT, COMBINED FIVE SEAT ON BACK

9.10.3.2.1. Seats used only when vehicle is not operating: -

9.10.4. Type of headrests (if any, approval no): COMBINED

9.10.4.1. Type approval number (numbers): if any

9.12.2. Structure and place of additional protective system: No
9.17. Compulsory labels
9.17.1. Photographs and/or drawings of places of compulsory labels, writings and chassis numbers
9.17.4. Explanatory note about conformity of Manufacturer to Article 3, Annex I of Regulation numbered 76/114/EEC
VIN NUMERATION SYSTEM DETAILS WAS GIVEN AS ANNEXED.

9.17.4.1. Definitions of letters and numbers in second section and, if any, third section should be given in order to fulfil requirements of Article 3.1.1.2. VIN NUMERATION SYSTEM DETAILS WAS GIVEN AS ANNEXED.

9. 17.4.2. Definitions of letters and numbers in second section and, if any, third section should be given in order to fulfil requirements of Article 3.1.1.3. VIN NUMERATION SYSTEM DETAILS WAS GIVEN AS ANNEXED.

INTRODUCTION DOCUMENT FOR TYPE APPROVAL ANNEX 3 ARTICLE 9.17.4.

ARTICLE 9.17.4.1

EXPLANATIONS RELATING ARTICLE 9.17.4.2. WAS GIVEN IN THE ATTACHMENT..

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Engineer /seal/ T.TEOMAN ÖZTÜRK
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TEST RESULTS

(It must be filled by Approval Body and added to vehicle approval document)

In each case, it must be clear that it belongs to which variant and version. One version could not have one more than test result.

1. Sound Level Test Results:

Test Method: TR 2214

| | |
|---|---|
| Variant/Version | WHOLE |
| In Motion (dB(A) ): | 84. 8 |
| Inert (dB(A) ): | EXHAUST: 86,8 (SIDE: 99,4—3200 rpm) |
| Rpm (revolutions per minute) | 2400 |

2. Exhaust emission test results by means of specifying test method used (test results are explained in appropriate units according to test method.

2.1 Diesel

Test Method: EEC 88/77*91/542A

| | |
|---|---|
| Variant/Version | WHOLE |
| CO | 1.78 (gr/km) |
| HC | 1.1 gram/kWh |
| $NO_x$ | 8,0 gram/kWh |
| Particle | 0,612 gram/kWh |

2.3 Results of fuel consumption tests (Litre/ 100 km)

| | |
|---|---|
| Variant/Version | -- |
| Within urban | -- |
| 90 km/hour constant velocity | -- |
| 120 km/hour constant velocity | -- |

4. Opacity of exhaust gas ("C" Coefficient)

Test Method: ECE R-24.03

| | |
|---|---|
| Variant/Version | WHOLE |
| Free acceleration | 1.54 $m^{-1}$ |

/seal/

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Engineer

/seal/
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Variant, Version definitions of MD 27 type vehicle is given below.

| | | | |
|---|---|---|---|
| BASE VEHICLE | | MD 27 S | |
| VARIANTS | MD 27 S | MD 27 B | MD 27 A/S |
| VERSIONS | MD 27 SA | MD 22 B | |
| | MD 27 SL | | |

| ARTICLE NO | | MD 27 S | MD 27 SA | MD 27 L | MD 27 A/S |
|---|---|---|---|---|---|
| ANNEX I 2.6 | Superstructure in motion mass | 4450 | 4480 | 4650 | 4690 |
| 2.6.1 | Distribution of this mass FRONT | 2090 | 2080 | 2130 | 2150 |
| | REAR | 2360 | 2400 | 2520 | 2540 |
| 2.8 | Maximum load mass | 6635 | 6665 | 6835 | 6875 |
| 2.8.1 | Distribution of this mass FRONT | 2558 | 2548 | 2598 | 2618 |
| | REAR | 4077 | 4117 | 4237 | 4257 |
| ANNEX III 9.10.3.1 | Number of passenger and seat | 27+1 | 27+1 | 27+1 | 27+1 |

| ARTICLE NO | | MD 22 B | MD 27 B |
|---|---|---|---|
| ANNEX I 2.6 | Superstructure in motion mass | 4450 | 4485 |
| 2.6.1 | Distribution of this mass FRONT | 2130 | 2145 |
| | REAR | 2330 | 2340 |
| 2.8 | Maximum load mass | 7442 | 7069 |
| 2.8.1 | Distribution of this mass FRONT | 2692 | 2708 |
| | REAR | 4750 | 4361 |
| ANNEX III 9.10.3.1 | Number of passenger and seat | 22 SEATED + 21 STANDING+1 | 27 SEATED + 10 STANDING+1 |

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/seal/

Elvan YILMAZ
Engineer

/signature/

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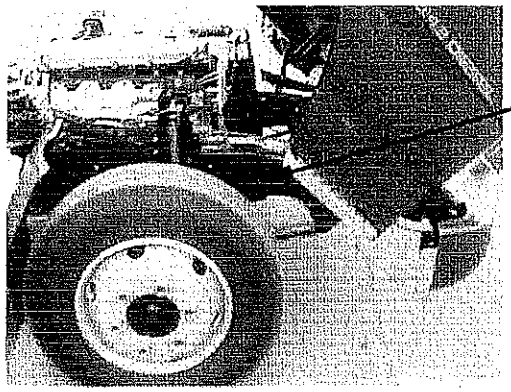
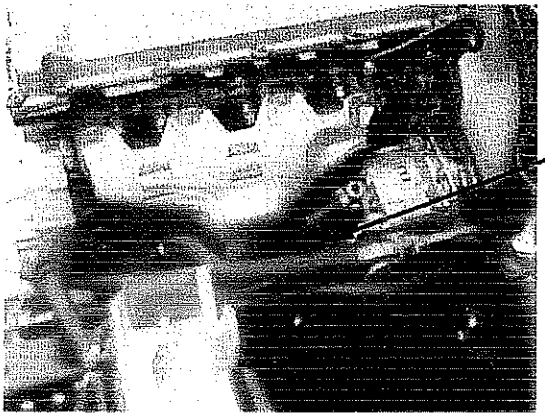
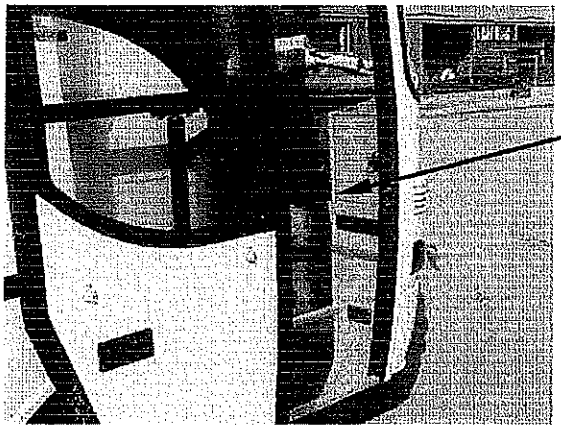


ARTICLE 9.17.4 LOCATION
OF VIN NUMBER



ARTICLE 9.17.1 LOCATION
OF ENGINE NUMBER

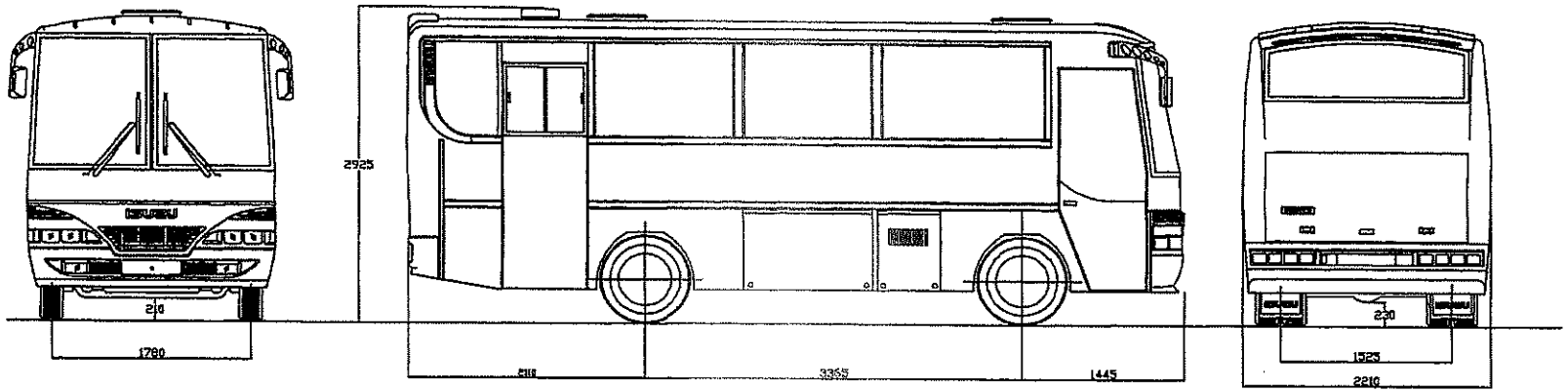


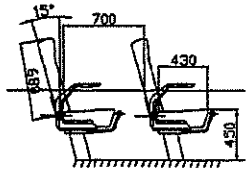
ARTICLE 9.17.1 LOCATION
OF VIN PLATE

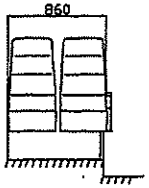
/seal/

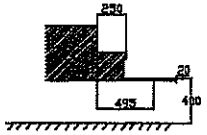
/seal/ T.TEOMAN ÖZTÜRK

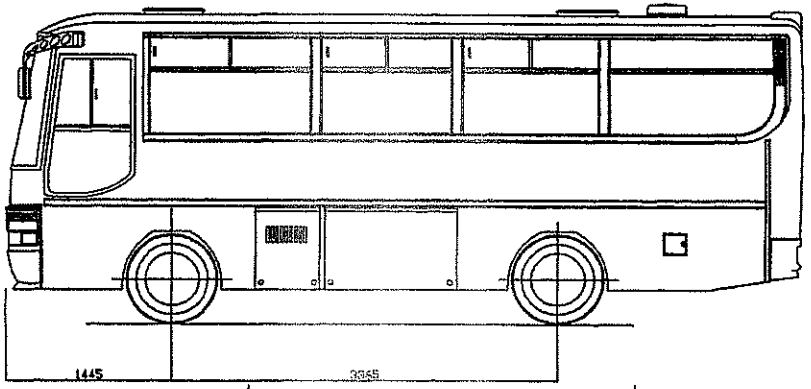
/signature/ M.M.O (Chamber of Mechanical Engineers) No : 33732
Elvan Yılmaz COMPL. CERT. NO. : 34-056
Engineer /signature/

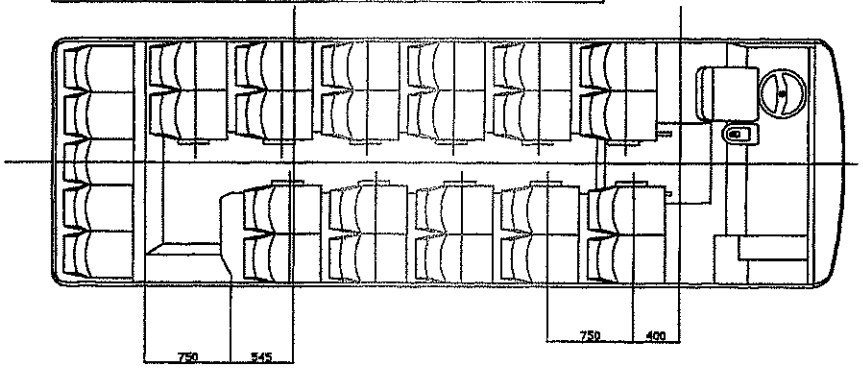
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ANADOLU ISUZU OTOMOTİV

SANAYİ VE TİCARET A.Ş.

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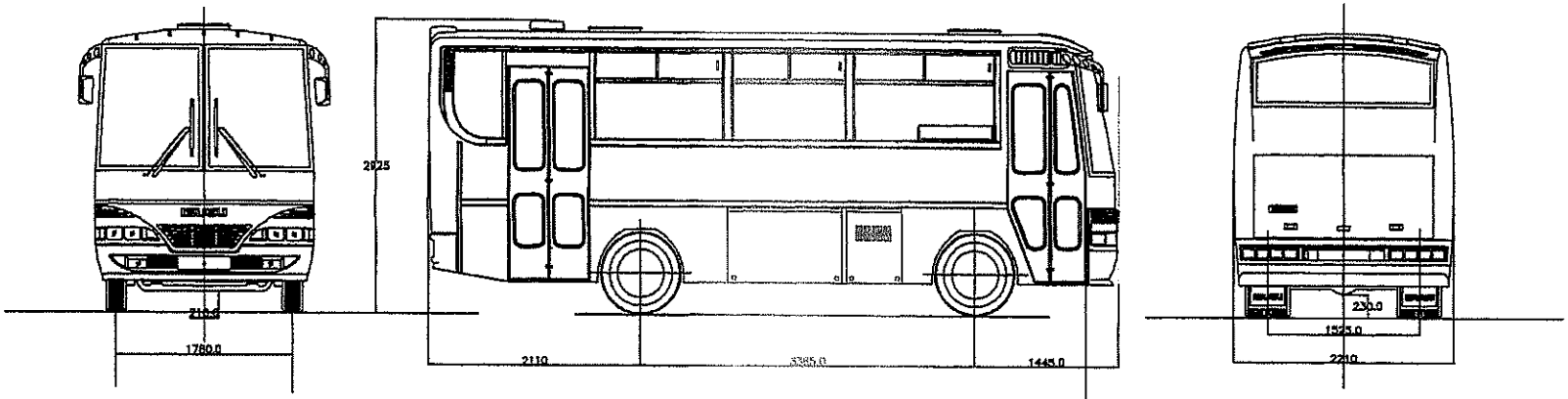
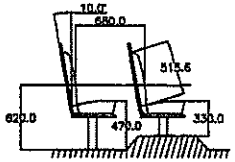
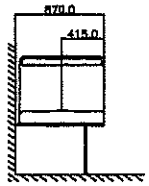
/signature/

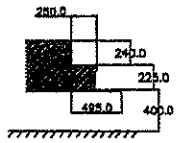
Elvan Yılmaz /Engineer

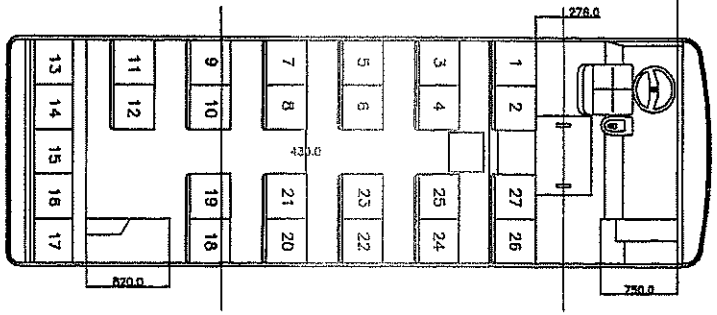
**MD 27 S; MD 27 SA**

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M.M.O (Chamber of Mach. Eng.) No: 33732

COMPL. CERT. NO. : 34-056

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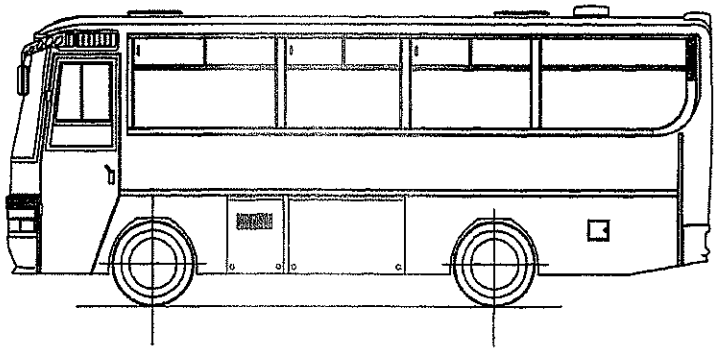
ANADOLU ISUZU OTOMOTİV

SANAYİ VE TİCARET A.Ş.



**STANDING SPACE**

**1.6 $m^2$**

**PASSENGER CAPACITY**

**SEAT NUMBER : 27**

**STANDING PASSENGER: 10**

**TOTAL PASSENGER : 38**

**(INCLUDING DRIVER)**

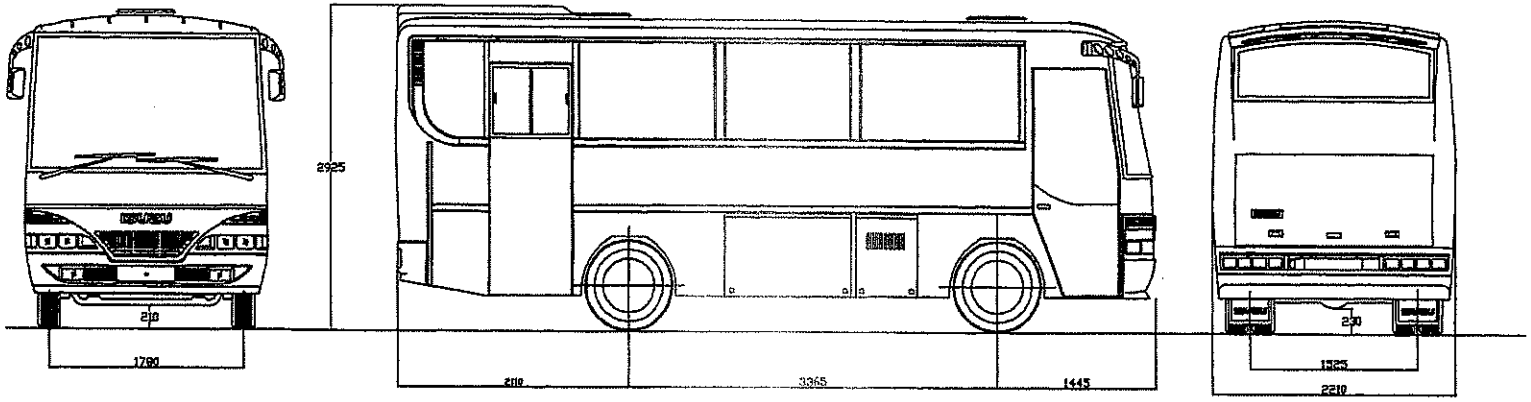
**MD27B (MUNICIPALITY)**

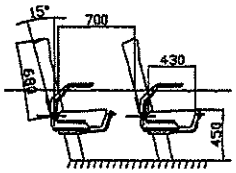
Elvan Yılmaz /Engineer

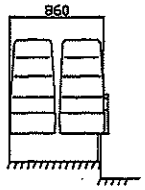
/signature/

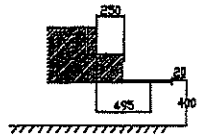
/seal/

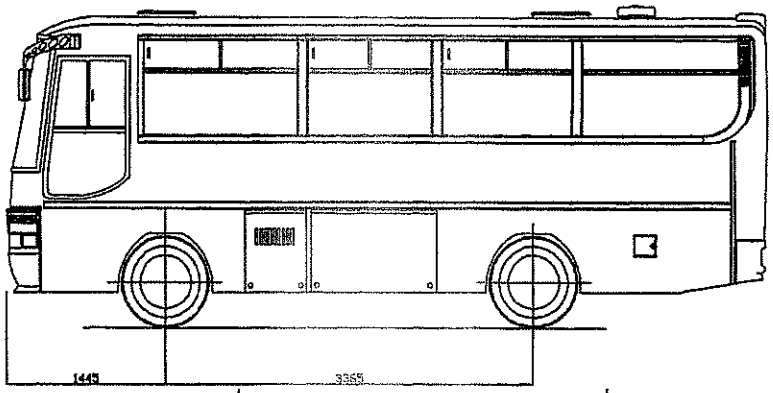
/seal/

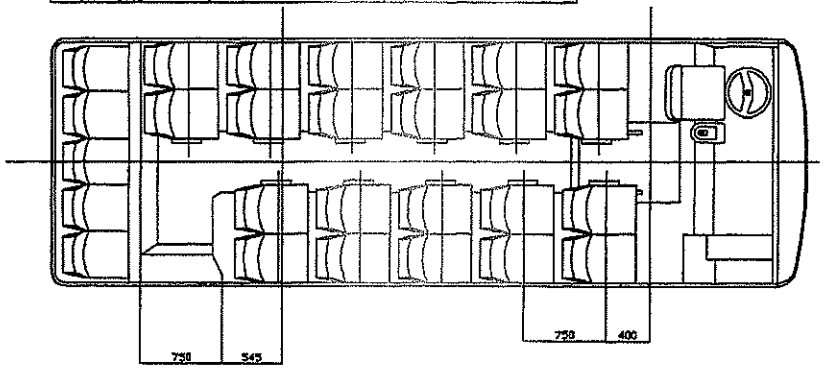



T.TEOMAN ÖZTÜRK

M.M.O (Chamber of Mech. Eng.) No: 33732

COMPL. CERT. NO. : 34-056

/signature/

ANADOLU ISUZU OTOMOTİV

SANAYİ VE TİCARET A.Ş.

**MD 27 L; MD 27 A/S**

Elvan Yılmaz /Engineer

/signature/

/seal/

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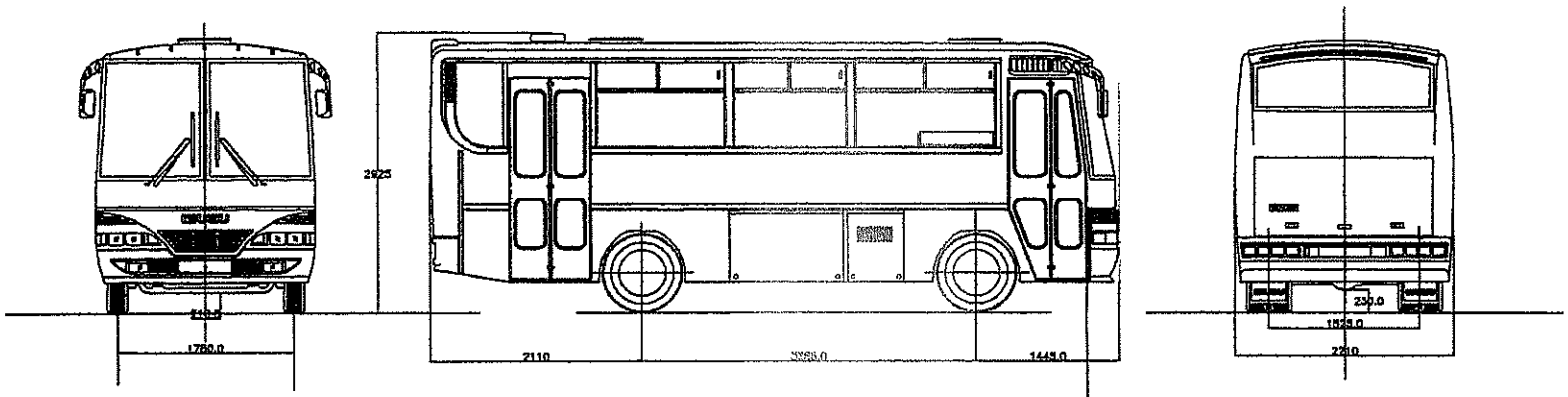


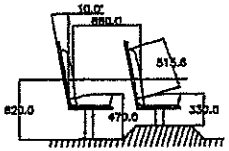


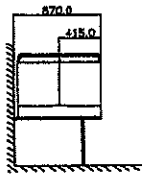


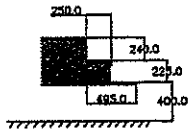


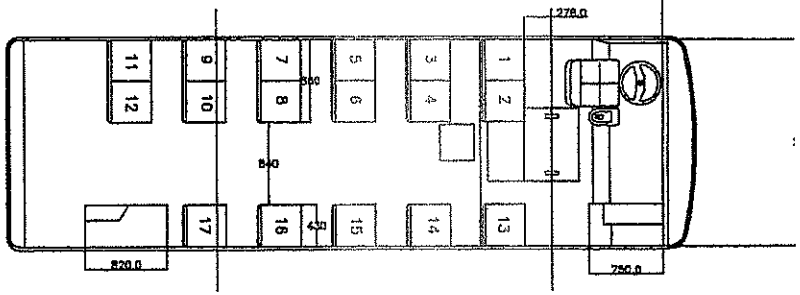


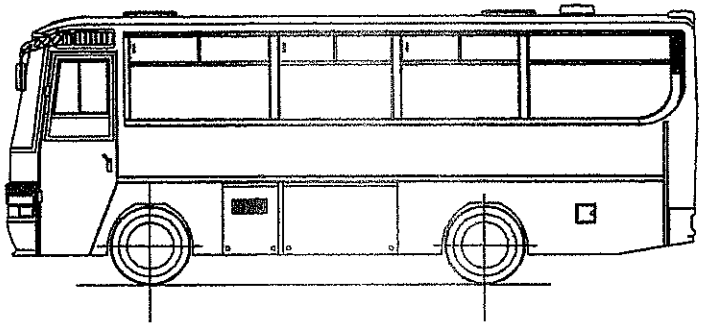

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: /seal/

/signature/

Elvan Yılmaz /Engineer

**STANDING SPACE**

**4.125 $m^2$**

**PASSENGER CAPACITY**

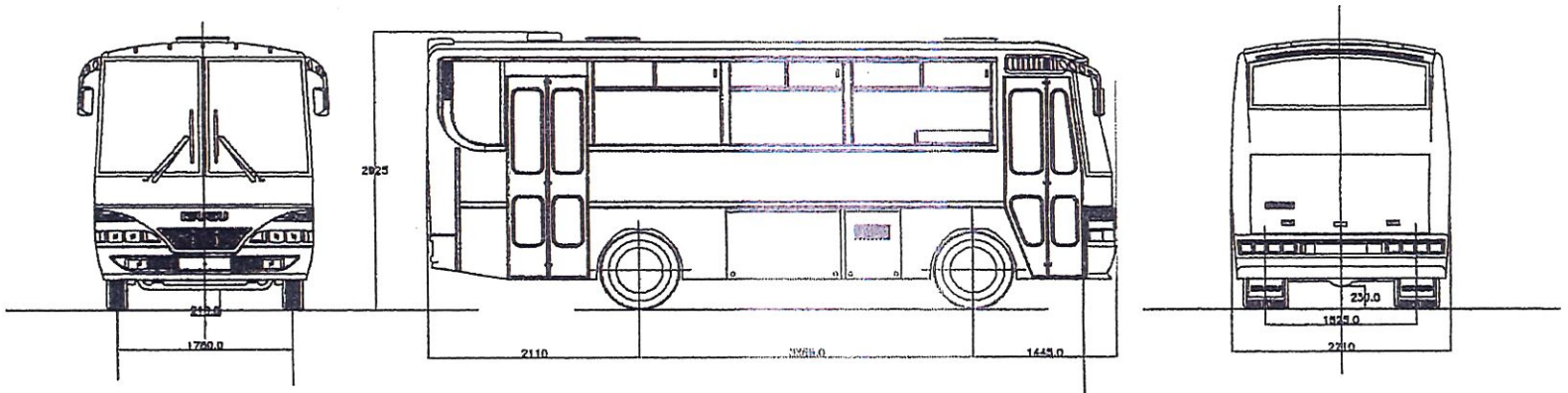
| | |
|---|---|
| **SEAT NUMBER** | **: 17** |
| **STANDING PASSENGER** | **: 33** |
| **TOAL PASSENGER** | **: 50 (INCLUDING DRIVER)** |

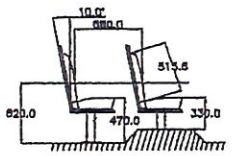
MD50 B-17 (MUNICIPALITY)

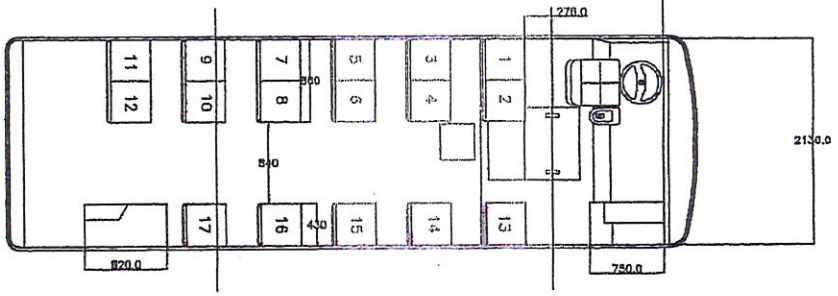
T.TEOMAN ÖZTÜRK

M.M.O (Chamber of Mech. Eng.) No : 33732

COMPL. CERT. NO. : 34-056/signature/




/seal/
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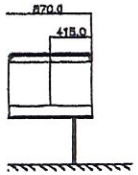
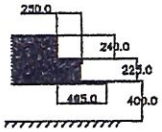
/signature/
Elvan Yılmaz /Engineer

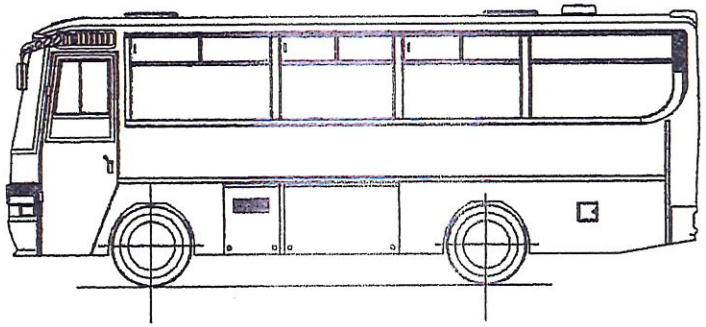



T.TEOMAN ÖZTÜRK

M.M.O (Chamber of Mech. Eng.) No : 33732

COMPL. CERT. NO. : 34-056/signature/



**STANDING SPACE**
3.75 $m^2$

**PASSENGER CAPACITY**

| | |
|---|---|
| SEAT NUMBER | : 20 |
| STANDING PASSENGER | : 30 |
| TOAL PASSENGER | : 50 (INCLUDING DRIVER) |

MD50 B-20 (MUNICIPALITY)