



# AR-300E

CARRIER: AF308F

## GENERAL DATA

CRANE CAPACITY	30,000kg at 3.0 m	
BOOM	4-section, 8.45m-26.3 m	
DIMENSIONS		
Overall length	approx.	9,950 mm
Overall width	approx.	2,500 mm
Overall height	approx.	3,650 mm
WEIGHTS (Excluding optional equipment)		
Gross vehicle weight		
-total	approx.	24,000 kg
-front	approx.	12,000 kg
-rear	approx.	12,000 kg
PERFORMANCE		
Travelling speed (max.)		
Driver's cab	computed	70 km/h
Operator's cab	computed	14 km/h
Gradeability( $\tan \theta$ )	computed	70 % (at 1.6 km/h)
OPTIONAL EQUIPMENT		
Auxiliary winch		
Jib		
Hook block-3.75 tons capacity		
Single top		
Oil cooler		
Spare tire		

## CRANE SPECIFICATIONS

MODEL  
AR-300E

CAPACITY  
30,000kg at 3.0m

BOOM  
4-section full power partly synchronized telescoping boom  
of box construction with 4-sheaves at boom head.

The synchronization system consists of a double-acting telescope cylinder, an extension cable and a retraction cable. Hydraulic cylinders fitted with holding valves.

Fully retracted length..... 8.45 m  
Fully extended length..... 26.3 m  
Extension speed..... 17.85 m in 74 s

# TADANO LTD.

## JIB\*

Single staged lattice type, 5° or 30° offset (tilt type)  
Single sheave at jib head. Stores alongside base boom section.

Length..... 7.5 m

## SINGLE TOP\*

Single sheave. Mounted to main boom head for single line work.

## ELEVATION

By a double-acting hydraulic cylinder, fitted with holding valve.

Elevation speed..... -2° to 80° in 43 s

## HOIST – Main winch

2-speed type with grooved drum driven by hydraulic axial piston motor through speed reducer. Power load lowering and hoisting.

Equipped with automatic fail-safe brake (neutral brake) and counterbalance valve. Controlled independently of auxiliary winch.

Single line pull.....3,750 kg

Single line speed

High range.....104 m/min.(at the 4th layer)

Normal range..... 52 m/min.(at the 4th layer)

Wire rope.....No-spin type

Diameter × length... 16 mm × 145 m

## HOOK BLOCK – 30 tons capacity

4 sheaves, swivel type hook with safety latch.

## HOIST – Auxiliary winch\*

2-speed type with grooved drum driven by hydraulic axial piston motor through winch speed reducer. Power load lowering and hoisting.

Equipped with automatic fail-safe brake (neutral brake) and counterbalance valve. Controlled independently of main winch.

Single line pull..... 3,750 kg

Single line speed

High range.....104 m/min.(at the 4th layer)

Normal range..... 52 m/min.(at the 4th layer)

Wire rope..... No-spin type

Diameter × length..... 16 mm × 75 m

## HOOK BLOCK – 3.75 tons capacity\*

Swivel hook with safety latch for single line use.

## SWING

Hydraulic axial piston motor driven through planetary swing speed reducer. Continuous 360° full circle swing on ball bearing slew ring. Equipped with hand-operated swing brake.

Swing speed..... 2.1 rpm

Tail swing radius.....2,890 mm

## HYDRAULIC SYSTEM

Pumps.....Triple gear pump for crane.

Tandem gear pump for carrier.

Control valves.... Multiple valves actuated by hand levers with integral pressure relief valves.

Hydraulic oil tank

capacity.....approx. 355 liters

Filters.....Return filter

## CAB

Both crane and drive (pick and carry ) operations can be performed from cab mounted on rotating super structure.

One sided one-man type, Steel construction with one door access and safety glass windows opening at side, rear, and roof. Reclining seat with high back.

## SAFETY DEVICES

Pendant type over-winding cut out device.

Winch automatic brake

Hook safety latch

Pilot check valves

Holding valves

Counterbalance valves

Hydraulic pressure relief valves

Swing brake

Swing lock device

Over-unwinding prevention device

## TADANO Automatic Moment Limiter

(Model:AML-M)

Main unit in crane cab gives audible and visual warning of approach to overload. Automatically cuts out crane motions before overload. With working range limit function.

Digital Liquid Crystal display:

Boom angle

Boom length

Actual working radius

Actual load lifed

Permissible load

Potential hook height

Color bar graphical display :

Moment as percentage

## OUTRIGGERS

Hydraulically operated double-box construction. Extended in "H" configuration. Integral with carrier frame.Power in and out, up and down.Provided with pilot check valves. Each outrigger slider beam and jack is controlled independently from the cab.

Extended width.....6,000 mm

## NOTE :

Each crane motion speed is based on unladen conditions.

\* optional

# CARRIER SPECIFICATIONS

SPEC. No. AR-300E-1/EU-14

**MANUFACTURER**  
MITSUBISHI MOTORS CORPORATION

**MODEL**  
AF308F

**TYPE**  
Front engine, left hand steering, driving axle 2-way selected type.  
4 x 2 rear drive  
4 x 2 front and rear drive

**FRAME**  
High-tensile steel, all welded construction.

**ENGINE**  
Model.....MITSUBISHI 6D22-1A  
DIESEL ENGINE  
Type.....4 cycle, 6 cylinder in line, direct injection, water cooled diesel engine.  
Piston displacement.....11,149 cc  
Max. output (JIS).....225 PS at 2,200 rpm  
(DIN)..... 215 PS at 2,200 rpm  
Max. torque (JIS)..... 78 kgm at 1,400 rpm  
(DIN)..... 75 kgm at 1,400 rpm

**TORQUE CONVERTER**  
3-elements, 1 staged type, with lock up clutch.

**TRANSMISSION**  
Constantmesh full power shift, 6 forward and 2 reverse speeds.

**AXLES**  
Front.....Full floating type  
Rear .....Full floating type.

**STEERING**  
Semi-integral power steering controlled by steering wheel, with emergency power steering system.  
Three steering modes available :  
2-wheel front  
4-wheel coordinated  
4-wheel crab

**SUSPENSION**  
Front.....Tapered leaf springs, with hydraulic lock cylinder  
Rear .....Tapered leaf springs, with hydraulic lock cylinder

**BRAKE SYSTEM**  
Service.....Full air brake on all wheels, dual air line system.  
Parking & Emergency.....Spring operated air released brake acting on all wheels.  
Auxiliary...Exhaust brake.

**SAFETY DEVICES**  
Rear steering lock device.

**ELECTRIC SYSTEM**  
24 V DC. 2 batteries of 12 V-140 AH capacity.

**FUEL TANK CAPACITY**  
200 liters

**CAB**  
Steel construction, full width two men type.

**TIRES**  
Front.....Single x 2, 14.00R24  
Rear .....Single x 2, 14.00R24

**TURN RADIUS**  
Min. turning radius(at center of extreme outer tire)  
2-wheel steering...8.8 m  
4-wheel steering...5.0 m

# TOTAL RATED LOADS

SPEC. No. AR-300E-1/EU-14

DIN 15019.2-75%

ON OUTRIGGERS

Unit : kg

Outriggers fully extended(360° )							
B \ A	8.45m	14.4m	20.35m	26.3m	E \ C \ D	7.5m	
						5°	30°
3.0m	30,000	17,000			80°	3,000	2,000
3.5m	23,750	17,000	9,000		75°	3,000	2,000
4.0m	20,500	15,500	9,000		70°	3,000	2,000
4.5m	17,900	14,200	9,000	6,800	65°	2,500	1,850
5.0m	15,900	13,200	9,000	6,800	60°	2,100	1,700
5.5m	14,200	12,200	9,000	6,800	55°	1,600	1,450
6.0m	12,800	11,400	9,000	6,800	50°	1,350	1,250
6.5m	11,600	10,600	8,500	6,800	45°	1,150	1,050
7.0m		9,900	8,100	6,800	40°	900	850
8.0m		8,200	7,300	6,100	35°	700	700
9.0m		6,750	6,600	5,500	30°	550	550
10.0m		5,650	6,000	5,000			
11.0m		4,800	5,100	4,600			
12.0m		4,100	4,400	4,200			
13.0m			3,850	3,850			
14.0m			3,350	3,550			
15.0m			2,950	3,150			
16.0m			2,600	2,800			
17.0m			2,300	2,500			
18.0m			2,000	2,200			
19.0m				1,950			
20.0m				1,750			
22.0m				1,400			
24.0m				1,100			
24.5m				1,000			

- A : Boom length
- B : Working radius
- C : Jib\* length
- D : Jib\* offset
- E : Boom angle

## NOTES FOR "DIN 15019.2-75%, ON OUTRIGGERS" TABLE

- Total rated loads shown in the table are based on condition that crane is set on firm level surface. Those above bold lines are based on crane strength and those below, on its stability.
- Total rated loads below bold lines do not exceed 75 % of tipping load.
- The weight of the hook (270 kg for 30 tons capacity, 60 kg for 3.75 tons capacity\*), slings and all similiary used load handling devices must be added to the weight of the load.
- For total rated load of single top\* reduce the 200 kg from the relevant boom total rated load. Total rated load of single top\* should not exceed 3,750 kg.
- Standard number of part lines for each boom length is as shown below. Load per line should not surpass 3,750 kg.

Boom length	8.45m	14.4m	20.35m	26.3m	Jib*	Single top*
No. of part lines	8	6	4	4	1	1

\* Optional

to be continued.

# TOTAL RATED LOADS

SPEC. No. AR-300E-1/EU-14

DIN 15019.2-75%

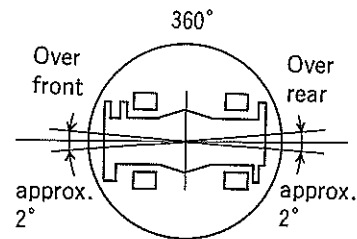
ON TIRES

Unit : kg

A	Stationary								
	Over rear			360°			Over front		
B	8.45m	14.4m	20.35m	8.45m	14.4m	20.35m	8.45m	14.4m	20.35m
3.0m	9,700	7,700		7,000	6,900		10,000	9,800	
3.5m	9,400	7,700	6,000	5,850	5,450	4,800	10,000	9,800	5,600
4.0m	7,800	7,500	6,000	4,850	4,500	4,800	10,000	9,800	5,600
4.5m	6,600	6,400	6,000	4,100	3,750	4,000	10,000	9,800	5,600
5.0m	5,650	5,400	5,900	3,450	3,150	3,400	10,000	9,800	5,600
5.5m	4,900	4,650	5,000	2,900	2,600	2,850	10,000	9,800	5,600
6.0m	4,350	4,050	4,400	2,500	2,200	2,550	9,700	9,500	5,600
6.5m	3,800	3,550	3,900	2,100	1,900	2,200	8,100	7,750	5,600
7.0m		3,100	3,450		1,500	1,900		6,500	5,600
8.0m		2,400	2,750		1,000	1,400		4,950	5,500
9.0m		1,900	2,200		600	1,000		3,950	4,300
10.0m		1,500	1,800			700		3,100	3,500
11.0m		1,150	1,450					2,500	2,850
12.0m			800	1,150				2,050	2,400
13.0m				950					2,000
14.0m				750					1,650
15.0m				550					1,400
16.0m									1,150
17.0m									900
18.0m									750

A : Boom length B : Working radius

WORKING AREA



Without outriggers "Over front" and "Over rear" operation should be performed within 2 degrees according to the diagram.

ON TIRES

Unit : kg

A	Creep								
	Over rear			360°			Over front		
B	8.45m	14.4m	20.35m	8.45m	14.4m	20.35m	8.45m	14.4m	20.35m
3.0m	8,150	6,600		5,900	5,750		8,700	8,400	
3.5m	7,350	6,600	5,200	5,150	4,800	4,200	8,700	8,400	4,900
4.0m	6,650	6,500	5,200	4,300	3,950	4,200	8,700	8,400	4,900
4.5m	5,850	5,650	5,200	3,600	3,300	3,550	8,700	8,400	4,900
5.0m	5,000	4,750	5,200	3,050	2,750	3,000	8,700	8,400	4,900
5.5m	4,350	4,100	4,400	2,550	2,300	2,500	8,550	8,400	4,900
6.0m	3,850	3,550	3,900	2,200	1,950	2,250	7,750	7,550	4,900
6.5m	3,350	3,150	3,450	1,850	1,650	1,950	7,000	6,850	4,900
7.0m		2,750	3,050		1,400	1,650		5,750	4,900
8.0m		2,100	2,400		1,000	1,200		4,350	4,900
9.0m		1,650	1,950		600	900		3,500	3,800
10.0m		1,300	1,550			650		2,750	3,100
11.0m		1,000	1,250					2,200	2,500
12.0m			750	1,000				1,800	2,100
13.0m				800					1,750
14.0m				600					1,450
15.0m									1,200
16.0m									1,000
17.0m									800
18.0m									700

A : Boom length B : Working radius

## NOTES FOR "DIN 15019.2-75%, ON TIRES" TABLES

- Total rated loads shown in the tables are based on condition that crane is set on firm level surface, with suspension lock applied. Those above bold lines are based on tire capacity and those below, on crane stability. They are based on actual working radii increased by tire deformation and boom deflection.
- "STATIONARY" load capacities do not exceed 75% of tipping loads. "CREEP" load capacities do not exceed 66<sup>2</sup>/<sub>3</sub>% of tipping loads.
- The weight of the hook (270 kg for 30 tons capacity), slings and all similiary used load handling devices must be added to the weight of the load.

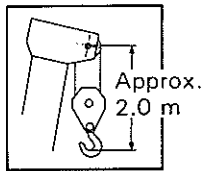
- Without outriggers liftings with "26.3 m boom", with "26.3 m boom + 7.5 m jib\*" and with "Single top\*" are not permitted.
- CREEP is motion for crane not to travel more than 60 m in any 30 min. period and to travel at the speed of less than 1.6 km/h.
- During CREEP duties travel slowly and keep the lifting load as close to the ground as possible, and especially avoid any abrupt steering, accelerating or braking.
- Do not operate the crane while carrying the load.
- Tires should be inflated to their correct air pressure of 10.2 kg/cm<sup>2</sup>.

\* Optional

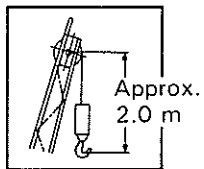
# WORKING RADIUS - LIFTING HEIGHT

SPEC. No. AR-300E-1/EU-14

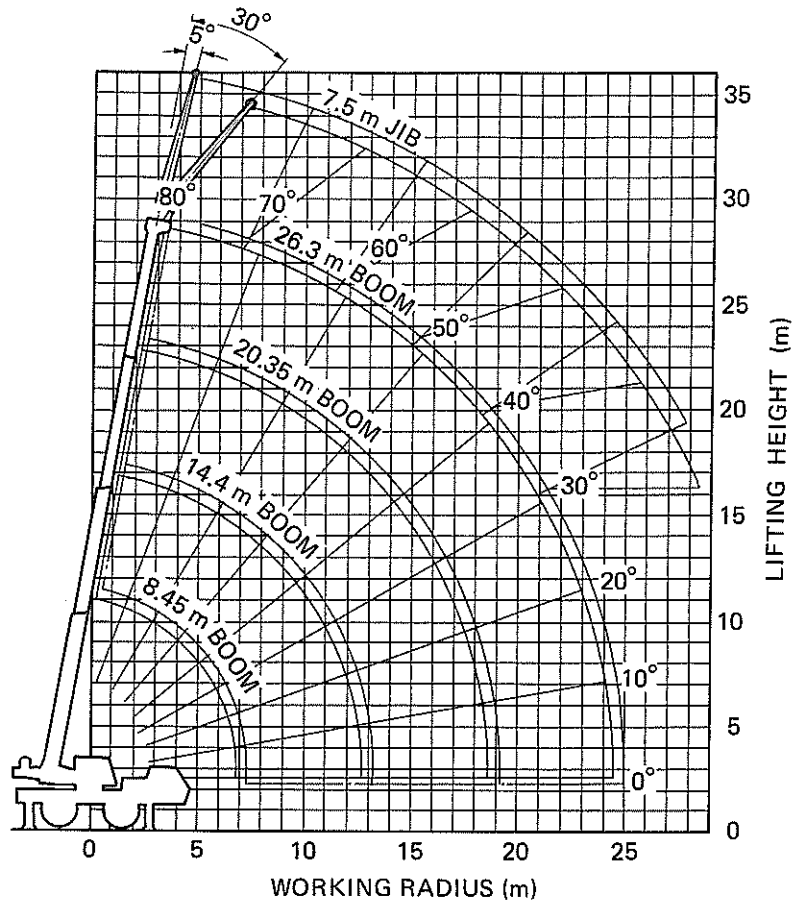
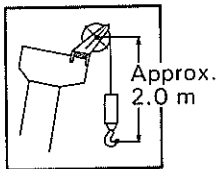
BOOM



JIB\*



SINGLE TOP\*

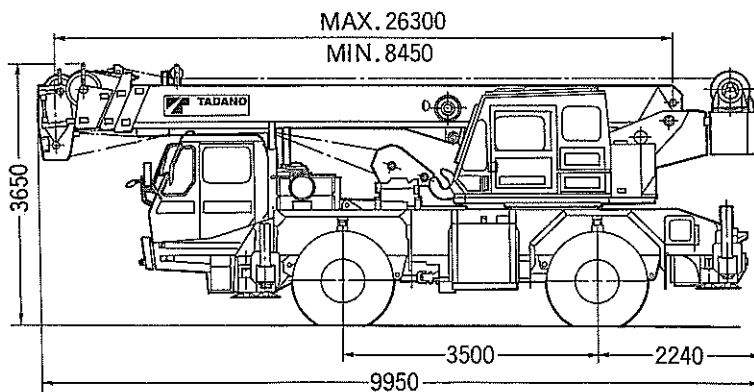


**NOTE:**

The above lifting heights and boom angles are based on a straight (unladen) boom, and allowance should be made for boom deflection obtained under laden conditions.

\* Optional

## DIMENSIONS



Overall width.....2,500 mm  
 Tail swing radius.....2,890 mm  
 Tread(track) - Front.....2,065 mm  
 - Rear .....2,065 mm

An asterisk(\*) denotes optional equipments.  
 Specifications are subject to change without notice.



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