TCM

A new standard in material handling performance

ACROBA

Diesel Forklift Truck Series

2.0-3.0 tons

ACROBA

With its superb maneuverability and productivity, ACROBA is a dramatic breakthrough in the field of material handling

ACROBA offers a variety of proprietary features that break the limits of common vehicles in the material handling industry.

Industrial property rights pending (combining foreign and Japanese filings): **138**

A variety of safety and operating features:

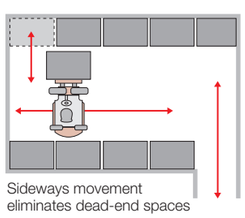
- The lift lock system prevents the forks from lowering when the engine is shut off, for enhanced safety.
- Operating status indicators including sideways travel warning light and buzzer, to assure safe operation in a congested work place.
- Fingertip hydraulic control levers for easy load handling
- The integrated light and turn-signal switch lever, similar to that found in passenger cars, offers fingertip control of turn signals and head lights.
- The operator's seat has a convenient document pocket and mobile phone holder.

Moves straight sideways

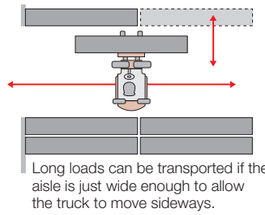
World's first ※1

The floor space utilization in warehouses can be improved 10 to 30% (for warehouses with a floor space of 1500 m^2)

- Elimination of dead-end spaces offers better utilization of storage space.
- Possible to transport long loads in a narrow aisle, as long as the aisle is wider than the truck's length.
- The auxiliary control lever helps you steer the truck precisely while the truck is moving sideways, ensuring safe and efficient operation.



Sideways movement eliminates dead-end spaces



Long loads can be transported if the aisle is just wide enough to allow the truck to move sideways.

Sideways travel mode lever

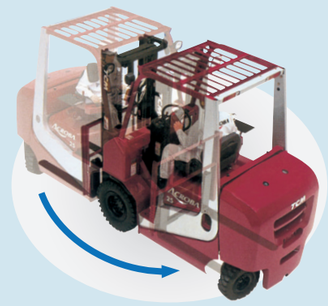
Auxiliary control lever

Spin turns

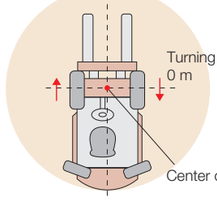
World's first ※2

Precision turns on a dime, for maximum agility

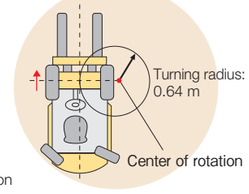
- Able to turn from a stationary position with almost zero turning radius in very narrow spaces, because the center of rotation is located at the center of the truck.
- The center line of the truck is the same after making a turn from a stationary position.
- The spin-turn feature reduces the aisle width required to turn the truck by 11% (from 4.27 m for our conventional FD25 model to 3.81 m for the ACROBA), for more efficient utilization of floor space.



ACROBA



Our conventional FD25 model

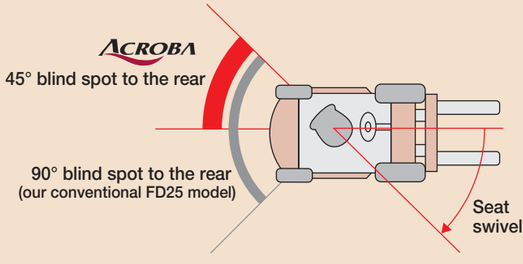


Swivel operator's seat

Japan's first ※3

The operator's seat rotates to improve the view to the rear by 50% in reverse travel

- The operator's seat rotates 45° to the right to offer a wider rear view when driving backward.
- The 2nd accelerator pedal for reverse travel and an armrest integrated into the operator's seat reduce operator fatigue substantially when continuously traveling in reverse.



Driver's posture in reverse travel

ACROBA

Our conventional FD25 model

Reduced load on the muscles when looking back while driving backward

Neck strain: Reduced 28% | Shoulder strain: Reduced 38% | Spinal twist: Reduced 44% | Waist twist: Reduced 59%

Reduced muscle stress (%) when looking back = (Myoelectric potential on a standard seat - Myoelectric potential on a swivel seat (μV)) / Myoelectric potential on a standard seat (μV)

(measured by the Preventive Medicine Department of Shiga University)

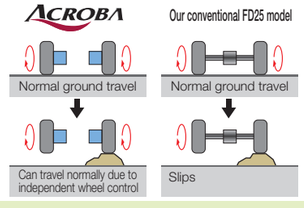
2 x 2 HST

World's first ※4

The dual-pump, dual-motor hydrostatic (HST) drive system brings straight sideways travel and spin turns

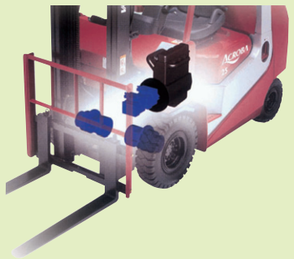
- The dual-pump, dual-motor HST drive system allows four-wheel drive with the wheels on the left side independent of those on the right side, which makes it possible to move straight sideways and make spin turns.
- The truck can start and travel easily even on rough or wet surfaces.
- The drive system isolates the engine from the axle shaft, which reduces vibration and noise substantially.
- The number of drive system components has been reduced by as much as 80% to offer minimal, easy maintenance.

Improved starting and traveling on rough or wet surfaces

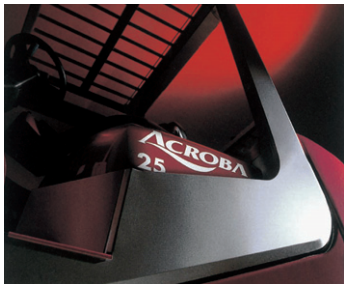


Low vibration and noise

	Starting on a wet surface (Time required to travel 5 m after starting with the wheels on one side resting on a wet surface)	Low vibration (Vibration acceleration at the steering wheel)	Low noise (Noise level heard at operator's ear)	Number of drive system components
ACROBA	4.1 sec.	0.5 G	81 dB	100
Our conventional FD25 model	6.4 sec.	1.5 G	85.5 dB	550



※1 The world's first among commercial engine-powered counterbalanced forklift trucks. ※2 The world's first among commercial engine-powered forklift trucks. ※3 ACROBA is the first forklift truck with a swivel seat as standard equipment in Japan. ※4 ACROBA is the first forklift truck in the world with a 2x2 HST drive system. ※ The figures on pages 2 and 3 are comparisons between our conventional FD25 model and the ACROBA25, with a 2.5-ton capacity.

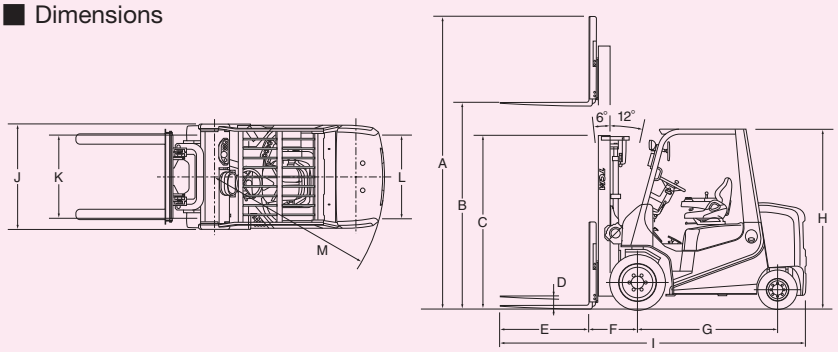


	ACROBA 20	ACROBA 25	ACROBA 30
			
	2.0 ton capacity	2.5 ton capacity	3.0 ton capacity

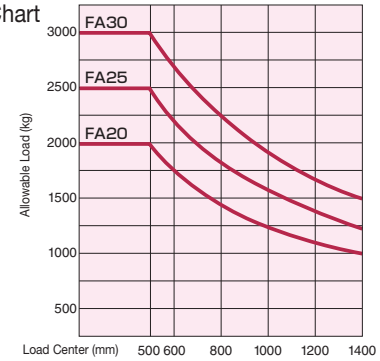
Standard Specifications				FA20D	FA25D	FA30D
Performance						
Max. Capacity		kg		2000	2500	3000
Load Center		mm		500	500	500
Max. Fork Height		mm	B	3000	3000	3000
Free Lift		mm	D	160	160	135
Lift Speed	: w/ load	mm/s		630	630	530
	: w/o load	mm/s		650	650	550
Lowering Speed	: w/ load	mm/s		450	450	450
	: w/o load	mm/s		550	550	450
Mast Tilt Angle	: fwd/bwd	degree		6°—12°	6°—12°	6°—12°
Travel Speed (w/o load)	: fwd	km/h		18.5	18.5	19.5
	: rev	km/h		18.5	18.5	19.5
Minimum Turning Radius		mm	M	1990	2020	2140
Dimensions and Weight						
Overall Length		mm	I	3510	3690	3820
Overall Width		mm	J	1260	1260	1260
Overall Height	: Lowered	mm	C	2040	2040	2120
	: Overhead guard	mm	H	2165	2165	2215
	: Extended	mm	A	4030	4030	4250
Minimum Ground Clearance		mm		150	150	160
Fork Size		mm	E	920×122×40	1070×122×40	1070×125×45
Wheelbase		mm	G	1680	1680	1750
Tread	: Front	mm	K	1000	1000	1000
	: Rear	mm	L	970	970	970
Fork Overhang		mm	F	600	600	610
Truck Weight		kg		4400	4870	5560
Engine						
Model				Isuzu 4JG2	Isuzu 4JG2	Isuzu 4JG2
Total Displacement		ℓ		3.059	3.059	3.059
Rated Output		kW(PS) at rpm		44.2 (60) at 2100	44.2 (60) at 2100	44.2 (60) at 2100
Maximum Torque		N-m (kgf-m) at rpm		206 (21) at 1700	206 (21) at 1700	206 (21) at 1700
Tires						
Front Wheels				7.00×12-14PR (I)	7.00×12-14PR (I)	28×9-15-14PR (I)
Rear Wheels				18×7-8-16PR (I)	18×7-8-16PR (I)	21×8-9-14PR (I)

●The specifications are subject to change without notice.

Dimensions



Load Chart



●TCM retains the right to change these products and specifications without incurring any obligation relating to such changes.
●These products and specifications are subject to change without notice.
●Photos and illustrations may or may not include optional equipment and accessories.
●Features and specifications may vary depending on markets.
●Performance data and dimensions are nominal and subject to tolerances.

ISO 9001 Certification
(TCM Shiga plant)

ISO 14001 Certification
(TCM Shiga plant)

Manufactured by

TCM

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