

Guidelines for value orientation

The LECTURA Valuation is a mirror of the value system of the machinery on the European market. The values are an orientation guide for the purchase or the sales of used machinery from an authorised dealer.

Price-Formation

List prices

The price corresponds generally with the gross list price (off work/importer), value added tax excluded. Not all manufacturers update their data on a regular basis. This is indicated in red in "Model data". In this case we recommend contacting the manufacturer directly. List prices do not represent current market prices.

Listings

Listings are the results of market surveys as well as of the personal opinion of the publisher. In addition, manufacturers, importers, trade organisations, experts, European organisations as well as associations act in an advisory capacity. **The accident prevention regulations must be still valid for 6 months.**

The listed values correspond to a medium value structure that results from the adjustment of regional differences between demand and supply. All listings are indicated in € (VAT excluded). They are not binding and without engagement.

Dealer purchase prices

The listings in the market overviews "LECTURA Valuation – Purchase" refer to the dealer purchase values. These are average values that were determined for the redemption by the authorised dealers.

Dealer sales prices.

The listings in the market overviews "LECTURA Valuation –Sales" refer to the dealer sales values.

Serial equipment

These are serial-production machines and tools (listed standard equipment included). Machinery and equipment do not show essential defects and are ready for immediate use.

Individual production (prototypes)

These are no values. There is only the list price listed.

- 2 This type is assembled in few items only and has a low market presence.
- 3 Due to the technical criteria or the market strategy a reasonable valuation is not possible.

A valuation for this kind of machinery can only be made individually by an expert. This also applies in case particular deviations from the named products are identified.

Maintenance work

Maintenance work increasing the value, new or replacement units, new crawler tracks or tyres, a condition above average relating to the year of manufacture and the number of operating hours shall be considered separately (positive or negative). The same applies to additional work equipment and any other accessories.

Conditions of use

The prices are quoted for machinery and equipment which do not reveal any material defects beyond the usual wear and sign of wear. In the calculation of the values, they assumed the use in one shift (8 hours/ day). The values refer to a machine ready for use regarding any and all functions.

Technical requirements

Supporting construction parts shall be crack- and break- resistant and shall not reveal any distortions, bendings or compressions. They shall be free from any damage resulting from corrosion. The machine shall be varnished in the original colour typical for the manufacturer, other colours such as the print of the previous company name cause a loss of value. All important aggregates, elements and equipment have not been replaced (renewed). They are in an average condition, which is conform with the operating hours and the commitment according to the regulations. Crawler tracks or tyres shall reveal a minimum state of preservation equal to 30%. Any defects deviating from the aforementioned provisions shall justify deductions. The amount of these shall depend on the extent of the damage identified respectively the increased wear.

Rules

The EU rules for manufacturer and trade shall be observed. The equipment shall comply with the equipment safety regulations and the safety specifications of the manufacturer. All related UVV regulations and guidelines for machinery shall apply.

Technical documents

All documents relating to the machinery shall be available. Operating license, general operating license or vehicle registration document, EU declaration of conformity, inspection books, manuals, catalogues for spare parts or other descriptive literature for the machinery, load tables.

Valuation schedule

Depending on the state, the following surcharges or reductions shall be considered. The values apply both to the devices and to the existing equipment.

Depending the individual state, the following surcharges or reductions shall be considered.

Cat eg ory	Valuat ion	Fact or	Condition	Wear	Tyres/ Suspensi on	Rules	Tests
1	excellent	1,1-1,3	exceptional	small	At least	Meets the safety rules	At least valid for 6 months
2	good	1	perfect	normal	50%		
3	average	0,75	Still operational	increased	30%		
4	poor	0,50	General overhaul required	Excessively worn			

All values refer to the category 2.

Hydraulical loading cranes

1. Definition

- 1.1 According to register of construction equipment (German BGL) 1991:
Hydraulic loading cranes are cranes for loading and unloading of trucks, hydraulically articulated, telescopic and pivotable, mounted either behind the cab, at the rear end or in the middle of the platform, brace via hydraulic supporting legs, mechanical brace widening, for bigger units also hydraulic. Operating panel is mostly on both sides. Driven by hydraulic pump coupled to the engine of the truck. The boom can be positioned above the platform or it is foldable sideways.
- 1.2 According to accident prevention regulation for cranes (BGV D6) from 01.04.1994
- 1.2.1 § 26 (2) In terms of this regulation 'truck-mounted loading cranes' are defined as cranes mounted on a vehicle whose main purpose is to load and unload the platform of the carrying vehicle. 30 tm is the limit for the load torque and 15 m the limit for the reach. Please note: This modification of the regulations implies that all truck-mounted loading cranes with more load than 30 tm or more reach than 15 m are classified as automobile cranes, like truck crane, mobile crane, crawler crane etc.
- 1.2.2 § 2 (3) Mountable loading cranes are devices equipped with attachments to allow mounting and dismantling on a truck.
- 1.2.3 § 2 (4) Tree-length cranes are truck-mounted loading cranes dedicated to lift logs which are too long to be lifted at their balance point only and thus require additional pulling, pushing or levering mechanisms.

2. Examination record

The following documents must be available for the valuation of a truck-mounted loading crane:

- 2.1 An inspection logbook (according to the German regulation BGG 905)

- 2.1.1 *with the certification of the acceptance test, the in-process inspection on site and the final inspection by a technical expert or*
- 3.1.2 *a declaration of EC conformity by manufacturer and machine builder (since 31.12.92 resp. 31.12.94)*
- 3.2 *Certification of the periodic examination by a technical expert according to § 26 (1) of the accident prevention regulation for cranes (BGV D6)*
 - *at least once a year for all cranes*
- 3.3 *Certification of examination by a technical expert every four years according to § 26 (2) of the accident prevention regulation „Cranes“ (BGV D6) for:*
 - *cranes with a load torque above 300 kNm and a reach beyond 15 m*
 - *mountable loading cranes (uncoupling possible, on lift-off or roll-off tippers, etc)*
- 3.4 *Certification of the cable winch's remaining operating life according to the accident prevention regulation for winches and hoisting devices (BGV D8).*

3. Examinations

3.1 By professionals

- *authorised by the [Accident Prevention & Insurance Association](#)*
- *from Technical Supervisory Association (German TÜV)*

3.2 By technical experts

Besides above mentioned professionals, operating engineers, foremen, crane mechanics or other qualified staff may act as technical expert and assess the crane's condition as long as their knowledge and operating experience is adequate.

4. Valuation

The value relates to:

- *the unmounted crane*
- *basic version as described*
- *without manually operated booms*
- *without special equipment*

Additional equipment is listed separately after the manufacturer's models.

Reductions are required if

- *inspection logbook and examination certificates are not available*
- *operating manual is not available*
- *damages due to improper use or excessive stress are detected, e.g. deflections, bucklings, breaks, fissures, intense corrosion or leakage*

5. Mounting costs

Said costs for mounting are approximate values that may vary widely with specific construction conditions.

Notes on loading crane stress

Cranes require an operational stability certificate against breakage according to DIN 15018 Part 1. The allowed strain of different steels is predefined in loading groups (B1 to B6). Criteria for assigning a crane to a loading group are strain clearance ranges and collective load.

Manufacturers normally assign loading cranes to group B3 and timber cranes to group B4.

Strain clearance range	Total amount of strain clearance, e.g. Load clearance, work clearance N 1 20.000 – 200.000	N 2 200.000 – 600.000
Usage	every now and then, unregularly; long downtimes	regelmäßig; uninterrupted usage

collective load or
work strain

- very light	B 1	B 2
- light	B 2	B 3
- medium	B 3	B 4
- heavy	B 4	B 5

The automatic shutdown of crane movements due to load torque limitation may be used as a reference value for load classification.

Example:	Truck with trailer, carrying capacity:32 pallets, load: forklifts, unload: loading crane + stone tongs tours/day:2, operating time: 200 working days usage: delivery of building material	
Work strain	estimated:	medium
Work clearance/year	32 x 2 x 200:	12800
Strain clearance value	achieved after ca.:	12-15 years

Example:	Truck with soil grapple usage	
work strain	according to DIN 15018 T1	B 4, B 5

Swap body systems

The assembly is mounted on the auxiliary frame of the truck's chassis. All movements are hydraulic; driven by the truck's hydraulic pump.

1. Definition

1.1 Lift-off tipper

(Figure)

The whole swap body system is mounted as an auxiliary frame of the truck chassis. The pivoting equipment with two main beams lifts or puts down a container fixed by chains in longitudinal direction of the vehicle. The container can be tilted if it is hooked in. The brace support at the rear end of the vehicle is necessary for stability.

1.2 Slip-off tipper

(Figure)

Tuck-mounted swap body systems with a hydraulically tiltable frame on which the container can slip on or off by a cable winch.

1.3 Roll-off tipper

(Figure)

Hook lift model with hydraulically operating articulated horizontal movement. The hooked container is winded or unwinded over rollers at the back of the construction.

2. Examination certificates

Valuations of a truck-mounted swap body system require the following documents:

- 2.1 Declaration of EC conformity from manufacturer and machine builder (since 31.12.92 resp. 31.12.94)
- 2.2 Certificate of periodic examination by experts according to vehicle's accident prevention regulation (BGV D29):

3. Valuation

Valuation relate to unmounted standard devices without additional equipment. Additional equipment is listed separately after the manufacturer's models.

4. **Mounting costs**
Said costs for mounting are approximate values that may vary widely with specific construction conditions.

Tail-lifts

1. **Definition**
According to accident prevention regulation for tail-lifts (VGB 14)
§2 (1) Tail-lifts in terms of this accident prevention regulation are lifting devices with guided load handling, even if the guidance is provided by the supporting structure only.
According to this accident prevention regulation tail-lifts are
2. hoisting platforms associated with vehicle and designed to load and unload this vehicle.
2. **Examination certificates**
- 2.1 Inspection logbook for tail-lifts (according to guideline ZH 1/491 with declaration of EC conformity from the manufacturer and machine builder since 31.12.92 resp. 31.12.94) and certification of the acceptance test by a technical expert.
- 2.2 Certificate of periodic examination
3. **Valuation**
Valuation relate to unmounted standard devices without additional equipment. Additional equipment is listed separately after the manufacturer's models.
4. **Mounting costs**
Said costs for mounting are approximate values that may vary widely with specific construction conditions.

Costs for mounting

Reference values for assembling– prices in 1000 € excluding VAT

<u>KNm</u>	<u>Truck-mounted loading crane*</u>						
	<u>load torque in</u>						
	<25	<50	<100	<150	<200	<300	
>300							
behind the cab	2,9	3,1	4,0	5,15	7,1	7,3	10,5
at the rear end	3,7	4,5	5,5	6,2	8,3	10,3	13,6
on the platform	1,45	-	-	-	-	-	-
additional for the dismountable version	3,6	5,7	6,1	7,3	8,85	-	-
Quadruple brace movable, mech.	-	.	4,95	5,7	7,6	10,0	-
Quadruple brace movable, hydr.	-	5,5	7,7	9,5	10,7	17,1	-
Hydraulic pump	0,7	1,1	2,0	2,0	2,1	2,3	3,6

***data for mounting with auxiliary frame**

Swap body systems	Total weight of the vehicle (t)						
	4-6	6-8	8-10	10-16	16-19	22-26	32-
36							
Slip-off tipper				12,0	13,0	14,5	14,5

Including: axle support, underride protection, mounting of tank and pumps

Roll-off tipper	9,1	9,1	9,1	11,0	12,0	13,2	14,2
Including: mounting and fixing of the container, bracket plates for the vehicle, underride protection, mounting of tank and pumps, offsetting of coupling traverse							

Lift-off tipper	5,0	5,0	5,0	8,5	8,5	9,8
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Including: bracket plates, extension of loading platform, mounting of tank and pumps

Tail-lifts

Carrying capacity	-2000 kg	fixed	foldable	underridable
	>2000 kg	2,4	2,8	2,4
Additional for mounting on:		3,2	3,7	3,2
- trailer		1,65	battery box, bracket, e-cable	
- semitrailer		2,0	battery box, bracket, e-cable, spiral cable	
- box truck		1,05	bridging plate, automatic reset for lowering	
Brace support	- hydraulic	3,3	with locking, starter, hoist/support cylinder	
	- mechanical	0,6		

Machine Age – Value - Effect

Age in years	1	2	3	4	5	6	7	8	9	10
Value in %	73,0	61,0	51,0	41,0	33,0	26,0	20,0	14,0	10,0	7,0

Terms and abbreviations

1. Swap body systems

Axles	Number of Axles according to the total weight of the truck
GGW	Max. total weight in t
KN	Lifting force of the assembly in kN (kilo Newton)

1.1 Slip-off tippers

Model	Std.	Basic model
	Std.S	Cable pulley block
	DSK	Three-side tipper
	Std-K	Chain pulley block

1.2 Roll-off tippers

Model	K	Model with articulated hook arm
	SZA	Semi-trailer
	SK	Articulated thrust hook arm for more reach or extra high containers
	KT	Telescopic articulated hook arm
	KK	Articulated hook arm and additional articulated joint
	KTK	Telescopic articulated hook arm and additional articulated joint
	DSK	Three-side tipper
	KO	Combination of articulated hook arm and winch for slip-off/roll-off container
	S	Thrust hook arm
	Silo T	Silo transporter

1.3 Lift-off tippers

Model	Std.	Rotating booms with fixed length
	T	Telescopic rotating booms for more reach or extra high containers
	SK	Articulated rotating booms for more reach or extra high containers
	SSB	Sideways rotatable booms for quick and easy uploading of containers etc.

STSB	Telescopic and sideways rotating booms
TSS	Telescopic and sideways adjustable rotating booms for different widths of special containers, silos etc.
HAK	High lift-off tipper

2. **Truck-mounted loading cranes - hydaulical, electrical, rollable**

KNm	Load torque of the crane
LMB	Electronic load torque limitation
Schwenkb. Endl.	Unlimited pivoting range Pivoting range is limited if there is no entry in this field.

3. **Tail-lifts**

Model	S	=	Standard
	F	=	Collapsible
	P	=	Pendular folding
	U	=	Ground clearance for easy access
Platform	S	=	Steel
	A	=	Aluminium
	Iso	=	Insulated

