

Guidelines for value orientation

The LECTURA Valuation is a miracle 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.

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Category	Valuation	Factor	Condition	Wear	Tyres/Suspension	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.

This market overview values the following cranes:

1. Tower cranes: bottom-slewing / top-slewing / luffing boom / truck-mounted
2. AT cranes up to approx. 250 t load
3. Truck cranes up to approx. 250 t load
4. RT cranes up to approx. 250 t load
5. Mobile cranes with telescopic boom up to approx. 250 t load
6. Mobile cranes with lattice boom up to approx. 250 t load
7. Industry mobile cranes up to approx. 250 t load
8. Crawler crane with telescopic boom up to approx. 250 t load
9. Crawler crane with lattice boom up to approx. 250 t load

Prices for tower cranes and mobile cranes include the following attachments:

- A. Concrete weights for bottom-slewing cranes
- B. Concrete weights for top-slewing cranes (only if ticked)
- C. Crane control
- D. Spindles and plates for stationary use
(Obsolete for rail-bound models)
- E. All additional weights for mobile cranes

Values for nominal torque in kNm (10 kNm \approx 1 m) of tower cranes always corresponds to the particular type of boom.

Valuations of **tower cranes** are based on a single-shift operation with medium wear and tear according to FEM 9.755.

Load spectrum group L2 ($k_m = 0,25$ equals $0,63^3$) and mechanism group 1 AM M4.

For double-shift operation the values are reduced by 20%, for triple-shift operation reductions will be 40%.

The valuations of **mobile cranes** are based on a single-shift operation and normal wear and tear according to FEM 9.755.

Load spectrum group L1 ($k_m = 0,125$ equals $0,5^3$) and mechanism group 1 BM/M3.

According to BGV D 8 the used percentage of the theoretical expected service life must be documented in the inspection logbook for all cranes except the tower cranes (lifting unit valuation). In case of missing documentary proof, the hoisting winch has to be overhauled after 10 years.

Please note:

1. The complete documentation for the crane must be available, including:

- 1.1 The inspection logbook according to BGG 943 including all data and details of the identity and the mode of operation of the crane.
- 1.2 The examiner's results about the preliminary, working and acceptance test, the certification of the type test (manufacturer's declaration) or a declaration of conformity.
- 1.3 The yearly inspection report by a technical expert.
- 1.4 The inspection results from an appraiser.
- 1.5 Detailed information if crane was welded (see "Repair weldings at cranes 2").
- 1.6 Inspection report of a lifting unit valuation (according to BGV D 8).
- 1.7 All documents required for road traffic in case of truck cranes.
- 1.8 Instruction manuals, mounting and demounting instructions, spare parts catalogue.

1. Repair weldings at cranes

- 2.1 A comprehensive qualification certificate according to DIN 18800 T 7 with increment DIN 15018 is required.

3. Examinations

- 3.1 The 4. amendment of BGV D 6 was enacted on 2001-04-01.
- 3.2 According to these rules, tower cranes have to be examined after 4/8/12/14/16 years of operation by an appraiser. Tower cranes older than 16 years (constructed 1985 or before) have to be examined yearly.
- 3.3 Power-driven vehicles have to be examined after 13 years of operation and every year after by an appraiser.

Definitions

Tower crane:

A tower crane is a revolving crane, formerly known under the term 'revolving tower crane', with a tower-like main structure and a fixed or luffing jib (colloquially known as a boom). Both the jib and counter-jib are mounted on a turntable where the slewing mechanism and slewing machinery is located (top-revolving) or the slewing mechanism is located at the tower's bottom allowing the whole scaffolding and main structure to turn (bottom-revolving).

Fixed jibs have a trolley moving in and out along the jib to adapt to the load while level luffing cranes move the hinged jib up and down, so as to move the load inwards and outwards. Hoisting motors and partially trolley motors are nowadays pole-changing electric drives or variable-frequency-controlled drives to allow varying hoist and movement velocity.

If needed, tower cranes may be equipped with a rail-bound carriage. Tower cranes with smaller nominal load are often constructed as quick-mountable in order to allow quick and easy moving from one construction area to another with specialized road-travelling mechanisms.

Crawler crane:

A crawler crane does not need rails but moves on an undercarriage with a set of tracks. The revolving superstructure (grid framework or telescopic jib) and the crane drives correspond to those of a mobile crane. The broad tracks prevent the machine from sinking into loose ground and thus a crawler crane is mainly used on rough terrain.

Mobile crane:

A mobile crane has its revolving superstructure mounted on a wheeled truck for mobility. Contrary to a truck crane mobile cranes are equipped with a single motor only for moving and hoisting which limits the moving speed to a mere 20 km/h. Its axles are either rigidly coupled to the undercarriage with gummy or metal

suspensions or oscillatingly suspended.

The superstructure with grid framework or telescopic jib is often continuously revolving. However, industry-strength cranes often limit the rotation to approximately 380°. The crane is controlled from within a cabin mounted to the undercarriage.

Truck crane:

Just as the mobile crane, a truck crane has own drives. Its wheeled undercarriage is build and permitted according to road traffic regulations. Truck cranes have own engines for movement allowing speeds up to 70 km/h. Axles are suspended with steel leaf springs or hydro-pneumatically. Often truck cranes support all-wheel-drive to provide good driving characteristics within rough terrain. Easy maneuvering calls for a small turning radius so the wheels of multiple or all axles are steerable.

The superstructure with its telescopic boom rotates on the undercarriage and drives the crane hoisting mechanism with a separate motor.

Definitions of terms

(Following BEWG § 9 Par. 2 and „Guidelines for machine valuation“ from IfS e.V., Cologne)

Fair market value

The fair market value is defined as the price which a machine/equipment would exchange between a willing buyer and a willing seller, which each having reasonable knowledge of all relevant facts, and neither being under any compulsion to act.

The fair market value is interchangeably used for current market price, open market price and common value. (BEWG § 9 Par. 2 German Valuation Law; § 141 Federal Building Act).

Present value

The present value is the price of a machine/equipment with consideration of age, wear and tear, maintenance, technological obsolescence and the amount of working hours already operated.

Replacement value

The replacement value covers all the costs involved to replace a machine/equipment with an equivalent at the present time.

Original value

The original value is the price that had been paid when a machine/equipment was first acquired.

Value as new

The value as new is used for the costs to aquire a brand-new machine/equipment at present time.

Abbreviations

RT Cranes:

RT Cranes (Rough-terrain crane = for open terrain only) are developed especially for use on open ground. These moveable and steerable mobile cranes work on low speeds (mostly below 20 km/h). Steerable all-wheel-driven axles hinged at the undercarriage enable a maximum oscillation. Wheels with large tyre sections, high loads and corresponding threads (EM = earth-moving machine) reduces soil pressure on poorly supporting grounds.

AT Cranes:

AT Cranes (All-terrain cranes = cranes for both road and open terrain) are steerable, suspended mobile cranes that allow a higher speed. The high speed up to 70 km/h together with the good terrain driving characteristics and small dimensions make AT cranes a valuable replacement for automotive and RT cranes. Smaller models are mainly single drive cranes whereas bigger models have separate drives for mobility and hoisting. Axles are mostly suspended hydro-pneumatically and are steerable and driven. Gears are either torque-converting automatic or power shift transmissions.

There is an undercarriage for on-site movement and a superstructure cabin for travelling on roads. The non-limited revolving superstructure with its telescopic boom may be adjusted to special on-site loads with additional varying counterweights.

Description of abbreviations

The format chosen for our market overview calls for a display of many data within constraint space to remain easily readable and comprehensible. This is why we attached additional information to the manufacturer's type name.

Examples:

HTD 70/20 LVF 15/3,0m	=	Potain tower crane HD = hydraulic assembly T = telescopic tower 70 = nominal torque 700kNm lifting unit 20 LVF 15 20 kW LVF frequency converter 15 kN traction per rope line 3,0 m rotary radius
140 EC-H (120 HC) 11x 2,5 + 6,85 m	=	Liebherr tower crane type 140 EC-H (tower model 120 HC) tower consists of 11 parts à 2,5 m and a bottom tower piece of 6,85 m
180 EC-B-FU (185 HC) 7x4, 14+GTS	=	Liebherr tower crane type 180 EC-B FU = lifting unit with frequency converter tower model 185 HC tower consists of 7 parts à 4,14 m and a bottom tower part
Chronoflash 25 A (2,0t)	=	BPR-Cadillon tower crane type chronoflash 25A, maximum load 2,0t
Chronoflash 35 A-LVF	=	BPR-Cadillon Tower crane type chronoflash 35 A Lifting unit LVF (F = frequency converter)
WK 91 SL-TFS 15	=	Wolff tower crane type WK 91 SL tower model TFS 15
HD 21 B-6PC7-1,9 m	=	Potain tower crane type HD 21B lifting unit 6PC7 superstructure rotary radius 1,9 m
ZBK 180/2-TS 17-UW 60	=	Zeppelin-BKT tower crane type ZBK 180/2 tower model TS 17 carriage model UW 60
LTM 109/1 (8x8x8)-Owvf	=	Liebherr AT crane type LTM 1090/1 drive format 8x8x8 = 8 wheels, 8 wheels driven, 8 wheels steerable Owvf = crane movable from superstructure
LTM 1030/2-sFH-CH	=	Liebherr AT crane type LTM 1030/2 sFH = small driver cabin CH = narrower vehicle width, orig. for Switzerland
RTF 60- 4 (8x6x8,MB)	=	Tadano-Faun AT crane type RTF 60-4 drive format 8x6x8 = 8 wheels, 6 wheels driven, 8 wheels steerable MB = Mercedes-Benz (bzw. Deutz) - diesel engine
AT 9120-5 G (15,0t – 10x6x8)	=	Grove AT crane type 9120-5G 15,0 t counterweight drive format 10x6x8 = 10 wheels 6 wheels driven, 8 wheels steerable
LTL 1080	=	Liebherr RT crane type LTL 1080 with tyres 26.5-25

