



JCB LOADALL 550-80 vs MLT 845-120

SUPERIOR BY DESIGN



CONFIDENTIAL TO JCB PERSONNEL



Base Specification

MANUFACTURER	JCB	MANITOU
SPECIFICATION	JCB 550-80	MLT845
Payload (kg)	4990	4500
Lift Height (m)	8.1	7.55
Maximum forward reach (m)	4.5	-
Overall height (mm)	2590	2580
Overall width (mm)	2420	2420
Weight (kg)	10150	8870
Engine make	JCB DIESELMAX	PERKINS
Engine power (HP)	130/145	101/124
Engine power (Kw)	97/108	74.5/91
Tearout force (daN)	6650	6650
Travel speed (kph)	38	33

- JCB 550-80 offers both increased payload and lift height over the MLT 845-120 in response to customer demand for a high capacity machine at height
- Both increased engine HP and travel speed facilitate maximum productivity and machine utilisation
- These features are achieved whilst still keeping relative dimensions to the MLT 845-120 maximise both manoeuvrability and visibility



Chassis

- Built to last
- Strength and weight
- Attention to detail

Built to last

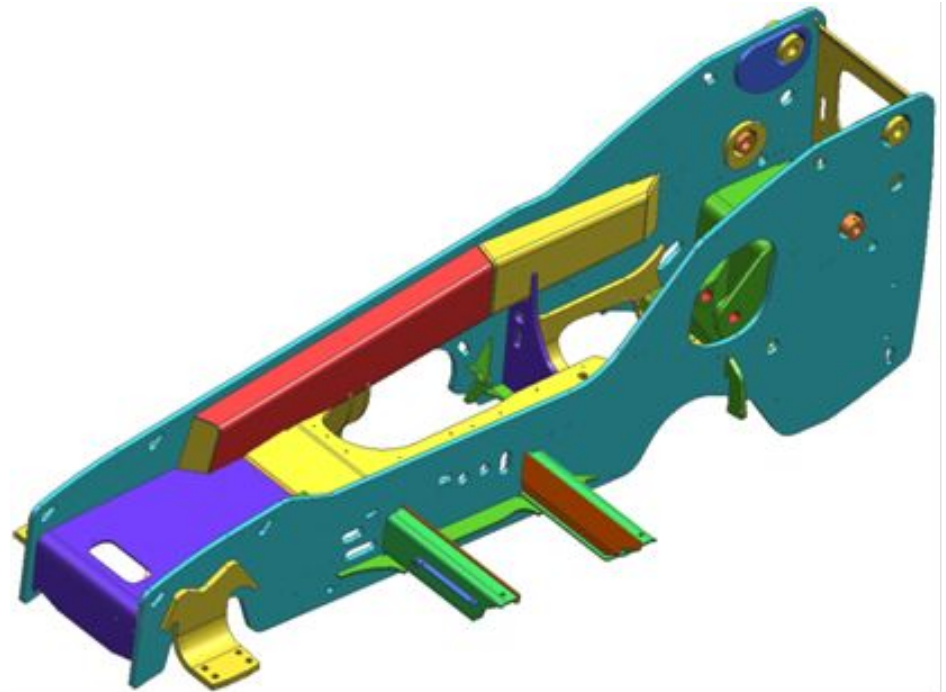
JCB Loadall's can dig, not just lift and place. Cat tail welds eliminate stress concentration at joint lines

Strength and weight

25mm thick steel chassis plates provide excellent strength and torsional stiffness. Also acts and integral counterweight

Attention to detail

Finite element analysis and strain gauge testing prove JCB's 10 year design life





Superior by Design

Main Components



- JCB Dieselmex turbocharged cooled engine combined with JCB gearbox, hydraulic rams, cab, chassis and boom.
- In house manufacture facilitates high quality control and quick response to customer needs



- Manitou uses 'off the shelf' items for its main componentry including the Perkins engine and Turner gear box
- Offers less controllability over quality, and service availability



Chassis



- 25mm thick side plates provide excellent strength and weight to the chassis structure
- Long, thick deck plates provides superb structural rigidity and durability
- Integral hydraulic tank adds weight to the structure to reduce counterweight needs



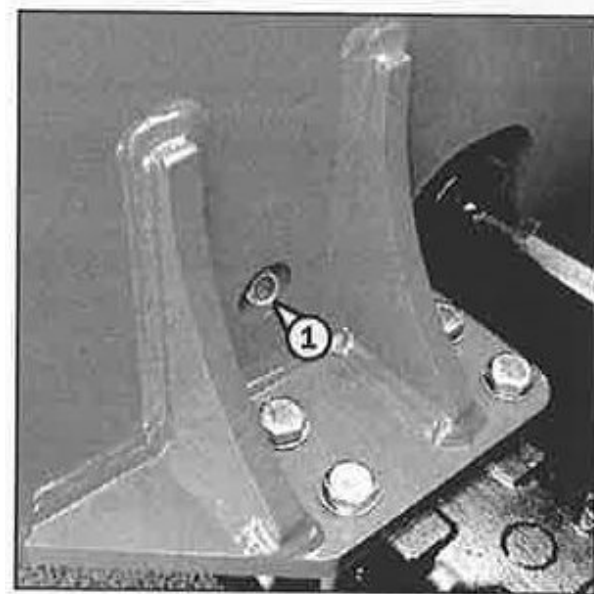
- Thin bolt on deck plates offer little structural integrity
- Susceptible to damage and therefore increase operator costs and potential downtime



Chassis



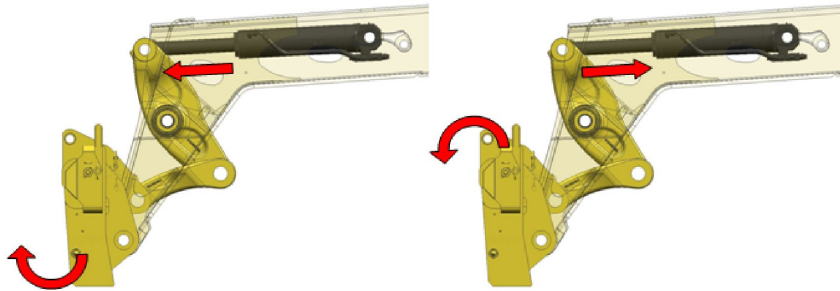
- Heavy duty axle feet comprehensively absorb stress caused through heavy duty operation
- Cat tail welds disperse the stress into the structure to minimise wear and increase durability



- Smaller axle feet reduce surface area to absorb pressure and stress of operation
- This can cause early life failure and increased owner costs and downtime
- None cat tail welds disperse stress less efficiently



Boom



- JCB 550-80 has a Z-Bar linkage at the boom nose as opposed to conventional link and lever
- Massive 6650 daN tear out force generated which is ideal for re-handling and digging
- Splayed boom nose design adds rigidity and strength to support the Z-bar linkage
- Thick 12mm plate inner boom and 10mm plate outer boom provide excellent strength and durability for maximum machine life



Boom

	Manitou MLT845	JCB 550-80
Outer boom height	430mm	450mm
Outer boom width	350mm	353mm
Outer boom plate thickness	8mm	10mm
Inner boom height	350mm	373mm
Inner boom width	300mm	300mm
Inner boom plate thickness	8mm	12mm
Boom overlap, outer to inner	1040mm	1195mm

- 550-80 has a boom overlap of 1195mm between the inner and outer boom to minimise deflection in operation- this is 14% more than the Manitou which is only 1040mm
- Increased boom height and widths increase the structural strength and rigidity of the boom
- Increased plate thicknesses maximise boom durability and machine life
- Reduced maintenance



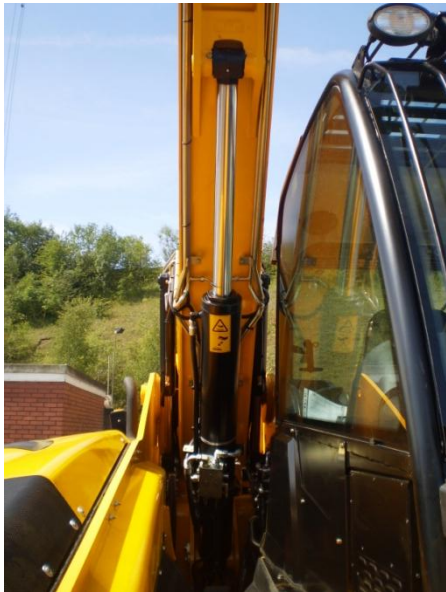
Boom



- Dry waxoyl coating is used for excellent wear protection, reduced dirt adhesion and reduced servicing
- Keyhole type castings absorb and disperse energy created through extension and retraction of the boom to minimise wear and increase duty life



Boom



- One centrally mounted lift ram provides even dispersion of lifting forces throughout the boom structure
- Provides reduced maintenance and cost of ownership



- 2 lift rams positioned either side of the boom
- This design increases the likelihood of deflection during lifting/lowering operations
- High pivot points reduce rear visibility



Cycle times

Hydraulic cycle times (secs)	JCB 550-80	MLT845-120	DIFF (+/-)
Lift	7.4	8.4	-1
Lower	5.9	6	-0.1
Extend	8.3	9.7	-1.4
Retract	5.9	8.3	-2.4
Bucket dump	2.8	3.3	-0.5
Bucket crowd	3	3.7	-0.7
TOTAL	33.3	39.4	-6.1

- JCB 550-80 is 6.1 seconds (18%) quicker than the MLT 845-120
- JCB has quicker cycle times across all operations for fast and efficient operation and maximum productivity
- Lower and retract functions use a re-generation system which uses 'gravitational force' to increase cycle speed and reduce cycle time



Transmission

	Speed (km/h)	
Gear	Manitou 845-120	JCB 550-80
1st	5.3	4
2nd	8.6	8
3rd	18.2	18
4th	32.4	35

- JCB has an overall higher travel speed than the Manitou
- This facilitates machine productivity and utilisation



Cab Layout



- Large right hand display facilitates clear and concise operator feedback
- Logically grouped switches which fall easily to hand for ease of operation
- Pillar mounted LMI display for ease of use when operating at height



- Small, centrally mounted display is easily obscured and difficult to distinguish
- Adhoc based switch locations
- Dash mounted LMI display is difficult to view when operating at height



Cab Controls



- Electric servo control offers light and responsive control of the hydraulic services
- Ergonomically designed joystick requires minimal movement for operation to reduce operator fatigue
- Cab mounted or seat mounted options for maximum versatility

- Manitou JSM joystick requires full arm movement to operate the hydraulics therefore increasing operator effort and fatigue
- Only directional control is on the joystick reducing machine versatility



Cab Controls



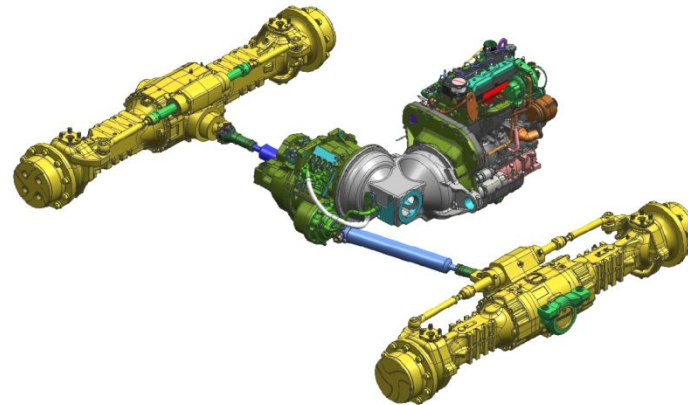
- Combined directional control and 4 powershift gears on steering column lever makes direction and gear change effortless for maximum productivity and minimum fatigue
- Auto steer mode switch makes changing between the 3 steer modes quick and easy



- 4 speed torque converter is controlled by a manual gear lever. This requires high operator effort and decreases comfort due to arm rest position
- Manual steer mode lever increases both operator effort and time when switching between modes



Braking



- 550-80 is fitted with high back off brakes which facilitates less energy consumption
- Power brakes are used to reduce pedal effort and therefore operator fatigue
- 4 wheel braking is used for maximum safety and braking capability

- MLT 845-120 has multiple disk brakes on front and rear axles
- Lack of high back off brakes increases energy consumption and therefore fuel usage



Cab Design



- JCB cab has 8 fully adjustable vents, giving excellent all round ventilation
- Air conditioning compliments this ventilation
- Manitou air conditioning vents are poorly located above the operators head
- Facilitates uncomfortable operator environment and poor air conditioning efficiency



Cab Design



- 2 large and deep cab steps facilitate ease of access/egress
- Large 146 litre fuel tank minimises fuel filling to maximise productivity



- 1 wide but narrow step can hinder easy access/egress
- 135 litre fuel tank has less capacity which increases filling frequency and idle time



Cab Design



- 2 large grab handles facilitate ease of access into the cab
- Lower glass door panel provides increased visibility to low areas around the machine
- Built in storage provides quick, easy access to stored items to reduce operator fatigue



- No grab handles to aid access/egress- reduced comfort and safety of operation
- Standard solid lower door panel impairs visibility around the machine
- External toolbox storage is exposed and can create excessive noise



Service access



- Wide opening, gas strut assisted bonnet gives extensive access for servicing
- All service points are located at the front of the bay for ease of location
- Easily removable pod and bonnet for all round access and minimum machine downtime



- Service points not logically grouped and located deep into the engine compartment



Service access



- Wide opening for ease of access to hydraulic filler neck
- Diesel filler is recessed into cab for maximum protection with ease of access
- Vertical orientation allows maximum filling without overspill

- Fuel and hydraulic fill points grouped together making access to each restricted
- Fuel filler neck lies horizontal making filling difficult and overspill of fuel possible. This can increase cost of ownership and reduce utilisation.



Structure



- Minimal rear counter weight reduces stress throughout the chassis when laden
- Low boom pivot point in chassis increases machine stability whilst offering maximum visibility to the rear



- Increased rear counterweight adds stress to the rear of the machine structure
- High pivot points and low cab mounting decrease rear visibility
- Recovery hitch as standard



Rear Lights



- JCB offers 2 positions for the rear lights for roading and non roading
- Increased protection to the components reduces the cost of ownership
- Increased visibility when stored upright

- Static position of rear lights on rear fender
- No protection for lights when off road
- Potential for damage through vibrations of fender
- Reduces rear visibility over fender



Why JCB Loadall

- JCB's proven 10 year design life
- In house manufacture of major components for quality assurance
- Minimal daily checks
- Structural integrity built in
- Simple control layout for safe and productive operation
- Increased visibility for high productivity and increased safety
- Patented 'Adaptive load control' generates progressive control complying to EN15000



JCB LOADALL

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