



WHEEL LOADER | 456

Operating weight: 18823 - 22079kg Max engine power: 160kW (215hp) Max loading capacity: 3.5m³



A powerful machine that's fully loaded

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Excellent all-round visibility

Large glass areas giving excellent visibility around the machine.

Sloped engine cover provides views at the rear.

Front quarter glass panels overlook central pivot area.

Power and performance

Axles provide automatic traction control for all conditions.

Smart hydraulic systems maximise efficiency and drive down fuel costs.

Automatic transmission ensures the machine is always in the right gear.

Built to last

High-quality, industry-recognised components.

Electronic safeguard systems prevent catastrophic failures.

Designed for easy servicing and maintenance.





Superb operator environment

Ergonomic high-back seat for superior comfort.

Easy-to-use, clearly marked controls.

Large, spacious cabin with ample storage room.

Easy access to all areas

Ground-level access for easy servicing and reduced downtime.

All components in accessible areas.

Large, single-piece engine cover and swing-out fan give access to engine and cooling bays.

Maximum safety

Inclined steps and well-placed grab handles allow easy access.

Ground-level checks eliminate the need to climb onto the machine.

Optional rear-view camera systems available.

Superb operator environment

Central to the 456's well-thought-out design is the person who will be controlling it. With operators working for up to 12 hours a day, they need to be constantly alert and comfortable so they can be productive. The 456's cab is a remarkable achievement, combining a stylish interior with highly practical features.



Easy, safe access

With a wide door, steps inclined to 10° (something that's fast becoming a quarry standard), non-slip surfaces and well-positioned handles, access is always easy and safe, helping to minimise accidents on site.

The largest cab in its class

At 3m³, the 456 has one seriously large operating environment, with every detail ergonomically designed for comfort and ease of use. There's also plenty of room for storage, including a massive open-floor space.



Positive pressure cab

The cab is fully sealed in order to reduce dust and dirt entering the cabin, maintaining a healthy working environment. To suit different environments, a range of fresh air intake filters (P3, carbon and standard) is also available; all are easy to remove for cleaning and replacement.



Ergonomic high-back seat

The standard high-backed suspension seat is fully adjustable and provides excellent support and comfort. The result is reduced operator fatigue for added productivity.

Just the right temperature

The excellent heating and ventilation systems ensure ideal working temperatures. There is a variable blower speed and a range of fresh air intake filters to choose from. The temperature and recirculation controls are all well marked out and simple to use. An optional air-conditioning system and heated, air-suspended seat are also available.

Complete controllability and all-round visibility

Today's worksites are busier than ever, so safety is always a primary concern. At JCB, we're committed to doing everything we can to reduce the risk of accidents and so we have designed the 456 to give operators the best possible visibility all around the machine.

Large operator environment

The 360° tinted glass cab allows the operator not only to spot almost all potential hazards, but also to view the load throughout its full lift range. The cab features narrow uprights between the glass panels, an extra large wiper and a choice of front and rear blinds to keep the sun off.



Heated mirrors

When it's cold outside, the heated mirrors prevent icing. Plus, there are two interior mirrors that provide superb views of hard-to-see areas.



Controls

All the 456's controls are conveniently placed and incredibly easy to use. There's a choice of single or multi-lever controllers – both allowing for consistent use with minimum fatigue. The single-lever controller incorporates a forward/reverse switch that can be used without taking your hands off the steering wheel, while the multi-lever version is a switch located to the side. Both controllers feature gear-change and disconnect switches, and the latter speeds things up by transferring engine power to the hydraulics.

Power and performance as standard

In a competitive world, you need to move the maximum amount of material at the lowest possible cost. Designed to deliver outstanding power and optimum efficiency, every component on the JCB 456 has been created to meet rigorous demands day in, day out.

A world-class powertrain

A perfectly matched, balanced powertrain provides the power to move even the most demanding material from A to B.



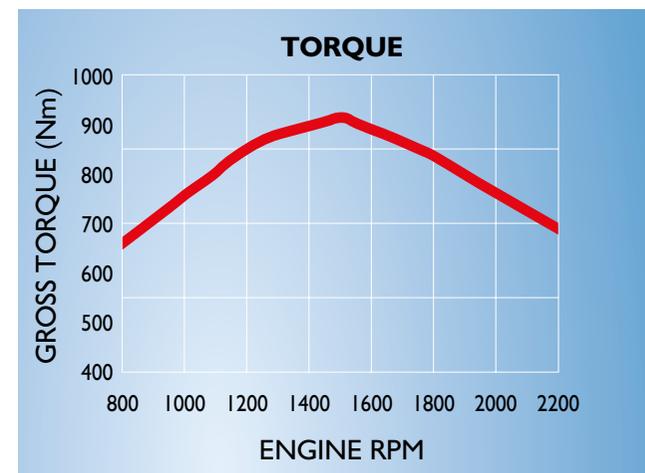
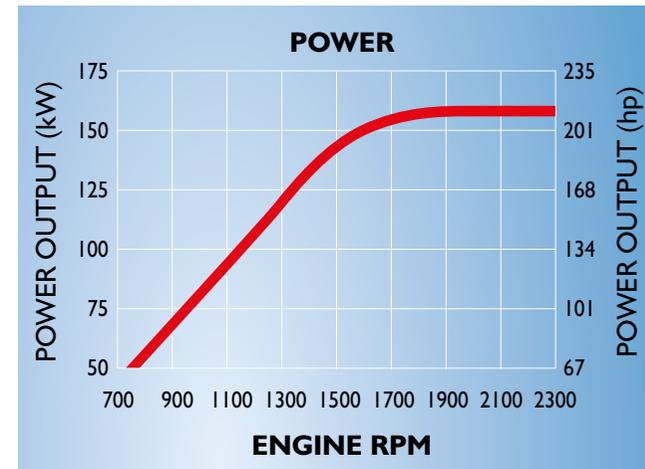
Turbocharged Cummins QSC engine

The 456 boasts an air-to-air intercooled low-emission engine with electronically controlled fuel-injection system. This delivers high torque at a low engine RPM, enabling the operator to fill the bucket faster.



ZF Smoothshift transmission

The 456 features a fully automatic transmission. Normally the driver has to select the correct gear to ensure efficient fuel use. But with this system the correct gear is automatically and immediately selected ensuring the absolute maximum productivity and fuel efficiency, and prolonging the life of the machine.



ZF axles

The 456 is fitted with standard torque proportioning axles that keep the machine moving even in difficult conditions. If one wheel is slipping, power is automatically transferred to the wheel with traction. Torque is also increased at the hubs, which reduces stress on other components. Ultimately, this saves wear on the tyres and gets the job done faster. There's also the option to have even more advanced limited slip differential axles.

**Oil-immersed brakes**

The oil-immersed braking system not only ensures effective braking but also a long service life. Wheel speed braking means the brakes on the 456 rotate at the same speed as the wheels for heat and drag reduction, as well as improved fuel economy. As a safety precaution, a back-up brake circuit allows safe stopping in the event of drivetrain failure.

Load-sensing hydraulics

The 456 delivers efficient hydraulic oil flow on demand thanks to a load-sensing circuit. This minimises fuel consumption, directs power where it is needed most and allows for accurate and efficient load placements. When it comes to driving, the steering requires minimum effort, even at full articulation.

A choice of loader arms

Different jobs demand excellent versatility, which is why the 456 comes with a choice of either HT standard/super-high-lift or ZX standard arms.

The Z bar arms generate maximum power to get more from the stockpile, while the HT arms can be used for a range of applications with different attachments. The super-high-lift option allows you to load higher-sided vehicles or hoppers without the need for loading ramps or high-tip buckets.



456ZX



456HT



456HT Super High Lift

Maintenance made easy

Once in use, the 456 rapidly becomes a vital part of the production process, so any downtime could mean a serious loss in productivity and, therefore, profitability. Keeping it in prime condition is vital, so we have made regular maintenance extremely easy to carry out, which in turn will maximise the machine's use and longevity.

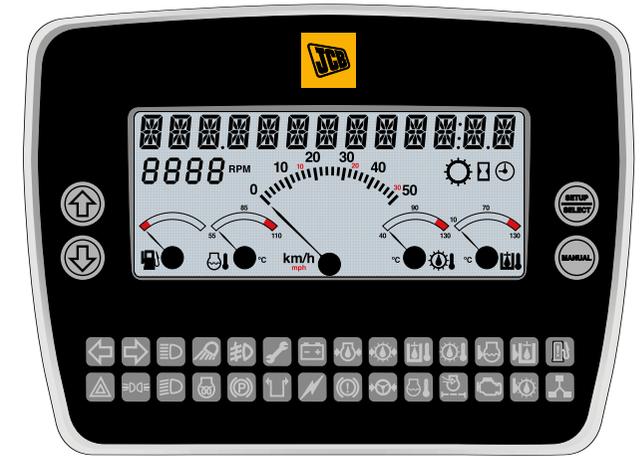
Ground-level access

Daily and weekly maintenance checks can be completed easily and safely by operators, thanks to ground-level checkpoints.



Optimum cooling performance

Keeping your machine at the right temperature will ensure it stays efficient and has a long life. The 456's cooling system is cleverly designed to stay free of dirt and debris, while the cooling pack can be easily cleaned via the swing-out rear grille and single-piece engine cover doors. For particularly arduous or dusty conditions, add-on options include a fully automatic reversing fan and a widecore cooling pack. The reversing fan is designed to protect the cooling pack while the widecore pack allows larger particles through the cooler without catching.



The Electronic Monitoring System

Our sophisticated Electronic Monitoring System (EMS) controls and monitors the components, triggering built-in safeguards that prevent major damage to major parts. For example, if the coolant temperature gets too hot, the machine will automatically protect itself and shut down.

This multi-language system allows you to set certain functions to suit the application, for optimum performance, and displays key operation data in real time. Fault codes allow quick identification of problems enabling quicker turnaround of issues, while a service indicator lets you know when service is required.

Built to last

Everything about the new 456 indicates that it is built to last, offering maximum productivity over thousands of operational hours. Every single component has been carefully designed and manufactured to rigorous standards, ensuring long life, lower running costs and a high value when it finally comes to selling.

Designed-in strength

Using cutting-edge design techniques, the best components, sophisticated computational analysis and rigorous physical testing, JCB has created a machine fit for the demands of your business. The cast steel rear end (often of plastic fabrication on competitor machines) gives real strength and protects against significant damage, reducing operating costs. The slope of the rear bonnet is shaped for better visibility so that it's easier to see potential hazards, again reducing damage to the machine. Full chassis belly guarding also protects the main driveline components from damage on the underside.

Tailoring the machine for your needs

The 456 is built to cope with extremely demanding environments, but it can also be customised to meet the specific requirements of individual applications. For example, for waste applications a series of additional guards is available, including brake lines guards, extra belly guards, lift ram guards, cab screen guards, etc. And for load and carry operations, Smooth Ride Systems can be fitted, turning the arms into a form of suspension which allows them to float. The machine can then travel more quickly over the ground because shock loadings are not passed through the machine making it unstable, plus shock is not passed to loads through all the structures and systems.



Protected hydraulic circuits

A high-quality filtration system ensures no debris passes through the hydraulic circuit. This, along with highly adapted assembly procedures, ensures a long operating life.



Smooth operation

By reducing the shock passing through all the components, the machine is guaranteed smooth and easy operation – and a longer life span.

Easy maintenance

Easier access for operators and maintenance technicians ensures that the machine can be kept in the best condition, maintaining availability and productivity. Service intervals are every 500 hours.

VALUE ADDED

JCB'S WORLDWIDE CUSTOMER SUPPORT IS FIRST CLASS. WHATEVER YOU NEED AND WHEREVER YOU ARE, WE'LL BE AVAILABLE QUICKLY AND EFFICIENTLY TO HELP MAKE SURE YOUR MACHINERY IS PERFORMING TO ITS FULL POTENTIAL.

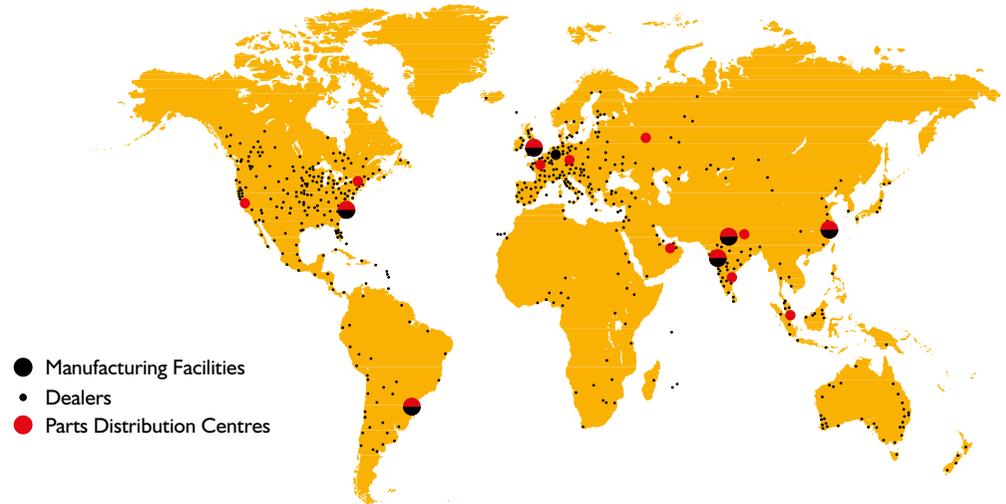


1 Our Technical Support Service provides instant access to factory expertise, day or night, while our Finance and Insurance teams are always on hand to provide fast, flexible, competitive quotes.

2 The global network of JCB Parts Centres is another model of efficiency; with 15 regional bases, we can deliver around 95% of all parts anywhere in the world within 24 hours. Our genuine JCB parts are designed to work in perfect harmony with your machine for optimum performance and productivity.



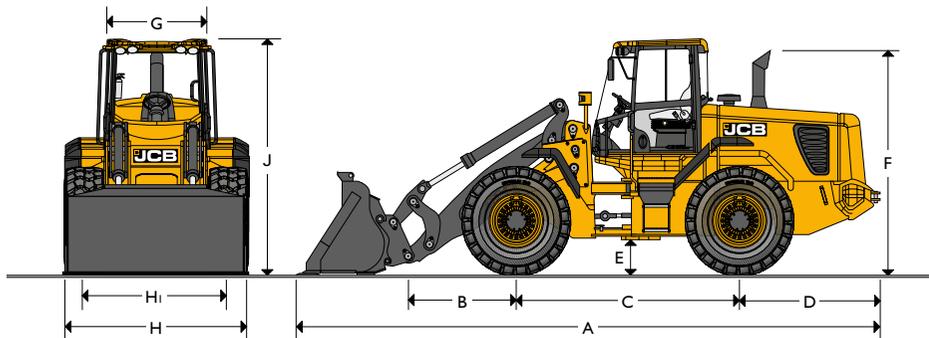
3 JCB Assetcare offers comprehensive extended warranties and service agreements, as well as service-only or repair and maintenance contracts. Irrespective of what you opt for, our Maintenance teams around the world charge competitive labour rates, and offer non-obligation quotations as well as fast, efficient insurance repair work.



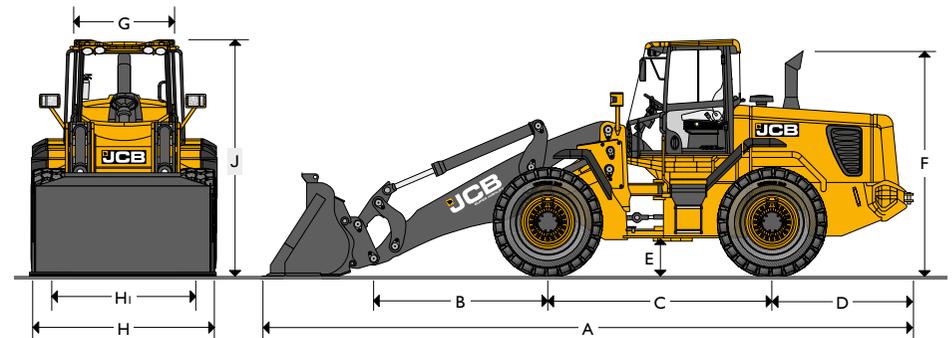
Note: JCB ASSETCARE may not be available in your region, so please check with your local dealer.

MAX. ENGINE POWER: 160kW (215hp) MAX. OPERATING WEIGHT: 22079kg MAX. LOADER CAPACITY: 3.5m³

456/456e HT – STATIC DIMENSIONS – Standard height arm



456/456e HT – STATIC DIMENSIONS – Super high lift arm



456/456e HT – STATIC DIMENSIONS – Standard height arm

		mm
A	Overall length	8520
B	Axle to pivot pin	1713
C	Wheelbase	3300
D	Axle to counterweight face	1970
E	Minimum ground clearance	470
F	Height over exhaust	3260
G	Width over cab	1400
H	Width over tyres	2702
Hi	Wheel track	2100
J	Height over cab	3370
	Pin height (maximum)	4304
	Overall operating height	5768
	Front axle weight	kg 9266
	Rear axle weight	kg 11105
	Total weight	kg 20371
	Inside radius	3182
	Maximum radius	6630
	Articulation angle	± 40°

456/456e HT – STATIC DIMENSIONS – Super high lift arm

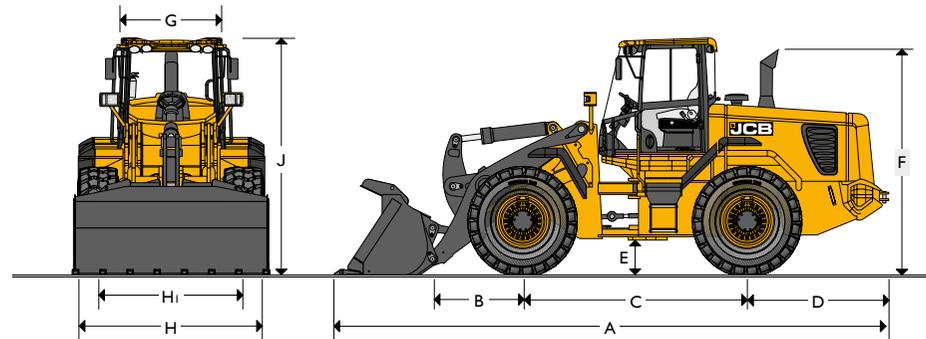
		mm
A	Overall length	9450
B	Axle to pivot pin	2727
C	Wheelbase	3300
D	Axle to counterweight face	1970
E	Minimum ground clearance	470
F	Height over exhaust	3260
G	Width over cab	1400
H	Width over tyres	2702
Hi	Wheel track	2100
J	Height over cab	3370
	Pin height (maximum)	5270
	Overall operating height	6733
	Front axle weight	kg 11141
	Rear axle weight	kg 10130
	Total weight	kg 21271
	Inside radius	3182
	Maximum radius	7121
	Articulation angle	± 40°

Data based on machine equipped with quickhitch mounted 3.5m³ bucket with toe plate and 23.5 R25 Michelin XHA (L3) radial tyres.

Data based on machine equipped with quickhitch mounted 3.5m³ bucket with toe plate and 23.5 R25 Michelin XHA (L3) radial tyres.

MAX. ENGINE POWER: 160kW (215hp) MAX. OPERATING WEIGHT: 21335kg MAX. LOADER CAPACITY: 3.5m³

456/456e ZX – STATIC DIMENSIONS – Standard height arm



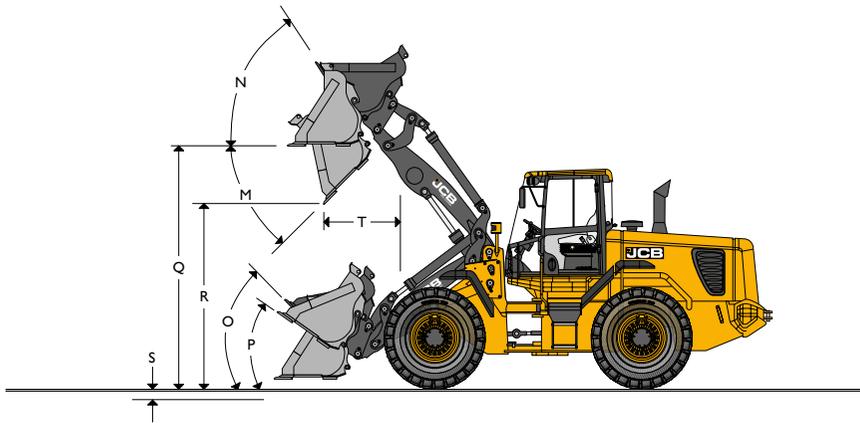
456/456e ZX – STATIC DIMENSIONS – Standard height arm

		mm
A	Overall length	7960
B	Axle to pivot pin	1622
C	Wheelbase	3300
D	Axle to counterweight face	1970
E	Minimum ground clearance	470
F	Height over exhaust	3260
G	Width over cab	1400
H	Width over tyres	2702
Hi	Wheel track	2100
J	Height over cab	3370
	Pin height (maximum)	4107
	Overall operating height	5571
	Front axle weight	kg 8840
	Rear axle weight	kg 10030
	Total weight	kg 18870
	Inside radius	3182
	Maximum radius	6554
	Articulation angle	± 40°

Data based on machine equipped with pin mounted 3.3m³ bucket with teeth and 23.5 R25 Michelin XHA (L3) radial tyres.

456/456e HT – LOADER DIMENSIONS – Standard height arm

CHANGES TO OPERATING PERFORMANCE AND DIMENSIONS – Standard height arm

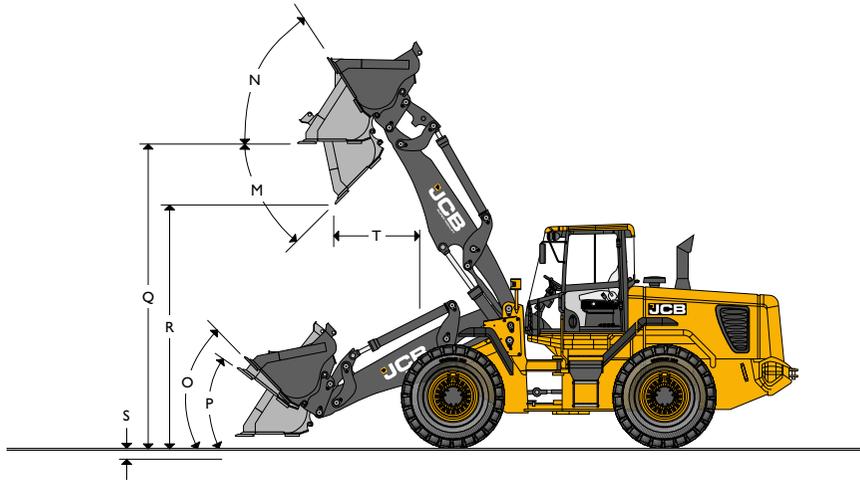


Assumes the fitment of Michelin 23.5R25 XHA (L3) tyres.

Tyre size	Manufacturer	Type	Rating	Op. weight kg	Tipping loads		Dimensions	
					Straight kg	Full turn kg	Vertical mm	Width mm
23.5 - 25 (crossply)	Bridgestone	20 Ply	L2	-432	-251	-246	-2	0
23.5 R 25 (radial)	Goodyear	GP - 2B	L2	-64	-38	-37	-2	0
23.5 R 25 (radial)	Goodyear	RL - 2 +	L2	100	62	+61	-2	0
23.5 R 25 (radial)	Michelin	XTLA	L2	-100	-58	-57	-2	0
23.5 - 25 (crossply)	Bridgestone	20 Ply	L3	-208	-121	-118	0	0
650/65 R25 (radial)	Michelin	XLD	L3	-196	-113	-112	-60	29
750/65 R25 (radial)	Michelin	XLD	L3	424	262	257	-6	205
23.5 R25 (radial)	Michelin	XRD1A	L4	256	158	155	36	0
23.5 R 25 (radial)	Goodyear	GP - 4B	L4	380	235	230	36	0
23.5 R 25 (radial)	Michelin	XLDD2A	L5	572	353	345	36	0
23.5 R 25 (radial)	Michelin	XMINED2	L5	808	499	488	36	0
23.5 R 25 (radial)	Goodyear	RL - 5K	L5	704	435	425	36	0
23.5-25 (crossply)	JCB	SITEMASTER	L3	-92	-58	-49	6	1
23.5R25 (radial)	JCB	EARTHMOVER	L3	160	101	86	1	6

		Direct	Direct	Direct	Direct	Direct	Direct	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch
		General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose
Bucket mounting		Direct	Direct	Direct	Direct	Direct	Direct	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch
Bucket type		General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose
Bucket equipment		Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	Tipped teeth & toeplate segments	Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	Tipped teeth & toeplate segments
Bucket capacity (SAE heaped)	m ³	3.1	3.3	3.3	3.5	3.3	3.5	3.1	3.3	3.3	3.5	3.3	3.5
Bucket capacity (struck)	m ³	2.497	2.687	2.648	2.844	2.648	2.844	2.497	2.687	2.648	2.844	2.648	2.844
Bucket width	mm	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837
Bucket weight with wearparts	kg	1508	1554	1623	1669	1623	1669	1380	1416	1495	1531	1495	1531
Maximum material density	kg/m ³	2032	1895	1888	1767	1888	1767	1925	1796	1787	1673	1787	1673
Tipping load straight	kg	14635	14534	14493	14392	14493	14392	13888	13801	13746	13653	13746	13653
Tipping load full turn	kg	12601	12508	12462	12368	12462	12368	11933	11853	11795	11708	11795	11708
Payload at 50% FTTL	kg	6301	6254	6231	6184	6231	6184	5697	5926	5897	5854	5897	5854
Maximum break out force	kN	161	153	150	143	150	143	144	138	135	130	135	130
M Dump angle maximum	degrees	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
N Roll back angle at full height	degrees	57°	57°	57°	57°	57°	57°	57°	57°	57°	57°	57°	57°
O Roll back at carry	degrees	52°	52°	52°	52°	52°	52°	52°	52°	52°	52°	52°	52°
P Roll back at ground level	degrees	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°
Q Load over height	mm	4028	4028	4028	4028	4028	4028	4028	4028	4028	4028	4028	4028
R Dump height (45° dump)	mm	2930	2888	3069	3027	2930	2888	2824	2782	2963	2921	2824	2782
S Dig depth	mm	109	109	91	91	109	109	109	109	91	91	109	109
T Reach at dump height	mm	1334	1375	1220	1261	1334	1375	1440	1482	1326	1368	1440	1482
Reach maximum (45° dump)	mm	2310	2352	2196	2238	2310	2352	2416	2458	2302	2344	2416	2458
Operating weight (includes 80kg operator and full fuel tank)	kg	20028	20074	20143	20189	20143	20189	20220	20256	20335	20371	20335	20371

456/456e HT – LOADER DIMENSIONS – Super high lift arm



Assumes the fitment of Michelin 23.5R25 XHA (L3) tyres.

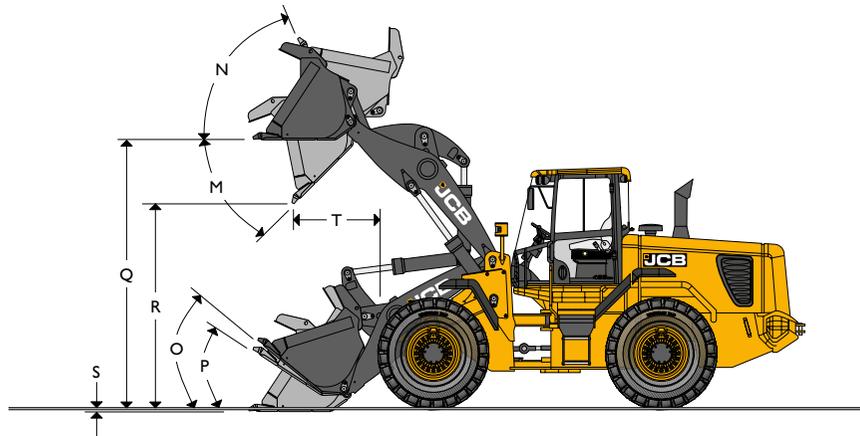
CHANGES TO OPERATING PERFORMANCE AND DIMENSIONS – Super high lift arm

Tyre size	Manufacturer	Type	Rating	Op. weight kg	Tipping loads		Dimensions	
					Straight kg	Full turn kg	Vertical mm	Width mm
23.5 - 25 (crossply)	Bridgestone	20 Ply	L2	-432	-190	-186	-2	0
23.5 R 25 (radial)	Goodyear	GP - 2B	L2	-64	-28	-28	-2	0
23.5 R 25 (radial)	Goodyear	RL - 2 +	L2	100	47	46	-2	0
23.5 R 25 (radial)	Michelin	XTLA	L2	-100	-44	-43	-2	0
23.5 - 25 (crossply)	Bridgestone	20 Ply	L3	-208	-92	-89	0	0
650/65 R25 (radial)	Michelin	XLD	L3	-196	-86	-85	-60	29
750/65 R25 (radial)	Michelin	XLD	L3	424	198	194	-6	205
23.5 R25 (radial)	Michelin	XRD1A	L4	256	120	117	36	0
23.5 R 25 (radial)	Goodyear	GP - 4B	L4	380	178	174	36	0
23.5 R 25 (radial)	Goodyear	RL - 5K	L5	704	392	322	36	0
23.5 R 25 (radial)	Michelin	XLDD2A	L5	572	267	261	36	0
23.5 R 25 (radial)	Michelin	XMINED2	L5	808	378	369	36	0
23.5-25 (crossply)	JCB	SITEMASTER	L3	-92	-44	-38	6	1
23.5R25 (radial)	JCB	EARTHMOVER	L3	160	76	65	1	6

Bucket mounting		Direct	Direct	Direct	Direct	Direct	Direct	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch	
Bucket type		General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	
Bucket equipment		Tipped teeth	Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	Tipped teeth & toeplate segments	Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	
Bucket capacity AE heaped)	m ³	2.8	3.1	3.3	3.3	3.5	3.3	3.5	3.1	3.3	3.3	3.5	3.3	3.5
Bucket capacity (struck)	m ³	2.210	2.497	2.687	2.648	2.844	2.648	2.844	2.497	2.687	2.648	2.844	2.648	2.844
Bucket width	mm	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837	2837
Bucket weight with wearparts	kg	1436	1508	1554	1623	1669	1623	1669	1380	1416	1495	1531	1495	1531
Maximum material density	kg/m ³	1468	1311	1222	1218	1140	1218	1140	1241	1158	1153	1079	1153	1079
Tipping load straight	kg	9688	9587	9520	9493	9427	9493	9427	9097	8753	9004	8942	9004	8942
Tipping load full turn	kg	8221	8128	8067	8038	7978	8038	7978	7697	7645	7608	7551	7608	7551
Payload at 50% FTTL	kg	4111	4064	4034	4019	3989	4019	3989	3848	3822	3804	3776	3804	3776
Maximum break out force	kN	175	163	155	152	145	152	145	146	140	137	132	137	132
M Dump angle maximum	degrees	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
N Roll back angle at full height	degrees	58°	58°	58°	58°	58°	58°	58°	58°	58°	58°	58°	58°	58°
O Roll back at carry	degrees	54°	54°	54°	54°	54°	54°	54°	54°	54°	54°	54°	54°	54°
P Roll back at ground level	degrees	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°	46°
Q Load over height	mm	4994	4994	4994	4994	4994	4994	4994	4994	4994	4994	4994	4994	4994
R Dump height (45° dump)	mm	3960	3896	3854	4034	3993	3896	3790	3790	3748	3929	3887	3790	3748
S Dig depth	mm	109	109	109	91	91	109	109	109	109	91	91	109	109
T Reach at dump height	mm	1327	1393	1432	1277	1318	1393	1432	1497	1539	1383	1425	1497	1539
Reach maximum (45° dump)	mm	3046	3110	3152	2996	3038	3110	3152	3216	3258	3102	3144	3216	3258
Operating weight (includes 80kg operator and full fuel tank)	kg	20856	20928	20974	21043	21089	21043	21089	21120	21156	21235	21271	21235	21271

456/456e ZX – LOADER DIMENSIONS – Standard height arm

CHANGES TO OPERATING PERFORMANCE AND DIMENSIONS – Standard height arm



Assumes the fitment of Michelin 23.5R25 XHA (L3) tyres.

Tyre size	Manufacturer	Type	Rating	Op. weight kg	Tipping loads		Dimensions	
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23.5 R 25 (radial)	Goodyear	GP - 2B	L2	-64	-38	-37	-37	0
23.5 R 25 (radial)	Goodyear	RL - 2 +	L2	100	62	61	-2	0
23.5 R 25 (radial)	Michelin	XTLA	L2	-100	-58	-57	-2	0
23.5 - 25 (crossply)	Bridgestone	20 Ply	L3	-208	-121	-118	0	0
23.5 - 25 (crossply)	Firestone	20 Ply	L3	-312	-181	-177	0	0
650/65 R25 (radial)	Michelin	XLD	L3	-196	-113	-112	-60	29
750/65 R25 (radial)	Michelin	XLD	L3	424	262	257	-6	205
23.5 R25 (radial)	Michelin	XRD1A	L4	256	158	155	36	0
23.5 R 25 (radial)	Goodyear	GP - 4B	L4	380	235	230	35	0
23.5 R 25 (radial)	Goodyear	RL - 5K	L5	704	435	425	36	0
23.5 R 25 (radial)	Michelin	XLDD2A	L5	572	353	345	36	0
23.5 R 25 (radial)	Michelin	XMINED2	L5	808	499	488	36	0
23.5-25 (crossply)	JCB	SITEMASTER	L3	-92	-69	-59	6	1
23.5R25 (radial)	JCB	EARTHMOVER	L3	160	120	103	1	6
Optional extra counterweight		-	-	800	1445	1211	0	0

		Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch
Bucket mounting		Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Quickhitch	Quickhitch	Quickhitch	Quickhitch	Quickhitch
Bucket type		General Purpose	General Purpose	Penetration	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose	General Purpose
Bucket equipment		Tipped teeth	Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	Tipped teeth & toeplate segments	Tipped teeth	Tipped teeth	Reversible toeplate	Reversible toeplate	Tipped teeth & toeplate segments	Tipped teeth & toeplate segments
Bucket capacity (SAE heaped)	m ³	3.1	3.3	3.1	3.3	3.5	3.3	3.5	3.1	3.3	3.3	3.5	3.3	3.5
Bucket capacity (struck)	m ³	2.791	2.991	2.791	2.933	3.137	2.933	3.137	2.497	2.687	2.648	2.844	2.648	2.844
Bucket width	mm	2837	2837	2811	2800	2800	2800	2800	2837	2837	2837	2837	2837	2837
Bucket weight with wearparts	kg	1602	1645	1612	1722	1765	1722	1765	1380	1416	1495	1531	1495	1531
Maximum material density	kg/m ³	2064	1925	2061	1920	1797	1920	1797	1874	1748	1743	1631	1743	1631
Tipping load straight	kg	15340	15235	15318	15211	15106	15211	15106	13975	13880	13857	13762	13857	13762
Tipping load full turn	kg	12797	12703	12776	12672	12577	12672	12577	11620	11534	11506	11419	11506	11419
Payload at 50% FTL	kg	6399	6352	6388	6336	6288	6336	6288	5810	5767	5753	5710	5753	5710
Maximum break out force	kN	172	165	172	161	154	161	154	153	147	143	137	143	137
M Dump angle maximum	degrees	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
N Roll back angle at full height	degrees	67°	67°	67°	67°	67°	67°	67°	67°	67°	67°	67°	67°	67°
O Roll back at carry	degrees	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
P Roll back at ground level	degrees	39°	39°	39°	39°	39°	39°	39°	39°	39°	39°	39°	39°	39°
Q Load over height	mm	3822	3822	3856	3831	3831	3822	3822	3822	3702	3831	3711	3822	3702
R Dump height (45° dump)	mm	2741	2699	2765	2887	2845	2741	2699	2621	2559	2767	2725	2621	2559
S Dig depth	mm	74	74	74	91	91	109	109	74	74	91	91	109	109
T Reach at dump height	mm	1183	1135	1207	1085	1039	1183	1135	1301	1255	1205	1159	1301	1255
Reach maximum (45° dump)	mm	2140	2182	2164	2032	2074	2140	2182	2260	2302	2152	2194	2260	2302
Operating weight (includes 80kg operator and full fuel tank)	kg	18823	18872	18833	18943	18992	18943	18992	19147	19196	19267	19316	19267	19316

LOADER – HT

Widely spaced four ram geometry provides the combination of excellent visibility with high bucket torque characteristics throughout the working arc. The pin, bush and sealing design on all pivot points provide extended maintenance intervals.

LOADER – ZX

Heavy-duty three ram geometry provides high breakout forces with excellent loading characteristics. The pin, bush and sealing design on all pivot points provide extended maintenance intervals.

TRANSMISSION

4-wheel drive, automatic smooth shift transmission electrically operated selector and gear change incorporating a speed inhibitor and modulation for smooth, responsive on-the-move direction and ratio changes. Single stage integral torque converter 4 forward and 3 reverse gears.

Type		Smooth shift powershift
Make & model		ZF 4WG 210
Torque converter stall ratio		2.813 : 1
1st gear	kph	6.9
2nd gear	kph	12.3
3rd gear	kph	24.4
4th gear (forward only)	kph	37.4

AXLES

Type	Open differential / Limited slip differential
Make & model	ZF MT-L 3095 MK2 front and rear
Overall axle ratio	23.334 : 1
Rear axle oscillation	± 12.5°

STEERING

Priority steer hydraulic system with emergency steering. Piston pump meters flow through steer valve to provide smooth low effort response. Steering angle ± 40°. Steer rams fitted with end rod damping to provide cushioned steering at full articulation. Adjustable steering column.

BRAKES

Hydraulic power braking on all wheels, operating pressure 80 bar. Dual circuit with accumulator back-up provide maximum safety under all conditions. In board mounted, oil immersed, multi-plate disk brakes with organic brake linings are environmentally acceptable. Parking brake, electro-hydraulic disc type operating on transmission output shaft.

456 (TIER 2 EMISSIONS)

6-cylinder wastegated turbo-charged, liquid cooled, direct injection diesel. Air-to-air charge-air cooling ensure low emissions and "clean-burn" combustion chamber provides minimum fuel consumption. A remote sump oil drain facility simplifies servicing.

Type		4 stroke direct injection
Model		6CT 8.3C
Capacity	litres	8.3
Bore	mm	114
Stroke	mm	135
Aspiration		Turbo charged
Cylinders		6
Max gross power to SAE J1995/ISO 14396	kW (hp) @ 2000rpm	161 (216)
Rated gross power to SAE J1995/ISO 14396	kW (hp) @ 2200rpm	153 (205)
Nett power to SAE J1349/EEC 80/1269	kW (hp) @ 2200rpm	147 (197)
Max torque	Nm @ 1400rpm	994

Emissions:-

Relevant standards EUNR MM Stage 2 USA CFR Part 89

(Complies with EU/EPA "Off Highway" Construction Equipment Regulation Stage 2).

456e (TIER 3 EMISSIONS)

6-cylinder wastegated turbo-charged, liquid cooled, direct injection common rail diesel. Air-to-air charge-air cooling ensure low emissions and "clean-burn" combustion chamber provides minimum fuel consumption. A remote sump oil drain facility simplifies servicing.

Type		4 stroke direct injection
Model		QSC 8.3
Capacity	litres	8.3
Bore	mm	114
Stroke	mm	135
Aspiration		Turbo charged
Cylinders		6
Max gross power to SAE J1995/ISO 14396	kW (hp) @ 2000rpm	160 (215)
Rated gross power to SAE J1995/ISO 14396	kW (hp) @ 2200rpm	160 (215)
Nett power to SAE J1349/EEC 80/1269	kW (hp) @ 2200rpm	154 (206.5)
Max torque	Nm @ 1400rpm	915

Emissions:-

US EPA Tier 3, CARB Tier 3, EU Stage 111A.

TYRES

A variety of tyre options are available including:

23.5 x 25 x 20 ply (L2). 23.5R25 RL-2+ (L2). 23.5 x 25 x 20 ply (L3). 23.5R25 XTLA (L2). 23.5R25 GP2B (L2). 23.5R25 VUT (L2). 650/65 R25 XLD (L3). 23.5R25 XHA (L3). 23.5R25 VMT (L3). 23.5R25 XMINED2 (L5). 750/65 R25 XLD (L3).

ELECTRICAL SYSTEM

24 volt negative ground system, 70 Amp alternator with 2 x 110 Amp hour low maintenance batteries. Isolator located in rear of machine. Ignition key start/stop and pre-heat cold start. Primary fuse box. Other electrical equipment includes quartz halogen, twin filament working lights, front/rear wash/wipe, heated rear screen, full road going lights, clock, gauge and warning light monitoring. Connectors to IP67 standard.

System voltage	Volt	24
Alternator output	Amp hour	70
Battery capacity	Amp hour	2 x 110

CAB

Resiliently mounted ROPS/FOPS structure (tested in accordance with EN13510 : 2000/EN13627 : 2000 (Level 2)). De - luxe operator environment combines ergonomically located controls with a high level of appointment and low internal noise levels. Entry/exit is via large rear hinged door and anti - slip steps. Excellent forward visibility is provided by a 3 section curved, laminated windscreen and full glazing below waistline. Extensive instrumentation includes electronic monitoring panel and display (EMS). Heating / ventilation provides balanced and filtered air distribution throughout the cab via a powerful 8 kW capacity heater. The unitary construction allows easy sealing and prevents ingress of dust. A transmission lock on the selector prevents inadvertent engagement and the loader controls can be isolated for safe road travel.
 Exterior power level 456 (Tier II): 72 Lp(A) 109 Lw(A)
 Exterior power level 456E (Tier III): 72 Lp(A) 106 Lw(A)

456/456e HT – LOADER HYDRAULICS

Variable displacement piston pump feed a "load sensing" system providing a fuel efficient and responsive distribution of power as required. Main services are servo actuated from a single lever (joystick) loader control. Auxiliary circuits controlled via additional lever or joystick mounted electrical buttons. Accumulator back-up is available to control loader in the event of loss of pump pressure.

Pump type	Twin variable displacement piston pump	
Pump 1 max. flow	l/min	163
Pump 1 max. pressure	bar	250
Pump 2 max. flow	l/min	163
Pump 2 max. pressure	bar	160
Hydraulic cycle times at full engine revs	seconds	
Arms raise (full bucket)	5.8	
Bucket dump (full bucket)	1.2	
Arms lower (empty bucket)	4.1	
Total cycle	11.1	

Ram dimensions	Bore	Rod	Closed centres	Stroke
Bucket ram x2	mm 130	75	1845	1270
Lift ram x2	mm 160	80	1290	744
Steer ram x2	mm 90	50	621	312

456/456e HT – ATTACHMENTS

An extensive range of attachments including pallet forks, crane jibs, high dumping buckets and timber grapples are available to fit directly or via the JCB quickhitch mounting.

456/456e HT – STANDARD EQUIPMENT

Loader: Bucket reset mechanism, loader arm kickout mechanism, loader control isolator, single lever or multi-lever servo control, high torque geometry combines with excellent visibility between arms.

Engine: Air cleaner 2 stage dry type – cyclonic with primary and safety elements, sedimenter, twin bowl fuel filters, alternator and air conditioning compressor drive belt guards, isolated cooling package with hydraulically driven cooling fan.

Transmission: Single lever shift control, speed inhibitor, neutral start, disconnect on footbrake and loader lever, disconnect isolator switch, direction changes and kickdown on gear selector and loader control lever.

Axles: Epicyclic wheel hub reduction, fixed front, oscillating rear.

Brakes: Multi-plate wet disc brakes, organic linings, dual circuit hydraulic power. Parking disc brake on transmission output shaft.

Hydraulics: Twin piston pumps with priority steer, emergency steer back-up, 2 spool loader circuit with accumulator support, 3rd and 4th spool auxiliary hydraulic circuits available as an option.

Steering: Adjustable steering column, "soft feel" steering wheel 5 turns lock to lock, resilient stops on max lock.

Cab: ROPS/FOPS safety structure, interior reading light, centre mounted master warning light. Electronic monitoring panel with LCD message display. 2-speed intermittent front windscreen wipe/wash and self park, single-speed rear windscreen wipe/wash and self park. 3-speed heater/demisting with replaceable air filter, LH and RH opening windows, sun visor, internal rear view mirror, external mirrors, adjustable suspension seat with belt and headrest, operator storage facilities, laminated windscreen, heated rear screen, loader control isolator, horn, adjustable armrest, heated mirrors.

Electrical: Road lights front and rear, parking lights, front and rear working lights, reverse alarm and light, rear fog light, battery isolator, radio wiring and speakers, 70 amp alternator, rotating beacon.

Bodywork: Front and rear fenders, side and rear access panels, flexible bottom step, full width rear counterweight, recovery hitch, lifting lugs.

456/456e HT – OPTIONAL EQUIPMENT

Air conditioning, limited slip differentials front/rear axles, Turbo 2 and dust buster pre-cleaner, tooth guard, replaceable bucket wearparts, epoxy coated radiator/coolers, automatically reversing cooling fan, stainless steel brake pipes, smooth ride system (SRS), hydraulic quickhitch with in-cab hydraulic pin isolation, full rear fenders, reversing camera (colour), auto greasing system, joystick or Multi-lever hydraulic controls, auxiliary hydraulic control on separate lever or joystick mounted (proportional), 24V to 12V in cab converter, cab screen guards, additional front and rear work lights, heated air suspension seat, light guards, front and rear blinds, engine block heater, biodegradable hydraulic oil, cab filtration options, fire extinguisher, number plate light kit, white noise reverse alarm, smart reverse alarm, parallel lift links (recommended for pallet forks), Super High Lift loader arms, canopy cab, Wastemaster cab, widecore radiator, sealed electrics, grease gun and cartridge, basic and full belly guard kits, mesh air intake screen, ARV kit, safety strut, transmission cooler bypass, non-heated mirrors, grease gun, LiveLink telematics.

456/456e HT – WASTEMASTER STANDARD EQUIPMENT

Machine as above including: basic and full belly guard kit, turbo 2 pre-cleaner, carbon cab air intake filter, front and rear light guards, widecore radiator, full Wastemaster branding, mesh air intake screen.

456/456e ZX – LOADER HYDRAULICS

Variable displacement piston pump feed a "load sensing" system providing a fuel efficient and responsive distribution of power as required. Main services are servo actuated from a single lever (joystick) loader control. Auxiliary circuit controlled via additional lever or joystick mounted electrical buttons. Accumulator back-up is available to control loader in the event of loss of pump pressure.

Pump type	Twin variable displacement piston pump				
Pump 1 max. flow	l/min	163			
Pump 1 max. pressure	bar	250			
Pump 2 max. flow	l/min	163			
Pump 2 max. pressure	bar	160			
Hydraulic cycle times at full engine revs		seconds			
Arms raise (full bucket)		5.8			
Bucket dump (full bucket)		1.2			
Arms lower (empty bucket)		4.1			
Total cycle		11.1			
Ram dimensions					
Ram dimensions	Bore	Rod	Closed centres	Stroke	
Bucket ram x1	mm	180	90	1120	
Lift ram x2	mm	160	80	1290	
Steer ram x2	mm	90	50	621	

456/456e ZX – ATTACHMENTS

An extensive range of attachments are available to fit directly or via the JCB quickhitch mounting.

456/456e ZX – STANDARD EQUIPMENT

Loader: Bucket reset mechanism, loader arm kickout mechanism, loader control isolator, single lever or multi-lever servo control, high breakout forces with excellent loading characteristics.

Engine: Air cleaner 2 stage dry type – cyclonic with primary and safety elements, sedimenter, twin bowl fuel filters, alternator and air conditioning compressor drive belt guards, isolated cooling package with hydraulically driven cooling fan.

Transmission: Single lever shift control, speed inhibitor, neutral start, disconnect on footbrake and loader lever, disconnect isolator switch, direction changes and kickdown on gear selector and loader control lever.

Axles: Epicyclic wheel hub reduction, fixed front, oscillating rear.

Brakes: Multi-plate wet disc brakes, organic linings, dual circuit hydraulic power. Parking disc brake on transmission output shaft.

Hydraulics: Twin piston pumps with priority steer, emergency steer back-up, 2 spool loader circuit with accumulator support, 3rd and 4th spool auxiliary hydraulic circuits available as an option.

Steering: Adjustable steering column, "soft feel" steering wheel 5 turns lock to lock, resilient stops on max lock.

Cab: ROPS/FOPS safety structure, interior reading light, centre mounted master warning light. Electronic monitoring panel with LCD message display. 2-speed intermittent front windscreen wipe/wash and self park, single-speed rear windscreen wipe/wash and self park. 3-speed heater/demisting with replaceable air filter, LH and RH opening windows, sun visor, internal rear view mirror, external mirrors, adjustable suspension seat with belt and headrest, operator storage facilities, laminated windscreen, heated rear screen, loader control isolator, horn, adjustable armrest, heated mirrors.

Electrical: Road lights front and rear, parking lights, front and rear working lights, reverse alarm and light, rear fog light, battery isolator, radio wiring and speakers, 70 amp alternator, rotating beacon.

Bodywork: Front and rear fenders, side and rear access panels, flexible bottom step, full width rear counterweight, recovery hitch, lifting lugs.

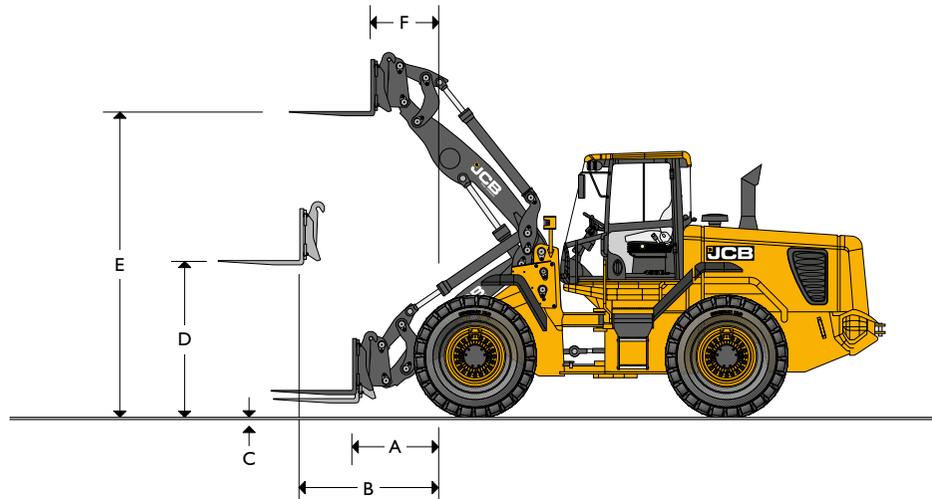
456/456e ZX – OPTIONAL EQUIPMENT

Air conditioning, limited slip differentials front/rear axles, Turbo 2 and dust buster pre-cleaner, tooth guard, replaceable bucket wearparts, epoxy coated radiator/coolers, automatically reversing cooling fan, stainless steel brake pipes, smooth ride system (SRS), hydraulic quickhitch with in-cab hydraulic pin isolation, full rear fenders, reversing camera (colour), auto greasing system, joystick or Multi-lever hydraulic controls, auxiliary hydraulic control on separate lever or joystick mounted (proportional), 24V to 12V in cab converter, cab screen guards, additional front and rear work lights, heated air suspension seat, extra counterweight, light guards, front and rear blinds, engine block heater, biodegradable hydraulic oil, cab filtration options, fire extinguisher, number plate light kit, white noise reverse alarm, smart reverse alarm, canopy cab, Wastemaster cab, LiveLink telematics, widecore radiator, sealed electrics, grease gun and cartridge, basic and full belly guard kits, mesh air intake screen, ARV kit, safety strut, transmission cooler bypass.

456/456e ZX – WASTEMASTER STANDARD EQUIPMENT

Machine as above including: basic and full belly guard kit, turbo 2 pre-cleaner, carbon cab air intake filter, front and rear light guards, widecore radiator, full Wastemaster branding, mesh air intake screen.

456/456e HT – LOADER DIMENSIONS – FORK FRAME WITH FORKS



LOADER DIMENSIONS – FORK FRAME WITH FORKS

	Standard height arm		Super high lift arm	
		mm		mm
Fork carriage width		1500		1500
Length of tines		1220		1220
A Reach at ground level		1175		2143
B Reach at arms horizontal		1851		2650
C Tine surface to ground level		50		50
D Arms horizontal height		1975		1975
E Arms maximum height		4194		5160
F Reach at maximum height		874		931
Payload **	kg	7808		5755
Tipping load straight	kg	11281		8314
Tipping load full turn (40°)	kg	9760		7193
Attachment weight	kg	590		590

Assumes the machine is fitted with Michelin 23.5R25 XHA (L3) tyres.

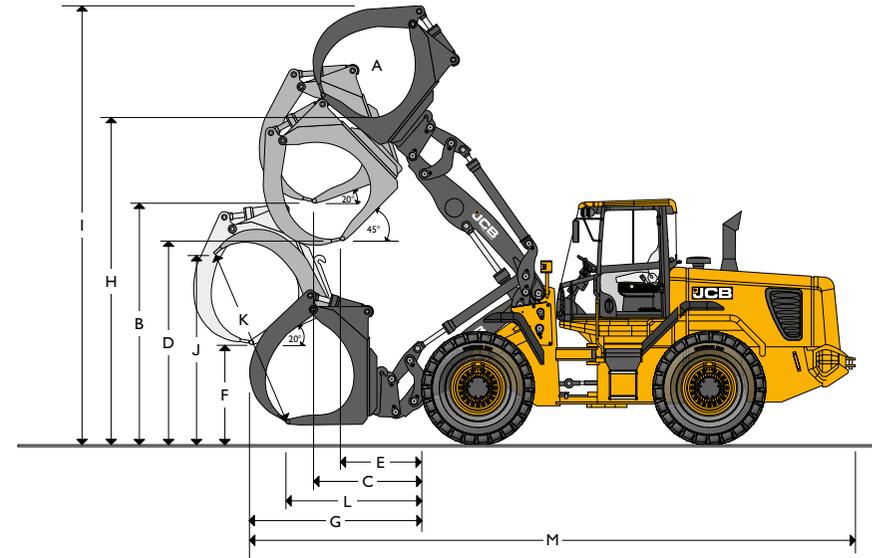
** At a centre of gravity distance of 600mm.

Based on 80% of full turn tipping load as defined by ISO 8313.

Manual fork spacings at 50mm increments.

Class 4A fork section 60mm x 150mm.

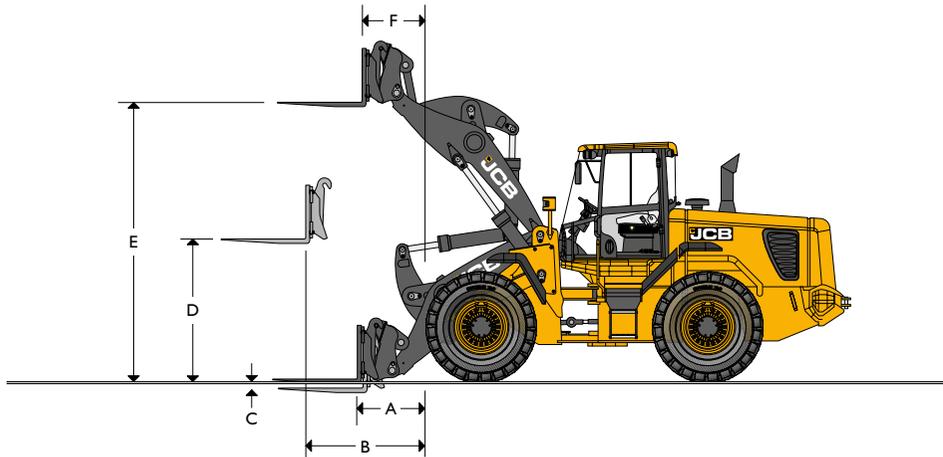
UNLOADING GRAPPLE DIMENSIONS – STANDARD HEIGHT ARM



UNLOADING GRAPPLE DIMENSIONS – STANDARD HEIGHT ARM

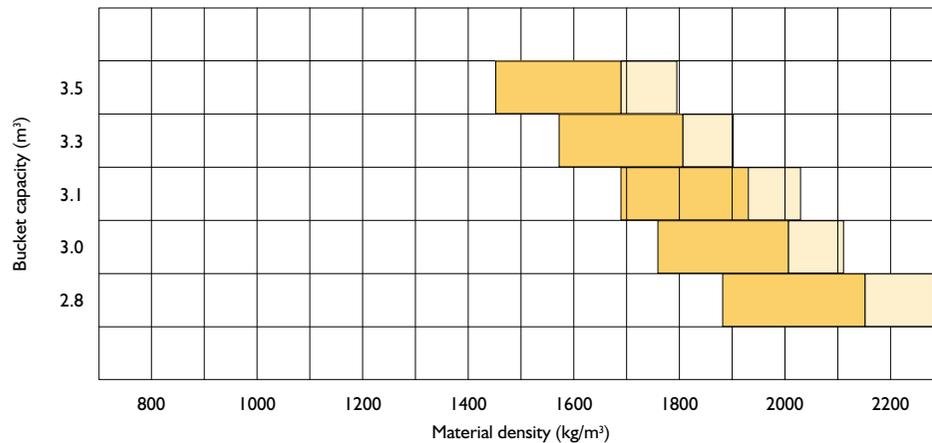
		Standard height arm	
			mm
A	Grapple capacity	m ²	2.40
B	Tine height at 20° dump		3707
C	Reach at full height and 20° dump		1998
D	Tine height at 45° dump		3087
E	Reach at full height and 45° dump		1494
F	Tine height, arms horizontal and 20° dump		1228
G	Reach, arms horizontal and 20° dump		3086
H	Maximum height inside grapple		5129
I	Maximum height		7084
J	Height at maximum opening		2357
K	Maximum opening		2706
L	Reach at ground level		2804
M	Overall length		9524
	Operating weight	kg	20320

Assumes the machine is fitted with Michelin 23.5R25 XHA (L3) tyres.


456/456e ZX – LOADER DIMENSIONS – FORK FRAME WITH FORKS

Assumes the fitment of Michelin 23.5R25 XHA (L3) tyres		Standard arm
Fork carriage width	mm	1500
Length of tines	mm	1220
A Reach at ground level	mm	1084
B Reach at arms horizontal	mm	1695
C Below ground level	mm	16
D Arms, horizontal height	mm	1975
E Arms, maximum height	mm	3997
F Reach at maximum height	mm	735
Payload*	kg	7883
Tipping load straight	kg	11812
Tipping load full turn (40°)	kg	9853
Attachment weight	kg	590

*At the centre-of-gravity distance 600mm. Based on 80% of full turn tipping load as defined by ISO 8313. Manual fork spacings at 50mm increments. Class 4A Fork section 150mm x 60mm.

BUCKET SELECTOR


Material	Loose density kg/m ³	Fill factor %
Snow (fresh)	200	110
Peat (dry)	400	100
Sugar beet	530	100
Coke (loose)	570	85
Barley	600	85
Petroleum coke	680	85
Wheat	730	85
Coal bituminous	765	100
Fertiliser (mixed)	1030	85
Coal anthracite	1046	100
Earth (dry) (loose)	1150	100
Nitrate fertiliser	1250	85
Sodium chloride (dry) (salt)	1300	85
Cement Portland	1440	100
Limestone (crushed)	1530	100
Sand (dry)	1550	100
Asphalt	1600	100
Gravel (dry)	1650	85
Clay (wet)	1680	110
Sand (wet)	1890	110
Fire clay	2080	100
Copper (concentrate)	2300	85
Slate	2800	100
Magnetite	3204	100





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Wheel Loader 456

Operating weight: 18823 - 22079kg Max engine power: 160kW (215hp)
 Max loading capacity: 3.5m³

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