

# 2021F WHEEL LOADER

# HINDUSTAN



## 2021F


<b>Engine Model*</b>	ASHOK LEYLAND, H6C513323
<b>Rated power (gross)</b>	98 kW (133hp) @ 2300 RPM
<b>Bucket Capacity</b>	1.53 - 3.0 m <sup>3</sup>
<b>Payload</b>	3,210 kg
<b>Operating Weight</b>	11,637 kg

\*Engine meets INDIA CEV STAGE V emission standards

**BUILD TO LAST,  
TRUSTED BY GENERATION.**



 **HIGHER  
DUMP HEIGHT**

 **HIGHER  
HYDRAULIC FLOW**

 **RELIABLE ENGINE  
WITH LOW O&O**

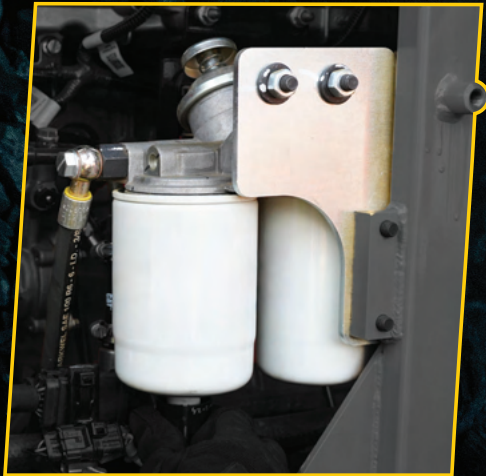
 **RELIABILITY &  
DURABILITY**

 **COMPACT &  
MANOEUVRABLE**

 **LOW MAINTENANCE/  
EASY SERVICEABILITY**

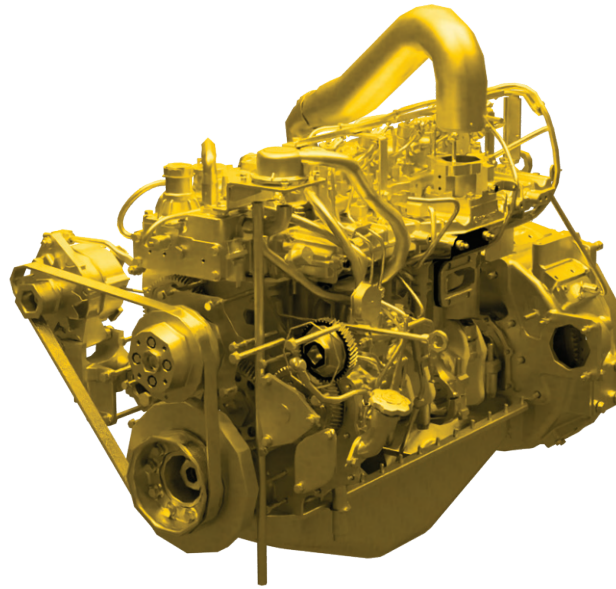
# BUILT FOR EFFICIENCY

Engine And After  
Treatment System



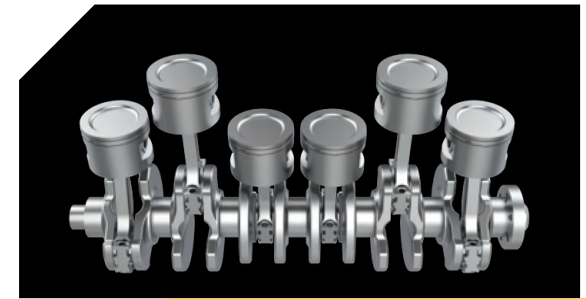
**Combi Filter** (2 Elements)  
Service hours-500hours

**20%** Improvement in  
Filtration



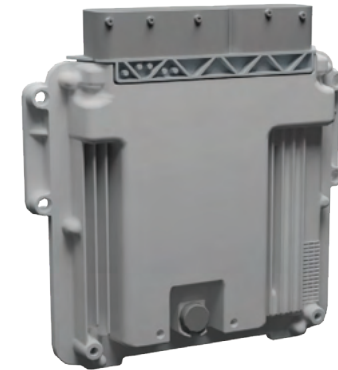
## RELIABLE EFFICIENT POWERFUL

Experience better fuel efficiency with an optimized power train. The new Ashok Leyland turbo charged engine has better structural strength and comes with common rail fuel injection system for better fuel efficiency, engine life and reduction in exhaust emission gas levels.



## POWER OF 6 CYLINDER

- Engine widely used & validated
- Optimum power of 133HP ensures fuel savings
- Higher torque available at low speed
- 6 Cylinder CRDI Engine for durable operation
- Proven After Treatment System
- Airless Dosing System for improved reliability
- Lowest Owning & Operating Cost



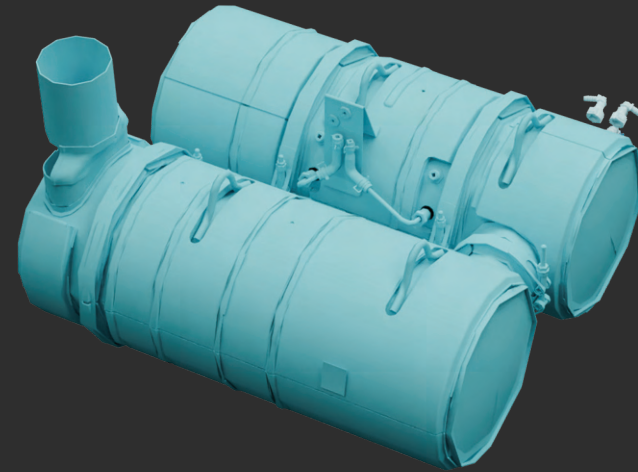
## SINGLE ECM

In 2021F we have a new integrated ECM (Electronic Control Module) - ECM monitors all engine functions as well as the After Treatment System (ATS) and helps in maintenance & troubleshooting of all engine components reducing downtime during servicing & increases the productivity.



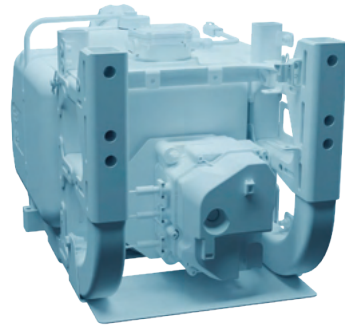
# AFTER TREATMENT SYSTEM

After treatment (DOC+SCR) along with DPF unit installed in the machine reduces harmful exhaust emissions from the internal-combustion engine. This will ensure clean exhaust gas to meet the BS V emission requirement for this machine. After treatment fluid tank is provided to fill Diesel Exhaust Fluid. Consumption rate is optimized and Diesel Exhaust Fluid level can be viewed in the display cluster for refilling



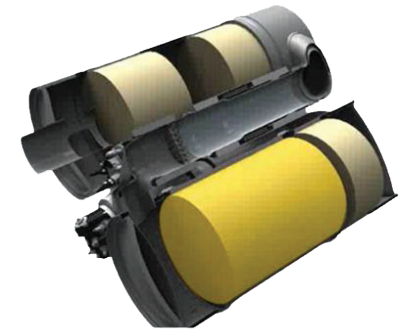
## AIR LESS DOSING

2021F is now fitted with an airless dosing pump system. Since it does not need any air while delivering the DEF needed In the After Treatment Process, it almost eliminates the chance of crystallization and Vastly improves the reliability.



## DIESEL PARTICULATE FILTER

Exhaust gases (with particulate material) enters the DPF where the soot is trapped inside the filter, allowing cleaner exhaust gases to exit into the atmosphere, which then reduces the exhaust emissions from the engine. Later the Soot is completely burnt through the regeneration process.



## DIESEL OXIDATION CATALYST (DOC)

- Converts exhaust gas pollutant into harmless gas by mean of chemical oxidation.
- Eliminate muffler requirement
- Easy installation and no maintenance Helps to reduce some amount of PM



## SELECTIVE CATALYTIC REDUCTION (SCR)

- Converts NOx into Nitrogen and water
- Requires DEF to Operate
- Can reduce NOx up to 93%
- This technology widely used in most of the OEMs.



# BUILT FOR **SAFETY AND COMFORT**

## OPERATOR ENVIRONMENT

- Spacious Cabin
- Headliner
- POH Controls
- Digital Cluster
- Bottle Holders
- Tool Box
- Lumber Support Seats
- Improved Visibility
- Option HVAC Cab



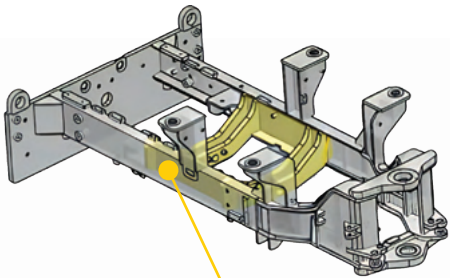
**ROPS/FOPS  
CERTIFIED  
TO HANDLE  
12350 KG**



# BUILT FOR DURABILITY

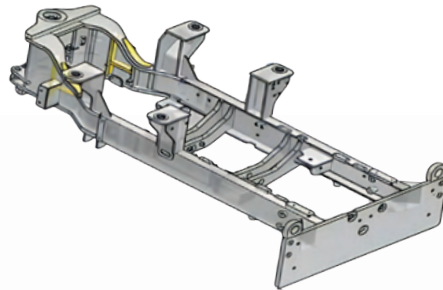
## REAR FRAME

100% NDT check done for critical welds



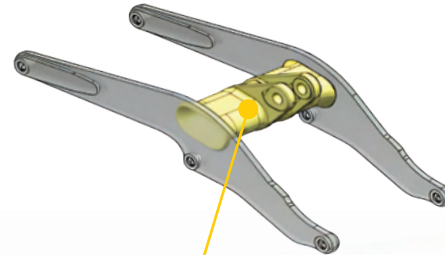
## REINFORCED FRAME

The frame to improve the strength



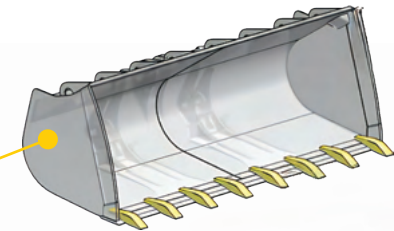
## LIFT ARM

Steel casting provides high durability



## BUCKET

High wear resistant cutting edge improves the bucket life



# BUILT FOR **PRODUCTIVITY**

## PERFORMANCE SERIES BUCKET



- 2021F comes with performance series bucket.
- The bucket is uniquely designed with Open Throat, Long Floor and Curved Side Plates.
- This allows the bucket to quickly penetrate and fill the material resulting in quick cycle time.
- The design also ensure the heaped material is retained resulting in fill factor upto 110%.

## HIGH ROLL BACK ANGLE



- 2021F has 50 Deg Bucket Roll Back angle at Carry Position
- This allows the bucket to curl back to a better position allowing it to hold the material more without any spillage during load and carry.

## EXCELLENT DUMP HEIGHT

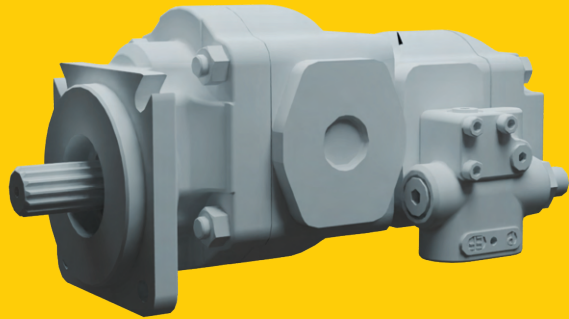


- 2021F has a very good Dump Height.
- This makes it easier for the loader to Load into a Tall Body Trucks used in Aggregate plants.
- This also makes it highly productive when it comes to Wagon Loading Application.

# BUILT FOR PERFORMANCE

## HIGHER HYDRAULIC FLOW

- 2021F comes with hydraulic pump generating 196 LPM flow.
- This higher hydraulic flow results in high hydraulic power which enables higher loading and breakout forces and quicker work cycles.
- The existing pump has been further improved by adding another suction port further improving the reliability and durability.



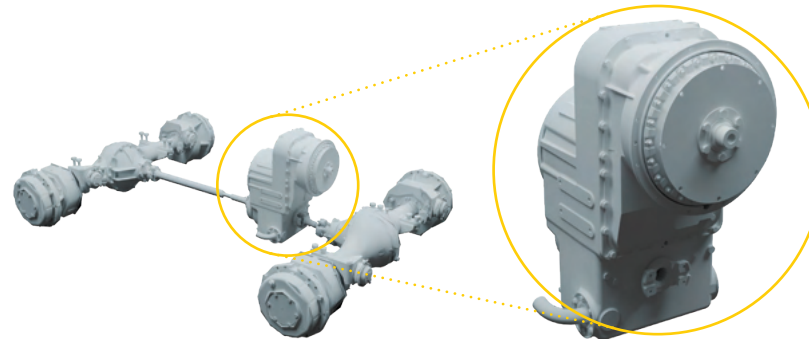
## HIGH AXLE RATIO

- Full floating axle shafts - can be removed independently off wheel and planetary.
- Durable & Proven Steel Casting Axles
- Has a higher axle ratio of 29.42
- Results in Increased Rimpull
- Higher Torque at Wheel providing Ability to handle heavy loads



## TWIN TURBINE TRANSMISSION

- Twin Turbine Enables 2 speeds at each gear
- Based on the load the transmission automatically choose low turbine when torque is needed while loading material.
- Automatically moves to high turbine speed during movement and implement cycle
- This reduces the cycle time



## COOLING PACK

- Radiator, Transmission Oil Cooler, Hydraulic Oil cooler in single row horizontally stacked
- No Chance of Clogging
- Uniform cooling
- Durable Aluminium Core
- 3000 Hours interval change

# BUILT FOR CONTINUOUS IMPROVEMENT



**FAULT CODE  
IN CLUSTER**



**SECONDARY  
BRAKE**



**INTEGRATED  
ECM**



**REAR WIPER WITH  
WASHER BOTTLE**



**LED TAIL  
LIGHT**



# SPECIFICATION



## ENGINE

Make	Ashok Leyland
Model	H6C513323,
Type	4 Stroke, 6 Cylinder
Bore & Stroke	104 X 113 mm
Displacement	5.76 Litre
Gross Power	98 kW (133 hp) @ 2300 rpm
Max Torque	475 Nm @ 1700 - 1900 rpm
Aspiration	Turbocharged
Emission	Bharat Stage V ( CEV )



## TRANSMISSION

Proven durable 4 wheel drive power shift transmission with mechanically actuated control. Build with 2 phase, 4 element twin turbine torque converted

Vehicle Speeds	Kmph
Forward 1	
Low Turbine	3.2
High Turbine	7.0
Forward 2	
Low Turbine	12.3
High Turbine	25.8
Reverse 1	
Low Turbine	4.4
High Turbine	9.5



## DRIVE AXLES

Type	4 WD with Conventional heavy duty differential with planetary hub reduction
Rear axle oscillation	+/- 11 deg



## TIRES

Rims are bolted directly to the wheels for positive non slip retention.

Standard Tire	14.00 X 25 - 20PR E3/L3
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## BRAKES

Service brake	4 Wheel air actuated brakes with separate circuit for front & rear
Parking brake	Mechanically expanding shoe brake mounted at transmission output shaft
Secondary brake	Uses Service brake. Applies automatically under low air pressure and can also be applied manually
Emergency brake	4 Wheel air actuated brakes with one circuit for front & rear

## ROPS / FOPS CERTIFIED CABIN

Cab is now ROPS/FOPS Certified. Spacious, Ergonomic and comfortable cab with low sound level and all around visibility is the standard features for all machines. HVAC Option available.

## STEERING

Steering system uses a load sensing with integrated priority valve operating at 155 bar to provide low effort and smooth response.

Steering articulation angle each direction	$\pm 40^\circ$
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## HYDRAULIC SYSTEM

Tandem Gear Pump. Two double acting lift cylinder and one double acting tilt cylinder. Two Spool hydraulic control valve. Standard machine comes with single joystick operated hydraulics with hand rest.

Pump Flow @ 2530 RPM	196 LPM
Hydraulic Cycle Time @ 2530 RPM	
Lift	Max 5.5 Seconds
Lower	Max 4 Seconds
Tilt Back	Max 3 Seconds
Dump	Max 2 Seconds
Float	Max 4 Seconds

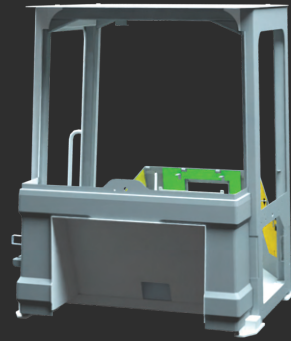
## ELECTRICAL SYSTEM

Entire machine electrical system is protected with Main fuse as a safety from Positive side of the battery. System includes 55A or 85A alternator with automatic voltage regulator and 24V system with 2 x 12V 130 ampere-hour batteries. Negative terminal of master switch is grounded ensuring complete electrical circuit is open during switch off position.



## CAB

**The Cab has** - headliner, internal cab light, fan, floor mat, front wiper, rear wiper (optional) with aesthetic cover, safety (emergency) hammer, sound & heat suppression, internal & external mirrors. Aesthetic non-metallic consoles in cab, mobile charger power socket, cup and bottle holder for water bottle, coffee mug. Easily removable, aesthetically designed, Cab covers (skirts) for better access to machine repair and maintenance points. Improved Comfort Seat, with wrap around lumbar back support, cushion and arm rest. Improved visibility from cab with one internal & two external mirrors. Operator controls with Pilot Operated Hydraulic joystick, placed ergonomically beside the Operator seat. Guards for the windshield comes as standard. Air Conditioning and heating (HVAC) is available for Cab as option.



## SERVICE REFILL CAPACITIES

	Litre
Fuel Tank	181
Diesel Exhaust Fluid (DEF) Tank	24
Cooling System	23
Engine crankcase	15
Transmission	41
Axles (Diff. & Planetary)	
Front	20
Rear	20
Hydraulic system (including tank)	127
Hydraulic tank	90



## BUCKET

Performance Series Buckets utilize a long floor and open throat resulting in easy loading and good material retention.

General Purpose	(GP)	1.7 & 2.0 m <sup>3</sup>
Light Material	(LM)	2.5 & 3.0 m <sup>3</sup>
Rock	(RK)	1.53 & 1.7 m <sup>3</sup>





## OPERATING DIMENSIONS

All dimensions are approximate. Dimensions will vary with bucket and tire choice. Refer to Operating Specifications with Buckets

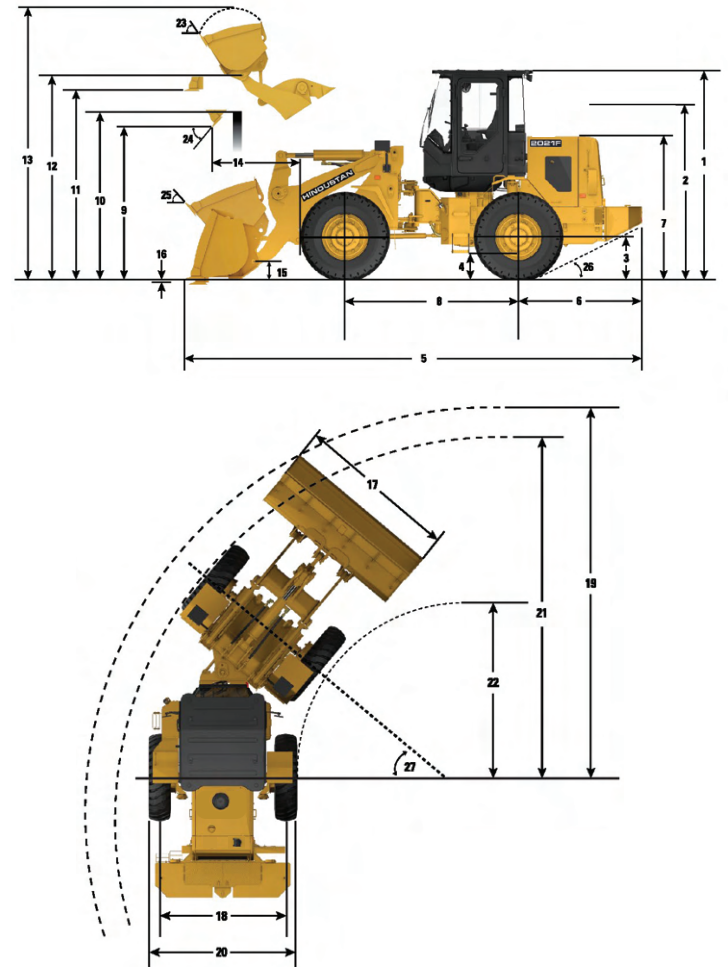
**1	Height: ground to cab	3207 mm
**2	Height: ground to exhaust stack	2470 mm
**3	Height: ground to axle center	634 mm
**4	Height: ground clearance	367 mm
*5	Length: overall	7034 mm
6	Length: rear axle to bumper	1907 mm
7	Height: Ground to hood	2163 mm
8	Length: wheel base	2658 mm
*9	Clearance: bucket at 45°	2936 mm
**10	Clearance: load over height	3453 mm
**11	Clearance: level bucket	3553 mm
**12	Height: bucket pin	3828 mm
**13	Height: overall	4893 mm
*14	Reach: bucket at 45°	1157 mm
15	Carry height: bucket pin	460 mm
**16	Dig depth	102 mm
17	Width: bucket	2550 mm
18	Width: tread center	1976 mm
19	Turning radius: over bucket	5598 mm
20	Width: over tires	2362 mm
21	Turning radius: outside of tires	4970 mm
22	Turning radius: inside of tires	2365 mm
23	Rack angle at full lift	58°
24	Dump angle at full lift	50°
25	Rack angle at carry	50°
26	Departure angle	27°
27	Articulation angle	40°
	Operating weight	11700kg

\* Vary with bucket

\*\* Vary with tire

Dimensions listed are for a machine configured with 1.8 cu.m general purpose pin on bucket, bolt- on cutting edge (BOCE), standard counterweights, 80kg (176lb) operator and 14.00 x 25 -20PR E3/L3.

## DIMENSIONS WITH BUCKET



## 2021F Operating Specifications with Buckets

		General Purpose			Light Material				Rock	
Rated capacity	m <sup>3</sup>	1.8	1.7	2	2.6	2.5	3.1	3	1.53	1.7
Struck capacity	m <sup>3</sup>	1.5	1.4	1.6	2.2	2.1	2.6	2.5	1.31	1.5
Width: bucket	mm	2550	2550	2700	2800	2800	2800	2800	2550	2550
Payload	kg	3210	3255	3200	3060	3115	3295	3340	3165	3165
Nominal material density, 100% fill factor	kg/m <sup>3</sup>	1654	1744	1506	1100	1158	996	1043	1850	1640
Clearance: full lift, 45° dump	mm	2936	2879	2828	2787	2727	2709	2648	2736	2736
Reach: full lift, 45° dump	mm	1157	1263	1299	1275	1380	1345	1449	1426	1426
Reach: 2130 mm (7'0") clearance, 45° dump	mm	1314	1776	1389	1417	1817	1473	1841	1868	1868
Reach: level arm, level bucket	mm	2345	2463	2527	2541	2659	2647	2765	2680	2680
Dig depth	mm	102	77	77	102	77	102	77	82	82
Length: overall	mm	7034	7133	7197	7230	7329	7336	7435	7354	7354
Height: overall	mm	4893	4893	4915	5045	5045	5209	5209	4719	4848
Turning radius, bucket at carry	mm	5598	5623	5708	5765	5790	5795	5821	5687	5687
Tipping load- straight	kg	7809	7907	7796	7495	7607	8092	8167	7713	7718
Tipping load- full turn	kg	6423	6512	6409	6128	6232	6592	6681	6338	6337
Breakout force	kg	10379	11122	10329	8918	8979	7654	8096	8900	8877
Operating weight	kg	11543	11506	11569	11736	11686	12226	12176	11550	11586
Ground engaging tool		BOCE	with Teeth	with Teeth	BOCE	with Teeth	BOCE	with Teeth	with Teeth	with Teeth

- Dimensions listed are configured with standard and heavy counterweights, 80 kg (176 lb) operator and 14.00 x 25 - 20PR E3/L3 tires at a recommended pressure of 3.8 bar (55 psi) in the front tires and 3.1 bar (45 psi) in the rear tires.

- Bucket with bolt on cutting edge (BOCE) are shown for technical information purposes only.

## 2021F Bucket Selection Table

% Bucket Fill Factor																															
Material Density (Kg/m <sup>3</sup> )		1275	1300	1325	1350	1375	1400	1425	1450	1475	1500	1525	1550	1575	1600	1625	1650	1675	1700	1725	1750	1775	1800	1825	1850	1875	1900	1925	1950	1975	2000
Bucket Size																															
1.53 cu.m RK																115%	110%	105%	100%	95%											
1.7 cu.m GP												115%	110%	105%	100%	95%															
1.7 cu.m RK								115%	110%	105%	100%	95%																			
2.0 cu.m GP		115%	110%	105%	100%	95%																									
Material Density (Kg/m <sup>3</sup> )		815	830	840	860	875	890	905	920	935	950	965	980	995	1010	1025	1040	1055	1070	1085	1100	1115	1130	1145	1160	1175	1190	1205	1220	1235	1250
Bucket Size																															
2.5 cu.m LM																115%	110%	105%	100%	95%											
3.0 cu.m LM								115%	110%	105%	100%	95%																			

All buckets are with weld on teeth

## Material Density Table

Materials	Density
Earth and rock	~ 1800 kg/m <sup>3</sup>
Sand and gravel	~ 1700 kg/m <sup>3</sup>
Aggregates	~ 1600 kg/m <sup>3</sup>
Coal	~ 900-1150 kg/m <sup>3</sup>
Wood chips	~ 500 kg/m <sup>3</sup>

Material density provided here are for reference only. Material density assessment must be carried out for each individual job site / application.



## 2021F Standard Equipment

### POWER TRAIN

- Brake/decelerator pedal
- Ashok Leyland H series engine
- BS-V Compliant engine
- Turbocharged
- Coolant
- Differential front open
- Differential rear open
- Dry type air cleaner
- Brakes : Dual System
- Emergency and Parking Brake System (SAE J1152)
- Fuel priming pump
- Fuel water separator
- Standard hydrodynamic transmission
- Single plane cooling system with coolant reservoir
- Transmission oil cooler
- Tires: Bias ply, 14 x 25

### HYDRAULICS

- Single pilot lever hydraulic control
- Hydraulic cooler
- Hydraulic S.O.S ports
- Hydraulic oil sight gauge, visible
- Load sensing hydraulics and steering

### ELECTRICAL

- 24 Volt system
- Batteries- 2 x 12v
- Main Fuse- 100 Amps
- Alternator, 55 Amps or 85 Amps
- Back-up alarm
- Battery disconnect switch
- Directional signals front and rear
- Halogen work lights for rear
- Front Rooding lights
- LED Tail Lights

### OPERATOR ENVIRONMENT

- Product Link
- Cab supported on resilient mount
- Hi-vis Seat belt
- Static seat
- Cup holder
- External mirrors (2)
- Interior rear view mirror (1)
- Ground level cab door release
- 12V mobile charger
- Gauges
  - Engine coolant temperature gauge
  - Fuel level indicator gauge
  - Tachometer
- Digital display
  - Digital hour meter
  - Digital brake air pressure gauge
  - Digital Torque converter temp. gauge
  - Digital DEF\* level
  - Digital DEF\* quality level
- Operator warning system indicators (Audio visual)
  - Low engine lube oil pressure
  - Low transmission oil pressure
  - Low brake air pressure
  - High engine coolant temperature
  - High transmission oil temperature
  - Low Fuel level
  - Low DEF\* level
  - Check Engine
  - Emission warning
  - Water in Fuel
  - Battery charging status
  - Turn indicator
  - Hi beam indicator
  - Hazard
  - Loss of signal

- Hydraulic control lockout
- Interior cab lighting at dome
- Removable floor mat
- Sliding glass on the side windows
- Steering column mounted multi function control – lights, wipers, turn signal
- Laminated front glass
- Front wiper, 2-speed
- Rear Wiper
- Wiper Washer Tank
- Guards - Windshield

### OTHER STANDARD EQUIPMENT

- Fenders
- Counterweight, Std
- Large-access enclosure doors
- Toolbox

\*Diesel Exhaust Fluid

## 2021F Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

### OPTIONAL EQUIPMENT:

- HVAC
- Additional Counterweights
- Brace GP - Lift Cylinder
- Work tools - Buckets

### DEALER FIT KITS

- Payload measurement system
- DGMS kit
  - Fire Suppression
  - Rear View Camera
  - Audio Visual alarm

NOTE: Not all features are available in all regions. See your Cat dealer for more information.