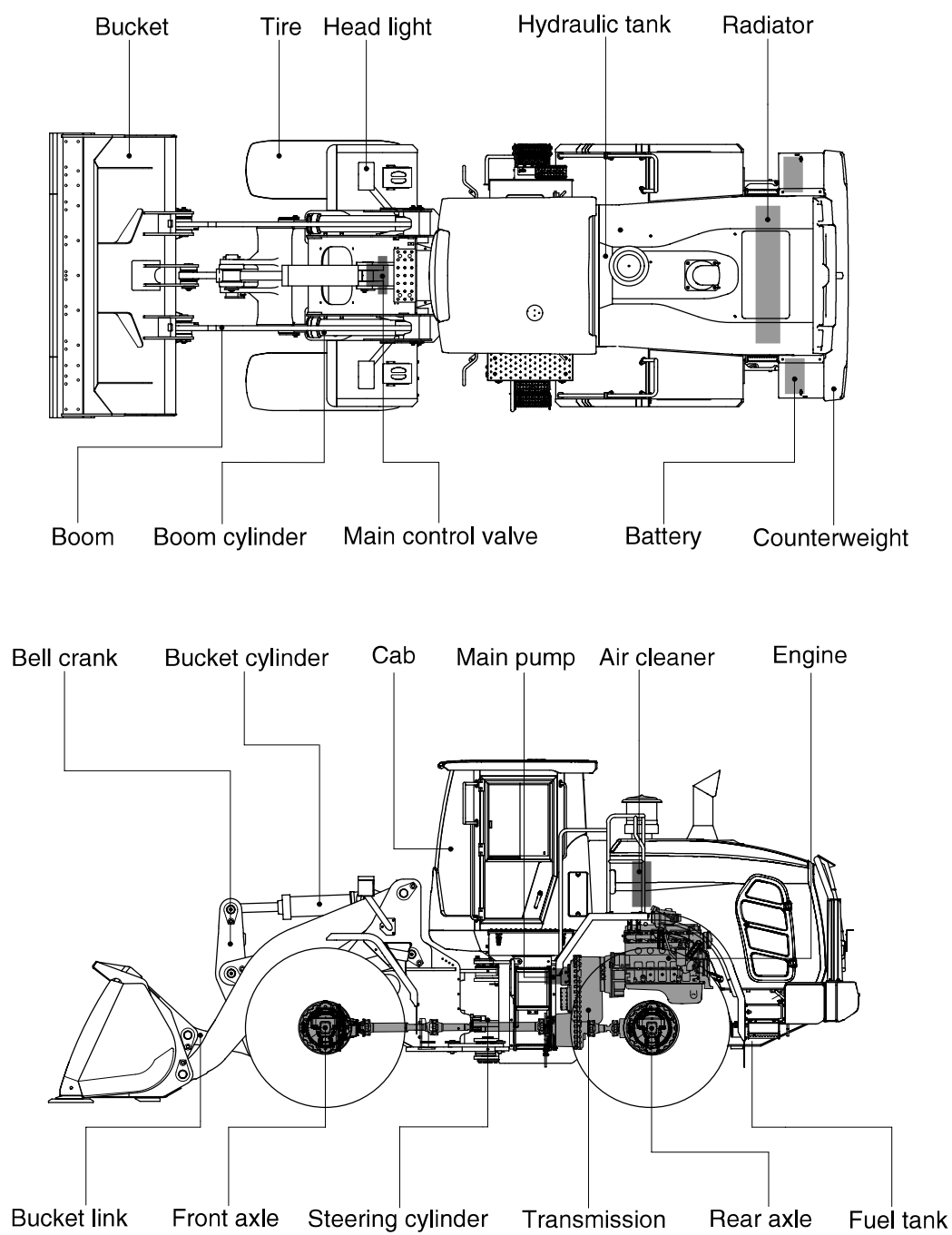


## 2. SPECIFICATIONS

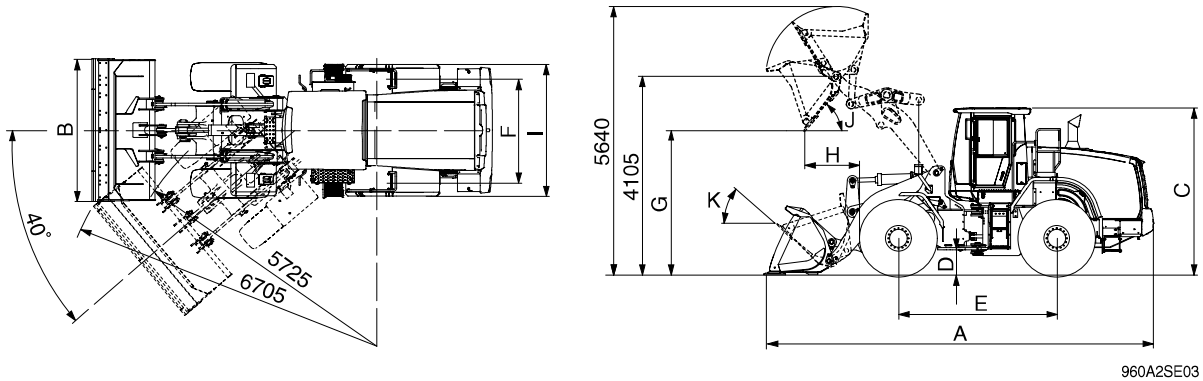
### 1. MAJOR COMPONENTS



960A2SE01

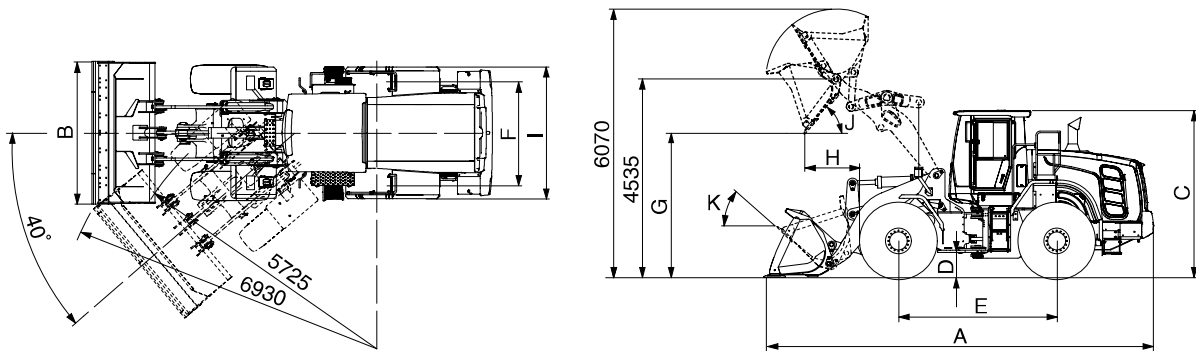
## 2. SPECIFICATIONS

### 1) WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL960A / HL960A HD)



Description			Unit	Specification
Operating weight (HL960A / HL960A HD)			kg (lb)	19200 (42330) / 19450 (42880)
Bucket capacity	Struck		m³ (yd³)	2.9 (3.8)
	Heaped			3.3 (4.3)
Overall length	A		mm (ft-in)	8140 (26' 8")
Overall width	B			2900 (9' 6")
Overall height	C			3450 (11' 4")
Ground clearance	D			410 (1' 4")
Wheelbase	E			3300 (10' 10")
Tread	F			2160 (7' 1")
Dump clearance at 45°	G			2935 (9' 8")
Dump reach (full lift)	H			1285 (4' 2")
Width over tires	I			2770 (9' 1")
Dump angle	J		degree (°)	50
Rollback angle (carry position)	K			47
Cycle time	Lift (with load)		sec	5.8
	Dump (with load)			2.0
	Lower (empty)			3.6
Maximum travel speed			km/hr (mph)	39.0 (24.2)
Braking distance			m (ft-in)	13.3 (43' 8")
Minimum turning radius (center of outside tire)				5.72 (18' 9")
Gradeability			degree (°)	30
Breakout force			kg (lb)	16670 (36750)
Travel speed	Forward	First gear	km/hr (mph)	6.4 (4.0)
		Second gear		12.1 (7.5)
		Third gear		24.5 (15.2)
		Fourth gear		39.0 (24.2)
	Reverse	First gear		6.8 (4.2)
		Second gear		12.8 (7.9)
		Third gear		25.7 (15.9)

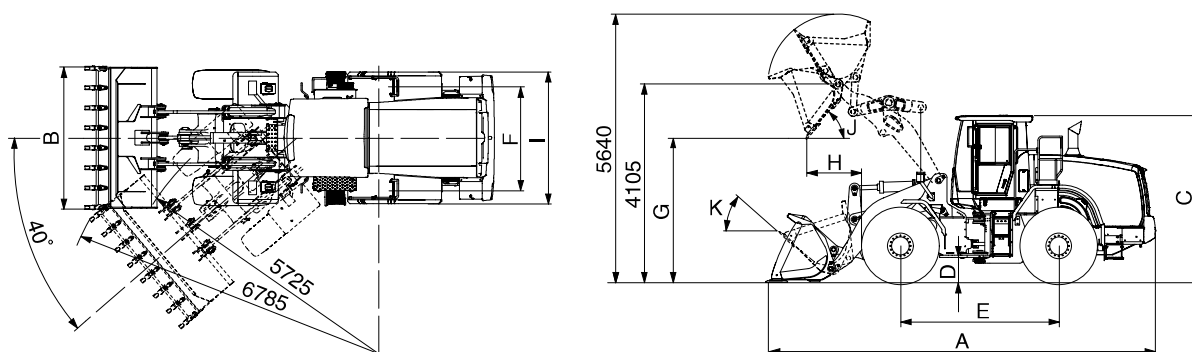
## WITH BOLT-ON CUTTING EDGE TYPE BUCKET (HL960A XT / HL960A HD XT)



960A2SE03-1

Description			Unit	Specification
Operating weight (HL960A XT /HL960A HD XT)			kg (lb)	20030 (44160) / 20280 (44710)
Bucket capacity	Struck		m³ (yd³)	2.9 (3.8)
	Heaped			3.3 (4.3)
Overall length	A		mm (ft-in)	8695 (28' 6")
Overall width	B			2900 (9' 6")
Overall height	C			3450 (11' 4")
Ground clearance	D			410 (1' 4")
Wheelbase	E			3300 (10' 10")
Tread	F			2160 (7' 1")
Dump clearance at 45°	G			3365 (11' 0")
Dump reach (full lift)	H			1380 (4' 6")
Width over tires	I			2770 (9' 1")
Dump angle	J			degree (°)
Rollback angle (carry position)	K		48	
Cycle time	Lift (with load)		sec	5.8
	Dump (with load)			2.0
	Lower (empty)			3.6
Maximum travel speed			km/hr (mph)	39.0 (24.2)
Braking distance			m (ft-in)	13.3 (43' 8")
Minimum turning radius (center of outside tire)				5.72 (18' 9")
Gradeability			degree (°)	30
Breakout force			kg (lb)	16430 (36220)
Travel speed	Forward	First gear	km/hr (mph)	6.4 (4.0)
		Second gear		12.1 (7.5)
		Third gear		24.5 (15.2)
		Fourth gear		39.0 (24.2)
	Reverse	First gear		6.8 (4.2)
		Second gear		12.8 (7.9)
		Third gear		25.7 (15.9)

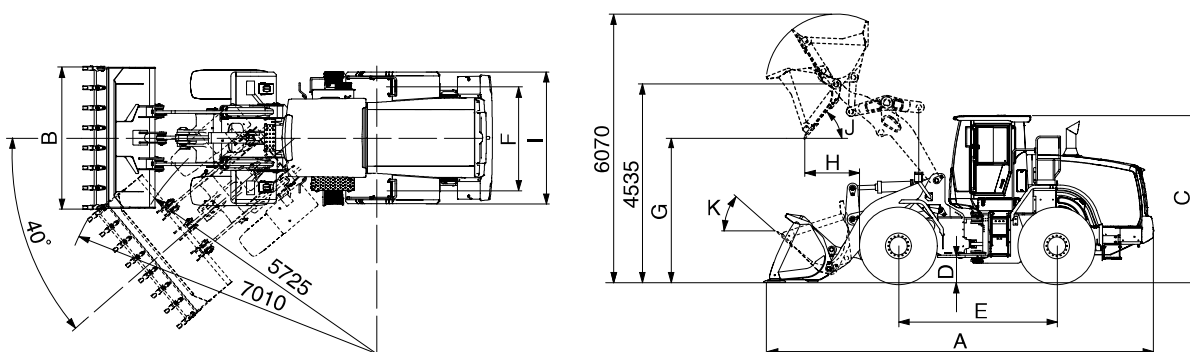
## 2) WITH TOOTH TYPE BUCKET (HL960A / HL960A HD)



960A2SE02

Description			Unit	Specification
Operating weight (HL960A / HL960A HD)			kg (lb)	19125 (42160) / 19375 (42710)
Bucket capacity	Struck		m³ (yd³)	2.8 (3.6)
	Heaped			3.2 (4.2)
Overall length	A		mm (ft-in)	8290 (27' 2")
Overall width	B			2950 (9' 8")
Overall height	C			3450 (11' 4")
Ground clearance	D			410 (1' 4")
Wheelbase	E			3300 (10' 10")
Tread	F			2160 (7' 1")
Dump clearance at 45°	G			2810 (9' 3")
Dump reach (full lift)	H			1370 (4' 6")
Width over tires	I			2770 (9' 1")
Dump angle	J			degree (°)
Rollback angle (carry position)	K		47	
Cycle time	Lift (with load)		sec	5.8
	Dump (with load)			2.0
	Lower (empty)			3.6
Maximum travel speed			km/hr (mph)	39.0 (24.2)
Braking distance			m (ft-in)	13.3 (43' 8")
Minimum turning radius (center of outside tire)				5.72 (18' 9")
Gradeability			degree (°)	30
Breakout force			kg (lb)	17705 (39030)
Travel speed	Forward	First gear	km/hr (mph)	6.4 (4.0)
		Second gear		12.1 (7.5)
		Third gear		24.5 (15.2)
		Fourth gear		39.0 (24.2)
	Reverse	First gear		6.8 (4.2)
		Second gear		12.8 (7.9)
		Third gear		25.7 (15.9)

## WITH TOOTH TYPE BUCKET (HL960 XT / HL960 HD XT)



960A2SE02-1

Description			Unit	Specification
Operating weight (HL960 XT / HL960 HD XT)			kg (lb)	19955 (43990) / 20205 (44540)
Bucket capacity	Struck		m³ (yd³)	2.8 (3.6)
	Heaped			3.2 (4.2)
Overall length	A		mm (ft-in)	8845 (29' 0")
Overall width	B			2950 (9' 8")
Overall height	C			3450 (11' 4")
Ground clearance	D			410 (1' 4")
Wheelbase	E			3300 (10' 10")
Tread	F			2160 (7' 1")
Dump clearance at 45°	G			3240 (10' 8")
Dump reach (full lift)	H			1465 (4' 9")
Width over tires	I			2770 (9' 1")
Dump angle	J			degree (°)
Rollback angle (carry position)	K		48	
Cycle time	Lift (with load)		sec	5.8
	Dump (with load)			2.0
	Lower (empty)			3.6
Maximum travel speed			km/hr (mph)	39.0 (24.2)
Braking distance			m (ft-in)	13.3 (43' 8")
Minimum turning radius (center of outside tire)				5.72 (18' 9")
Gradeability			degree (°)	30
Breakout force			kg (lb)	17465 (38500)
Travel speed	Forward	First gear	km/hr (mph)	6.4 (4.0)
		Second gear		12.1 (7.5)
		Third gear		24.5 (15.2)
		Fourth gear		39.0 (24.2)
	Reverse	First gear		6.8 (4.2)
		Second gear		12.8 (7.9)
		Third gear		25.7 (15.9)

### 3. WEIGHT

Item		kg	lb
Front frame assembly (HL960A / HL960A XT)		1640	3615
Front frame assembly (HL960A HD / HL960A HD XT)		1645	3626
Rear frame assembly		1937	4270
Front fender (LH & RH)		64	141
Counterweight	HL960A / HL960A XT	884/1520	1948/3351
	HL960A HD / HL960A HD XT		
Cab assembly		1048	2310
Engine assembly		534	1177
Transmission assembly (4-speed/5-speed)		558/583	1230/1285
Driveshaft (front)		34	75
Driveshaft (center)		23	51
Driveshaft (rear)		12	26
Front axle (include differential) (HL960A / HL960A XT)		1050	2314
Front axle (include differential) (HL960A HD / HL960A HD XT)		1236	2724
Rear axle (include differential) (HL960A / HL960A XT)		1070	2358
Rear axle (include differential) (HL960A HD / HL960A HD XT)		1450	3197
Tire (23.5 R25, ★ ★, L3)		343	756
Hydraulic tank assembly		186	410
Fuel tank assembly		331	729
Main pump assembly		62	136
Brake pump assembly		11	24
Main control valve (2/3 spool)		90 /105	198/231
Steering valve (priority valve)		5.9	13
Boom assembly	HL960A / HL960A XT	1257/1434	2771/3161
	HL960A HD / HL960A HD XT		
Bell crank assembly		361	795
Bucket link		64	141
3.3 m³ bucket, with bolt on cutting edge		1843	4063
3.2 m³ bucket, with tooth		1767	3895
Boom cylinder assembly (LH&RH)		342	754
Bucket cylinder assembly (HL960A / HL960A XT)		163	359
Bucket cylinder assembly (HL960A HD / HL960A HD XT)		181	399
Steering cylinder assembly (LH & RH)		58	128
Seat		80	176
Battery		45	99

## 4. SPECIFICATION FOR MAJOR COMPONENTS

### 1) ENGINE

Item	Specification
Model	Cummins B6.7
Type	4-cycle turbocharged, charge air cooled diesel engine
Control type	Electronic control
Cooling method	Water cooling
Number of cylinders and arrangement	6 cylinders, in-line
Firing order	1-5-3-6-2-4
Combustion chamber type	Direct injection type
Cylinder bore × stroke	107 × 124 mm (4.2" × 4.9")
Piston displacement	6700 cc (408 cu in)
Compression ratio	17.3 : 1
Rated horse power (Gross)	225 hp at 2200 rpm
Maximum torque (1300 rpm)	121 kgf · m (875 lbf · ft)
Engine oil quantity	18 ℓ (4.8 U.S. gal)
Wet weight	583 kg (1285 lb)
High idling speed	2230 ± 50 rpm
Low idling speed	800 ± 25 rpm
Rated fuel consumption (at rated)	206 g/kW · hr
Starting motor	Melco 90P(24V-5.5kW)
Alternator	Denso, 24V-95Amp
Battery	2 × 12V × 160Ah

## 2) MAIN PUMP

Item	Specification	
	Steering	Loader
Type	Variable piston pump	
Capacity	74 cc/rev	45 cc/rev
Maximum operating pressure	280 kgf/cm <sup>2</sup> (3980 psi)	
Rated oil quantity (at 2200 rpm)	163 ℓ /min (43.0 U.S.gpm)	99 ℓ /min (26.2 U.S.gpm)
Maximum speed	2230 rpm	

## 3) FAN AND BRAKE PUMP

Item	Specification
Type	Variable piston pump
Capacity	28 cc/rev
Maximum operating pressure	250 kgf/cm <sup>2</sup> (3560 psi)
Rated oil quantity (at 2200 rpm)	62 ℓ /min (16.3 U.S.gpm)
Maximum speed	2230 rpm

## 4) MAIN CONTROL VALVE

Item	Specification
Type	2 spool / 3 spool
Operating method	Hydraulic pilot assist
System pressure	280 kgf/cm <sup>2</sup> (3980 psi)
Overload relief valve pressure	340 kgf/cm <sup>2</sup> (4840 psi)

## 5) ELECTRO-HYDRAULIC (INCLUDED IN MCV SIDE)

Item	Specification
Type	Proportional pressure reducing valve
Control current	0~800 mA
Resistance	12 Ω
Normal flow	7.5 lpm (1.98 U.S.gpm)

## 6) REMOTE CONTROL VALVE (EH TYPE)

Item	Specification
Type	Fingertip
Axle	Single axle for boom, bucket, auxiliary
Operating voltage	4.5~5.5 V
Output signal	0.5~4.5 V (neutral 2.5 V)

## 7) REMOTE CONTROL VALVE (FNR TYPE)

Item	Specification
Type	Joystick
Axle	Two axle for boom, bucket, roller for auxiliary
Operating type	CAN J1939
Baud rate	500 Kbps

## 8) CYLINDER

Item	Specification
Boom cylinder	Bore dia × Rod dia × Stroke Ø 140 × Ø 80 × 765 mm
Bucket cylinder	Bore dia × Rod dia × Stroke Ø 160 × Ø 85 × 530 mm
Steering cylinder	Bore dia × Rod dia × Stroke Ø 80 × Ø 45 × 424 mm

## 9) DYNAMIC POWER TRANSMISSION DEVICES

Item			Specification
4-speed transmission (std)	Model		ZF 4WG 210
	Type	Converter	Single-stage, single-phase
		Transmission	Full-automatic power shift
	Gear shift		Forward fourth gear, reverse third gear
	Control		Electrical single lever type, kick-down system
	Travel speed		Forward 1/2/3/4 : 6.4 / 12.1 / 24.5 / 39.0 km/hr Reverse 1/2/3 : 6.8/12.8/25.7 km/hr
5-speed transmission (opt)	Model		ZF 5WG210
	Type	Converter	Single-stage, double-phase (with lock up clutch)
		Transmission	Full-automatic power shift
	Gear shift		Forward fifth gear, reverse third gear
	Control		Electrical single lever type, kick-down system
	Travel speed	Forward 1/2/3/4/5	6.7 / 11.8 / 18.2 / 28.4 / 40.0 km/hr
		Reverse 1/2/3	7.1 / 12.5 / 29.9 km/hr
Axle	Drive devices		4-wheel drive
	Front		Front fixed location
	Rear		Oscillation $\pm 12^\circ$ of center pin-loaded
Wheels	Tires		23.5 R25, ★★, L3)
Brakes	Travel		Four-wheel, wet-disc type, full hydraulic
	Parking		Spring applied, hydraulic released brake on transmission
Steering	Type		Full hydraulic, articulated
	Steering angle		40° to both right and left angle, respectively
	Relief pressure		210 kgf/cm <sup>2</sup> (2990 psi)