

# 428

## Backhoe Loader



### **C3.6 Stage V Engine**

The Cat® C3.6 engine meets EU Stage V emission standards while delivering up to a 10% fuel efficiency improvement compared to the previous model. The aftertreatment system is completely maintenance free with Selective Catalytic Reduction (SCR), Diesel Exhaust Fluid (DEF) and a fit for life Diesel Particulate Filter (DPF) system. This new engine delivers power and torque density as per the C4.4 engine installed in the previous model.

### **Improved Operator Comfort**

Pilot hoe controls are an optional upgrade on your 428 (not available on 55 kW machine). These controls mounted on fully adjustable pods offer the operator finer controls while giving improved ergonomics and comfort.

### **Greater Lifting Performance**

The option of a larger boom cylinder will give greater lifting performance on the back of the 428 machine.

### **Powershift Transmission Option**

The four speed powershift transmission, improves operator comfort by utilizing the Power Shuttle Lever to shift gears. There is no floor-mounted gear shift lever, adding to the already spacious work environment.

### **Interactive Display Screens**

The choice of either a soft key or touchscreen (not available on 55 kW machine) display screen gives the operator information at the touch of their fingertips. Machine Security Software is embedded into the display screen as well as notifications on service intervals.

### **Excavator Style Boom**

The Excavator Style Boom is iconic to the Cat backhoe loader (BHL). This gives the operator more dig depth and reach when working around obstacles meaning less repositioning of the machine is required.

### **Powerful and Efficient Hydraulics**

The load sensing hydraulic system coupled with a variable displacement piston pump deliver powerful hydraulics when the operator really requires it.

### **Power Management Modes**

The operator can choose between Eco Mode, Standard Mode or Standard Plus dependent on job and site conditions. Eco Mode will save the operator fuel, lowering their owning and operating costs, where Standard Plus Mode will give more speed and power when time or tough ground conditions demand this.

### **Product Link™**

Product Link™ comes as standard on the Cat BHL. Many features exist through Product Link including fuel burn and location allowing the owner to access all data to help increase productivity while reducing costs.

# 428 Backhoe Loader Specifications

## Engine

|                              | <b>EU Stage V (Standard)</b>            | <b>EU Stage V (Optional)</b>            | <b>EU Stage V (Optional)</b>              |
|------------------------------|---|---|---|
| Engine                       | C3.6 55 kW Electronic Turbo Intercooled | C3.6 70 kW Electronic Turbo Intercooled | C3.6 74.5 kW Electronic Turbo Intercooled |
| Ratings at 2,200 rpm         |   |   |   |
| Gross Power SAE J1995        | 56 kW/76 hp                             | 71 kW/97 hp                             | 76 kW/103 hp                              |
| Gross Power ISO 14396        | 55 kW/75 hp                             | 70 kW/95 hp                             | 74 kW/101 hp                              |
| Net Power Rating @ 2,200 rpm |   |   |   |
| SAE J1349                    | 52 kW/70 hp                             | 64 kW/86 hp                             | 68 kW/92 hp                               |
| ISO 9249                     | 51 kW/70 hp                             | 63 kW/86 hp                             | 68 kW/92 hp                               |
| Torque Rise (net)            | 86% @ 1,200 rpm                         | 43% @ 1,500 rpm                         | 41% @ 1,500 rpm                           |
| Net Torque – SAE J1349       | 418 N·m                                 | 395 N·m                                 | 436 N·m                                   |
| Bore                         | 98 mm                                   | 98 mm                                   | 98 mm                                     |
| Stroke                       | 120 mm                                  | 120 mm                                  | 120 mm                                    |
| Displacement                 | 3.6 L                                   | 3.6 L                                   | 3.6 L                                     |

- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No derating required up to 3048 m altitude. Auto derate protects hydraulic and transmission systems.
- Meets EU Stage V emission standards.

## Transmission

Travel speeds of backhoe loader at full throttle, when equipped with 440/80-28 rear tires.

|         | <b>Power Shuttle Transmission (Standard)</b> | <b>Powershift Transmission (Optional)</b> | <b>Auto-Shift Transmission with Lock-Up Torque Converter (Optional)</b> |
|---------|--|---|---|
| Forward |  |   |   |
| 1st     | 5.6 km/h                                     | 5.9 km/h                                  | 5.9 km/h  |
| 2nd     | 9.2 km/h                                     | 9.5 km/h                                  | 9.5 km/h  |
| 3rd     | 21 km/h                                      | 20 km/h                                   | 12 km/h   |
| 4th     | 37 km/h                                      | 40 km/h                                   | 20 km/h   |
| 5th     | —  | —   | 27 km/h   |
| 6th     | —  | —   | 40 km/h   |
| Reverse |  |   |   |
| 1st     | 5.6 km/h                                     | 5.9 km/h                                  | 5.9 km/h  |
| 2nd     | 9.2 km/h                                     | 12.4 km/h                                 | 12 km/h   |
| 3rd     | 21 km/h                                      | 27 km/h                                   | 27 km/h   |
| 4th     | 37 km/h                                      | —   | —   |

# 428 Backhoe Loader Specifications

## Axle Ratings

|                 |           |
|-----------------|-----------|
| Front Axle, AWD |           |
| Static          | 12 000 kg |
| Dynamic         | 6000 kg   |
| Rear Axle       |           |
| Static          | 13 000 kg |
| Dynamic         | 7000 kg   |

## Weights\*

|  |                    |
|--|--------------------|
| Operating Weight (estimated)<br>(55 kW)*                 | 8131 kg            |
| Operating Weight (estimated)<br>(70 kW)*                 | 8206 kg            |
| Operating Weight (maximum)<br>(ROPS capacity)            | 11 000 kg          |
| Cab, ROPS/FOPS   | Standard           |
| Auto-Shift Transmission                                  | 96 kg              |
| Ride Control   | 15 kg              |
| Air Conditioning   | 45 kg              |
| MP Bucket (1.03 m <sup>3</sup> )                         |                    |
| with Fold-over Forks                                     | 860 kg             |
| without Fold-over Forks                                  | 674 kg             |
| Loader QC  | 185 kg             |
| Extendible Stick<br>(excludes front counterweight)       | 208 kg             |
| Counterweights   |                    |
| Base   | 115 kg             |
| Stackable, One   | 250 kg             |
| Maximum  | 485 kg             |
| Minimum Counterweight Recommendations – Standard Stick   |                    |
| Loader Bucket  | <b>Power Train</b> |
| GP   | AWD 115 kg         |
| MP   | AWD 0 kg           |
| Minimum Counterweight Recommendations – Extendible Stick |                    |
| Loader Bucket  | <b>Power Train</b> |
| GP   | AWD 460 kg         |
| MP   | AWD 0 kg           |
| Total Gross Weight Not to Exceed                         | 11 000 kg          |

\*Machine Configuration – standard HRC engine; standard stick hoe; standard cab with A/C; AWD standard shift transmission; 1.03 m<sup>3</sup> MP loader bucket; 600 mm standard duty hoe bucket; 340/80-18 and 440/80-28 tires; no counterweight; 80 kg operator; full fuel tank.

## Hydraulic System

|                           |                             |
|---------------------------|-----------------------------|
| Type                      | Closed Center               |
| Pump Type                 | Variable-Flow, Axial Piston |
| Pump Capacity @ 2,200 rpm | 160 L/min                   |
| System Pressure           |                             |
| Backhoe                   | 250 bar                     |
| Loader                    | 250 bar                     |

## Steering

|                                     |             |
|-------------------------------------|-------------|
| Type                                | Front Wheel |
| Power Steering                      | Hydrostatic |
| AWD Cylinder, One (1) Double-acting |             |
| Bore                                | 65 mm       |
| Stroke                              | 106 mm      |
| Rod Diameter                        | 40 mm       |

## Turning Circle

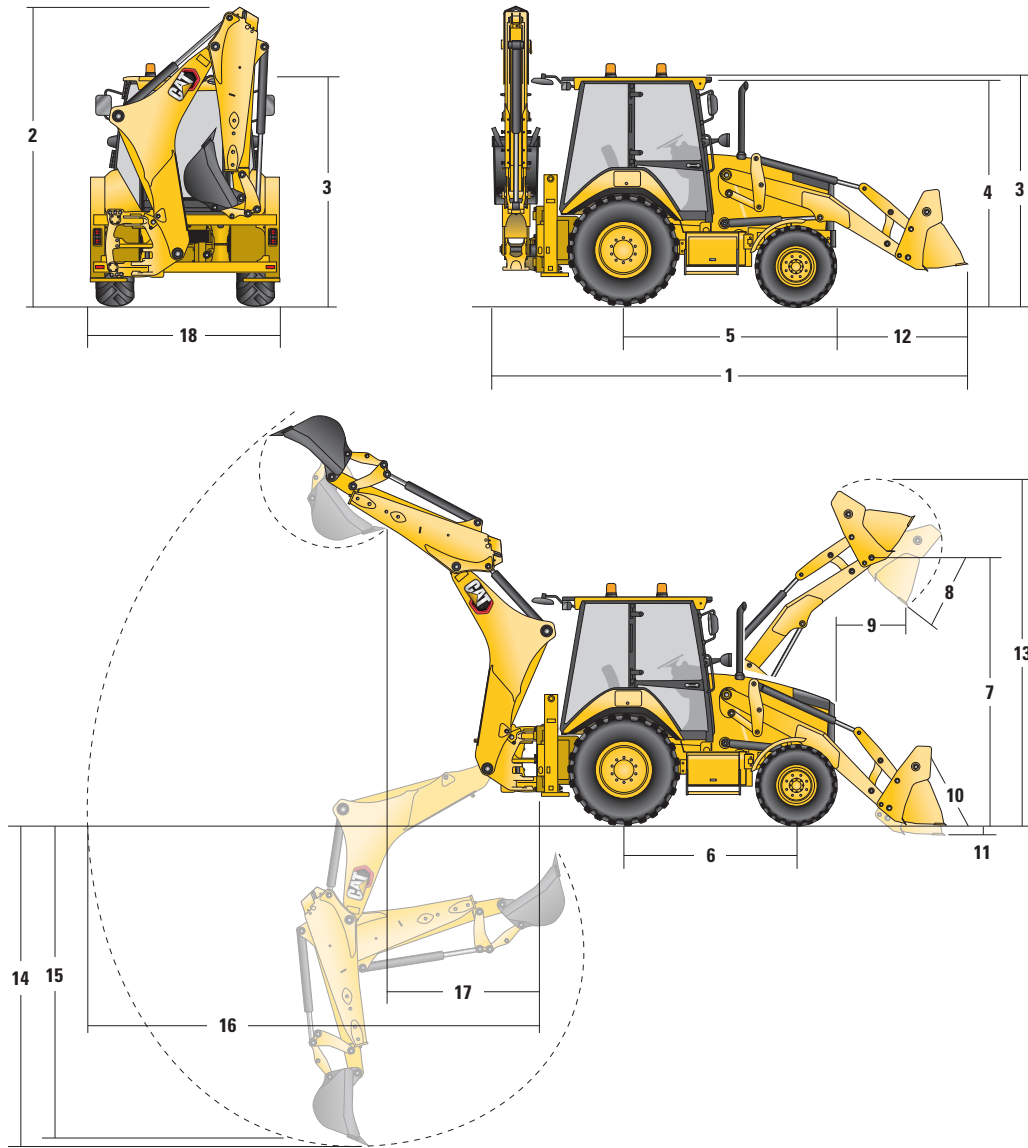
|                                  |          |
|----------------------------------|----------|
| 2WD/AWD (inner wheel not braked) |          |
| Outside Front Wheels             | 8.205 m  |
| Outside Widest Loader Bucket     | 10.745 m |

## Service Refill Capacities

|                                     |       |
|-------------------------------------|-------|
| Cooling System with A/C             | 18 L  |
| Fuel Tank                           | 160 L |
| Engine Oil with Filter              | 9 L   |
| Diesel Exhaust Fluid                | 19 L  |
| <b>Transmission (Power Shuttle)</b> |       |
| 2WD                                 | 18 L  |
| AWD                                 | 18 L  |
| <b>Transmission (Powershift)</b>    |       |
| AWD                                 | 19 L  |
| Rear Axle                           | 16 L  |
| Planetaries                         | 1.7 L |
| Front Axle (AWD)                    | 11 L  |
| Planetaries                         | 0.7 L |
| Hydraulic System                    | 95 L  |
| Hydraulic Tank                      | 42 L  |

# 428 Backhoe Loader Specifications

## Machine Dimensions



### Parallel Lift Loader

|   | GP – 1.0 m <sup>3</sup> | MP – 1.03 m <sup>3</sup> | MP with Forks – 1.03 m <sup>3</sup> |
|---|-------------------------|--------------------------|-------------------------------------|
| <b>1</b> Overall Length in Rooding Position (15 degree approach angle and hoe stowed to side) S-Stick | 5763 mm                 | 5744 mm                  | 5744 mm                             |
| Overall Transportation Length (loader on ground and hoe stowed to side) S-Stick                       | 5775 mm                 | 5731 mm                  | 5731 mm                             |
| <b>2</b> Overall Transportation Height (standard stick)   | 3806 mm                 | 3806 mm                  | 3806 mm                             |
| Overall Width (excluding loader bucket)   | 2352 mm                 | 2352 mm                  | 2352 mm                             |
| <b>3</b> Height to Top of Cab/Canopy  | 2822 mm                 | 2822 mm                  | 2822 mm                             |
| <b>4</b> Height to Top of Exhaust Stack   | 2715 mm                 | 2715 mm                  | 2715 mm                             |
| <b>5</b> Rear Axle Centerline to Front Grill  | 2705 mm                 | 2705 mm                  | 2705 mm                             |
| <b>6</b> Wheelbase 2WD/AWD  | 2200 mm                 | 2200 mm                  | 2200 mm                             |

Dimensions and performance specifications shown are for machines equipped with 340/80-18 front tires, 440/80-28 rear tires, standard cab, standard stick, 600 mm standard duty bucket, and 1.03 m<sup>3</sup> MP loader bucket and standard equipment unless otherwise specified.

# 428 Backhoe Loader Specifications

## Loader Bucket Dimensions and Performance

|  | Parallel Lift Loader    |                          |                                     |
|--|-------------------------|--------------------------|-------------------------------------|
|  | GP – 1.0 m <sup>3</sup> | MP – 1.03 m <sup>3</sup> | MP with Forks – 1.03 m <sup>3</sup> |
| Capacity (SAE rated)                                   | 1.0 m <sup>3</sup>      | 1.03 m <sup>3</sup>      | 1.03 m <sup>3</sup>                 |
| Width  | 2406 mm                 | 2406 mm                  | 2406 mm                             |
| Lift Capacity at Maximum Height                        | 3728 kg                 | 3488 kg                  | 3303 kg                             |
| Lift Breakout Force                                    | 54 791 N                | 53 252 N                 | 51 536 N                            |
| Tilt Breakout Force                                    | 54 292 N                | 59 845 N                 | 58 900 N                            |
| Tipping Load at Breakout Point                         | 6627 kg                 | 6604 kg                  | 6448 kg                             |
| <b>7</b> Maximum Hinge Pin Height                      | 3462 mm                 | 3462 mm                  | 3462 mm                             |
| <b>8</b> Dump Angle at Full Height                     | 45°                     | 45°                      | 45°                                 |
| Dump Height at Maximum Angle                           | 2755 mm                 | 2780 mm                  | 2780 mm                             |
| <b>9</b> Dump Reach at Maximum Angle                   | 805 mm                  | 732 mm                   | 732 mm                              |
| <b>10</b> Maximum Bucket Rollback at Ground Level      | 38°                     | 39°                      | 39°                                 |
| <b>11</b> Digging Depth                                | 99 mm                   | 132 mm                   | 132 mm                              |
| Maximum Grading Angle                                  | 113°                    | 116°                     | 116°                                |
| <b>12</b> Grill to Bucket Cutting Edge, Carry Position | 1488 mm                 | 1471 mm                  | 1471 mm                             |
| <b>13</b> Maximum Operating Height                     | 4328 mm                 | 4365 mm                  | 4365 mm                             |
| Weight (does not include teeth)                        | 438 kg                  | 674 kg                   | 860 kg                              |

## Backhoe Dimensions and Performance

|   | Standard Stick –<br>4.3 m | E-Stick Retracted –<br>4.3 m | E-Stick Extended –<br>4.3 m |
|---|---------------------------|------------------------------|-----------------------------|
| <b>14</b> Digging Depth, SAE Maximum              | 4298 mm                   | 4301 mm                      | 5292 mm                     |
| Digging Depth, Manufacturer's Maximum             | 4778 mm                   | 4782 mm                      | 5700 mm                     |
| <b>15</b> Digging Depth, 2400 mm Flat Bottom      | 3915 mm                   | 3919 mm                      | 4987 mm                     |
| Digging Depth, 600 mm Flat Bottom                 | 4255 mm                   | 4259 mm                      | 5254 mm                     |
| Digging Depth, 600 mm Flat Bottom, Manufacturer's | 4753 mm                   | 4758 mm                      | 5700 mm                     |
| Reach from Rear Axle Centerline at Ground Line    | 6741 mm                   | 6746 mm                      | 7672 mm                     |
| <b>16</b> Reach from Swing Pivot at Ground Line   | 5651 mm                   | 5656 mm                      | 6582 mm                     |
| Maximum Operating Height                          | 5665 mm                   | 5666 mm                      | 6265 mm                     |
| Loading Height                                    | 3991 mm                   | 4000 mm                      | 4599 mm                     |
| <b>17</b> Loading Reach                           | 1690 mm                   | 1639 mm                      | 2501 mm                     |
| Swing Arc   | 180°                      | 180°                         | 180°                        |
| Bucket Rotation                                   | 205°                      | 205°                         | 205°                        |
| <b>18</b> Stabilizer Overall Width                | 2352 mm                   | 2352 mm                      | 2352 mm                     |
| Bucket Dig Force                                  | 63 447 N                  | 63 419 N                     | 63 419 N                    |
| Stick Dig Force                                   | 36 232 N                  | 36 899 N                     | 26 976 N                    |

# 428 Standard and Optional Equipment

## Standard and Optional Equipment

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

|   | Standard | Optional |                                   | Standard | Optional |
|---|----------|----------|-----------------------------------|----------|----------|
| <b>Cab ROPS and FOPS</b>  |          |          | <b>Hydraulics</b>                 |          |          |
| Cab, Standard   | ✓        |          | Variable Displacement Piston Pump | ✓        |          |
| Cab, Deluxe   |          | ✓        | Hydraulic Quick Disconnects       |          | ✓        |
| <b>Tires/Steering/Brakes</b>  |          |          | Side Shift Lock                   | ✓        |          |
| All Wheel Drive   | ✓        |          | Hydraulic Oil Cooler              | ✓        |          |
| 100% Differential Lock  | ✓        |          | Hydraulic Lines, One Way          |          | ✓        |
| Hydraulic Boosted Brakes  | ✓        |          | Hydraulic Lines, Two Way          |          | ✓        |
| Tires 26 inch   | ✓        |          | Loader Kickout, Float             | ✓        |          |
| Tires 28 inch   |          | ✓        | Loader Kickout, Return to Dig     | ✓        |          |
| <b>Engine/Transmission</b>  |          |          | Powered Side Shift                |          | ✓        |
| Engine, C3.6 55 kW  | ✓        |          | Ride Control                      |          | ✓        |
| Engine, C3.6 70 kW  |          | ✓        | Continuous Flow                   |          | ✓        |
| Engine, C3.6 74.5 kW  |          | ✓        | Programmable Auxiliary Flow       |          | ✓        |
| Battery, 750 CCA, Standard  | ✓        |          | <b>Booms, Sticks and Linkages</b> |          |          |
| Battery, 750 CCA, Heavy Duty  |          | ✓        | Stick Standard, 4.3 m             | ✓        |          |
| Hinged Radiator Pack  | ✓        |          | Stick Extending, 4.3 m            |          | ✓        |
| Auto Idle   | ✓        |          | Hoe Quick Coupler, Mechanical     |          | ✓        |
| Eco Mode  |          | ✓        | Hoe Quick Coupler, Hydraulic      |          | ✓        |
| Standard Mode   | ✓        |          | Loader Quick Coupler, Hydraulic   |          | ✓        |
| Standard + Mode   | ✓        |          | Transport Lock, Swing             | ✓        |          |
| Engine Block Heater   |          | ✓        | Transport Lock, Boom              | ✓        |          |
| Transmission Neutralizer  | ✓        |          | <b>Other Attachments</b>          |          |          |
| Transmission, Four Speed Manual   | ✓        |          | Counterweight, 115 kg             |          | ✓        |
| Transmission, Four Speed Powershift (not on 55 kW engine)                   |          | ✓        | Counterweight, 240 kg             |          | ✓        |
| Transmission, Six Speed with Lock-Up Torque Converter (not on 55 kW engine) |          | ✓        | Counterweight, 460 kg             |          | ✓        |
| <b>Controls</b>   |          |          | Front Fenders                     |          | ✓        |
| Controls, Mechanical Levers   | ✓        |          | Street Pads, Stabilizers          |          | ✓        |
| Controls, Pilot Joysticks   |          | ✓        | External Tool Box                 | ✓        |          |
| Pattern Selector (ISO/SAE)  |          | ✓        | Transport Tie Downs               | ✓        |          |
| Power Steering, Hydrostatic   | ✓        |          | <b>Electrical</b>                 |          |          |
|   |          |          | Display Screen, Soft Key          | ✓        |          |
|   |          |          | Display Screen, Touchscreen       |          | ✓        |
|   |          |          | Product Link Cellular             |          | ✓        |
|   |          |          | Product Link Satellite            |          | ✓        |
|   |          |          | Reversing Alarm                   | ✓        |          |
|   |          |          | Stabilizer Alarm                  | ✓        |          |
|   |          |          | Beacon, Rotating                  |          | ✓        |
|   |          |          | Beacon, Strobe                    |          | ✓        |



# 428 Backhoe Loader

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

© 2020 Caterpillar  
All rights reserved

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

CAT, CATERPILLAR, LET'S DO THE WORK, their respective logos, "Caterpillar Yellow," the "Power Edge" and Cat "Modern Hex" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

AEHQ8249 (01-2020)  
Build Number: 07  
(Europe)

