42197 Backhoe Loader

Adapted by Jordi Isus. Tested by Natalie Charbonneau.

Here's a fun construction toy for boys, girls, and any fan of building site vehicles. With their trusty LEGO® Technic™ Backhoe Loader (42197) toy, kids aged 7 and up will be ready for any construction job! This fun set lets young builders' role-playlots of different building-site tasks. Wheel the loader into position and lower the outriggers for extra support. Turn the knob to move the front scoop up and down. Then try out the rear digger to tackle the next building site task.

LEGO Technic vehicle sets features realistic movement to introduce young LEGO builders to the universe of engineering. This set makes a great gift for kids who love loaders, excavators, and digger toys.

Give kids an easy and intuitive building adventure with the LEGO Builder app, where they can zoom in and rotate models in 3D, save sets, and track their progress.

- Construction toy for kids aged 7 and up – Inspire young construction site fans to create their own building adventures with this backhoe loader toy.
- A backhoe toy packed with features – This fun-filled toy vehicle is an anytime treat for kids and comes with lots of moving features for interactive construction site role play.
- Try out the scoop and digger – The LEGO® Technic™ Backhoe Loader model includes a scoop that kids can lift and lower using the knob, a back digger, and outriggers.
- A gift for fans of LEGO® vehicles – This set makes a gift idea or treat for kids who enjoy building with LEGO bricks or playing with construction toys.
- An introduction to engineering – LEGO® Technic™ buildable model sets feature realistic movement and mechanisms to introduce young LEGO builders to the universe of engineering.
- Measurements – A 104-piece set with a buildable toy model measuring over 4 in. (10 cm) high, 9 in. (24 cm) long and 3.5 in. (9 cm) wide, with outriggers folded out.

On the front of the box, the LEGO Technic 42197 Backhoe Loader is shown in action, with the front bucket raised and the rear arm extended against a construction site background that conveys strength and movement! The LEGO logo is placed in the upper corner alongside the set number and the recommended age of 7+!

On the back of the box, the design is more technical and straightforward, presenting the Backhoe Loader from different angles with small panels that explain its main functions: the movement of the front bucket, the deployable stabilizers, and the rear arm digging! The background is neutral gray, chosen to keep the focus on the mechanical details and the play features of the set!

The building set is 104 pieces in total and is for ages 7+!

Welcome to text-based instructions from Bricks for the Blind. Before you start building, here are some terms we'll be using:

- In Front of/Front: towards you.
- Behind/Back: away from you.
- Up: towards the ceiling.
- Down: towards the floor.

- Stud: the bump on a LEGO brick. Example: A 2x1 brick has two studs on it.
- Vertically: with the longest side going from front to back
- Horizontally: with the longest side going from left to right.
- Upright: pointing up towards the ceiling.
- Standing upright: The piece is perpendicular to the ground, like a wall.
- Lying flat: The piece is parallel to the ground, like a piece of toast which fell off the table.
- That one/ppp: previously placed piece.
- Plate: piece with studs.
- Tile: smooth piece without studs (unless otherwise specified)
- A jumper plate is a 2L plate with a single stud on top, or a 3L plate with only two studs on top.
- Anti-stud is a term for the portion of a LEGO piece which accepts studs, like the bottom of a plate or brick.
- Symmetrically: a mirror image. Example: If you place a 2x1 brick with technic connector on the front wall at the right, connector to the front, and then place another such piece symmetrically on the back wall, at the right, the technic connector of the second piece should point to the back, since it will be placed symmetrically.
- Centered-vertically: even amount of space in front of and behind piece
- Centered-horizontally: even amount of space left and right of piece.
- Row: studs lined up horizontally (left to right/side to side).
- Column: studs lined up upright or vertically (top to bottom/back to front).

A note on LEGO Technic™ part names. These parts are different from regular LEGO bricks. Here are some definitions in case the builder or helper is not familiar with LEGO Technic™.

- Axles - An axle is a connector which has an X shaped cross-section. Because their cross section is not round, anything connected to an axle using an axle-hole will rotate with that axle. Axles are longer than they are wide, and the length of an axle corresponds with how many bricks long it is. Aka a 3L axle is three bricks long. Axles come in a variety of lengths, with a 2L axle being the shortest available. They may be combined with pins or have circular stops on them. A stop prevents the axle from sliding through an axle-hole at a specific point on the axle.
- Pins - A pin is a connector which has a circular cross section and a flanged notch out of one or both ends. This flanged notch allows them to click into bricks with a pinhole. Pins come with and without friction ridges, which are small bumps on the pin which prevent them from rotating freely. For standard pins, black is a high friction pin, and gray is a low friction pin. A standard-length pin is two brick lengths long, with a stop in the middle. This prevents a brick from being pushed from one side of the pin to the other. A 1L pin is one brick long and still retains the stop; however, it also includes a hollow stud at the other end. A 3L pin is three bricks long, and only contains a stop at one side, allowing two bricks to be pushed onto the other side of the pin. Pins may also have one side which is an axle.
- Technic brick - a brick which contains one or more holes which accept technic pins.

- Lift-arms - A lift-arm is a basic structural element, like a brick or a plate, but usually without any studs. It is a beam with rounded ends and with holes in it, with the same spacing as the studs on a LEGO brick. lift-arms come in a variety of lengths, including a 1x1 lift-arm which looks like a cylinder. Thick lift- arms are as wide as a LEGO brick, and thin lift-arms are half as wide as a LEGO brick, but not the same thickness as a LEGO plate! The holes in a lift-arm arm may accept axles or pins. They also come in a variety of shapes, including tees, ells, and triangles.

- Gears - A gear is a functional element. They are typically discs with teeth on the outside; there are also worm gears which look like a spiraling cylinder! Gears connected by axles transmit or even transform rotational motion!

- Axle and Pin Connectors - These elements are typically smaller than lift-arms and are used to connect some combination of pins or axles. They might have pins or axles, as well as axle or pinholes. They have a lot of different angle combinations! The simplest just connects two axles or pins together in a straight line.

- Bushes/Bushings - LEGO Technic™ uses bushes as spacers, but they also can reduce friction between rotating parts or can form useful elements such as bars. Bushes are typically light gray, cylindrical, and have an axle-hole running through the middle. They have a flange at the front and back to make it easier to pull on and off.

For builders with low vision, or a sighted building partner who may want to follow along with the printed visual instructions that come with each kit, PDF versions are always online at LEGO.com: (https://www.lego.com/en-us/service/buildinginstructions/42197) As low vision users may benefit from viewing the instructions on a personal device where they can zoom in on content and use assistive technologies to enhance the visuals.

Sorting the pieces:

To begin a successful build, it helps to sort the pieces into groups, bags, or small containers. Have a sighted friend or family member do this in advance following the instructions below. You will see that the pieces should be sorted into groups according to the building steps in the set. Doing this in advance makes locating the pieces easier. See below on how to sort the pieces to correspond to the steps in this set. Number the containers using letters A-Z, Numbers, or meaningful names. The parts will be collected into a small Number from steps in the instructions. Example: Steps 1-3 means collecting all the parts used in steps 1, 2 and 3, and putting them in one container.

This set comes with 2 non labelled paper bags, a set of instructions and some loose pieces. Sort the pieces into groups as described below. Note that where there are multiple colors of the same brick in a step, the colors will be split across two groups to make telling the difference easier for the builder!

LEGO includes a few spare parts in case you lose something. Set these into their own group away from the rest, in case you need them later.

Before start building it might be helpful for you, the blind builder, to know that the LEGO Technic 42197 Backhoe Loader is a compact construction vehicle built in yellow and black. At the front there is a wide black bucket, also called a scoop, which can be lifted and lowered by turning a small knob placed on the top of the model. This knob controls the mechanism that moves the scoop up and down, making it the main functional feature of the build. Near the rear wheels, on each side, there are stabilizers also called outriggers that fold down to keep the vehicle steady when digging. At the back, the digging arm is folded against the body of the machine. The arm itself is yellow, and at its end there is a black bucket representing the digging tool of a real backhoe loader. In this LEGO version, the rear bucket does not have a mechanism to unfold or

operate, so it remains folded in place. The overall shape of the model is compact and sturdy, resembling the real backhoe loaders used on construction sites, with the front scoop as the part you can move and play with.

Specific guidelines for this set

- When a liftarm contains both pin holes and axle holes, all holes are counted in sequence unless otherwise specified. In other words, when an instruction refers to the second hole from the right or the third hole, the count includes every hole along the liftarm, regardless of type.

Example: Take a grey 5L liftarm with 3 axle holes and 5 pin holes. Position it horizontally in front of you with the holes facing to the front and to the back. Insert a black 2L pin from front to back into the second forward-facing hole from the right.

Here, the term hole refers to both pin holes and axle holes; no distinction is made during counting unless explicitly stated.

- To make the building instructions smoother and more precise for blind builders, we provide clear directional guidance whenever a piece needs to be inserted or attached. These directions specify the exact path the piece should follow, using the terms front to back (the piece moves away from you), back to front (the piece moves toward you), top to bottom (the piece moves downward), and bottom to top (the piece moves upward). For example: Insert a black 2L pin from front to back into the second front-facing hole from the right of your 5L liftarm or attach the leftmost forward-facing hole of your 7L liftarm from back to front onto the 1L section extending from the ppp.
- After inserting or attaching a piece, we specify how far the axle or pin extends in each direction. For example: Insert a black 2L pin from front to back into the second front-facing hole from the right of the 5L liftarm, so that 1L of the pin extends toward the front. Or: Attach the leftmost back-facing hole of a 7L liftarm from front to back onto the 1L pin end extending at the front.

Book 1:

All bags:

Group 1: contains the pieces to build steps 1-6.

Group 2: contains the pieces to build steps 7-8.

Group 3: contains the pieces to build steps 9-19.

Group 4: contains the pieces to build steps 20-28.

Group 5: contains the pieces to build steps 29-33.

Group 6: contains the pieces to build steps 34-38.

Group 7: contains the pieces to build steps 39-42.

Group 8: contains the pieces to build steps 43-52.

Let’s get to building!

Building Instructions (All Bags, Book 1):

Group 1:

1. Horizontally place a black 2L perpendicular axle and pin connector in front of you, so the pin connector is at the left with its pin holes facing front and back. Insert a blue 3L pin from front to back into the front facing pin hole of the ppp, Make sure the pin is pushed all the way through, so 1L extends to the front and 1L extends to the back.

2. Insert a yellow 3L axle from top to bottom into the top facing axle hole, so 2L of the axle extends upward.

3. Attach the bottom axle hole of a grey 2x3 axle connector with join ball socket from top to bottom onto the ppp, so 1L of the axle extends upward and the join ball socket faces the right.

4. Insert a red 2L axle from front to back into the front facing axle hole of the ppp, so 1L extends to the front. Repeat symmetrically to the back. Take a black 2L perpendicular pin with an axle connector and position it vertically upright so that the axle connector is on top with its axle holes facing front to back, while the pin connector is at the bottom with its pin holes facing left to right. Attach the front facing axle hole of the 2L perpendicular pin an axle connector from back to front onto the ppp. Repeat symmetrically to the front.

5. Take a black 2L perpendicular axle connector and place it upright so the top axle holes face front and back. Attach the bottom facing axle hole of the black 2L perpendicular axle connector from top to bottom onto the 1L upward extending axle end of the yellow 3L axle from step 2. Insert a light grey 5L axle from front to back into the front facing AXLE hole of the ppp. Make sure the axle is pushed all the way through so that 2L of the axle extends to the front and 2L extends to the back.

6. Take a yellow 2x4 L-shaped liftarm (with 4 pin holes and 1 axle hole) and position it upright so its holes face front to back and it sits on the short arm of the liftarm which extends to the left, the long arm points upright at the right and the right angle faces the bottom right. Attach the front facing axle hole of the 2x4 L-shape liftarm from back to front onto the back 2L protruding end of the ppp, so after the attachment 1L of the axle extends to the back. Then connect the leftmost front facing pin hole of the bottom arm from back to front onto the back 1L protruding end of the blue 3L pin from Step 1. Press firmly forward so that the liftarm fits securely in place. Repeat symmetrically to the front attaching from front to back.

Group 2:

7. Insert a black 2L pin from front to back into the rightmost bottom front facing pin hole of the ppp, to the left of the front 2L perpendicular axle and pin connector, so 1L of the pin extends to the front. Repeat symmetrically to the back inserting from back to front.

8.1 Let's make a part! Horizontally place a yellow 9L liftarm in front of you, so its holes face front and back. Insert a tan 3L pin from back to front into the 2nd back facing axle hole starting from the left, so 2L of the pin extends to the back. Repeat symmetrically to the right.

8.2 Bring back your main build so the join ball socket faces the right and the black 2L pins face the front and the back at the bottom. Attach the rightmost front facing hole of your part from back to front onto the bottom back facing 1L protruding pin end.

Group 3:

9. Let's make a part! Hold a grey 3L axle connector upright, so the axle holes face up and down. insert the axle end of a blue 2L pin axle from bottom to top into the bottom axle hole of the ppp, so 1L of the pin extends to the bottom. Repeat symmetrically to the top inserting from top to bottom. Bring back your main build and place it horizontally in front of you, so the holes face front to back and the 2L extending pin ends of the 2 tan 3L pins face the back. Insert a pin end

of your part from front to back into the leftmost front facing hole of the 9L liftarm so 4L of your part extends to the front.

10. Let's make a part! Hold a red, brown 3L axle with stop upright, so the stop is at the bottom. Attach a black gear wheel with 12 teeth to the top facing end of the ppp. Push it down until it reaches the stop. After the attachment, 2l of the axle extends upward.

11. Horizontally place a yellow 3L axle and pin connector in front of you so the pin holes of the pin connector faces up and down. This is a straight 3L axle connector with a center pin hole. Insert a red 2L axle into the right facing axle hole. Repeat symmetrically to the left. then attach it to the previous part by sliding the bottom pin hole from top to bottom onto the 2L upward extending end of the 3L axle with stop. After sliding, 1L of the axle should extend upward.

12. Attach the bottom facing axle hole of a grey 3L axle connector from top to bottom onto the 1L upward extending end of the 3L axle with stop of your part.

13. Let's make a part! Hold a grey 4L axle with stop upright, so the stop is at the bottom. Slide the bottom facing center hole of a black angular wheel from top to bottom onto the top end of the ppp. Push it down until it reaches the stop, 3L of the axle extends upward. Angular wheels feel round but have a lightly ridged edge and a smooth pinhole in the center and they spin freely and don't have sharp teeth, whereas normal gears have clearly defined, sharper teeth all around the edge. When running a finger along them, you can feel the difference.

14. Attach a black 1L round pin connector from top to bottom onto the 3L upward extending axle end of your part. After the attachment, 2L of the axle should extend upward.

15. Horizontally attach the bottom facing pin hole of a horizontal yellow 3L axle and pin connector from top to bottom onto the 2L upward extending axle of your part. 1L of the axle extends upward. Insert a yellow 3L axle from right to left into the right-facing axle hole of the ppp, so 2L of the axle extends to the right. Then repeat symmetrically to the left, inserting from left to right. The yellow 3L axle and pin connector, with the two axles pointing left and right, must be positioned so that they sit interspaced between the angular holes of the bottom wheel. They should not align directly with the wheel's hole tips but instead fit in the spaces between them.

16. Bring back your part from step 12. Turn it upside down so the wheel with 12 teeth Is at the top and the 3L axle connector is at the bottom. Attach the bottom axle hole of this part from top to bottom onto the top 1L upward extending axle end of your current part you've been working with since step 13. The 2 yellow 3L axles and pin connectors from the 2 attached parts should be aligned and should extend to the front and back.

17. Position a black 3x5 L-shape liftarm with bow and 4 pin holes and 3 axle holes vertically upright with its holes facing front and back, so the short arm is at the bottom, and the right angle is at the bottom left and the rounded edge faces the top right. Attach the back facing axle hole located on the bottom left right angle of the black 3x5 L-shape liftarm with bow and 4 pin holes and 3 axle holes from front to back onto the bottom left 2L protruding axle end of the 3L axle of your part. Attach the back facing top axle hole from front to back onto the top left protruding red 1L axle end of your part.

18. Bring back your main build and place it horizontally in front of you, so the holes face front to back and the 2 tan 2L extending pin ends face the back. Attach the bottom right back facing axle hole of the ppp from front to back onto the front extending 1L axle end of the light grey 5L axle from step 5.

19. Attach a black 3x5 L-shape liftarm with bow and 4 pin holes and 3 axle holes symmetrically to the back, attaching from back to front: the front facing left bottom axle hole attaches to the bottom back 2L extending axle end so that 1 and a half L of the axle extends to the back. The

top front axle hole attaches to the back 1L extending axle end of the red 2L axle and the bottom front right axle hole attaches to the back extending 1L of the light grey 5L axle from step 5, so after these 2 attachments 0.5L of both axles extend to the back.

Group 4:

20. Let's make a part! Hold a black 2L perpendicular axle and pin connector upright, so the pin connector is at the top with its holes facing left to right, and the axle connector is at the bottom with its axle holes facing back to front. Insert a yellow 3L axle from front to back into the front facing axle hole, so after inserting 1L of the axle extends to the front and 1L to the back.

21. Take a grey 2L thin liftarm with 2 axle holes and position it horizontally upright in front of you, so the axle holes face front and back. Attach the right front facing axle hole of the grey 2L liftarm with 2 axle holes from back to front onto the back end of the ppp extending 1L, so 0.5L of the axle extends to the back. Then insert a yellow 3L axle from back to front into the left back facing axle hole of the ppp, so 0.5L of the axle extends to the back and 2L of the axle extends to the front.

22. Slide a black 1L round pin connector from front to back through the front extending 2L end of the ppp until it reaches the liftarm, after sliding 1L of the axle should extend to the front. Take a grey 2L thin liftarm with 2 axle holes and position it horizontally upright in front of you, so the axle holes face front to back. Then attach the back facing axle holes from front to back onto the front extending 1L axle ends of the 2 3L axles, so after attaching 0.5L of both axles extend to the front.

23. Take a yellow 3x5 liftarm with bow and 4 pin holes and 3 axle holes and position it, so the holes face front and back, the long arm is at the bottom extending to the left, the short arm is pointing vertically upright at the right, the right angle faces the bottom right and the bow the top left. Attach the 2 bottom left front facing holes from back to front onto the back extending 0.5L axle ends of the 2 3l axles of your part.

24. Let's make a part! Hold a grey 3L perpendicular axle and pin connector with center pin hole upright so the pin holes face left to right and the axle holes face front and back. Insert a light grey 5L axle from front to back into the top front facing axle hole, so after inserting 2L of the axle extends to the front and 2L to the back.

25. Insert a yellow 3L axle from front to back into the bottom front facing axle hole, so after inserting 1L of the axle extends to the front and 1L to the back.

26. Take a light grey 4L liftarm with knob connector and 2 axle holes and 2 pin holes and position it vertically upright, so the holes face front to back and the knop connector is at the bottom extending to the front. Attach the top back facing hole from front to back onto the front extending 2L axle end of the 5L, so 1 and a half L of the axle extends to the front. then attach the 3rd back facing hole starting from the top from front to back onto the front extending 1L axle end of the yellow 3L axle, so 0.5L of the axle extends to the front. Repeat symmetrically to the back attaching from back to front.

27. Insert the axle end of a blue 2L pin axle from back to front into the back facing hole of the bottom back knob connector of the ppp, 1L of the pin axle extends to the back. Repeat symmetrically to the front inserting from front to back.

28. Bring back your previous part from step 23 and place it horizontally in front of you, so the holes face front and back. The axles and the light grey 2L liftarm with 2 axle holes should face the front left, while the yellow 3x5 L-shaped liftarm with bow and 4 pin holes and 3 axle holes is at the back. In this orientation, the right angle of the L-shape liftarm faces the bottom right and the rounded bow edge points to the top left. Attach the bottom rightmost front-facing axle hole of

the yellow 3x5 L-shape liftarm from back to front onto the back extending 0.5L axle end of the yellow 3L axle of your part. Connect the top front facing axle hole of the L-shape liftarm from back to front onto the back 1 and a half L extending axle end of the light grey top 5L axle of your part, so 1L of the axle extends to the back.

Group 5:

29.1 Let's make a part! Place a light grey 5L axle horizontally in front of you. Attach a grey 8-tooth gear to the right end of the ppp. Slide the gear from right to left along the axle until it sits in the middle.

29.2 Place a light grey 2L bush on the right end of the axle. Slide it from right to left until it rests snugly against the right side of the gear. Repeat symmetrically to the left side sliding from left to right. 1 and a half L of the axle should extend to the right and to the left. Rotate your part 90 degrees clockwise.

29.3 Bring back your previous sub-build. Use the yellow 3x5 L-shape liftarm (with bow, 4 pin holes, and 3 axle holes) as your orientation guide. Position the sub-build in front of you so that the L-shape stands upright at the back with its holes facing front and back, the short side of the L points vertically upward to the right, the long side of the L points horizontally to the left, the right angle sits at the bottom right, and the rounded bow edge is at the top left. With the sub-build in this orientation, take the part you just built and insert the back extending 1 and a half L of the axle end of the 5L axle from front to back into the front facing bottom right pin hole of the L-shape liftarm, to the left of the part placed in the previous step, so 1L of the axle extends to the back.

29.4 Take a yellow 7L bent liftarm (with 5 pin holes and 2 axle holes) position it horizontally, so the holes face front and back, the triangular tip of the liftarm points upward, while its left end extends outward to the left. Attach its rightmost front axle hole from back to front onto the back extending 1L tip of the 5L axle you just inserted into the main build.

30. Insert the end without a stop of a reddish brown 5L axle with stop from left to right into the left-facing pin hole located on the left side of the sub-build. Push the axle only partway through so that 4L extends to the left. Take a light grey 2L worm gear with hole, this is a small, straight cylinder two studs long, with a round hole in the center, with tight spiral ridges wrapped around the cylinder. Place it horizontally to the right of the pin hole where you inserted the ppp, so the left facing hole of the light grey 2L worm gear with hole aligns with this right facing pin hole. Then push the entire axle from left to right fully through the pin hole, so it passes through the light grey 2L worm gear with hole and it is inserted into the left-facing pin hole on the right side of the sub-build of a 3L perpendicular axle and pin connector with center pin hole from step 24. After inserting, 1L of the axle should extend to the right.

31. Attach a black angular wheel using the center hole from right to left onto the right extending 1L axle end of the reddish brown 5L axle with stop from the previous step.

32. Position a yellow 3x5 L-shape liftarm with bow and 4 pin holes and 3 axle holes in front of you so that the holes face front and back, its short side points upward at the right, its long side is horizontal at the bottom, its right angle points to the bottom right, and its rounded bow edge points to the top left. In this orientation, connect the top back-facing axle hole of the L-shape liftarm from front to back onto the top front extending 1 and a half L axle end of the light grey vertical 5L axle of your sub build, so 1L of this axle extends to the front after attaching. Then connect the bottom right back-facing axle hole, located at the right angle of the L-shape liftarm, from front to back onto the front extending 0.5L axle end of the yellow vertical 3L axle. Attach the 2 leftmost bottom back facing holes of your L-shape liftarm from front to back onto the 2 left front extending 0.5L ends of the 2 yellow 3L axles from step 21. This secures the structure.

33. Bring back your main build and place it horizontally in front of you so that the holes of the 9L liftarm face front and back, and the two tan 2L extending pin ends of the 3L pins face backward. Keep the sub-build in the same orientation as before, with the yellow 7L bent liftarm positioned at the back, pointing horizontally to the left, and with the triangular tip facing upward. Insert the blue back extending 1L pin of the bottom back facing 2L pin axle from your sub-build from front to back into the 5th front facing hole starting from the right of the 9L liftarm.

Group 6:

34. Let's make a part! Horizontally place a yellow 9L liftarm in front of you, so the holes face front and back. Insert a tan 3L pin from back to front into the 2nd back facing axle hole starting from the left, so 2L of the pin extends to the back. Repeat symmetrically to the right. Rotate your part 180 degrees so the 2L extending pins face the front. Bring back your main build and place it horizontally in front of you so that the two 2L extending pins face the back. Attach the leftmost back-facing pin hole of your part from front to back onto the leftmost front extending 1L blue pin from your main build. Then attach the rightmost back-facing pin hole of your part from front to back onto the rightmost front extending 1L black pin. Attach the 5th back facing pin hole starting from the right of your part from front to back onto the front extending 1L blue pin from the main build. This part is symmetrical to the back liftarm with the two back-facing tan 3L pins of the main build that we used as reference for orienting the main build.

35.1 Let's make a part! Horizontally place a light grey 5L axle in front of you. Attach a black 2L perpendicular axle and pin connector to the left-facing end of the axle using its axle hole and slide it through from left to right until it sits in the middle, with the pin connector at the front and the pin holes facing up and down. Slide a black 1L round pin connector from right to left onto the right end of the axle until it touches the 2L perpendicular axle and pin connector. Finally, attach another black 2L perpendicular axle and pin connector to your part by sliding it from right to left through the right end of the axle using its axle hole, so that it also sits with the pin connector at the front and the pin holes facing up and down. Make sure the spacing on both axle ends is symmetrical so the distance from the central pieces to the left axle end is the same as to the right axle end, 1L of the axle should extend to the right and to the left on each end.

35.2 Bring back your main build and place it horizontally in front of you so the 7L bent liftarm is at the back pointing horizontally to the left and its holes face front to back. insert an end of your axle from your part from front to back into the leftmost front facing axle hole of the yellow 7L bent liftarm, so the pin connectors of your part are at the bottom.

36. Attach the leftmost back-facing axle hole of a yellow 7L bent liftarm from front to back onto the front extending 1L axle end of the axle from the part you built in the previous step. Then connect the rightmost back-facing axle hole of the same liftarm from front to back onto the front extending 1L axle end of the vertical light grey 5L axle from Step 29, so that the liftarm is positioned symmetrically to the one at the back. Make sure the triangular tip of the liftarm points upward.

37.1 Let's make a part! Horizontally place a yellow 2x3 curved slope panel in front of you, so it slopes to the front. Insert a yellow 3L axle from right to left into the right facing axle hole, so 2L of the axle extends to the right. Repeat symmetrically to the left, inserting from left to right.

37.2 Take a black 5L thin liftarm and position it vertically upright, so its holes face left to right. Attach the top right facing axle hole of the liftarm from left to right onto the ppp, push it through until it reaches the 2x3 curved panel, so 1 and a half L of the axle extends to the left. Repeat symmetrically to the right attaching from right to left.

38. Bring back your main build and place it vertically in front of you, so the higher part faces the back. Hold your part upright, so the liftarms face down, and the panel sits flat on top of the

attached part sloping to the front. Attach the bottom left facing axle hole of the ppp from right to left onto the right extending 1L axle end of the light grey 5L axle located above the back end of the 7L bent liftarm. After attaching, 0.5L of that axle extends to the right. Attach the bottom right facing axle hole of the left vertical upright black 5L liftarm with an axle hole on each end of your part symmetrically to the left from left to right.

Group 7:

39. Rotate your main build 90 degrees clockwise so that the high part faces to the right. Take a yellow 5L thin liftarm with an axle hole on each end and place it horizontally upright with its holes facing front and back. Let's attach it to the front right side of the build above the angular wheel. Attach it from front to back across the three front extending 2 0.5L axle ends and across the front extending 1 and a half L axle end located between the 0.5L front protruding axle ends. Attach the leftmost back-facing axle hole of the liftarm from front to back onto the front extending 0.5L axle end of the light grey axle where you connected your last part in the previous step. Attach the rightmost back-facing axle hole from front to back onto the front extending 0.5L of the rightmost front-facing light grey 5L axle end. Finally, connect the center pin hole of the liftarm from front to back onto the front extending 1 and a half L 3L axle end, so 1L of this axle extends to the front after connecting. Repeat symmetrically to the back attaching from back to front.

40. Position a yellow 3L Liftarm with 1 axle hole on each end and a pin hole in the center horizontally upright on the top back right facing side of the backhoe loader. Attach the leftmost front facing axle hole of the yellow 3L Liftarm from back to front onto the top back extending 1 and a half L axle end of the yellow 3L axle inserted into a upright vertical back facing liftarm and a vertical 2x3 curved slope panel from step 37 and 38. After attaching 1L of the axle should extend to the back. Then attach the rightmost front facing axle hole from back to front onto the top back right extending 0.5L axle end of the red 1L axle. Press the lift arm firmly forward to secure the attachment. Repeat symmetrically to the front, attaching from front to back.

41. Attach the back facing axle hole of a horizontal yellow 2x3 curved left slope wedge panel from front to back onto the front extending yellow 1L axle end of the 3L axle end located below the ppp, so the short end faces the left and it slopes to the front. Attach a yellow 2x3 curved right slope wedge panel symmetrically to the back, attaching from back to front. When you place the curved yellow 2×3 curved slope wedge panel in front of you with the thin edge pointing forward and the hole facing toward the back, you can tell which one it is by the short end: if the short end points to the left, it is the left panel; if the short end points to the right, it is the right panel.

42.1 Let's make 2 identical parts! Let's make the front lights! Place a black 2L perpendicular axle and pin connector vertically in front of you, so the pin connector is at the front with its holes facing up and down, and the axle connector is at the back with its axle holes facing left to right. Insert a light grey 1L pin with stud from top to bottom into the upward facing pin hole of the ppp.

42.2 Place a transparent 1x1 round tile on the ppp. You should now have 2 identical parts! Bring back your main build and position it horizontally in front of you, so the high side faces the right. Attach the left facing axle hole of your first part from front to back onto the top front right extending 1L axle of the yellow 3L axle end, where you attached the horizontal 3L thin liftarm from step 40, in front of the right column of the top flat 2x3 curved slope panel from step 37, so the transparent 1x1 round tile is at the bottom of this part and the transparent 1x1 round tile faces the front. Repeat symmetrically to the back, attaching from back to front. Rotate your main build 90 degrees counterclockwise so the lights you have just attached face the front at the top. Backhoe loaders have their front lights at the top.

Group 8:

43. Rotate your main build 180 degrees, so the high side is at the front. Insert a black 2L pin from front to back into the bottom front right facing pin hole of a black 2L perpendicular axle and pin connector, so 1L of the pin extends to the front. Repeat symmetrically to the left. then position a yellow 5L liftarm horizontally, so its holes face front and back. Attach its rightmost back facing hole from front to back onto the ppp. repeat symmetrically to the right. you have built the outriggers!

44. Let's make a part! Let's start building the back digger! Hold a yellow 7L bent liftarm with 5 pin holes and 2 axle holes upright with its holes facing front and back, so the triangle tip faces down. Insert the axle end of a blue 2L pin axle from back to front into the top leftmost back facing axle hole, so 1L of the pin axle extends to the back.

45. Insert the axle end of another from front to back into the top rightmost front facing axle hole, so 1L of the pin axle extends to the front.

46. Let's make a part! Horizontally place a black 2L liftarm with ball join in front of you, so the ball faces the left and the holes face front and back. insert a red 2L axle from front to back into the front right facing axle hole, so 1L of the axle extends to the front. Then insert the front sticking 1L end of the ppp from back to front into the 2nd back facing hole from the left of your previous part. Attach the front facing pin hole of the liftarm with ball joint from back to front onto the blue 1L pin that sticks out to the back on the far left end of the part from the previous step.

47. Hold a yellow 7L bent liftarm with 5 pin holes and 2 axle holes upright, so the holes face front and back, and the triangular tip faces down. Then Attach the 3rd back facing hole starting from the right from front to back onto the front right sticking 1L pin of the blue 2L pin axle from step 45.

48. Let's make a part! Place a black 2x3 curved slope panel vertically in front of you, so it slopes to the left. Position a black axle and pin connector hub with 2 perpendicular axles in front of you so 1 axle faces the front, and the other faces the left, and the pin holes face up and down. Insert the left axle of the black axle and pin connector hub with 2 perpendicular axles from right to left into the right facing hole of the ppp. Bring back your previous part and insert the front axle from the ppp to the top leftmost back facing axle hole of the 2nd 7L bent liftarm you attached in the previous step, so the panel faces the left.

49. Rotate your digger part 180 degrees. Then turn your part upside down so the triangular tips face up. Bring back your main build so the high side faces the front. Attach the ball join of your part from front to back into the front facing socket. Fold the back digger by pushing it upward.

50. Let's build the front scoop! Rotate your main build 180 degrees so the high side faces the back. Insert the 2 back facing pins of a light grey 3L hinge with 2 pins and lock finger square from front to back into the front facing pin holes of the 2 vertical upright black 2L perpendicular axle and pin connectors.

51. Attach the clip of a black 4x8 digger bucket to the hinge locker finger square of the ppp., so the hollow side faces up.

52. Let's make 4 identical parts! Let's build the 4 wheels! Place a light grey 18x14 wheel with pin hole inside a black tire so the hollow side faces the front. You should now have 4 identical parts! Bring back your main build and place it vertically in front of you, so the digger bucket faces the front. Attach the first wheel from right to left to the right front extending 2L pin, so the hollow side faces the right. Repeat symmetrically to the left. Let's attach the back wheels! Attach them to the right back and left back extending tan 2L pins, so the hollow side faces outward. Congratulations! You have finished building your Backhoe Loader. Feel the knob on the very top: when you turn it clockwise, the front scoop lowers down; when you turn it counterclockwise,

the scoop lifts. Now your machine is ready to work. Imagine it on a busy construction site, lifting, digging, and helping to build. Let's put it to work!

Congratulations on finishing your build! Would you like to inspire other blind people to build LEGO sets? Let's feature your build on our Builders page. It's easy and we will do all the work! Just contact us at info@bricksfortheblind.org and together we will make it happen!
Please signup for our newsletter and follow us on Facebook and Instagram to be the first to know when new instructions are available!
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