

Simmons DCP-400/600 Dual End Combination Press Data Sheet

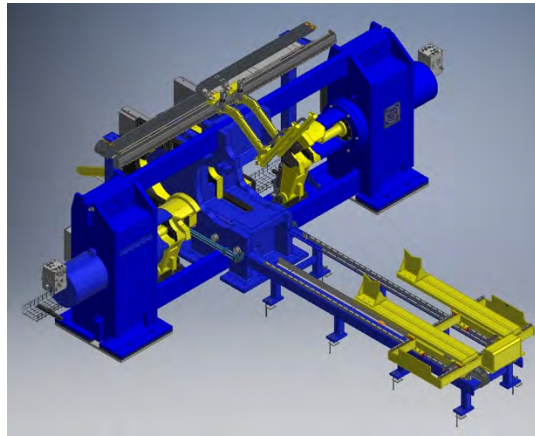


The **Simmons DCP-400/600 Dual End Combination Press** mounts and demounts wheels, bearings, gearboxes, and other railway wheel set components. Its versatility eliminates the need for multiple machines. The press offers the freedom to control pressing speed and tonnage while also providing rapid extend/retract traverse speeds, allowing for the fastest possible setup and breakdown time in between pressing operations. All tooling is specialized and easily exchanged to safely accommodate a large variety of wheel set components and configurations. Installation is straightforward, as the press is flat-floor-mounted – no civil work is required. The on-demand hydraulic power unit provides maximum energy efficiency and reduced noise. The press is available as a 600 ton pressing force model or a derated 400 ton system for customers with lower capacity requirements.

Wheel set components can be loaded and unloaded with the aid of an optional overhead crane system and wheel set handling cart. The wheel set is held between centers throughout mounting and demounting operations. Both the swing-in yoke and abutments are positioned under power. A precision wheel press recorder captures the mount force versus distance graph, storing the data along with wheel set information entered by the operator in accordance with AAR, APTA, and other international standards. The optional overhead measuring system monitors the position of the gearbox, wheels, and other components as needed. The press’ controls are intuitive for safe and efficient operation.

Press operation rates are variable due to the variety of wheel sets that can be processed. Rates can range from 8–32 wheel sets per 8-hour shift depending on wheel set complexity and the number of components and operations necessary per wheel set.





Machine Dimensions

Press Length	287.3 in.	7297 mm
Press Width	124.3 in.	3159 mm
Press Height	88.5 in.	2248 mm
Total Weight (Including HPU)	68000 lbs.	31000 kg
Vertical Distance Between Tie Bars	60 in.	1524 mm
Ram Stroke	36 in.	914 mm
Max. Opening Between Ram Faces (Without Tools)	148 in.	3759 mm
Max. Opening Between Ram Faces (With Standard Tools)	116 in.	2946 mm

General Specifications

Production	8-32 wheel sets per 8-hour shift (depending on wheel set complexity)	
DCP-600 Maximum Pressing Force	600 tons	5330 kN
DCP-400 Maximum Pressing Force	400 tons	3558 kN
Rapid Ram Extend Speed	130 in/min	55 mm/s
Rapid Ram Retract Speed	130 in/min	55 mm/s
Maximum Pressing Speed	18 in/min	7.6 mm/s

Utility Requirements

Electrical Power	65 kW
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Wheel Set Dimensions

Maximum Wheel Diameter	52 in.	1320 mm
Minimum Wheel Diameter	24 in.	600 mm
Maximum Axle Length	102 in.	2590 mm
Maximum Axle Diameter	10.5 in.	265 mm

Updated October 15, 2021

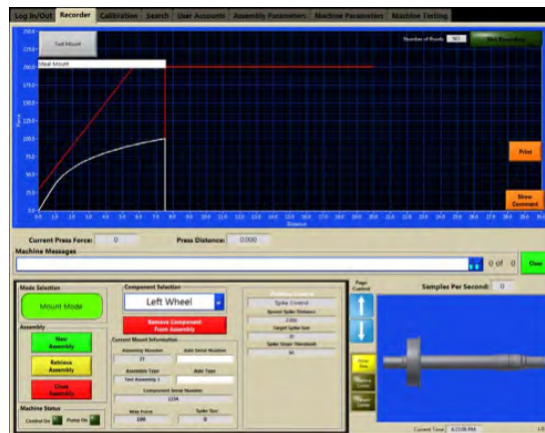
Simmons SCP-400 Single End Combination Press Data Sheet

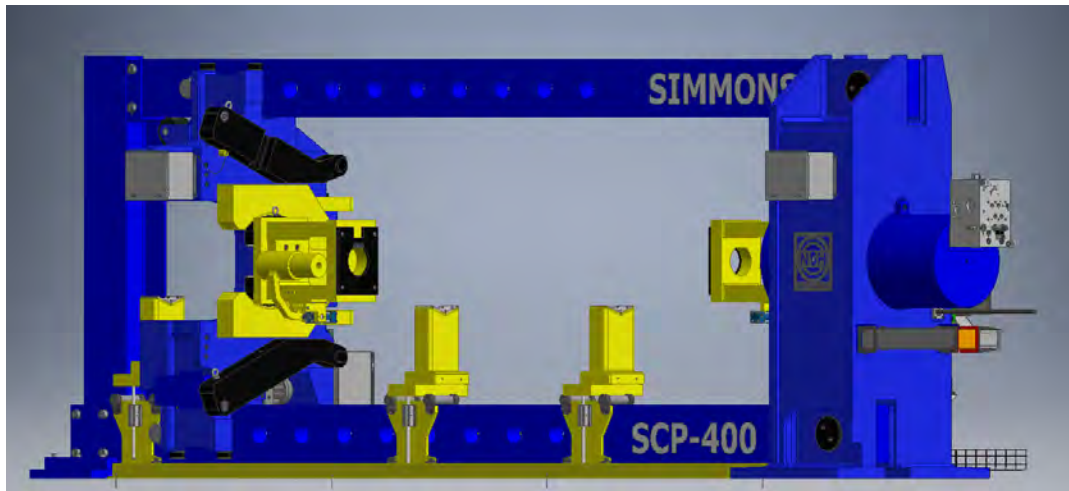


The **Simmons SCP-400 Single End Combination Press** is designed to mount and demount railway wheel sets. The press uses a moveable abutment to oppose the pressing forces from the single pressing cylinder. The abutment can be positioned as necessary for both mounting and demounting operations by removing two powered locking pins, freeing it to be positioned either manually or with the aid of an optional on-board controller. Swing-in tooling is mounted to both the abutment and the pressing ram. This tooling is manually positioned by the operator.

The wheel set is loaded manually with the aid of an overhead crane system, and is held on elevators throughout mounting and demounting operations. The Wheel Press Recorder will automatically capture the mount force versus distance graph and store that data along with wheel set information entered by the operator. After the components on one end of the wheel set are mounted or demounted, the operator then uses the overhead crane to turn the wheel set end-to-end. The process is repeated to process the remaining components.

Press operation rates are variable due to the variety of wheel sets that can be processed. Rates can range from 8–32 wheel sets per 8-hour shift depending on wheel set complexity and the number of components and operations necessary per wheel set. The press can move to position within a 0.020 inch or 500 micron accuracy. Spike control is provided, allowing components to press up against an axle feature as a means of positioning.





Machine Dimensions

Press Length	273 in.	6934 mm
Press Width	280 in.	7122 mm
Press Height	88 in.	2235 mm
Total Weight	34000 lbs.	15500 kg
Vertical Distance Between Tie Bars	60 in.	1524 mm
Ram Stroke	26 in.	660 mm
Maximum Opening, Ram (Retracted) To Abutment	109 in.	2768 mm
Minimum Opening, Ram (Retracted) To Abutment	35 in.	890 mm

General Specifications

Production	8-32 wheel sets per 8-hour shift	
Accuracy	+/- 0.020 in.	+/- 500 microns
Maximum Pressing Force	400 tons	3560 kN
Rapid Ram Extend Speed	120 in/min	50 mm/s
Rapid Ram Retract Speed	140 in/min	60 mm/s
Maximum Pressing Speed	11 in/min	4.5 mm/s

Utility Requirements

Electrical Power	52 kW
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Wheel Set Dimensions

Maximum Wheel Diameter	52 in.	1320 mm
Minimum Wheel Diameter	24 in.	600 mm
Maximum Axle Length	102 in.	2590 mm
Maximum Axle Diameter	10.5 in.	265 mm

Updated November 15, 2021

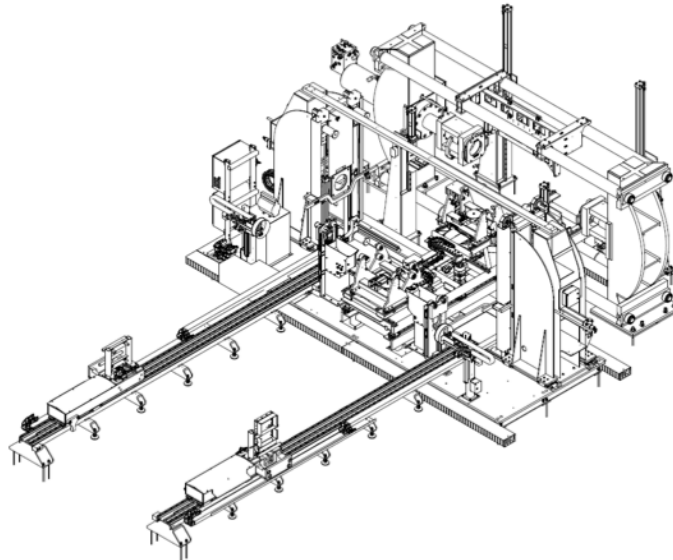
Simmons SMP-200 Pre-Mount and Mount Press Data Sheet



The **Simmons SMP-200 Pre-Mount and Mount Press** is a fully automatic production wheel press for mounting railcar wheels to axles. The SMP-200 takes pre-machined wheels and axles and accurately positions and mounts the wheel set in a fast, efficient, and AAR-compliant manner.

The machine cell combines wheel bore and axle lubrication stations, pre-mount press, and mount press. Wheels are loaded into wheel carts that transport them to the wheel bore lubrication station. Once lubricated, the cart loads the wheels into the pre-mount press. Axles are loaded directly into the axle lubrication station, or held in an optional axle rack. After lubrication, the axle is transferred to the wheel set cart that holds the axle during the pre-mounting and mounting operations. The pre-mount system pre-assembles the wheel set, pressing the wheels onto the axle with 19 tons of force. Pre-mounting is fully automatic and eliminates pre-assembly of the components in the mounting press, saving production time. After the wheels are pre-mounted to the axle, the wheel set cart transfers the wheel set to the intermediate elevator, which transfers the pre-mounted wheel set from the first position on the wheel set cart to the second position. The pre-mounted wheel set is then transferred into the mounting press.

The 200-ton mounting press performs the final assembly of the railway wheel set. Matched wheel and axle assemblies are indexed into the mounting press from the pre-mount station. The press includes special tooling and an automatic gauging system. The gauge system automatically positions the wheels on the axle centerline and at proper track gauge, produces wheel sets that are consistent and free of operator error. The automatic press includes a Wheel Press Recorder, which produces a pressure diagram, reflecting tonnage over distance. The tonnage recorder also stores the pertinent wheel and axle data such as wheel and axle serial numbers, mount number, and misfits, allowing the stored data to be and transferred to a central computer.



Machine Dimensions

Overall Machine Length (not including wheel carts)	175.5 in.	4455 mm
Overall Width	267.5 in.	6797 mm
Maximum Height	113 in.	2871 mm
Total Machine Weight	47700 lbs.	21637 kg

General Specifications

Takt Time	2 minutes 10 seconds	
Wheel Centering Accuracy	+/- 0.020 in.	+/- 0.51 mm
Back-To-Back Repeatability	+/- 0.015 in.	+/- 0.38 mm
Max. Pressing Force - Mount Press	200 short tons	181 metric tons
Max. Pressing Force - Pre-Mount Press	19 short tons	17.2 metric tons
Press Ram Stroke - Mount Press	36 in.	914 mm
Ram Extend Speed	250 in/min	6350 mm/min
Maximum Pressing Speed - Mount Press	11.3 in/min	287 mm/min

Utility Requirements

Electrical Power	60 kW	
Hydraulic Reservoir	200 US gallons	757 liters

Wheel Set Dimensions

Maximum Wheel Diameter	44 in.	1120 mm
Minimum Wheel Diameter	28 in.	711 mm
Maximum Axle Length	102 in.	2590 mm

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Simmons DDP-600 Dual End Demount Press Data Sheet

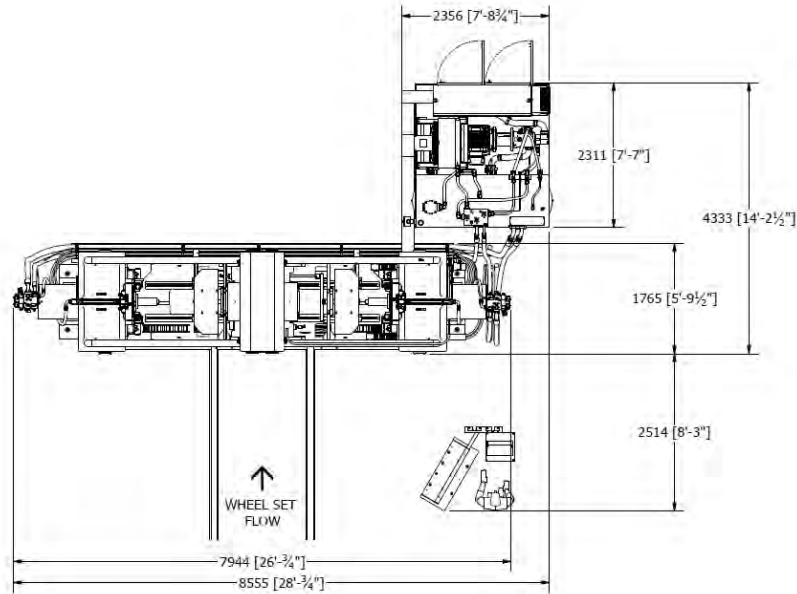


The **Simmons DDP-600 Dual End Demount Press** disassembles wheels from railway wheel sets. It has a maximum force capability of 600 tons and is capable of demounting a wheel set every 150 seconds (including loading and unloading).

The machine consists of a hydraulic cylinder beam assembly at each end of the press. Both rams have embedded distance transducers to provide ram and axle position information to the operator at all times. The press can be recessed into a shallow pit to optimize the working height of the press and accept wheel sets from embedded shop rails. It can also be used entirely above floor to minimize the installation costs.

The press is capable of demounting a wheel set every 150 seconds. The load and unload time varies depending on the optional handling equipment selected.





Machine Dimensions

Press Length	313 in.	8 m
Press Width	70 in.	1.8 m
Press Height (without pit)	95 in.	2.4 m
Total Weight (Not Including HPU)	57,000 lbs.	25,900 kg
Distance Between Tie Bars	48 in.	1219 mm
Ram Stroke	36 in.	914 mm

General Specifications

Cycle Time	150 seconds	
Maximum Pressing Force	600 tons	5330 kN
Rapid Ram Extend Speed	120 in/min	50 mm/s
Rapid Ram Retract Speed	140 in/min	60 mm/s
Maximum Pressing Speed	11 in/min	4.5 mm/s

Utility Requirements

Electrical Power	73 kW
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Wheel Set Dimensions

Maximum Wheel Diameter	44 in.	1117 mm
Minimum Wheel Diameter	28 in.	711 mm
Maximum Axle Length	102 in.	2590 mm
Maximum Axle Diameter	10.5 in.	265 mm

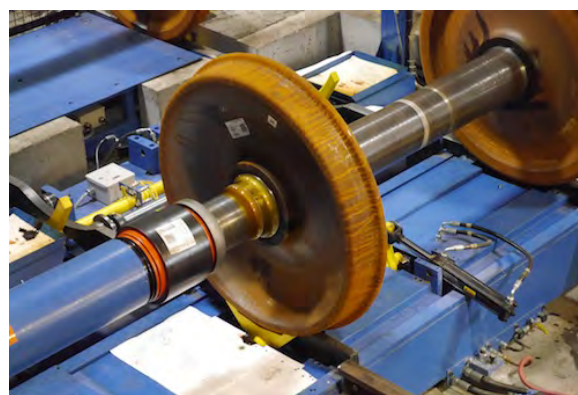
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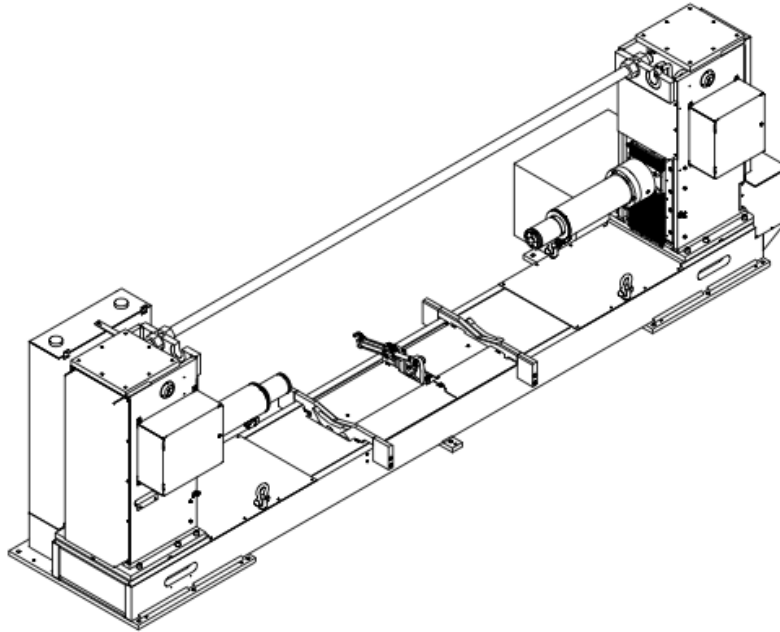
Simmons BMP-070 Bearing Mount Press Data Sheet



The **Simmons BMP-070 Bearing Mount Press** automatically aligns and presses bearing onto axles at the proper tonnage. An integrated measuring system can be included to compensate for various wheel diameters to maintain proper center location. Mounting tonnage is controlled hydraulically by pressure control to assure bearings are not damaged by excessive force while mounting. Wheel sets roll into the press on customer shop rails and are captured on the press centerline. The bearings are placed on a mandrel, which is mechanically aligned with the bearing mounting tool for various bearing configurations. The bearings are then pressed into place and set at the manufacturer's recommended tonnage. After the mounting operation is complete, the wheel set is escaped at the rear of the machine via the customer shop rail system. Tooling is supplied per customer product specification.

The press can be supplied for fully automatic or semi-automatic operation, depending on the customer's production requirement. There is also an optional Bearing Press Recorder available, which automatically captures the mount force versus distance graph and store that data along with wheel set information entered by the operator.





Machine Dimensions

Length	266 in.	6746 mm
Width	65 in.	1659 mm
Height	79.5 in.	2018 mm
Total Weight	21000 lbs.	9500 kg
Ram Press Stroke	17 in.	432 mm

General Specifications

Cycle Time	1 minute (excluding bearing handling)	
Bearing Size	All AAR Bearing Sizes	
Maximum Operating Force	70 tons	63.5 metric tons

Utility Requirements

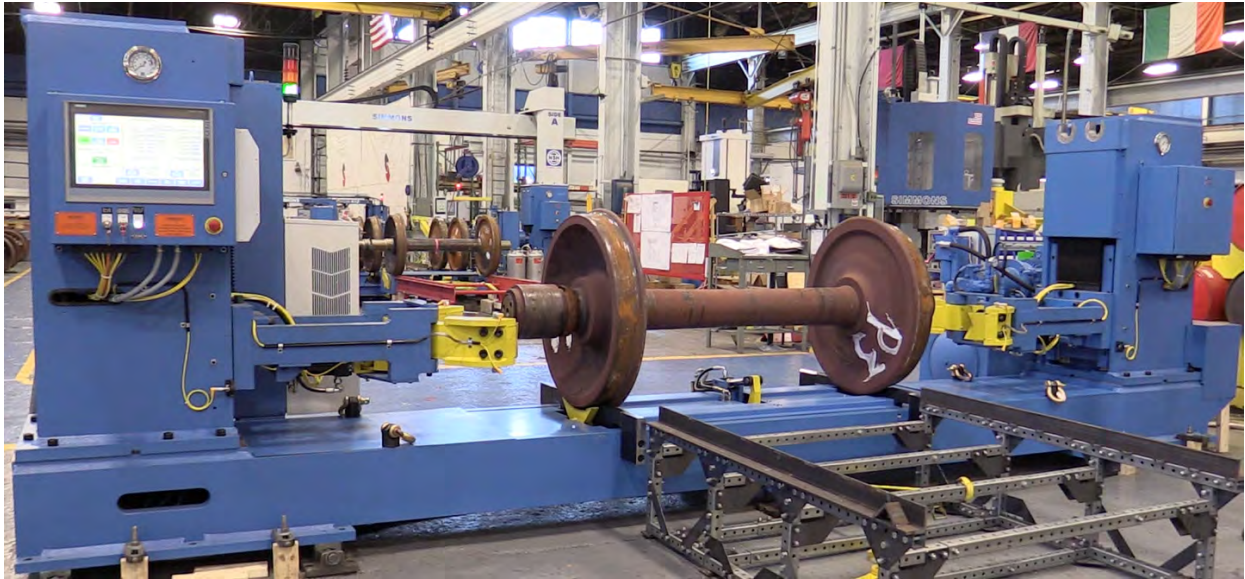
Electrical Power	32 kW	
Hydraulic Reservoir	60 US gallons	227 liters

Wheel Set Dimensions

Maximum Wheel Diameter	42 in.	1066 mm
Minimum Wheel Diameter	28 in.	700 mm
Maximum Axle Length	102 in.	2591 mm

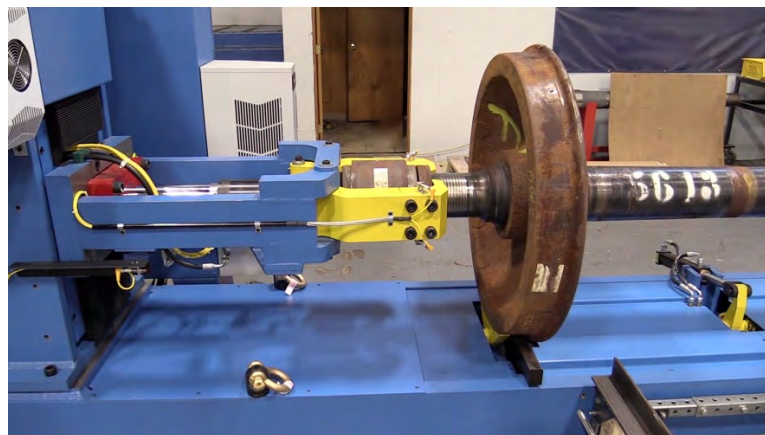
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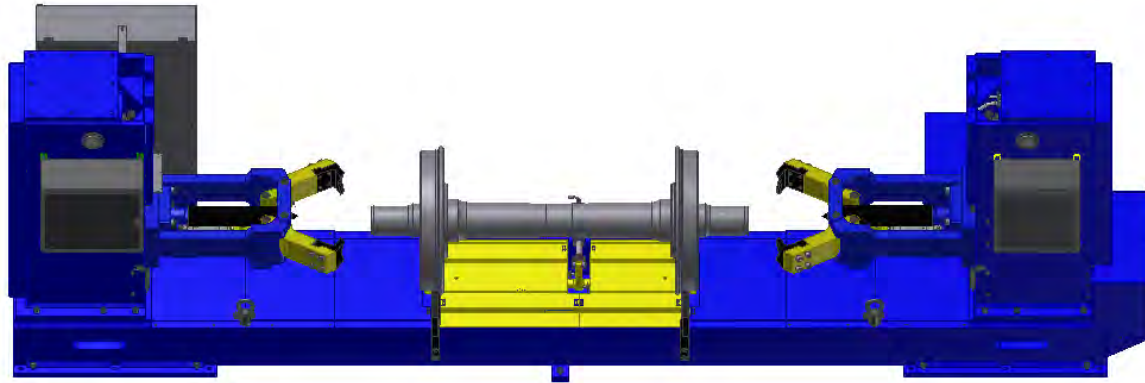
Simmons BDP-070 Bearing Demount Press Data Sheet



The **Simmons BDP-070 Bearing Demount Press** automatically removes bearings from the axle journals of a wheel set. First the height of the jaws is adjusted to the incoming wheel set diameter. The wheel sets then roll into the press from shop rails onto the carriage. The carriage supports the wheel set and moves it precisely to the left and right cylinder beams with a motor-driven rack and pinion. With the wheel set in the correct position, the jaws swing in behind the bearing backing ring where a hydraulic ram pushes a mandrel through the bearing. Once the bearing is removed from the wheel set, the jaws open and the bearing rests on the mandrel for removal. The process is then repeated for the other side before the wheel set is pushed through the machine onto shop rails.

The press can be supplied for fully automatic or semi-automatic operation, depending on the customer's production requirement. The removed bearings can be handled in a number of ways. Optional equipment is available to manage the removed bearings either manually or automatically.





Machine Dimensions

Length	266 in.	6746 mm
Width	65 in.	1659 mm
Height	78 in.	1982 mm
Total Weight	20000 lbs.	9000 kg

General Specifications

Cycle Time	2 minutes load to unload	
Ram Stroke Press Stroke	17 in.	432 mm
Ram Extend Speed	105 in/min	2667 mm/min
Ram Retract Speed	155 in/min	3937 mm/min
Demounting Force	70 short tons	63.5 metric tons

Utility Requirements

Electrical Power	32 kW	
Hydraulic Reservoir	60 US gallons	227 liters

Wheel Set Dimensions

Maximum Wheel Diameter	42 in.	1067 mm
Minimum Wheel Diameter	28 in.	711 mm

Updated November 16, 2021