

RAMMERS



SOLUTIONS THAT LAST

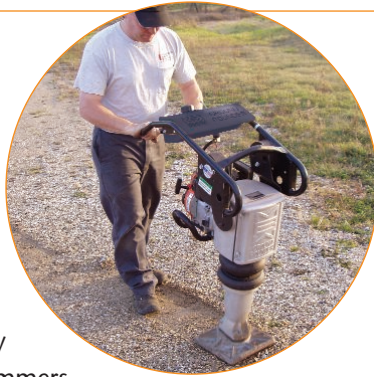


R421 & R440 SERIES

The R421 & R440 Series Rammers are ideally suited for the compaction of granular, mixed and cohesive soils in confined areas.

A mainstay in contractor and municipal fleets, the R421 & R440 offer highly productive percussion rammers

at less than 135 & 147 lbs. respectively. The contoured fuel tank provides the largest fuel capacity in its class and effectively baffles engine noise. Power is supplied by a Honda engine.



R440

- 4-cycle engine
- Elevated bellows placement for trench applications
- Polyethylene slide bearings provide minimal internal wear
- 11" high density, ductile cast iron tamping shoe
- 4" and 6" trench shoes available for the R420



R421HC

SPECIFICATIONS	R421HL	R421HC	R440H
Shoe Size	11 x 13 in (25 x 33 cm)	11 x 13 in (28 x 33 cm)	11 x 13 in (28 x 33 cm)
Operating Weight	141 lb (64 kg)	135 lb (61 kg)	147 lb (67 kg)
Engine Option	Honda GX100 6.0 cu/in (98 cm ³)	Honda GX100 6.0 cu/in (98 cm ³)	Honda GX100 6.0 cu/in (98 cm ³)
Travel Speed	Up to 55 ft/min (16 m/min)	Up to 55 ft/min (16 m/min)	Up to 55 ft/min (16 m/min)
Compaction Depth*	Up to 18 in (45 cm)	Up to 18 in (45 cm)	Up to 18 in (45 cm)

Percussion rate of up to 750 blow/min;
Fuel capacity of 4.6 qt (4.3 l); Engine 3600 rpm

() Metric Measurements.
Specifications subject to change without notice.

* Clean sand, optimum moisture. MBW recommends that lifts not exceed 12" of granular soil or 9" cohesive soil.

RAMMER FEATURES

The secret to our success...

MBW achieves unmatched durability by using high-density non-metallic slide bearings and spring separators. These components last up to 6 times longer than their metal counterparts, create less friction and heat, preserve lubricant integrity, and produce less internal load for the engine to overcome. Compression springs made of stress relieved, chrome-silicon alloy steel and a percussion housing of lightweight, durable aluminum alloy provide the strength for all MBW rammers.



R421 Series

Optional 4" and 6" trench shoes available as well as a 6" extension for deeper trench application. The unique shoe design keeps rammer on surface of lift.



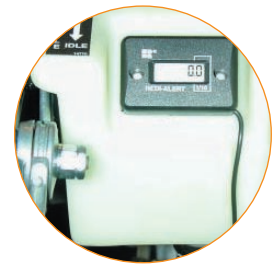
Hand/Arm Vibration

MBW is committed to reducing hand/arm vibration on its entire range of rammers. We have made significant progress without cutting back on rammer compaction performance. Hand/arm vibration levels have decreased between 25 & 60% across the range.



Smart Rammer

The integral tachometer/hour meter ensures that the rammer is operating at maximum capacity. It also informs service personnel of proper maintenance intervals. Optional on the R421 and R440, standard on the R480.



SMART RAMMER SERIES

The Smartest Rammers in the industry, this MBW line is equipped with integral tachometers and hour meters that indicate when maximum operational performance is being reached and when maintenance intervals are needed. The result is higher productivity and increased service life. Weighing between 159-169 lbs. (72-77 kg), **Smart Rammers** produce compaction depths to 24 inches (61 cm)*.

Models R480R and R481R are recommended for altitude above 4000 ft.



Smart Rammers are available with a choice of two engines which provide sure starts and long-term low maintenance.

SPECIFICATIONS	R480R	R480H	R481R	R481H
Shoe Size	11 x 13 in (28 x 33 cm)	11 x 13 in (28 x 33 cm)	13 x 15 in (33 x 38 cm)	13 x 15 in (33 x 38 cm)
Operating Weight	166 lb (75 kg)	159 lb (72 kg)	169 lb (77 kg)	162 lb (23 kg)
Engine Option	Robin EH12	Honda GX100 6.0 cu/in (98 cm ³)	Robin EH12	Honda GX100 6.0 cu/in (98 cm ³)
Compaction Area	3300 sqft (307 sqm)	3300 sqft (307 sqm)	3900 sqft (362 sqm)	3900 sqft (362 sqm)
Travel Speed	60 ft/min (18.3 m/min)	60 ft/min (18.3 m/min)	60 ft/min (18.3 m/min)	60 ft/min (18.3 m/min)
Compaction Depth	up to 24 in (61 cm)	up to 24 in (61 cm)	up to 24 in (61 cm)	up to 24 in (61 cm)

Percussion rate of up to 650 blow/min;
Fuel capacity of 4.6 qt (4.3 l); Engine 3600 rpm
() Metric Measurements. Specifications subject to change without notice.

* Clean sand, optimum moisture. MBW recommends that lifts not exceed 12" of granular soil or 9" cohesive soil.

RAMMER SPECIFICATIONS

- Published lift capacity reflects ideal conditions (clean sand, optimum moisture). Good compaction practice restricts lift depth to a maximum of 12 inches for granular soils, 6 to 9 inches for cohesive soils.
- Published travel speeds generally indicate operation under ideal conditions.

MBW urges interested parties to see "Beware of Compactor Specifications" at WWW.MBW.COM

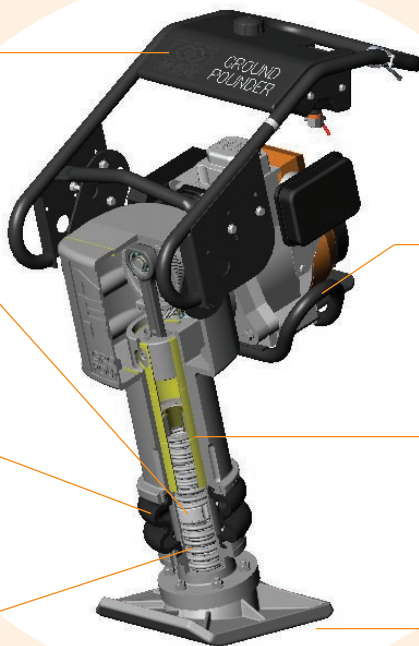
- Area of compaction calculations factor in lift and travel expectations that may not be realistic for all conditions of compaction.
- There is no universally accepted formula or method for determining rammer "compaction force". Manufacturers employ their own formulas/methods to develop "compaction force" specifications thereby rendering comparison between rammers an exercise in futility.

1/8" Thick Polyethylene
fuel tank to resist punctures and abrasions and has largest capacity in the industry

Non-Metallic Spring Separator
to further reduce friction

4 Ply Vulcanized Rubber Bellows
reinforced with stranded steel cable

Compression Springs
manufactured of highest quality, stress relieved alloy steel. Springs do not bottom out or require rubber stoppers like competitive models



Precision Balanced Handle
with contoured fuel tank

Impact Resistant Engine Guard
protects against damage

High Density Non-Metallic Slide Bearings
reduce internal friction to the lowest levels in the industry

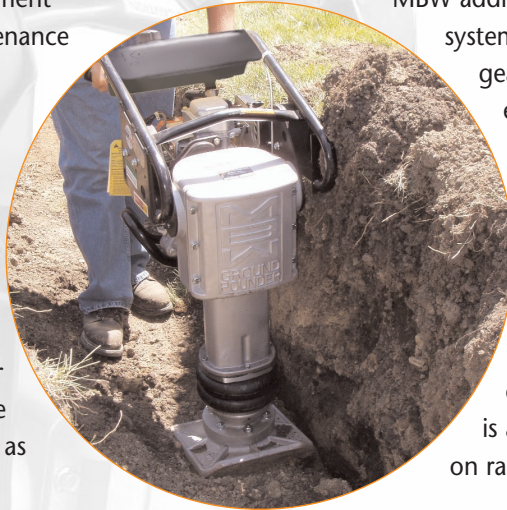
Ductile Cast Iron
MBW shoes do not absorb impact like competitive models but transfer all force to soil. R480 is available in both cast iron and aluminum



1-800-678-5237

HIGH PERFORMANCE PERCUSSION RAMMERS

MBW approaches rammer development aggressively. We attack high maintenance issues usually associated with this product type. The MBW delivery system is the lowest friction, heat, and maintenance percussion unit in the industry. Less friction, heat, and wear in the delivery system translates into lower continuous horsepower demands to keep the rammer running. That means fewer engine problems and longer engine life. Bellows failures are reduced by as much as 90% with MBW's 4-ply, steel reinforced, vulcanized rubber bellows.



MBW addresses maintenance issues on throttle systems, tamping shoes, fuel tanks, gearboxes, shock mounts, proper engine rpm, and we answer the question as to when your service staff should perform routine maintenance.

While MBW rammers are decidedly high performance, the thing that truly separates our rammers from the competition is an unrelenting, aggressive attack on rammer problems.

RATING RAMMER ENGINES

In January 2004 MBW eliminated 2-cycle engines on its rammers. The change was the direct result of ever more stringent EPA regulations and a growing user preference for 4-cycle engines. Indeed, the trend toward 4-cycles has been so pronounced that the world's largest producer of 2-cycle engines for the rammer application, Subaru-Robin, discontinued 2-cycle engine production in early 2004.

MBW offers both Honda and Robin 4-cycles. The Honda GX100 is used on both the R420H and R480H. Please note that when altitude exceeds 4000 feet, MBW recommends Robin model EH12 on R480.



**HONDA GX100
4-CYCLE**



**ROBIN EH12
4-CYCLE**

The Robin EH12 is a 4 hp engine. The EH12 is used only on model R480. MBW has subjected all of the above engines to rigorous endurance testing and found them a good match for the rammer application. We do, however, suggest that buyers pay close attention to matching engines (horsepower) to the altitude in which they are anticipated to operate.



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