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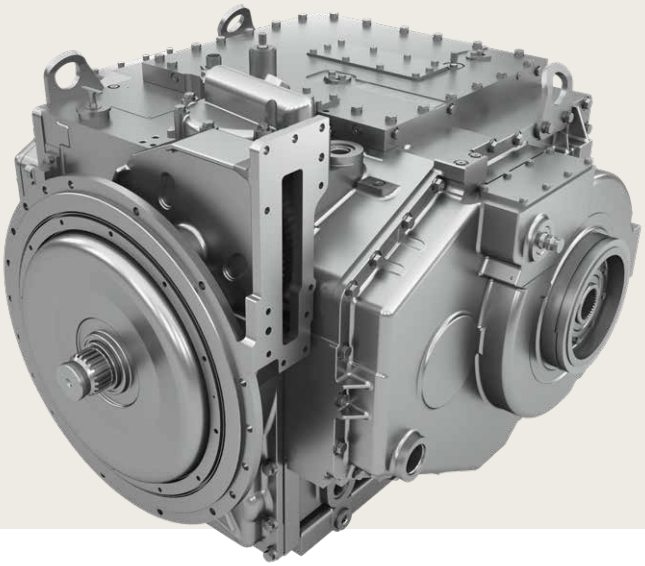
RENK

MILITARY VEHICLES ENGINES

HMPT 800 & 1000

/ 800 HP & 1000 HP TRANSMISSIONS



The fully automatic, continuously variable hydromechanical steering transmission was developed and designed by RENK America for the Bradley Fighting Vehicle. The highly successful transmission remains in continuous production at RENK America, the largest supplier of U.S. combat vehicle transmissions.

Proven Reliability

Designed as a modular unit for simplified maintainability, the HMPT has established a superior reputation for performance and reliability. The advanced, low-profile, high power density design emphasizes packaging, anticipating the tight constraints of future vehicle power trains. The compact, lightweight design has dramatically higher power/weight ratio than competitors.

The 800 hp transmission fits in the existing envelope of the HMPT 500 Series. This transmission has been in production in the United States since 2014 for the Bradley Fighting Vehicle Systems (BFVS), Paladin Integrated Management (PIM), Armored Multi-Purpose Vehicle (AMPV) and Multiple Launch Rocket System (MLRS) and in Korea for the K21 since 2009. The HMPT 800 delivers significantly increased power and allows the maneuverability and agility that will be needed for system survivability on the battlefields of the future.

Wolverine Upgrade

RENK America's most recent upgrade to the HMPT is known as Project Wolverine. Wolverine provides 1,000 hp mobility and retains the same interfaces as the HMPT 800. The upgrade improves dash speed, efficiency, and reliability at 50 Tons. Wolverine adds Drive-by-Wire and High Speed Reverse to meet the requirements of new generation vehicles, while still maintaining the cost and logistics benefits of the HMPT in the current fleet.

Armored Multi-Purpose Vehicle (AMPV).
BAE Systems © 2019

Bradley Fighting Vehicle Systems (BFVS).
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M109A7 Paladin Integrated Management (PIM).
Amanda Swihart CPT, FA 3-16 FA, 2ABCT, 1CD
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HMPT 800 & 1000

Features

- Meets U.S. Army requirements
- TDP 100% U.S. government owned
- Strong Depot partnership in place
- In Full-Rate Production
- Made in the U.S.A.
- CVT for superior handling and fuel economy
- Smallest 800 hp transmission in the world
- Highest reliability in the ABCT
- Common across Armored Brigade Combat Teams (ABCTs) – Bradley, PIM, AMPV, MLRS
- Upgrade available for 1000 hp and 50 ton

Technical Info (dependent on variant)

	HMPT 800 SERIES UP TO 45-TON VEHICLE APPLICATION	**HMPT 1000 'WOLVERINE'** UP TO 50-TON VEHICLE APPLICATION
Input Rating		
Power	800 net hp (597 kW)	1,000 net hp (746 kW)
Speed	2,300 – 4,250 rpm (modification option for other speeds)	2,300 – 4,250 rpm (modification option for other speeds)
Output Rating		
Maximum Torque	13,100 lb.-ft. (17,760 Nm)	16,300 lb.-ft. (22,100 Nm)
Maximum Forward Ratio	1.26 – 1.50:1	1.26 – 1.50:1
Maximum Reverse Ratio	0.20:1	1.26 – 1.50:1
Steering Torque Speed Side	8,000 lb.-ft. (10,850 Nm)	10,500 lb.-ft. (14,236 Nm)
Weight		
Dry	2,050 lb. (980 kg)	2,275 lb. (1,032 kg)
Oil	100 lb. (45 kg)	100 lb. (45 kg)
Hydraulic Fluid		
MIL-L-2104	SAE Grade 15W40, above 0° F (-18° C)	SAE Grade 15W40, above 0° F (-18° C)
MIL-L-46167	0° F to -65° F (-18° C to -54° C)	0° F to -65° F (-18° C to -54° C)
General		
Volume	13.1 ft.3 (.37m3)	13.3 ft.3 (.38m3)
Power Density	61 hp/ft.3 (.1,612 kW/m3)	75 hp/ft.3 (.1,979 kW/m3)
Power Takeoff	300 hp, constant running (Integrated Starter Generator option)	300 hp, constant running (Integrated Starter Generator option)
Service and Parking Brakes	Mechanically actuated, oil-cooled multiple disc	Same type as HMPT 800, upgraded for 50 Ton
Steering	Smooth automotive-like steering without rating changes. Mechanically activated with true pivot (electrically activated option)	Smooth automotive-like steering without rating changes. Mechanically activated with true pivot (electrically activated option)
Input Disconnect	Hydraulically actuated clutch to disconnect power train for reduced cold weather cranking torque and improved fuel economy at idle	Hydraulically actuated clutch to disconnect power train for reduced cold weather cranking torque and improved fuel economy at idle
Control – Transmission Electronic Controller (TEC)	The TEC automatically adjusts the transmission ratio to operate at most efficient engine speed based on throttle position and vehicle load	Same control scheme as HMPT 800. Upgraded for full drive by wire capability and advanced diagnostics
Attitude	70% fore and aft slope, 45% side slope	70% fore and aft slope, 45% side slope

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