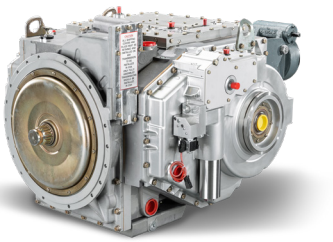
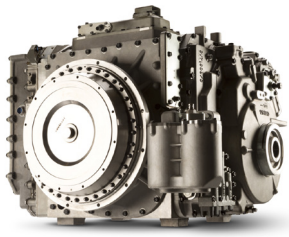
RENK HMPT 800 TRANSMISSION





ALLISON 3040 MX TRANSMISSION

RENK HMPT 800 TRANSMISSION		ALLISON 3040 MX TRANSMISSION
The HMPT is an infinitely variable, hydromechanical, three range, steering transmission with the primary function of transmitting engine power for vehicle propulsion and steering. The transmission combines the precise, infinitely variable speed ratio control of a hydrostatic transmission with the high efficiency of a mechanical drive.	**OVERVIEW**	A variant of the X300, the Allison 3040MX is a hydrokinetic, dual torque converter, automatic transmission with 4 forward and 2 reverse gears.
In series production with long term U.S. Government contracts in place	**PRODUCTION / DESIGN STATUS**	Not in production - Design complete
U.S. - BFV, AMPV, MLRS, M109A7 Korea - K30, K21 and Variants Singapore - Bionix, Primus	**FIELDED APPLICATIONS AS OF MAR 2023**	None
42 Metric Ton	**VEHICLE CAPACITY (LBS)**	**45** Metric Ton
Net Power (hp): **600 kW**	**INPUT RATING**	Net Power (hp): **600 kW**
Max Speed (rpm): **2,800**		Max Speed (rpm): **2,800**
Max Forward Speed Ratio: **1.29**	**OUTPUT RATING**	Max Forward Speed Ratio: **1**
Max Reverse Speed Ratio: **0.21**		Max Reverse Speed Ratio: **0.43**
Rated Output Torque (ft-lbs): **17,800 N-m**		Rated Output Torque (ft-lbs): **16,200 N-m**
Rated Steering Torque (ft-lbs): **10,900 N-m**		Rated Steering Torque (ft-lbs): **No data available**
Type: **Integrated, oil cooled**	**BRAKE CAPACITY**	Type: **Integrated, oil cooled**
Static Brake Torque (Total) (ft-lbs): **14,640**		Static Brake Torque (Total) (ft-lbs): **No data available**
Nominal Weight (Dry) : **2125 lb, 960 kg**	**PHYSICAL CHARACTERISTICS**	Nominal Weight (Dry) : **1000 kg**
Overall Transmission Volume (ft3): **0.37 m^3**		Overall Transmission Volume (ft3): **0.45 m^3**
Power Density: **61.1**		Power Density: **51.0**
Mechanical PTO Max Power (hp): **230 kW**	**PTO OPTIONS**	Mechanical PTO Max Power (hp): **Capacity Unknown**
ISG Electrical Power Option (kW / hp): **160 / 215**		ISG Electrical Power Option (kW / hp): **None**

HMPT CHARACTERISTICS	OPERATIONAL IMPACT
Small Size	Easier to integrate into the vehicle and less volume under armor
Low Weight	Vehicle weight budget may be applied to other areas, (armor or fuel)
Robust Design	Requires no energy absorbing clutches or torque converters with smaller parts count
Modular Design	For ease of maintenance and rapid repair
Integrated Dynamic Braking	Long life, oil-cooled friction plates with large thermal mass
Integrated Power Take Off	Efficient power available to drive auxiliary loads / marine propulsion
Precise Steering	Maximum steering torque is available in all ratios for ease of driving
Continuously Variable Transmission	Produces high torque at low very slow speed for stable vehicle control
Continuously Variable Transmission	Allows engine to operate at its most efficient points, saving fuel, reducing smoke/noise, and optimizing system cooling demands (XM+engine)
Continuously Variable Transmission	Synchronous shifts for a smoother ride, less heat & torque shock resulting in longer life
True Pivot Capability	Spins within its length for maximum maneuverability in confined environments
Automatic, Electronically Controlled	Determines speed ratio and engine input for reliability and flexibility
Tailorable Controls	Optimize mobility performance with engines such as system efficiency, optimized fuel economy, system heat rejection, powerpack protections, dash speed, combat override, etc.
Pure Mechanical Drive at High Speeds	Provides greatest efficiency during long road marches
Disconnect Clutch	Allows disconnection from engine to prevent unsafe situations, low cranking torque, and optimized efficiency during idle situations (reduced fuel usage)
Off Power Handling	Allows safe steering and braking of the vehicle in the event of a power loss or engine stall
High Speed Towing	High speed towing without time-consuming and dangerous disconnect of the drive shafts
High RAM-D Characteristics	Refined and improved over decades of development and thousands of units produced
HMPT FEATURES	**GROWTH CAPABILITY**
Capacity Growth	Vehicles available 2025
Drive By Wire	Requirements available 2025
High Speed Reverse	Reverse available 2Q24
Improved Efficiency	RENK funded development for higher dash speed and fuel economy in process
Integrated Starter Generator	Optional 160kW motor/generator for hybrid propulsion or extreme power requirements
Emergency Gear	Inoperable, available 2Q24
Tow Start	For operations flexibility available 2Q24
HMPT STATUS	**BENEFITS TO HMPT USER**
High Volume, Long Term Production	Economies of scale reduce costs and provide greatest availability
Standard Equipment in U.S. Army Medium Fleet	Periodic improvement funding ensures long term sustainability and obsolescence avoidance
Fully Qualified, Mature Product	Proven in over 10k vehicles reduces technical and program risk in new installs
U.S. Origin Design	Allows export free from restriction to most Countries
Manufacturing License Availability	Available to meet Local Production requirements, lower production costs and increased sustainability
Logistics Support	Spares, manuals, special tools/equipment, training and technical support are all available
RENK Group Supply	Trusted partner to Allies Worldwide for defense equipment and services