

Innovative Power Transmission



ESM 350

**Modern Powerpacks for T-72/T-90 tanks
new production and upgrade programs**

Powerpack ESM350 for T-72 / T-90 and derivatives

New production and upgrade programs
Up to 880 kW / 1,200 hp

Superior mobility by the addition of an automatic powershift transmission and increased engine power (up to 1,200 hp)

- Top speed of 70 km/h and 23 km/h reverse, start-up on 60% slope for a 50 tons vehicle
- Increased vehicle speeds even with inexperienced drivers, especially in difficult terrain
- More intelligent use of engine power and elimination of driver error thanks to the electronic transmission control
- Increased operating range, reduced fuel consumption, reduced heat emissions and cooling needs

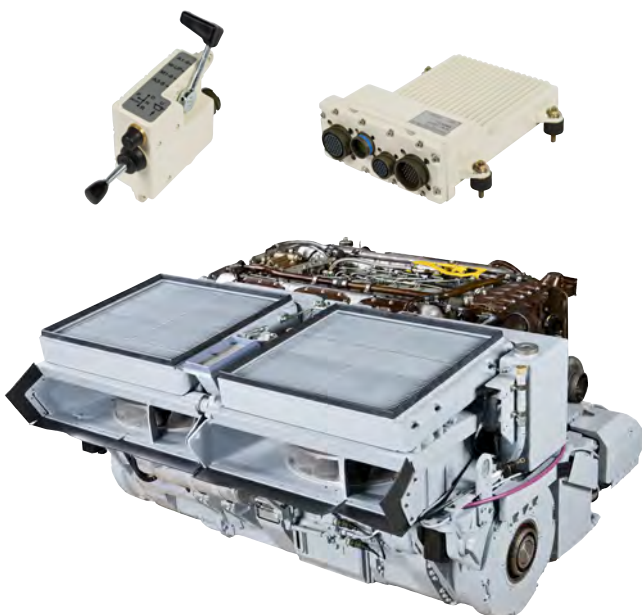
Enhanced operation in hot climatic conditions due to the high performance cooling system

- Drastically increased cooling air flow compared to conventional design
- Automatically and permanently optimized fan speed adapted to cooling needs to minimize power losses
- Increased engine lifetime due to a more stable engine coolant temperature
- Availability of full engine power even in extreme hot conditions
- Option to switch off the cooling fans for special operations such as fording



Various engine options up to 1,200 hp

- Derivatives of original engine
- French
- Italian
- Polish
- Russian
- Other



Transmission characteristics

- Fully automatic power shifting – 8 speed forward – 3 speed reverse with manual override
- Mechanical emergency gear shift system allowing vehicle drive without power supply
- Infinitely variable hydrostatic steering system actuated by a steering wheel
- Pivot on the spot feature
- Integrated multi-disk service and parking brake
- PTO for existing vehicle power units such as dynamo-starter, air compressor etc...
- PTO for fan drive with full digital speed control
- Optional 200 kW PTO for special applications
- Engine tow-start capability
- BITE and extended diagnostic plug for quick and easy failure analysis
- Electronic control unit with CAN bus

Superior mobility especially in hot and difficult conditions

Excellent fleet availability, improved combat effectiveness with limited financial investment

Complete vehicle integration work realized by RENK France

- Easy integration process
- No changes to hull, only minor internal modifications
- No affect on the gun depression angle
- Improved mine protection, no more maintenance hatches necessary below vehicle

Improved vehicle availability due to the powerpack concept

- Integration of engine, transmission and cooling system in one single and very compact block
- Better reliability of the components compared to conventional equipment
- Exchange of the powerpack for maintenance purposes in less than one hour, even in field conditions
- Vehicle downtime in case of repair limited to one hour compared to several days with the existing vehicles

Advantages for fleet availability, logistics and total operating cost

- Better fleet availability resulting from high equipment reliability and quick powerpack exchange capability
- Simplified maintenance and spare parts logistics
- Focus on handling complete powerpacks for front line logistics instead of thousands of individual spare-parts and separate repair jobs
- Standardisation of powerpacks across various vehicles types like T-72, T-90 and their derivatives (AEV, ARV or AVLB)



One standard powerpack for all your vehicles (MBT, ARV, AEV, AVLB)

- Suitable for

MBTs	T-72, T-90, PT-91, TR-125, M-84, etc ...
ARVs	BREM, WZT-3, etc...
AEVs	MID, IMR, etc...
AVLBs	BLT-T72, PMC-90, MTU-72, MTU-90, etc...
- In serial production for PT91-M Poland/Malaysia, WZT-4, MID-M and PMC-Leguan

RENK France, your partner for mobility upgrade programs



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