

HARTZELL ENGINE TECHNOLOGIES STARTERS

X-DRIVE STARTERS FROM HARTZELL ENGINE TECHNOLOGIES





Only 7.6 lbs.
Lightest Starter Available

- Weight 7.6 lbs.
- Perfect spin » Sweet spot engine starts, doesn't drain your power like other starters
- Start efficiency » Lowest inrush & operating current draw in the industry
- No mechanical Bendix
- Electromechanical solid-state solenoid
- Powerful permanent magnet » Performance
- Easy installation » Left or right mount
- FAA/PMA approved
- 2 Year Unlimited Hours Warranty *

The X-Drive aircraft starter is one of the most popular models because of its awesome power and compact size. Targeted toward Lycoming users that want one of the industries lightest but most powerful starter on the market, the X-Drive delivers the same high torque, low current draw, and superior duty cycle that had previously been available only to E-Drive customers. The introduction of the X-Drive starter allows Hartzell Engine Technologies to service virtually all OEM and aftermarket Lycoming applications.* Kick-backs not covered

APPLICATION DATA GUIDE

 <p>FIGURE 1</p>	Solenoid to the Left: (X-Drive series: see figure 1)	
	SRZ-9021 (12 Volt - 149 tooth)	SRZ-9022 (12 Volt - 122 tooth)
 <p>FIGURE 2</p>	Solenoid to the Right: (X-Drive series: see figure 2)	
	SRZ-9031 (12 Volt - 149 tooth)	SRZ-9032 (12 Volt - 122 tooth)
	SRB-9031 (24 Volt - 149 tooth)	SRB-9032 (24 Volt - 122 tooth)
	(12/14 pitch works on a 149 tooth ring gear & 10/12 pitch works on a 122 tooth ring gear.)	

Description	Part No	Price
Hartzell X-Drive Starter SRB-9032	08-06274	\$618.00

CROSS-REFERENCE CHART

Sky-Tec P/N	X-Drive P/N	Sky-Tec P/N	X-Drive P/N
122-12LS	SRZ-9022	149-12PM	SRZ-9031
122-12PM	SRZ-9032	149-24HT	SRB-9021
122-24LS	SRB-9022	149-24LS	SRB-9021
122-24PM	SRB-9032	149-24PM	SRB-9031
149-12LS	SRZ-9021		


HARTZELL ENGINE TECHNOLOGIES E-DRIVE STARTERS



- Lightweight neodymium permanent magnet motor
- In line design
- Self-resetting torque limiter for kickback protection
- Internal solenoid engagement
- Drive pinion supported by bearings on both ends


E-Drive aircraft starters offer industry-leading, robust, high duty cycle starters in a lightweight package. By utilizing a powerful neodymium permanent motor driven through a self-resetting negative torque-sensing device, the E-Drives provides unparalleled kickback protection, preventing hours of down time and replacement costs. The E-Drive aircraft starter is solenoid engaged, eliminating the need for a Bendix drive. Its low current draw helps maintain good battery life.





- High Performance Armature
- Increased commutator bar length
- Thin laminations
- High quality magnetic alloy
- 12 & 24 volt winding configuration
- Redesigned Brush Holder
- Metal construction for heat sinking
- Offset brush position for increased brush contact area

- Robust spring design
- High performance field housing
- Rare earth neodymium magnets
- Small package
- Stronger flux field
- Improved temperature stability
- 9.5 lbs.



- Starter system designed for maximum performance.
- Drive assembly integrates proprietary pinion gear, clutch, torque limiter, and actuator in one complete module.
- Available for coarse and fine pitch ring gears, clockwise and counterclockwise rotation.
- No periodic service or recurring maintenance required.
- 9.5 lbs.

APPLICATION CHART			
E-Drive Number - Approved Alternative for the following:			
ERB-8011	ERB-8012	ERZ-8011	ERZ-8012
MHB-4001	MHB-4015	MZ-4205	MZ-4204
MHB-4002	MHB-4002	MZ-4206	MZ-6204
MHB-4003	MHB-6001	MZ-4207	
MHB-4005		MZ-4217	
MHB-4007		MZ-4218	
MHB-4010		MZ-4219	
MHB-4012		MZ-4221	
MHB-4013		MZ-4224	
MHB-4014		MZ-4222	
MHB-4016		MZ-4223	
MHB-4017		MZ-4225	
MHB-4019		MZ-6222	
MHB-4020		MZ-6224	

Model	Description	Lycoming Engine	Replaces	Part No.	Price
ERZ-8011	Clockwise rotation, 12 Volt, 149 tooth - 12/14 Pitch Gear	235, 290, 320, 340, 360, 540	Lycoming 31A21198, Sky-Tec 149-NL, 149-12PM, LS, Lamar PM1201, PM1204, MZ-4205 thru -4207, -4217 thru -4219, -4221 thru -4226, -6222, -6224	07-01102	\$928.00
ERZ-8012	Clockwise rotation, 12 Volt, 122 tooth - 12/12 Pitch Gear	235, 290, 320, 360, 540	Lycoming 31A21210, Sky-Tec 122-NL, 122-12PM, LS, Lamar PM1203, MZ-4204, -6204	07-01103	\$1,080.00
ERB-8011	Clockwise rotation, 24 Volt, 149 tooth - 12/14 Pitch Gear	235, 320, 340, 360, 540	Lycoming 31B21064, Sky-Tec 149-NL, 149-NL/ec, 149-24, Lamar PM2401, MHB-4010, -4016 thru -4020, -6014, -6016, -6018	07-01099	\$949.00
ERB-8012	Clockwise rotation, 24 Volt, 122 tooth - 10/12 Pitch Gear	235, 290, 320, 340, 360, 540	Lycoming 31B21211, Sky-Tec 122-NL/ec, 122-24PM, LS, Lamar PM2403, MHB-4015, -6001, MMU-4001, -6001, Delco 1109669	07-01101	\$1,076.00
ELB-8011*	Reverse/Counter rotation, 24 Volt, 12/14 Pitch Gear	LTIO-540, LTIGO-540	Lycoming 14214, Sky-Tec 149-NLR/ec*, Lamar PM2404, MHB-4014, MHB-6014	07-02665	\$984.00
ELZ-8021*	Reverse/Counter rotation, 12 Volt, 12/14 Pitch Gear	LIO-320, LO-360, LTO-360, LIO-360	Lycoming 14215, Sky-Tec 149-NLR, Lamar PM1204, MZ-4220, MZ-6220	07-02666	\$1,091.00