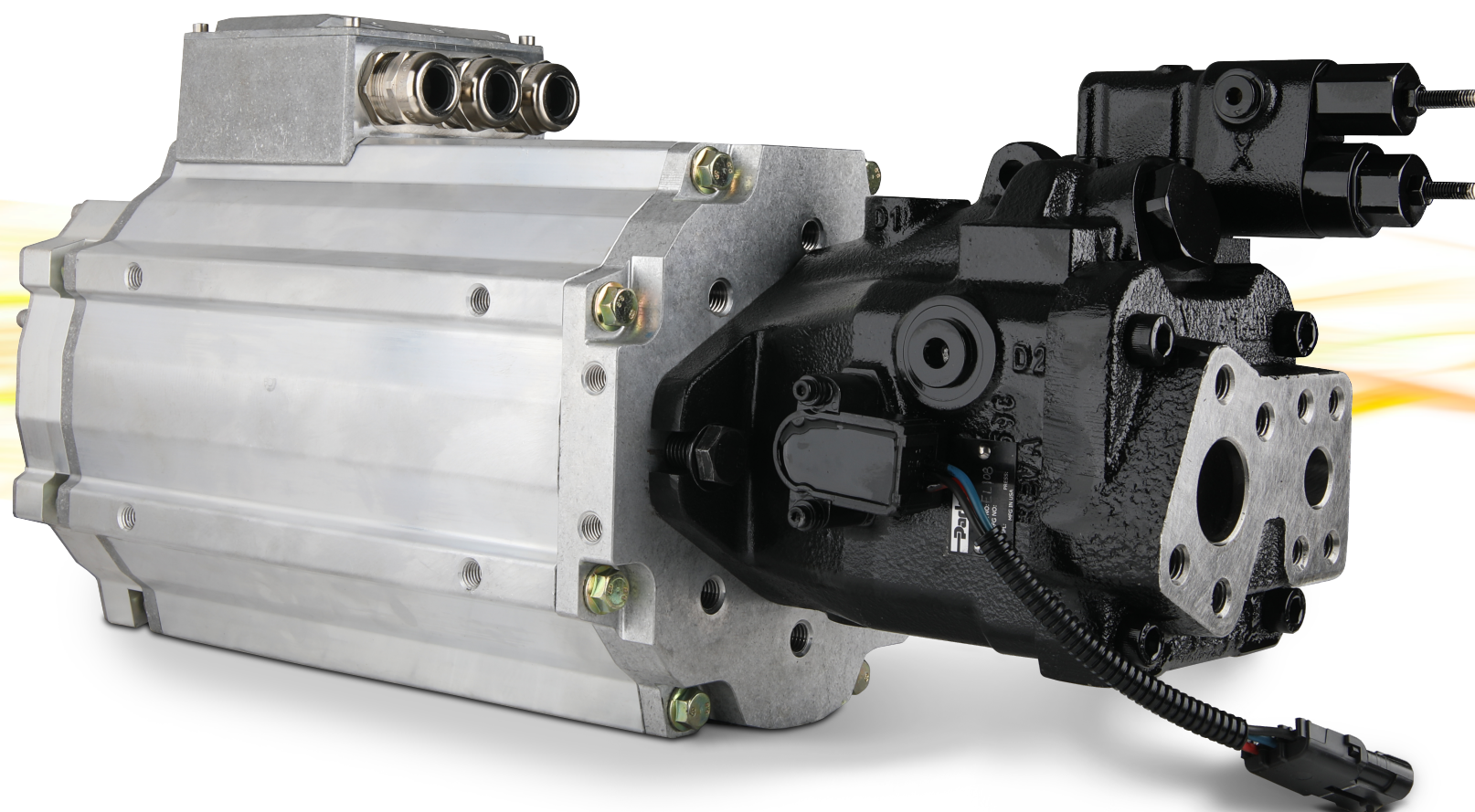
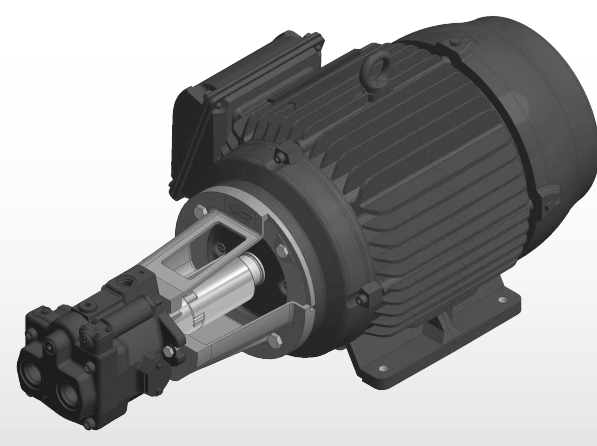


COMPARISON CHART



As the mobile application market continues to electrify machines, many manufacturers are moving away from the traditional methods of connecting the electric motor to the hydraulic pump and adopting a direct male-to-female spline connection. Despite its many advantages, this method consists of direct metal-to-metal contact, so choosing the right lubrication is key to long-term performance and shaft life.

TRADITIONAL VS. SPLINE CONNECTION

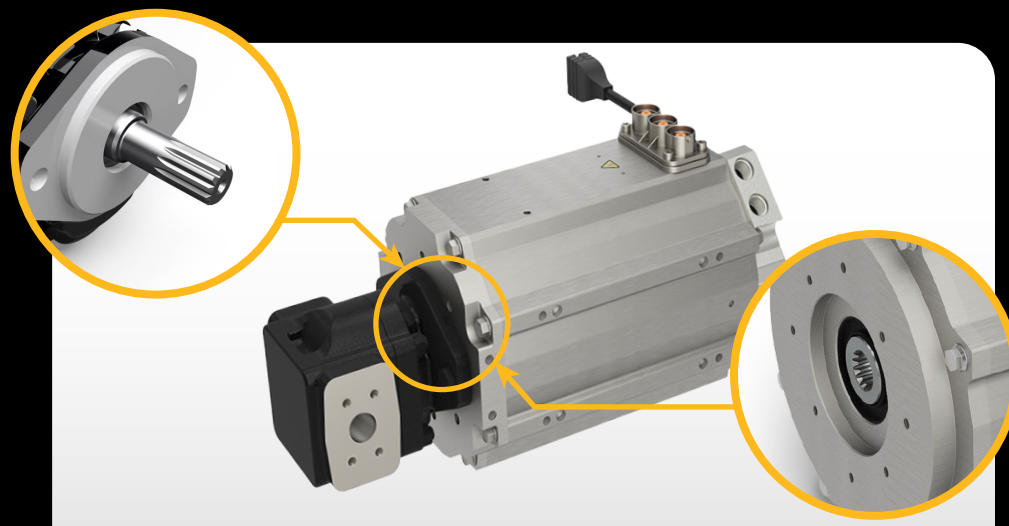


Coupling

A once popular method involves connecting the motor and pump via a coupling, with the mounting flanges connected with a bellhousing.

- ✗ Requires additional components
- ✗ Increases cost
- ✗ Poor dynamic response to speed changes

VS



Spline

The electric motor utilizes a female spline, while the pump with a male shaft directly “plugs into” the motor’s female shaft.

- ✓ Direct connection vs. additional components
- ✓ Reduces length, weight, and cost
- ✓ Promotes tighter operational control
- ⚠ Lubrication is required to help mitigate fretting corrosion

SPLINE LUBRICATION TECHNOLOGIES

To avoid fretting corrosion

GOOD	BETTER	BEST
Greased Spline	Wet Spline	Parker's Maintenance-Free Spline (Patented)
		
A greased lube closed connection	Oil-bath lubed open spline connection	Oil flow created to actively lubricate the spline connection
		
Grease is manually applied to spline connection	Shaft splines are partially or fully submerged in a bath of hydraulic oil	Case oil is pulled through the shaft by centrifugal forces created in the spinning shafts
		
<ul style="list-style-type: none">Requires re-greasingMaintenance interval dependent on the application and duty cycle	<ul style="list-style-type: none">Maintenance may be requiredFrequency is dependent on application	<ul style="list-style-type: none">Maintenance-free
		
Horizontal & Vertical	Horizontal	Horizontal & Vertical
<ul style="list-style-type: none">Simple solution for many applicationsGrease breaks down over time; higher temperatures increase degradationIn vertical orientation, a pocket of air may develop inside the pump reducing shaft seal life	<ul style="list-style-type: none">Robust for many applicationsIn some cases, the absence of positive flow can prevent old oil from being flushed out with fresh oil	<ul style="list-style-type: none">Eliminates the risk of fretting corrosion in all applicationsThis positive flow solution ensures that the splines are always lubricated with fresh case oil, regardless of mounting orientation, optimizing the reliability

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