COOLING PERFORMANCE

HAYDEN® AUTOMOTIVE

Electronic Fan Clutch Buyer's Guide

The Leader in Automotive Cooling

For more than 60 years, Hayden® Automotive has been the leader in performance cooling products for engine, transmission and power steering oil cooling. As a certified OES supplier, Hayden® continues to add innovative products to meet the needs of its customers while investing in continuous improvements and maintaining superior quality standards. This includes being the first aftermarket manufacturer of electronic fan clutches with industry leading coverage and world class performance.

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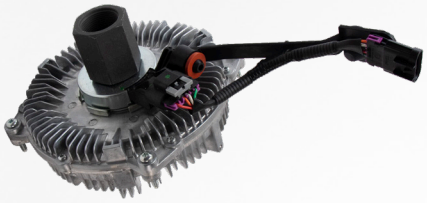
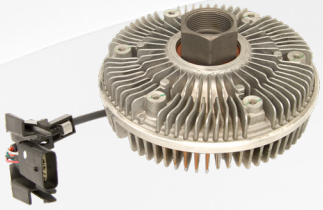
Part Number	Buyer's Guide*	
3200	Buick Rainier (07-04); Chevy SSR (06-03), Trailblazer (09-02); GMC Envoy (09-02); Isuzu Ascender (07-03); Oldsmobile Bravada (04-02); Saab 9-7 (07-05)	
3202	Chevrolet Silverado (14-11); GMC Sierra (14-11)	
3203	Chevrolet Silverado (16-15); GMC Sierra (16-15)	
3204	Chevrolet Silverado (20-17); GMC Sierra (19-17)	
3210	Chevrolet Colorado (21-16), Express Series Van (21-17); GMC Canyon (21-16), Savana (21-17)	
3221	GMC & Chevrolet Topkick & Kodiak (09-07)	
3222	Chevrolet Express Series (16-09); GMC Savana (16-09)	

*For complete application information, visit the ecatalog at haydenauto.com.

Part Number	Buyer's Guide*	
3240	Ford E Series Van (19-17), F Series Pickup (19-17)	
3241	Ford F Series Pickup (19-15)	
3242	Ford F250 (22-20); F350 (22-20)	
3243	Ford F250 (22-20); F350 (22-20)	
3251	Ford F Series Pickup (22-20)	
3260	Ford F150 (21-18)	
3261	Ford E Series Van (10-04), Excursion (05-03), F Series Pickup (07-03)	
3263	Ford Explorer/Sport/ Sport Trac (10-06); Mercury Mountaineer (10-06)	

COOLING PERFORMANCE

Part Number	Buyer's Guide*	
3264	Ford Expedition (08-07), F Series Pickup (08-07), Lobo (08-07); Lincoln Mark Light Truck (08-07), Navigator (08-07)	
3265	Ford F Series Pickup (10-08)	
3266	Ford Expedition (09), F Series Pickup (10-09), Lobo (10-09); Lincoln Navigator (09)	
3267	Ford F Series Pickup (14-11)	
3268	Ford F Series Pickup (16-11)	
3281	Dodge Pickup/Ram (04-03)	
3282	Dodge Pickup/Ram (10-04)	
3291	Dodge Pickup/Ram (13-10)	

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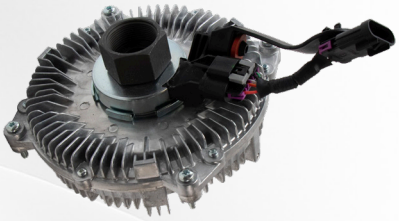
Part Number	Buyer's Guide*	
3292	Dodge Pickup/Ram (18-13)	
3330	Infiniti QX56 (13-11), QX80 (22-14); Nissan Armada (22-17), NV Series (21-17), Titan (22-16)	
3332	Nissan Titan XD (19-16)	
3300	Land Rover LR3 (09-05), Range Rover (09-06), Range Rover Sport (09-06)	
3301	Land Rover Range Rover (09-06), Range Rover Sport (09-06)	

Part Number	Buyer's Guide*	
3302	Land Rover Discovery (20-17), LR4 (16-14), Range Rover (20-10), Range Rover Sport (20-10), Range Rover Velar (18)	
3303	Land Rover Defender 110 (22-20), Defender 90 (22-20), LR4 (13-10), Range Rover (22-10), Range Rover Sport (22-10)	
8302	Mercedes Sprinter (21-10)	

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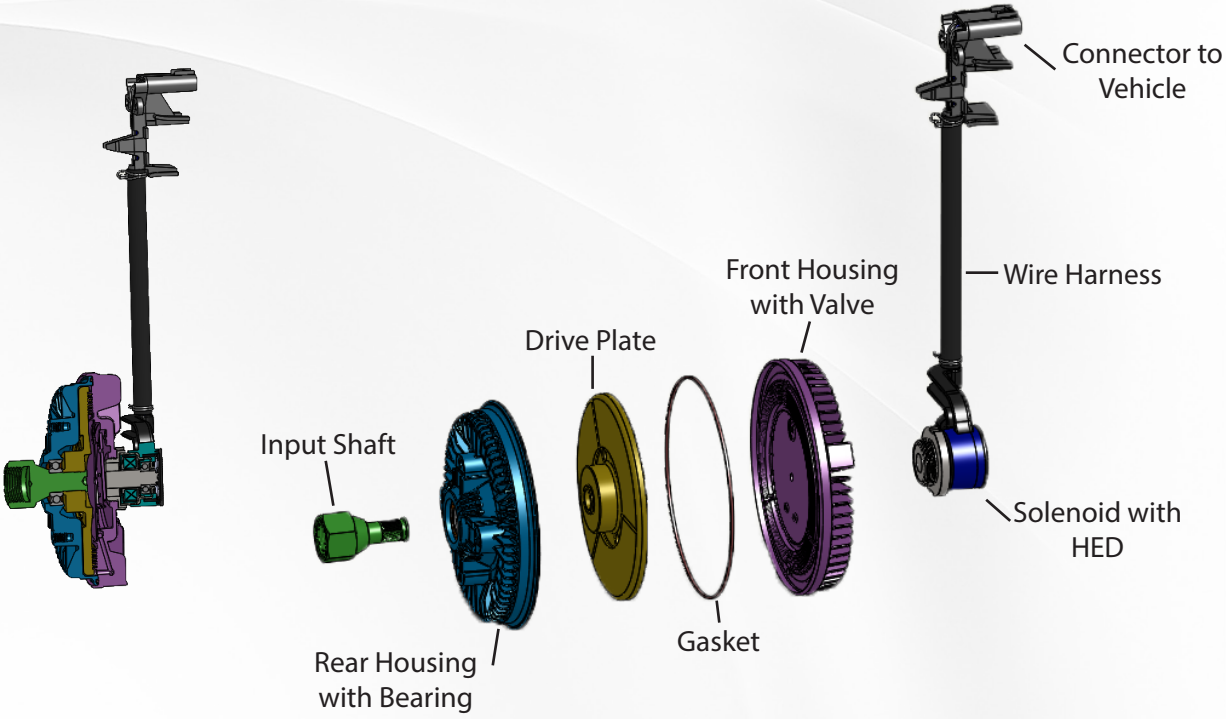
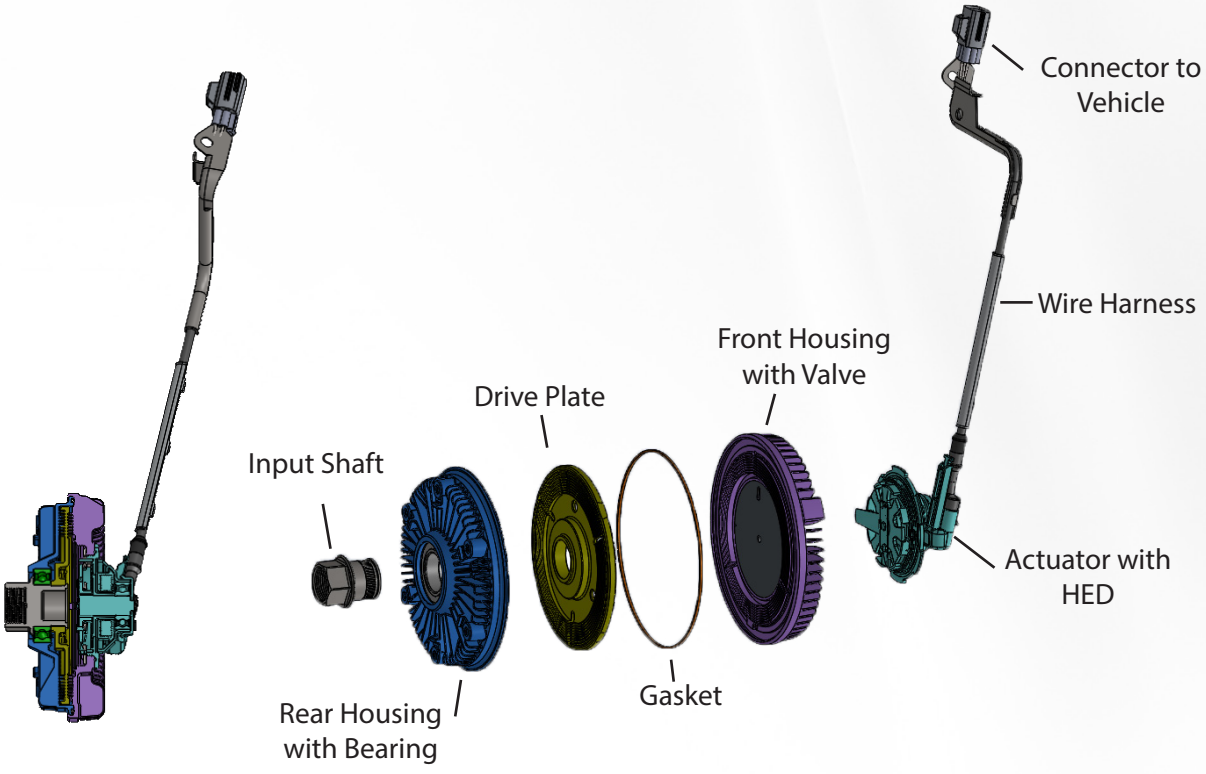
Anatomy of Electronic Fan Clutches

Linear Actuated Electronic Fan Clutch



Rotary Actuated Electronic Fan Clutch



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FAN CLUTCH TROUBLESHOOTING GUIDE

Hayden's engineering team has over 60 years of experience in the engineering and development of fan clutches. This expertise has enabled us to maintain several manufacturing certifications and to create consistent quality in every fan clutch we build. Fan clutches operate at different speeds and conditions and testing must be performed at every level of operation. Critical performance aspects of a fan clutch include engagement and disengagement temperatures, duty cycle speed, disengagement RPM, engagement RPM and torque. Hayden takes the time to measure each of these critical performance indicators for every O.E. fan clutch we design. This level of commitment delivers a part that will match O.E. performance in every facet. Below are some key factors that affect fan clutch performance and vehicle cooling.

Before replacing, check all of the following:

- Bent, cracked or missing fan blades
- O.E. fan blades in use (Hayden® fan clutches are designed to be used with the O.E. fan blade)
- Oil streaks, black marks or excessive dirt collection on the fan clutch as a sign of leaks
- Play in the fan clutch (no more than 1/4" forward/back at fan blade tip)
- Ensure all air dams are in place
- Fins of the condenser, radiator, oil coolers or intercoolers are straight and free of debris
- No debris between condenser and radiator to obstruct air flow
- Cooling system has been serviced and maintained to manufacturer specifications
- Radiator has no blockages or hot spots
- Functioning thermostat
- Cooling system hoses are new or match O.E. specifications
- Water pump functioning and in good condition
- Electric fan clutch harness is routed away from fan blades and free of kinks, sharp bends or other wire damaging conditions
- PCM is updated to the latest firmware version
  - PCM monitors transmission temperature, A/C head pressure, A/C demand, coolant temperature, engine speed and engine load which all determine electric fan clutch engagement and disengagement

IMPORTANT

- Do NOT replace EV fan clutch unless a specific issue is identified by proper SI (Service Indicator/ Check Engine) diagnosis
- Do NOT replace an EV fan clutch for fan noise
- Do NOT replace an EV fan clutch unless a specific condition related to the EV fan clutch is identified using SI diagnostics. If the EV fan clutch has a condition that warrants replacement, a DTC (Diagnostic Trouble Code) should set and/or SI diagnostics should lead to the replacement of the fan clutch
- Do not attempt to replace EV fan clutch without proper tools. Please refer to manufacturer requirements for proper tools and replacement
- Always check motor and transmission mounts to prevent fan blade contact with wire harness. Subsequent damage is not covered via warranty

In the event an electronic fan clutch harness is cut or damaged by the fan blade, the common causes are improper routing of the harness and worn or defective engine/transmission mounts. These instances are <u>NOT</u> covered by the manufacturer's warranty.

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