



ALTERNATOR  
ISOLATOR  
DECOUPLER  
PULLEYS

Designed, Engineered and Produced by the Original Equipment Manufacturer.

## Isolator Decoupler Pulleys (IDPs) Improve Vibration Isolation For Quieter, Smoother Drive Belt Performance.

More and more OEs are recognizing the performance gains achieved with Isolator Decoupler Pulleys (IDPs), and designing them into their vehicles to connect or couple the engine's alternator to the accessory drive belt.

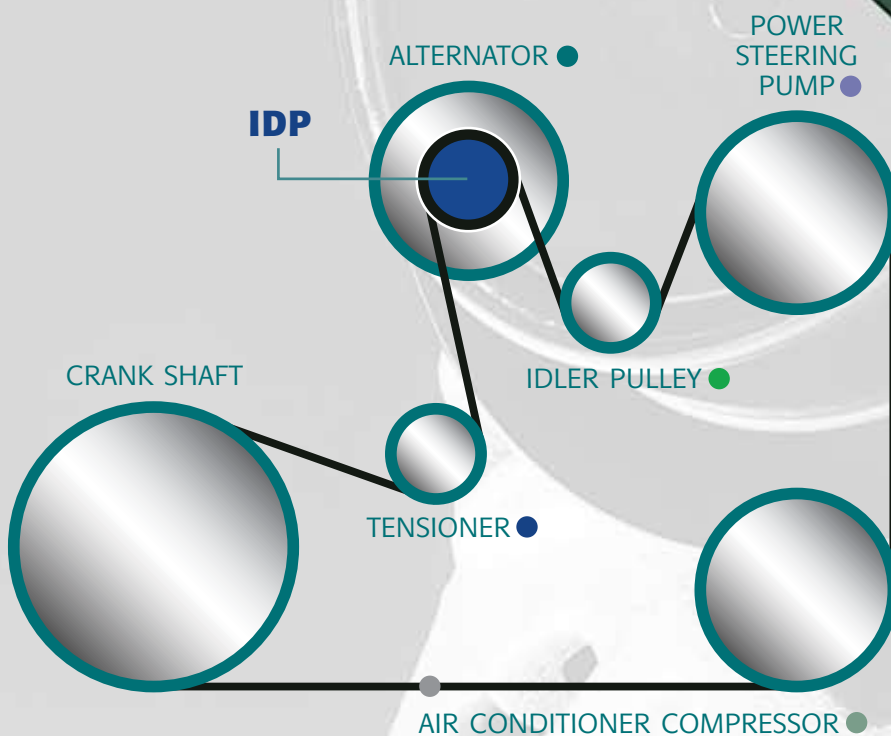
Never use a solid or overrunning alternator pulley on a vehicle designed with an IDP. Downgrading the original IDP will compromise performance and may lead to accessory drive problems. For OE quality and performance, RotoRx® is the only true aftermarket IDP available.

### The Advantages of IDPs.

IDPs provide unique levels of vibration isolation within the accessory drive belt system. This results in quieter and smoother performance particularly in more torsionally active engine applications.

With its unique internal clutching mechanism, the RotoRx® IDP is able to effectively isolate vibrations through absorption. The clutch mechanism also includes engineered internal damping elements to further control vibrations and resonances that would otherwise be felt within the vehicle's passenger compartment. IDPs also include a decoupling feature that enables the alternator to coast freely if the belt speed is suddenly and rapidly decreased, such as during engine shut down or transmission shifting.

**RotoRx® IDPs:**  
reduce and improve.  
*Now that's performance.*



#### REDUCE

- inertia influence
- current fluctuation

#### REDUCE

- reduce tensioner motion

#### REDUCE

- bearing loads

#### REDUCE

- steering shudder

#### REDUCE

- A/C compressor rattle
- pumping noise

#### REDUCE

- belt flutter
- belt noise

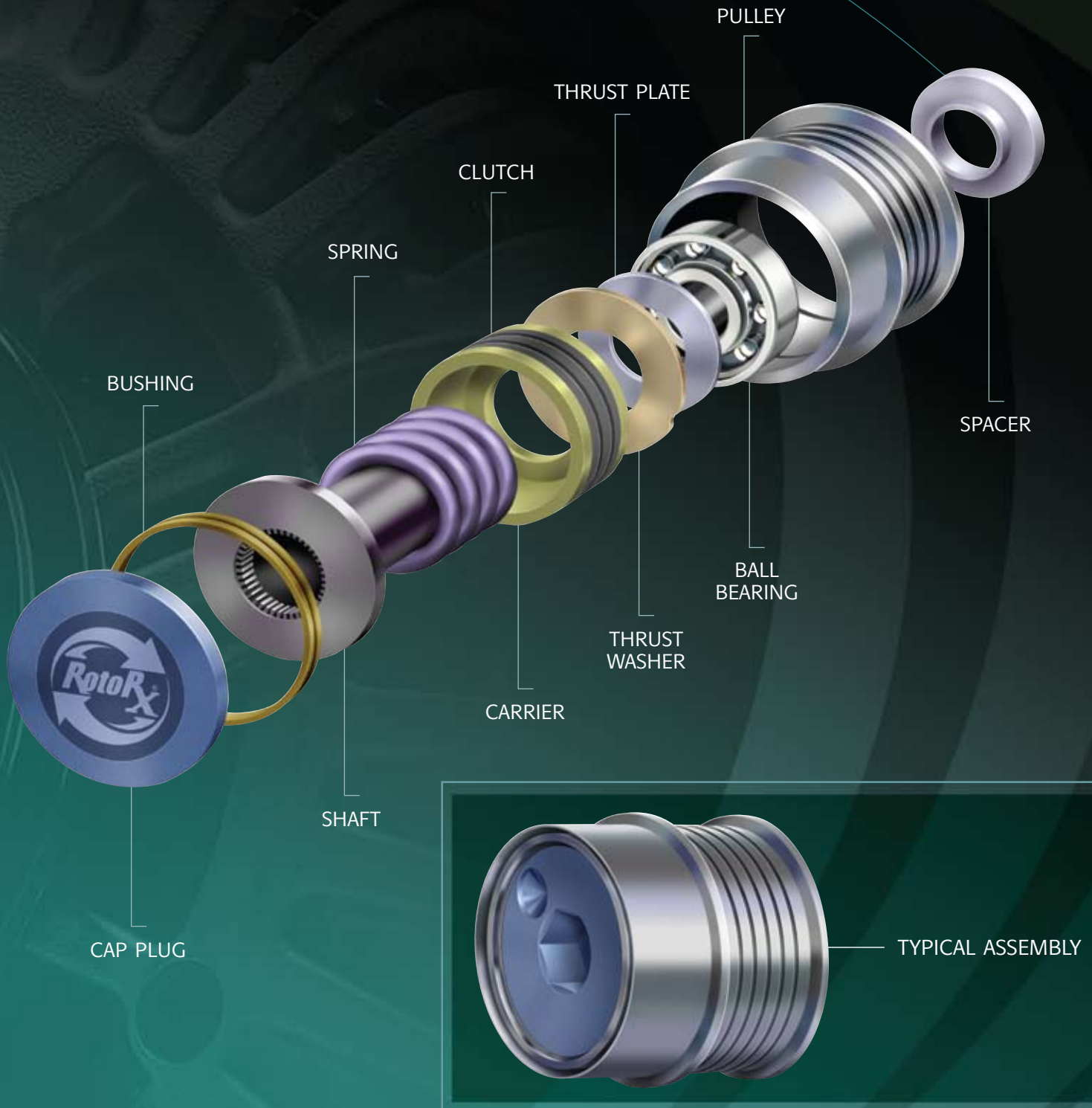
#### IMPROVE

- belt life
- vehicle noise, vibration, and harshness
- tensioner life
- accessory drive component life

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# A closer look at an IDP assembly.

Not a simple One-Way Clutch or Solid Pulley



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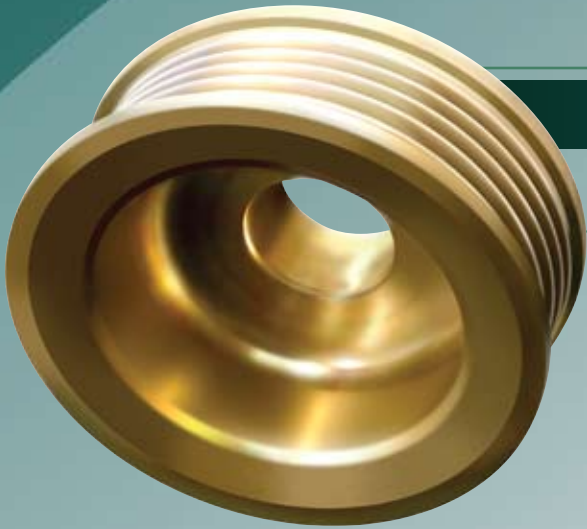
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## NOT ALL PULLEYS ARE CREATED EQUALLY.

Besides quieter performance, IDPs allow manufacturers to use narrower belts with lower output tensioners. The lower system tension means the alternator, water pump, and other accessory bearings will last much longer.

Here's how IDPs stack up against other pulleys:

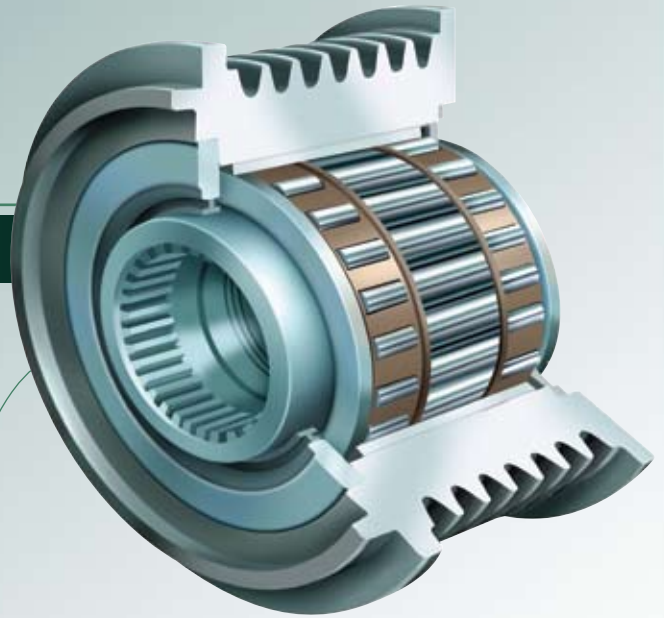


### The Solid Alternator Pulley

used to be the industry standard and has been around for many years. It has evolved from the V type to the V-ribbed type (serpentine belt). Its only purpose is to drive the alternator via the belt. If your alternator has a solid pulley, only replace if damaged, rusted, or worn.

### The Overrunning Alternator Pulley (One-Way Clutch)

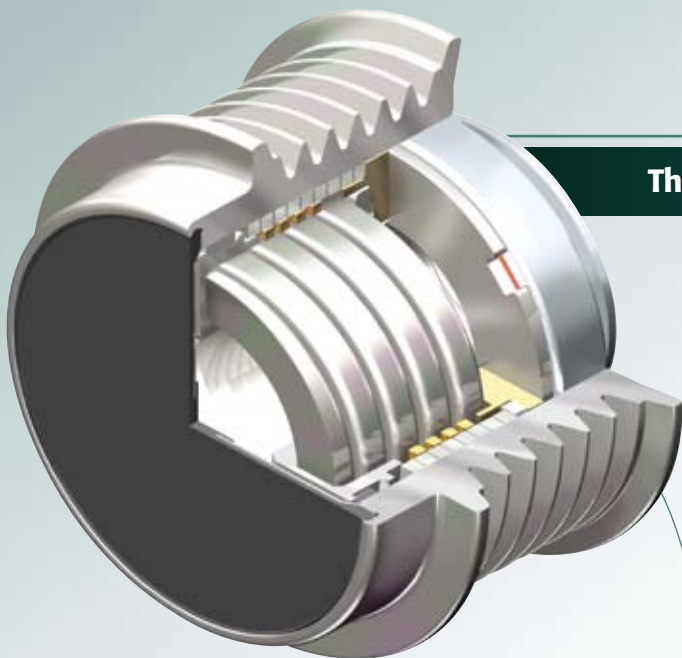
has a simple one-way clutch inside the pulley. This internal clutch allows the rotor of the alternator to coast to a stop when the engine is shut down. This "overrunning" feature eliminates "chirp" sounds that occur when the engine decelerates quickly, causing the belt to slip (engine shut down or transmission shifting).



### The Isolator Decoupler Pulley (IDP)

not only has a one-way clutch inside, it also incorporates a torsion spring to absorb energy. The effects of the internal clutch are the same as mentioned above; however, the patented internal torsion spring design is the key to the much higher level of function associated with the IDP.

The internal spring is tuned (engine specific) to absorb base engine vibrations (cylinder firing pulses) before they reach the alternator rotor and negatively affect the accessory drive. With the IDP installed you will see much less tensioner motion, reduced noise, vibration, and harshness and an all around more robust accessory drive.



## North American Applications

IDP#	Manufacturer	Alternator	Lester #s	Model / Engine
920538	Chrysler	Denso - SC1/SC2 - 137A, 160A	13870, 13871	Caravan 3.3L/3.8 V6 - Gas (superceded by 920834)
920542	Chrysler	Mitsubishi - 130A	13955	Prowler - 3.5L V6 - Gas
920629	GM/ Opel/ Saab	Bosch KCB2 E6 120A M6E, NCB1 E8 140A	11186, 11043	Signum 2.0/2.2 Turbo Vectra 2.0, 2.2, 2.2i 9-3 1.8t, 2.0 T, 2.0t
920650	John Deere	Bosch 90A Bosch 115A	12379 12370	Tractor - 4.5L Turbo Diesel
920667	Chevrolet	Valeo TG15 - 110A	13864	Corvette C5 - 5.7L V8 Gen III - Gas
920685	Chrysler	Denso - SC1/SC2 - 137A, 160A	13870 13871	Caravan 3.3L/3.8 V6 - Gas (superceded by 920834) Pacifica 3.5L V6 Gas (superceded by 920834)
920720	Jeep	Denso - SC2 - 160A	11114	Liberty KJ 2.5/2.8L L4 Diesel DOHC
920726	Toyota/ Lexus	Denso-SC1 /SC2 -100A, 130A, 150A	N/A	Avalon / Sienna / RAV 4 / Camry / Lexus GS, IS, ES 2.5L, 3.0L, 3.5L V6 - Gas
920746	GM	Valeo TG15 - 145A	13969	Corvette C6 - 6.0L V8 - Gas
920762	GM/ Saturn	Denso SC2 - 160A (CCW rotation)	11109	Saturn Ion Redline / Chevy Cobalt SS 2.0L I4 Supercharged - Gas
920768	Chrysler	Mitsubishi 8GM - 140A	11115	Pacifica 3.8L V6 - Gas
920782	GM Holden	Melco - 6GA11 - 140A	N/A	Monaro GTO 5.7L - V8 Gas
920797	GM	Bosch E6 - 125A	N/A	Malibu LZ9 3.9L V6 Gas - DOD
920802	Toyota	Denso SC2 - 90/100A	11195	Camry, Matrix, Rav 4, Solara AZ 2.4L Gas - Worldwide
920803	Volvo	BOSCH LIX 14C2.1 -150A BOSCH LIX 14M2.5 -180A	N/A	V70, XC90, S80... Short I6, 3.0L TurboGas / 3.2 L Gas
920810	Chrysler/ Dodge/ Jeep	Melco-8GM-128 - 105A Melco-8GM-135 - 140A Melco-9G-128 - 110A	N/A	Sebring, Caliber, Jeep Compass, Jeep Patriot DC World Engine 1.8L/2.0L/2.4L/2.4 turbo 4cyl Gas
920818	GM	Valeo -TG13 - 125A	11143	Pontiac G6 -LZ9 3.9L V6 Gas Manual Trans
920834	Toyota/Pontiac Chrysler Chrysler Chrysler	Denso Denso SC2 - 145A Denso SC2 - 160A Denso SC1 - 137A	N/A 11063 13870 13871	Corolla / Matrix / Vibe 1.8L ZZ engine Pacifica 3.5L (supercedes 920685) Minivan 3.3L/3.8 V6 - Gas (supercedes 920538 / 920685) Minivan 3.3L/3.8 V6 - Gas (supercedes 920538 / 920685)
920843	Pontiac Saturn	Valeo TG15 - 150A Valeo TG15 - 150A	11263 11263	Solstice, 2.0L Turbo Sky, 2.0L Turbo
920850	Opel/Saab	Bosch E8 - 140A	N/A	Opel Family III, Saab 9-5, 2.0/2.3L Gas Turbo



**What to look for...** IDPs should rotate freely in one direction and have a "spring feel" in the other direction. Service life of the IDP is also dependent on the duty cycle, driving conditions (city vs. highway), and seasonal temperature variations. Since these conditions are generally unknown when rebuilding the alternator, you should always install a new IDP at this time. This will ensure a quality rebuilt alternator and help eliminate field failures. Never substitute a solid alternator pulley or a simple Overrunning Alternator Pulley in place of an IDP. The vehicle manufacturer has designed the vehicle with this higher level of function for a reason! Substituting a different alternator pulley may cause damage to accessory drive components. IDPs should always be checked when replacing any accessory drive component or every 40,000 miles (65,000 kms).

## European Applications

IDP#	Manufacturer	Alternator	Model / Engine
920476	Ford	Magneti Marelli A111 - 70A	Ford Lynx L4 1.8L Diesel
920501	Opel	Bosch NCB1 120A (14V)	Corsa 1.4i/1.8i 16V, Astra 1.4i -2.0i Signum 1.8i, Vectra 1.6i/1.8i Zafira 1.6i/1.8i
920574	Ford	Bosch 75A/110A	Transit 2.4 Diesel >2001
920583	Ford	Visteon 110A	Transit 2.4 Diesel >2001
920599	Chrysler	Denso SC2 160A	Voyager 2.5 Diesel
920606	Ford	Denso SC2 160A	Fiesta /Focus Lynx 1.8 Diesel
920629	Opel	Bosch KCB2 E6 120A M6E, NCB1 E8 140A	Signum 2.0/2.2 Turbo Vectra 2.0, 2.2, 2.2i 9-3 1.8t, 2.0 T, 2.0t
920650	John Deere	Bosch 90A/115A	Tractor 4.5L Turbo Diesel
920693	Opel	Valeo TG8 75A/TG9 90A	Opel Corsa 1.3L Diesel
920720	Chrysler/Jeep	Denso - SC2 - 160A	Voyager, Grand Voyager, Cherokee, Wrangler, KJ 2.5/2.8L CRD
920726	Toyota/Lexus	Denso SC1/SC2 100A, 130A, 150A	Avalon/Lexus IS, GS,... 2.5L, 3.0L, 3.5L V6 - Gas
920731	Citroen  Peugeot	Bosch LIX 14M2.5 180A	C6 2.7 HDI C5 2.7 HDI > 2008 407 2.7 HDI Coupè, 607 2.7 HDI
920752	Jaguar LandRover	Denso SC2 160A	S-Type 2.7 TTD Lion 2.7 V6 DOHC Diesel, Discovery 3, Range Rover Sport
920755	Opel	Bosch E6 120A	Astra 2.0 Turbo, incl. GTC + TwinTop Zafira 2.0i Turbo
920789	Fiat	Denso 115A	Piccolo 1.25 JTD 4 Cyl.
920796	Alfa Romeo	Bosch E6	Alfa Romeo 159 1.9/ 2.2 JTS Brera 2.2 JTS, Spider 2.2 JTS
920801	Opel Saab	Bosch E8	Signum 2.8 V6 Turbo 9-3 2.8 V6 Turbo
920802	Toyota	Denso SC2 100A	RAV4 AZ 2.0 / 2.4L L4 Gas - Worldwide
920803	Volvo	Bosch LIX 14C2.1 150A Bosch LIX 14M2.5 180A	V70, S80, XC90 Short I6, 3.2L L6 Gas/3.0L L6 Turbo Gas
920810	Chrysler/ Dodge/ Jeep (Mitsubishi)	Melco 8GM-128 105A Melco 8GM-135 140A Melco 9G-128 110A	Sebring, Caliber, Jeep Compass, Jeep Patriot DC World Engine 1.8L/2.0L/2.4L/2.4 turbo 4-Cyl. Gas
920814	Toyota	Denso SE0 100A	3-Cyl. 1.0L Gas
920834	Toyota Chrysler Chrysler	Denso Denso SC1 - 137A Denso SC2 - 160A	Verso, Avensis 1.8L Voyager, Grand Voyager V6 Gas Voyager, Grand Voyager V6 Gas
920850	Opel/Saab	Bosch E8 140A	Opel Family III, Saab 9-5, 2.0/ 2.3 Gas Turbo



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