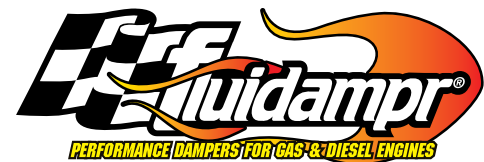


Since 1946

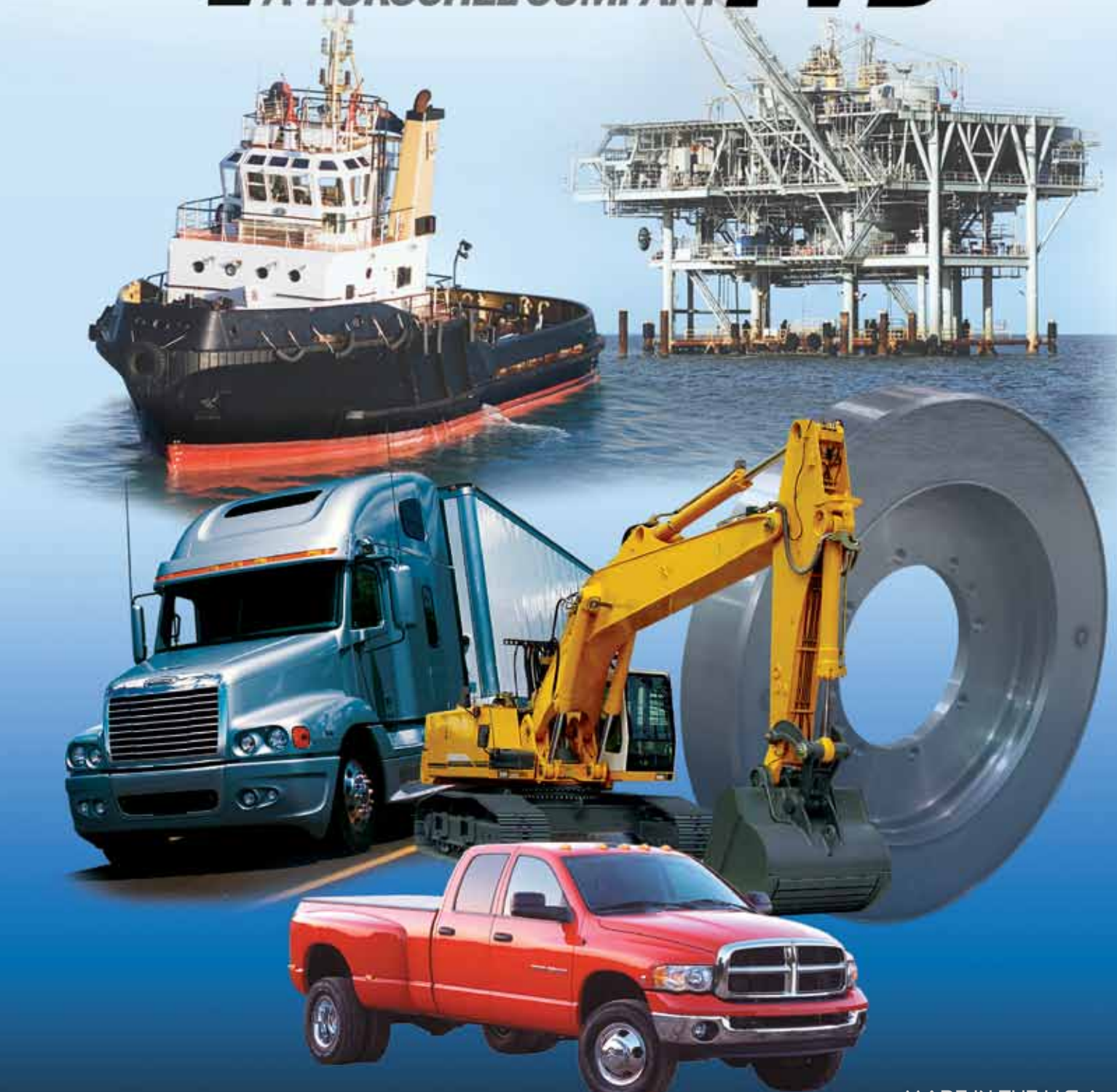


Vibratech TVD, LLC
 180 Zoar Valley Rd.,
 Springville, NY 14141
 Ph: (716) 592-1000
 Fax: (716) 592-1001
www.vibratechtvd.com
www.fluidampr.com



VIBRATECH[®] TVD

A HORSCHEL COMPANY



HEAVY DUTY HARMONIC DAMPERS
 FOR HEAVY DUTY DIESEL AND PERFORMANCE DIESEL ENGINES

MADE IN THE U.S.A.
 ISO 9001:2000 CERTIFIED
 2009-2010 CATALOG



Nobody likes downtime. Torsional vibrations can speed up the wearing process on cranks and bearings. You can control these vibrations by installing a new Vibrattech TVD viscous damper at every major overhaul - a small investment with big returns in engine protection and performance.



Work boats keep our shores safe while on patrol and move valuable freight from port to port. Reduce wear and add power by installing a Vibrattech TVD viscous damper on the engines that propel working boats.



Time is money. If your construction equipment is in the shop for an engine overhaul, be sure it gets a new Vibrattech TVD viscous damper to reduce the harmful effects of torsional vibrations. Engines that use a Vibrattech TVD viscous damper run effectively for more hours.



There's no parts store out here. The last thing you need on an offshore rig is to shut down because of engine failure. Install Vibrattech TVD dampers on the heavy duty engines you depend on.



Farm equipment needs to work as hard and long as the farmers who operate it. Eliminating down time is critical during planting and harvesting. Powering harvesters and tilling equipment puts strain and stress on engine components. The best way to protect these engines against torsional vibrations is with a new viscous damper from Vibrattech TVD at every major overhaul.

Vibrattech TVD is the Source

Vibrattech TVD (formerly Houdaille) invented the original viscous fluid type torsional vibration damper in 1946. It was quickly accepted by diesel engine manufacturers because of its technologically superior design versus existing dampers available.

All design, engineering, testing and manufacturing continue to be performed in the USA where all elements of manufacturing are strictly monitored and controlled in our ISO 9001-2000 certified and registered state-of-the-art manufacturing facility located in Springville, NY.

Vibrattech TVD is continuously striving to improve its products and is the only viscous diesel damper supplier that manufactures dampers for both heavy duty diesel and high performance engines. In the mid 1980's we developed the first Fluidampr and began testing it on high profile race engines. As expected, the results showed improved engine performance and reduced wear on internal components.

Since racing is the ultimate laboratory for development of technology and testing, much of what is learned from the racing industry is applied to the heavy duty diesel damper designed and manufactured by Vibrattech TVD.

Vibrattech TVD offers viscous dampers ranging from 5" to 36" for popular diesel and natural gas engines used by the trucking industry, off highway construction vehicles, marine, agriculture, stationary power applications, off shore drilling, mining, mass transit and military applications.

Vibrattech TVD should be your only choice for OEM and replacement viscous dampers. We value our customers' needs and support them with superior customer service and our professional technical support personnel. Manufacturing expertise and product knowledge is why Vibrattech TVD remains the leader in quality, competitive pricing and customer service.

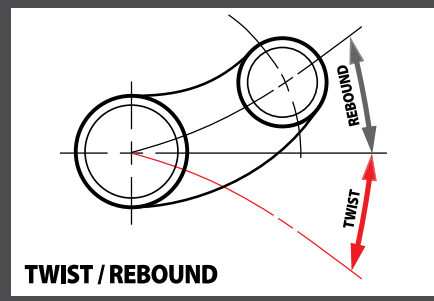
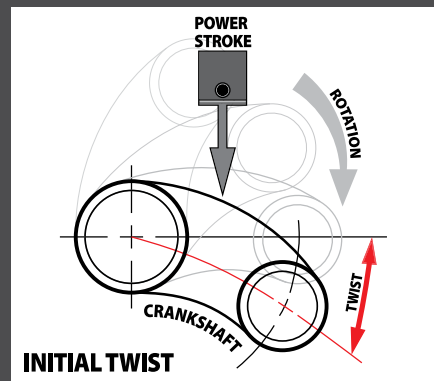


Contents

- 2-3 Introduction
- 4-5 Facts & Facility
- 6 Detroit Diesel
- 7 Caterpillar
- 8 Cummins
- 9 Mack / International / Navistar Truck
- 10 Mitsubishi / Waukesha / GE
- 11 Cooper / Miscellaneous
- 12-15 Performance Diesel



TORSIONAL VIBRATION



The Problem: Torsional Vibration

Each time the air fuel mixture inside a cylinder is ignited, the combustion that results creates a torque spike – an extremely rapid rise in cylinder pressure. This pressure is applied to the top of the piston, which becomes the force that is applied to the crankshaft through the connecting rod. Each torque spike is like a hammer blow. It hits with enough intensity that it not only causes the crankshaft to turn; it actually deflects, or twists the crankshaft ahead of its rotation. This twisting action and rebound is known as torsional vibration.

The Solution:

Vibratech TVD's Viscous Torsional Vibration Damper

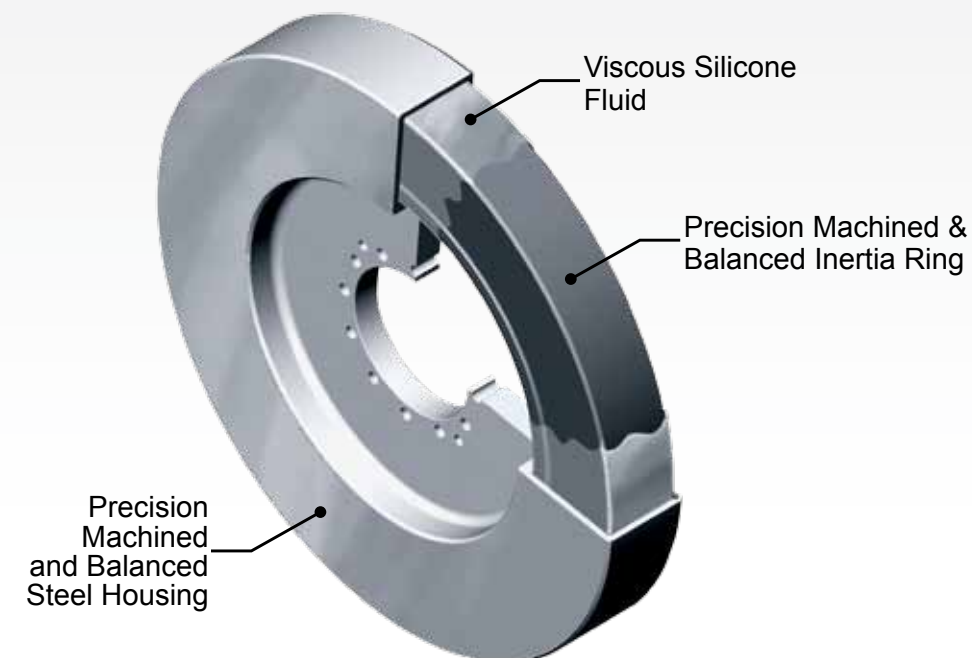
The Vibratech TVD viscous damper is a simple design consisting of a free rotating inertia ring surrounded by a high viscosity silicone fluid enclosed in a totally sealed, leakproof housing. When crankshaft torsional vibrations occur, the outer housing of the damper reacts with the crankshaft, twisting while it rotates, while the inertia ring inside moves out of phase with the housing. This relative motion between the inertia ring and the housing causes the inertia ring to shear through the silicone fluid, which reduces the vibration.

Viscous Dampers

Damper Inspection and Replacement

The nature of silicone fluid results in a high energy dissipation, which makes it an excellent damping medium. A worn out damper leaves crankshaft torsional vibration unchecked and can cause costly engine damage. That's why regular damper replacement is critical to longer engine life. While recommended replacement intervals vary depending on engine manufacturer, the average is about **500,000 miles (15,000 hours)** or at major engine overhauls and in-frame rebuilds.

It's your investment, demand the best - Vibratech TVD dampers.



Unchecked Torsional vibrations can cause:

- Crankshaft cracking or failure
- Excessive bearing wear
- Excessive gear wear or failure
- Broken accessory drives
- Throwing or slapping of belts

Checked Torsional vibrations can:

- Increase Torque & Horsepower
- Improve valve timing
- Prolong engine life
- Extend fuel economy
- Quiet noisy belts & drives

ISO 9001-2000 Certification is testimony to Vibratech TVD's commitment to be the best in the industry. It means quality is an all encompassing, company-wide attitude.

Facts & Questions

How does the damper work, it looks like solid steel?

The Vibratech TVD damper is a vital mechanically functioning component of the engine, protecting it from the destructive forces of harmonic vibrations. It is neither solid steel nor completely fluid filled. Inside the precision machined housing, a free rotating inertia ring shears through a thin film of highly viscous silicone tuning to the harmonics generated by every stroke of the engine.

Why is silicone used?

The silicone is a gel more than 45,000 times thicker (more viscous) than 30 weight motor oil and is proven to be an excellent damping medium.

How much silicone is in the damper?

The silicone fills the shear gap, the space between the inertia ring and housing which is measured in thousandths of an inch. The silicone is engineered and precisely metered for the specific requirements of an engine.

Why should the damper be replaced?

Over time on a heavy duty engine (approx 500,000 miles or 15,000 hours), the silicone in the damper begins to revert to its original state as a solid. As this progresses the silicone becomes thicker and the reaction time (shearing) of the inertia ring is reduced, which causes it not to be able to tune to the different harmonics of the engine throughout the RPM range.

How can I tell when the damper needs to be replaced?

Excessive wear of engine bearings and accessory drive gears, cracked or broken accessory brackets, loosening of bolts, throwing or slapping belts, loss of horsepower, torque and poor fuel economy due to a poorly performing engine are all **symptoms** of a worn out harmonic damper. Annoying vibrations that lead to driver fatigue can also be a warning sign. Failure to replace a worn damper can and often does lead to cracking or catastrophic failure of the crankshaft.

My mechanic does not recommend replacing the damper.

Can the mechanic correctly answer the above questions?



Shear gap



State-of-the-art Manufacturing - Vibratech TVD's fully integrated manufacturing facilities feature proprietary equipment and processes that enable us to produce the highest quality dampers.

DETROIT DIESEL®				
Reference Number	Vibrattech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
5107312	708915-000	16V149	18	109
5106222	709815-000	16V92 / 16V71	15.1	71
8920653	710240-001	12V71	13.5	39
8924435	711060-000	16V92	18	109
8922492	712935-060	8V92	12.3	33
8925437 / 8928951	712935-300	6-71 / 12V71 / 8.2 L	12.3	33
8922491	713393-000	6-71 / 12V71 / 12V149	12.3	33
5177763	713398-000	4 CYL. 71	10.8	14
5109863	715015-000	8V71 / 8V92 / 12V149	5.5	8
23523042	715037-000	20V149	24	220
5147600	715458-000	12V71	13.5	41
23550030	715885-000	SERIES 55	13.5	40
23525990 / 8929502	716852-000	11.1 / 12.7 L SERIES 60	13.5	40
23531040 / 23522891	717406-000	14 L SERIES 60	13.5	56

CATERPILLAR®				
Reference Number	Vibrattech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
2P1793 / 1678133	712020-001	D / G379 / 398 / 399	21	90
4W0337 / 1678123	715452-000	3306 / 330C / 3304 / 333C	12.3	32
9S4444 / 1678128	715462-000	D 343 / D 346	13.5	38
7E9520 / 1678126	716405-000	C15 / C16 / 3408 / 3406 (A,B,C,E,PC) Adapter plate Incl.	13.5	38
1933288	718019-600	3500 Series	21	107

Uncontrolled engine harmonics is one of the major contributors to poor engine performance or failure.

Loss of HP & Torque = Greater Fuel Consumption



CUMMINS®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
217321	709965-000	NTC335 TAPER / 855	13.5	41
217323	713396-000	NTC /NTA / FFC 400-475 / 855	13.5	42
211915	715285-000	NTC290-350 / 855	12.3	36
217322	715300-000	NTC335-FFC / INTERIM K6 / 855 / K19	13.5	40
3101655	718018-300	N14	13.5	42
211915	718028-300	NTC290-350 / 855 (with timing marks clockwise)	12.3	36
3628652	718030-100	KTA38	18	109
3628649	718031-600	KTA50	18	109
211915	718036-300	NTC 290-350 / 855 (with timing marks counter clockwise)	12.3	36
211915	718038-300	NTC 290-350 / 855 (modified hole pattern)	12.3	36
4101884 / 4026799 / 3680504	718041-600	ISX / Signature 600	14.8	40

Supporting the trucking industry for over 60 years with 100% manufacturing in the USA



MACK®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
404GB469	713384-000	EG6-235	12.3	33
404GB470	713387-000	ENDT676	12.3	33

International / Navistar Truck

INTERNATIONAL / NAVISTAR TRUCK®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
1808800C1	711705-002	DT 466 / DT 466E	10.9	28
677781C91	712110-002	D 466	10.9	28
1827229-C1	716691-000	I 308530HD	12.3	33



Mitsubishi®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
652-227-D02	713368-000		20	370
62NTC-SL-01	718000-060	12 LITER	12.3	33

Waukesha

WAUKESHA®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
153705B	709615-000	F2895 / F3521	18.2	115
153807	709910-000	L6670 / L5792 / L7042 / L7040	24	220
211150 A/B	710605-000	P9390 GL	24	314
199331	711570-000	L6670 / L5792 / P9390 / L7044	24	314
167631	713411-000		8.5	12
346642R92	715729-000		12.3	31

General Electric

GENERAL ELECTRIC®				
Reference	Vibratech TVD Part Number	Application	O.D.	Wt. / Lbs.
119X1006	712955-000	LOCOMOTIVE	24	220



COOPER®				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
2-01D-005-001	703771-000		24	220
C-007-717	705965-000		15	72
08-489-02-AD	706985-001		24	220
A118-966	710975-000	16GT-825 / 6GTL	18	109
H14252-C / BM-11725-B	713075-000	PTLS / 12VGT-825 / AJAX DPC-800	24	214

Misc

MISC				
Reference Number	Vibratech TVD Part Number	Engine Model	O.D.	Wt. / lbs.
654225	703055-600	AVDS 1790 GDLS	15	73
	711085-002	DRIVELINE DAMPER	13.5	40
	712090-000	BMY HOWITZER M109	13.5	45
	713318-000	DRIVELINE DAMPER	18	120
	715009-000	DRIVELINE DAMPER	18	109
	715923-000	DRIVELINE DAMPER	18	110

Continuing our tradition of designing and manufacturing quality viscous harmonic dampers since 1946



Performance Diesel

Not just for competition trucks but for the serious working pickup.

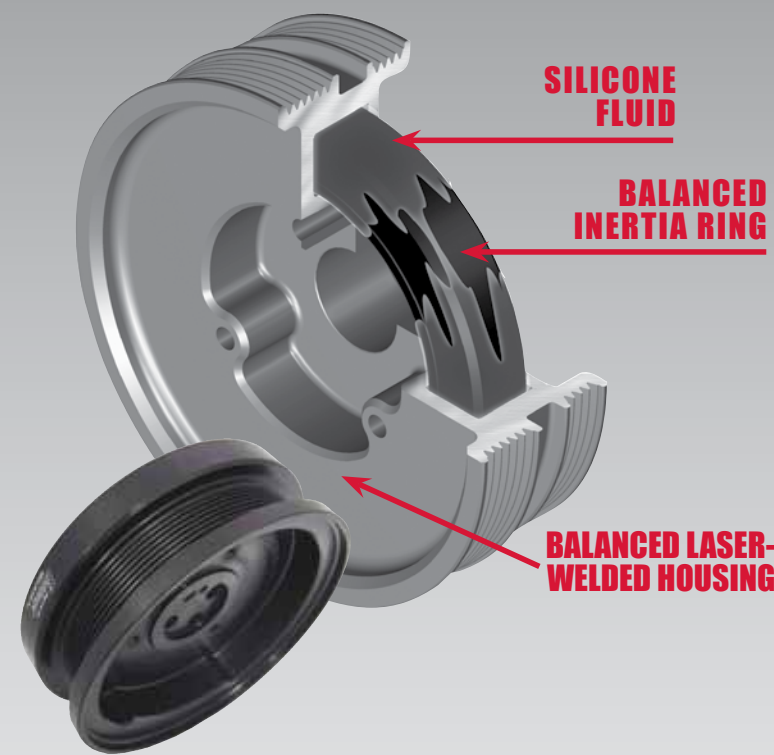


Fluidampr Performance Diesel dampers offer the best protection against torsional vibrations. Performance tuned or stock, your diesel engine will run more efficiently with a viscous Fluidampr installed.

The Problem: Torsional vibrations or harmonics rob horsepower and torque from an engine and can lead to crankshaft and bearing damage. Typical stock elastomer dampers are referred to as *tuned or frequency sensitive*. These dampers are designed to function throughout only a predetermined vibration frequency bandwidth associated with the RPM, torque and horsepower engineered for a particular engine application. The *tuned or frequency sensitive* damper relies on a ring of elastomer (rubber) of a specific durometer

to absorb the harmonic vibrations and are limited to the bandwidth of vibration frequencies that the particular elastomer can absorb. The elastomer damper cannot self tune beyond the bandwidth that it is designed for.

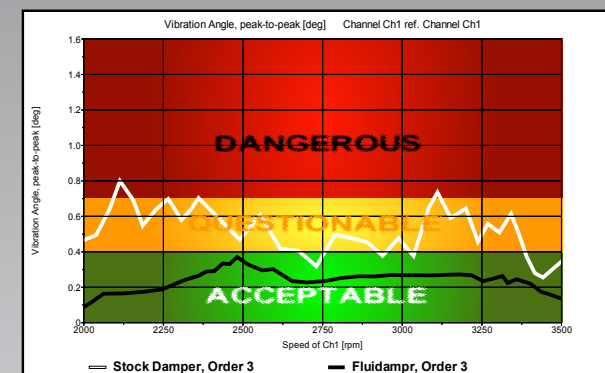
Dampers that utilize elastomer (rubber) are prone to deterioration. When performance enhancements are made to a stock engine, whether for commercial, pleasure or competition, the increased performance overworks the stock damper because of its inherent inability to self tune to the increased harmonic vibration generated. Also exposure to oils and solvents can cause the elastomer to swell or harden and quickly breakdown. These changes in durometer result in diminished engine protection and ultimately damper failure and damage to costly engine components.



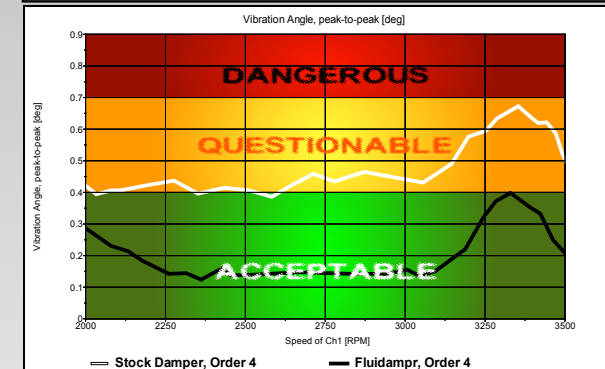
The Solution: Utilizing the same technology as our heavy duty viscous dampers, the Fluidampr Performance Diesel damper incorporates a totally sealed laser welded housing encasing the precision machined and balanced inertia ring. Fluidampr's are *frequency insensitive*, able to self tune to the exact frequency bandwidth of the engine harmonics at any range.

Fluidampr viscous dampers never have to be tuned or rebuilt and in a performance application will never wear out. Be leery of damper manufacturers that state their "dampers should be rebuilt or tuned".

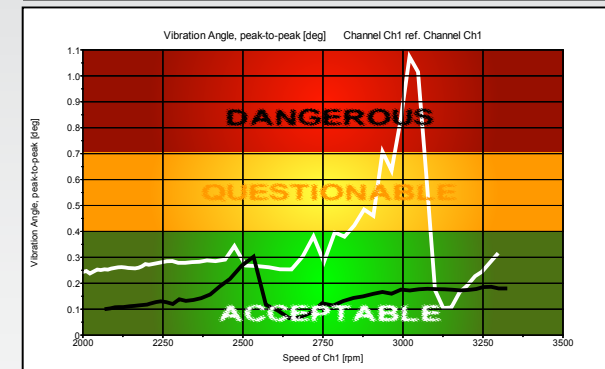
Fluidampr is the only viscous damper SFI certified for diesel engines.



2006 5.9L Dodge Cummins		Measurement:	Limits:
102355	19.45 PSI	162.65	362.77
19.0	19.0	3108.44	0.833647
		2070.66	0.241701



2004 6.0L Powerstroke		Measurement:	Limits:
102355	19.45 PSI	162.65	362.77
19.0	19.0	3108.44	0.833647
		2070.66	0.241701



2006 6.6L Chevy Duramax		Measurement:	Limits:
102355	19.45 PSI	162.65	362.77
19.0	19.0	3108.44	0.833647
		2070.66	0.241701

These graphs depict total twist of crank peak to peak. White line = stock damper / Black line = Fluidampr Performance Diesel



Made in the U.S.A. ISO 9001:2000 Certified



TORQUE & HORSEPOWER

	Stock Damper	Fluidampr
Cummins 5.9 L		
HP	421.0	426.4
Torque	844.5	847.6
PowerStroke 6.0 L		
HP	366.3	380.8
Torque	569.5	609.0
DuraMax 6.6 L		
HP	459.9	465.8
Torque	926.5	944.2

This chart depicts horsepower and rear wheel torque gains on a tuned engine by only changing the stock elastomer damper to a Fluidampr Performance Viscous Type Damper.

PART NO.	NOTES	HOUSING	FINISH	O.D.	WT. (RWT.*)	BORE DIA. MIN/MAX	LENGTH
FORD POWERSTROKE® EXTERNALLY BALANCED							
720211	7.3 L Ford Trucks Late 1999 - 2003	ST	BZ	7-1/4"	18 (12.1)	1.7375 / 1.7385	3.967
720221	7.3 L Ford Trucks Early 1994-1997 (Fan spacer included)	ST	BZ	7-1/4"	18 (12.1)	1.7375 / 1.7385	3.967
870201	6.0 L Ford Trucks	ST	BZ	8-7/8"	20 (13.4)	NA / NA	2.880
870211	6.0 L FORD TRUCKS DUAL ALTERNATOR	ST	BZ	8-7/8"	29 (19.4)	NA / NA	4.199
GM DURAMAX® EXTERNALLY BALANCED							
800141	6.2 L / 6.5 L GM / HUMMER 1994-2000 (electronic)	ST	BZ	8"	18 (12.1)	1.5988 / 1.5998	2.443
800191	6.2 L / 6.5 L GM 1982-1993 (mechanical)	ST	BZ	8"	18 (12.1)	1.5988 / 1.5998	3.180
830111	6.6L GM TRUCKS 2006-2007.5	ST	BZ	8-3/8"	25 (16.8)	1.930 / 1.931	2.858
890101	6.6 L GM TRUCKS 2001-2005	ST	BZ	8-3/8"	23 (15.4)	1.930 / 1.931	2.858
DIESEL ACCESSORIES							
300002	Cummins Drill Pin Kit	Dodge	Drill fixture, drill bit and roll pins				N/A
300003	Cummins Sensor Relocation Kit	Dodge	Use on 12V trucks 1992 -1998				N/A
717675	Powerstroke Dual Alternator Pulley	Ford	Pulley and Hardware				8"
TOOLS							
300001	Fluidampr Installation / Removal Tool	Most	Installs & Removes most Fluidamprs				N/A

* Rwt. stands for rotating weight. (ST = Steel, AL = Aluminum, BZ = Black Zinc Chromate, HCA = Hard Coat Anodize)

**POWERSTROKE
DUAL ALTERNATOR
PULLEY
717675**



PART NO.	NOTES	HOUSING	FINISH	O.D.	WT. (RWT.*)	BORE DIA. MIN/MAX	LENGTH
CUMMINS® INTERNALLY BALANCED							
920301	5.9 L Cummins 2003 - 2007	ST	BZ	9-1/4"	23 (15.4)	NA / NA	2.462
920321	6.7 L Cummins	ST	BZ	9-1/4"	25	NA / NA	2.690
960301	5.9 L Cummins 24 Valve 1998-2002	ST	BZ	9-3/4"	23 (15.4)	NA / NA	2.617
960311	5.9 L Cummins 12 Valve 1992-1998 MAY REQUIRE SENSOR KIT 300003 (INCLUDED)	ST	BZ	9-3/4"	24 (16.1)	NA / NA	2.617
960341	5.9 L Cummins COMP SERIES (NO PULLEY)	ST	BZ	9-3/4"	21 (14.1)	NA / NA	2.131

* Rwt. stands for rotating weight. (ST = Steel, AL = Aluminum, BZ = Black Zinc Chromate, HCA = Hard Coat Anodize)

**CUMMINS
DRILL PIN KIT
300002**

For use on high horsepower and high RPM engines to prevent fretting. Installation of new torque to yield bolts are recommended.



Detailed installation and removal instructions are included with each Fluidampr and are also available online at www.fluidampr.com



Scott Vorhees