

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

AMERICAN AXLE & MANUFACTURING, INC.,	)	
	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	C.A. No. _____
NEAPCO HOLDINGS LLC and NEAPCO DRIVELINES LLC,	)	
	)	<b>JURY TRIAL DEMANDED</b>
	)	
Defendants.	)	
	)	
	)	

**COMPLAINT**

Plaintiff American Axle & Manufacturing, Inc. (“Plaintiff” or “AAM”), by its attorneys, demands a trial by jury on all issues so triable and for its complaint against Neapco Holdings LLC and Neapco Drivelines LLC (collectively “Defendants” or “Neapco”) alleges as follows:

**NATURE OF THE ACTION**

1. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code, and seeks damages and injunctive relief as provided in 35 U.S.C. §§ 281 and 283-285.

**THE PARTIES**

2. Plaintiff is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business at One Dauch Drive, Detroit, Michigan 48211. AAM is the owner by assignment of United States Patent Nos. 7,774,911, 8,176,613, and 8,528,180 identified in paragraphs 9-11 below.

3. On information and belief, Defendant Neapco Holdings LLC (“Neapco Holdings”) is a limited liability corporation organized and existing under the laws of the state of Delaware, having a principal place of business at 6735 Haggerty Road, Belleville, Michigan 48111.

4. On information and belief, Defendant Neapco Drivelines LLC (“Neapco Drivelines”) is a limited liability corporation organized and existing under the laws of the state of Delaware, having a principal place of business at 6735 Haggerty Road, Belleville, Michigan 48111.

### **JURISDICTION AND VENUE**

5. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. On information and belief, jurisdiction and venue for this action are proper in the District of Delaware.

7. This Court has personal jurisdiction over Defendants because they have each purposefully availed themselves of the rights and benefits of the laws of this State and this Judicial District. On information and belief, Defendants are each organized and existing under the laws of Delaware. This Court also has personal jurisdiction over Defendants because they have each done and are doing substantial business in this Judicial District, both generally and, on information and belief, with respect to the allegations in this complaint, including Defendants’ one or more acts of infringement in this Judicial District.

8. Venue is proper in this Judicial District under 28 U.S.C. §§ 1391(b) and (c) and § 1400(b).

### **THE PATENTS-IN-SUIT**

9. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 7,774,911 entitled “METHOD FOR ATTENUATING DRIVELINE VIBRATIONS” (“the ’911 patent”), including the right to sue and to recover for infringement thereof. A copy of the ’911 patent is attached hereto as Exhibit A, which was duly and legally issued on August 17, 2010, naming Zhaohui Sun, David P. Shankin, Dumitru F. Patrascu, and Austin R. Gerding as the inventors.

10. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 8,176,613 entitled “METHOD FOR ATTENUATING DRIVELINE VIBRATIONS” (“the ’613 patent”), including the right to sue and to recover for infringement thereof. A copy of the ’613 patent is attached hereto as Exhibit B, which was duly and legally issued on May 15, 2012, naming Zhaohui Sun, David P. Shankin, Dumitru F. Patrascu, and Austin R. Gerding as the inventors.

11. Plaintiff is the lawful owner of all right, title, and interest in United States Patent No. 8,528,180 entitled “METHOD FOR ATTENUATING DRIVELINE VIBRATIONS” (“the ’180 patent”), including the right to sue and to recover for infringement thereof. A copy of the ’180 patent is attached hereto as Exhibit C, which was duly and legally issued on September 10, 2013, naming Zhaohui Sun, David P. Shankin, Dumitru F. Patrascu, and Austin R. Gerding as the inventors.

### **BACKGROUND**

12. On information and belief, Defendants are automotive companies with a range of products in various automotive specialties, including driveline products such as propshafts (aka driveshafts) for use in the light vehicle market. On information and belief, Defendants

manufacture, use, sell, and/or offer for sale propshafts with tuned liners that reduce noise and vibration, including at least the 4 ½ and 5 inch propshafts for Chevy Colorado and GMC Canyon pickup trucks (“Colorado/Canyon propshafts”), which, on information and belief, are identified by product nos. 94769073 and 94769076, respectively.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,774,911**

13. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 12 above.

14. Defendants have manufactured, used, offered for sale, or sold driveline products, including at least “Colorado/Canyon propshafts,” that infringe, either literally or under the doctrine of equivalents, one or more claims of the ’911 patent in violation of 35 U.S.C. § 271(a). Defendants’ infringement will continue unless enjoined by this Court.

15. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method that infringes one or more claims of the ’911 patent, including claim 1, which reads as follows.

1. A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning at least one liner to attenuate at least two types of vibration transmitted through the shaft member; and

positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also configured to damp bending mode vibrations in the shaft member, the at least one liner being tuned to within about  $\pm 20\%$  of a bending mode natural frequency of the shaft assembly as installed in the driveline system.

16. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component. The method comprises providing a hollow shaft member. The method also comprises tuning at least one liner to attenuate at least two types of vibration transmitted through the shaft member. The method also comprises positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also configured to damp bending mode vibrations in the shaft member, the at least one liner being tuned to within about  $\pm 20\%$  of a bending mode natural frequency of the shaft assembly as installed in the driveline system.

17. Defendants' infringement has damaged and continues to damage and injure Plaintiff. Plaintiff's injury is irreparable and will continue unless and until Defendants are enjoined by this Court from further infringement.

**COUNT II – INFRINGEMENT OF U.S. PATENT NO. 8,176,613**

18. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 17 above.

19. Defendants have manufactured, used, offered for sale, or sold driveline products, including at least "Colorado/Canyon propshafts," that infringe, either literally or under the doctrine of equivalents, one or more claims of the '613 patent in violation of 35 U.S.C. § 271(a). Defendants' infringement will continue unless enjoined by this Court.

20. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method that infringes one or more claims of the '613 patent, including claim 1, which reads as follows.

1. A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning at least one liner to attenuate a plurality of types of vibration transmitted through the shaft member; and

positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also tuned to within about  $\pm 20\%$  of a natural frequency of the driveline system in a torsion mode.

21. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component. The method comprises providing a hollow shaft member. The method also comprises tuning at least one liner to attenuate a plurality of types of vibration transmitted through the shaft member. The method also comprises positioning the at least one liner within the shaft member such that the at least one liner is configured to damp shell mode vibrations in the shaft member by an amount that is greater than or equal to about 2%, and the at least one liner is also tuned to within about  $\pm 20\%$  of a natural frequency of the driveline system in a torsion mode.

22. Defendants' infringement has damaged and continues to damage and injure Plaintiff. Plaintiff's injury is irreparable and will continue unless and until Defendants are enjoined by this Court from further infringement.

**COUNT III – INFRINGEMENT OF U.S. PATENT NO. 8,528,180**

23. Plaintiff incorporates by reference the allegations contained in paragraphs 1 to 22 above.

24. Defendants have manufactured, used, offered for sale, or sold driveline products, including at least "Colorado/Canyon propshafts," that infringe, either literally or under the doctrine of equivalents, one or more claims of the '180 patent in violation of 35 U.S.C. § 271(a). Defendants' infringement will continue unless enjoined by this Court.

25. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method that infringes one or more claims of the '180 patent, including claim 1, which reads as follows.

1. A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning a mass and a stiffness of at least one liner; and

inserting the at least one liner into the shaft member;

wherein the at least one liner is a tuned resistive absorber for attenuating shell mode vibrations and

wherein the at least one liner is a tuned reactive absorber for attenuating torsion mode vibrations.

26. On information and belief, Defendants, in connection with the Colorado/Canyon propshafts, perform, and/or direct or control others to perform on their behalf, a method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component. The method comprises providing a hollow shaft member. The method also comprises tuning a mass and a stiffness of at least one liner. The method also comprises inserting the at least one liner into the shaft member. The at least one liner is a tuned resistive absorber for attenuating shell mode vibrations and is a tuned reactive absorber for attenuating torsion mode vibrations.

27. Defendants' infringement has damaged and continues to damage and injure Plaintiff. Plaintiff's injury is irreparable and will continue unless and until Defendants are enjoined by this Court from further infringement.

### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff requests that the Court enter judgment for Plaintiff and against Defendants as follows:

A. That U.S. Patent Nos. 7,774,911, 8,176,613, and 8,528,180 be judged valid, enforceable, and infringed by Defendants;

B. That the Court preliminarily and permanently enjoin Defendants, their officers, partners, agents, servants, employees, parents, subsidiaries, divisions, affiliate corporations, joint ventures, other related business entities and all other persons acting in concert, participation, or in privity with them, and their successors and assigns, from any commercial manufacture, use, offer to sell, or sale within the United States, or importation into the United States of



Colorado/Canyon propshafts and any product that infringes the '911, '613, and/or '180 patents prior to the expiration of the '911, '613, and/or '180 patents;

C. That Plaintiff be awarded judgment against Defendants for damages together with interests and costs fixed by the Court;

D. That the Court declare this an exceptional case and award Plaintiff its attorneys' fees, as provided by 35 U.S.C. § 285;

E. That Plaintiff be awarded such other and further relief as this Court may deem just and proper.

**JURY DEMAND**

Plaintiffs respectfully request a jury trial on all issues so triable.

Respectfully submitted,

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