## UNITED STATES CUSTOMS AND BORDER PROTECTION

## PROPOSED REVOCATION OF A RULING LETTER AND PROPOSED REVOCATION OF TREATMENT RELATING TO THE TARIFF CLASSIFICATION OF CERTAIN MASS FLOW CONTROLLERS

**AGENCY:** U. S. Customs and Border Protection; Department of Homeland Security.

**ACTION:** Notice of proposed revocation of a tariff classification ruling letter and proposed revocation of treatment relating to the classification of certain mass flow controllers.

**SUMMARY:** Pursuant to section 625(c), Tariff Act of 1930, (19 U.S.C. 1625 (c)), as amended by section 623 of Title VI (Customs Modernization) of the North American Free Trade Agreement Implementation Act (Pub. L. 103-182, 107 Stat. 2057), this notice advises interested parties that Customs and Border Protection (CBP) intends to revoke a ruling letter relating to the tariff classification of certain mass flow controllers, under the Harmonized Tariff Schedule of the United States (HTSUS). The Mass Flow Controller ("MFC") is described as being is a closed-loop device that sets, measures, and controls the flow of a gases or liquids. The MFC is said to operate automatically according to a complex system of internal applications. The MFC consists of five main components: the base, sensor, bypass (or flow splitter), control valve and printed circuit board. CBP also proposes to revoke any treatment previously accorded by it to substantially identical transactions. Comments are invited on the correctness of the proposed actions.

**DATE:** Comments must be received on or before (30 DAYS FROM PUBLICATION DATE).

**ADDRESS:** Written comments are to be addressed to Customs and Border Protection, Regulations and Rulings of the Office of International Trade, Attention: Commercial Trade and Regulations Branch, 799 9th Street, N.W., 5th Floor, Washington, D.C. 20229-1179. Submitted comments may be inspected at Customs and Border Protection, 799 9th Street N.W., 5th Floor, Washington, D.C. 20229-1179, during regular business hours. Arrangements to inspect submitted comments should be made in advance by calling Mr. Joseph Clark, Trade and Commercial Regulations Branch, at (202) 325-0118.

**FOR FURTHER INFORMATION CONTACT:** John Rhea, Tariff Classification and Marking Branch: (202) 325-0035.

## SUPPLEMENTARY INFORMATION:

### BACKGROUND

On December 8, 1993 Title VI (Customs Modernization) of the North American Free Trade Agreement Implementation Act (Pub. L. 103-182, 107 Stat. 2057) (hereinafter "Title VI"), became effective. Tile VI amended many sections of the Tariff Act of 1930, as amended, and related laws. Two new concepts which emerge from the law are "**informed compliance**" and "**shared responsibility**." These concepts are premised on the idea that in order to maximize voluntary compliance with customs laws and regulations, the trade community needs to be clearly and completely informed of its legal obligations. Accordingly, the law imposes a greater obligation on CBP to provide the public with improved information concerning the trade community's responsibilities and rights under the customs and related laws. In addition, both the trade and CBP share responsibility in carrying out import requirements. For example, under section 484 of the Tariff Act of 1930, as amended (19 U.S.C. §1484), the importer of record is responsible for using reasonable care to enter, classify and value imported merchandise, and provide any other information necessary to enable CBP to properly assess duties, collect accurate statistics and determine whether any other applicable legal requirement is met.

Pursuant to section 625 (c)(1), Tariff Act of 1930 (19 U.S.C. 1625 (c)(1)), as amended by section 623 of Title VI, this notice advises interested parties that CBP intends to revoke one ruling letter pertaining to the tariff classification of certain mass flow controllers. Although in this notice, CBP is specifically referring to the revocation of New York Ruling Letter ("NY") R01762 (Attachment "A"), this notice covers any rulings on this merchandise which may exist but have not been specifically identified. CBP has undertaken reasonable efforts to search existing databases for rulings in addition to the one identified. No further rulings have been found. Any party who has received an interpretive ruling or decision (i.e., a ruling letter, internal advice memorandum or decision or protest review decision) on the merchandise subject to this notice should advise CBP during this notice period.

Similarly, pursuant to section 625(c)(2), Tariff Act of 1930 (19 U.S.C. 1625 (c)(2)), as amended by section 623 of Title VI, CBP intends to revoke any treatment previously accorded by CBP to substantially identical transactions. Any person involved in substantially identical transactions should advise CBP during this notice period. An importer's failure to advise CBP of substantially identical transactions or of a specific ruling not identified in this notice, may raise issues of reasonable care on the part of the importer or its agents for importations of merchandise subsequent to the effective date of the final decision on this notice.

In the above mentioned ruling, CBP determined that the mass flow controllers were classifiable under subheading 8481.80.9015, HTSUS. Based upon our analysis of the mass flow controller, CBP now believes that the mass flow controller is properly classified in heading 9032, HTSUS, as an automatic regulating or control apparatus. Specifically, the mass flow controller is classified under subheading 9032.89.6060, HTSUS, which provides for: "Automatic regulating or controlling instruments and apparatus ... Other instruments and apparatus: Other: Other Flow and liquid level control instruments."

Pursuant to 19 U.S.C. 1625(c)(1), CBP intends to revoke NY R01762 and any other ruling not specifically identified, to reflect the proper classification of the mass flow controllers according to the analysis contained in proposed Headquarters Ruling Letter ("HQ") H028098, set forth as Attachment "B" to this document. Additionally, pursuant to 19 U.S.C. 1625(c)(2), CBP intends to revoke any treatment previously accorded by CBP to substantially identical transactions. Before taking this action, consideration will be given to any written comments timely received.

**DATED:** DEC 4 2009

Myles B. Harmon, Director
Commercial and Trade Facilitation Division

Attachments:

U.S. Department of Homeland Security
Washington, DC 20229

U.S. Customs and
Border Protection

**HQ H028098**

**CLA-2 OT:RR:CTF:TCM H028098** JER

**CATEGORY:** Classification

**TARIFF NO.:** 9032.89.6060

George R. Tuttle, Esq.
Law Offices of George R. Tuttle, PC
One Embarcadero Center, Suite 730
San Francisco, CA 94111

**RE:** Mass Flow Controller; Proposed Revocation of NY R01762

Dear Mr. Tuttle:

On April 26, 2005, U.S. Customs and Border Protection ("CBP") issued New York Ruling Letter ("NY") R01762, dated April 26, 2005, to you on behalf of Advanced Energy Industries, Inc. (hereinafter "AEI"), classifying certain Mass Flow Controllers ("MFC") in heading 8481, of the Harmonized Tariff Schedule of the United States ("HTSUS"). After reviewing NY R01762, we have found that ruling to be in error. For the reasons set forth in this ruling, we are revoking NY R01762.

**FACTS:**

The Mass Flow Controller ("MFC") is described as being a closed-loop device that sets, measures, and controls the flow of gases or liquids. The MFC is said to operate automatically according to a complex system of internal applications. The MFC consists of five main components: the base, a thermal sensor, a bypass (or flow splitter), a control valve and a printed circuit board (or electronic assembly). The base provides the platform on which all other components of the MFC are mounted and contain the channels that form the main flow path of the gas. The thermal sensor is designed to respond to any changes in gas flow conditions. The bypass maintains a constant ratio of gas

flow, measuring the portion of gas that passes through the sensor. The control valve establishes the flow of gas by responding to a signal that compares the actual flow to the set point. The printed circuit board system includes a bridge circuit, an amplifier circuit and a comparator circuit (or central processing unit ("CPU")) wherein output indications and command signals are processed. The output signal is compared with the external set point signal. Any resulting error signal directs the control valve to open or close to maintain a constant flow at the set point. Fundamentals of Mass Flow Control, Critical Terminology & Operation Principles for Gas and Liquid MFCs, Advanced Energy Industries, Inc., (hereinafter Fundamentals of Mass Flow Control) available at, www.advanced-energy.com.

**ISSUE:**

Whether the subject merchandise is classified as an automatic regulating valve in heading 8481, HTSUS, or as an automatic controlling apparatus, in heading 9032, HTSUS, or as an instrument for measuring or checking liquids or gases in heading 9026, HTSUS.

**LAW AND ANALYSIS:**

Classification under the HTSUS is made in accordance with the General Rules of Interpretation ("GRIs"). GRI 1 provides that the classification of goods shall be determined according to the terms of the headings of the tariff schedule and any relative section or chapter notes. In the event that the goods cannot be classified solely on the basis of GRI 1, and if the headings and legal notes do not otherwise require, the remaining GRIs 2 through 6 may then be applied in order.

The HTSUS provisions under consideration are as follows:

8481 Taps, cocks, valves and similar appliances, for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves; parts thereof:

8481.80 Other appliances:
8481.80.90 Other...
8481.80.9015 Regulator valves, self-operating, for controlling variables such as temperature, pressure, flow and liquid level

9026 Instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquid or gases...excluding instruments and apparatus of heading 9014, 9015, 9028 or 9032; parts thereof:

9026.10 For measuring or checking the flow or level of liquids:

9026.10.20 Electrical...

9026.10.2040 Flow meters

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9026.20 For measuring or checking pressure:

9026.20.4000 Electrical...

9032 Automatic regulating or controlling instruments and apparatus; parts and accessories thereof:

* * *

Other instruments and apparatus:

* * *

9032.89 Other:

9032.89.60 Other...

Other:

9032.89.6060 Flow and liquid level control instruments

The Harmonized Commodity Description and Coding System Explanatory Notes ("ENs") constitute the official interpretation of the HTSUS. While not legally binding nor dispositive, the ENs provide a commentary on the scope of each heading of the HTSUS and are generally indicative of the proper interpretation of these headings. See T.D. 89-80, 54 Fed. Reg. 35127 (August 23, 1989).

In NY R01762, CBP determined that the subject Mass Flow Controllers were classified in heading 8481, HTSUS. That ruling based its decision in part on the fact that the ENs to heading 8481, HTSUS, provide that combinations consisting of a valve and any measuring, checking or automatically controlling instrument of heading 9032, HTSUS, are classifiable in heading 8481, HTSUS, where it is found that the instrument or apparatus is mounted directly on the valve, and the combined article has the essential character of an article of heading 8481. By contrast, you contend that the controller apparatus is not mounted directly onto the valve and that the essential character of the combined apparatus is not imparted by an article of heading 8481, HTSUS. Specifically you aver that the MFC is classified in heading 9032, HTSUS, and alternatively in heading 9026, HTSUS.

In NY R01762, CBP viewed the MFC as satisfying the conditions for "combinations" set forth in the ENs to heading 8481, HTSUS. The ENs to heading 8481, HTSUS, provide that:

> Combinations consisting of a valve and any measuring, checking or automatically controlling instrument or apparatus of HTSUS headings 9026 or 9032 remain in this heading if the instrument or apparatus is mounted directly on the valve, and **provided** the combined article has the essential character of an article of heading 8481. If **not** satisfying these conditions, they are classified in **heading 90.26** ... or in **heading 90.32**.

AEI's Mass Flow Controller consists of five main components which work in unison to maintain a constant gas flow at a particular set point. Essentially, the bypass or flow splitter forces a proportion of incoming gas through a thermal sensor which, through a heating and cooling effect, creates a temperature differential. This temperature differential is amplified into a flow output signal. This output signal is compared with the set point signal. Should an error signal result, the command signal from the printed circuit board directs the control valve to open or close to maintain a constant flow at the set point. Fundamentals of Mass Flow Control, at 2.

While CBP has in previous rulings classified "combination" automatic control valves in heading 8481, HTSUS, those decisions were in part based on the fact that the term "valve" was incorporated into the product's name and thus provided for *eo nomine* in heading 8481, HTSUS. Also, while capable of sensing changes in variables and regulating flow rate, these articles were distinguishable from articles of heading 9032 HTSUS. See Headquarters Ruling Letters (HQ) 952880, dated February 8, 1993; HQ 956084, dated July 27, 1994 and HQ 958548, dated February 1996 (which classified automatic flow regulating valves in heading 8481, HTSUS).

We find that the subject MFC does not satisfy the two-part analysis in the ENs to heading 8481, HTSUS. The essential character of the subject MFC directs and analyzes the gas flow, features which are beyond the scope of heading 8481, HTSUS. Also, the measuring instrument is not mounted directly on the control valve.[1] In the instant case, the measuring and checking devices are housed in a common unit with the valve. As such, the subject MFC is not classifiable in heading 8481, HTSUS.

Note 1(g) to Chapter 90 provides that this chapter does not include valves of heading 8481, HTSUS. As the subject MFC does not satisfy the criteria for "combination automatic valves" described in the ENs to heading 8481, HTSUS, Note 1(g) to Chapter 90 applies to exclude products whose essential character and function is that of a valve of heading 8481, HTSUS. As discussed above, the subject MFC by its function, composition and essential devices, is not classifiable as a valve within the meaning of heading 8481, HTSUS.

In order to be classifiable in heading 9032, HTSUS, merchandise must meet the terms of Note 7 to Chapter 90, HTSUS. Specific to the instant facts, the subject merchandise must satisfy Note 7 (a) to Ch. 90, HTSUS. Note 7 (a) to Chapter 90 states that:

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[1] NY J87730, dated August 20, 2003 and NY L82203, dated February 15, 2005. (wherein the Taco bypass valve and the BASO automatic gas pilot valve, respectively, had measuring devices which, according to images posted on the respective websites, were mounted directly on the control valve).

Heading 9032 applies only to:

> (a) Instruments and apparatus for automatically controlling the flow, level, pressure or other variables of liquids or gases, or for automatically controlling temperature, whether or not their operation depends on an electrical phenomenon which varies according to the factor to be automatically controlled, which are designed to bring this factor to, and maintain it at, a desired value, stabilized against disturbances, by constantly or periodically measuring its actual value [.]

According to the ENs to heading 9032, HTSUS, this heading provides for instruments and apparatus for automatically controlling the flow, level pressure or other variables of liquids or gases. In previous rulings, CBP has classified automatic controlling devices in heading 9032, HTSUS, where it was determined that the merchandise met the requirements set forth in the terms of the heading, the ENs to heading 9032, HTSUS, and Note 7 to Ch. 90, HTSUS. Such items were substantially similar in function to the subject MFC. For instance, in HQ H008629, dated August 13, 2007, CBP classified two cold control devices as automatic controlling apparatus within the meaning of Note 7(a) to heading 9032, HTSUS. In HQ H008629, CBP determined that the articles contained a device for measuring the variable to be controlled, a control device which compared the measured value with the desired value and a starting, stopping or operating device.[2] See also, HQ 954950, dated December 23, 1993, in which CBP classified an electronic control unit ("ECU") in heading 9032, HTSUS, because the ECU measured the flow, pressure and temperature of fuel, compared the data to pre-established norms and had a control device which brought the variable within the desired parameters. Likewise, HQ 086179, dated March 12, 1990, classified a water temperature regulating module in heading 9032 HTSUS, because it had a measuring device to monitor the variable, had a control device to control the water temperature and a stopping device to turn off the hot water generator when the water reached a predetermined temperature.

As the ENs to heading 9032, HTSUS, explains, instruments and apparatus which control the flow, level and pressure of liquids, gases or temperature are generally remote controlled by another control device. However, in cases where the automatic apparatus is combined with the appliance or device which carries out the order, classification of the whole is determined by GRI 1 or GRI 3(b). The applicable ENs to heading 9032, HTSUS, state in pertinent part that:

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[2] HQ H008629, explained that: "these controllers contain the main components of thermostats, as they are described by EN 90.32(I). They contain: (1) an element sensitive to changes in temperature, the action of which depends on the vapor pressure of a liquid; (2) have preset differentials for obtaining a desired temperature; and (3) switches that operate contactors, relays, fans, and motors which regulate temperature."

> Instruments and apparatus for automatically controlling the flow, level, pressure and other variables of liquids or gases or for automatically controlling temperature are connected to an appliance which carries out the orders ... which restores the variable ... This appliance, generally remote controlled by a mechanical, hydraulic, pneumatic or electric control, is to be classified in its own appropriate heading (pump or compressor: **heading 84.13** or **84.14**; valve: **heading 84.81**, etc.). If the automatic control apparatus is combined with the appliance which carries out the orders, the classification of the whole is to be determined under either Interpretative Rule 1 or Interpretative Rule 3 (b) (see Part (III) of the General Explanatory Note to Section XVI and the Explanatory Note to heading 84.81).

The ENs to heading 9032, HTSUS, further state that: "Apparatus for automatically controlling liquids or gases or temperature, within the meaning of Note 7 (a) to this Chapter, consists of [the following] three devices forming a single entity or in accordance with Note 3 to this Chapter, a functional unit." The ENs to heading 9032 HTSUS, state that these items consist of [the following] three essential devices which carry out its functions forming a single entity. As counsel noted, advancements in technology have caused the once separate components, (flow meter, controller and valve) to become consolidated into one single device. As such, those aspects of the MFC which measure and monitor flow activity are inseparable from those aspects which regulate the gas flow.

The ENs to heading 9032, HTSUS, provides as follows:

> **Automatic control apparatus for liquids or gases and apparatus for automatically controlling temperature** form part of complete automatic control systems and consist essentially of the following devices:
>
> (A) **A device for measuring** the variable to be controlled (pressure or level in a tank, temperature in a room, etc.); in some cases, a simple device which is sensitive to changes in the variable (metal or bi-metal rod, chamber or bellows containing an expanding liquid, float, etc.) may be used instead of a measuring device.
>
> (B) **A control device** which compares the measured value with the desired value and actuates the device described in (C) below accordingly.
>
> (C) **A starting, stopping or operating device**.

The subject merchandise has each of these three essential devices. The subject MFC has (A) a measuring device: the sensor/bypass combination which measures and checks the flow of gas, (B) a control device: the printed circuit board system which interprets the output signal in light of the desired set point and ultimately directs (C) the starting and stopping device: the printed circuit board ("PCB") which provides the detailed instructions to the control valve to open or close to maintain a constant gas flow at the set point. Specifically, the signal generated by the bridge circuit is amplified and fed into the analog

converter which outputs this signal into the CPU. The CPU compares the set point signal to the sensor reading to generate a signal to drive the control valve. See Mass Flow Controllers: Series FC-77X, et al; Advanced Energy (March 2004). As such, the subject MFC meets the description of an automatic control apparatus as set forth in ENs to heading 9032 HTSUS. Moreover, because the subject MFC contains each of the three devices set forth above, the MFC therefore is classifiable as an automatic regulating or controlling apparatus within the meaning of Note 7 (a) to Chapter 90, HTSUS.

In the alternative, counsel asserts that the MFC is classifiable in heading 9026, HTSUS. Classification of the subject merchandise in heading 9026, HTSUS, would be proper only if the MFC was limited to measuring and checking gas flow, i.e., the device was a Mass Flow Meter and did not meet the terms of heading 9032, HTSUS. According to our research, Mass Flow Controllers throughout the industry are devices used to both measure and control the flow of gases or liquids.[3] AEI's MFC is no different. Fundamentally, the MFC contains a thermal sensor, bypass and printed circuit board (the Flow Meter) and a solenoid control valve and PCB (the Flow Controller). As explained above, the MFC meets the terms of heading 9032, HTSUS. Therefore, classification under heading 9026, HTSUS, is precluded.

**HOLDING:**

By application of GRI 1 and Legal Note 7 (a) to Chapter 90, HTSUS, we find that the Mass Flow Controller is correctly classified in heading 9032, HTSUS, and specifically provided for in subheading 9032.89.6060, HTSUS, which provides for: "Automatic regulating or controlling instruments and apparatus...: Other instruments and apparatus: Other: Other: Other: Flow and liquid level control instruments." The 2009 column one, general rate of duty is 1.7% *ad valorem*.

**EFFECT ON OTHER RULINGS:**

NY R01762, dated April 26, 2005 is hereby revoked.

Sincerely,

Myles B. Harmon, Director
Commercial and Trade Facilitation Division

[3] See *Smart-Trak Series 100*, at www.sierrainstruments.com and *Brooks MF Series, Smart Mass Flow*, at www.Brooksinstruments.com. (For a discussion of the capacity of mass flow meters and controllers which monitor and regulate gas flow rates).