



Bulletin HY14-1485-M1/US

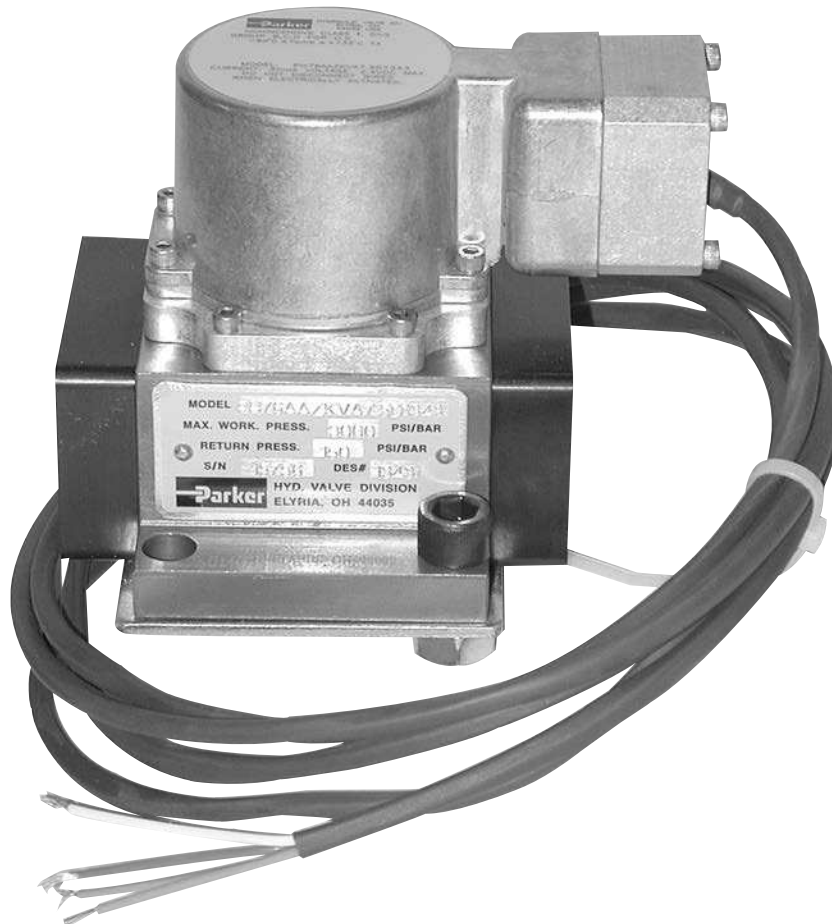
Series PH76 Servovalves for Class 1, DIV 2 Group B,C,D

 II 3G

EEx nA II T3

Effective: July 1, 2015

Supersedes: August 1, 2003



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WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
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The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale" elsewhere in this document or available at www.parker.com/hydraulicvalve.

SAFETY GUIDE

For safety information, see Safety Guide SG HY14-1000 at www.parker.com/safety or call 1-800-CParker.

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Introduction

Devices which are applied in hazardous environments require formal approval granted by an appropriately authorized institution. Care must be taken to make sure that the device is approved for the particular environment and installed with approved procedures and accessories. The approval by the authorized institution is accomplished through actual testing of the device, controlled drawings, and periodic inspection which certifies compliance to those drawings by the manufacturer. The approval is granted to the facility where the product is manufactured.

Servovalves for
Class 1, Division 2 Group B, C, D
For Canada and United States

European Classification, Zone 2, II3G,
Groups IIA, IIB, IIC
EEx nA II T3

Model PH76AAZKVA**D**** Servovalve

I. Hazardous Area Classification

The National Electrical Code has established a classification system for hazardous environments. The basis for differentiation is based on the properties of the flammable vapors, liquids or gas, or combustible dusts or fibers which may be present, and the likelihood that flammable or combustible concentration or quantity is present.

Class I, Division 2, Groups B, C, & D

A Class I, Division 2, location is a location: (1) in which hazardous concentrations of flammable gases or vapors exist continuously, intermittently, or periodically under normal operating conditions; or (2) in which hazardous concentrations of such gases or vapors may

exist frequently because of repair or maintenance operations or because of leakage; or (3) in which breakdown or faulty operation of equipment or processes might release hazardous concentration of flammable gases or vapors, and might also cause simulations failure in electric equipment.

The group category identifies the most representative chemicals which are:

- Group B: Hydrogen
- Group C: Ethylene
- Group D: Propane

A complete listing of chemicals and their groups can be found in the National Electrical Code, Table 500-20.

This apparatus is suitable for use in Class I, Division 2, Groups B, C, and D, or nonhazardous locations only.

This product is not field repairable. The valve must be returned to the manufacturer for service if required.

II. Installation and Wiring Drawings

The following drawings are required to assist in obtaining a correct installation. Available upon request from Hydraulic Valve Division, Elyria, Ohio.

PH76AAZKVA**D**** Servovalve

Note: The servovalve is mounted directly on a hydraulic manifold. The servovalve wire leads must run through a metal conduit and be terminated in a junction box. The wires shall be terminated on a terminal block within the junction box. The end-user connection is routed via separate conduit into this same junction box and terminated on the opposite side of the terminal block. Splicing of wires is not permitted with this valve.

WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT – RISQUE D’EXPLOSION – NE PAS DÉBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, À MOINS QU’IL NE S’AGISSE D’UN EMPLACEMENT NON DANGEREUX.

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

AVERTISSEMENT – RISQUE D’EXPLOSION – LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE 1, DIVISION 2.

WARNING – EXPLOSION HAZARD – DO NOT REPLACE EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT – RISQUE D’EXPLOSION – COUPER LE COURANT OU S’ASSURER QUE L’EMPLACEMENT EST DESIGNÉ NON DANGEREUX AVANT DE REPLACER LE COMPOSANT.

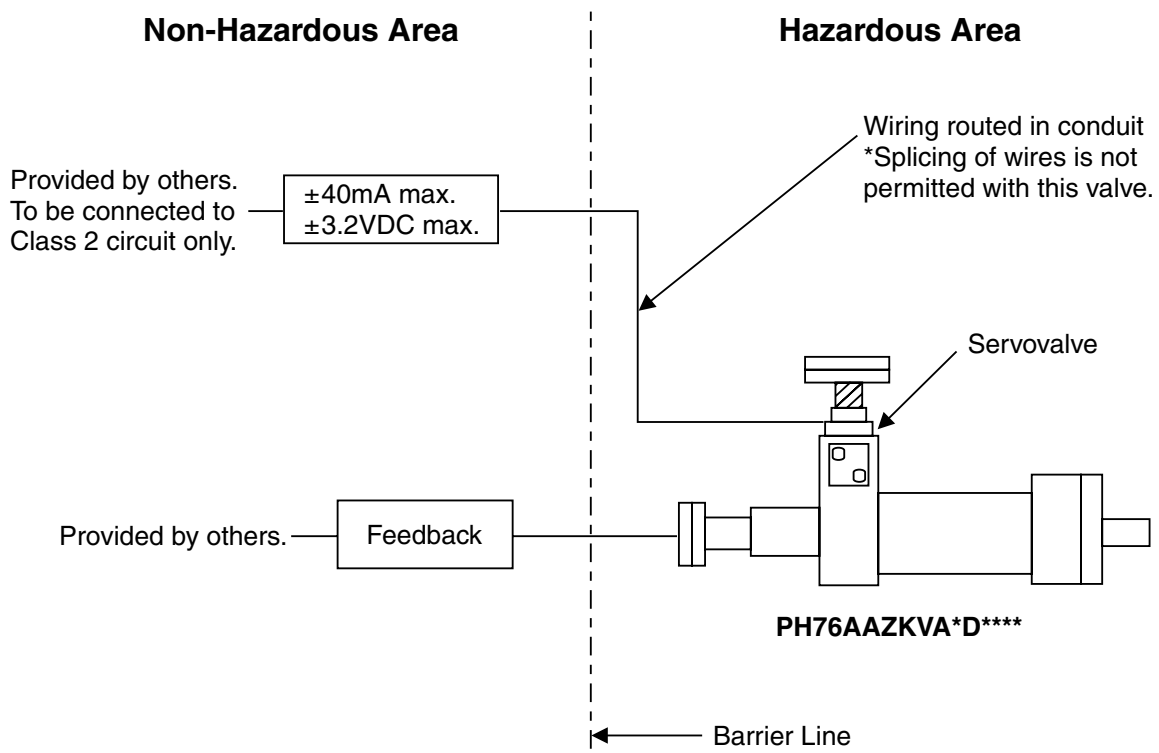
WARNING – TO BE CONNECTED TO A CLASS 2 CIRCUIT ONLY.

AVERTISSEMENT – RACCORDER UNIQUEMENT A UN CIRCUIT DE CLASSE 2.

WARNING – EXPOSURE TO CERTAIN CHEMICALS MAY DEGRADE THE SEALING PROPERTIES OF THE ELASTOMERS. CONTACT YOUR PARKER SALES REPRESENTATIVE FOR OPTIMAL ELASTOMER SELECTION.

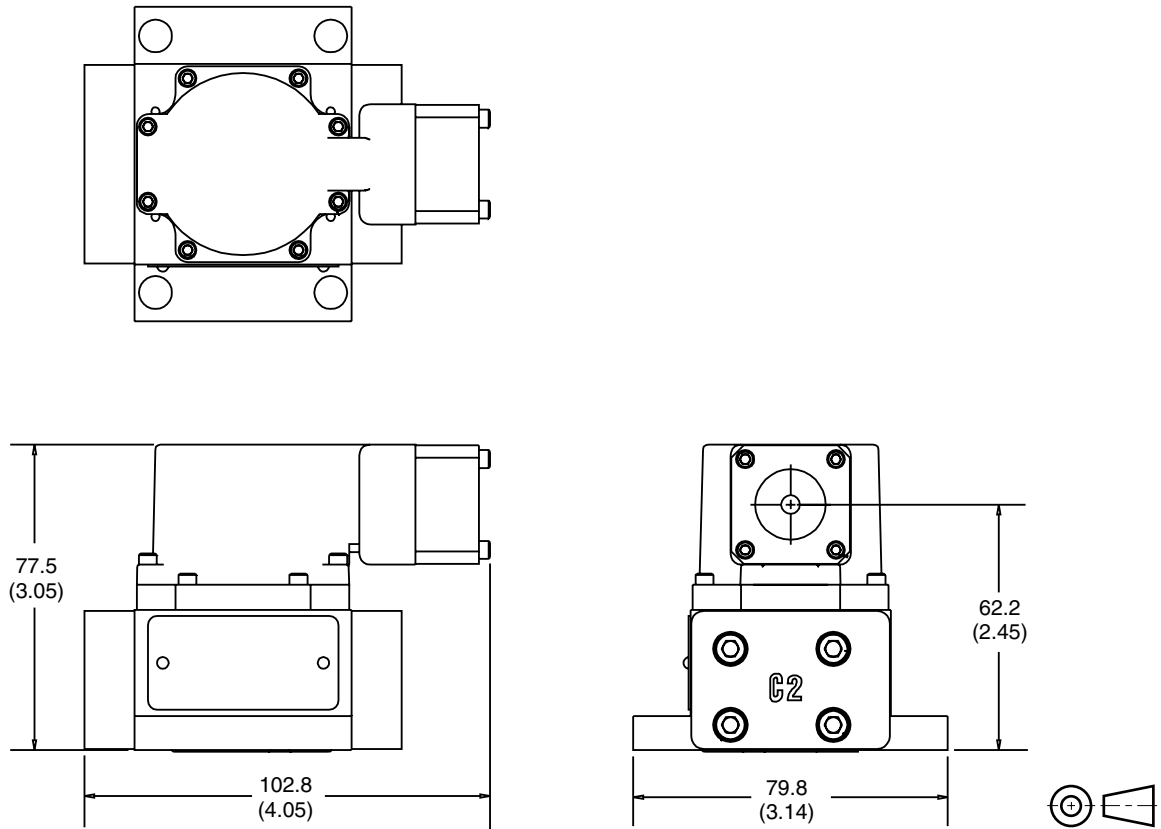
ATTENTION – L’EXPOSITION À CERTAINS PRODUITS CHIMIQUES PEUT DÉGRADER LES PROPRIÉTÉS D’ÉTANCHÉITÉ DES ÉLASTOMÈRES. CONTACTEZ VOTRE VENTE REPRESENTATIVE PARKER POUR LA SÉLECTION D’ÉLASTOMÈRE OPTIMALE.

Figure 1: Actuator Block Diagram

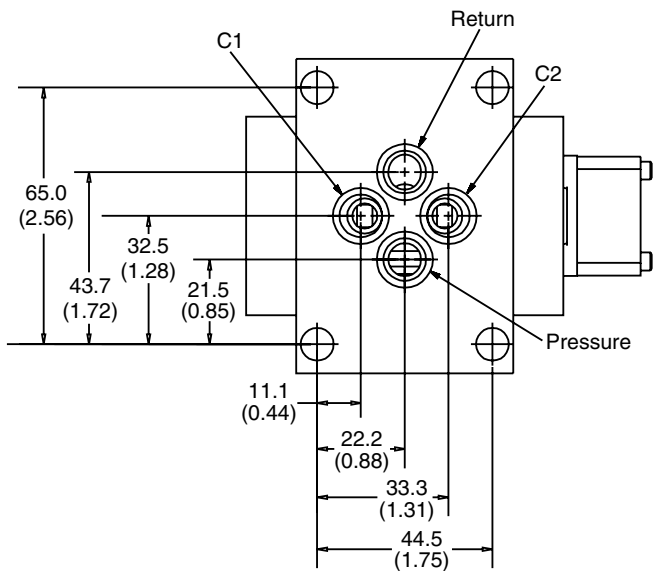


*Inch equivalents for millimeter dimensions are shown in (**)

Figure 2: PH76AAZKVAD******

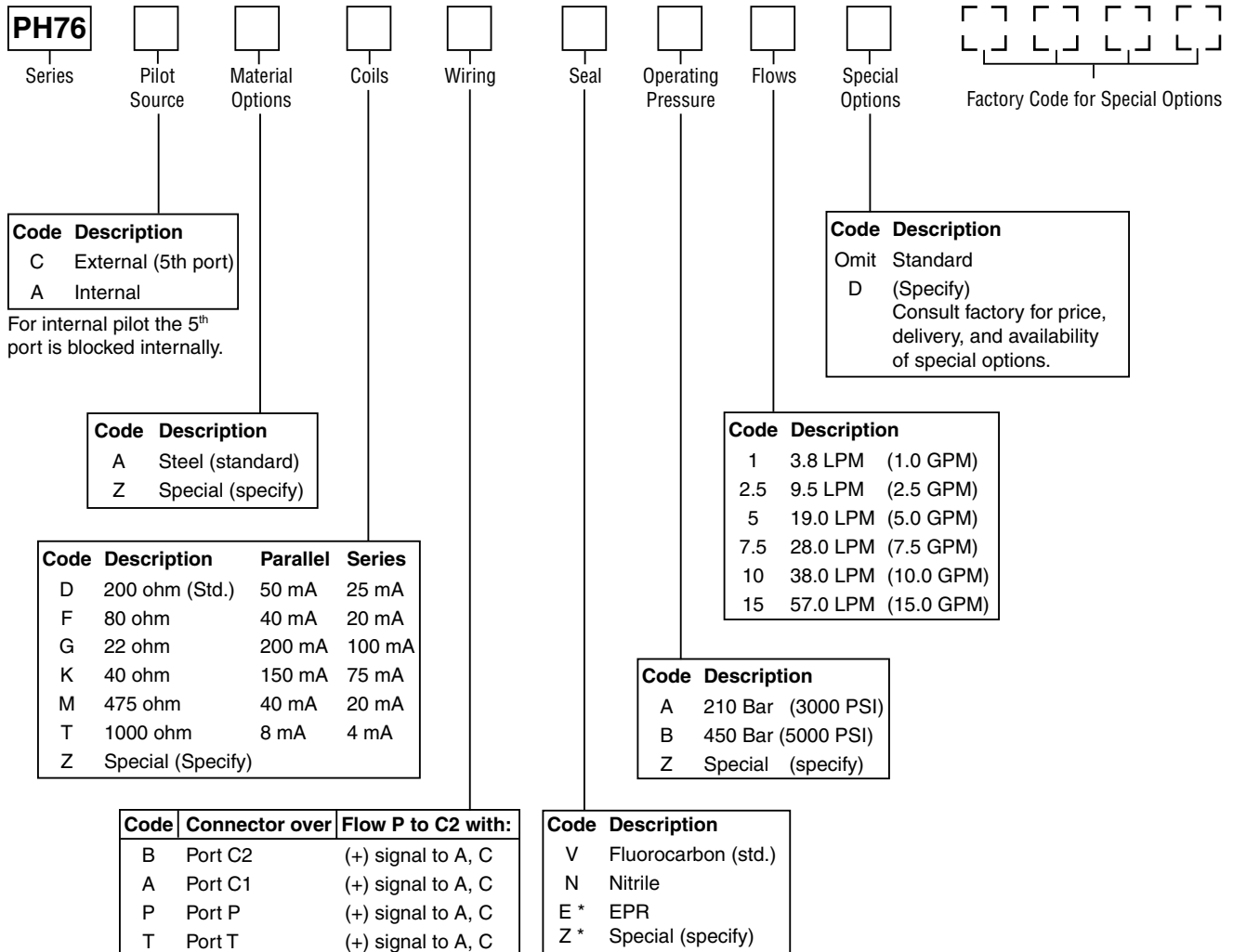


Mounting Interface Dimensions



Notes:

- 1 See Figure 1 for typical block diagram.
2. Refer to Catalog HY14-2550/US for flow and performance characteristics.



Weight: 1 kg (2.2 lb)
Cable with mating connector: EHC154S
Mating connector: MS3106E-14S-2S
Bolt kit: Included with valve. BK07 (4) 5/16-18x1"
Flushing valve: 1200127 (same for 4 or 5 port PH76 valve)
Subplate, 5 ports: 1402303 (4) #12 SAE side ports, (1) #4 SAE side port
Subplate, 4 ports: 810090-3 (4) #12 SAE side ports
Null adjust tool: 6522A13
Driver cards: 23-7030, BD90*, BD101*

When used in conjunction with Series BD90 and BD101 servo amplifiers or a motion controller, Series BD valves will provide accurate control of rotary and linear actuators.

* For output currents >15 mA



Flushing valve is rated for 3000 psi operation.

Terms of Sale with Warranty Limitations

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7. User Responsibility. The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.

8. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

10. Buyer's Obligation; Rights of Seller. To secure payment of all sums due or otherwise, Seller retains a security interest in all Products delivered to Buyer and this agreement is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

11. Improper Use and Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought

by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Products; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

12. Cancellations and Changes. Buyer may not cancel or modify or cancel any order for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change Product features, specifications, designs and availability.

13. Limitation on Assignment. Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

14. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller's obligations by reason of events or circumstances beyond its reasonable control (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

15. Waiver and Severability. Failure to enforce any provision of this agreement will not invalidate that provision; nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

16. Termination. Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate this agreement, in writing, if Buyer: (a) breaches any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

17. Governing Law. This agreement and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

18. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and refund the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller is not liable for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

19. Entire Agreement. This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged. The terms contained herein may not be modified unless in writing and signed by an authorized representative of Seller.

20. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards of care, including those of the United Kingdom, the United States of America, and the country or countries in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act") and the U.S. Food Drug and Cosmetic Act ("FDCA"), each as currently amended, and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that it is familiar with the provisions of the U. K. Bribery Act, the FCPA, the FDA, and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller.



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