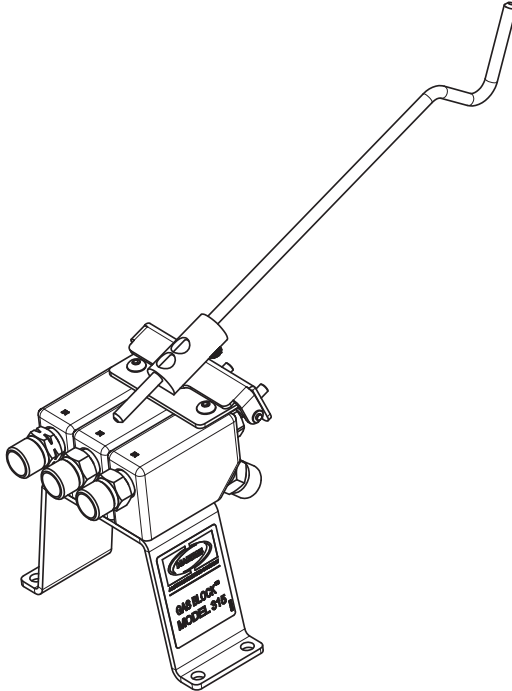




A LINCOLN ELECTRIC COMPANY

## **GAS BLOCK INSTRUCTION MANUAL**

IMPORTANT - SAVE THESE INSTRUCTIONS



# GAS BLOCK INSTRUCTION MANUAL

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For your own safety, read these instructions. Failure to do so could lead to serious injury.

### BE SURE THIS INFORMATION REACHES THE OPERATOR

#### GENERAL INSTRUCTIONS

These instructions and product are intended for EXPERIENCED oxy-fuel equipment operators or those working under the close supervision of skilled operators.

DO NOT permit untrained persons to install, operate or maintain this equipment. DO NOT attempt to install or operate this equipment until you have read and understand these instructions. If you do not fully understand these instructions, contact your supplier for further information.

All gas flows should be COMPLETELY SHUT OFF when installing or servicing this equipment.

SAFETY: Comply with all safety precautions as listed below:

- A. Use only the correct type hose connection for specific gas service.
- B. Test equipment for leaks regularly with approved leak detection solution or pressure loss method. The leak detection solution is available through your industrial gas supplier.
- C. Do not use equipment unless it is free from leaks, is operating properly and is being used as intended by the manufacturer.
- D. Before lighting torch equipment, purge lines individually to eliminate any mixture of fuel gas in air or pure oxygen.
- E. Avoid releasing uncontrolled, flammable gases or vapors near potential sources of ignition such as an open flame during set-up, operation and/or servicing. These operations should always be done in a well ventilated area.
- F. Do not use oil, or oil bearing materials, on or near devices through which oxygen flows. Oil, or any other combustible material, can ignite readily and burn vigorously in the presence of oxygen. Use only lubricants and leak detection fluids compatible with oxygen.

### 1. INTRODUCTION

#### 1.1 SCOPE

This manual provides installation and operation information for The Harris Products Group's 2 and 3 Gas Block Automatic Flow Control Systems. The Gas Block is an accessory recommended primarily for high volume production brazing, welding or heating applications. Both 2 and 3 Gas Block Systems are designed for oxy-fuel or air-fuel torch equipment. The 3 Gas Block System includes an additional on/off control for an inert back-purging gas.

Model GB2, Gas Block for Fuel Gas and Oxygen

Model GB3, Gas Block for Fuel Gas, Oxygen and Inert Purging

#### 1.2 DESCRIPTION

The inlet and outlet threads are conforming to standard of country.

The Gas Block shut-off valves can be individually adjusted using their seat adjustment screws and lock nuts (Ref. \_\_\_).

(See 3.4 SHUT-OFF VALVE ADJUSTMENT.) Both Gas Block hanger rods can also be adjusted according to the weight of the torch equipment being used. (See 3.3

HANGER ROD ADJUSTMENT.)

### 2. INSTALLATION

The Gas Block is a shut-off unit and not a pressure regulating device. It is designed for installation downstream of the pressure regulators.

- A. Secure the Gas Block on a bench, or other horizontal surface, using the four to six mounting holes in the Gas Block Base (Item 1 TABLE A). Position the Gas Block so that when the torch is placed on the hanger rod, the torch flame will point away from the operator and not in the proximity of any combustible material; also, so that the bench or surface does not contact the hoses and restrict gas flow downstream.

The Gas Block is shipped with the hanger rod (Item 2 TABLE A) packed separately, but in the same carton as the main body. Insert the rod, straight end, into the hole in the hanger block (Item 3 TABLE A) on the side of Gas Block marked "OUTLET." Push rod through hanger block hole on opposite side and allow it to protrude about three (3) inches. Tighten hanger rod lock screw (Item 4 TABLE A).

- B. Connect the fuel gas hose from the regulator (grooved nut) to the connection marked "INLET (LH)" (Item 5 TABLE A) and the oxygen hose from the regulator (non-grooved nut) to the connection marked "INLET (RH)" (Item 6 TABLE A). Connect inert gas supply to inert gas inlet (Item 7 TABLE A), if so equipped.
- C. Connect torch hoses to the respective Gas Block outlets. Fuel gas hose (grooved nut) to "OUTLET (LH)" (Item 8 TABLE A) and oxygen hose (non-grooved nut) to "OUTLET (RH)" (Item 9 TABLE A). Connect torch to outlet hoses. Connect inert gas outlet hose to inert gas outlet connection (Item 10 TABLE A).
- D. To close Gas Block valves, place oxy-fuel or air-fuel torch on Gas Block hanger rod.
- E. Open cylinder or pipeline valves pressurizing the system. Adjust regulators to the operating pressures recommended by the torch equipment manufacturer.\* Before lifting torch from hanger rod, make sure torch valves, if so equipped, are fully closed. Lift torch from hanger rod and test torch for leaks. Do not proceed until all leaks are corrected and torch is returned to hanger rod.
- F. Purge gas system. Lift torch from hanger rod and open then close each torch valve\* independently. Recommended purge time is 5 seconds for every 10 feet of hose. Purging oxy-fuel system is recommended to prevent flashback due to gases being mixed in the system beyond where intended. Shielding gases in 3 Gas Blocks can also be purged using the same method.

\*Note: If using torches without valves or with valves capped, follow the same purging sequence using the pipeline supply or the cylinder valve(s) to purge and use upstream regulators to set tip pressures.

### 3. GENERAL OPERATION

#### 3.1 USE

Torch equipment should be operated according to the manufacturer's instructions. When the torch operation is completed, place the torch on the hanger rod to extinguish the flame. For reuse, remove the torch from hanger rod and, without delay, relight torch using an approved ignition source. When the torch will not be used for an extended period of time, for example, at the end of the work day, close the main supply valve and bleed gas pressure from the regulator, Gas Block, hoses and torch system.

#### 3.2 PRESSURE SETTINGS

The Gas Block generally does not significantly affect regulator pressure settings for the torch. Use regulator pressure settings recommended by the oxy-fuel torch, tip and/or mixer manufacturer. Setting pressures in an "at flow" condition is generally recommended especially when using higher volume tips.

#### 3.3 HANGER ROD ADJUSTMENT

When placing the Gas Block in operation, the hanger rod should be adjusted so that the torch will close the valves with the torch equipment's weight.

When the torch is placed on the hanger rod, the torch flame should be extinguished. If the flame is not extinguished, perform the following operations:

- A. Loosen the hanger rod lock screw (Item 4 TABLE A) and slide the hanger rod (Item 2 TABLE A) and torch forward in the hanger block (Item 3 TABLE A) to a position where the flame is extinguished when torch is placed on the hanger rod hook.
- B. Tighten the hanger rod lock screws.
- C. If either gas continues to flow, it may be necessary to adjust the shut-off valve seat pressure. This operation is described in "3.4 Shut-Off Valve Adjustment."

### 3.4 SHUT-OFF VALVE ADJUSTMENT

Initial adjustment(s) were made at the factory. Readjustments should only be performed if hanger rod adjustment fails to provide positive valve shut-off of gases or if the proper gas shut-off sequence has changed due to service, repair, etc.

- Torch equipment should be in place on the hanger rod during adjustment.
- To make adjustment(s) only the gas pressure of the valve being adjusted should be on. Adjustments of fuel gas and oxygen valve should be done in a well ventilated area away from all sources of ignition.
- Loosen the shut-off valve locking nut (Item 11 TABLE A).
- Turn valve adjusting screw (Item 12 TABLE A) clockwise until gas flow ceases, then turn one-half turn more.
- Re-tighten locking nuts, not allowing adjusting screws to turn while tightening.

### 3.5 OXY-FUEL SHUT-OFF SEQUENCE ADJUSTMENT

A popping sound may occur at shut-off (when lighted torch is returned to hanger rod). This occurs primarily because the oxy-fuel gas pressure settings are not set properly or the oxy-fuel shut-off sequence is set improperly.

- Adjust tip pressure settings according to the manufacturers recommendations. If popping persists, adjust oxy-fuel shut-off sequence. (See 3.58 below.)
- Resetting oxy-fuel gas shut-off sequence requires that oxygen be shut-off first and fuel gas last with a slight delay between to prevent popping. To reset sequence, loosen fuel gas shut-off valve locking nut. Turn adjustment screw counterclockwise one-half turn and test system. If popping persists, turn screw further and retest. When popping ceases, re-tighten locking nut while preventing screw from turning.

### 3.6 SERVICE

Whenever leaks or improper operation of a Gas Block System persists and cannot be corrected by adjustments mentioned in 3.3 and 3.4 above, removal from service and repair may be required.

#### A. Removal from service:

- Close pipeline and/or cylinder valves upstream of the regulators.
- Lift torch from Gas Block hanger rod with torch valves open to bleed pressure from system.
- When regulator outlet gauge reading(s) drop to zero, turn regulator adjustment counterclockwise until loose.
- Remove Gas Block from operation.

#### B. Repair service:

Harris recommends, unless personnel at your facility are specifically trained to do so, that the Gas Block be sent to an experienced repair facility. Special tools, techniques and trained personnel are required.

### 3.7 USER RESPONSIBILITIES

This equipment will perform safely and reliably only when installed, operated, maintained and adjusted in accordance with the instructions provided. Equipment must be checked periodically and serviced, replaced or reset as necessary for continued safe and reliable performance. Defective equipment should not be used. Parts that are broken, missing, plainly worn, distorted, or contaminated should be replaced immediately with parts that are manufactured or sold by Harris Products Group. The equipment or any of its parts should not be modified without prior written approval from The Harris Products Group. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, or repair using parts other than from The Harris Products Group, or using parts that have been damaged or modified by anyone other than Harris Products Group.

To assure proper operation and warranty coverage, use only genuine Harris parts with this equipment. For assistance, visit the Harris website at [www.harrisproductsgroup.com](http://www.harrisproductsgroup.com).

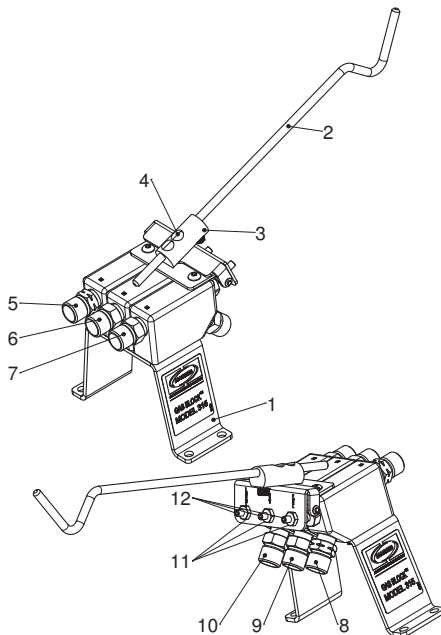
### HARRIS PRODUCTS GROUP WARRANTY

For one (1) year after the sale of a Harris Products Group equipment product, The Harris Products Group ("Harris") warrants to the Purchaser that its product is free from defects in materials and workmanship. HARRIS MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATIONS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE. During the warranty period, Harris, at its option, to repair, replace or refund the purchase price of any product found defective upon inspection by Harris or its authorized distributors. THIS IS THE SOLE AND EXCLUSIVE REMEDY OF THE PURCHASER AND THE SOLE AND EXCLUSIVE LIABILITY OF HARRIS, WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY, IN NEGLIGENCE OR OTHERWISE. HARRIS SHALL NOT

BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT, OR OTHER DAMAGES, OR FOR LOSS OF USE, REVENUE OR PROFIT, EVEN IF HARRIS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. The warranty and remedies provided herein shall not apply if a product is damaged by accident, abuse or misuse, if a product is modified in any way except by personnel authorized by Harris, or if anything except genuine Harris replacement parts and/or tips/consumables is used with the equipment.

GAS BLOCK FEATURES - TABLE A

ITEM NO.	DESCRIPTION
1	GAS BLOCK BASE
2	HANGER ROD
3	HANGER BLOCK
4	HANGER ROD LOCKING SCREW(S)
5	FUEL GAS INLET CONNECTION
6	OXYGEN INLET CONNECTION
7	SHIELDING (PURGING) GAS INLET CONNECTION
8	FUEL GAS OUTLET CONNECTION
9	OXYGEN OUTLET CONNECTION
10	SHIELDING (PURGING) GAS OUTLET CONNECTION
11	SHUT-OFF VALVE ADJUSTMENT LOCKING NUTS
12	SHUT-OFF VALVE ADJUSTMENT SCREWS



**NOTE: please save these instructions for the next user.**



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