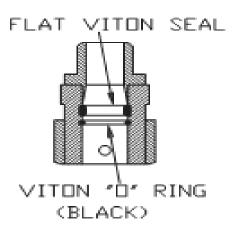
Valco Boardrunner glue station daily Maintenance

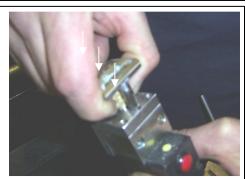
Cleaning glue head:

Should be carried out at the end of every shift

- Press and hold the spring clamp button to remove the valve assembly.
- Remove the glue applicator head from the glue valve by releasing the snap lock fitting.
- Install the applicator head onto the tap connection
- Turn tap on and flush water through the glue applicator head and remove any glue from around the head.
- Install Brass seal cap onto glue valve to prevent glue drying in valve.
- At end of every shift the glue unit must be cleaned down and all dried glue removed, and same for glue inspection sensor. DO NOT USE METAL OBJECTS TO CLEAN GLUE PARTS
- Check condition of Brass fittings, and ensure fittings lubricated regularly to ensure they do not become sticky, use the proper grease gun & Grease.
- Check condition of the Flat Viton Seal on the fittings for swelling where glues use solvents.



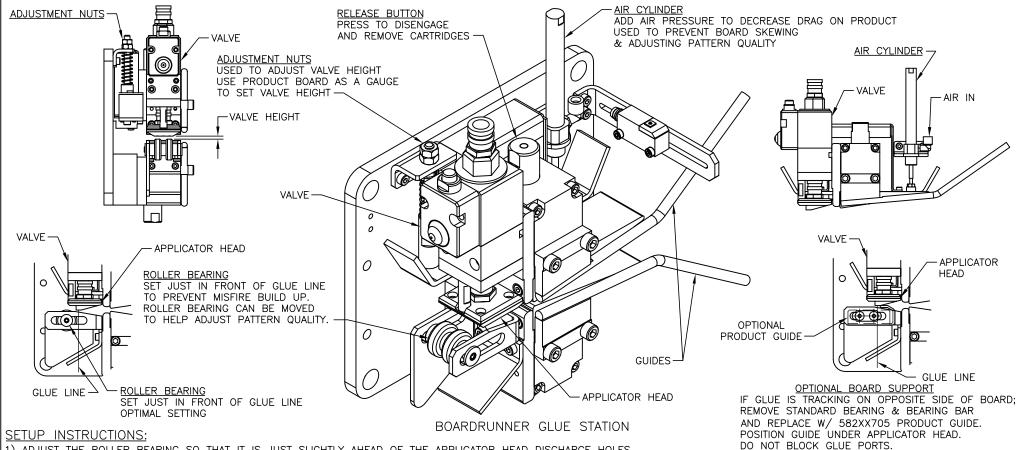












1) ADJUST THE ROLLER BEARING SO THAT IT IS JUST SLIGHTLY AHEAD OF THE APPLICATOR HEAD DISCHARGE HOLES.

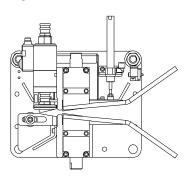
- 2) ADJUST VALVE HEIGHT BY TURNING THE ADJUSTMENT NUTS. USE A PRODUCT BOARD TO SET THE VALVE HEIGHT, THE BOARD SHOULD PASS FREELY UNDER THE HEAD.
- 3) MOUNT THE BOARDRUNNER GLUE STATION TO THE MACHINE, MAKE SURE THAT THE ANGLE OF THE GLUE STATION IS PARALLEL TO THE FOLDING RAIL OF THE MACHINE. RUN A BOARD UP TO THE GLUE STATION TO CHECK THE ANGLE AND HEIGHT OF THE GLUE STATION. THE BOARD SHOULD PASS THROUGH THE MIDDLE OF THE GLUE STATION GUIDES.
- 4) RUN A FEW BOARDS THROUGH THE GLUE STATION TO CHECK THE VERTICAL MOVEMENT OF THE VALVE. THE VALVE MAY RAISE SLIGHTLY IF ANY AS THE BOARD PASSES UNDER THE APPLICATOR HEAD. IF THE VALVE RAISES MORE THAN 1/8" (3,2mm), READJUST THE VALVE HEIGHT USING THE ADJUSTMENT SCREWS. THE APPLICATOR HEAD SHOULD JUST TOUCH THE BOARD AS IT PASSES THROUGH THE GLUE STATION. YOU MAY HAVE TO ADJUST THE ENTIRE GLUE STATION UP/DOWN DEPENDING ON THE AMOUNT OF MOVEMENT.
- 5) IF SKEWING OF THE BOARD OCCURS AS IT PASSES THROUGH THE GLUE STATION, AIR PRESSURE CAN BE ADDED TO THE AIR CYLINDER TO RELIEVE SOME OF THE WEIGHT OF THE VALVE.
- 6) IF GLUE TICKS OCCUR WHEN THE STATION IS INSTALLED ON THE 4TH PANEL SIDE:
 - A) TRY ADJUSTING THE AIR PRESSURE FOR THE VALVE CONTACT UNTIL THE TICKS ARE ELIMINATED.
 - B) ENSURE THAT THE GLUE PATTERN IS AT LEAST 1/2" (12,7mm) AWAY FROM THE SCORE LINES. THIS WILL GIVE THE APPLICATOR HEAD A CHANCE TO WIPE OR CLEAN ITSELF BEFORE REACHING THE SCORE LINE.
 - C) READJUST THE VALVE HEIGHT WITH THE ADJUSTMENT NUTS WHEN CHANGING FROM A SINGLE WALL BOARD TO A DOUBLE WALL BOARD.

| PROPERTY CONTAINING PROPRIETARY INFORMATION WHICH MUST NOT BE REPRODUCED OR DISCLOSED WITHOUT WRITTEN PERMISSION AND MUST BE RETURNED UPON DEMAND. | | UP INSTR OARDRUN | UCTIONS INER | 999XA582-17 18 | | REV.: A ADDED OPTIONAL PRODUCT GUIDE 18NOV04 S.M.T. 06DEC04 SMT |
|--|------------------|---------------------|------------------|----------------|---------------|--|
| CINCINATI BE RETURNED UPON DEMAND. | DRAWN BY: SMT | APPROVED BY: SMT | DATE: 17JUN04 | SMT2787 | SUPERSEDED BY | |

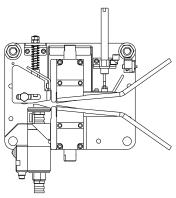
BOARD-RUNNER™ Glue Station Option (582xx538)

To complement the Flexoseal® Gluing System, Valco Cincinnati offers an option designed to improve quality assurance and increase productivity—BOARDRUNNER. The BOARDRUNNER glue station utilizes a floating applicator head to adjust to any standard size board with no need for operator involvement. The all-electric Series 900 valve remains in contact with the board at all times with minimal pressure applied to the product. The BOARDRUNNER station takes advantage of Flexoseal's "quick disconnect" capability for easy changeover from top-down to bottom-up gluing. For step-by-step changeover instructions, refer to Section 6–Maintenance. BOARDRUNNER uses a laser beam to detect product, so a precise glue pattern is applied even if the board flutters during the gluing process.

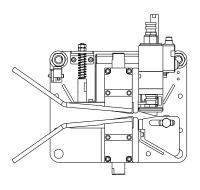
With BOARDRUNNER, the auto track bracket can be adjusted so that scanner depth can be maximized and the scanner can detect the leading edge of a board. Gap thickness is easily controlled by turning a hex nut to reduce or increase spring tension. The spring is positioned to provide constant board pressure and help bring the top cartridge back to the start position. An adjustable air cylinder helps counteract the weight from the top cartridge.



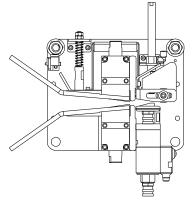
BOARDRUNNER— 4th Panel Top-down gluing configuration



BOARDRUNNER— 4th Panel Bottom-up gluing configuration



BOARDRUNNER— Tab Side Top-down gluing configuration



BOARDRUNNER— Tab Side Bottom-up gluing configuration

Valco Cincinnati, Inc. 4-5

4th Panel Side to Tab Side Conversion

To convert the BOARDRUNNER from 4th panel setup to tab side setup, do the following:

- 1. Remove the valve bracket assembly by using the push-button quick-release. (No tools required)
- Remove the bearing bracket assembly using the push-button quick-release. (No tools required)
- 3. Remove the laser scanner from the scanner bracket. (Two m3 screws)
- 4. Remove the scanner bracket from the backplate, turn it over, and re-install it on the opposite end of the backplate. (Use the two m4 screws.)
- 5. Re-install the scanner onto the scanner bracket. Make sure the scanner is facing down.
- Remove the upper and lower guide rails (two m6 screws each).
 Reverse them so they are pointing the opposite direction, and re-install.
- Rotate the valve bracket assembly so it is pointing the opposite direction and re-insert it on the opposite side of the cartridge block.
- Rotate the bearing bracket assembly so it is pointing the opposite direction and re-insert it on the opposite side of the cartridge block.
- The BOARDRUNNER station is now ready for tab side installation.

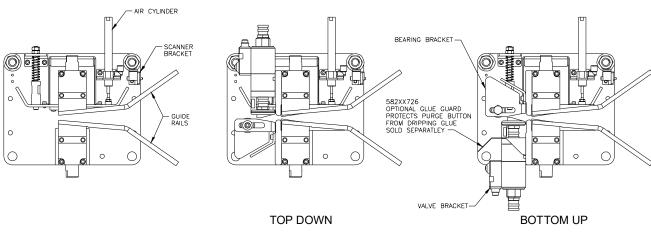


Do not move or change the slide bearing assembly, the air cylinder, or the spring. These items stay in the same position for both the tab-side and the drive side (4th panel) installation.

4-6 Valco Cincinnati, Inc.

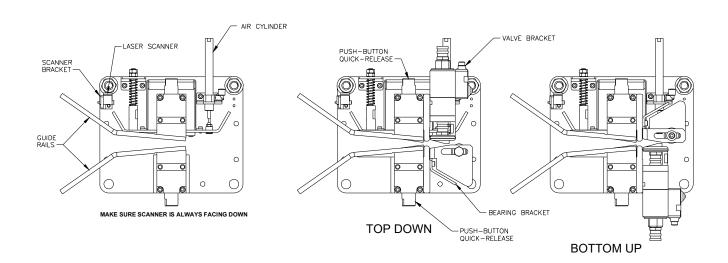
4th Panel Side to Tab Side Conversion - Continued

4TH PANEL STANDARD ASSEMBLY



MAKE SURE SCANNER IS ALWAYS FACING DOWN

TAB SIDE



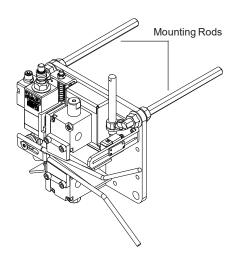
Valco Cincinnati, Inc. 4-7

Initial Setup of Glue Application System (BOARDRUNNER - 900 valve) When the BOARDRUNNER is shipped, it is ready for a 4th panel (drive side) top-down installation. The scanner is initially mounted to view the product in line with the glue valve. The gap adjustment is set so that a single-walled product (approximately 3 mm thick) can pass through the glue station and remain in contact with the applicator head.

Minimal adjustments, if any, should be made during the setup process.

The Setup Process consists of the following steps:

1. Mount BOARDRUNNER to mounting rods.



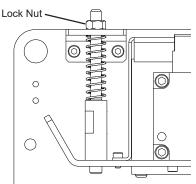
- 2. Install the applicator head onto the 900 valve.
- 3. Purge all air from the glue line, then connect to the valve. Purge the valve by activating the push button switch on the valve.
- 4. Run adhesive through the valve until no air is present in the glue line. (The valve should produce an even glue flow.)
- 5. Run the parent machine. Stop the machine when a product reaches the glue station.
- Adjust the glue station vertically to ensure the product is level.
 The product should not be forced up or down when traveling through the glue station.



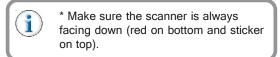
The top portion of this bracket moves vertically on a ball slide. This allows the valve (top down) or bearing bar (bottom up) to follow the product regardless of varying thickness or irregularities in the product. If a manufacturer only runs a thicker product, it is advised to modify the 'gap adjust' to the thickness of the board or product.

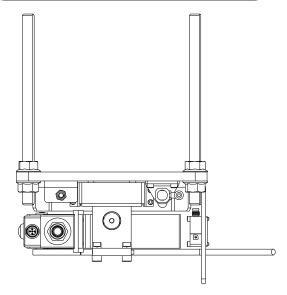
4-8 Valco Cincinnati, Inc.

Initial Setup of Glue Application System (BOARDRUNNER - 900 valve) - Continued 7. To modify the 'gap adjust': use the lock nut (found on the upper left hand side of the BOARDRUNNER) to increase or decrease the gap between the applicator head and bearing bar guide.



- 8. **Unique to the BOARDRUNNER design**—Air is used to take the weight *off* the product to prevent pinching or jamming of the board in the glue station. The more air that is added, the more responsive (less weight) the upper cartridge is to the board.
- If a tab side (operator's side) installation is required, reverse the direction of the inlet guides and mount the scanner bracket, valve bracket and bearing bar guide on the opposite side of the BOARDRUNNER.
- 10. If the leading edge must be detected, the scanner arm must be flipped* so the scanner depth can be maximized.





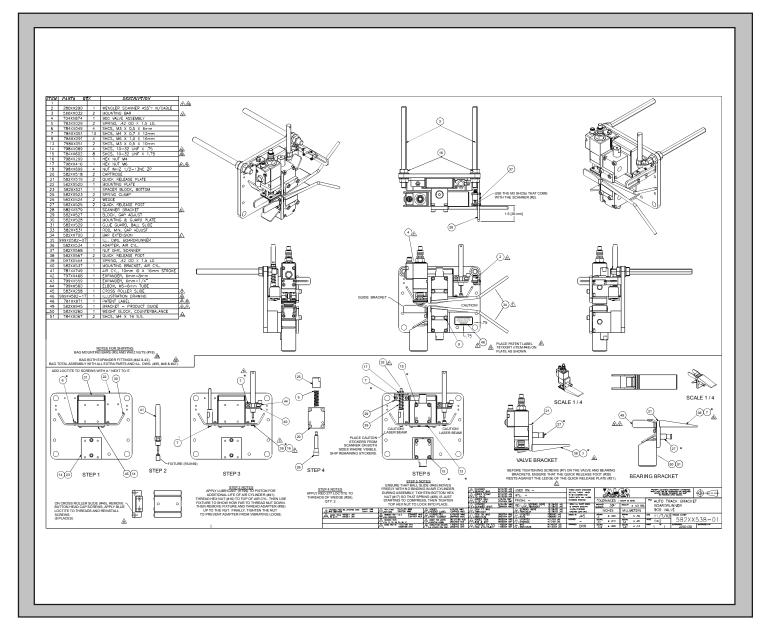
Enlarged to Show Detail

Valco Cincinnati, Inc. 4-9

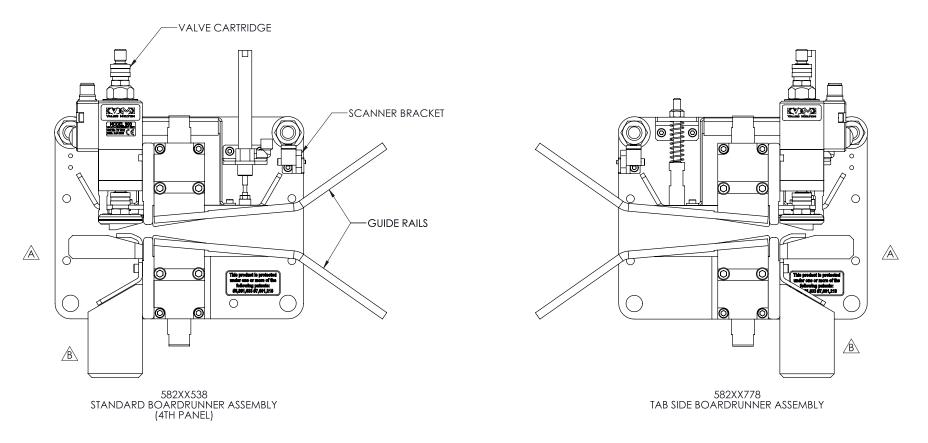




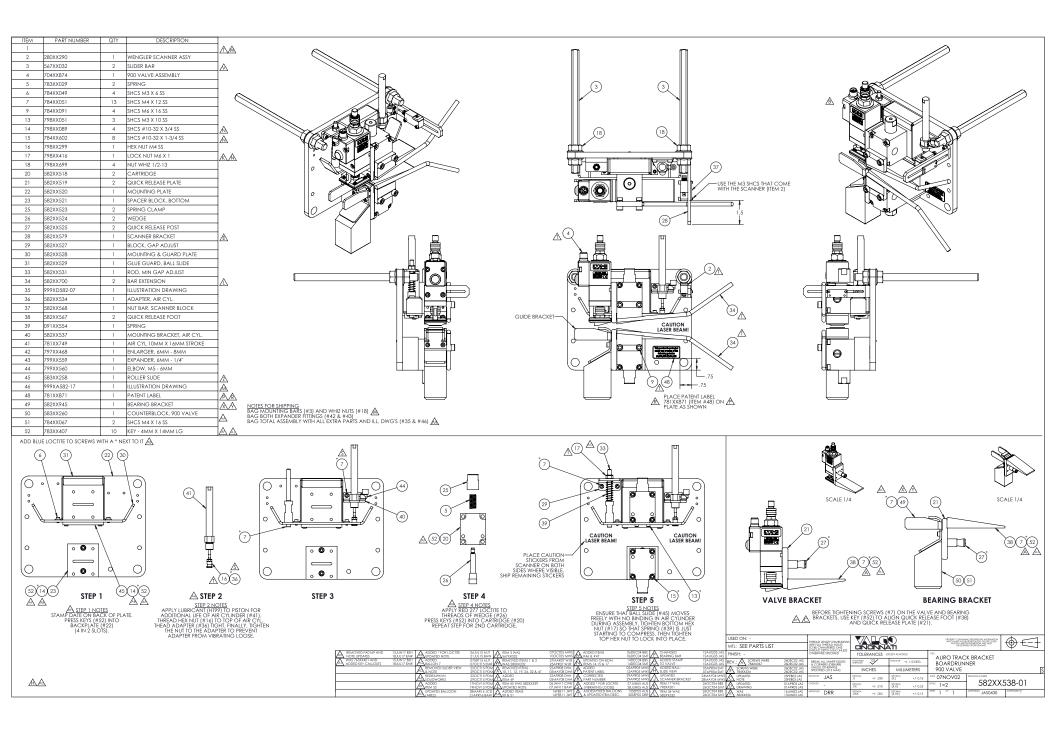
BoardRunner™ Illustration - Contact

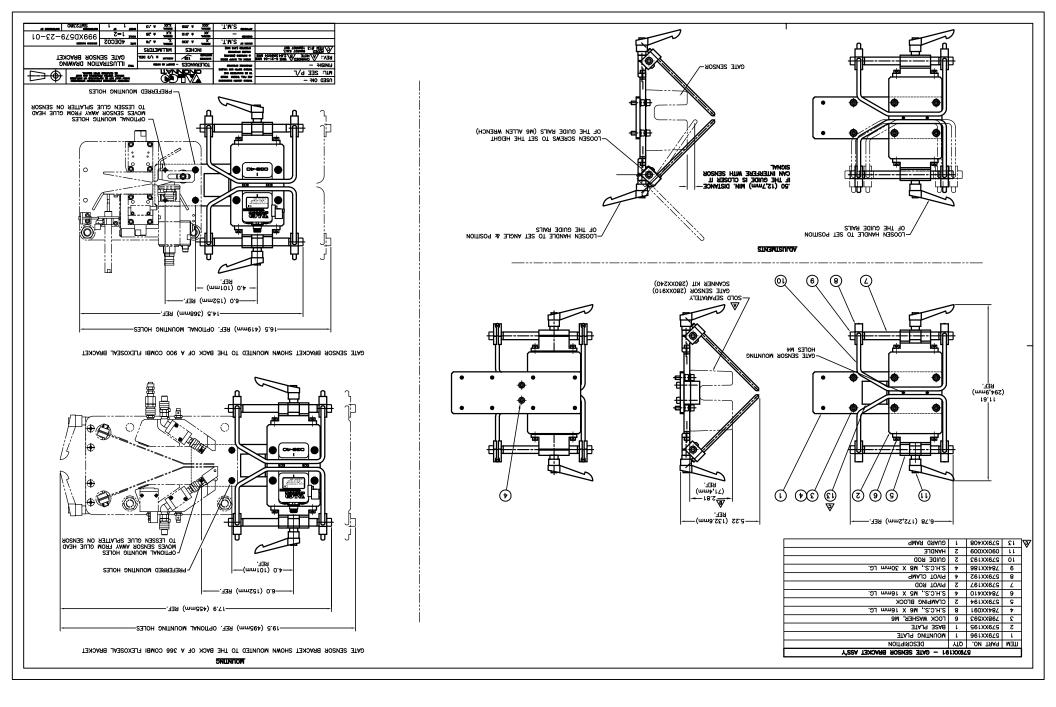


CONVERT 4TH PANEL BOARDRUNNER ASSEMBLY TO A TAB SIDE ASSEMBLY MOVE VALVE AND BEARING CARTRIDGES TO OPPOSITE SIDE. REMOUNT GUIDE RAILS IN OPPOSITE DIRECTION. REMOUNT SCANNER BRACKET ON OPPOSITE SIDE OF THE BASE PLATE. ASSEMBLY SHOULD MATCH VIEW BELOW.



| USED ON: - | | THREAD LENGTH DIMENSIONS | | | | PROPERTY CONTAINING PROPRIETARY INFORMATION WHICH MUST NOT BE REPRODUCED OR DISCLOSED | | \$ [| $\overline{1}$ | |
|-------------------------------|----------------------------------|---|------------------------------------|-------|----------------------|---|--------------|----------------|----------------|--|
| MTL: 582XX538 BR BRKT | | ARE FULL THREAD HOLES TO BE CHAMFERED ONE THREAD DEPTH MAX UNLESS | READ HOLES AFERED ONE CINCINNATION | | | WITHOUT WRITTEN PERMISSION AND MUST BE RETURNED UPON DEMAND, | | | | |
| FINISH: - | | OTHERWISE SPECIFIED | TOLERANCES - EXCEPT AS NOTED | | BOARDRUNNER ASSEMBLY | | | | | |
| REV.: A UPDATED PRODUCT GUIDE | 17JUN08 DHA 19JUN08 DHA | BREAK ALL SHARP EDGES & CORNERS (DEBURR) | MACHINED SURFACES | 125/ | ANGULAR +/ | - 1/2 DEG. | TAB SIDE | | | |
| ADDED WEIGHT BLOCK | 08MAR11 S.M.T. 08MAR11 S.M.T. | UNLESS OTHERWISE SPECIFIED (.015 MAX) | INCHES MILLIMETERS | | | | | S | | |
| REDRAWN IN SOLIDWORKS | 04JAN16 PDM 06JAN16 PDM | DRAWN BY S.M.T. | DECIMAL .X | +/030 | DECIMAL [X,] | +/- 0,76 | DATE 31OCT05 | DRAWING NUMBER | 770.01 | |
| | - | CHECKED _ | DECIMAL .XX | +/010 | DECIMAL [X,X] | +/- 0.25 | SCALE 1=2 | 582XX | //8-01 | |
| | - | APPROVED SMT | DECIMAL ,XXX | +/005 | DECIMAL [X,XX] | +/- 0,13 | SHEET 1 OF 1 | SMT3280 | SUPERSEDED BY | |





Bulletin no. 60 August 1, 2002

TECHNICAL BULLETIN



The CGS-30 gate sensor has been replaced by the new CGS-40. The CGS-40 has an injection-molded Valox polymer enclosure with a smooth surface for minimal buildup and easy cleaning. It features the Turck connector and uses the same connector cables as the CGS-30. One assembly is used for either the tab-side or the fourth-panel. Additional features of the CGS-40 include:

- Smaller size than the CGS-30
- Indicator LED's for supply voltage and signal output
- Waterproof
- Connector for optional dedicated scanner

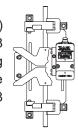
The illustration below shows the CGS-40 with dedicated scanner with scanner mounting kit (high-speed PNP laser scanner reference Bulletin no.53). The dedicated laser scanner enhances system reliability and accuracy. It is recommended as standard for new system orders.



| 280xx241 | CGS-40 gate sensor with dedicated laser scanner and scanner mounting kit (see below). | | | | |
|----------|---|--|--|--|--|
| | 280xx240 | Laser scanner assembly with bracket kit, includes: | | | |
| | 280xx233 | laser scanner | | | |
| | 029xx057 | scanner adapter cable | | | |
| | 582xx456 | scanner clamp | | | |
| | 582xx443 | scanner bracket | | | |
| | 798xx051 | SHCS, M3 x 10 (2) | | | |
| | 789xx099 | SHCS, M3 x 16 (2) | | | |
| | 280xx241 | 280xx240 280xx233 029xx057 582xx456 582xx443 798xx051 | | | |

Note: If the 280xx241 gate sensor/scanner assembly above is being mounted to the 581xx898 (CGS-30) mounting bracket, a bracket adapter (579xx166 - below) must also be included.

A bracket adapter (shown with the sensor top left) is used to mount the CGS-40 to the 581xx898 mounting bracket for the CGS-30. The following assembly part number is a direct replacement for the 280xx207 (CGS-30, fourth-panel) and 280xx208 (CGS-30, tab-side).

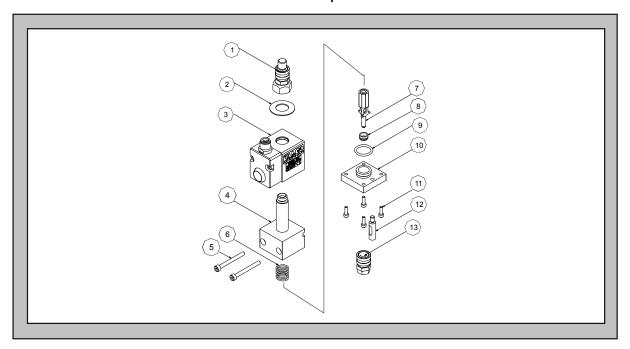


| 280xx242 | CGS-40 with | CGS-40 with bracket adapter, includes: | | | | |
|----------|----------------------|--|--|--|--|--|
| | 280xx910 579xx166 | CGS-40 gate sensor | | | | |





900 Series Valve Components - Contact



| | | | 900 Valve Components - Contact |
|------|-----------|----------|--|
| ITEM | STD VITON | EP SEALS | DESCRIPTION |
| 1 | 752xx036 | 752xx045 | Disconnect adapter assembly with male stopper (750xx013) |
| 2 | 783xx043 | | Spring washer |
| 3 | 704xx872 | | Solenoid assembly, 900 includes flux washer 704xx879 |
| 4 | 704xx873 | 707xx610 | Valve body assembly, 900 valve, includes item 4a O-ring |
| 4a | 745xx184 | 746xx169 | O-ring |
| 5 | 784xx136 | | SHCS. M4 x 40mm |
| 6 | 783xx042 | | Spring, 900 |
| 7 | 707xx580 | | Plunger assembly, 900, 4mm ball |
| 8 | 707xx462 | | Seat insert assembly, 900 includes O-ring 746xx069 |
| 9 | 745xx007 | 746xx170 | O-ring |
| 10 | 704xx878 | | Seat adapter, 900 |
| 11 | 784xx112 | | SHCS, M3 x 8mm |
| 12 | 704xx880 | | Stand-off, 900 |

| 900 Valve Plunger Upgrade Kit | | | | |
|-------------------------------|---|--|--|--|
| PN | DESCRIPTION | | | |
| 707xx581 | 900 valve plunger upgrade kit. Upgrades old 6mm plunger to new 4mm plunger, includes plunger, seat and spring - see Bulletin no, 100 for additional information | | | |





Applicator Head Options for BoardRunner® Glue Station - 900 Series Valves



NOTE: An additional pattern shim is recommended for use with the BoardRunner applicator heads to improve performance with high-viscosity adhesives and high-speed applications.

1/4" Center Pattern Style

| Applicator Head Opt | ions for standa | rd BoardRunn | er® Glue Station - 1/4" Centers |
|---------------------|----------------------------|-------------------------|---|
| | PN Viton Sea l s | PN EP Sea l s | DESCRIPTION |
| | 661xx001 | 660xx001 | Applicator head, single vein 0.040, includes 1 pattern shim |
| | 661xx002 | 660xx002 | Applicator head, 1/4 in. (6.4 mm) pattern width, two 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx102 | 660xx102 | Same as above with 1.5 mm veins |
| 6.74 | 661xx003 | 660xx003 | Applicator head, 1/2 in. (13 mm) pattern width, three 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx103 | 660xx103 | Same as above with 1.5 mm veins |
| | 661xx004 | 660xx004 | Applicator head, 3/4 in. (19 mm) pattern width, four 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx104 | 660xx104 | Same as above with 1.5 mm veins |
| S S | 661xx005 | 660xx005 | Applicator head, 1 in. (25 mm) pattern width, five 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| 0 9 | 661xx105 | 660xx105 | Same as above with 1.5 mm veins |
| | 661xx006 | 660xx006 | Applicator head, 1 1/4 in. (32 mm) pattern width, six 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx106 | 660xx106 | Same as above with 1.5 mm veins |
| | 661xx007 | 660xx007 | Applicator head, 1 1/2 in. (38 mm) pattern width, seven 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx107 | 660xx107 | Same as above with 1.5 mm veins |
| | 661xx008 | 660xx008 | Applicator head, 1 3/4 in. (45 mm) pattern width, eight 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx108 | 660xx108 | Same as above with 1.5 mm veins |





BoardRunner Applicator Head Options - 1/8" Centers

| Applicator Head O | Applicator Head Options for BoardRunner® Glue Station - 1/8" Centers | | | | | |
|-------------------|--|----------------|---|--|--|--|
| | PN Viton Seals | PN EP Seals | DESCRIPTION | | | |
| | 661xx804 | 660xx804 | Applicator head, 4 vein, 1 mm orifice, 1/8 inch centers, 3/8 inch pattern width | | | |
| | 661xx805 | 660xx805 | Applicator head, 5 vein, 1 mm orifice, 1/8 inch centers, 1/2 inch pattern width | | | |
| () P | 661xx806 | 660xx806 | Applicator head, 6 vein, 1 mm orifice, 1/8 inch centers, 5/8 inch pattern width | | | |
| | 661xx807 | 660xx807 | Applicator head, 7 vein, 1 mm orifice, 1/8 inch centers, 3/4 inch pattern width | | | |
| | 661xx808 | 660xx808 | Applicator head, 8 vein, 1 mm orifice, 1/8 inch centers, 7/8 inch pattern width | | | |
| | 661xx810 | 660xx810 | Applicator head, 10 vein, 1 mm orifice, 1/8 inch centers, 1-18 inch pattern width | | | |
| 2000 | 661xx705 | 660xx705 | Applicator head, 5 vein, 1.5 mm orifice, 1/8 inch centers, 1/2 inch pattern width | | | |
| 0 0 | 661xx706 | 660xx706 | Applicator head, 6 vein, 1.5 mm orifice, 1/8 inch centers, 5/8 inch pattern width | | | |
| 0 0 | 661xx707 | 660xx707 | Applicator head, 7 vein, 1.5 mm orifice, 1/8 inch centers, 3/4 inch pattern width | | | |
| | 661xx708 | 660xx708 | Applicator head, 8 vein, 1.5 mm orifice, 1/8 inch centers, 7/8 inch pattern width | | | |





Applicator Head options for Jumbo BoardRunner®

| Applicator He | ad Options for | Jumbo BoardRı | unner® Glue Stations |
|---------------|----------------------------|----------------|--|
| | PN Viton Sea l s | PN EP Seals | DESCRIPTION |
| | 661xx006 | 660xx006 | Applicator head, 1 1/4 in. (32 mm) pattern width, six 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx106 | 660xx106 | Same as above with 1.5 mm veins |
| | 661xx007 | 660xx007 | Applicator head, 1 1/2 in. (38 mm) pattern width, seven 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx107 | 660xx107 | Same as above with 1.5 mm veins |
| | 661xx008 | 660xx008 | Applicator head, 1 3/4 in. (45 mm) pattern width, eight 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx108 | 660xx108 | Same as above with 1.5 mm veins |
| | 661xx009 | 660xx009 | Applicator head, 2 in. (51 mm) pattern width, nine 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx109 | 660xx109 | Same as above with 1.5 mm veins |
| | 661xx010 | 660xx010 | Applicator head, 2 1/4 in. (57 mm) pattern width, ten 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx110 | 660xx110 | Same as above with 1.5 mm veins |
| | 661xx011 | 660xx011 | Applicator head, 2 1/2 in. (64 mm) pattern width, eleven 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx111 | 660xx111 | Same as above with 1.5 mm veins |
| | 661xx012 | 660xx012 | Applicator head, 2 3/4 in. (70 mm) pattern width, twelve 0.040 veins on 1/4 in. (6.35 mm) centers, includes 1 pattern shim |
| | 661xx112 | 660xx112 | Same as above with 1.5 mm veins |





Dual Valve BoardRunner Applicator Heads

| Du | al Valve Boardi | Runner® App | olicator Heads |
|---------------------------|----------------------------|-------------------------|--|
| | PN Viton Sea l s | PN EP Sea l s | DESCRIPTION |
| | 661xx213 | 660xx213 | 3 inch pattern width, 13 veins 1/4 in. (6.35 mm) centers |
| | 661xx215 | 660xx215 | 3.5 inch pattern width, 15 veins 1/4 in. (6.35 mm) centers |
| manufacture of the second | 661xx217 | 660xx217 | 4 inch pattern width, 17 veins 1/4 in. (6.35 mm) centers |
| | 661xx219 | 660xx219 | 4.5 inch pattern width, 19 veins 1/4 in. (6.35 mm) centers |
| | 661xx221 | 660xx221 | 5 inch pattern width, 21 veins 1/4 in. (6.35 mm) centers |
| | 661xx223 | 660xx223 | 5.5 inch pattern width, 23 veins 1/4 in. (6.35 mm) centers |
| | 661xx225 | 660xx225 | 6 inch pattern width, 25 veins 1/4 in. (6.35 mm) centers |

BoardRunner Applicator Head, Pattern Shims

An additional pattern shim is recommended for use with the BoardRunner applicator heads to improve performance with high-viscosity adhesives and high-speed applications.

| Pattern Shim Options for BoardRunner® Glue Station | | | | | |
|--|---|--|--|--|--|
| PN | DESCRIPTION | | | | |
| 708xx722 | Pattern shim, 1/4 inch pattern width | | | | |
| 708xx723 | Pattern shim, 1/2 inch pattern width | | | | |
| 708xx724 | Pattern shim, 3/4 inch pattern width | | | | |
| 708xx725 | Pattern shim, 1 inch pattern width | | | | |
| 708xx726 | Pattern shim, 1-1/4 inch pattern width | | | | |
| 708xx727 | Pattern shim, 1-1/2 inch pattern width | | | | |
| 708xx728 | Pattern shim, 1-3/4 inch pattern width | | | | |
| 708xx729 | Pattern shim, 2 inch pattern width | | | | |
| 708xx730 | Pattern shim, 2-1/4 inch pattern width | | | | |
| 708xx731 | Pattern shim, 2- 1/2 inch pattern width | | | | |
| 708xx732 | Pattern shim, 2- 3/4 inch pattern width | | | | |