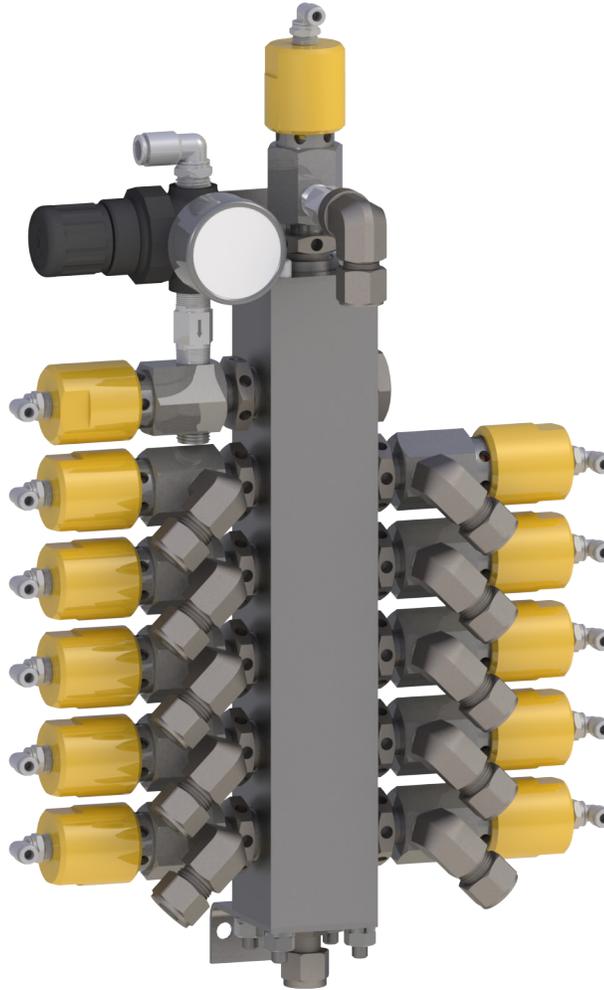


Ransburg® CCV-5100 COLOR VALVE STACKS LOW PRESSURE



SPECIFICATIONS

Maximum air inlet pressure:	7 bar [105 psi]
Air requirements (operating pressure):	4.8-6.9 bar [70-100 psi]
Air inlet ports (1x per valve):	1/8" NPT (f)
Maximum fluid pressure:	20.7 bar [300 psi]
Fluid inlet ports (2x per valve):	1/4" NPT (f)
Fluid outlet connection:	1/4" NPT (f)
Fluid flow capacity:	3800 cc/min @ 47 psi pressure drop (paint viscosity = 700 centipoise) Varies according to material pressure and viscosity.
Valve actuation speed (ON/OFF cycles):	55 cycles/min
Maximum number of colors:	30
Wetted parts:	300 series Stainless Steel, PTFE

Product Description/Object of Declaration: Color Stacks - CCV-51xx

This Product is designed for use with: Solvent and Water based Materials

Suitable for use in hazardous area: Zone 1

Protection Level: II 2 G X

Notified body details and role: Element Materials Technology. WN8 9PN UK
Lodging of Technical file

This Declaration of Conformity /incorporation is issued under the sole responsibility of the manufacturer: Carlisle Fluid Technologies,
320 Phillips Ave.,
Toledo, OH 43612

EU Declaration of Conformity		
<p>The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:</p> <p>Machinery Directive 2006/42/EC ATEX Directive 2014/34/EU by complying with the following statutory documents and harmonized standards: EN ISO 12100:2010 Safety of Machinery - General Principles for Design EN 1127-1:2011 Explosive atmospheres - Explosion prevention - Basic concepts EN 13463-1:2009 Non electrical equipment for use in potentially explosive atmospheres - Basic methods and requirements EN 13463-5:2011 Non electrical equipment for use in potentially explosive atmospheres - Protection by constructional safety The object of the declaration described above is in conformity with the relevant Union harmonisation legislation: Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, 2016)</p>		
<p>Providing all conditions of safe use / installation stated within the product manuals have been complied with and also installed in accordance with any applicable local codes of practice.</p>		
Signed for and on behalf of Carlisle Fluid Technologies:	 DJ Hasselschwert 10-Mar-16	(Vice President: Global Product Development) Toledo, OH 43612

4-3191R-2

In this part sheet, the words **WARNING**, **CAUTION** and **NOTE** are used to emphasize important safety information as follows:

WARNING

Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

CAUTION

Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTE

Important installation, operation or maintenance information.

WARNING

Read the following warnings before using this equipment.



READ THE MANUAL

Before operating finishing equipment, read and understand all safety, operation and maintenance information provided in the operation manual.



WEAR SAFETY GLASSES

Failure to wear safety glasses with side shields could result in serious eye injury or blindness.



DE-ENERGIZE, DEPRESSURIZE, DISCONNECT AND LOCK OUT ALL POWER SOURCES DURING MAINTENANCE

Failure to De-energize, disconnect and lock out all power supplies before performing equipment maintenance could cause serious injury or death.



OPERATOR TRAINING

All personnel must be trained before operating finishing equipment.



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in serious injury.



KEEP EQUIPMENT GUARDS IN PLACE

Do not operate the equipment if the safety devices have been removed.



PROJECTILE HAZARD

You may be injured by venting liquids or gases that are released under pressure, or flying debris.



PINCH POINT HAZARD

Moving parts can crush and cut. Pinch points are basically any areas where there are moving parts.



PACEMAKER WARNING

You are in the presence of magnetic fields which may interfere with the operation of certain pacemakers.



AUTOMATIC EQUIPMENT

Automatic equipment may start suddenly without warning.



INSPECT THE EQUIPMENT DAILY

Inspect the equipment for worn or broken parts on a daily basis. Do not operate the equipment if you are uncertain about its condition.



NEVER MODIFY THE EQUIPMENT

Do not modify the equipment unless the manufacturer provides written approval.



KNOW WHERE AND HOW TO SHUT OFF THE EQUIPMENT IN CASE OF AN EMERGENCY



PRESSURE RELIEF PROCEDURE

Always follow the pressure relief procedure in the equipment instruction manual.



NOISE HAZARD

You may be injured by loud noise. Hearing protection may be required when using this equipment.



HIGH PRESSURE CONSIDERATION

High pressure can cause serious injury. Relieve all pressure before servicing. Spray from the spray gun, hose leaks, or ruptured components can inject fluid into your body and cause extremely serious injury.

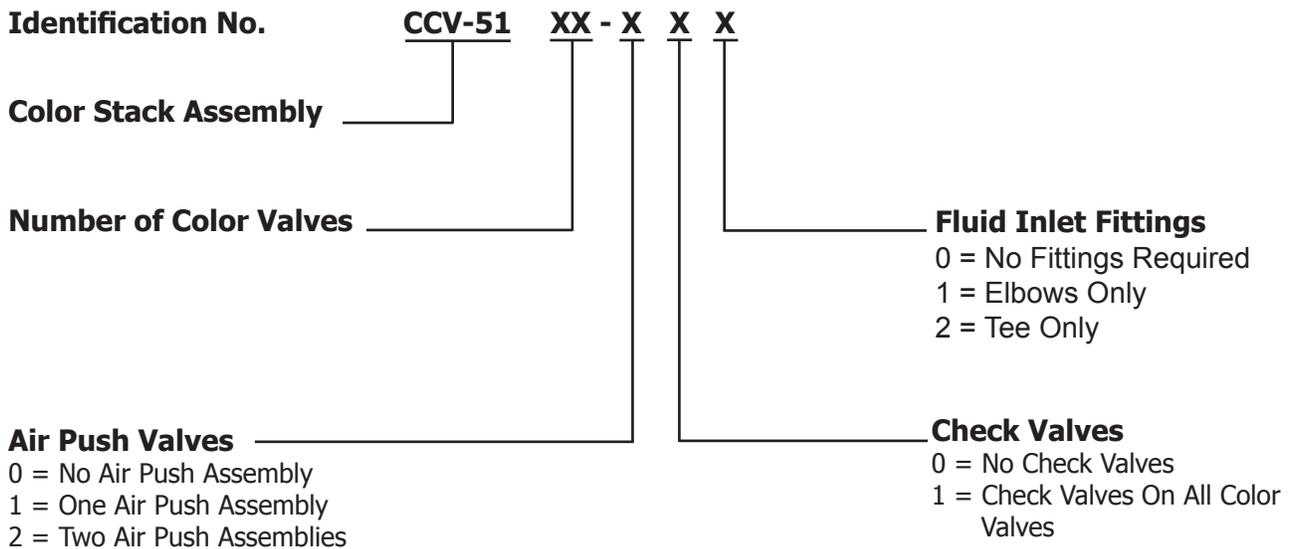


STATIC CHARGE

Fluid may develop a static charge that must be dissipated through proper grounding of the equipment, objects to be sprayed and all other electrically conductive objects in the dispensing area. Improper grounding or sparks can cause a hazardous condition and result in fire, explosion or electric shock and other serious injury.

IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PROVIDE THIS INFORMATION TO THE OPERATOR OF THE EQUIPMENT. FOR FURTHER SAFETY INFORMATION REGARDING THIS EQUIPMENT, SEE THE GENERAL EQUIPMENT SAFETY BOOKLET (77-5300).

COLOR VALVE STACK – SELECTION CHART



Note: Includes check valve, regulator, and gauge.

COLOR VALVE STACK ASSEMBLIES OPTIONS

The following is for "Pre-Engineered Color Valve Stack Assemblies". Please reference "Color Valve Stack Selection Chart" for the stack assembly number.

Part Number CCV-51XX-XXX identifies the configuration of the stack assembly.

(CCV-51)XX-XXX
COLOR STACK ASSEMBLY

Includes the top block and solvent valve. The solvent valve is always supplied with a check valve and a 3/8-inch ODT stainless steel female elbow for fluid inlet.

CCV-51(XX)-XXX
NUMBER OF COLOR VALVES

(Selection 00-30). These two numbers indicate the number of valves required for paint inlet to the stack assembly.

CCV-51XX-(X)XX
AIR PUSH VALVES

(Selection 0, 1, 2). This number indicates the number of "air push" valves required. Each valve is supplied with a check valve, gauge, regulator, and 3/8-inch ODT brass push style fitting for air inlet. The air push is used to push out residual paint in the fluid supply line. This air is also pulsed on and off with the solvent to create a scrubbing action. In the event that two different pressures are required, two air push valves can be supplied.

CCV-51XX-X(X)X
CHECK VALVES

(Selection 0, 1). This number indicates whether check valves are supplied on the paint inlet valves. Check valves are used to prevent materials from contaminating each other in the event that two valves would be opened at the same time.

NOTE

Check valves will always be supplied on solvent and air valves, regardless of selection made here.

CCV-51XX-XX(X)
FLUID INLET FITTINGS

(Selection 0, 1, 2). This number indicates whether no fitting, elbows, or tees are supplied for the fluid inlet to the color valves. Elbows are typically utilized for fluid inlet. Tees are used for circulating the paint at the color valve. The elbows and tees are stainless steel and accept a 1/4-inch OD fluid line.

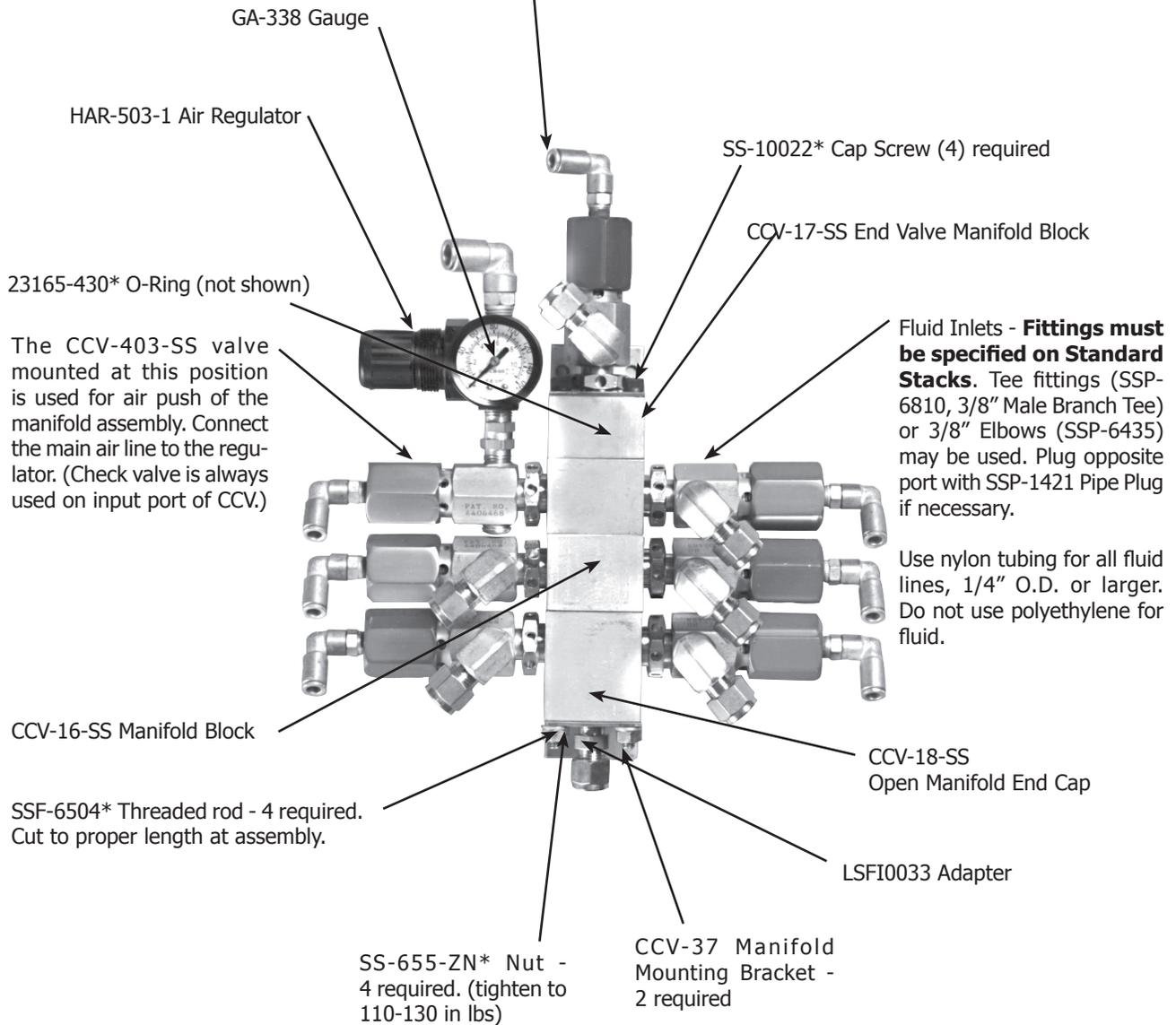
All valves are supplied with a brass push style, swivel elbow for the air pilot. This fitting accepts a 1/4-inch OD tube.

COLOR VALVE STACK – INSTALLATION

The CCV-403-SS valve mounted at this position is used for solvent flushing of the manifold assembly. Connect the solvent feed line to this valve. (Check valve is always used on input port of CCV).

NOTE

Check valves are always used on input ports of Air Push and Solvent CCV's They are optional for Color CCV's.



* Included in KK-4901 Manifold Assembly Kit.

Figure 1: Typical Color Change Stack

COLOR VALVE STACK – INSTALLATION

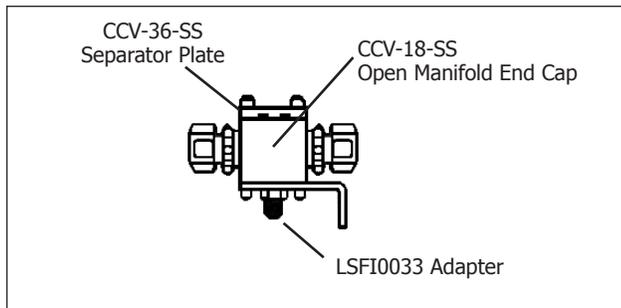


Figure 2: Two Valve Manifold Assembly

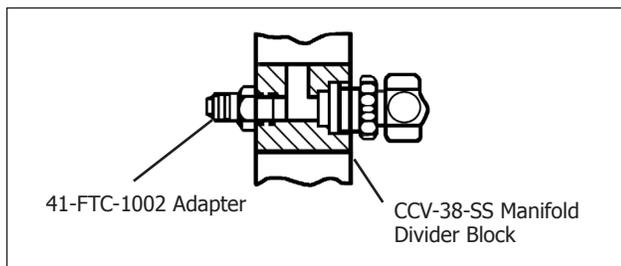


Figure 3: Manifold Divider Block

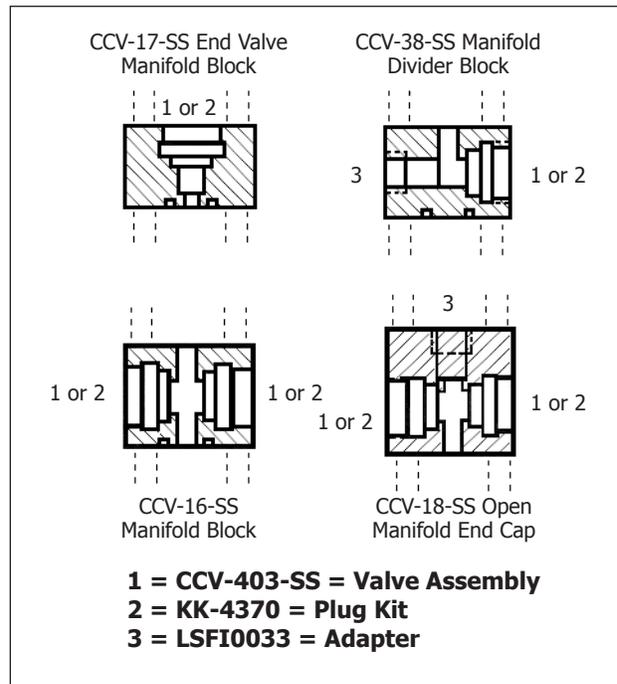


Figure 4: Available Manifold Blocks

Figure 4 shows the four manifold blocks that can be used in a manifold system. In addition, CCV-36-SS separator plate (Figure 2) can also be used. In Figure 4, shown by the block inlets/outlets, are numbers indicating hardware to be installed at these locations. The dotted lines indicate the path of the mounting studs which hold the blocks in place. The o-ring slots are shown (o-rings are not included on CCV-18-SS). O-rings are included in KK-4901 Manifold Assembly Kit.

KK-4901 MANIFOLD ASSEMBLY KIT

The kit includes threaded rod, lockwashers, nuts, two (2) mounting brackets, and twelve (12) o-rings which will allow assembly. A spanner tool, part CCV-7, is also included in this kit. This tool inserts into any one of the holes in the spanner nut and is used to tighten or loosen the nut. This is convenient in close clearances where a wrench may not fit.

NOTE

Tighten CCV-403-SS valve assembly and KK-4370 plug kit (when used) to manifold using 132-156 lbs•in torque. DO NOT OVER-TIGHTEN. USE A GOOD QUALITY PIPE SEALANT ON ALL THREADS OF AIR AND FLUID CONNECTIONS.

Do NOT use sealant or tape on CCV-403-SS valve when assembling to manifold.

COLOR VALVE STACK – OPERATION

INSTALLATION AND OPERATION OVERVIEW

The coating material is supplied from the users pressurized system that may be a pressure tank, paint circulating system or other suitable pressure paint supply system. 3/8-inch OD fluid tubing is connected between the users paint supply and the CCV.

An air signal supplied to the CCV activates the paint being delivered to the applicator.

CAUTION

CCV Valve must be supported while tightening the tube fittings to prevent damage to the valve seats, or remove the valve before tightening the fluid inlet fittings.

Circulation system lines must have a flexible connection between the "hard piping" and the valve.

COLOR VALVE STACK – MAINTENANCE

CLEANING

The valve and associated parts through which fluid passes should be cleaned after use by flushing with an appropriate solvent. While flushing, the valve should be triggered several times in order to flush particles from the seat and stem seal areas.

WEAR PARTS

Wear parts include the poppet seat, stem, valve needle seal, and piston cup. All of these parts are PTFE except for the stem that is stainless steel. Wear parts should be inspected and replaced on a regular maintenance schedule. The frequency of replacement depends upon cycle rate and material abrasiveness. Valves should be inspected after six months usage. If any parts are worn, or if paint leakage is evident, replace all wear parts with Valve Repair Kit KK-4841.

VALVE REMOVAL

1. Disconnect air and fluid lines from valve.
2. Insert the Spanner Tool (CCV-7) into one of the holes in the spanner nut and rotate counterclockwise (as viewed from the rear air inlet fitting in valve). If the Spanner Tool is not available, a 1-1/6-inch open-end wrench can also be used to loosen the spanner nut.

MANIFOLD REASSEMBLY

1. When reinstalling the CCV-403-SS back into the manifold block or valve adapter, torque the spanner nut to 132-156 lbs•in. **DO NOT OVER-TIGHTEN.**
2. If the manifold blocks are disassembled, do not reuse o-ring 23165-430 which goes between each block. Replace with new o-rings. Reusing the old o-rings may cause leakage.
3. Torque the four SS-655-ZN nuts (which hold the manifold blocks together) to 110-130 lbs•in.
4. When reinstalling air and fluid connections, use a good quality pipe sealant on the threads. However, do not use sealant or tape on the spanner nut threads when installing the CCV-403-SS valve into the manifold block or valve adapter.

CCV MAINTENANCE

Refer to CS-15-01 for details.

COLOR VALVE STACK – TROUBLESHOOTING GUIDE

General Problem	Possible Cause	Solution
DELIVERY		
Fluid	1. No main supply air	1. Turn supply air on.
	2. No paint connected to CCV	2. Reconnect paint.
	3. Paint not pressurized	3. Check users supply.
Air (to CCV)	1. No main supply air	1. Turn supply air On.
	2. Loose connection	2. Tighten connections.
LEAKAGE		
Air	1. Hole in tubing	1. Replace worn tubing.
	2. Loose connections	2. Tighten connections.
Fluid	1. Loose connection	1. Tighten connections.
	2. Worn fluid tubing	2. Replace worn fluid tubing.
DEFICIENT DELIVERY		
Air	1. Insufficient supply air	1. Check air regulator.
Fluid	1. Low supply pressure	1. Increase supply pressure.
	2. Clogged or obstructed fluid lines	2. Clean or replace.
	3. Clogged or obstructed CCV stack	3. Clean as required.

COLOR VALVE STACK – PARTS IDENTIFICATION

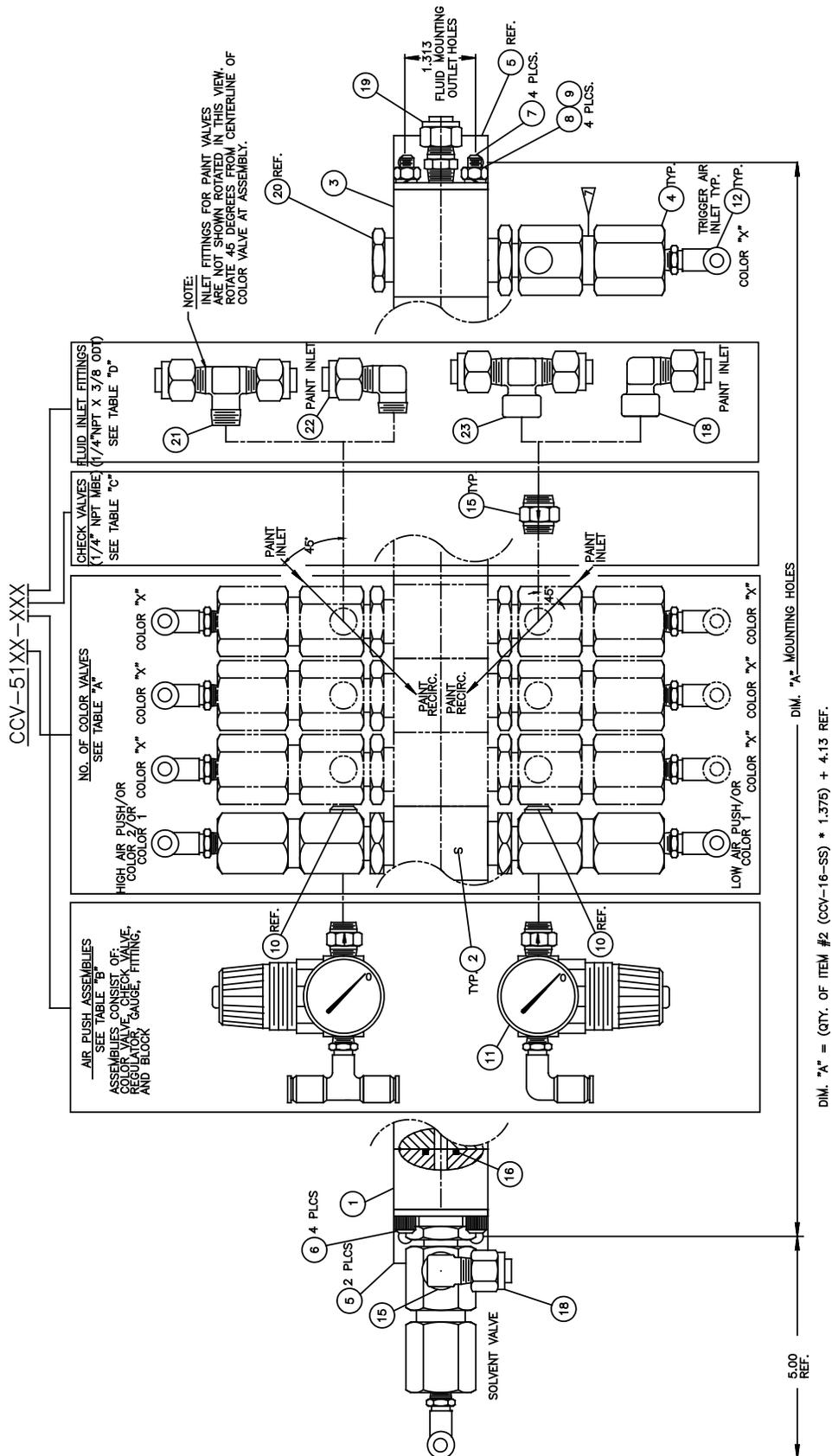


Figure 5: Color Valve Stack

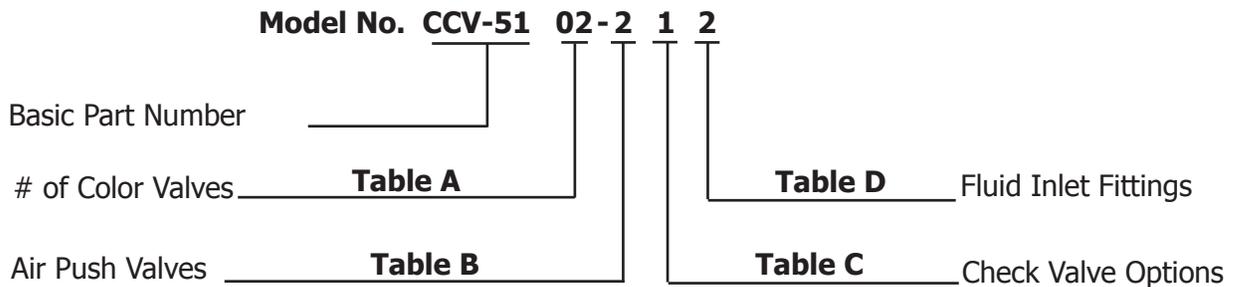
COLOR VALVE STACK – PARTS IDENTIFICATION

PARTS LIST (FIGURE 5)

Item No.	Part No.	Description	Qty.
1	CCV-17-SS	MANIFOLD BLOCK	1
2	CCV-16-SS	MANIFOLD BLOCK	1
3	CCV-18-SS	MANIFOLD BLOCK	1
4	CCV-403-SS	COLOR VALVE ASSEMBLY	TABLE A - "H"
5	CCV-37	BRACKET	2
6	SS-10022	CAP SCREW	4
7	SSF-6504	THREADED ROD (CUT TO SUIT)	TABLE A - "G"
8	SS-655-ZN	HEX NUT	4
9	SS-1505-CD	LOCKWASHER	4
10	SSP-1421	PIPE PLUG (INCLUDED WITH VALVE ASSEMBLIES)	REF.
11	Table B - "K"	AIR PUSH ASSEMBLY	1
12	SSP-6427	MALE, SWIVEL ELBOW	TABLE A - "H"
13	—	—	—
14	—	—	—
15	SSV-809	CHECK VALVE, 1/4" NPT, MBE, SOLVENTBORNE	TABLE C - "J"
16	23165-430	O-RING	TABLE A - "L"
17	----	----	—
18	SSP-6443	FEMALE ELBOW, 3/8" ODT X 1/4" NPT, SS	TABLE D - "M"
19	LSFI0033-00	CONNECTOR, 3/8" ODT X 3/8" AN, SS	1
20	KK-4370	PLUG KIT	TABLE A - "E"
21	SSP-6810	MALE TEE, 3/8" ODT X 1/4" NPT, SS	TABLE D - "N"
22	SSP-6435	MALE ELBOW, 3/8" ODT X 1/4" NPT, SS	TABLE D - "O"
23	SSP-6812	FEMALE TEE, 3/8" ODT X 1/4" NPT, SS	TABLE D - "P"
24	—	—	—
25	CCV-7	VALVE TOOL (INCLUDED BUT NOT SHOWN)	1

COLOR VALVE STACK ASSEMBLY MODEL IDENTIFICATION

When ordering, use CCV-51AA-BCD as indicated by Tables A thru D.
Three characters must follow the basic part number:



COLOR VALVE STACK – PARTS IDENTIFICATION

TABLE "A" - NUMBER OF COLOR VALVES

Dash #	Description	"E"	"F"	"G" x(4)	"H"	"L"
00	NO COLOR	0	0	3"	1	1
01	ONE COLOR	1	0	3"	2	1
02	TWO COLOR	0	0	3"	3	1
03	THREE COLOR	1	1	4-3/8"	4	2
04	FOUR COLOR	0	1	4-3/8"	5	2
05	FIVE COLOR	1	2	5-3/4"	6	3
06	SIX COLOR	0	2	5-3/4"	7	3
07	SEVEN COLOR	1	3	7-1/8"	8	4
08	EIGHT COLOR	0	3	7-1/8"	9	4
09	NINE COLOR	1	4	8-1/2"	10	5
10	TEN COLOR	0	4	8-1/2"	11	5
11	ELEVEN COLOR	1	5	9-7/8"	12	6
12	TWELVE COLOR	0	5	9-7/8"	13	6
13	THIRTEEN COLOR	1	6	11-1/4"	14	7
14	FOURTEEN COLOR	0	6	11-1/4"	15	7
15	FIFTEEN COLOR	1	7	12-5/8"	16	8
16	SIXTEEN COLOR	0	7	12-5/8"	17	8
17	SEVENTEEN COLOR	1	8	14"	18	9
18	EIGHTEEN COLOR	0	8	14"	19	9
19	NINETEEN COLOR	1	9	15-3/8"	20	10
20	TWENTY COLOR	0	9	15-3/8"	21	10
21	TWENTY-ONE COLOR	1	10	16-3/4"	22	11
22	TWENTY-TWO COLOR	0	10	16-3/4"	23	11
23	TWENTY-THREE COLOR	1	11	18-1/8"	24	12
24	TWENTY-FOUR COLOR	0	11	18-1/8"	25	12
25	TWENTY-FIVE COLOR	1	12	19-1/2"	26	13
26	TWENTY-SIX COLOR	0	12	19-1/2"	27	13
27	TWENTY-SEVEN COLOR	1	13	20-7/8"	28	14
28	TWENTY-EIGHT COLOR	0	13	20-7/8"	29	14
29	TWENTY-NINE COLOR	1	14	22-1/4"	30	15
30	THIRTY COLOR	0	14	22-1/4"	31	15

COLOR VALVE STACK – PARTS IDENTIFICATION

TABLE "B" - AIR PUSH VALVES

Dash #	Description	"K"
0	NO AIR PUSH ASSEMBLY	--
1	ONE AIR PUSH ASSEMBLY	79309-01
2	TWO AIR PUSH ASSEMBLIES	79309-02

TABLE "C" - CHECK VALVE OPTIONS

Dash #	Description	"J"	"R"	"S"	"T"	"U"
0	NO CHECK VALVES ON COLOR VALVES	1	0	Table A-"H"	Table A-"H"	0
1	CHECK VALVES ON ALL COLOR VALVES	Table A-"H"	Table A-"H"	0	0	Table A-"H"

TABLE "D" - FLUID INLET FITTINGS

Dash #	Description	"M"	"N"	"O"	"P"
0	NO FITTINGS	0	0	0	0
1	ELBOWS ONLY	Table C-"R"	0	Table C-"S"	0
2	TEES ONLY	0	Table C-"T"	0	Table C-"U"

ACCESSORIES

Part No.	Description
KK-4901	PAINT MANIFOLD ASSEMBLY KIT

WARRANTY POLICY

This product is covered by Carlisle Fluid Technologies' materials and workmanship limited warranty. The use of any parts or accessories, from a source other than Carlisle Fluid Technologies, will void all warranties. Failure to reasonably follow any maintenance guidance provided may invalidate any warranty.

For specific warranty information please contact Carlisle Fluid Technologies.

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