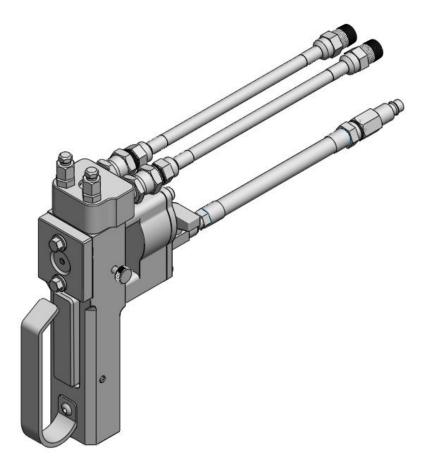
Operation and Parts Manual

October 2016, Issue 3



Plural Component, Impingement Mix, Mechanical Purge Spray Gun



Maximum Fluid Pressure – 3500 psi (24.5 MPa, 245 Bar) Air Inlet Pressure Range – 80-130 psi. (0.56-0.9 MPa, 5.6-9.0 Bar) Maximum Fluid Temperature – 200°F (94° C)

Pentech, Inc.

P.O. Box 274, Tallevast, FL 34243

Serial #_____

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MG Spray Gun Technical Data

Pressures & Temperatures:

Maximum Fluid Working Pressure Minimum Air Inlet Pressure Maximum Air Inlet Pressure Minimum Material Output Maximum Material Output Maximum Fluid Temperature

Hose Connections:

Air Inlet Size A Component (ISO) Inlet Size B Component (Poly) Inlet Size

Dimensions:

3500 psi (24.5 MPa, 245 Bar) 100 psi. (0.69 MPa, 6.9 Bar) 130 psi. (0.9 MPa, 9.0 Bar) 1 Lbs. /Min. (.4536 kg) 23 Lbs. /Min. (10.43 kg) 200° F (94°C)

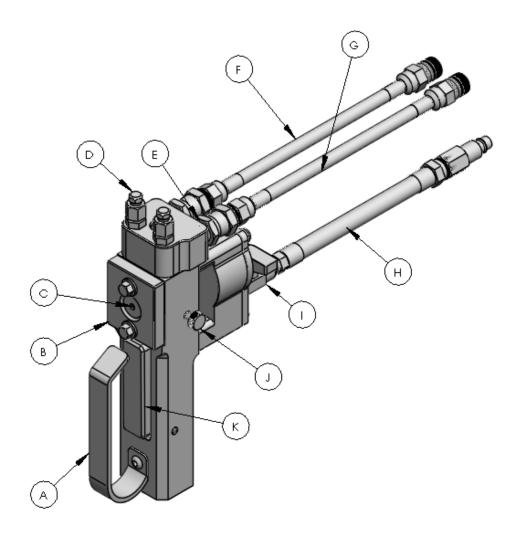
1⁄4" npt Quick Disconnect Nipple 1⁄4" mpt 1⁄4" mpt

Height – 6 1/2" (16.51 cm) Width – 2" (5.08 cm) Length – 2 3/4" (6.985 cm) Weight 1.9Lbs. (.8618 kg)

Wetted Parts: Aluminum, Stainless Steel, Carbon Steel, Teflon, Chemically Resistant Plastic and O-Rings

Plural Component Air Operated Impingement Mixing Mechanical Purge





Item	Name
А	Trigger Guard
В	Air Cap
С	Pattern Control Disc (PCD)
D	Manual on/off Valve
E	Check Valve
F	Whip Hose, Resin
G	Whip Hose, ISO
Н	Whip Hose, Air
I	Air Safety Valve
J	Air Needle Valve
К	Trigger Paddle

The MG Spray Gun Package Includes

MG1003 Includes:	MG	MG Spray Gun Package			
MG2100	MG	MG Gun Assembly Complete			
MG5300			/hip Hose Assembly		
WG3300	Cou		The Hose Assembly		
	_				
MG9000	Тоо	l Kit			
Includes:	1	BD9054	Flush Bottle		
	1	PSG9012	Drill Bit, 7/64" x 6" Long		
	1	PSG9010	Combination Wrench, 5/16"		
	1	PSG9009	Nut Driver, 5/16"		
	1	PSG9011	Pin Vise		
	1	MG9014	Drill Bit, 1/16"		
	4	MG4003	O-Ring, Coupling Block		
	3	PSG2008	O-Ring		

MG100 Manual, Operation and Parts Identification

Note: MG Gun package comes ready to spray with:

MG9001-24 – (Module, Mix, Round Pattern, .024) MG9003-24 – (PCD, Round Pattern, .024)

Safety Information & Warnings

Before operating The MG Spray Gun, personnel should fully understand the contents, recommendations, and safety notes contained in this manual.

Failure to follow these guidelines may result in severe bodily injury or damage to equipment and property.

The safety guidelines outlined in this manual are not intended to be all inclusive. A certain degree of knowledge of general industrial safety practices as used in the spray applied coatings and foam industry are required to insure operator safety.

Aluminum Parts Hazard

Do Not Use 1,1,1-Trichloroethane, Methylene Chloride, or other halogenated hydrocarbon solvents, or fluids containing these solvents in the MG Gun. These solvents are capable of causing a serious chemical reaction, and possible rupture when used in pressurized aluminum equipment.

Personal Protection

The operator and personnel in the vicinity of this equipment must ensure their personal safety by wearing:

Protective eyewear

Protective clothing and gloves

Protective breathing apparatus, supplied fresh air system, or approved respirator.

Injection Hazard:

This equipment operates at high fluid pressure and is capable of injecting chemicals into skin.

Do not place hands or fingers in area of spray pattern. Never point spray gun in the direction of other personnel. Close material supply valves before leaving spray gun unattended.

Relieve all pressure before servicing or cleaning this equipment. If chemicals have pierced skin, get immediate medical attention.

Chemical Materials and Fumes: Read and understand Material Safety Data Sheet (MSDS) provided by chemical manufacturer. Store and dispose of chemicals in accordance with manufactures guidelines.

GENERAL OPERATION OVERVIEW

GUN SAFETY DEVICES:

The MG Gun has two methods of putting the gun in the safe mode.

#1. Air Valve:

Gun will not trigger without air pressure to the air cylinder. To engage air valve safety, turn air valve handle clockwise. Air needle valve will vent air contained in gun handle and air cylinder.

2. Material Shut Off Valves:

Gun will not dispense material with A & B manual valves closed.

To engage manual valve safety, turn manual valves clockwise until closed.

Hose Orientation:

With gun pointing away from operator, **A** component hose and manual valve is on operators left. **B** component hose and manual valve is on operator's right.

Air Hose Connection:

Insure that air valve at rear of air Cylinder is in the closed/safe position.

Air hose is connected by inserting male quick disconnect fitting located at end of air whip hose into female quick disconnect air fitting located in heated hose bundle. When gun is not in use, keep air fitting free of debris.

Coupling Block:

The A & B material whip hoses are connected to the gun head by the coupling block bolt.

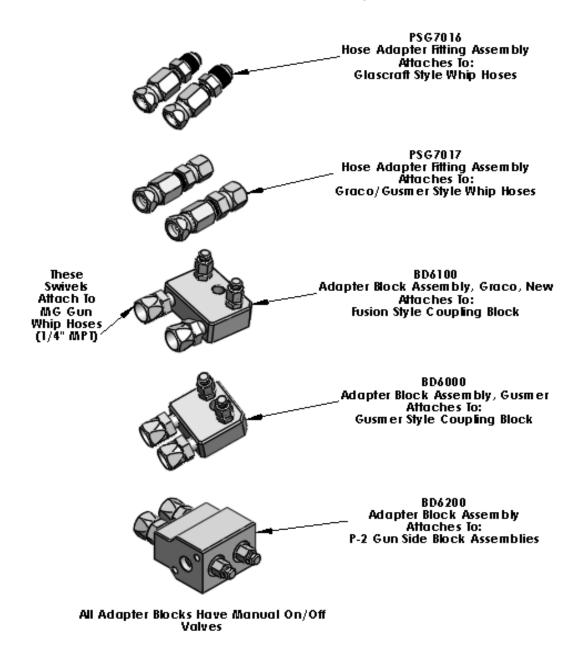
Insure that the two coupling block o-rings are in place.

Material Shut Off Valves:

The A & B manual valves control the on/off flow of material to the gun. Open valves 2 turns when spraying.

Do not open manual valve unless the gun is connected, or the coupling block material ports are directed into a suitable container.

Attaching MG Gun Whip Hoses To Other Manufacturers Whip Hoses



Important Tips for Operation

Air cap and mating front face of gun must be very clean and free of nicks.

Air cap bolts must be greased and tightened with wrench until tight.

Consult your material supplier for the proper cleaning and flushing solvent to use.

Ensure that cleaning solvents do not cause swelling of o-rings.

Do not soak o-rings or mix module in solvent. Solvent may be used for cleaning, and then dried off.

Air cap clean off air should remain on whenever manual valves are open.

Do not submerge entire gun in cleaning solvent. O-Ring damage will result.

Lubricate air line inlet daily, 2-3 drops of air tool oil only.

Apply light coat of grease or wax to exterior of gun daily to prevent overspray build up.

Initial Gun Start Up

Install Coupling block / Whip hose assembly to heated hose set:

- Attach Coupling block / whip hose assembly to existing hose assembly using either adapter fittings, or adapter blocks. See page
 8. Check to see that A & B material shut off valves are closed.
- 2. Turn on hose heat and machine heaters. Set temperature, and allow machine to reach spray temperature.
- 3. Pressurize equipment, bleed air from coupling block/ whip hose assembly into suitable waste container. Equalize A and B component pressure gauges at correct spray pressure.

Assemble MG spray gun:

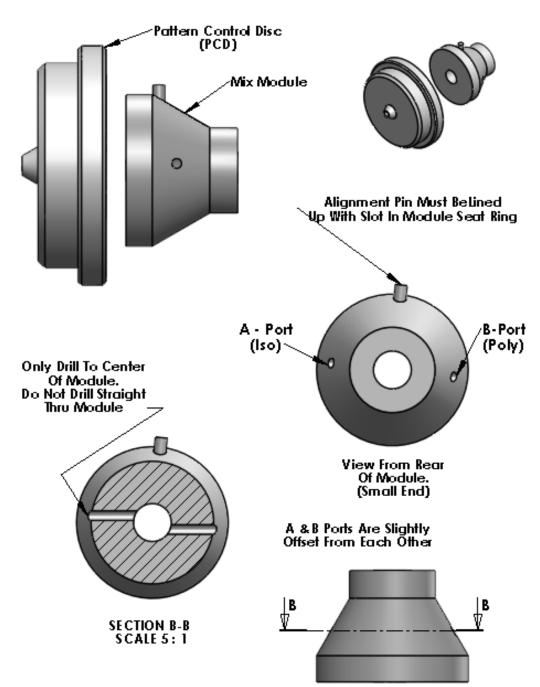
- 1. Check to see that basket filters and coupling block o-rings are in place.
- 2. Apply light coat of grease or wax to gun to prevent overspray from sticking.
- 3. Attach gun to coupling block using 5/16" nut driver.
- 4. Plug in air supply whip hose, open air / safety valve at rear of gun.
- 5. Open pattern air valve $\frac{1}{4} \frac{1}{2}$ turn.
- Slowly open A & B material shutoff valves 1 ½ turns. Check for material mist in pattern or leakage at air cap. Gun is now ready to spray. Aim off target, spray off target until good pattern develops.

Normal Gun Start Up

Assemble MG spray gun:

- 1. With air cap, PCD, and mix module removed, use solvent squeeze bottle to ensure that basket filter ports and ports to mix module seat are clean and open. A drill of the proper diameter can be used to clear build-up that may be present.
- 2. Check ports in mix module to ensure they are clean. **See Page 13** for details on drilling the mix module.
- 3. Wipe grease around module seat area. Use excess to apply a light coat to the outside of the mix module.
- 4. Push small end of module over end of valving rod. Carefully align module locating pin with groove in module seat ring. Push module fully into seat area. Recheck alignment of pin in slot.
- 5. Check to see that the orifice in the PCD is clean. Orifice may be cleaned with proper drill size. See page 13. Apply light coat of grease to PCD. Put PCD into place over large end of mix module.
- 6. Install air cap and 2 lightly greased bolts over PCD. Tighten until very snug using 5/16" combination wrench. Apply light coat of grease to front of air cap.
- 7. Plug in air supply whip hose, open air / safety valve at rear of gun.
- 8. Open pattern air valve 1/4 1/2 turn. Trigger gun to check for proper operation.
- 9. Slowly open A & B material shutoff valves 1 ½ turns. Check for mist in pattern or leakage at air cap.
- Check for leakage at rear seal packing nut. Nut should be only tight enough to prevent leakage. Do not over tighten. Gun is now ready to spray. Aim off target, spray off target until good pattern develops.

MG Mix Module and PCD



Module / PCD Chart

	PART		Approx. Output	Number	Cleanout
Item #	NUMBER	DESCRIPTION	Pattern At 24"	Drill Size	Drill Size
20	MG9001-16	Module, Mix Rnd Pattern, 016	1.0 - 2.0 Lbs/Min	78	.016
13	MG9003-20	PCD, Round Pattern, .020	4-6"	76	.020
20	MG9001-16	Module, Mix, Rnd Pattern, .016	1.25-2.0 Lbs./Min.	78	.016
13	MG9003-24	PCD, Round Pattern, .024	4-6"	73	.024
20	MG9001-24	Module, Mix, Rnd Pattern, .024	2.5 - 4.0 Lbs./Min.	73	.024
13	MG9003-24	PCD, Round Pattern, .024	4-6"	73	.024
20	MG9001-24	Module, Mix, Rnd Pattern, .024	2.5 - 4.0 Lbs./Min.	73	.024
13	MG9003-36	PCD, Round Pattern, .036	5-8"	64	.036
20	MG9001-37	Module, Mix, Rnd Pattern, .037	10 - 18 Lbs./Min.	63	.037
13	MG9003-47	PCD, Round Pattern, .047	12-16"	3/64	.0469
20	MG9001-52	Module, Mix, Rnd Pattern, .052	18 - 25 Lbs./Min.	55	.052
13	MG900360	PCD, Round Pattern, .060	14-21"	53	.0595

Spraying and Normal Operation

Note: The MG Gun comes standard with 24" unheated whip hoses. Their purpose is to limit operator fatigue by providing more flexibility, as well as saving the wear and tear on the more expensive heated whip hose assembly.

Due to the small amount of unheated material in the whip hoses, it may take a moment for the spray pattern to fully develop when first triggered. Subsequent triggering will yield a good pattern instantly. If this delay is an issue, heated whip hoses may be attached directly to the MG coupling block with fittings listed on page 8.

Start by spraying off target to check pattern.

Hold spray gun perpendicular to work surface whenever possible.

Overlap round pattern by approximately 1/3 for even application of coatings or foam.

Due to the direct impingement mixing of the MG gun; it may be triggered while aiming at the project surface without producing an Iso spit, or off ratio material condition.

Gun Shutdown and Cleaning

Removing MG gun from coupling block:

- 1. Close A & B material shutoff valves.
- 2. With pattern air still on, trigger gun into waste bucket repeatedly to relieve pressure in material ports.
- 3. Turn off Pattern air valve.
- 4. Remove gun from coupling block.

Cleaning:

- 1. Remove 2 bolts and air cap.
- 2. Remove PCD from air cap. Trigger gun to push out module. Air Safety valve can now be closed, and air hose disconnected from gun.
- 3. Using flush bottle, clean module ports by blocking one end of module with finger, and squirting solvent in open end until it comes out both ports. Clean outside of module. Store dry.
- 4. Remove 2 coupling block o-rings, clean and store dry. Remove basket filters from gun and clean in solvent. Using flush bottle, flush solvent thru each basket filter port until solvent comes out of material port in module seat area. Repeat for other side. Gun should be held at an angle to prevent solvent from flooding the trigger area.
- 5. Clean exterior of gun with solvent rag.

Note: To clean overspray from gun, a rag may be wrapped around gun which has been soaked in suitable solvent, to soften overspray.

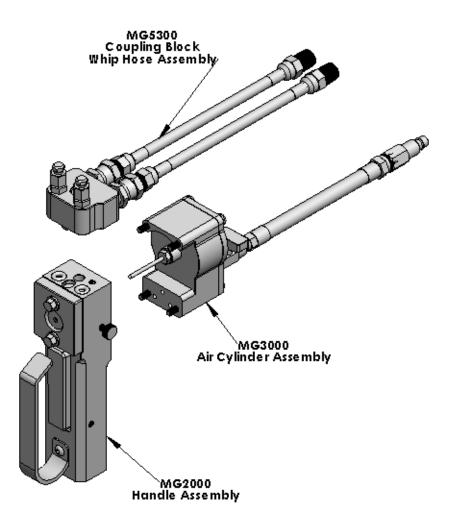
Do not immerse gun in solvent to clean. O-rings in trigger spool valve and air cylinder will be damaged.

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Very slight air leakage at sides of air cap.	This is normal.	No action required.
Valving rod does not actuate.	No air pressure.	Connect air, open air safety valve.
	Low air pressure.	Set air pressure to 80-130 psi.
	Rear seal packing nut to tight.	Loosen packing nut slightly.
Mist from PCD when not triggered.	Air cap bolts loose.	Tighten air cap bolts with wrench.
	Rear surface of air cap dirty.	Clean, check for nicks.
	Module bore worn out.	Replace worn module.
Excessive overspray.	Excessive air flow to air cap.	Reduce air flow with needle valve.
	Fluid pressure set to high.	Reduce fluid pressure.
Round pattern has fingers, or is misshaped.	PCD orifice dirty.	Clean PCD orifice with proper clean out drill.
	PCD orifice worn.	Replace PCD.
	Material pressure too low.	Increase material pressure.
Pressure imbalance.	Module ports dirty.	Clean module ports using proper drill size.
	Module ports worn.	Re drill module ports to next larger drill size.
	A & B viscosities not equal.	Adjust temperatures of A & B.
	Basket filters dirty.	Clean basket filters.
	Check valves dirty.	Clean or replace check valve.
Gelled, or hardened material in air passages feeding air cap.	Material crossover, air in hoses.	Clean, or replace check valves. Clean material ports with drill.
Material leakage at rear seal.	Rear seal packing nut loose.	Tighten packing nut slightly.
	Rear seal worn or damaged.	Replace rear seal.
Rapid material buildup on PCD or air cap.	Insufficient air flow to air cap.	Increase air flow to air cap.
Gun triggers slowly.	O-rings dry, or worn.	Lubricate gun with air tool oil in air inlet, or replace and lubricate o- rings.
Air Leakage from exhaust under Trigger paddle.	Damaged spool valve o- rings. Damaged piston o-ring.	Replace spool valve o-rings. Replace piston o-ring.

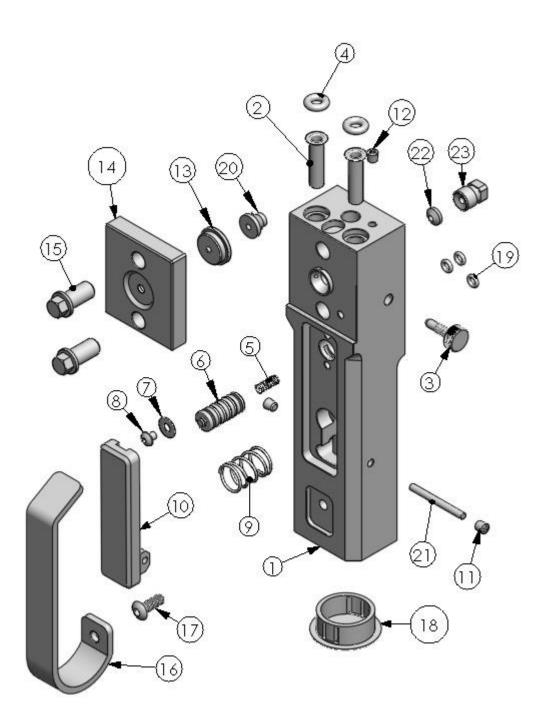
Parts Identification Section

MG2100 MG Gun Complete Main Assemblies



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MG2000 Handle Assembly Complete



MG2000 Handle Assembly Complete

Item #	Description	Qty.	Part Number
1	Gun Handle Bare	1	MG2001
2	Basket Filter	2	PSG2016A
3	Air Needle Valve	1	MG2017
4	O-Ring, Coupling Block	2	MG4003
5	Spring, Spool Valve Return	1	PSG2005
6	Spool Valve	1	PSG2004
7	Washer	1	PSG2007
8	Button Head Cap Screw, 6-32	1	PSG2006
9	Spring, Trigger Paddle	1	PSG2009
10	Trigger Paddle	1	BD2003
11	Set Screw, 8-32	2	PSG2014
12	Socket Head Set Screw, 10-32	1	BD2015
13	PCD, XX Orifice	1	MG9003-XX
14	Air Cap	1	MG2002
15	Air Cap Bolt	2	PSG2012
16	Trigger Guard	1	BD2010
17	Button Head Cap Screw, 10-32	1	BD9045
18	Plug, Finish	1	MG9044
19	O-Ring	3	PSG2008
20	Module, Round Pattern, XX Orifices	1	MG9001-XX
21	Dowel Pin, 1/8" x 1 1/4"	1	PSG2011
22	Rear Seal	1	MG2021
23	Rear Seal Packing Nut	1	MG2022

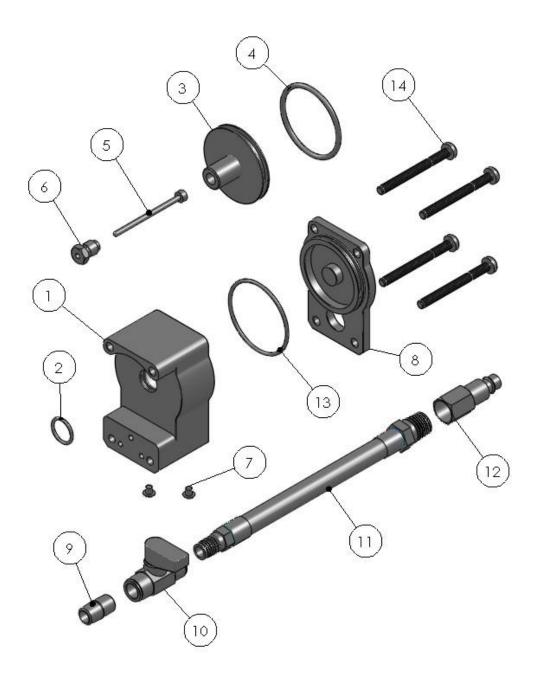
Repair Kit: See Page 27

For # 13 and #20: See Page 22

Module / PCD Chart

	PART		Approx. Output	Number	Cleanout
Item #	NUMBER	DESCRIPTION	Pattern At 24"	Drill Size	Drill Size
20	MG9001-16	Module, Mix, Rnd Pattern, .016	1.0 - 1.75 Lbs./Min	78	.016
13	MG9003-20	PCD, Round Pattern, .020	4-6"	76	.020
20	MG9001-16	Module, Mix, Rnd Pattern, .016	1.25 - 2.0 Lbs./Min.	78	.016
13	MG9003-24	PCD, Round Pattern, .024	4-6"	73	.024
20	MG9001-24	Module, Mix, Rnd Pattern, .024	2.5 - 4.0 Lbs./Min.	73	.024
13	MG9003-24	PCD, Round Pattern, .024	4-6"	73	.024
20	MG9001-24	Module, Mix, Rnd Pattern, .024	2.5 - 4.0 Lbs./Min.	73	.024
13	MG9003-36	PCD, Round Pattern, .036	5-8"	64	.036
20	MG9001-37	Module, Mix, Rnd Pattern, .037	10 - 18 Lbs./Min.	63	.037
13	MG9003-47	PCD, Round Pattern, .047	12-16"	3/64	.0469
20	MG9001-52	Module, Mix, Rnd Pattern, .052	18 - 25 Lbs./Min.	55	.052
13	MG9003-60	PCD, Round Pattern, .060	14-21"	53	.0595

MG3000 Air Cylinder Assembly

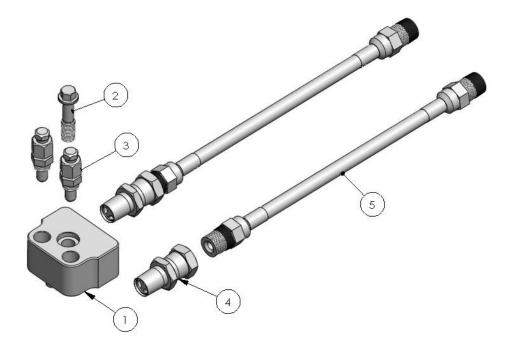


MG3000 Air Cylinder Assembly

Item #	Description	Qty.	Part Number
1	Air Cylinder, Bare Assembly	1	MG3001
2	O-Ring	1	PSG3014
3	Piston & Shaft	1	MG3012
4	O-Ring, Piston	1	MG3010
5	Valving Rod	1	MG4000
6	Valving Rod Bolt	1	MG4001
7	Button Head Cap Screw, 6-32	2	PSG2006
8	Rear Cover	1	MG3009
9	1/8" Pipe Nipple	1	PSG7004
10	Air Safety Valve	1	PSG5014
11	Whip Hose, Air	1	BD9041
12	Nipple, Male QD, 1/4 FPT	1	PSG7008
13	Rear Cover O-Ring	1	MG3008
14	Pan Head Screw, 2" Length	4	MG3004

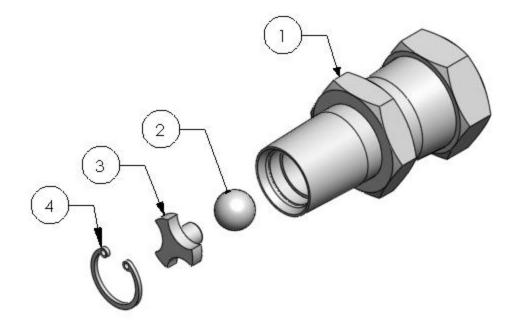
Repair Kit: See Page 27

MG5300 Coupling Block / Whip Hose Assembly



Item #	Description	Qty.	Part Number
1	Coupling Block - Machined & Plated	1	MG5001
2	Coupling Block Bolt	1	PSG5003
3	Manual Valve Assembly	2	PSG5500
4	Check Valve, A or B	2	BD5305
5	Whip Hose, A or B	2	BD5007





1	Check Valve Body	1	BD5301
2	Ball, .250	1	BD5303
3	Ball Support	1	BD5302
4	Snap Ring, Internal	1	BD5304

Repair Kit: See Page 27

Repair and Tool Kit List

MG3006				
	Includes:	1 1 1	PSG3014 MG3010 MG3008	O-Ring O-Ring, Piston O-Ring, Rear Cover
PSG3015	Trigger O-R Includes:	ling Re	epair Kit	
	includes.	1 6	PSG2005 PSG2025	Spring, Spool Valve, Return O-Ring, Spool Valve
BD5307	Check Valv Includes:	e Repa 2 2 2	air Kit BD5302 BD5303 BD5304	Ball Support Ball Snap Ring
MG9000	Tool Kit Includes:	(Parts	s Also Sold I	ndividually)
	includes.	1 1 1 1 1 4 3	BD9054 PSG9012 PSG9010 PSG9009 PSG9011 MG9041 MG4003 PSG2008	Solvent Squeeze Bottle Drill Bit, 7/64" x 6" Combination Wrench, 5/16" Nut Driver, 5/16" Pin Vise Drill Bit, 1/16" O-Ring, Coupling Block O-Ring
			O-Ring Kit	S
		MG30 PSG3 MG40	08-PKG 10-PKG 014-PKG 03-PKG 008-PKG	12 Pack 12 Pack 12 Pack 12 Pack 12 Pack
MG9910 MG9920 MG9930 MG9940	O-Ring & S MG Rebuild MG Rebuild MG Rebuild	l Kit - H I Kit - A	landle Air Cylinder	D-Ring set and a Rear Seal

Options List

MG9001-16 Mix Module, Round Pattern, .016

Includes:

1

MG3016-16 Start Up Kit

1 6 6 1 1	MG9003-20 MG4003 PSG2008 MG2021 PSG2016A	PCD, Round Pattern, .024 O-Ring, Coupling Block O-Ring Rear Seal Basket Filter
MG3016 Start Up Kit (This Mo	dule/PCD Comb Includes:	pination Comes Standard in New Gun)
1 1 6 1 1	MG9001-24	Mix Module, Round Pattern, .024 PCD, Round Pattern, .024 O-Ring, Coupling Block O-Ring Rear Seal Basket Filter
MG3016-24 Start Up Kit 1 6 6 1 1		Mix Module, Round Pattern, .024 PCD, Round Pattern, .036 O-Ring, Coupling Block O-Ring Rear Seal Basket Filter
MG3016-37 Start Up Kit 1 1 6 6 1 1 1		Mix Module, Round Pattern, .037 PCD, Round Pattern, .047 O-Ring, Coupling Block O-Ring Rear Seal Basket Filter
MG3016-52 Start Up Kit 1 6 6 1 1 1	Includes: MG9001-52 MG9003-60 MG4003 PSG2008 MG2021 PSG2016A	Mix Module, Round Pattern, .052 PCD, Round Pattern, .060 O-Ring, Coupling Block O-Ring Rear Seal Basket Filter

Options Continued

PSG7016	Hose Adapter Fitting Assembly – Glascraft (Attaches MG Whip Hoses to Glascraft Style Whip Hoses)
PSG7017	Hose Adapter Fitting Assembly – Graco / Gusmer (Attaches MG Whip Hoses to Graco / Gusmer Style Whip Hoses)
BD6100	Adapter Block Assembly – Graco (Attaches MG Whip Hoses to Graco Fusion Style Coupling Block)
BD6000	Adapter Block Assembly – Gusmer (Attaches MG Whip Hoses to Gusmer Style Coupling Block)
BD6200	Adapter Block Assembly – P-2 (Attaches MG Whip Hoses to P-2 Side Block Assemblies)
PSG9015	Drill Index, #80 - #61 Drill Bits
BD9015	Drill Index, #60 - #41 Drill Bits
PSG9011	Pin Vise Small, For # 61 - #80 Drill Bits
BD9011	Pin Vise Large, For 1/16" – ¼: Drill Bits
BD9042	High Pressure Swivels
PSG5009	High Pressure Filter Swivel, With 60 Mesh Filter Cartridge

PENTECH, INC.

Standard Warranty

Pentech, Inc. provides a limited warranty to the original purchaser of Pentech manufactured parts and equipment against any defects in material or workmanship for a period of one year from the date of shipment from Pentech, Inc.

In the event product is suspected to be defective in material or workmanship, product must be returned in a cleaned and flushed condition, freight prepaid in suitable packaging, using a Returned Material Authorization (RMA) number issued by Pentech, Inc.

If product is found to be defective in material or workmanship, Pentech will issue full credit to customer for the freight charges involved in returning the product to Pentech. A credit will be issued for the replacement cost, or a replacement part will be sent to the customer, no charge, freight prepaid to customer.

This warranty shall not apply to product that Pentech determines to be damaged by misuse, normal wear, or negligence by the customer.

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