MultiBin Lid Cylinder Check Valve Replacement Instructions

WARNING	Shut off all power and allow all moving parts to come to rest before performing any maintenance operation.

WARNING	To perform the process described, a ladder or personal lifting device will be required. Use extreme caution when working above ground. Use of 3-point contact when on a ladder, or use of safety harness when using any type of lifting device is highly recommended.

WARNING	Pressurized air may cause sudden movement of parts. Do not service cover components until safety precautions have been performed. • Take preventative measures to prevent falling or runaway of cylinder or mechanism before maintenance and restart of spreader. • Exhaust all residual air and cut the pressure supply for components before servicing. • Injury can occur if precautions are not taken.

Follow this procedure to replace/re-install the MultiBin Lid cylinder check valve. See Figure 1 for list of parts in upgrade kit.

Item	Description	Quantity
1	Check Valve Assembly	1
2	Spring	1
3	Speed Control Fittings	2
4	Inline filter Assembly	1
5	Clevis Spring Plates	2
6	Corrugated tube	1
7	1/4” tubing	24”

Tools Needed	
Vise Grips	Clean Shop Rag
Flat Blade Screwdriver	Small External Snap Ring Pliers
20” Wood block	Ratchet wrench
Pliers	7/16” & 9/16” Sockets
Utility Knife	Wrenches:
Small Pin Punch	7/16”, 9/16” & 11/16”
Small Hammer	

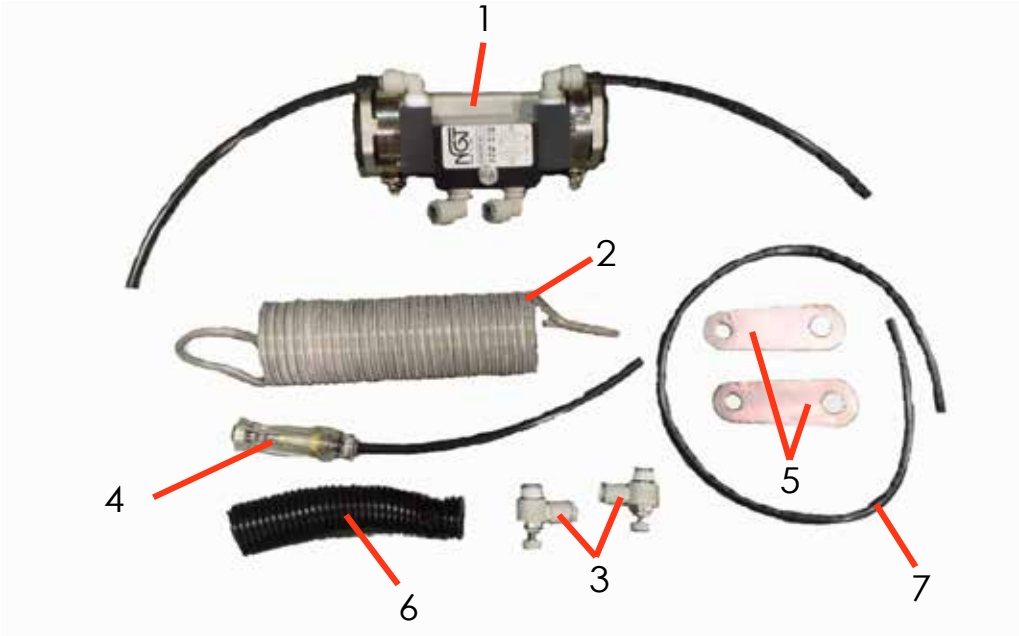

Figure 1: Parts in Kit

MultiBin Lid Cylinder Check Valve Replacement Instructions

1. Drain air system and cycle lid control valve to expel any trapped air
2. Figure 2 - Remove 4 cylinder guard retaining bolts (2). Set guard (1) and bolts (2) aside for later use.

Item	Description
1	Cylinder guard
2	Retaining bolts

Figure 2

3. Figure 3A - Carefully clean area around all 4 air tubes (1 & 2). Unhook air supply tubes to cylinder (1) and air tubes between cylinder fittings (2) (as shown in Figure 3B).

Item	Description
1	Air Supply Tube
2	Air Cylinder Tube
3	Cylinder Fitting

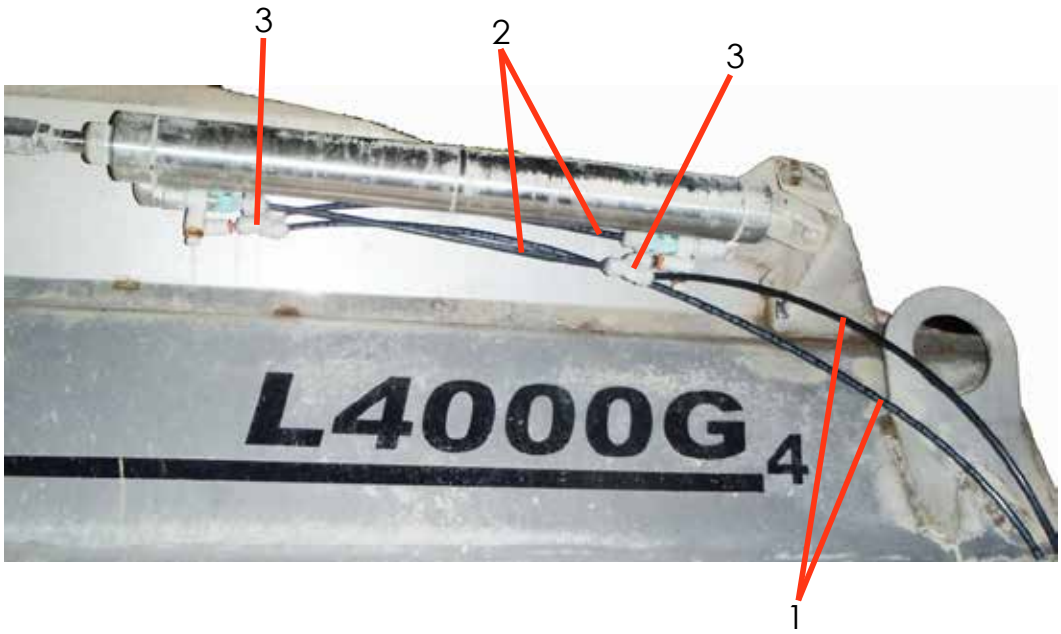

Figure 3A

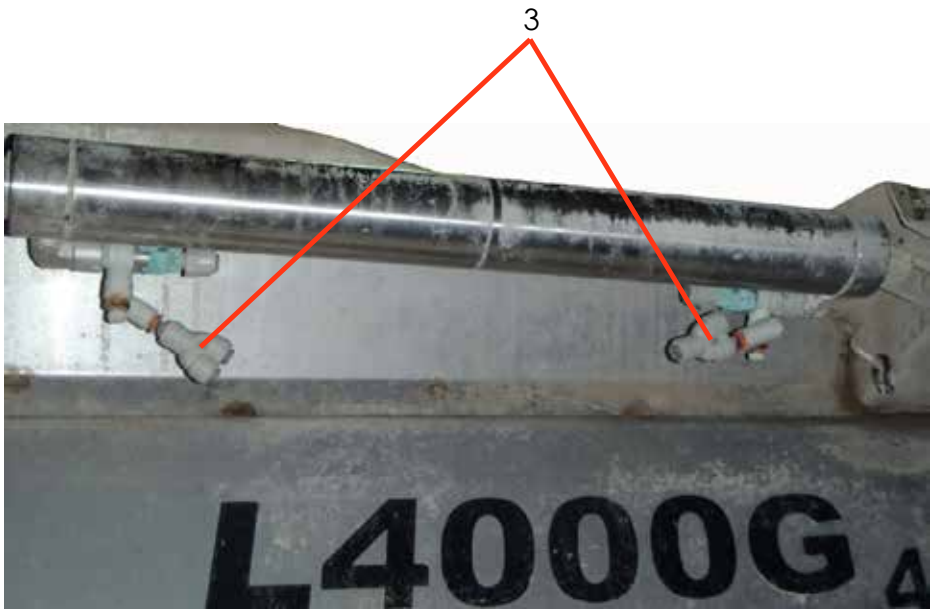

Figure 3B

4. Figure 4 - Remove e-clip (1) and clevis pin (2) from each end of cylinder. Remove cylinder. Set clevis pins and e-clips aside for later use.

Item	Description
1	E-clip
2	Clevis Pin

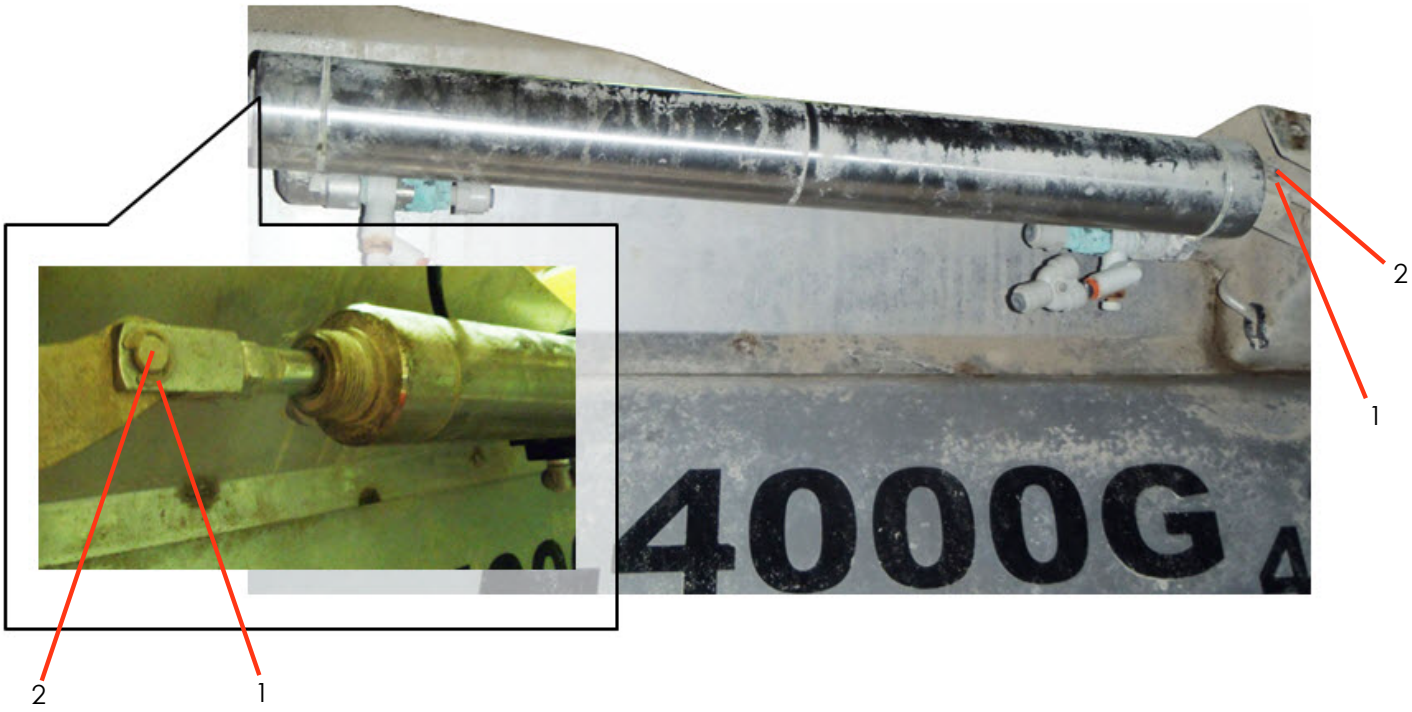

Figure 4

5. FIgure 5 - Clean the areas around the cylinder fittings. Remove and discard old fittings (2).

6. Figure 6 - Slide new check valve assembly (3) midway onto cylinder (1). Position as shown. Note proper angle in Figure 6A. Tighten hose clamps (4).

Item	Description
1	Cylinder
2	Old fittings
3	Check Valve Assembly
4	Hose Clamps

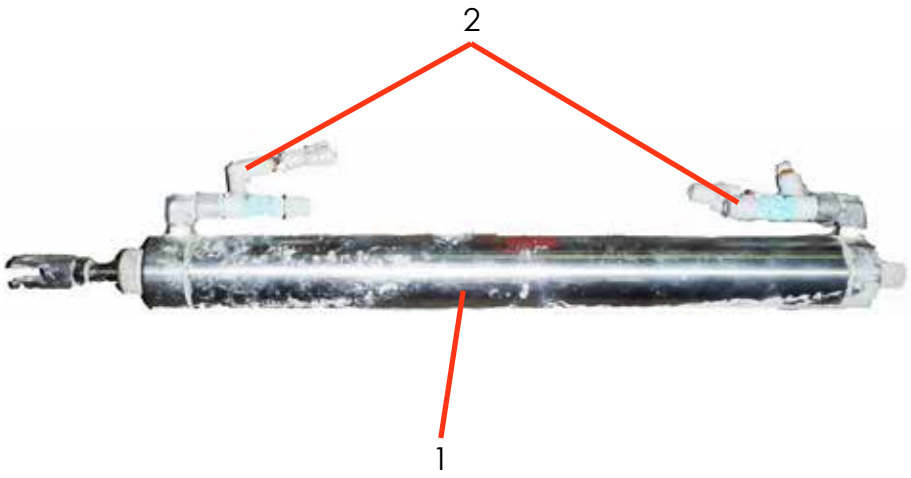

Figure 5

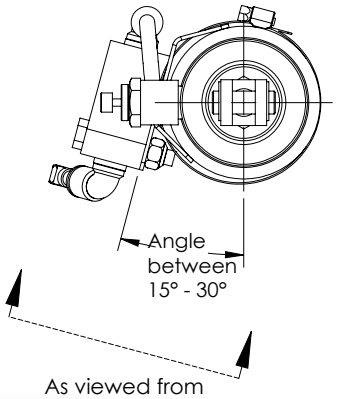

Figure 6A

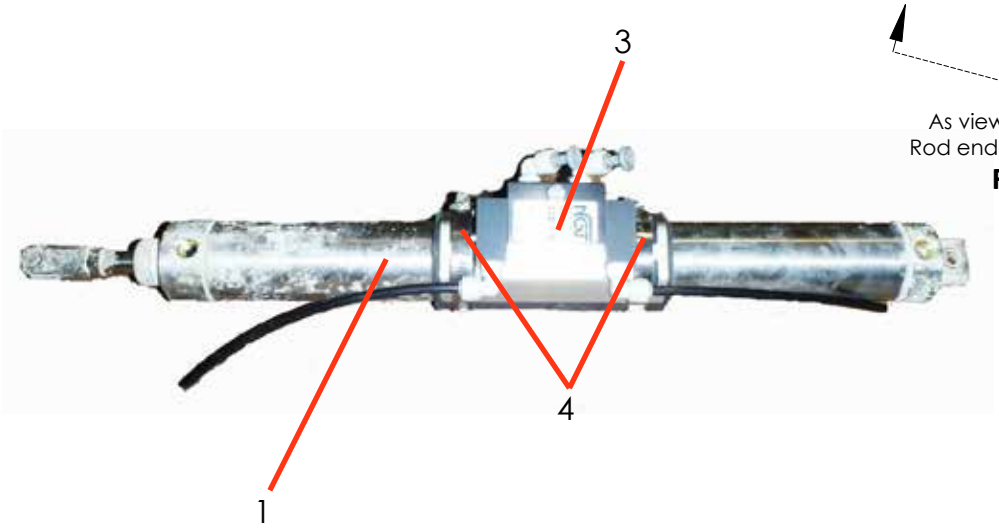

Figure 6

7. Figure 7 - Install new speed control fittings (2) onto cylinder (1) as shown. Fittings do not require adjustment for proper air flow. **NOTE: Do NOT connect air tubes (3) at this time.**

Item	Description
1	Cylinder
2	Speed Control Fittings
3	Air Tubes

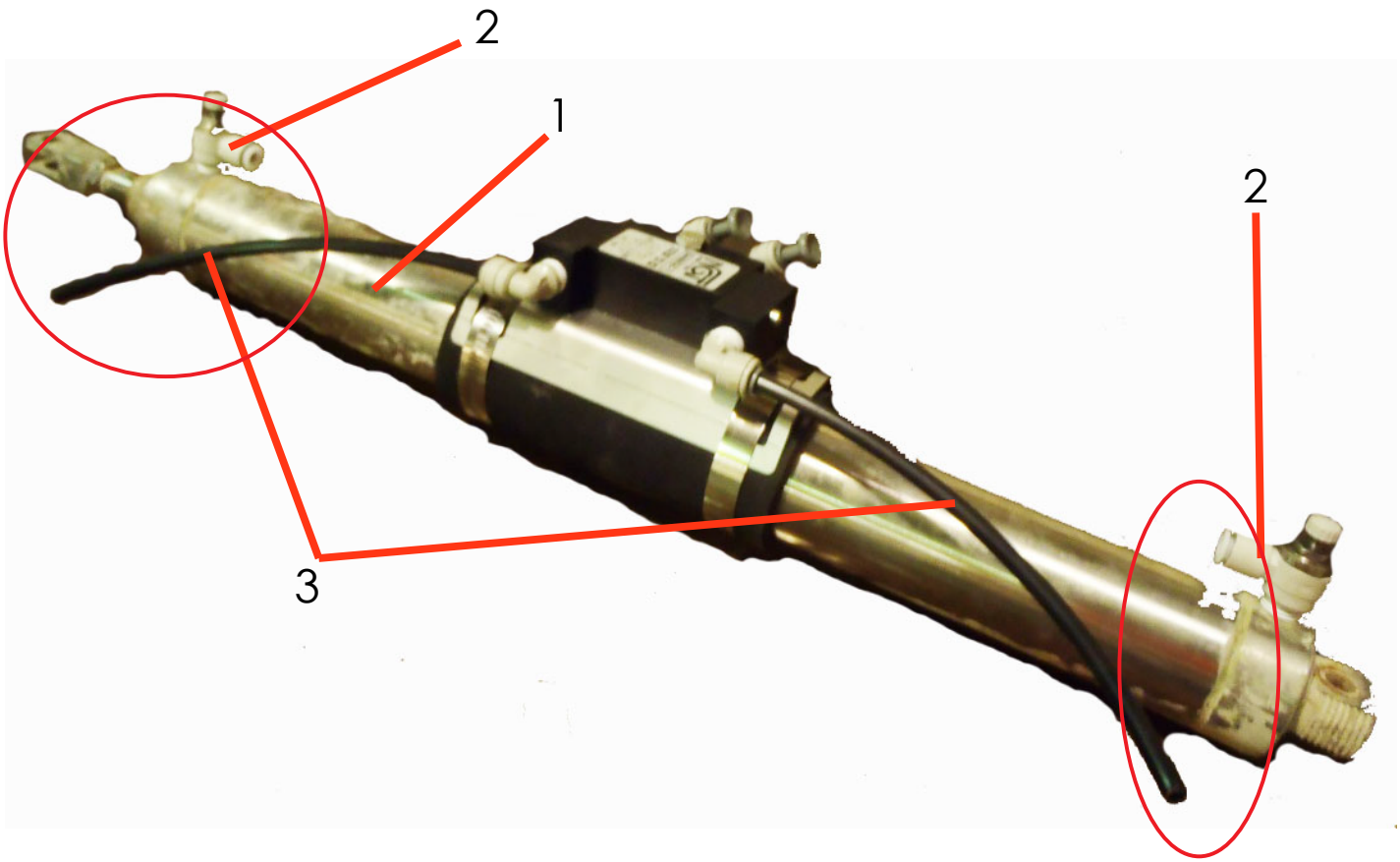

Figure 7

8. Figure 8 - Reinstall cylinder as shown using original clevis pins (2) and e-clips (1). **NOTE: Do NOT connect air tubes (3) at this time (as shown in Figure 8).**

Item	Description
1	E-clip
2	Clevis Pin
3	Air Tubes

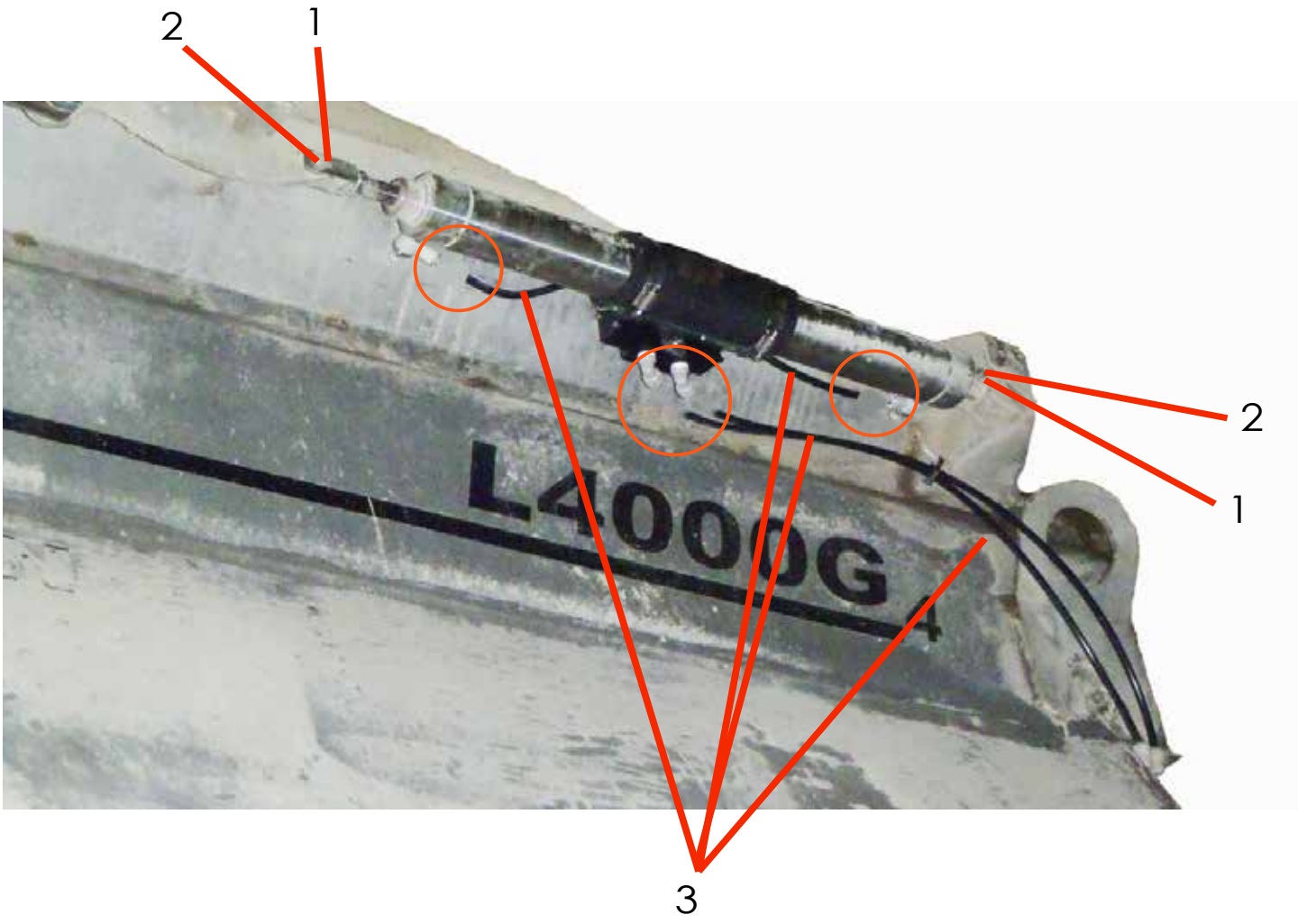

Figure 8

9. Figure 9 - By Hand, open lid (1) to 20” and insert block (2). Assist spring (3) will be left at its shortest position.

Item	Description
1	Lid
2	Block
3	Assist Spring

WARNING Block cover lid to prevent closing. Unintentional closing could cause injury.

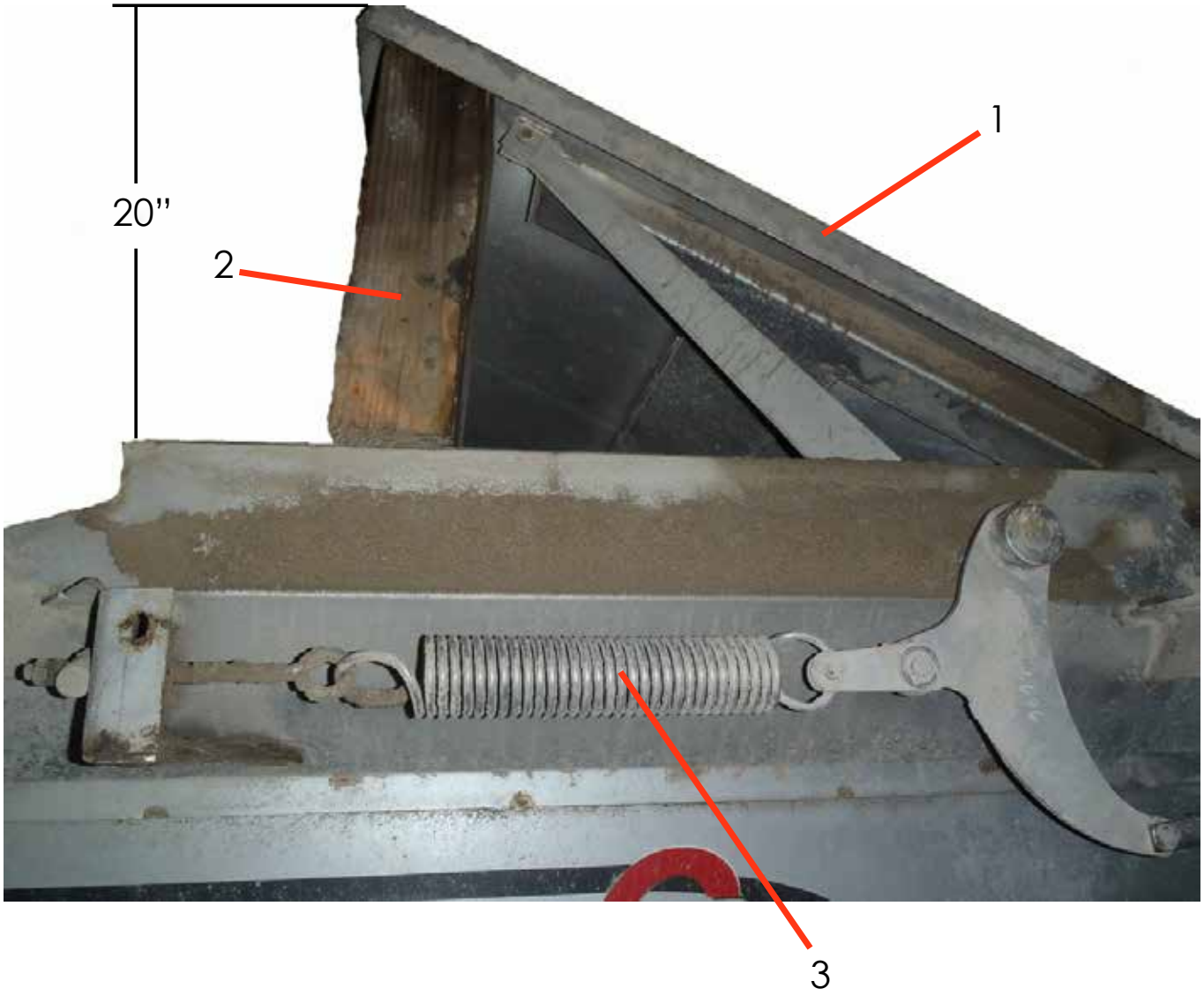

Figure 9

10. Figure 10 - Use Vise Grips to secure Eyebolt (1). Carefully remove eyebolt 3/8" nut (2). Set nut (2) and spring pivot (3) aside for later use.

⚠	**CAUTION**	Eyebolt is under tension. Caution should be used when removing to prevent parts from being thrown by spring. Safety glasses should be worn when working on this component.

Item	Description
1	Eyebolt
2	3/8" Nut
3	Spring Pivot

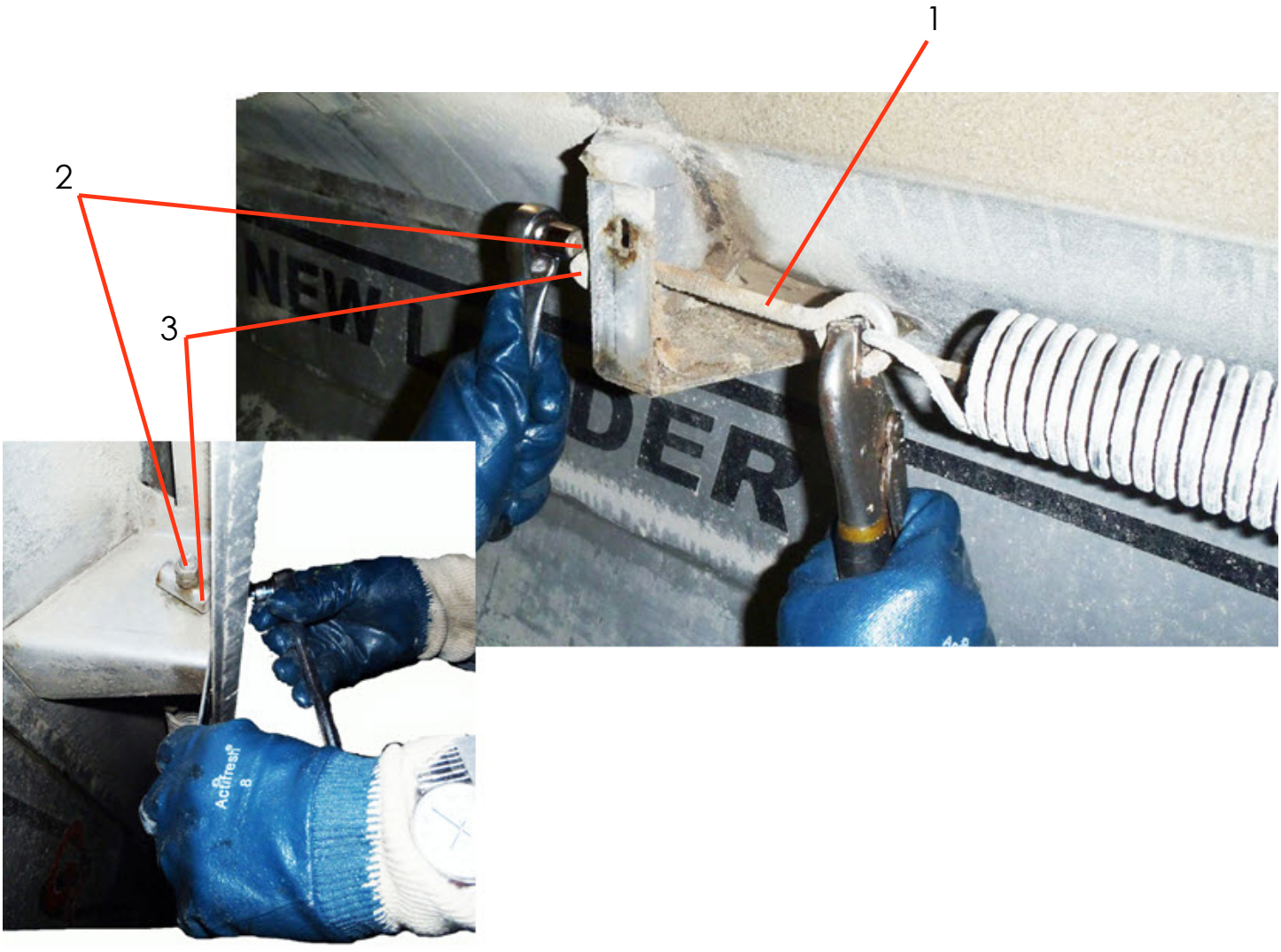

Figure 10

11. Figure 11 - Remove cotter pin (4) and flat washer (5). Set hardware aside for later use. Remove spring assembly to workbench and disassemble spring assembly. Save eyebolt (3) and hardware (4-6). Discard old spring (1) and old clevis plates (2).

Item	Description
1	Spring (discard)
2	Old Clevis Plates (discard)
3	Eyebolt (re-use)
4	Cotter pin (re-use)
5	Flat Washer (re-use)
6	Clevis Pin (re-use)

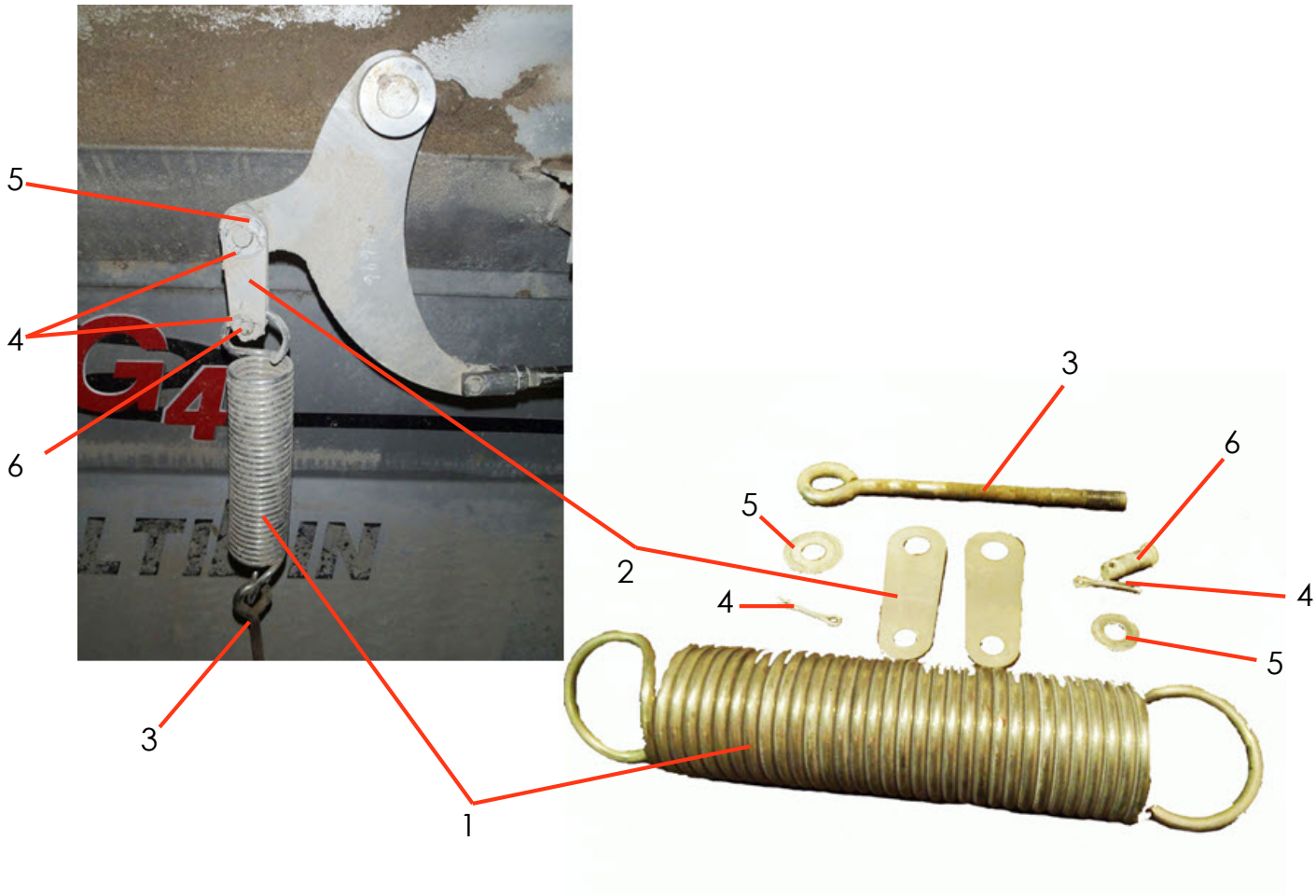

Figure 11

12. Figure 12 - Install original spring eyebolt (3) and new longer clevis plates (2) onto new spring (1), reusing original hardware (4-6). Install new spring assembly using original clevis pin (6), cotter pin (4), and washer(5).

Item	Description
1	New Spring
2	New longer Clevis plates
3	Eyebolt (re-use)
4	Cotter pin (re-use)
5	Flat Washer (re-use)
6	Clevis Pin (re-use)

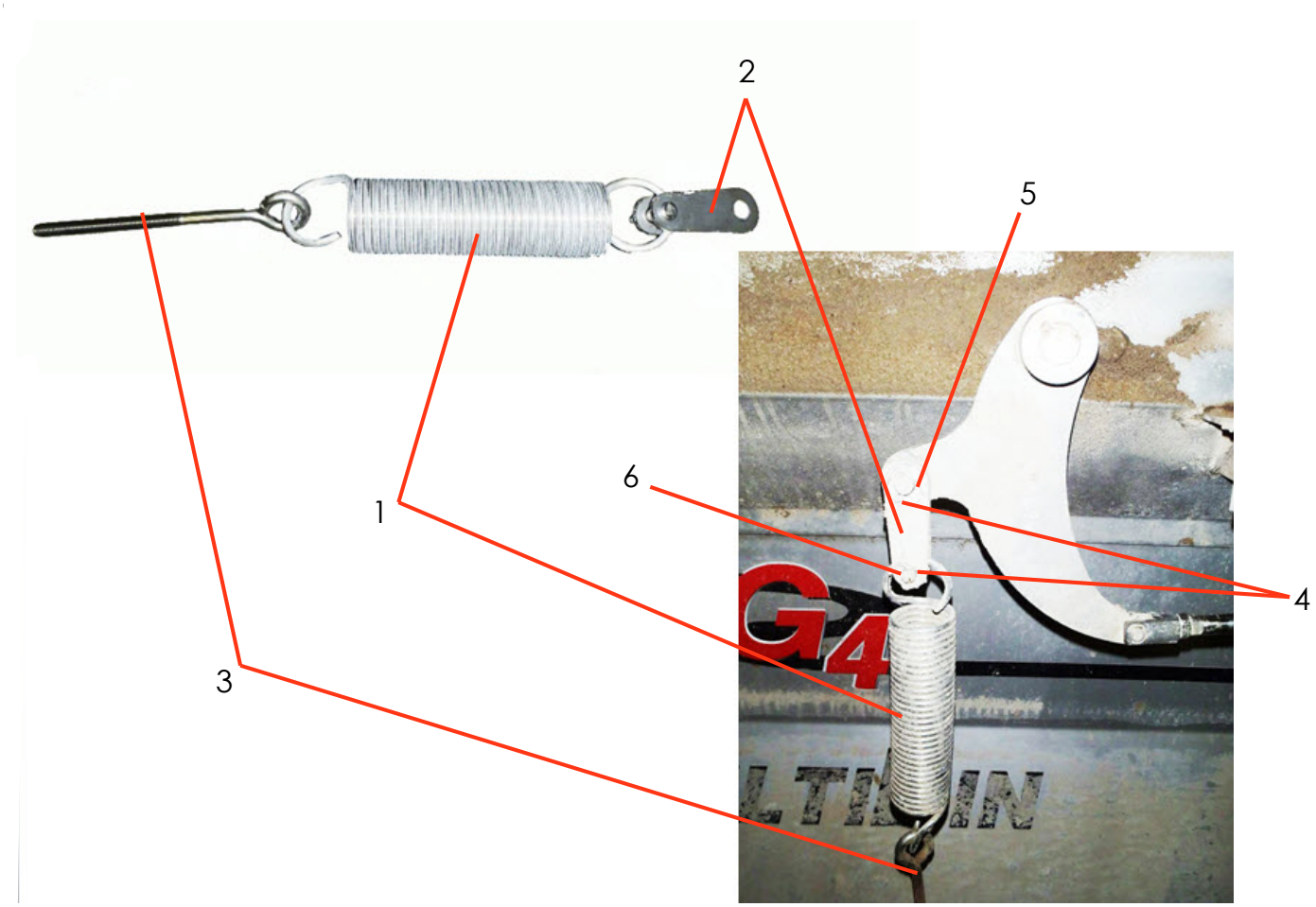

Figure 12

13. Figure 13 - Use Vise Grips to secure eyebolt (1). Reinstall spring eyebolt using original spring pivot (3) and hardware. Thread 3/8" nut (2) onto eyebolt ONLY 1/2" at this time.

Item	Description
1	Eyebolt
2	3/8" Nut
3	Spring Pivot

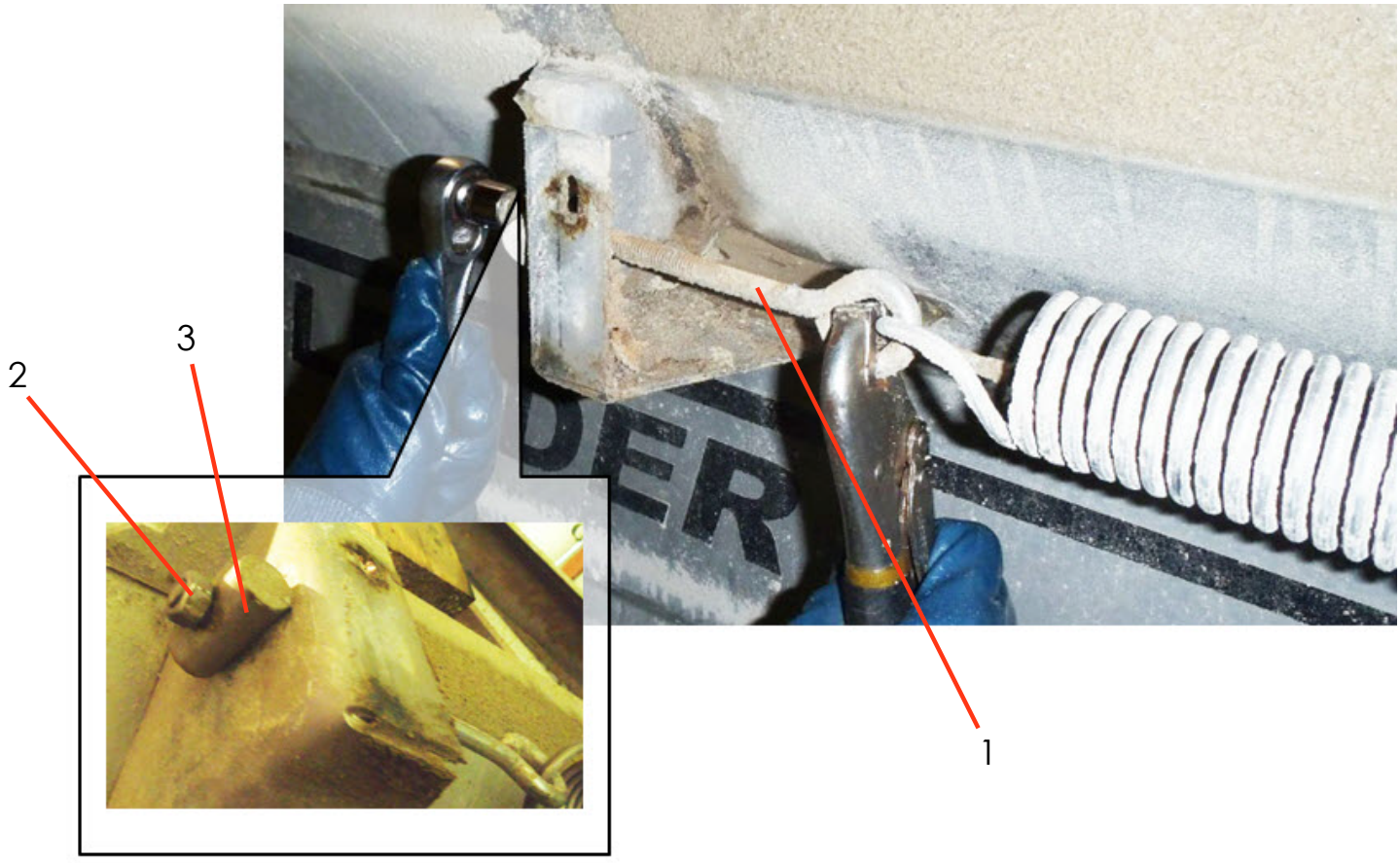

Figure 13

14. Figure 14 - Remove block and lower lid. Tension spring (1) to 16-1/4" as shown by adjusting eyebolt hardware. When spring is properly adjusted, tighten the eyebolt jam nut (3/8" Nut) (2).

Item	Description
1	Eyebolt
2	3/8" Nut

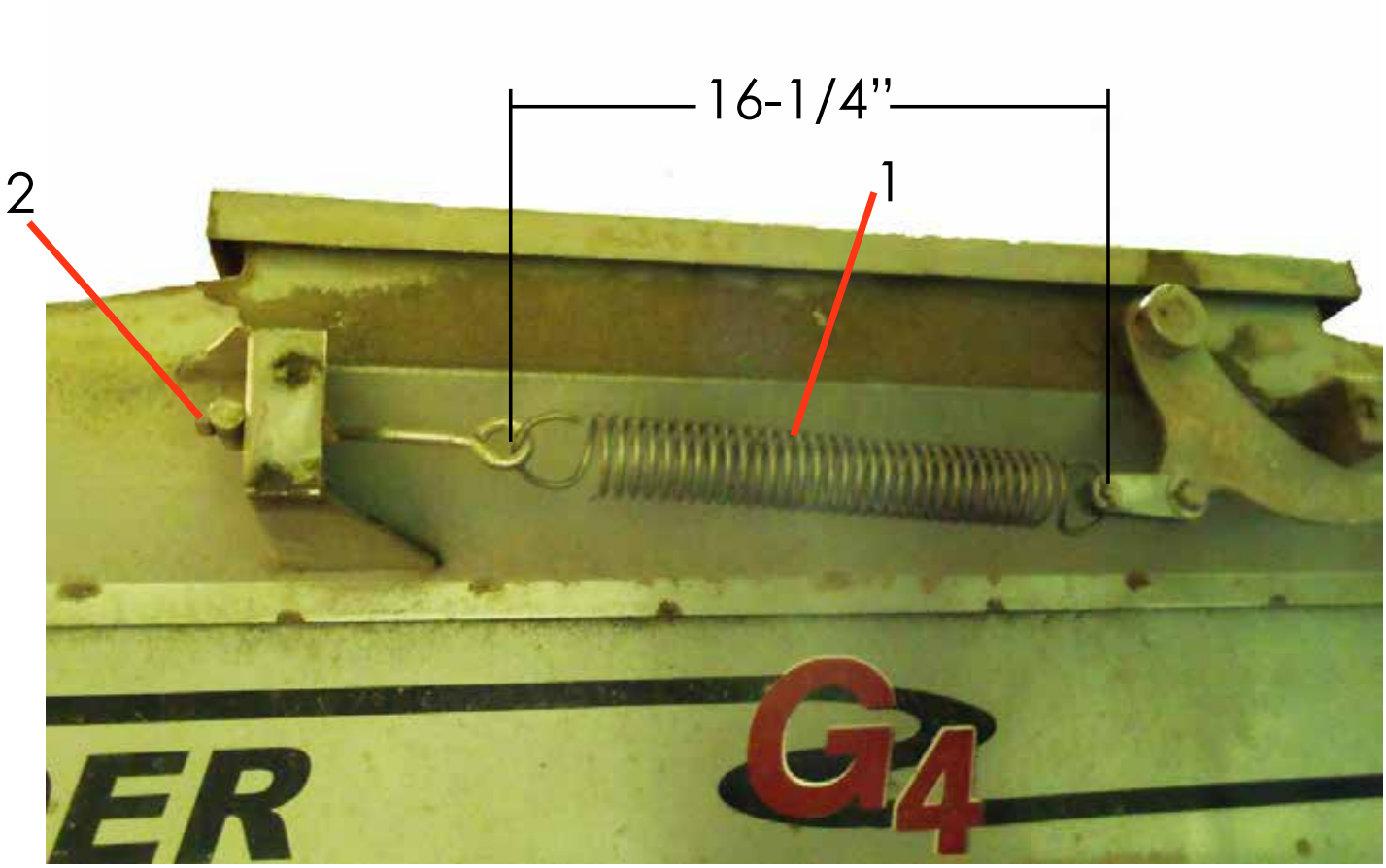

Figure 14

15. Figure 15 - Connect check valve tubes (1) to cylinder fittings (2) at both ends. Push firmly to seat tubes into fittings.

Item	Description
1	Check Valve tube
2	Cylinder fitting

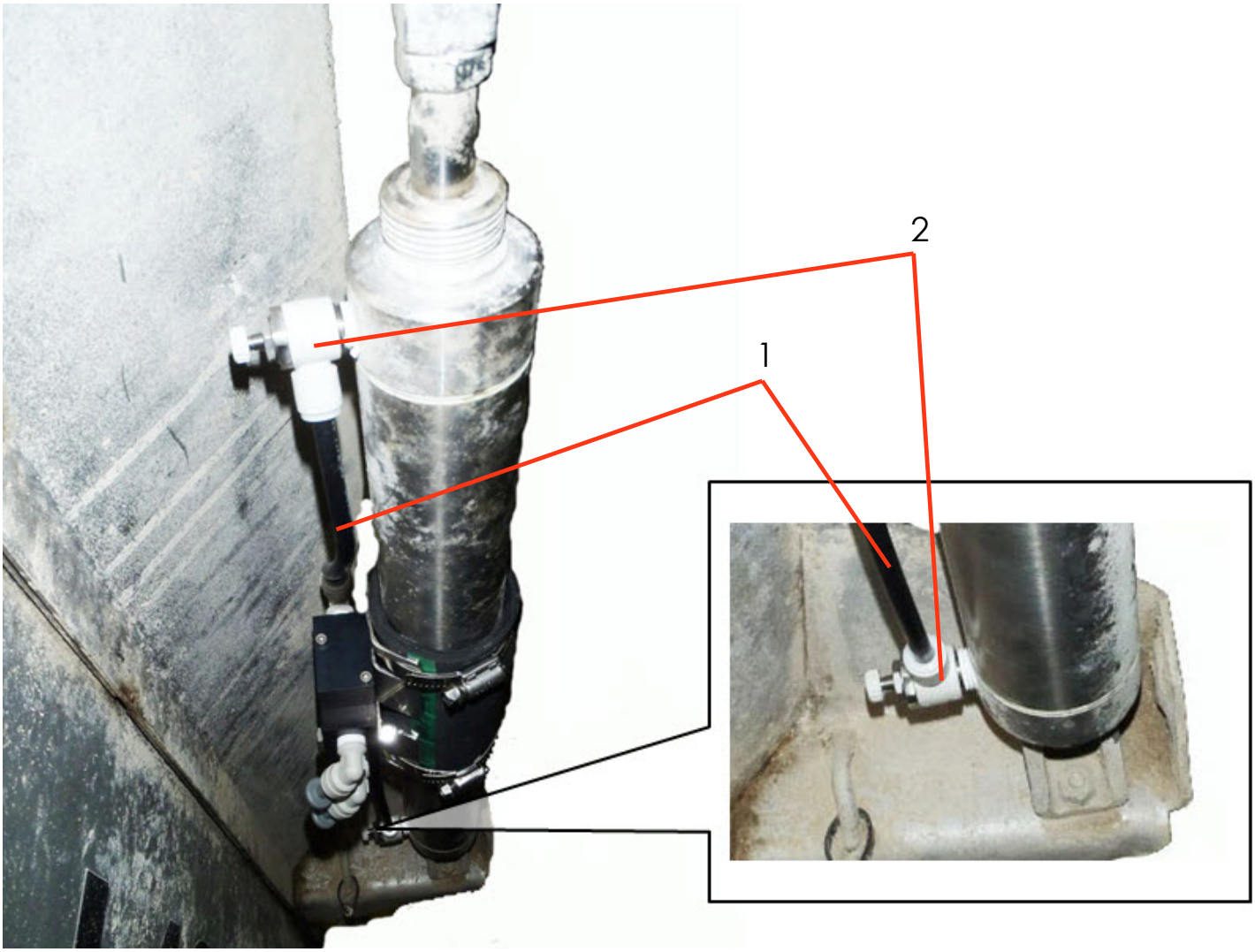

Figure 15

16. Figure 16 - Replace short supply tube with new 24” long tube (1) (cut to length as needed) and install into right-hand check valve fitting (3). Clean original long tube (2), cut to length (as needed) and install into left-hand check valve fitting (4). Push firmly to seat tubes into fittings.

Item	Description
1	New 24” tube
2	Original long tube
3	Right-hand check valve fitting
4	Left-hand check valve fitting

Figure 16

17. Figure 17 - Reinstall cylinder guard (1) and 4 guard retaining bolts (2).

Item	Description
1	Cylinder guard
2	Retaining bolts

Figure 17

18. Figure 18 - On right-hand front corner of spreader, remove air supply tube (3) from control valve inlet fitting (2) on control valve assembly (1).

Item	Description
1	Control valve assembly
2	Inlet fitting
3	Air Supply tube

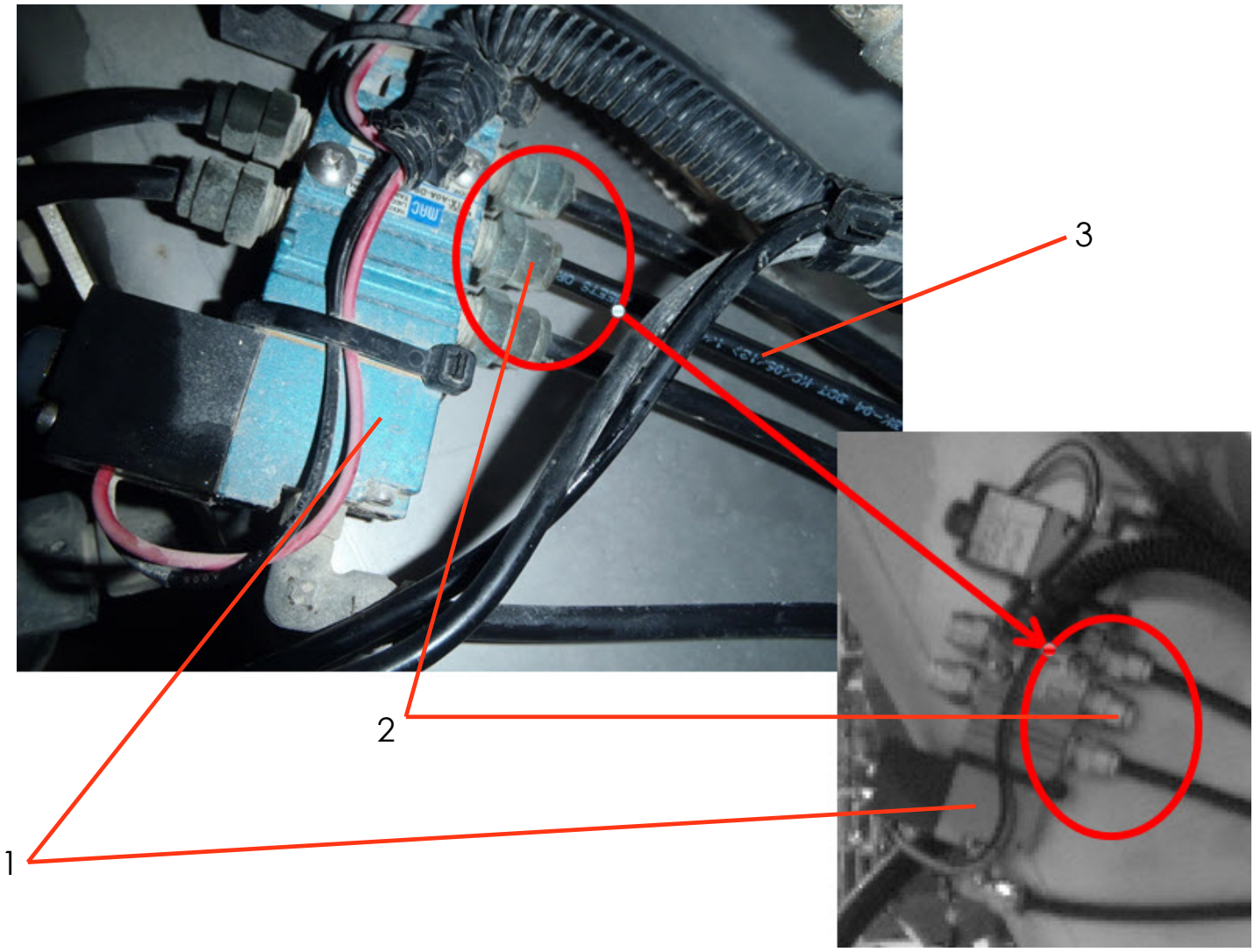

Figure 18

19. Figure 19 - Install new inline air filter (5) with corrugated tube (4) into inlet fitting (2) on control valve assembly (1). Push firmly to seat tube (3) into fitting.

Item	Description
1	Control valve assembly
2	Inlet fitting
3	Short Air Supply tube
4	Corrugated tube
5	Inline filter

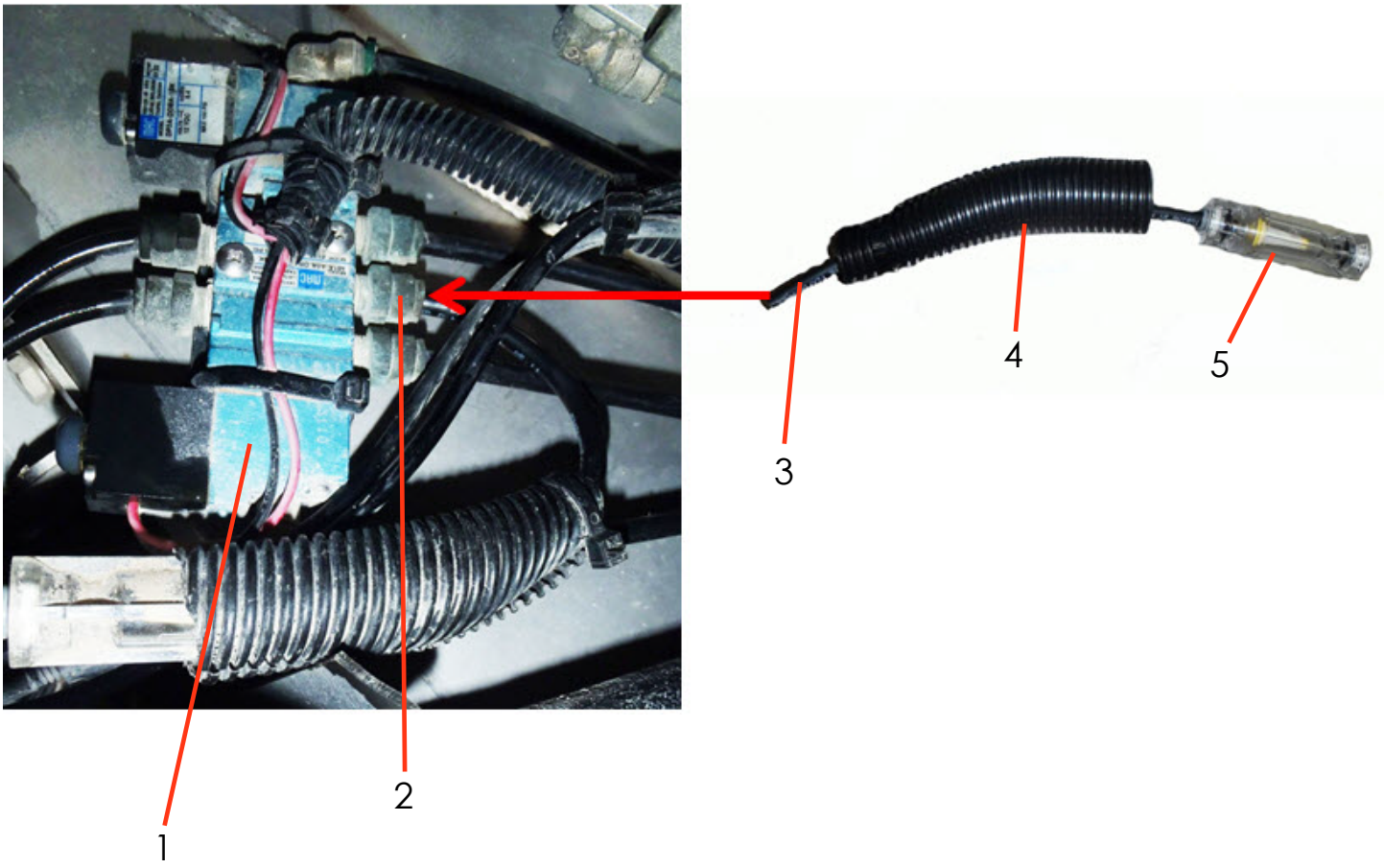

Figure 19

20. Figure 20 - Clean air supply tube (4) and cut to length as needed. Install air supply tube into inline filter (3) on control valve assembly (1). Push firmly to seat tube into filter. Slide corrugated tube (2) over inline filter.

Item	Description
1	Control valve assembly
2	Corrugated tube
3	Inline filter
4	Air Supply Tube

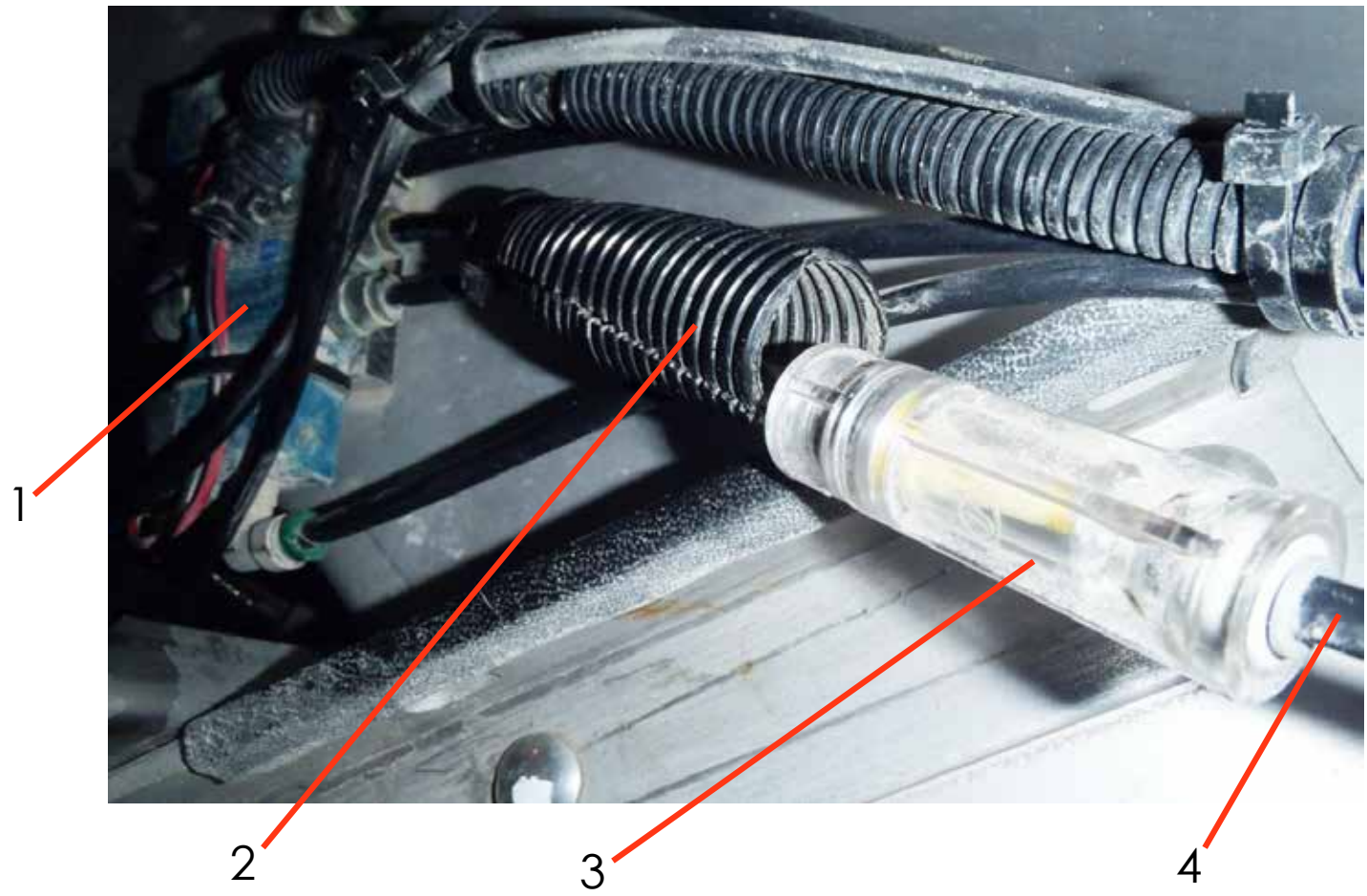

Figure 20

21. Start engine and allow air pressure to build in system. Test operation by cycling lid control valve several times and check for air leaks. Lid will open and close smoothly for correct operation.