RF 100™ Automatic Primer Filler User Instructions

Dillon Precision, Inc.



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DILLON PRECISION DISCLAIMER, EXPLANATION OF SAFETY WARNINGS, DILLON CONTACT INFORMATION

DISCLAIMER

The material in this manual is for informational purposes only. The products it describes are subject to change without prior notice. Dillon Precision Inc. makes no representations or warranties with respect to this manual. Dillon Precision Inc. shall not be liable for any damages, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of, or related to the use of, or the inability to use the products described herein. Read this manual before using this product. Failure to follow the instructions and safety precautions in this manual can result in serious injury or death. Keep this manual in a safe location for future reference.

EXPLANATION OF SAFETY WARNINGS

DANGER!

Danger! Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury WARNING!

Warning! Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury. CAUTION!

Caution! Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

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Document Revisions

Date	Version Number	Document Changes
10-1-2019	0	New Updated Manual

MANDATORY SAFETY PRECAUTIONS—MUST BE READ

1. The Basic Risk of Reloading, and Overall RF 100 Design Usage Safety:

- 1. DANGER! The reloading of ammunition and the handling of reloading components used in the reloading process is inherently dangerous. Accidents and mistakes in re-loading can and do occur, sometimes with disastrous results resulting in, but not limited to loss of hearing, vision, limbs or life. These accidents can occur with the novice and experienced reloader.
- 2. Dillon Precision Inc. has designed the RF 100 with user safety in mind, doing everything Dillon Precision Inc. knows to make the use of the RF 100 as safe as possible.

2. Mandatory RF 100 User Safety Minimum Requirements:

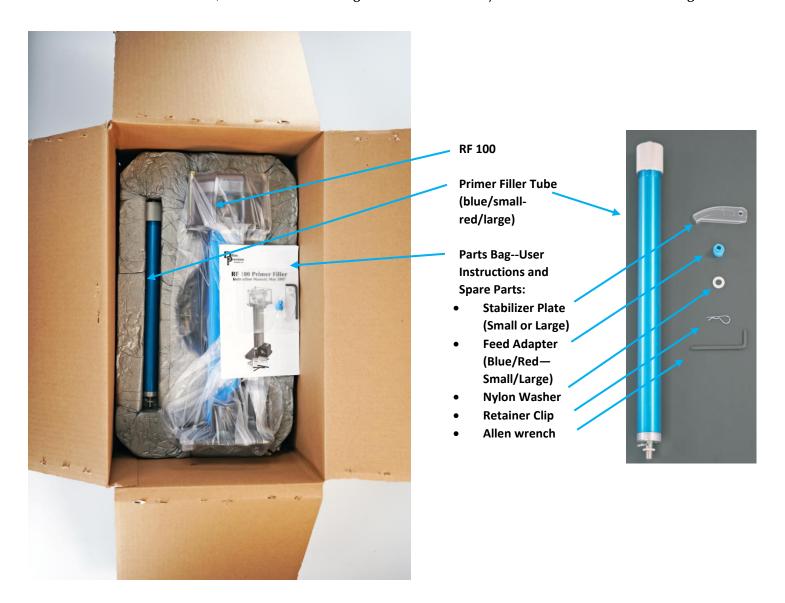
- 1. Dillon Precision Inc. cannot guarantee the complete safety of the reloader/user of the RF 100. In order to minimize the user's risk, use common sense when reloading and follow these basic safety rules at a minimum.
- 2. KNOWLEDGE: Study and learn the basics, processes and specifications used in the reloading of ammunition from reputable sources and publications by the prominent bullet and powder manufacturers such as Sierra, Hornady, Speer, Western Powders and Alliant Powders; including reloading manuals such as the Lyman Reloading Manual and the Western Powder Reloading Guide.
- 3. EYE AND EAR PROTECTION: Never operate the RF 100 without eye and ear protection.
- 4. PAY ATTENTION: Give your full attention to the reloading process. Do not watch television, the internet or converse with anyone while loading. It is a full-time operation.
- 5. SMOKING/IMPAIRMENT: Do not smoke or allow anyone to smoke in the reloading area. Do not allow open flames. Do not load if you have been drinking alcohol or are impaired in any way.
- SAFETY: Do not remove any safety device(s) from the RF 100 or modify the RF 100 in any way. Keep components and ammunition out of the reach of children.
- 7. LEAD--CAUTION! Almost all primers contain a lead compound, which may or may not be exposed. Be sure to have proper ventilation while handling primers or when shooting. Cleanup any primer residue left behind during the reloading processes. Lead causes birth defects, reproductive harm and cancer. Wash your hands thoroughly after handling components or shooting.
- 8. PRIMERS—DANGER! Primers contain a small amount of a shock-sensitive chemical that explodes when struck by a firing pin or hammer or accidentally crushed. Never force primers. Never attempt to clear primers that are stuck in the RF 100 or the Prime Filler Magazine Assembly. Never, under any circumstance, insert any type of rod into these tubes to attempt to push out stuck primers—PRIMERS CAN "CHAIN DETONATE." If a primer(s) gets stuck in the Primer Filler Magazine Assembly, remove the inner tube. Flood the inner tube with penetrating oil/WD-40, throw it away and call Dillon for a free replacement.
- 9. PROPERLY LABEL RELOADED AMMUNITION: Overall Length, bullet manufacturer, type and weight, primer manufacturer and type--powder manufacturer, type and powder charge and date loaded.
- 10. RELOADING AREA-- The reloading area should be well lit, dry and comfortable without breezes.
- 11. BE PATIENCE and OBSERVANT--If a problem is not obvious—CALL Dillon Technical Support (800) 223-4570 or visit the troubleshooting section at www.dillonprecision.com.

3. RF 100 LIMITED WARRANTY

Dillon Precision warranties the RF 100 for one year from the date of shipment against defects in material and workmanship. Dillon Precision Inc. will either repair or replace any part(s) that prove defective. Repaired or replacement products/parts at Dillon's choice will be provided by Dillon Precision Inc. on an exchange basis. This limited warranty does not cover any damage to the product that results from improper installation, accident, abuse, misuse, natural disaster, insufficient or excessive electrical supply, abnormal mechanical or environmental conditions, or any unauthorized disassembly, repair or modification. This limited warranty shall not apply if: (i) the product was not used in accordance with any accompanying instructions, (ii) the product was not used for its intended function or (iii) the addition of any non-authorized equipment. A part(s) replaced under warranty does not restart the warranty period.

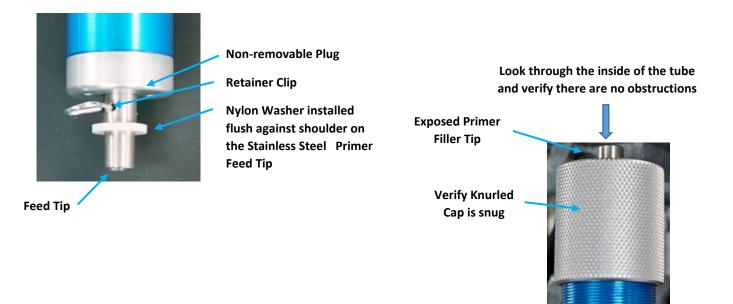
4. RF100 SHIPPING CONTENTS:

- 4.1 Remove the top protective foam layer of the RF 100 shipping box.
- 4.2 Remove the RF 100, the Primer Filler Magazine Tube Assembly (Blue or Red) and a "Parts Bag."

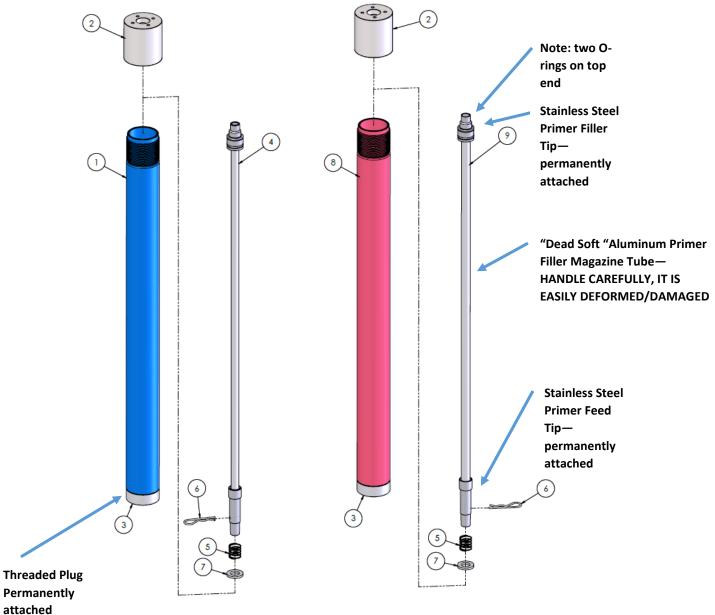


5. RF 100 ASSEMBLY GUIDE

- 5.1. Remove the RF 100 from the plastic shipping bag and place the RF 100 on a stable table or bench free from vibration.
- 5.2. Remove the Primer Filler Magazine Tube Assembly (Blue or Red) from the shipping box/foam.
- 5.3. Verify the Primer Filler Magazine Tube Assembly is assembled as shown below:
 - Look through the inside tube and verify there are no obstructions other than the Retainer Clip.
 - Verify that the Retainer Clip is installed through the holes in the bottom of the exposed Stainless Steel
 Feed Tip and the Nylon Washer is flush against the shoulder on the Feed Tip. WARNING!—Failure to
 install the Retainer Clip will result in primers falling through the Primer Filler Magazine Tube
 Assembly and out the bottom of the RF 100.
 - Verify the Knurled Cap on the top of the Primer Filler Magazine Tube Assembly is tightened just snug.
 - CAREFUL! If you disassemble the Primer Filler Magazine Assembly, be aware that the inside Primer Filler Magazine Tube is made of "dead soft" aluminum tubing and can be easily deformed and "ruined."



- Primer Filler Magazine Assembly
- Note: Only one size (Small or Large) Primer Filler Magazine Assembly provided with each RF 100



ITEM NO.	ITEM NO. DESCRIPTION	
1	17919_BLUE PF TUBE HOUSING	1
2	17193_VENTED CAP	2
3	17187_VENTED PLUG	2
4	12724_FILL TUBE ASSEM SMALL	1
5	13956_CONTACT PIN SPRING	2
6	14040_040 HAIRPIN COTTER	2
7	17898_NYLON FLAT WASHER 278 ID	2
8	17920_RED PF TUBE HOUSING	1
9	12723_FILL TUBE ASSEM LARGE	1

6. DESCRIPTION, SETUP PROCEDURES, OPERATING THE RF 100, FACTORY ADJUSTMENT AND CAUTIONS:

- 6.1. Dillon's RF 100 Automatic Primer Filler™ eliminates the task of manually filling primer pick up tubes. The RF 100 is available as a Small Primer Filler or a Large Primer Filler. Conversion Kits are available to convert the RF 100 from small to large primers or vice versa.
- 6.2. Install the Primer Filler Magazine Tube Assembly as shown below:
 - Insert the lower end of the Primer Filler Magazine Assembly, the Primer Filler Feed Tip with the Retainer and Nylon Washer into the Spring Loaded Socket on the base of the RF 100 and gently press down compressing the Spring Loaded Socket.
 - Carefully position the top of Primer Filler Magazine Tube Assembly into the opening of the RF100 Lexan cover and insert the Filler Tube Tip of the Magazine Filler into the Blue or Red feed Adapter in the base of the Primer Feed Bowl.
 - WARNING! Failure to properly seat the top of the Primer Filler into the Feed adapter will allow primers to "miss" the Primer Filler Magazine Tube Assembly and "fall all over the bench."



installed

- 6.3. Plug the RF 100 into the appropriate AC power. The RF 100 is now ready to run.
- 6.4. Pressing the Blue Button (see below) on the top of the Control Box of the RF 100 causes the RF 100 to automatically run for approximately 2 minutes and then shut off. Pushing the Button when the RF 100 is running shuts it off.
- 6.5. The Primer Filler Magazine Assembly can hold 100 primers.
- 6.6. The White Rheostat Knob (see below) on the side of the Control Box adjusts the vibration intensity applied to the RF 100 Vibratory Feeder Bowl. Adjusting the White Knob <u>clockwise decreases the intensity</u> and <u>counter-clockwise increases</u> it. Note--Primers from different manufacturers and different materials such as Nickel-plated primers may require a different vibration intensity.
- 6.7. Adjust intensity until primers just start moving up the vibratory bowl ramp. Too high a setting will cause the primers to bounce and not feed reliably into the hole in the Feed Adapter.



On-Off Button

Vibration intensity control



6.8. Put on safety glasses and pick up a box of 100 primers or less. Carefully slide the cardboard outer jacket back exposing only half of the first row of primers. Place the primer box upside down directly over/in contact with the Integral Collection Tray at the top of the Lexan Cover. Hold the exposed edge of the primer tray and gently slide the outer jacket fully off the plastic primer tray gently dropping the primers into the Collection Tray. The primers still sitting on the Collection tray will drop into the Vibratory Feeder Bowl when the RF 100 is turned on. Remove and discard the primer plastic tray and cardboard jacket.



Carefully slide the outer cardboard jacket back exposing only ½ of the first row of primers



Place primer box upside down directly over and in contact with the Lexan Cover's integral Collection Tray. Gently, open primer box the rest of the way dropping the primers onto the Collection Tray

Integral Collection Tray Funnel (opening) that drops primers into Vibratory Bowl

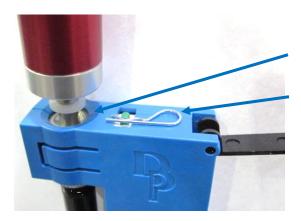


Vibratory Feeder Bowl



Protective Lexan Cover

- 6.9. Pressing the On/Off Blue Button causes the RF 100 to run for approximately two minutes in which all the primers should be inside the Primer Feed Magazine Assembly. If primers are still in the Feeder Bowl, press the Blue Button again. (If primers are still in the bowl and are not moving, slightly increase the vibration intensity. Too high a setting can cause primers to turn upside down/sideways in the Red or Blue Feed Adapter.
- 6.10. Remove Primer Filler Assembly Tube from the RF 100 by pushing down on the Primer Filler Magazine Tube Assembly disengaging the Tube from the Feed Adapter.
- 6.11. Take the Primer Filler Magazine Tube Assembly to the reloading press wearing safety glasses. Place the bottom end with the Retainer clip in the top/receptacle of the Primer Shield Knurled Cap on the Reloading Press. Pull the Retainer Clip dropping the primers into the Primer Magazine. Look through the end of the Filler tube and verify the inside tube is clear. Replace the Retainer Clip.



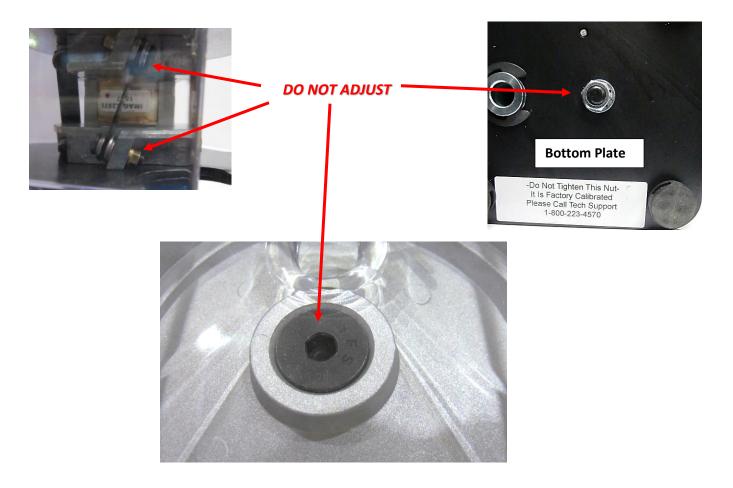
Primer Filler Feed Tip placed in top of Knurled Magazine Cap on Reloading Press

Retainer Clip pulled dropping Primers

6.12. Place the Primer Filler Magazine Tube Assembly in the RF 100 and repeat the primer loading sequence described above so that a full Primer Filler Magazine Tube Assembly is ready.

7. FACTORY ADJUSTMENT CAUTIONS AND SAFETY

7.1. The RF 100 has adjustments that are critical and <u>set at the Factory</u>. Do not tighten or loosen any of the following fasteners, bolts or nuts! Doing so will cause the RF 100 not to work properly and may require the RF 100 to be returned to Dillon for repair.



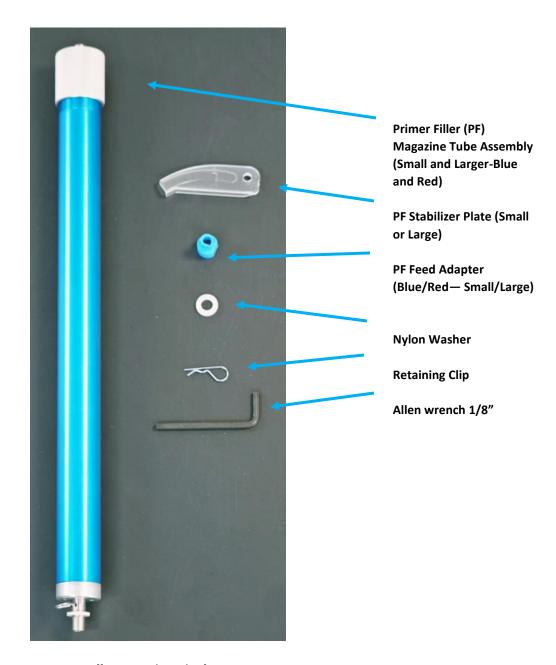
7.2. DANGER!--Do not remove this cover with the RF 100 plugged in. Doing so will expose you to High Voltage.



8. RF 100 CONVERSION LIST AND METHODS

8.1 DILLON HAS CONVERSION KITS FOR SMALL AND LARGE PRIMERS

	Small Primer Part No.	Large Primer Part No.
120 VAC RF100	97111	97077
220 VAC RF 100	97113	97112
Conversion Kit P/N	17903	17902
Primer Filler Magazine Tube Assembly	12653	12654



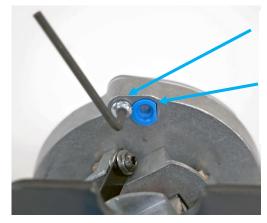
Small Conversion Kit Shown

8.2 PRIMER SIZE CONVERSION PROCEDURE:

- 8.2.1 Unplug RF 100 from the AC power source.
- 8.2.2 Layout the appropriate Changeover Kit as shown in 8.1 on the previous page.
- 8.2.3 Remove the four bolts that attach the Lexan Protective cover with a 7/16" wrench.

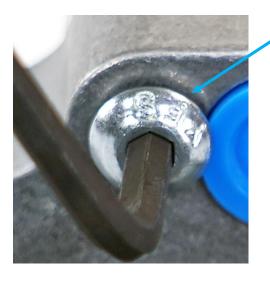


- 8.2.4 Set the Bolts and Lexan Cover aside.
- 8.2.5 Use the provided 1/8" Allen wrench and remove the Adapter Mounting Screw holding the Red or Blue Plastic Adapter in place and remove the Adapter. Store the Adapter for future use. Verify that the Adapter has not been damaged by the Adapter Screw.



Remove Adapter Mounting Screw and exchange Red or Blue Adapter

- 8.2.6 Replace the Adapter with the correct size (Blue for Small and Red for Large Primers) and reinstall the Adapter Mounting Screw.
- 8.2.7 <u>Carefully tighten the screw with the 1/8" Allen wrench until it is ~.012" (the thickness of a business card) from the base. The thread in the bowl is self-locking and will hold the screw in position. Note, the Red or Blue Feed Adapter is designed to "slightly float."</u>



Tighten Screw leaving ~.012" gap here—the thickness of a business card

8.2.8 Remove the Stabilizer Plate Mounting Screw and replace the Stabilizer Plate (Small or Large) with the correct size for the primers being used.



Remove Screw and Replace/correctly position the Stabilizer Plate with the correct size— Labeled S or L— for Small or Large primers-- Tighten Screw to 3-5 in-lbs.

8.2.9 Install the correct Stabilizer Plate and reinstall the Stabilizer Plate Screw tightened just snug—3 to 5 inlbs. The threaded hole contains a self-locking insert—do not over tighten!



Tighten Screw to 3-5 in-lbs.

The Stabilizer Plate must sit flat and flush with the top of the Vibratory Feeder Bowl—do not overtighten

8.2.10 Reinstall the Lexan Protective cover and the four fasteners--5 in-lbs. Do not overtighten.



Tighten in a diagonal pattern to no more than 5in.-lbs.

9. TROUBLESHOOTING GUIDE

No.	Category	Issue	Corrective Action
1.	Primers not moving freely in a vibratory bowl	Primer residue will buildup in the vibratory bowl causing primers to stick to the bowl. The residue can be a red, green or yellow powder/dust. Danger! This residue is from the explosive mix used in primers and is a fire and an explosion hazard.	1. Clean up the residue with alcohol and wipes whenever observed.
2.	Primers are getting stuck or dragging inside Primer Filler Magazine tube	Primer residue may also build up inside the Primer Filler Magazine Tube assembly.	1. Pass a pipe cleaner dampened with alcohol through the inside to the Primer Filler Magazine Tube Assembly followed by a dry pipe cleaner.
		The tube may be damaged	1. Replace tube.
3.	Primers are getting stuck in the Red or Blue Primer Feed Adapter	Red or Blue Feed Adapter is worn, damaged or dirty	Clean the adapter with alcohol and a pipe cleaner. Replace Feed Adapter with a new one.
		Primers are oversize or not round	1, Verify primer dimensions—See Section 12 Use different primers.
4.	Primers are being turned upside down in the Feed Adapter (blue or red)	The Feed Adapter Mounting Screw is too loose.	1. Adjust the mounting screw just snug so that there is .012" (thickness of a business card) between the screw and the base of the bowl. Then adjust the screw in or out 1/16 of a turn at a time. .012" gap here
		The vibratory intensity is too high.	1. Turn the vibration intensity down.
		The wrong size/color Feed Adapter is installed.	1. Install the correct Feed Adapter.
5.	Primers are turning over or upside down in the track under the Stabilizer Plate	Stabilizer Plate Mounting Screw is loose.	1. Re-tighten Mounting Screw to 3-5 in-lbs.
6.	Primers "standing still" on the way to the colored Feed Adapter	The Feed Adapter Mounting Screw is too tight	Inspect Feed Adapter and reinstall the Mounting Screw just snug so that there is .012" (thickness of a business card) between the screw and bottom of the Vibratory Bowl.
		The wrong size/color Feed Adapter is installed	1. Install the correct Feed Adapter.
		Stabilizer Plate is the wrong size	1, Replace the Stabilizer plate with correct size (S or L) for the primers used.
		Stabilizer Plate mounting screw is too tight.	1. Readjust Stabilizer Plate Mounting Screw to 3-5 in-lbs.
		Vibration intensity is too low	1 Increase vibration intensity.
7,	Primers are not feeding and are staying on their sides	Primer Wiper Blade is missing or Mounting Screw is not installed properly	1. Reinstall Wiper Blade and re-tighten mounting screw

10.CLEANING THE RF 100

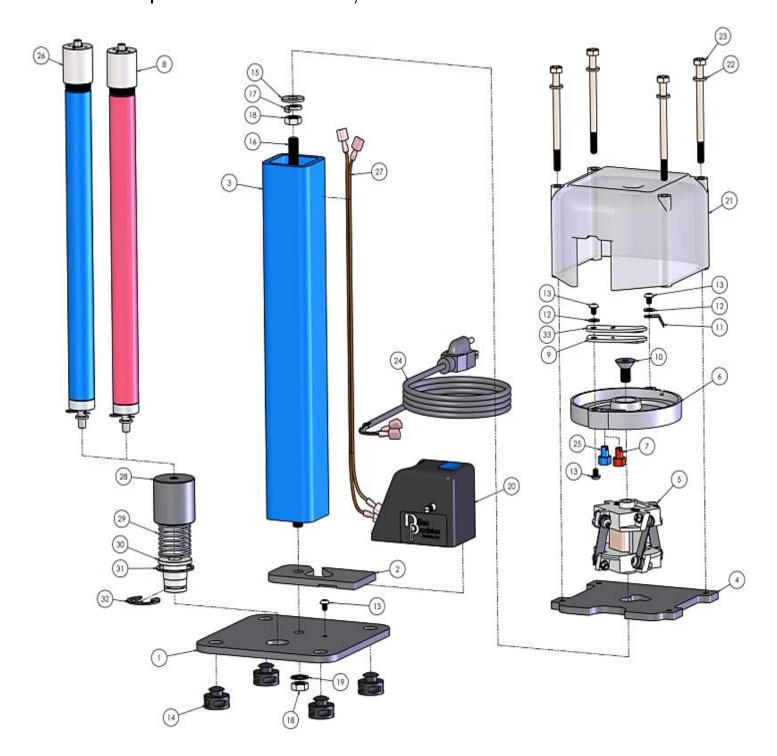
10.1 DANGER! Primer residue can buildup in the vibratory bowl, on the Clear Cover, or in the Feed Adapters. The residue can be a red, green or yellow powder. This residue is dangerous and comes from the explosive compound used in the primers and must be cleaned up with alcohol and wipes.



- 10.2 Inspect the inside of the Primer Filler Magazine Tube Assemblies for dirt and or primer residue and clean out with a pipe cleaner dampened with alcohol followed with a dry pipe cleaner and a final inspection.
- 10.3 Verify that a primer will drop through the inner tube freely.
- 10.4 DANGER! Do not attempt to remove a stuck primer in the inside tube. Pushing something into the tube could cause the primer to detonate. Throw the inner tube away; keep the Orings, Spring, Nylon Washer and Retainer Clip. Call Dillon for a replacement.

11.DILLON PRECISION RL1100 SUB-ASSEMBLIES AND PARTS IDENTIFIER

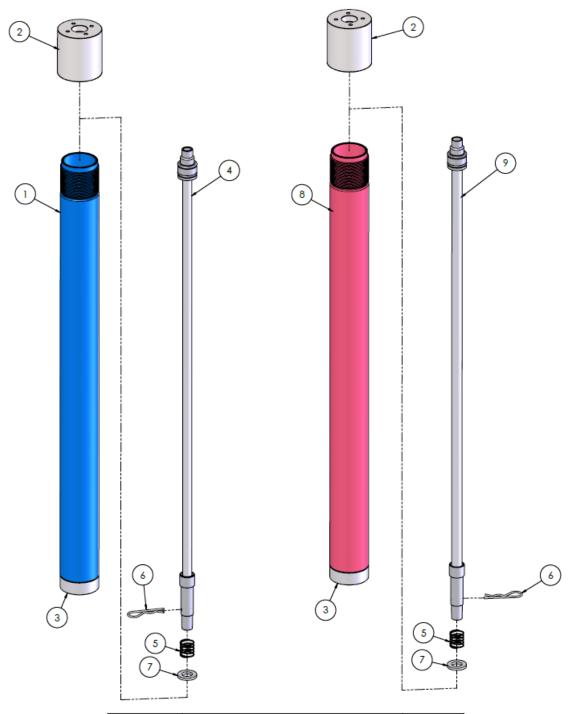
11.1 "Expanded View" Main Assembly



11.2 Parts Identifier Main Assembly

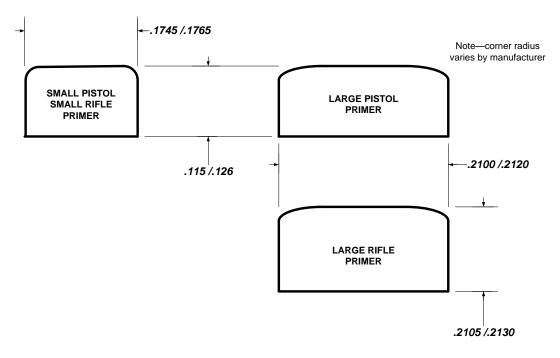
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ITEM	PART NUMBER	DESCRIPTION	QTY.
1	17198_PRIMER FILLER BASE	PF BASE	1
2	17291_SWITCH BOX BASE	PF SWITCH BASE	1
3	17292_PLATFORM SUPPORT TUBE	PF MAIN TUBE	1
4	17199_PRIMER FILLER PLATFORM	PF PLATFORM	1
5	MOTOR ASSEMBLY	PF MOTOR	1
6	17289_PRIMER BOWL	PF PRIMER BOWL	1
7	17285_FEED ADAPTOR LARGE	PF ADAPTER LARGE	1
8	12654_PF MAGAZINE ASSEM LARGE	PRIMER MAGAZINE LARGE	1
9	17295_STABILIZER PLATE L	LARGE PRIMER STABILIZER	1
10	17891_375-24X750 FHS	3/8-24x750 FLAT HD	1
11	17200_PF WIPER BLADE	PRIMER WIPER	1
12	17896_10 FLAT 031 THICK	#10 FLAT WASHER	2
13	13964_10-24x250 BHCS ZINC	10-24 X 1/4 BUTTON HD ZINC	4
14	13993_FL2000 FOOT	RUBBER MOUNT	4
15	13655_516 WASHER	5/16 FLAT WASHER ZINC	1
16	17194_RF100 THREADED SHAFT	PF CENTER ROD	1
17	17958_375 SPLIT WASHER	3/8 LOCK WASHER	1
18	13901_375-24 ZINC JAM	3/8-24 ZINC JAM NUT	2
19	62313_ 375 INTERNAL-TOOTH LOCK	3/8 LOCK WASHER	1
20	19819_SWITCH BOX ASSEM	PF MOTOR CONTROLLER	1
21	17293_RF LEXAN COVER	PF SAFETY SHIELD	1
22	17953_250 NAS1149 CAD FLAT	1/4 CAD FLAT WASHER	4
23	17894_250-20x3500 GR 8 HEX	1/4-20 x 3-1/2 GR 8 HHCS	4
24	18807_PF100 CORD SET	POWER CORD WITH TERMINALS	1
25	17286_FEED ADAPTOR SMALL	PF ADAPTER SMALL	1
26	12653_PF MAGAZINE ASSEM SMALL	PRIMER MAGAZINE SMALL	1
27	19010_PF PIGTAIL ASSEM	CORD WITH TERMINALS	1
28	17189_FLOATING TUBE HOLDER	PF MAG TUBE HOLDER	1
29	17290_MAG RETAINER SPRING	PF MAG HOLDER SPRING	1
30	17188_PF TUBE HOLDER POST	PF MAG HOLDER POST	1
31	17892_PF SNAP RING	PF POST SNAP RING	1
32	17893_PF E-CLIP	PF POST E-CLIP	1
33	17294_STABILIZER PLATE S	SMALL PRIMER STABILIZER	1

11.3 Primer Filler Magazine Assembly (Small--P/N12653 and Large--P/N12654)



ITEM NO.	DESCRIPTION	QTY.
1	17919_BLUE PF TUBE HOUSING	1
2	17193_VENTED CAP	2
3	17187_VENTED PLUG	2
4	12724_FILL TUBE ASSEM SMALL	1
5	13956_CONTACT PIN \$PRING	2
6	1 4040_040 HAIRPIN COTTER	2
7	17898_NYLON FLAT WASHER 278 ID	2
8	17920_RED PF TUBE HOUSING	1
9	12723_FILL TUBE ASSEM LARGE	1

12. SAAMI PRIMER SIZE SPECIFICATIONS (Numbers in inches)



13. Notes:

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