



**Chipley Custom Machine
.45 or 86 Degree Grip Manual**

V 1.0

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This photo shows a comparison of the .45 frame (top) and an 86 degree frame (bottom).

Below is a Series 5 Basic .45 frame.



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II. Liability:

ChIPLEY Custom Machine and Datum Precision Machining (CCM / DPM) does not accept any liability for the handling of these markers, tools, air tanks, or any other item mentioned in this manual. You, the user accept this sole liability when purchasing and using any paintball marker or paintball accessories. We, CCM / DPM, disclaim any implied warranties or any responsibility for any errors that may appear in this manual.

If, as the user of a paintball marker or any of the accessories that CCM / DPM sells, you do not accept total liability for performing any of the maintenance, assembly, or work performed in this unofficial manual, CCM / DPM requests that you do not do anything described in this manual. You are not to use this manual unless you accept all liability and release CCM / DPM and all of its current and previous members of all liability through any use or misuse thereof.

Simply by using this manual or using the marker in general you release CCM / DPM of any and all liability associated with its use. When using a paintball marker please adhere to all local, state and federal laws.

III. Safety and Handling:

A Paintball Marker is not a toy. Any of the tools in this manual are not toys. Tools and paintball markers should be used only by adults or with adult supervision. Respect other peoples' property and when using any paintball marker, obey all local, state and federal laws. When entering a paintball field, become aware of their rules and regulations.

It is very important to have the proper paintball protection before going to the paintball field for play. This includes and is not limited to eye, head, throat, and body protection. All protection used should be designed for the sport of paintball, e.g. eye gear designed specifically for paintball usage.

Always have a barrel plug in place and keep the safety ON when handling your marker. When repairing or cleaning your marker first remove barrel and gas cylinder, then depressurize your marker by pointing in safe direction and dry firing. Always treat the paintball marker as if it were loaded.

When handling the marker, always keep your fingers or any other objects away from the trigger assembly to avoid accidental discharges. Make sure, when carrying or transporting the marker, to keep the muzzle pointed downward with a barrel-blocking device in place.

Before transporting your marker through public areas, such as airports, or bus and trains stations, call ahead for regulatory information regarding the carrying and transporting of such an item.

Remember, any paintball marker should never be pointed or fired at anyone, and should only be used at a supervised, licensed and insured paintball field.

IV. CCM Grip Frame Parts List:

Part	Material	Manufacturer	Part or Spec Number
86 Degree or .45 Hinge Frame	6061 Aluminum	DPM	
Trigger	Delrin	DPM	
Trigger Bearing			H .250, W .110
Trigger Bearing Pin	Steel	McMaster	1/8 x 1/4 Dowel Pin
Sear			Standard cocker sear
Sear Pin	Steel	McMaster	1/8 x 1/2 Ground Pin
Sear Pin Lock Screw (not present on the S5 or S5B)	Stainless Steel	McMaster	8/32 x 1/8 Dowel Pin
Sear Spring (Same as Valve Spring)	Lee Springs	Lee Springs	LC-028D 11
Grips (on 86 degree grip)	Delrin	DPM	
Grips (optional on 86 degree grip)		Hogue	CZ Grips.
Grips on .45 Grip			Standard 45*, CCM Logo, standard hole pattern.
Grip Screws	Stainless Steel	Fastenal	6-32 x 1/4 ss BSHCS
Frame Mounting Screw (front)	Stainless Steel	Fastenal	10-32 x 1/2 BHCS
Frame Mounting Screw (rear)	Stainless Steel	Fastenal	10-38 x 3/8 LHSCS
Beaver Tail Rod	300 Series Steel	DPM	
Beaver Tail	6061 Aluminum	DPM	

V. Disassembly of a Stock Autococker for preparation of a CCM Deluxe Kit and Grip Frame:



Schematic of a 2004 WGP Prostock® Autococker®. Your 'cocker might differ – but the parts are essentially the same.

Step One:

Remove Bolt Pin and Slide Bolt from the Body of the marker and the Back Block.

Step Two:

Remove Cocking Rod from the marker.



The back of the marker as it looks after Step One and Two.

Step Three:

Unscrew the back block from the marker. You may need to flex the cocking / pump arm a little - but this is okay. In my the case of the 2004 Prostock® it takes about 10 full turns to get the back block off the marker.



Your marker will look like this once the Bolt, Bolt Pin, Cocking Rod, and Back Block have been removed.

Step Four:

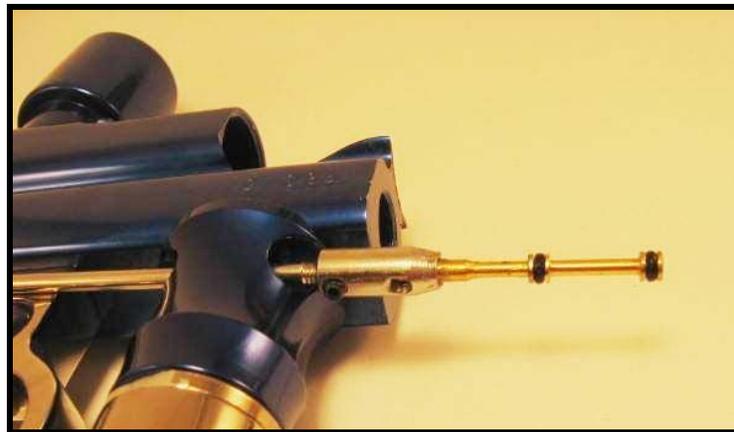
Use a 3/16th Allen Key to remove the Front Block and Pneumatics. The 3/16th Allen Key inserts into the flat headed 'Banjo' bolt in the front of the front block and with a bit of muscle comes off the marker. In the case of the 2004 Prostock® it took 8 turns to take the banjo bolt off the marker enough to take the front block off.



Note that you will not remove the banjo bolt from the front block. The front block will move away from the marker as you remove the banjo bolt and allow you to remove it.



This is what your front block and pneumatics will look like when removed from the marker. Note that the 4-way actuating rod, coupler, and spool did not come with the pneumatics. This is okay.



Step Five:

Using a .50 Allen Key remove the grub screw that retains the Actuating Rod Coupler to the Actuating Rod. Unscrew the Coupler. In my case it took 9.5 turns to remove the coupler from the Actuating Rod.



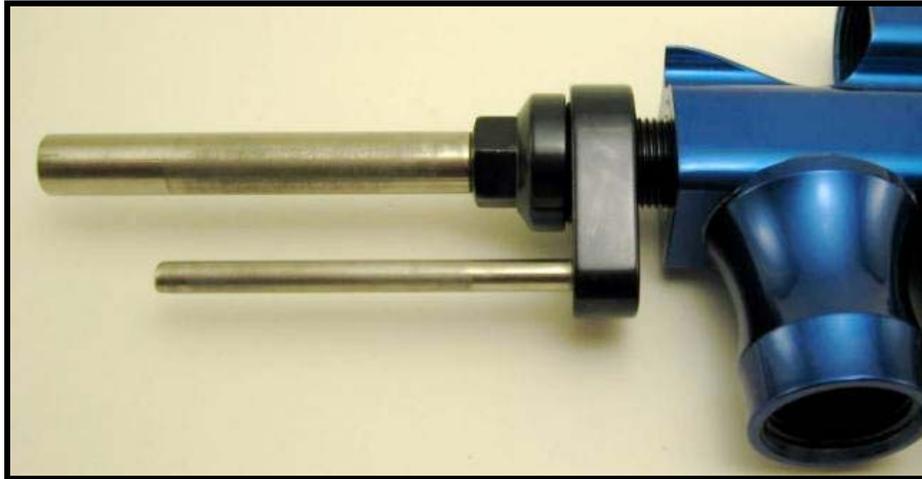
Step Six:

Using a 1/8th Allen Key remove the two screws that hold the grip frame on the marker. Slide the Actuating Rod through the Vertical Regulator Adapter and remove it. Screw the Actuating Rod back on the coupler of the pneumatics and set them aside.

VI. Assembly of the CCM Grip Frame on a Stock Autococker®:

Step One:

Insert the Guide Rod and Guide Ring (being sure the o-ring is slightly lubricated) into the threaded portion where you removed the Banjo Bolt.



Step Two:

Optional: Slide a return spring (not supplied but one can be purchased through CCM) over the top (larger) guide rod and then slide the pump over the guide rod. If you don't want a return spring skip this step.

Step Three:

Tighten down the guide rod with a ½ Box wrench or an adjustable wrench.

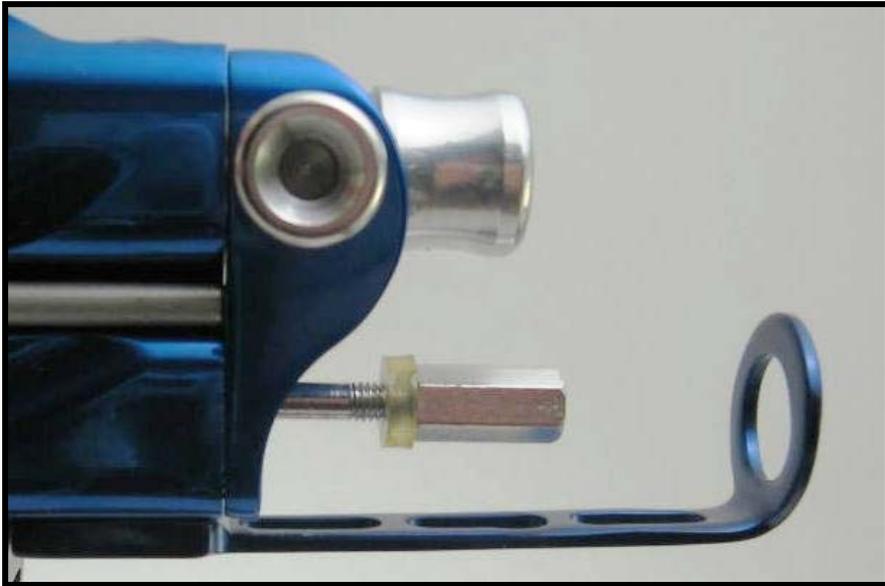


Step Four:

Screw the Back Block on to the Pump Rod until it is tight on the Pump Rod. It might not tighten down on the Pump Rod and this is not essential. Just get it close to the end of the threads.

Step Five:

Reinsert the Bolt, Bolt Pin, and Cocking Rod into the rear of the marker.

**Step Six:**

Place the new grip frame on the body and tighten down the front (1/8th inch) and the rear bolts (3/32nd inch) (These might be different on your frame - the Basic Frame has two 1/8th screws and the new S6 Frame has two 3/32 screws.)



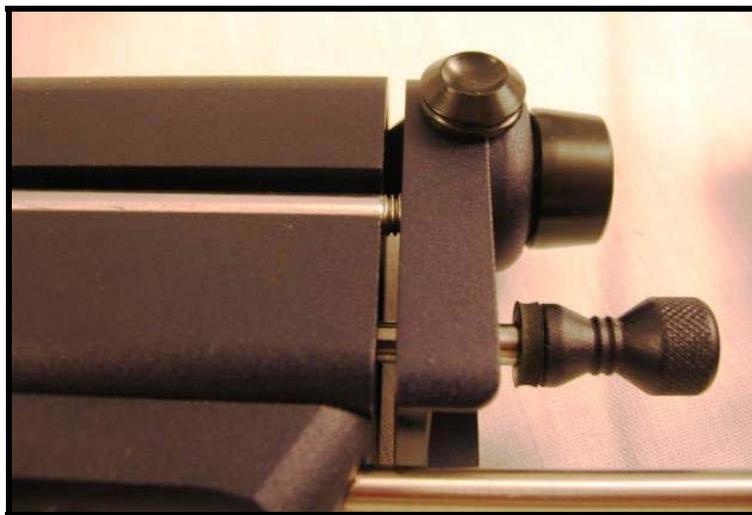
Step Seven:

Slide the Auto Trigger assembly into the hole in the side of the frame and attach it to the pump rod (5/64ths).



Step Eight:

Time the Auto Trigger by ensuring that the marker fires while holding down the trigger where the back block is 1/8th of an inch away from the body. To do this adjust the lug of the bolt (1/8th - long handled Allen Key) until the back block is in the right position when the trigger is depressed.



Above: Proper Spacing - as shown on a Series 5 Basic.

Below: Adjusting the lug on also shown on a Series 5 Basic.



Step Nine:

Adjust the undertravel screw so that the Auto Trigger cam does not block the trigger pull. The under travel screw sets where the pull of the trigger begins and also holds the Cam in place.



Above: The access hole to the Undertravel screw is shown by the bottom Allen key.

Pump the marker until you hear the sear 'click'. Allow the pump to sit at this point and adjust the undertravel screw until it touches the trigger.

This should set the undertravel screw to the proper position.

Essentially you want to set the trigger as short as you can without causing binding on the pump stroke. You have set the undertravel too short if you feel binding in the rear portions of the pump stroke.

That should be it. Congrats!

VII. Disassembly of a CCM Grip Frame for Maintenance:

1. Remove the screw that attaches the auto trigger arm and cam to the frame.

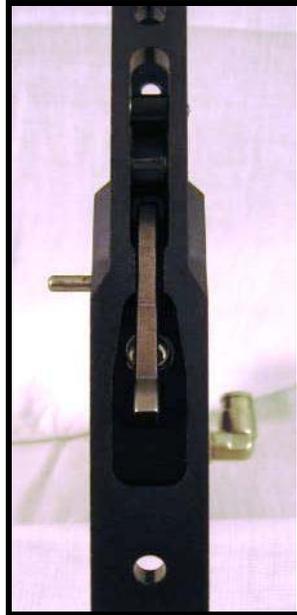


2. Remove the grip screws (4 - 5/64th) and the grip panels and the Frame Screws (2 1/8th Allen Screws for the Series 5 Basic and 2 - 3/32nd for the Series 6) that attach the frame to the marker chassis. The screws on the Series 6 are submerged and thus can be simply loosened a turn or two and the frame slid to the rear of the marker and removed. The Series 6 screws are of two different lengths – ensure you replace these properly when reassembling. Set the chassis aside.



3. Remove the Auto Trigger Arm and Cam from the .45 frame. Sometimes you can simply rotate the AT arm to remove it - if it feels stuck you will most likely have to back out the undertravel screw (see below).
4. **Series 5 Basic Frame – Pictured** Carefully (the sear is under slight spring tension) remove the sear retention pin. Simply push out the pin using a punch or a small Allen key.

5. **Step Four (Series 6 Frame - Not Pictured):** Carefully (the sear is under slight spring tension) remove the sear retention pin. There is a small grub screw to remove and then a small pin can be used to push out the sear retention pin.



6. The Sear, Sear Pin, and Spring will come out.



7. Inspect the Sear to see if it has wear where the lug catches. (Notice the slight wear on this sear.) Wear can cause the marker to 'skip' (not recock from time to time) or be VERY hard to time the auto trigger. Replace this if wear is evident or malfunctions are occurring. This should not need to be done often and perhaps will never need to be replaced on your marker.



8. Remove the Trigger Shoulder Bolt and slide the trigger from the frame (shown with the top Allen key). Also remove the Trigger Undertravel Screw (shown with the bottom Allen key) - it must be removed from the top of the frame. Use Blue Loctite® on these screws upon reassembly. Be sure not to over tighten the Trigger Shoulder Bolt. Over tightening can cause drag on the trigger.



9. Your trigger frame is now completely disassembled. Clean thoroughly and reassemble.