

# General Information



## General Information on Finishing with Your Raytech Centrifugal Magnetic Finisher

The Raytech Centrifugal Magnetic Finishing machines are complete, direct drive, fan-cooled systems. The magnetic disk that actually turns the pins is made up of many powerful magnets that are precisely placed in a cast disk. The alternating polarity is constantly changing, thereby allowing the media to move freely in a liquid solution that is constantly changing its make-up. This, combined with centrifugal force, allows for quiet and fast time cycles to perform a myriad of applications.

Up until now, magnetics have been limited to magnetic pin finishing only. Two newly designed bowls have been added to the Raytech Magnetic line. The wet bowl can be used for abrasive requirements such as small plastic medias or porcelain applications and the new dry bowl is for use with Raytech's new Dri-Shine formulations. These bowls are only for use with the model 410 and 610 units!

Magnetic finishing remains as today's state-of-the-art method to finish non-ferrous metals that have a high degree of intricacy with medias as small as .010 in diameter and .250 in length stainless steel pins. This method of finishing was first introduced to the jewelry industry with tremendous success for processing precious metals. Magnetic finishing has also gained great popularity within the dental and medical industries and the metal-working industry as well.

## CAUTION

- Always make sure the unit is plugged into a properly grounded outlet.
- Persons with pacemakers should not use this machine as the magnets may interfere with the pacemaker.
- Always turn the unit off before removing the bowl from its base.
- Always make sure the machine is turned off before placing your hands inside the working chamber.
- When the machine is not in use, remove the bowl from the machine base.
- Do not fill the bowls past the recommended maximum fill line to avoid spillage.
- Do not place any items that are affected by magnetism such as computer discs, credit cards, etc. on or near your magnetic finisher.
- On export models CMF 900 and CMF 1200 a surge protector is mandatory in order to avoid any high voltage spikes as excessive voltage may damage or destroy circuitry. Failure to use a surge protector could void the warranty should this problem arise.
- Use only in a dry environment.
- Do not allow the base or housing of this unit to get wet as this may affect the motor and electrical components.
- Always be sure that the cooling fan is operating.
- On very soft, non-ferrous metals, the speed control knob on the digital models should be set for a maximum of 1/2 to 3/4 rotations as high speed can cause impingement on the parts.

## Unpacking Your Raytech Centrifugal Magnetic Finisher

Upon unpacking your Raytech Centrifugal Magnetic Finisher, you will find in the box the magnetic tumbler base, the bowl, pins and compound. (NOTE: Pins and compound are only supplied with Models CMF400, 410 and 610). The pins are .5mm and the compound is referred to as compound "D". For the CMF900 and 1200, pins and compound must be purchased separately. See replacement chart on last page of this brochure. If any damage should occur to the equipment in shipping, do not discard the box and packing materials and contact your distributor immediately.

## General Use

**NOTE: These are the general operating instructions as supplied by Raytech Industries.** In some cases, you will need to experiment with your process and find your own comfort zone. Each process is unique to each user's application. As the manufacturer we can't stress enough how important it is to keep your CMF clean and away from water or dust.

**Fill the bowl with the correct amount of pins.** Refer to the chart on page 6.

**Fill the bowl with water to the fill line.** For the model 400, 410 and 610, use approximately 4-5 drops of Compound D provided with your unit. For the models 900 and 1200, add approximately (1-2) teaspoons of Compound D.

**Break in the pins prior to use.** To break the pins in, place approximately (10-12) brass screws into the bowl with pins and water. Run the unit for at least (3) hours. If the pins turn black in the beginning, there is nothing wrong with them. The pins contain carbon and this is sometimes released into the water at initial use. If this should happen, fill your bowl approximately halfway and add (2) Tablespoons of Trisodium Phosphate (TSP - which is available at most paint or food markets). Run for 5-10 minutes, rinse and then repeat this cycle until water is clear. It is good practice to properly clean and rinse your pins on a daily basis.

**The optional Wet Bowl** is for use with only the CMF 410 or 610 units and utilizes medias such as plastic and porcelain. Fill the bowl with media and water not to exceed the fill lines. **Run this bowl at half speed only!**

**The optional Dry Bowl** is for use only with Raytech's Dri Shine VI or Dri Buff. **Run this bowl at half speed only!** Using other manufacturer's media will void the warranty. In most cases this is the final step in polishing. See page #4 for more information on these new bowls.

See ordering information on page 6.

**\*Before you begin,** refer to the capacity chart on page 6 for each unit's individual capacities.

# Instructions and Cycle Times



## CMF400

When operating the CMF400, fill the bowl as described previously and turn on the main power switch. Set the timer to how many minutes you want to finish your pieces. This will vary with each individual application. We recommend that for the first use, you limit the time to 5 minutes and inspect the piece/pieces to check the progress. (Average time is 30 minutes.) On the CMF400, simply turn the timer to the desired cycle time, which is in minutes. This timer has increments ranging from 0-120 minutes.



## CMF410

Our newest model CMF410 is operated differently from the 400 as it has digital and programmable options. When you turn the unit on, press the timer key repeatedly until the desired time is reached. The minimum time is 15 minutes and the maximum time is 180 minutes. Press the memory key to set. Press the direction key to program the reverse function. Press and hold the timer button for desired time then press the memory key. The lowest setting for the reverse function is 1 minute. Press the start key. Once the contents of the bowl are spinning, press the speed keys (walking and running man) to program the speed of the unit. The walking symbol is for a slower rotation and the running symbol is for a faster rotation. The speed range is 5-100. The speed will automatically stay at this setting.



## CMF1200



## CMF900



## CMF610

To program these digital models, first turn the main power on.

1. Press the mode button once. This will set the **cycle running time** which will be flashing. Press the up or down buttons to set the desired time. Once done, press the set button to lock time.
2. Press the mode button again and the **forward/reverse function** will flash. Press the up or down buttons to select forward/reverse cycle time. Once selected, press the set button to lock.
3. The above Raytech model finishers can now be adjusted so that the **buzzer or alarm** for the timer can be silenced. If you want to silence the buzzer/alarm at the completion of the time cycle, please do the following: To disable the buzzer, push the mode button three times and in the For./Rev. screen a "1" will appear. This indicates that the buzzer is on. Pressing the up or down button will change the setting to 0 which indicates the buzzer is off. Make your selection 1 or 0 and press set to lock.
4. This completes the programming. Next, **set the desired speed** by adjusting the speed control knob. After completing the above, depress the start button and the machine will function as programmed.

\*Remember, when the machine is not in use, remove the bowl from the base of the unit.

## Maintenance

**Cleaning** your finisher between cycles is recommended. The bowl should be removed and cleaned thoroughly. Note that the pins will stay at the bottom of the bowl when tipped gently. Do not tip too quickly as you do not want to lose the pins. We recommend purchasing the Raytech Magnetic Separator for separating the parts from the pins as it is more efficient and makes for easier separation. See the ordering information on page 6 for details. It is also recommended that you purchase a separate bowl for use in a production type process as the bowls will heat up due to friction and need time to cool off between cycles.

**Storage** of Magnetic Finishers: After you finish using your Centrifugal Magnetic Finisher, always remove the bowl from its base and store with the base on a workbench or table. It is also good practice to unplug your machine daily after each use or if the machine is not being used for a period of time. This practice will prevent small children from playing with the controls and accidentally turning the machine on. Store bowl on a non-metallic surface to prevent de-magnetization of the pins.

## Wet & Dry Bowls

In addition to our existing line of Centrifugal Magnetic Finishers, we now offer wet and dry bowls for all of your finishing applications. The current models 410 & 610 come with an original bowl and stainless steel magnetic pins, which is standard and will efficiently burnish and polish small non-ferrous metals in approximately 20 to 30 minutes. With our line of optional wet & dry bowls, you have the advantage of cutting, creating a matte finish and even final finishing. After each cycle, let bowl cool 20 minutes before next cycle. Now you can go from a pre-finishing stage, and in most applications, to a final polish in less time than vibratory tumbling. These bowls work the same as the original bowl in respect to the movement of the pieces inside the bowl being driven around by the magnetic base of our model 410 & 610 models. The average cycle time using our wet bowl is approximately 10 to 40 minutes and with our dry bowl is approximately 20 to 40 minutes depending on your application. NOTE: It is best to check your work every 15 minutes for the results you are looking to achieve until you are confident of the cycle time for your specific process. The only recommended medias for your wet bowl are porcelain, plastic, glass beads and agate beads. The recommended medias for your dry bowl are corn cob-based, nut-shell based and wood-based medias. All other medias will void your warranty. Stainless steel pins are only to be used with original bowls.



**NOT FOR USE WITH THE MODEL CMF400 OR THE CMF600**



## Maintenance & Storage

It is most important to always keep both the wet and dry bowls clean. We recommend cleaning the bowls after every three cycles. After removing the allen cap screw from the center of bowl using the hex key provided, remove the disc and clean both the bowl and disc. As with our original bowls with stainless steel pins, we highly recommend not placing the bowls on any metal bench top or surface and always remove the bowls from the base of the unit when not in use. Bowls are warranted 1 year from date of purchase as long as being used to manufacturer's suggestions and are sold exclusively through distributors.

**CAUTION:** ALWAYS ALLOW THE MACHINE TO COMPLETELY SHUT DOWN (APPROXIMATELY 30 – 45 SECONDS) PRIOR TO PLACING EITHER THE DRY OR WET BOWL ON THE MACHINE BASE.

**Only use the dry bowl for dry medias and the wet bowl for wet medias.**



## Accessories

Parts holders sold separately for use in wet bowl (porcelain and stainless steel balls only), and dry bowls (Dri Shine VII and Dri Buff only). This parts holder sits inside the bowl and ensures that all surfaces of the piece/part are worked. The model 410 parts holder offers 3 tiers and the model 610 parts holder offers 6 tiers. Each tier will hold approximately 2 to 3 rings or comparable parts depending on the size of the piece. In the box you will find the plastic spinners. These are to be placed on the work holder prior to use.

The parts holder should be placed inside of the wet or dry bowl prior to turning the machine on. These bowls offer a variety of uses and faster results for any application. See page 6 for ordering information.

# Ordering Information

<b>Models Available</b> . . . . .	<b>Item #</b>
CMF400, 115V 60Hz . . . . .	#23-048
CMF400, 230V 50Hz . . . . .	#24-139
CMF410, 115V 60Hz . . . . .	#23-049
CMF410, 230V 50Hz . . . . .	#24-140
CMF610, 115V 60Hz . . . . .	#23-051
CMF610, 230V 50Hz . . . . .	#24-142
CMF900, 115V 60Hz . . . . .	#23-052
CMF900, 230V 50Hz . . . . .	#24-143
CMF1200, 230V 50/60Hz . . . . .	#24-145

**Pins**

Turbo Pins .3mm, 250 gms . . .	#41-372
Turbo Pins .3mm, 1 Kg . . . . .	#41-374
Turbo Pins .5mm, 250 gms . . .	#41-376
Turbo Pins .5mm, 1 Kg . . . . .	#41-378

**Compound and Accessories**

Compound D-1 Quart . . . . .	#41-003
Compound D-1 Gallon . . . . .	#41-004
Magnetic Separator 400/600 . . .	#23-081
Magnetic Separator 900/1200 . .	#23-083
CMF410 Parts Holder . . . . .	#23-088
CMF610 Parts holder . . . . .	#23-089

**Spare Bowls**

CMF400/410 Spare Bowl . . . . .	#23-064
CMF600/610 Spare Bowl . . . . .	#23-057
CMF900 Spare Bowl . . . . .	#23-068
CMF1200 Spare Bowl . . . . .	#23-072
CMF410 CBD Dry Bowl . . . . .	#23-084
CMF410 CBW Wet Bowl . . . . .	#23-085
CMF610 CBD Dry Bowl . . . . .	#23-086
CMF610 CBW Wet Bowl . . . . .	#23-087

**Wet Bowl Medias**

Brown Pyramids-5 lbs. . . . .	#41-141
Green Pyramids-5 lbs. . . . .	#41-119
White Pyramids-5 lbs. . . . .	#41-131
Porcelain balls, 1mm-5 lbs. . . .	#41-210
Porcelain balls, 2mm-5 lbs. . . .	#41-214
Porcelain balls, 3mm-5 lbs. . . .	#41-218
Porcelain balls, 4mm-5 lbs. . . .	#41-222
Porcelain balls, 6mm-5 lbs. . . .	#41-226

**Dry Bowl Medias**

Dri-Shine VII-5 lbs. . . . .	#41-290
Dri-Buff-4 lbs. . . . .	#41-291
Dri-Shine VII Reactivator-1 lb. .	#41-292

## Replacement Part Numbers -- Magnetic Finishers

Description	115 Volt Machines						230 Volt Machines					
	400	410	600	610	900	1200	400	410	600	610	900	1200
Bowl	23064	23064	23057	23057	23068	23072	23064	23064	23057	23057	23068	23072
Brushes (Motor)	08456	08456	08463	08463	08487	08499	08456	08456	08463	08463	08487	08499
Cooling Fan	08451	08451	08467	08467	08510	08510	08477	08477	08478	08478	08511	08511
Fuse	2 amp	2 amp	5 amp	5 amp	10 amp	10 amp	2 amp	2 amp	5 amp	5 amp	10 amp	10 amp
Magnetic Cast Disc	08516	08516	08472	08472	08489	08500	08516	08516	08472	08472	08489	08500
Main Control Module	NA	08458	NA	08474	08474	08474	NA	08458	NA	08474	08474	08474
Motor	08452	88452	08464	08464	08482	08494	08453	08453	08465	08465	08483	08495
Motor Control Board	NA	08460	NA	08473	08473	08473	NA	08461	NA	08485	08485	08485
On/Off Switch	08450	08457	08462	08475	08475	08512	08450	08457	08462	08475	08475	08512
Push Button Switch	NA	NA	NA	08476	08476	08513	NA	NA	NA	08476	08476	08513
Speed Control	NA	NA	NA	08502	08502	08502	NA	NA	NA	08502	08502	08502
Timer	08454	NA	08468	NA	NA	NA	08454	08454	08468	NA	NA	NA
Timer Knob	08455	NA	08455	NA	NA	NA	08455	08455	08455	NA	NA	NA
Top Plate	08501	08501	08470	08470	08488	08496	08501	08501	08470	08470	08488	08496

## Capacities and Functions

Model	HP	Pin Capacity (grams)	Ring Capacity	Forward/Reverse Function	Variable Speed	Bowl Diameter		Timer	Voltage Available		Shipping Weight
						In	mm		115V 60Hz	230V 50Hz	
CMF-400	1/32	100	8-12	No	No	4	100	Mechanical	Yes	Yes	17 lbs
CMF-410	1/32	100	8-12	Yes	Yes	4	100	Programmable	Yes	Yes	17 lbs
CMF-610	1/12	200	30	Yes	Yes	6	150	Programmable	Yes	Yes	25 lbs
CMF-900	1/3	400	100	Yes	Yes	9	230	Programmable	Yes	Yes	55 lbs
CMF-1200	1/3	800	225	Yes	Yes	12	300	Programmable	No	Yes 50/60Hz	85 lbs



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