



**AMERICAN WATCHMAKERS & CLOCKMAKERS INSTITUTE  
HARRISON, OHIO**

**Quartz & Quartz Chronograph Service Procedures & Diagnostics**

(Also a preparatory course for the AWCI CW21 exam)

- **The purpose** of this course is to teach the student all the fundamentals of modern quartz watch repair and quartz chronographs that are most prevalent on today's market. The student will learn how to perform the various important electronic tests e.g. current consumption, coil resistance, lower working voltage, fault finding etc.
- **Prerequisites:**
  - Some basic understanding in electronic watch functions,
  - Knowledge of watch terminology.
  - Membership with AWCI
  - **Ownership of the book *The Theory of Horology* is essential. Must read, chapter 15 of *The Theory of Horology*, prior to attending the course.**
  - It would be of extreme benefit for the student to be familiar with some watch theory and also previous experience in watch repair.
- Swiss calibers covered include: Ronda 715 and Ronda 8040.B  
(ETA 955.xxx if time allows)
- Length of course: Monday-Thursday 8am -5pm Friday 8am – 3pm

**More specifically, the student will learn about:**

- Brief historical background of quartz watches
- Discussion of all the components in detail and their purpose
- Measurement points for analog quartz watches
- Modern cleaning procedures
- Modern lubricants - as it applies to 21<sup>st</sup> century watchmaking
- Servicing of both movements
- Testing parameters and troubleshooting with the modern quartz analyzers

**Essential materials for the student to bring**

For all AWCI courses, AWCI will provide cleaning machines and solutions. Hand-tools should be provided by the student. Ownership of quality hand tools is an expectation of a **Professional Watchmaker**. The brand name Bergeon mentioned below is used to help you identify the tools from the most popular tool catalogs; you are welcome to choose a brand of your choice, as long as it is of equal or better quality.

Check with your supplier for the recommended hand tools or their equivalents.

<b>Quartz &amp; Quartz Chronograph Service Procedures &amp; Diagnostics TOOL LIST</b>	
Description	Bergeon
1. Buff stick leather 6.0 mm wide with plexi-cover # 4056-6	1282-D 4056-6
2. Casing cushion	5394
3. Cloth (lint-free) Selvyt or Micro-fiber	
4. Dial plastic protection	6938
5. Dust-blower (rubber)	5733
6. File, Hand style 6" long #2 cut <b>or</b> #4cut	
7. File Handle	
8. Finger cots	
9. Hands fitting tool (hand press or manual pushers)	7404
10. Knife with case opener	6403
11. Lever for hands (2.5 – 5.0 mm in width or similar)	30018
12. Loupe 4x or 5x	
13. Loupe 10x for inspection purposes	
14. Movement holder – dial side with center support for hand installation	1996 / 1112
15. Movement holder (Slick/Bergeon/Horotec) ( <b>large</b> )	4040
16. Oilers (plastic handle, spade tipped) <b>small sizes Bergeon only</b> (7013 preferred)	7013 or 30102
17. Oil cups, die-cast alloy, 4 <b>separate</b> cups (or more)	30180-A
18. Pithwood (circular wheels)	
19. Pithwood sticks (assorted sizes)	
20. Plexi-stick ( <b>clear</b> style only)	6436
21. Presto tool No 1 (for removing hands) (polish the outer jaw surfaces to a mirror sheen)	30636-1
22. Rodico or Rub-off	Rodico # 7033
23. Screwdrivers, with stand, e.g. Bergeon, Horotec, Vaucher, etc.	
24. Stem cutting pliers (end cutter type preferred)	
25. Tweezers, brass or bronze	1064AM
26. Tweezers, antimagnetic, No. 3	6671-3
27. Tweezers for hands, type F (Fontax or Horotec) polished steel tips Horotec 12.301-F1 or 12.302-F1	