

Watchmaker Apprenticeship Assessment Plan

Contents

- Section 1 – Summary of End Point Assessment..... 3
- Section 1 – Overview 3
- Section 2 – Summary of Assessment 3
- Section 3 – On Programme Assessment 4
- Section 4 – End-Point Assessment 5
- Section 6 – Quality Assurance 8
- Annex – End Point Assessment, Detailed Assessment Criteria 10

Section 1 – Overview

This document provides details of the End Point Assessment for the Watchmaker Apprenticeship. It provides guidance for employers, apprentices, training providers and assessment organizations.

The End point Assessment follows a period of at least twelve months (typically two years) of training and development and is arranged when the employer is satisfied that the apprentice is consistently working at or above the level described in the Watchmaker Apprenticeship Standard and the Annex to this document.

The End Point Assessment is conducted over two days by an Independent Assessor and requires the apprentice to:

- Service an Automatic Watch with introduced faults and refurbish the watch case and bracelet (8 hours)
- Service a Quartz Watch (4 hours)
- Complete a written Theory assessment (1 hour)
- Participate in a Professional Discussion (1 hour)

Section 2 – Summary of Assessment

An Independent Assessor will conduct the End Point Assessment in the workplace or at a centre arranged for assessment. The apprentice will be required to

- Show knowledge of Health and Safety legislation relating to watchmaking and demonstrate the ability to work safely in a watch servicing workshop.
- Know the tools, equipment and materials required when servicing watches, how to select and maintain the appropriate tool / item of equipment for each of the processes involved.
- Access, interpret and understand technical documentation required for watchmaking.
- Understand the procedures for assessing the condition of watches and diagnose faults in watch movements and cases.
- Determine the level of intervention required and cost and seek approval for the work.
- Refurbish watch cases using hand tools and machinery.
- Service and correct faults in quartz and mechanical watch movements.
- Understand the construction and functioning of the components of quartz and mechanical watches.
- Understand and apply quality control procedures to ensure serviced watches meet the company's and manufacturer's requirements.

Further details are given on Page 5 'End Point Assessment', 'What will be assessed'.

Assessment Method	Area Assessed	Assessed by	Grading	Weighting
Practical Test (12 hours)	End Point Assessment: Practical servicing relating to the detailed, 'Skills' and 'Behaviours' Assessment Criteria given in the Annex: 1. Servicing mechanical watches 2. Refurbishing watch case and bracelet 3. Servicing quartz watches	Independent Examiner	Fail / Pass / Distinction (according to descriptors in the Annex)	Equally Weighted
Theory test (one hour)	End Point assessment: Theory relating to the detailed 'Knowledge' Assessment Criteria given in the Annex.	Independent Examiner	Fail / Pass / Distinction (according to descriptors in the Annex)	Equally Weighted
Professional Discussion (one hour)	End Point assessment: Discussion relating to the detailed 'Knowledge', 'Skills' and 'Behaviours' Assessment Criteria given in Annex.	Independent Examiner	Fail / Pass / Distinction (according to descriptors in the Annex)	Equally Weighted

Section 3 – On Programme Assessment

There are no mandatory qualifications on the standard which must be undertaken as a pre-requisite to taking the End point Assessment.

It is strongly advised that the employer follows a modular learning approach using detailed on-programme assessment procedures available in the Watchmaker Apprentice Handbook and the Watchmaker Assessment Handbook (freely available to all employers from website, www.gdetac.org).

Assessment Gateway

The independent End Point Assessment ensures that all successful apprentices have achieved the industry set professional standard for a watchmaker.

Apprentices without Level 2 English and Mathematics will need to achieve this level prior to taking the end-point assessment.

The End Point Assessment should only commence once the employer is confident that the apprentice has developed all the knowledge, skills and behaviours defined in the watchmaker apprenticeship standard and the detailed performance criteria given in the Annex. It is advised that the employer follows the guidance provided in The Watchmaker Apprentice Handbook and The Watchmakers Assessment Handbook to verify the apprentice's achievement against established criteria.

Once the employer is satisfied that the apprentice has achieved a standard sufficient for the Independent End Point Assessment, The Assessment Organisation will make arrangements for the End Point Assessment.

Section 4 – End-Point Assessment

What will be assessed:

The skills, knowledge and behaviours delineated in the detailed Assessment Criteria will be assessed, please refer to the Annex.

How will the skills, knowledge and behaviours be assessed:

1. The Independent Assessment:

The Independent Assessor will spend two days at the workplace or a mutually convenient servicing centre used for assessment:

a. First Day

The apprentice will be provided with an automatic watch with bracelet; faults will have been introduced into the movement (the faults will be graded to ensure an equal overall level of difficulty and apply to different aspects of the movement).

The apprentice will:

- i. service the watch movement.
- ii. refurbish the case and bracelet.

The test will be timed (8 hours allowed for servicing the movement and refurbishing the case and bracelet).

b. Second Day

The apprentice will:

- i. complete a written theory assessment (1 hour):
- ii. service a quartz watch with introduced faults; although cased, the case will not require refurbishing (4 hours allowed for servicing the watch).
- iii. participate in a Professional Discussion with the Independent Assessor (1 hour).

To ensure accurate assessment of the serviced movements, the Independent Assessor will make observations while the apprentice is servicing the movement and note items marked on the Assessment Scheme: e.g. the use of different types of lubricants, treatment procedures, etc.

For the Practical Tests and the Theory Test, up to two apprentices can be assessed at any given time; the Professional Discussion will be conducted individually. Marks for the Independent Assessment will be awarded according to detailed marking schemes.

Who will conduct the assessment:

The End Point Assessment will be conducted by an Assessment Organisation on the SFA Register for Apprentice Assessment Organisations; the assessor selected for any assessment will be:

- Independent of the apprentice, the employer and the training provider.
- Appointed by the Assessment Organisation with the requirement of five years recent experience at Senior Watchmaker level.
- Trained to conduct the end point assessment detailed in this plan

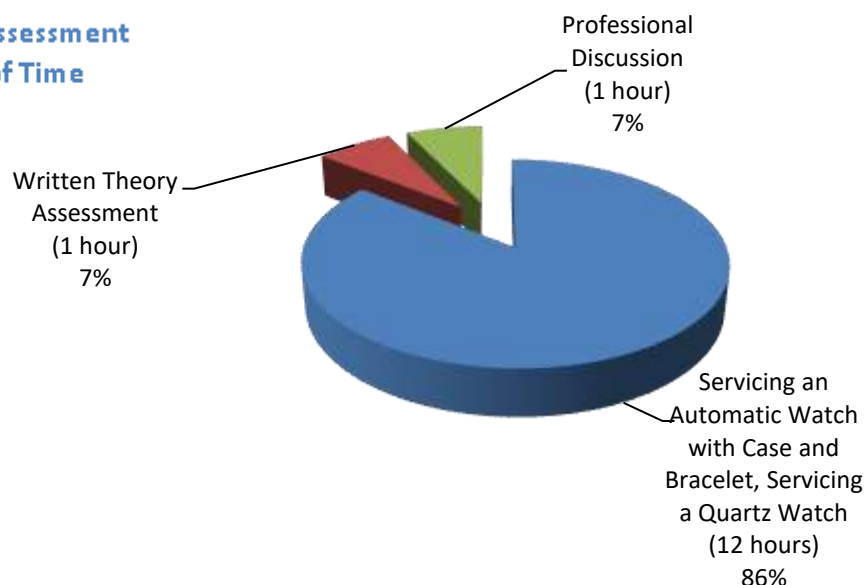
The Assessment Organisation will operate an appeals procedure in the event of any dispute concerning the outcome of an End Point Assessment.

How is the final judgement achieved:

The Independent Assessor will use detailed marking schemes designed to assess each of the three End Point Assessment methods:

1. Practical Tests:
 - a. Servicing the automatic movement and refurbishing the case and bracelet.
 - b. Servicing the quartz watch.
2. Theory Examination.
3. Structured Professional Discussion.

End Point Assessment Weighting of Time



For each of the three End Point Assessment methods, marks are awarded according to the marking scheme to provide an outcome:

- Pass with Distinction
- Pass
- Fail

End Point Grading: The End Point Assessment considers 'Skills', 'Knowledge' and 'Behaviours'.

- The **Practical Tests** assess the apprentice's 'Skills' and 'Behaviours' when servicing a mechanical movement, refinishing a watch case and bracelet and servicing a quartz movement. Achievement is assessed according to the Assessment Criteria given in the Annex.

There are 18 learning outcomes in all, 3 of which can achieve a Distinction.

The apprentice is awarded a Distinction / Pass / Fail:

To gain a Pass: All Learning Outcomes must be passed.

To gain a Distinction: The three Learning Outcomes with a descriptor for 'Distinction' must be passed with Distinction and all the remaining Learning Outcomes must be awarded a pass.

- The **Theory Examination** samples the apprentice's 'Knowledge' of the theoretical background to watch servicing. The apprentice will answer forty questions set and assessed according to the Assessment Criteria given in the Annex.

The apprentice is awarded a Distinction / Pass / Fail:

To gain a Pass: at least twenty four questions must be answered correctly.

To gain a Distinction: at least thirty two of the questions must be answered correctly.

- The **Professional Discussion** samples aspects of the apprentice's understanding of the 'Knowledge', 'Skills' and 'Behaviours' required for watch servicing. The apprentice will answer thirty questions set and assessed according to the Assessment Criteria and graded for 'Pass' and 'Distinction' as given by descriptors in the Annex.

The apprentice is awarded a Distinction / Pass / Fail:

To gain a Pass: at least eighteen of the questions must be answered correctly.

To gain a Distinction: at least twenty four of the questions must be answered correctly.

There are four levels of overall achievement (Distinction, Pass, Fail); they are determined from the outcome for each of the three End Point Assessments:

- An overall **Pass with Distinction** will be awarded if the apprentice passes:
 - The Practical Tests with Distinction
 - The Theory Examination with Distinction
 - The Professional Discussion with Distinction
- An overall **Pass** can only be awarded if the apprentice passes:
 - The Practical Tests
 - The Theory Examination
 - The Professional Discussion
- An overall **Fail** will be awarded if the apprentice fails one or more of:
 - The Practical Tests
 - The Theory Examination
 - The Professional Discussion

If an apprentice fails one or more of the End Point Assessment activities, it should be retaken after a period of further training and development lasting between two and six months. A maximum of one resit for each of the assessment methods will be permitted.

Section 6 – Quality Assurance

The Independent Assessors will be employed by an Assessment Organisation approved on the Register of Apprentice Assessment Organisations (RoAAO).

The final competence and grading decisions will be taken by a suitably qualified and experienced Independent Assessor, who has not previously been involved in the ‘on-programme’ training or assessment of the apprentice, and with no interest in the outcome of the assessment.

These arrangements will ensure a clear separation between the training of the apprentice and the final assessment.

The End Point Assessment will be conducted in the apprentice’s workplace or at a suitable watch servicing workshop which is mutually convenient for the Independent Assessor and the apprentice.

End Point Assessment – Summary of Roles and Responsibilities:

Role	Responsibilities
Assessor	Liaises with the Assessment Organisation to conduct the End Point Assessment; informs the Assessment Organisation of the outcome.
Employer	<p>Guided by:</p> <ul style="list-style-type: none"> • The Training Provider • On Programme Assessments throughout the apprenticeship • The watchmaker standard • The detailed Assessment Criteria • It is also advised that the employer refers to the guidance provided in The Watchmaker Apprentice Handbook and the Watchmaker Assessment Handbook to verify the apprentice’s achievement against established criteria. <p>The employer initiates the End Point Assessment by contacting the Assessment Organisation.</p>
Assessment Organisation	<p>Responsibility for the End Point Assessment:</p> <ul style="list-style-type: none"> • Appoints and trains Independent Assessors • Provides assessment materials for the End Point Assessment • Maintain procedures for standardization. • Operates appeals procedure in case of dispute

Quality Assurance – internal:

The Assessment Organisation will:

1. Appoint suitable Independent Assessors.
2. Train the Independent Assessors.
3. Ensure uniformity between Independent Assessors.
4. Provide suitable assessment materials:
 - a. watch movements with specified introduced faults.
 - b. replacement components.

Quality Assurance – internal, continued:

- c. marking schemes for practical assessments.
 - d. theory examination papers and marking schemes.
 - e. structured professional discussion with marking scheme.
5. Sample 10% outcomes annually to confirm the outcome is:
- a. valid
 - b. reliable
 - c. constant over time

Quality Assurance – external:

External Quality Assurance of the end point assessment for this standard will be the responsibility of the Institute for Apprenticeships.

Implementation:

- It is anticipated that the End Point Assessment will cost approximately 7.5% – 10% of the total cost of the apprenticeship.
- Achievement of the standard meets the requirements for eligibility for Membership of the British Watch and Clockmakers Guild.
- The End point Assessment is to be conducted in the apprentice's workplace or at a suitable watch servicing workshop which is mutually convenient for the Independent Assessor and the apprentice thus enabling the delivery of the End Point Assessment across the country.
- It is anticipated that there will be fifteen starts per year.

Annex – End Point Assessment, Detailed Assessment Criteria

Knowledge, Skills and Behaviours are assessed during the End point Assessment:

PT = Practical Test

TE = Theory Examination

PD = Professional Discussion

Direct observation during the Practical Test will contribute to accurate assessment of the serviced watch movements / refinished case / bracelet and the assessment of Behaviours.

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
Health and Safety	PD	1 understand the application of health and safety legislation (e.g. COSHH, PPE) and company regulations for conforming to Health and Safety at Work Regulations	<ul style="list-style-type: none"> show they know the location of the essential health and safety regulations in the workplace explain the objectives of the Health and Safety at Work Act explain the requirements of the Control of Substances Hazardous to Health Regulations (COSH) explain the company rules relating to health and safety
	PD	2 understand the benefit of risk analysis to ensure the safety of self and others when using tools, equipment and materials during work processes	<ul style="list-style-type: none"> explain the risks associated with the use of hand tools, machine tools and equipment explain the risks associated with cleaning fluids and solvents explain how to isolate machine tools in the event of an emergency
	PD	3 understand the benefit of safe and sustainable disposal of waste materials and cleaning fluids.	<ul style="list-style-type: none"> explain the risk to safety and the environment if suitable methods for the disposal of watch components are not followed: <ul style="list-style-type: none"> watch batteries watch components explain the risk to safety and the environment if suitable methods for the disposal of cleaning fluids are not followed

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
Tools and Equipment	TE PD	1 understand the construction, function, operational principles and maintenance of tools, equipment and materials required for watchmaking: hand tools and equipment for servicing movements	<ul style="list-style-type: none"> • explain the use and selection of suitable hand tools for servicing movements: e.g. screwdrivers, tweezers, movement holders, staking set • explain the use and selection of suitable equipment for servicing movements: e.g. demagnetiser, auto winder, microscope • explain the use and selection of equipment for the cleaning of watch movements • explain the principles for the maintenance of tweezers and screwdrivers
	TE PD	2 understand the construction, function, operational principles and maintenance of tools, equipment and materials required for watchmaking: cleaning fluids and materials	<ul style="list-style-type: none"> • explain the selection of cleaning fluids: <ul style="list-style-type: none"> ○ water based / waterless ○ ammonia / non ammoniated • explain the use and selection of materials for the manual cleaning of movement components: pith, Rodico, swabs, pegwood • explain the function of Fixodrop • explain the selection of suitable lubricants for watch movements: <ul style="list-style-type: none"> ○ synthetic ○ natural ○ greases
	TE PD	3 understand the construction, function, operational principles and maintenance of tools, equipment and materials required for watchmaking: test equipment for servicing watches	<ul style="list-style-type: none"> • explain the use of the Witschi Watch Handy 2 (or equivalent) for determining the condition of quartz watches • explain the use of the Witschi Watch Master I (or equivalent) for determining the condition of mechanical watches • explain the use of the methods of testing water resistance: <ul style="list-style-type: none"> ○ pressure test (pressure / vacuum) ○ wet test ○ condensation test

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
Tools and Equipment, continued	TE PD	4 understand the construction, function, operational principles and maintenance of tools, equipment and materials required for watchmaking: case and bracelet polishing equipment and materials	<ul style="list-style-type: none"> • explain the use and selection of suitable equipment for the refurbishment of watch cases: polishing spindle, lisher, polishing mops, cones and abrasive wheels • explain the selection of polishing materials: types of polishing compound, abrasive sticks, abrasive paper, protection tape • components and watch cases: watch cleaning machines (rotary / ultrasonic), ultrasonic cleaning tanks, steam cleaning equipment
Assessment of the Condition of Watches	TE PD	1 understand the procedures for the identification of operational faults in quartz and mechanical watches using a range of results from test equipment and the visual assessment of the condition and operation of watch movement components: Quartz Watches	<ul style="list-style-type: none"> • list the procedures for using test equipment to indicate: <ul style="list-style-type: none"> ○ defective battery ○ error in rate ○ congealed oil / debris ○ defective circuit ○ stop lever and switch not operational ○ end of life not operational • list the observations indicating: <ul style="list-style-type: none"> ○ battery leakage ○ corroded components ○ worn / damaged pivots ○ cannon pinion tightness ○ wear / damage to wheels and pinions ○ mainplate: wear from stem
	TE PD	2 understand the procedures for the identification of operational faults in quartz and mechanical watches using a range of results from test equipment and the visual assessment of the condition and operation of watch movement components: Mechanical Watches	<ul style="list-style-type: none"> • explain the testing to indicate: <ul style="list-style-type: none"> ○ beat error ○ rate error ○ amplitude error ○ poise error ○ escapement faults ○ cyclical faults

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
Assessment of the Condition of Watches, continued	TE PD	2 understand the procedures for the identification of operational faults in quartz and mechanical watches using a range of results from test equipment and the visual assessment of the condition and operation of watch movement components: Mechanical Watches, continued	<ul style="list-style-type: none"> • explain observations indicating <ul style="list-style-type: none"> ○ escapement faults: horn clearance, guard pin clearance, depth of locking, draw, run to the banking ○ worn / damaged pivots ○ damaged jewel holes ○ barrel and mainspring faults: set mainspring, mainspring slipping / not slipping (automatic) ○ worn / damaged automatic winding components ○ cannon pinion tightness ○ worn / damaged wheels and pinions ○ incorrect end shakes ○ damaged pallet jewels ○ distorted balance spring • explain the observations indicating <ul style="list-style-type: none"> ○ damaged shock springs ○ worn / damaged oscillating weight bearing ○ mainplate, wear from stem ○ barrel bridge, wear from: barrel arbor
	TE PD	3 understand the procedures for the identification of operational faults in watch cases and bracelets	<ul style="list-style-type: none"> • explain the testing procedure to show: <ul style="list-style-type: none"> ○ damaged seals to pushers ○ damaged seal to stem and crown ○ damaged case back seal ○ damaged seal for glass • list the observations indicating: <ul style="list-style-type: none"> ○ worn pushers / tubes ○ worn / damaged crown ○ worn / damaged spring bars ○ worn / damaged lugs ○ worn damaged glass ○ damaged (surface damage) case requiring refinishing ○ damaged bracelet (surface damage) requiring refinishing

Knowledge	Assessed during	Learning Outcomes	Assessment Criteria
Assessment of the Condition of Watches, continued	TE PD	The Apprentice will: 4 understand the principles for determining appropriate levels of intervention, costing and seeking approval for work (with both customer and company).	The Apprentice can: <ul style="list-style-type: none"> explain the company procedure to determine level of intervention and costing tabulate cost to service the movement, cost of parts: tabulate cost to refurbish the case and bracelet, cost of parts: explain the procedure to verify the availability of replacement components explain procedure for approval from the employer / supervisor explain procedure for approval from client / through employer / supervisor
The Refurbishment of Watch Cases and Bracelets	TE PD	1 understand the materials and construction used for different types of watch cases and bracelets (e.g. two piece, three piece, pushers, stems, gaskets)	<ul style="list-style-type: none"> identify the construction of different types of watch cases: <ul style="list-style-type: none"> one piece. two piece: snap / screwed back three piece: snap, screwed back stem: one piece, two piece crown: unsealed, sealed identify the materials used for watch cases and bracelets: <ul style="list-style-type: none"> precious metals stainless steel brass titanium plated ceramics PVD (physical vapour deposition). glasses: synthetic, natural glass, sapphire explain the principal legislation for watch cases
	TE PD	2 understand the approaches for securing movements to cases	<ul style="list-style-type: none"> identify the techniques to secure movements to cases: <ul style="list-style-type: none"> case ring case screws brackets
	TE PD	3 understand the specification of replacement watch case components (e.g. gaskets, glasses, pushers)	<ul style="list-style-type: none"> list the details required to specify case components: <ul style="list-style-type: none"> manufacturer, brand case number material description

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
The Refurbishment of Watch Cases and Bracelets, continued	TE PD	4 the standards for water resistance	<ul style="list-style-type: none"> • explain the standards for water resistance • explain the interpretation of water resistance standards for various uses
The Service and Repair of Watch Movements	TE PD	1 understand the function, construction and operational principles of quartz watch movements	<ul style="list-style-type: none"> • explain the function, construction and operational principles of: <ul style="list-style-type: none"> ○ plates, bridges, cocks and screws ○ batteries ○ electronic module ○ stepping motor ○ the train in a quartz watch, wheels and pinions, types of pivots ○ keyless work ○ date mechanism
	TE PD	2 understand the function, construction and operational principles of mechanical watch movements	<ul style="list-style-type: none"> • explain the function, construction and operational principles of: <ul style="list-style-type: none"> ○ mainplate, bridges, cocks, screws ○ motive force: going barrel, resilient hooking, snailed barrel arbor, mainspring ○ the train in a mechanical watch: wheels and pinions, types of pivots ○ motion work ○ keyless work ○ date mechanism ○ escapement ○ balance & spring, Etachron ○ jewel holes: train, balance staff ○ automatic winding: types (limited / full rotation, one direction / both directions, reverser / cam / pawl lever systems, oscillating weight, barrel and spring arrangement, decoupling) ○ calendar mechanisms: date, day-date, month indicating, phases of the moon, annual calendar, perpetual calendar

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
The Service and Repair of Watch Movements continued	TE PD	3 understand the characteristics of components: Quartz Watches	<ul style="list-style-type: none"> • explain the characteristics of batteries: <ul style="list-style-type: none"> ○ low drain, high drain, mercury, silver oxide, lithium ○ conditions for and effects of storage • explain the characteristics of the electronic module: <ul style="list-style-type: none"> ○ integrated circuit, quartz crystal, piezo electric effect and coil ○ magnetism ○ end of life ○ effect of temperature ○ thermo compensation ○ damage from mishandling ○ explain the gearing of the quartz train
	TE PD	4 understand the characteristics of components: Mechanical Watches	<ul style="list-style-type: none"> • explain the characteristics of mainsprings: <ul style="list-style-type: none"> ○ manual winding ○ automatic winding ○ mainspring condition ○ strength of mainsprings • explain the characteristics of escapements: <ul style="list-style-type: none"> ○ wheel and pallet action: unlocking, impulse, drop, locking, draw, run to the banking ○ safety action: roller and guard pin, banking pins, run to the banking, horns, draw ○ explain the principles for adjusting the lever escapement • explain the characteristics of the balance and spring: <ul style="list-style-type: none"> ○ balance spring: materials ○ balance: materials ○ effect of isochronism ○ effect of temperature changes • explain the characteristics of watch jewellery: <ul style="list-style-type: none"> ○ friction, shape of jewel holes, endstones ○ shock resistant settings: Incabloc, Kif, Duofix

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
The Service and Repair of Watch Movements continued	TE PD	5 understand the procedures for cleaning, preparing and storing watch components	<ul style="list-style-type: none"> • explain how to select the equipment, materials and procedures for cleaning watch components: <ul style="list-style-type: none"> mechanical cleaning: rotary, ultrasonic • explain how to select different types of cleaning fluids: waterless, water based, ammoniated, non-ammoniated, rinse with lubricant • explain the use of manual cleaning materials: pegwood, pith, Rodico, swabs, balance spring degreaser • explain the function of Fixodrop • explain how to identify components requiring surface treatment: <ul style="list-style-type: none"> ○ manufacturer's technical information • describe the procedure for using Fixodrop • explain the importance of following the procedure • explain the company policy for storage of watch components / watches: <ul style="list-style-type: none"> ○ during servicing process: security, cleanliness ○ overnight security ○ replacement components
	TE PD	6 understand the specification of replacement watch components (e.g. mainsprings, wheels, jewels, shock resistant settings).	<ul style="list-style-type: none"> • explain how to access manufacturer's technical information • explain the company policy for obtaining replacement components: <ul style="list-style-type: none"> ○ from company stock ○ material house ○ from brand • explain the identification of watch components: <ul style="list-style-type: none"> ○ calibre number ○ manufacturer's technical information ○ part number, description • explain the variations in the names of watch components • explain the identification of watch jewels: <ul style="list-style-type: none"> ○ dimensions: outside diameter, hole diameter, thickness stated $\frac{1}{100}$ mm ○ type: balance staff, flat, flat (olived), centre • explain the identification of mainsprings: <ul style="list-style-type: none"> ○ by calibre number ○ by barrel diameter, height, thickness ○ manual / automatic • explain the identification of shock springs <ul style="list-style-type: none"> ○ type: e.g. Kif, Incabloc ○ size

Knowledge	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:
Quality	TE PD	1 understand the company's and manufacturer's procedures for maintaining quality standards and record keeping	<ul style="list-style-type: none"> • explain the importance of quality control • explain the quality control procedures in the company • explain the function of manufacturer's technical information in quality control • explain the importance of record keeping • source reports and explain their relevance

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Health and Safety and Working Environment	PT PD	1 be able to demonstrate safe working practices when using tools, equipment and materials to achieve and maintain a safe working environment	<ul style="list-style-type: none"> • evaluate the condition of hand tools • use hand tools correctly • return all tools and equipment to the correct location on completion of the servicing activity • evaluate the condition of machine tools • use machine tools correctly • isolate machine tools in the event of an emergency 	evaluate the condition of hand and machine tools and show safe working practices when using hand and machine tools. Maintain a tidy and safe working environment and can isolate equipment in an emergency.	as for Pass.
	PT PD	2 be able to identify and minimise hazards and risks in the working environment	<ul style="list-style-type: none"> • demonstrate an understanding of personal safety issues in a watch servicing workshop: <ul style="list-style-type: none"> ○ eye protection ○ extraction system for polishing ○ handling luminous dials ○ changing / disposing of fluids • demonstrate an awareness of the safety of others in a watch servicing workshop • act to minimize personal safety issues in a watch servicing workshop • act to minimize safety issues of others in a watch servicing workshop • dispose of defective components in accordance with current legislation 	identify and minimize hazards and risks affecting personal safety and the safety of others in the working environment. Can dispose of defective components in accordance with current legislation.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Technical Interpretation and Understanding	PT PD	1 interpret and understand manufacturers' technical documentation (specifications, drawings, assembly procedures) and other written and verbal instructions for the servicing of watches	<ul style="list-style-type: none"> • access technical information: <ul style="list-style-type: none"> ○ identify the calibre of the watch movement ○ source the manufacturer's technical information from company records / internet • apply technical information: <ul style="list-style-type: none"> ○ watch movements for: <ul style="list-style-type: none"> • testing to determine faults • re-assembly procedures • replacement part numbers • testing to ensure serviced watch meets manufacturer's criteria 	source, interpret, understand and apply manufacturer's technical information.	as for Pass.
Tools and Equipment	PT PD	1 be able to maintain tools and equipment in an appropriate condition to undertake the servicing procedures for watchmaking	<ul style="list-style-type: none"> • inspect 'personal' tools, identify the need for maintenance/replacement: <ul style="list-style-type: none"> ○ screwdrivers ○ tweezers ○ other items • maintain 'personal tools', e.g.: <ul style="list-style-type: none"> ○ re-sharpen screwdrivers to fit screw slots ○ re-sharpen tweezers • report when condition of 'company' equipment requires attention • maintain 'company' equipment, for example: <ul style="list-style-type: none"> ○ change cleaning fluids ○ dress polishing mops 	inspect and maintain 'personal' tools, screwdrivers and tweezers, and report when condition of 'company' equipment requires attention. Maintains 'company' equipment, for example change cleaning fluids, dress polishing mops.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Assessment of the Condition of Watches	PT PD	1 be able to select and use appropriate test equipment and use structured observation to determine the condition of the watch movement, cases and bracelets	<ul style="list-style-type: none"> • evaluate the condition of watch movements prior to opening the case: <ul style="list-style-type: none"> ○ assess condition by observation: <ul style="list-style-type: none"> • dial and hands • keyless work • mainspring and click action • cannon pinion tension ○ assess the condition using calibrated test equipment: <ul style="list-style-type: none"> • mechanical movements • quartz movements • evaluate the condition of watch movements by observation after opening the case / dismantling: <ul style="list-style-type: none"> ○ cleanliness / corrosion ○ component damage ○ component wear • evaluate the condition of watch cases and bracelets / strap: <ul style="list-style-type: none"> ○ assess the condition by observation: <ul style="list-style-type: none"> • integrity of: case, glass, crown, pushers, bracelet/ strap • security of bracelet/strap ○ assess the water resistance of the case by testing 	use structured observation and the selection and use of suitable test equipment to determine the condition of mechanical and quartz watches both before and after opening the case and during dismantling,. Produce a condition report for the watch movement, watch case and bracelet / strap and the water resistance of the case.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Assessment of the Condition of Watches, continued	PT PD	2 be able to decide and record appropriate levels of intervention	<ul style="list-style-type: none"> • decide movement servicing procedure from the analysis of information gained from observation/use of calibrated test equipment: <ul style="list-style-type: none"> ○ interpret results gained from the use of calibrated test equipment: mechanical watches, quartz watches ○ identify worn/damaged/corroded components requiring replacement ○ identify components requiring adjustment ○ decide suitable cleaning procedure for: mechanical movements, quartz movements • decide the case and bracelet refinishing/refurbishment treatment programme from an analysis of information gained by observation/use of calibrated test equipment for water resistance: <ul style="list-style-type: none"> ○ interpret results gained from the use of calibrated water resistance test equipment ○ identify worn/damaged components requiring replacement: crown, pushers, seals, glasses 	use results from observations and testing to decide servicing procedures for quartz and mechanical watch movements and the refurbishment of watch cases and bracelets.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Assessment of the Condition of Watches, continued	PT PD	2 be able to decide and record appropriate levels of intervention, continued	<ul style="list-style-type: none"> ○ decide suitable refinishing/refurbishment procedures: case, bracelet ○ decide suitable cleaning procedure for case components ● follow company procedures for recording test results, observations and outcomes (simulated using recording procedures for Practical Servicing Test) 	Continuation from previous page.	Continuation from previous page.
The Refurbishment of Watch Cases and Bracelets	PT PD	1 be able to select and use appropriate tools, equipment, materials and techniques to open different types of watch cases	<ul style="list-style-type: none"> ● identify case construction: one piece, two piece, three piece, ● identify method of opening: <ul style="list-style-type: none"> ○ snap ○ screwed ○ with screws ○ claw tool (crystal lift) ● select and use appropriate case opening tools: <ul style="list-style-type: none"> ○ case knife ○ lever case openers ○ bench case openers ○ screw back tools ○ claw tool (crystal lift) 	identify the type of case construction and method of opening. Select and use appropriately, case opening tools listed case opening tools to open the case without damage.	as for Pass.
		2 be able to remove / replace watch movements	<ul style="list-style-type: none"> ● remove / replace the watch stem: <ul style="list-style-type: none"> ○ identify stem construction: one piece, two piece ○ remove stem: one piece, two piece ● remove watch movements fitted by: case ring, case screws 	identify the stem construction and remove one piece stems and two piece stems. Can remove watch movements fitted by case rings and case screws without damage.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Refurbishment of Watch Cases and Bracelets, continued	<p style="text-align: center;">PT PD</p>	<p>3 be able to refinish polished and grained surfaces of the watch case and bracelet</p>	<ul style="list-style-type: none"> • select and use suitable equipment for polishing/graining case components, bracelet: <ul style="list-style-type: none"> ○ grain between lugs using linisher ○ refinish case back bevel using abrasive sticks/lapping machine ○ grain case back using abrasive paper • select and use suitable mops, wheels, polishing compound, protection film: <ul style="list-style-type: none"> ○ use hard/soft polishing mop ○ use suitable polishing compound, according to material/finish: coarse (e.g. Hyfin), fine (e.g. Polinum), • apply protection film for masking (e.g. Kaptan tape/dots) 	<p>select and use suitable mops and polishing compound for refinishing polished and grained surface on watch cases and bracelets. Can apply protection film for masking polished / grained surfaces.</p> <p>Finishing may be slightly under / over finished; graining similar but may not perfectly matching; be consistent; directionally aligned without 'stops and starts' and a good joint between polished and grained surfaces, occasional slight 'blurring' is acceptable.</p>	<p>select and use suitable mops and polishing compound for refinishing polished an grained surface on watch cases and bracelets. Can apply protection film for masking polished / grained surfaces.</p> <p>Finishing should be 'sympathetic', acceptable for a few minor blemishes to remain; graining must match original and be consistent; directionally aligned without 'stops and starts' and a perfect joint between polished and grained surfaces.</p>
		<p>4 be able to prepare and reassemble components (e.g. gaskets, glasses, pushers) and reseal watch cases</p>	<ul style="list-style-type: none"> • clean case components and bracelet: <ul style="list-style-type: none"> ○ ultrasonic cleaning ○ steam cleaning • dry case and bracelet components • fit case components: <ul style="list-style-type: none"> ○ seals ○ crown and stem: <ul style="list-style-type: none"> • cutting to length • securing (using thread seal) ○ ensure fitting is within tolerance: <ul style="list-style-type: none"> • clearance • concentricity 	<p>clean case and bracelet components by ultrasonic and steam cleaning, dry and fit case components including seals, gaskets, glasses and pushers. Fit new crown to stem to give correct clearance between the crown and the case; the crown without 'wobble' when viewed with an eyeglass. Reseal watch cases.</p>	<p>as for Pass.</p>

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Refurbishment of Watch Cases and Bracelets	PT PD	4 be able to prepare and reassemble components (e.g. gaskets, glasses, pushers) and reseal watch cases, continued	<ul style="list-style-type: none"> • bracelet/strap using spring bar tools • fit case backs: <ul style="list-style-type: none"> ○ replace gasket ○ fit case back: <ul style="list-style-type: none"> • snap back – closing press • screwed – handheld, bench mounted, brand specific, • with screws 	Continuation from previous page.	Continuation from previous page.
The Service and Repair of Watch Movements	PT PD	1 be able to select and use appropriate tools, equipment, materials and techniques to service and repair watch movements	<ul style="list-style-type: none"> • choose appropriate tools and equipment to service and repair watch movements: <ul style="list-style-type: none"> ○ select suitable tools for watch service and repair, for example: screwdrivers (various sizes), tweezers (nos. ½, 5, brass), eyeglass (3.5x25 mm, 10X, 25X), hand removing levers, mainspring winder, movement holder (with/without jewel support), oilers, blower, cannon pinion removing tool, Horia tool, jewellery tool, staking set, incabloc stakes and punches, oscillating weight bearing tool, poising tool, pallet jewel adjusting tool and heater ○ ensure that tools and equipment for watch servicing and repairing are in a suitable condition for use 	select suitable tools, equipment, materials and techniques for the servicing of quartz and mechanical watch movements. Can correct poise errors with the use of a poising tool / dynamic poising and identify and correct cyclical errors.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PT PD	1 be able to select and use appropriate tools, equipment, materials and techniques to service and repair watch movements, continued	<ul style="list-style-type: none"> ○ select suitable equipment for watch service and repair, for example: quartz watch testing equipment (Witschi Watch Handy 2, or equivalent), mechanical watch timing machine (Witschi Watch Master 1, or equivalent), microscope • use appropriate tools and equipment to service and repair watches: <ul style="list-style-type: none"> ○ use hand tools for dismantling watches ○ use hand tools for repair and adjustment: <ul style="list-style-type: none"> • replacing shock springs • cannon pinion tightness • poising balance • adjusting balance spring • replacing jewels • adjusting endshake • adjusting pallet jewels • replacing oscillating weight bearing ○ use quartz watch testing equipment to verify movement is working within specification: <ul style="list-style-type: none"> • stepping motor pulses • coil resistance • average consumption • integrated circuit consumption • lower working voltage • end of life 	Continuation from previous page.	Continuation from previous page.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PT PD	1 be able to select and use appropriate tools, equipment, materials and techniques to service and repair watch movements, continued	<ul style="list-style-type: none"> • use appropriate tools and equipment to service and repair watches, continued: <ul style="list-style-type: none"> ○ use mechanical watch timing machine to ensure the movement operation is within manufacturer's specification: <ul style="list-style-type: none"> • beat • amplitude • rate (in positions) • dynamic poising • poise error • cyclical errors 	Continuation from previous page.	Continuation from previous page.
	PT PD	2 be able to dismantle the movement	<ul style="list-style-type: none"> • be able to establish the position of components prior to dismantling: <ul style="list-style-type: none"> ○ make notes, diagrams to aid reassembly ○ access manufacturer's technical information: <ul style="list-style-type: none"> • identify calibre number • obtain technical information • be able to dismantle quartz analogue movements in accordance with good practice and company procedures • be able to dismantle manual and automatic winding, day/date mechanical movements in accordance with good practice and company procedures 	can dismantle quartz and mechanical watch movements without damage in accordance with good practice and company procedures.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PT PD	3 be able to ensure components are in a suitable condition for re-assembly	<ul style="list-style-type: none"> • verify condition of watch components: <ul style="list-style-type: none"> ○ assess visually the condition of components, prior to/during/after dismantling: <ul style="list-style-type: none"> • wear • damage • corrosion ○ correct faults to ensure components are suitable for re-assembly: <ul style="list-style-type: none"> • by component replacement • by adjustment • clean watch components: <ul style="list-style-type: none"> ○ clean watch components using suitable equipment and fluids: <ul style="list-style-type: none"> • watch cleaning machine, rotary/ ultrasonic • manual cleaning, pegwood, pith, swabs, hairspring degreaser • apply surface treatment (if specified by manufacturer): <ul style="list-style-type: none"> ○ identify components requiring Fixodrop from manufacturer's technical information ○ clean component with Isopropanol (according to rinse being used) ○ apply Fixodrop according to manufacturer's instructions 	verify the condition of watch components, correct faults, clean watch components and, where specified by the manufacturer, apply surface treatment without errors.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PD	4 be able to specify replacement components	<ul style="list-style-type: none"> • source replacement components: <ul style="list-style-type: none"> ○ use manufacturer’s technical information to identify component description and reference number ○ use alternative nomenclature to identify watch components 	source replacement components using manufacturer’s technical information to identify components.	source replacement components using manufacturer’s technical information to identify components. Is familiar with alternative nomenclature for watch components.
	PT PD	5 be able to re-assemble, lubricate and adjust the movement components	<ul style="list-style-type: none"> • reassemble quartz analogue watches in accordance with good practice and company procedures: • reassemble manual wind and automatic, day date mechanical watches in accordance with good practice and company procedures: • lubricate components during/after assembly: <ul style="list-style-type: none"> ○ identify required lubricants from the manufacturer’s technical information ○ select suitable oiler (manual / auto), to apply lubricant in required quantity: <ul style="list-style-type: none"> • train pivots • balance staff pivots • mainspring: manual, automatic • keyless work • calendar work • automatic winding components 	re-assemble quartz analogue and mechanical watch movements in accordance with good practice with lubrication in accordance with the manufacturer’s Technical Information: <ul style="list-style-type: none"> a. quartz watch, pass all the criteria for oiling: <ul style="list-style-type: none"> i. all recommended points oiled. ii. correct oil used for each oiling point. iii. slight extraneous oil permitted. b. automatic watch, pass all the criteria for oiling: <ul style="list-style-type: none"> i. all recommended points oiled. ii. correct oil used for each oiling point. iii. slight extraneous oil permitted. 	re-assemble quartz analogue and mechanical watch movements in accordance with good practice with lubrication in accordance with the manufacturer’s Technical Information: <ul style="list-style-type: none"> a. quartz watch, pass 80% of the criteria for oiling at Distinction: <ul style="list-style-type: none"> i. all points oiled. ii. correct oil used for each oiling point. iii. correct quantity of oil. iv. no extraneous oil. b. automatic watch, pass 80% of the criteria for oiling at Distinction: <ul style="list-style-type: none"> i. all points oiled. ii. correct oil used for each oiling point. iii. correct quantity of oil. iv. no extraneous oil. v. Use of Fixodrop as recommended.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PT PD	6 be able to ensure the serviced movement meets the company's and manufacturer's operational specification	<ul style="list-style-type: none"> • ensure the operation of the assembled quartz movement meets the company's and manufacturer's specification: <ul style="list-style-type: none"> ○ obtain recommended operational parameters from manufacturer's technical information ○ use quartz watch test equipment to verify movement operates within the manufacturer's recommended parameters: average consumption, lower working voltage, end of life ○ correct any defects which are identified • ensure the operation of the assembled mechanical movement meets the manufacturer's specification: <ul style="list-style-type: none"> ○ obtain recommended operational parameters from the company's/manufacturer's technical information ○ use mechanical watch test equipment to verify movement operates within the company's/manufacturer's recommended parameters: beat, amplitude, rate (in positions), isochronism, power reserve 	ensure the serviced movement meets the company's and manufacturer's specification.	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
The Service and Repair of Watch Movements, continued	PT	7 be able to ensure the serviced movement meets the company's specification, cleanliness	<ul style="list-style-type: none"> • ensure the serviced mechanical movement meets the company's specification, cleanliness: <ul style="list-style-type: none"> ○ dust and dirt 	service watch movements ensuring there is no visible debris, hair(s), one or two specks of dust permitted	service watch movements ensuring the movement is free from visible debris, dust, hair(s)
Quality	PT PD	1 be able to inspect serviced watches for compliance with standards specified by the company and the manufacturer	<ul style="list-style-type: none"> • verify the conformance of serviced watches to company's and manufacturers requirements: <ul style="list-style-type: none"> ○ test for water resistance: <ul style="list-style-type: none"> • pressure test • wet test • condensation test (hotplate) ○ check operation of stem ○ check glass, dial, hands are free from: dust, debris, fingerprints ○ check case, dial, hands are free from damage ○ quartz watches, for: <ul style="list-style-type: none"> • rate • operation of stop lever and switch ○ mechanical watches, for: <ul style="list-style-type: none"> • rate in positions • amplitude • automatic winding • correct faults identified during inspection 	verify conformance of serviced watches to company's and manufacturer's requirements using appropriate procedures and standards specified by the company and the manufacturer	as for Pass.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Quality, continued	PD	2 be able to complete records in accordance with company policy	<ul style="list-style-type: none"> • record work undertaken in accordance with company policy: <ul style="list-style-type: none"> ○ explain the importance of record keeping ○ understand the company procedure for record keeping ○ complete company records reliably and legibly (simulated using recording procedures for Practical Servicing Test) 	complete company records reliably and legibly.	complete company records reliably and legibly and can explain the contribution of effective record keeping to the efficient management of the company.
	PD	3 use the appropriate language when communicating (with both customer and company)	<ul style="list-style-type: none"> • communicate effectively with company and customer: <ul style="list-style-type: none"> ○ consider the details that are to be conveyed to the client/employer ○ use appropriate technical language ○ explain technical principles simply and effectively ○ anticipate problems that might arise ○ verify with the client/employer whether conversation has been understood 	deal with basic technical enquiries and client interaction.	demonstrate effective communication to resolve issues and communicate with clients effectively in a wide range of situations.
	PD	4 manage time effectively	<ul style="list-style-type: none"> • work within the parameters of the company working day: <ul style="list-style-type: none"> ○ arrive and commence work punctually ○ plan work effectively within the restrictions of the working day ○ demonstrate a conscientious attitude towards breaks /stoppages 	follow the schedule of the working day, plan servicing activity and maintain focus during the day.	follow the schedule of the working day, plan servicing activity to complete work within company timescales; adapt work plans to reflect changing situations. Co-ordinate work activity alongside colleagues.

Skills	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Quality, continued	PD	4 manage time effectively, continued	<ul style="list-style-type: none"> • work within company timescales for servicing and repairing watches: <ul style="list-style-type: none"> ○ ensure all tools and equipment are available prior to commencing work ○ plan work to achieve objectives within company timescales ○ adapt work plans to reflect changing situations ○ co-ordinate work activity alongside fellow workers 	Continuation from previous page.	Continuation from previous page.

Behaviours	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Making it Happen	PT	1 be able to complete tasks, adapt work plans to reflect changing situations, organise work space effectively	<ul style="list-style-type: none"> break down complex tasks into stages allocate time and resources to work efficiently adapt to changing situations maintain a tidy working environment and replace equipment after use 	maintain a tidy, organized work bench while servicing watches and plan the use of time and resources effectively, readily adapt to changing situations	as for Pass.
	PD	2 be able to work in accordance with principles for health and safety	<ul style="list-style-type: none"> understand the importance of PPE (Personal Protective Equipment) routinely work safely in the workshop 	can describe the requirements of PPE and safe working practices when servicing watches.	can explain the requirements of PPE and safe working practices when servicing watches and understand the importance of PPE, its application to watch servicing and give examples in the watch servicing workshop.
	PD	3 be able to identify with environmental and ethical issues	<ul style="list-style-type: none"> identify with the appropriate disposal of batteries and cleaning fluids recognize counterfeit watches / generic components are damaging to the industry identify with ethical issues such as the return of parts to the client 	name the hazards to the environment by inappropriate disposal of batteries and cleaning fluids; identify counterfeit watches and generic components and respect the need for high ethical standards.	explain and demonstrate sympathy with the need to minimise damage to the environment; explain how counterfeit watches and generic parts harm the industry and understand ethical issues such as the return of parts.
Learning to Learn and Striving for Excellence	PD	1 be able to keep up to date with new developments, show a passion for watches	<ul style="list-style-type: none"> demonstrate a passion for watches maintain an awareness of new materials and movements show an understanding of historical and contemporary context of watchmaking 	give examples of innovations in watchmaking	show enthusiasm for developments in watchmaking and is able to discuss innovations in a historical context.

Behaviours	Assessed during	Learning Outcomes The Apprentice will:	Assessment Criteria The Apprentice can:	Pass The Apprentice can:	Distinction The Apprentice can:
Communication and Presentation	PD	1 be able to initiate communication confidently to further the work process, complete internal documentation promptly and with attention to detail, show appropriate body language and attitude	<ul style="list-style-type: none"> initiate conversation use questions confidently and appropriately exhibit appropriate body language and attitude when dealing with colleagues approach colleagues with respect 	discuss technical queries with colleagues to a successful conclusion.	approach colleagues appropriately to initiate effective discussion concerning technical issues.
		2 wear appropriate clothing; present a clean and tidy appearance.	<ul style="list-style-type: none"> recognize the need for appropriate clothing at all times present a clean and tidy appearance 	understand the need for appropriate clothing to be worn in the watch servicing environment.	always present a clean and tidy appearance and explain the need for appropriate clothing to be worn in the watch servicing environment.