



SERVICE LETTER

Information on the globally standardized iRMT training program for ROTAX® Aircraft Engines

ATA System: 72-00-00 Engine

1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

1.1) Applicability

All versions of ROTAX® engines types:

Engine type	Serial number
912 (Series)	all
914 (Series)	all
912 iS (Series)	all
915 iS (Series)	all
2-stroke UL aircraft engines	all

1.2) Concurrent ASB/SB/SI and SL

None.

1.3) Reason

ROTAX® Aircraft Engines are used all over the world. To assure maximum quality, BRP-Rotax GmbH & Co KG must be able to rely on quality engine operators/owners (pilots) and maintenance personnel in the field. To provide the relevant knowledge technical education (consisting of learning and training) is the key factor.

With the introduction of its globally standardized iRMT (independent Rotax Maintenance Technician) training program for ROTAX® Aircraft Engines, BRP-Rotax has achieved a process of expanding its global support using a recognizable system. This globally standardized iRMT program covers different scopes of work, target audiences and educational levels ranging from familiarization to overhauling the ROTAX® Aircraft Engines.

1.4) Subject

Information on the globally standardized iRMT training program for ROTAX® Aircraft Engines.

1.5) Compliance

NONE - For Information Only.

1.6) Approval

None.

1.7) Labor time

None.

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1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

1.9) Electrical load data

No change.

1.10) Software modifications

No change.

1.11) References

NOTE:

The status of the Manuals can be determined by checking the table of amendments. The 1st column of this table shows the revision status. Compare this number to that listed on the ROTAX WebSite: www.FLYROTAX.com. Updates and current revisions can be downloaded for free.

1.12) Other Publications affected

None.

1.13) Interchangeability of parts

- Not affected

2) Material Information

Not relevant.

3) Accomplishment/Instructions

- ROTAX® reserves the right to make any amendments to existing documents, which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

3.1) Benefits

Technicians who participate in this training program are identifiable as having met a high standard of training, knowledge and experience on ROTAX® Aircraft Engines to serve our end use customers.

The holder of a current valid iRMT certificate of completion may use the iRMT logo to display their appropriate level of training to a ROTAX® global training standard.

NOTICE

ONLY an approved individual who holds a current valid certificate for successful completion of an iRMT course may use and display the ROTAX® iRMT logo.



Fig. 1
ROTAX® iRMT Logo

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3.2) Course levels and content

See appendix for a brief overview of 5 main iRMT course levels, examples of certificates and information on Intended Learning Outcomes (ILOs) and other information like course length, prerequisites to attend a relevant course, intended audience, topics, etc.. For further detailed information on each course and dates and times of courses, contact the ROTAX® Authorized Distributor or their independent Service Centers.

NOTICE

Same also applies for relevant Refresher Courses, Special Courses etc.

3.3) Summary

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX® scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

3.4) Enquiries

Enquiries regarding the independent Rotax Maintenance Technician (iRMT) training program including a list of approved training facilities and training schedules should be sent to the ROTAX® Authorized Distributor or their independent Service Centers of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on www.FLYROTAX.com.

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4) Appendix

The following drawings should convey additional information:

THE iRMT TRAINING PYRAMID IS BUILT ON 5 MAIN LEVELS

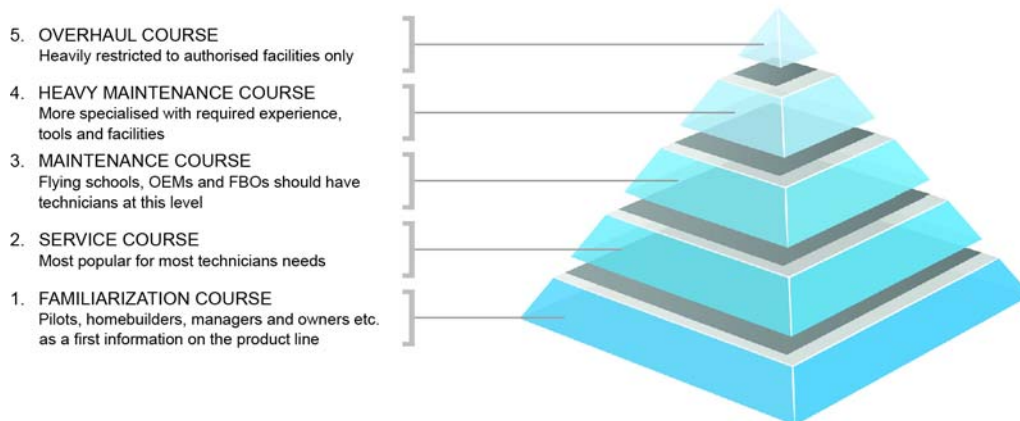


Fig. 2
iRMT Training pyramid

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All participants will receive one of the following iRMT certificates at the end of the course. These certificates are valid for 24 months from date of invoice..

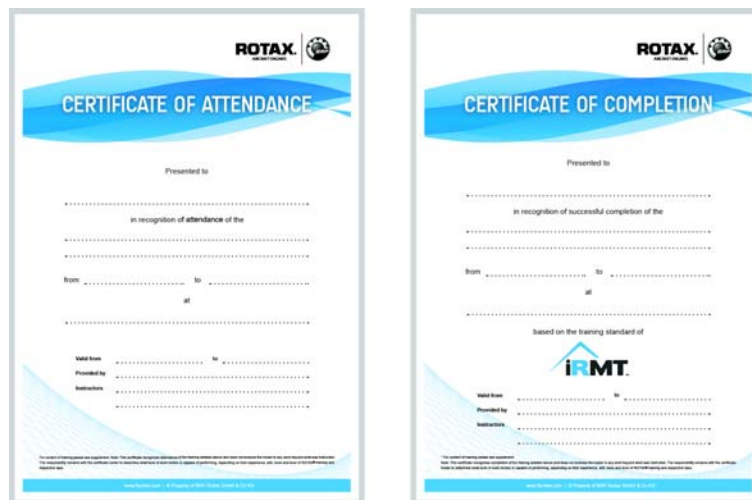


Fig. 3
Certificates

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NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function.

Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.

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4.1) Intended Learning Outcomes (ILOs)

4.1.1) Familiarization ROTAX® Aircraft Engines

Applicable engine types	912 Series, 914 Series, 912 i Series, 915 i Series.
Recommended course length	min. 4 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	This course gives basic knowledge of ROTAX® Aircraft Engines and information on the different systems and engine operation.
Prerequisites	General technical knowledge.
Intended audience	This course is intended for people with interest in ROTAX® Aircraft Engine history and product line.
Topics and learning objects	<ul style="list-style-type: none"> - Company presentation - Presentation of product line and applications - Description of design - Technical data - Technical publication (types and where to obtain) - Description of system - Operating instructions - Emergency procedures (Operators Manual) - Preflight checks
Hands-on	Not foreseen.
Methods	Multimedia presentation.
Training aids, equipment	If available, fully equipped training engine (can also be installed in an airplane).
Intended agenda	<ul style="list-style-type: none"> - 100% lecture with multimedia aids
Assessment	Not foreseen.
Skills/Competence acquired	Be familiar with the ROTAX® Aircraft Engines Product Line.
Certification/validity	None.
Recurrent training	None.

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4.1.2) Service ROTAX® Aircraft Engines

Applicable engine types	912 Series, 914 Series, 912 i Series, 915 i Series.
Recommended course length	min. 12 hours, recommended 16 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	This course gives the necessary knowledge to perform service on ROTAX® Aircraft Engines including 100/200 hour inspection and annual inspection.
Prerequisites	<ul style="list-style-type: none"> - Completion of Familiarization course - Technician must show/demonstrate basic knowledge of ROTAX® Aircraft Engine product line
Intended audience	Persons seeking in-depth knowledge for the proper operation and service of the ROTAX® Aircraft Engines.
Topics and learning objects	<ul style="list-style-type: none"> - Technical publications & communications - Engine systems - Inspection of engine systems like but not limited to: <ul style="list-style-type: none"> • Ignition system • EMS (only 912 i Series and 915 i Series) • Cooling system • Lubrication system • Fuel system • Carburetion incl. inspection of a float bowl at 200 hour (only 912 Series and 914 Series) • Fuel injection (only 912 i Series and 915 i Series) • Turbo charger (only 914 Series and 915 i Series) • Gearbox • Instrumentation systems - Service and troubleshooting issues
Hands-on	Yes; on engine and different components; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped training engine (can also be installed in an airplane). Fully equipped special tools.

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Intended agenda	<ul style="list-style-type: none"> - 50% lecture - 40% practical/hands-on - 10% exam/test
Assessment	Theoretical. Open books are mandatory as this promotes proper research into technical publications. Hands-on.
Skills/Competence acquired	Service ROTAX® Aircraft Engines.
Name of certification/eligibility/validity	Service ROTAX® Aircraft Engines. Eligibility to attend a Maintenance Course for ROTAX® 912 Series / 914 Series or a Maintenance Course for 912 i Series / 915 i Series. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

4.1.3) Maintenance ROTAX® 912 Series / 914 Series

Applicable engine types	912 Series, 914 Series.
Recommended course length	min. 12 hours, recommended 16 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	Additional to Familiarization course and Service course this course gives the technician the necessary knowledge required to exchange LRUs on a ROTAX® 912 Series / 914 Series (e.g. in the field).
Prerequisites	<ul style="list-style-type: none"> - Completion of a Service course for ROTAX® Aircraft Engines within the last 24 months - Technician must show/demonstrate experience servicing ROTAX® Aircraft Engine product line
Intended audience	Maintenance technicians seeking in-depth knowledge for the proper maintenance of the ROTAX® 912 Series / 914 Series.

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Topics and learning objects	<ul style="list-style-type: none"> - Detailed maintenance issues, procedures, removal and replacement of the following components (LRUs), but not limited to: - “Core engine module” <ul style="list-style-type: none"> • Cylinder heads • Cylinder/pistons • Intake/exhaust systems • Starter • Oil pump • Turbo charger - “Carburetor specific module” <ul style="list-style-type: none"> • Carburetors • Ignition system • Gearbox • Servo motor and TCU (only 914 Series) • Sensors • Wiring harness • Airbox <p>EXCLUDED: removal of ignition housing</p> <p>NOTE: The LRUs mentioned above must not be disassembled, only removal/replacement is within the scope of this course.</p> <ul style="list-style-type: none"> - Maintenance and troubleshooting issues - Create proper standardized technical reports e.g. MDR report
Hands-on	Yes; on engine and individual components; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped training engine (can also be installed in an airplane). Fully equipped special tools for service and maintenance.
Intended agenda	<ul style="list-style-type: none"> - 5% introduction general - 45% lecture - 40% practical/hands-on - 5% exam/test
Assessment	Theoretical. Open books are mandatory as this promotes proper research into technical publications. Hands-on.
Skills/Competence acquired	Maintain a ROTAX® 912 Series / 914 Series.

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Name of certification/eligibility/validity	Maintain a ROTAX® 912 Series / 914 Series. Eligibility to attend a Heavy Maintenance course for ROTAX® 912 Series / 914 Series. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

4.1.4) Maintenance ROTAX® 912 i Series / 915 i Series

Applicable engine types	912 i Series, 915 i Series.
Recommended course length	min. 12 hours, recommended 16 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	Additional to Familiarization course and Service course this course gives the technician the necessary knowledge required to exchange LRUs on a ROTAX® 912 i Series / 915 i Series (e.g. in the field).
Prerequisites	<ul style="list-style-type: none"> - Completion of a Service course for ROTAX® Aircraft Engines within the last 24 months - Technician must show/demonstrate experience servicing ROTAX® Aircraft Engine
Intended audience	Maintenance technicians seeking in-depth knowledge for the proper maintenance of the ROTAX® 912 i Series / 915 i Series.

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Topics and learning objects	<ul style="list-style-type: none"> - Detailed maintenance issues, procedures, removal and replacement of the following components (LRUs), but not limited to: - "Core engine module" <ul style="list-style-type: none"> • Cylinder heads • Cylinder/pistons • Intake/exhaust systems • Starter • Oil pump • Turbo charger - "Injection specific module" <ul style="list-style-type: none"> • Fuel injection system • Ignition system • EMS (ECU, fuse box,...) • Gearbox • Pneumatic system of over boost valve (only 915 i Series) • Sensors • Wiring harness • Airbox <p>EXCLUDED: removal of ignition housing</p> <p>NOTE: The LRUs mentioned above must not be disassembled, only removal/replacement is within the scope of this course.</p> <ul style="list-style-type: none"> - Maintenance and troubleshooting issues - Create proper standardized technical reports e.g. MDR report
Hands-on	Yes; on engine and individual components; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped training engine (can also be installed in an airplane). Fully equipped special tools for service and maintenance.
Intended agenda	<ul style="list-style-type: none"> - 5% introduction general - 45% lecture - 45% practical/hands-on - 5% exam/test
Assessment	Theoretical. Open books are mandatory as this promotes proper research into technical publications. Hands-on.
Skills/Competence acquired	Maintain a ROTAX® 912 i Series / 915 i Series.

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Name of certification/eligibility/validity	Maintenance ROTAX® 912 i Series / 915 i Series. Eligibility to attend a Heavy Maintenance course for ROTAX® 912 i Series / 915 i Series. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

4.1.5) Heavy Maintenance ROTAX 912 Series / 914 Series

Applicable engine types	912 Series, 914 Series.
Recommended course length	min. 16 hours, recommended 24 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	Additional to Familiarization course, Service course and Maintenance course; this course gives the technician the necessary knowledge required to repair ROTAX® 912 Series, 914 Series Aircraft Engines and its components (mainly performed in a workshop environment).
Prerequisites	<ul style="list-style-type: none"> - Completion of a Service and Maintenance ROTAX® 912 Series / 914 Series course within the last 24 months - Technician must show/demonstrate experience on maintaining 912 Series / 914 Series for a min. of 2 years
Intended audience	Maintenance personnel seeking in-depth Heavy Maintenance information on ROTAX® 912 Series / 914 Series

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Topics and learning objects	<p>Detailed Heavy Maintenance issues and procedures like hands-on tear down, inspection and re-assembly of the following components but not limited to:</p> <ul style="list-style-type: none"> - “Core engine module” <ul style="list-style-type: none"> • Cylinder heads • Cylinder/pistons • Intake/exhaust system • Starter • Oil pump • Turbo charger • Ignition housing/water pump/sprag clutch • Valve train • Exchange of block engine - “Carburetor specific module” <ul style="list-style-type: none"> • Carburetors • Ignition system • Gearbox/checking of friction torque/checking of slipping (overload) torque/setting shimming • Servo motor and TCU (only 914 Series) • Sensors • Wiring harness • Airbox <p>EXCLUDED:</p> <ul style="list-style-type: none"> • Splitting of crankcase • Disassembly/assembly of the overload clutch
Hands-on	Yes; on engine and different components in detail; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped training engine. Fully equipped special tools for service, maintenance and heavy maintenance.
Intended agenda	<ul style="list-style-type: none"> - 5% introduction general - 30% lecture - 60% practical/hands-on - 5% exam/test
Assessment	Theoretical. Open books are encouraged as this promotes proper research into technical publications. Hands-on.

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Skills/Competence acquired	Repair components and engine ROTAX® 912 Series / 914 Series.
Name of certification/eligibility/validity	Heavy Maintenance ROTAX 912 Series / 914 Series. Eligibility to attend an Overhaul course for ROTAX® Aircraft Engines. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

4.1.6) Heavy Maintenance ROTAX 912 i Series / 915 i Series

Applicable engine types	912 i Series, 915 i Series.
Recommended course length	min. 16 hours, recommended 24 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL)
Overview/aim	Additional to Familiarization course, Service course and Maintenance course; this course gives the technician the necessary knowledge required to repair ROTAX® 912 i Series, 915 i Series Aircraft Engines and its components (mainly performed in a workshop environment).
Prerequisites	<ul style="list-style-type: none"> - Completion of a Service and Maintenance ROTAX® 912 i Series / 915 i Series course within the last 24 months - Technician must show/demonstrate experience on maintaining ROTAX® 912 i Series / 915 i Series for a min. of 2 years
Intended audience	Maintenance personnel seeking in-depth Heavy Maintenance information on ROTAX® 912 i Series / 915 i Series.

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Topics and learning objects	<p>Detailed Heavy Maintenance issues and procedures like hands-on tear down, inspection and re-assembly of the following components but not limited to:</p> <ul style="list-style-type: none"> - “Core engine module” <ul style="list-style-type: none"> • Cylinder heads • Cylinder/pistons • Intake/exhaust system • Starter • Oil pump • Turbo charger • Ignition housing/water pump/sprag clutch • Valve train • Exchange of block engine - “Injection specific module” <ul style="list-style-type: none"> • Fuel injection system • Ignition system • EMS (ECU, fuse box,..) • Gearbox/checking of friction torque/checking of slipping (overload) torque/setting shimming Pneumatic system of over boost valve (only 915 i Series) • Servo motor and TCU (only 915 i Series) • Sensors • Wiring harness • Airbox <p>EXCLUDED:</p> <ul style="list-style-type: none"> • Splitting of crankcase • Disassembly/assembly of the overload clutch
Hands-on	Yes; on engine and different components in detail; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped training engine. Fully equipped special tools for service, maintenance and heavy maintenance.
Intended agenda	<ul style="list-style-type: none"> - 5% introduction general - 30% lecture - 60% practical/hands-on - 5% exam/test

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Assessment	Theoretical. Open books are encouraged as this promotes proper research into technical publications. Hands-on.
Skills/Competence acquired	Repair components and engine ROTAX® 912 i Series / 915 i Series.
Name of certification/eligibility/validity	Heavy Maintenance ROTAX® 912 i Series / 915 i Series. Eligibility to attend an Overhaul course for ROTAX® Aircraft Engines. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

4.1.7) Overhaul ROTAX® Aircraft Engines

Applicable engine types	912 Series, 914 Series, 912 i Series, 915 i Series.
Recommended course length	min. 40 hours, recommended 60 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL) - Overhaul Manual and Appendix
Overview/aim	For ROTAX® authorized overhaul facilities this course gives their technician the necessary knowledge required to overhaul the engine and components on ROTAX® 912 Series, 914 Series, 912 i Series, 915 i Series.
Prerequisites	<ul style="list-style-type: none"> - Completion of a Service, Maintenance and Heavy Maintenance ROTAX® 912 Series / 914 Series and a Service, Maintenance and Heavy Maintenance ROTAX® 912 i Series / 915 i Series within the last 24 months and - Technician must show/demonstrate experience in doing repair on ROTAX® 912 Series / 914 Series and ROTAX® 912 i Series / 915 i Series for a min. of 5 years
Intended audience	This course is intended for qualified individuals only, which are associated to an overhaul facility and must provide proof of access to calibrated tools, test bench, dyno etc.

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Topics and learning objects	Hands-on teardown, evaluation and reassembly of ROTAX® 912 Series, 914 Series, 912 i Series, 915 i Series: <ul style="list-style-type: none"> - Complete disassembly including splitting crank case - Inspection, measurement and qualification of systems, components and parts - Hands on re-working of cylinder heads etc. - Notes of areas of concern etc. - Proper documentation procedures
Hands-on	Yes; on full assembled and disassembled engine and different components in detail; must be able to demonstrate technical confidence on the given learning objects.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	Fully equipped engine. Fully equipped special tools for service, maintenance, heavy maintenance and overhaul. Dyno or test rig.
Intended agenda	<ul style="list-style-type: none"> - 5% introduction general - 10% lecture - 80% practical/hands-on - 5% exam/test
Assessment	Instructor evaluation of student's performance in completion of overhaul, overhaul appendix and test run.
Skills/Competence acquired	Overhaul components and engines of ROTAX® 912 Series, 914 Series, 912 i Series, 915 i Series.
Name of certification/eligibility/validity	Overhaul ROTAX® Aircraft Engines. Valid only for 24 month from date of issue.
Recurrent training	With focus on the amendments and changes to ICAs since the last course.

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4.1.8) Refresher courses for renewal of iRMT ratings

As the standard validity of iRMT ratings expires two years after completion of the relevant course ROTAX® Authorized Distributors have to offer “refresher courses” (e.g. Refresher course on Maintenance ROTAX® 912 Series / 914 Series).

Applicable engine types	912 Series, 914 Series, 912 i Series, 915 i Series.
Recommended course length	min. 6 hours, recommended 8 hours.
Technical publication reference	The current version of: <ul style="list-style-type: none"> - Installation Manual - Operators Manual - Maintenance Manual (Line) - Maintenance Manual (Heavy) - Illustrated Parts Catalog - Service Information (ASB, SB, SI, SL) - Overhaul Manual and Appendix (overhaul class only)
Overview/aim	This course is aimed to provide the basis for the renewal of an expiring iRMT rating (except Familiarization).
Prerequisites	<ul style="list-style-type: none"> - Relevant iRMT rating (still valid or at maximum six months expired) - Technician must show/demonstrate experience to the course to be refreshed
Intended audience	Depending on the course to be refreshed.
Topics and learning objects	<ul style="list-style-type: none"> - Mainly depending on the content of the course to be refreshed INCLUDING the topics below - What's new and frequently asked questions - Update on relevant ICAs (e.g. changed procedures in manuals, new service documents, ...)
Hands-on	As required.
Methods	Multimedia presentation. Hands-on training.
Training aids, equipment	As required.
Intended agenda	As required.
Assessment	Theoretical exam equivalent to the course to be refreshed.
Skills/Competence acquired	Depending on the course to be refreshed.
Name of certification/eligibility/validity	Depending on the course to be refreshed. Valid only for 24 month from date of issue.

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Abbreviations	ASB	Alert Service Bulletin
	EMS	Engine Management System
	ICA	Instructions for Continued Airworthiness
	ILO	Intended Learning Outcome
	iRMT	independent ROTAX Maintenance Technician
	LRU	Line Replaceable Unit
	SB	Service Bulletin
	SI	Service Instruction
	TCU	Turbocharger Control Unit
	ECU	Engine Control Unit