

Unit:	Common rail system and exhaust treatment system		
Work tasks that the student should be able to do/solve after completed unit	Repair, change parts and do diagnostics on common rail and exhaust treatment system. Work is mainly carried out on cars.		
Pre requisites:	<ul style="list-style-type: none"> • Basic knowledge of electricity • Basic knowledge about engine management sensors (Airmass sensor, camshaft position sensor, crankshaft position sensor, fuel temperature sensor, high pressure sensor, accelerator pedal position sensor, etc) • Ability to use appropriate tools and keep your workplace in order. • Obey to workshop safety rules. 		
Learning outcomes:	<i>Knowledge</i>	<i>Skills</i>	<i>Competences</i>
	<ul style="list-style-type: none"> • Knows about common rail system parts. 	<ul style="list-style-type: none"> • Is able to use engine workshop manuals. 	<ul style="list-style-type: none"> • Is able to find common rail system parts on vehicle.
	<ul style="list-style-type: none"> • Describes working low pressure pump in schematic diagrams 	<ul style="list-style-type: none"> • Is able to use correct tools and process steps. 	<ul style="list-style-type: none"> • Is able to demount (remove) the low-pressure pump from engine according to the procedure in workshop manuals and do the controls its parts and install again in engine.
	<ul style="list-style-type: none"> • Describes working high pressure pump in schematic diagrams 	<ul style="list-style-type: none"> • Is able to use correct tools and process steps. 	<ul style="list-style-type: none"> • Is able to demount (remove) the high-pressure pump from engine according to the procedure in workshop manuals and do the controls its parts and install again in engine
	<ul style="list-style-type: none"> • Describes if common rail pressure regulator breaks down how engine does 	<ul style="list-style-type: none"> • Is able to measure common rail pressure regulator with test tools. 	<ul style="list-style-type: none"> • Removes the common rail pressure regulator and perform controls.

	work		
	<ul style="list-style-type: none"> • Knows the functions of hydraulic and piezo injectors. 	<ul style="list-style-type: none"> • Measures of injectors multimeter and diagnostic, 	<ul style="list-style-type: none"> • Removes injectors replace and checks be able to perform new injector adaptation
	<ul style="list-style-type: none"> • Is able to check OBD lambs and interview the customer 	<ul style="list-style-type: none"> • Is able to connect diagnostic tool to engine. 	<ul style="list-style-type: none"> • Is able to make controls the sensors of fuel system and diagnostics.
	<ul style="list-style-type: none"> • Knows EGR systems parts and working. 	<ul style="list-style-type: none"> • Shows EGR systems parts in vehicle. 	<ul style="list-style-type: none"> • Is able dismantle EGR valve and check it
	<ul style="list-style-type: none"> • Knows how catalytic convertor does work 	<ul style="list-style-type: none"> • Is able to connect diagnostic tool to engine. 	<ul style="list-style-type: none"> • Is able to find catalytic converter faults.
	<ul style="list-style-type: none"> • Knows how catalytic DPF (diesel particle filter) does work 	<ul style="list-style-type: none"> • Is able to connect diagnostic tool to engine. 	<ul style="list-style-type: none"> • Is able to do DPF (diesel particle filter) regeneration.
Reference to national qualification:	Sweden – Fordon och Transportprogrammet (SeQF 4) France – BTS Après-Vente des Véhicules Automobiles - Option Véhicules Industriels - Classe Europe (poids lourds, camions) Turkey – Engine Vehicle technology Vocational School Turkey The Netherlands – Bedrijfsautotechnicus Finland - Vehicle Sector, competence area in Vehicle Technology, Vehicle Mechanic (EQF 4)		
Reference to EQF/NQF:	The unit is too small to refer to an EQF level. Because it refers to an NQF this is an indirect reference to the EQF to which the regarding NQF belongs.		
ECVET points:	N/A		
Assessment:	Students will be assessed based on their knowledge's, skills and competences given in this unit. Use the related Assessment Grid.		

	<p>The student will be assessed both knowledge and skills.</p> <p>The student will be given a diesel engine. He/she should find the fault in common rail systems and exhaust systems.</p> <p>While he/she is working, he/she uses electrical wiring diagrams and engine workshop manuals.</p> <p>He/she performs all functions according to engine workshop manual steps.</p> <p>Student is able to do the diagnostics of electrical components in the common rail system and exhaust management system and if possible should be done with a multimeter measurements.</p> <p>Students should be able to replace the removed parts.</p> <p>The assessment will be overseen by an assessor/(teacher) who has the proper technical skills. The student will as a complement, create a report, step by step, explaining his/her actions.</p> <p>There will be a hand out to the assessor where he/she can follow the work and make notes.</p>
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