SWBTC	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06	
Eddy De	eprez	+32 2 722 86 89	Links		Replace 2003-0)6-24
	eddy.deprez@scania.be					1



Supply system DC 9

This course relates to the components of the supply system fitted with DC 9 (EDC MS5) engines originally fitted in production on series 4 trucks.

Principal objectives

This online training forms an integrated part of the Scania EDC MS5 course. This module is (or is part of) advance theoretical knowledge needed before being able to take part in the practical course supervised by an instructor. It is essential that you have a perfect command of the contents of this course as the instructor will not repeat these basics. The condition for being able to take part in the practical course is success in the final test of this module.

Estimated duration of the training: 1 hr

SWBTC	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06	
Eddy De	Eddy Deprez +32 2 722 86 89		Links		Replace 2003-0)6-24
eddy.deprez@scania.be					γ	



Self-assessment

This module starts with a self-assessment. This means that you must complete the questionnaire before being able to begin the course. The result will show you the knowledge you already have and of what must be focused on individually. Using the answer "Skip question" at the appropriate time is highly recommended. Do not answer randomly... these questions will return during the final test.

Important

The self-assessment can be accessed only once. The assessment can only be exited by finishing it. The results will be disclosed to you after the tests. You have a time limit per question.

The estimated total duration of the self-assessment is 5 minutes. Good luck!

Start the self-assessment

SWBTC	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06	
Eddy Deprez +32 2 722 86 89		Links		Replace 2003-0	6-24	
eddy.deprez@scania.be					2	
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SCANIA WEB TRAINING	Chapter 1 estimated time Exit Report Go to test
Chapter 1	
	This chapter introduces the basic
	theory, the functionality and location of the supply system components
Remarks	

SWBTC	Fuel supply system DC9 EDC MS5		EDC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez +32 2 722 86 89		Links		Replace 2003-0)6-24	
	eddy.deprez@scania.be					1
						4

SCANIA WEB TRAINING	Module 1 estimated time	Exit Report Go to test
Chapter 1		
(1. System structure		
		This module introduces the general structure of the fuel supply system
Remarks		

SWBTC	Fuel supp	ly system DC9 El	DC MS5	SWBTC_XXX_3_3	3_1_3_EN	Issue 2004-09-06
Eddy Depre	Eddy Deprez +32 2 722 86 89		Text WSM 03	Text WSM 03:01-01 page 4 modified		Replace 2003-06-24
eddy.deprez@scania.be			Ficture 1204	44 110011180		5
SCAN	IA WEB TRAINING	Module 1, pa	age 1	Exit Report	Go to test	
Chap 1. Module t	oter 1 itle	The fuel sys consists of a tank (2) with pick-up unit lines (10), a pump (4), a filter (5) an in pump (6) eq with a fuel va and a return (11), as well injectors (9) return pipes	tem fuel fuel (1), fuel fuel njection uipped alve (7) valve as and (12).			
Remarks						

SWBTC	Fuel s	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN		Issue 2004-0	9-06
Eddy Dep	orez	+32 2 722 86 89	Text WSM 03 Picture 120 4	3:01-01 page 4 - 5 44	I	Replace 2003-0	6-24
eddy.deprez@scania.be						6	
							U

	Module 1, page 2	Exit	Report (Go to test	
Chapter 1 1. Module title	The feed pump suc through the fuel pic then forces it throug filters on to the injec pump. The injection pump the fuel through the pipes to the injector to the combustion of when right pressure achieved.	ks fuel k-up and gh the fuel ction distributes delivery rs and then chambers e is			
	1 Suction line with stra	iner 5 Fuel filter	9 Ir	njector	
	2 Fuel tank	6 Injection pump	10 Return lin	ne	
	3 Fuel level sensor	7 Fuel valve	11 Overflow	valve	
	4 Fuel pump	8 Delivery pipe	12 Leak-off f	fuel pipe	

SWBTC	Fuel s	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy De	eprez	+32 2 722 86 89	Text WSM 03:01-01 page 4 - 5 Picture 120 444		Replace 2003-0)6-24
	eddy.deprez@	scania.be				7

SCANIA WEB	Module 1, page 3	Exit Report Go to test	
Chapter 1 1. Module title	This distribution is carried out at the right time and the quantity of fuel injected corresponds to the power requested from the driver through the accelerator pedal. The system surplus fuel and eventual leak from injectors is returned to the tank through the overflow valve.		
	 Suction line with strainer 5 Fuel filter Fuel tank Injection pump Fuel level sensor Fuel valve Fuel pump Delivery pipe 	9 Injector 10 Return line 11 Overflow valve 12 Leak-off fuel pipe	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Depr	rez	+32 2 722 86 89	TEC 00.01.01.11-01 question 16		Replace 2003-0)6-24
eddy.deprez@scania.be					Q	
						0

SCANIA WEB	Module 1 Exit Report Go to test
Chapter 1	Question 1 (45 sec)
• 1. Module title	In the supply circuit, what is the feed pump used for?
	To draw the fuel from the injectors.
	To bleed the supply circuit.
	To draw the fuel from the fuel filter and send it into the circuit.
	To draw the fuel from the tank and supply the system with fuel.
	Skip Question
	Wrong answer. The correct answer is in this module on page 1.
Remarks	•

SWBTC	Fuel s	l supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Depre	ez	+32 2 722 86 89	Links		Replace 2003-0)6-24
edd	dy.deprez@	scania.be				0
						7

SCANIA WEB TRAINING	Module 2 estimated time Exit Report Go to test
Chapter 1 1. Module title	
2. Fuel tank and lines	This module introduces the components of the fuel tank and lines
Remarks	

SWBTC	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0)9-06	
Eddy Deprez	Z	+32 2 722 86 89	Text WSM 03:01-01 page 6 modified		Replace 2003-	06-24
eddy	y.deprez@	scania.be	Picture 03_02	262 WSM 03:01-01 page 6		10
						IU

SCANIA WEB	Module 2, page 1 Exit Report Go to test
Chapter 1 1. Module title	Scania trucks are supplied with one or two fuel tanks. The fuel line to the engine is connected to the right-hand tank.
2. Module title	Trucks with two tanks therefore have a plastic connection pipe between the two tanks.
	There is a fuel pick-up unit in the fuel tank. This fuel pick-up unit is connected to the injection pump by suction and return lines.
	A third line supplies a possible auxiliary heater.
	The return line from the injection pump is angled towards the strainer at the bottom of the fuel pick-up unit so that the warm return fuel can help to prevent waxing in cold weather.

SWBTC	Fuel suppl	y system DC9 E	CDC MS5	SWBTC	C_XXX_3_3	3_1_3_EN	Issue	2004-09-06
Eddy Depre	Eddy Deprez +32 2 722 86 89		Text WSM 02 Picture 03 02	Text WSM 03:01-01 page 6 Picture 03 0253 WSM 03:01-01 page 6				2003-06-24
edd	y.deprez@scania	1.00	_		1.0			
SCAN	WEB TRAINING	Module 2, p	bage 2	Exit	Report	Go to test		
Chapt 1. Module t 2. Module t	er 1 fitle fitle	The float ac connector v causes it to increased o This enable indicate wha in the tank. A plastic fue suction pipe side membe the engine. Note : The p protected ag e.g. welding	tuates the slip ia the float arr move on the o r decreased re s the fuel leve at quantity of f el line runs from e and follows t er from the tar plastic pipe mu gainst intense g.	o ring n and coil and, via esistance. I gauge to uel remains m the he frame ik towards ist be heat when	1	1 Slip ring conne 2 Coil	ector	
Remarks								

SWBTC Fuel	C Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez	+32 2 722 86 89	New question	l	Replace 2003-0	6-24
eddy.deprez@scania.be					12

SCANIA WEB TRAINING	Module 2	Exit R	Report	Go to test		
Chapter 1	Question 1 (40 sec)					
1. Module title	A vehicle fitted with	two tanks is eq	quipped	with:		
2. Module title	An electric pump whi right-hand tank.	ch automatically	transfer	s the fuel over to	o the	
	A return and suction	line on each tank	k.			
	A plastic connection	pipe between the	e tanks.			
	Two valves which the tanks.	e driver must con	ntrol acco	ording to the stat	us of the	
	Skip Question					
	Wrong answer	. The correct ans	swer is ir	n this module on	page 1.	
Remarks						

SWBTC	Fuel supply system DC9 EDC MS5		SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06	
Eddy De	prez	+32 2 722 86 89	New question	l	Replace 2003-0)6-24
e	ddy.deprez@	scania.be	1			12
						IJ

SCANIA WEB TRAINING	Module 2	Exit Rep	port Go to te	est	
 Chapter 1 Chapter 1 1. Module title 2. Module title 	Module 2 Question 2 (40 sec) The return pipe comit the strainer at the fue To avoid a too significat Avoiding splashes and Warm fuel helping to p Drawing the cleanest the fuel filter. Skip Question	exit Rep ng from the inject of pick-up unit with ant heating of the then the formation prevent waxing in the bossible fuel in ord	ction pump is ith the aim of: tank walls. on of air bubble the event of fre der to lengthen	angled towards	
Remarks	Wrong answer. The	e correct answer is	s in this module	e on page 1.	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	prez	+32 2 722 86 89	Links		Replace 2003-0)6-24
e	ddy.deprez@	scania.be				11
						14

SCANIA WEB TRAINING	Module 3 estimated time Exit Report Go to test
Chapter 1	
2. Module title	
• 3. Fuel valve	This module introduces the fuel valve, as well as its location on the vehicle
Remarks	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-(09-06	
Eddy De	Eddy Deprez +32 2 722 86 89		Text WSM 03	Text WSM 03:01-01 page 7		Replace 2003-06-24	
eddy.deprez@scania.be		Picture 03_0800 WSM 03:01-01 page 7		L	15		
						15	

SCANIA WEB TRAINING	Module 3, page 1 Exit Report Go to test
Chapter 1	Operation
 1. Module title 2. Module title 	The fuel valve is a solenoid valve which opens and closes the fuel supply to the engine.
3. Module title	The route of the fuel through the valve depends on whether it is open or closed.
	The fuel valve is open when the power is switched on. This is why ignition has to be switched on when bleeding the fuel system.
	When power is switched off, the valve closes.Fuel valve and return valveThe fuel pump then draws fuel from the injection pump instead of supplying it.Fuel valve and return valve
	The engine stops due to lack of fuel.
Remarks	

Eddy Deprez +32 2 722 86 89 Text WSM 03:01-01 page 7 modified Replace 2003-06-24 eddy.deprez@scania.be Module 3, page 2 Exit Report Go to test Image: Chapter 1 Open fuel valve The fuel pump draws fuel from the tank through the fuel valve. It then pushes the fuel through the filter towards the injection pump. Descense fuel from the injection pump flows back to the tank via the fuel valve and overflow valve. This limits the pressure in the low pressure section and facilitates bleeding. Fuel leak-off from the injectors is returned via a connection on	SWBTC	Fuel supp	ly system DC9 E	DC MS5	SWBTC	C_XXX_3_3	5_1_3_EN	Issue 2004-0)9-06
eddy.deprez@scania.be Picture 120 445 Image: Scania with the state of the state o	Eddy Depre	Eddy Deprez +32 2 722 86 89		Text WSM 03:	Text WSM 03:01-01 page 7 modified)6-24
SCANIA WEB TRAINING Module 3, page 2 Exit Report Go to test • Chapter 1 • Chapter 1 • Deen fuel valve The fuel pump draws fuel from the tank through the fuel valve. It then pushes the fuel through the filter towards the injection pump. • Excess fuel from the injection pump flows back to the tank via the fuel valve and overflow valve. This limits the pressure in the low pressure section and facilitates bleeding. • Fuel leak-off from the injectors is returned via a connection on	edd	eddy.deprez@scania.be		Picture 120 44	5				16
 Chapter 1 Module title A Module title Module title Module title Module title Module title Excess fuel from the injection pump flows back to the tank via the fuel valve and overflow valve. This limits the pressure in the low pressure section and facilitates bleeding. Fuel leak-off from the injectors is returned via a connection on 	SCAN	WEB TRAINING	Module 3, p	age 2	Exit	Report	Go to test		
the return valve.	Chapt 1. Module 1 2. Module 1 3. Module 1	ter 1 title title title	Open fuel va The fuel pum the tank throu It then pushes the filter towa pump. Excess fuel fr pump flows b via the fuel va valve. This lin in the low pre facilitates ble Fuel leak-off is returned via the return val	Ive p draws fuel frough the fuel val s the fuel throu ards the injection rom the injection ack to the tank alve and overfloon nits the pressure ssure section a eding. from the injecto a a connection ve.	om ve. igh in on ow re and ors on				

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez +32 2 722 86 89		Text WSM 03:01-01 page 8		Replace 2003-0)6-24	
eddy.deprez@scania.be		Picture 120 4	46		17	
						1/

	Module 3, page 3 Exit Report Go to test
Chapter 1 1. Module title	Closed fuel valve The fuel pump draws fuel from the injection pump through the fuel valve. It then forces the fuel through the filter towards the tank.
2. Module title	
3. Module title	
Remarks	

SWBTC	Fuel s	upply system DC9 E	DC MS5	Issue 2004-09-06		
Eddy Dej	orez	+32 2 722 86 89	TEC 00.01.01	1.11-01 question 12	1 guestion 12 Replace 2003-0	
eddy.deprez@scania.be			1		18	
						10

SCANIA WEB TRAINING	Module 3 Exit Report G	o to test					
Chapter 1	Question 1 (40 sec)						
① 1. Module title	In the supply circuit, what is the overflow valv	ve used for?					
2. Module title	To reduce the risk of overpressure in the fuel pur	np.					
② 3. Module title	To increase the pressure of the fuel pump.						
	To limit the pressure in the low pressure section and to bleed the circuit.						
	To drive excess fuel past the fuel pump.						
	Skip Question						
	Wrong answer. The correct answer is in this n	nodule on page 2.					
Remarks	1						

SWBTC	Fuel supply system DC9 EDC MS5			SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	orez	+32 2 722 86 89	9 New question		Replace 2003-06-24	
eddy.deprez@scania.be		1			10	
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SCANIA WEB TRAINING	Module 3 Exit Report Go to test						
Chapter 1	Question 2 (40 sec)						
• 1. Module title	During the bleeding of the fuel system, it is necessary:						
🙄 2. Module title	To fit the tank plug.						
🙂 3. Module title	To have the starter key on.						
	To fill the filter with fuel before positioning it on the bracket.						
	To remove the overflow valve.						
	Skip Question						
	Wrong answer. The correct answer is in this module on page 1.						
Remarks							

SWBTC	Fuel supply system DC9 ED0		DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	orez	+32 2 722 86 89	Links		Replace 2003-0)6-24
eddy.deprez@scania.be					20	
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SCANIA WEB TRAINING	Module 4 estimated time Exit Report Go to test
 Chapter 1 Chapter 1 1. Module title 2. Module title 3. Module title 4. Fuel pump 	Module 4 estimated time This module introduces the fuel pump, as well as its location on the vehicle
Remarks	

SWBTC Fuels	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0)9-06	
Eddy Deprez	+32 2 722 86 89	Text WSM 03	xt WSM 03:01-01 page 9 modified		Replace 2003-06-24	
eddy.deprez@scania.be		Picture 03_0852			21	

SCANIA WEB	Module 4, page 1	Exit	Report	Go to test	
Chapter 1 1. Module title	The function of the fuel pum from the tank and to push it system to the injection pump	p is to draw on through t o.	fuel the		,
2 2. Module title	The fuel pump is a mechanic pump, attached to the inject powered from the injection p which has two cams to drive	cal piston-ty ion pump. It pump camsh the fuel pu	pe is aft mp.	P	8.
3. Module title4. Module title	There is a hand pump on the bleeding after service work.	e fuel pump	for		
	The capacity of the fuel purr fuel quantity considerably ex requirements.	np is sized s «ceeds engi	o that ne	O C	or one
	To start the animation (you need Flash player)	n			

SWBTC	Fuel suppl	ly system DC9 E	EDC MS5	SWBT	C_XXX_3_3	3_1_3_EN	Issue 2004-09-06
Eddy Depr	ez +	32 2 722 86 89	Animation b1	21518			Replace 2003-06-24
ede	eddy.deprez@scania.be			e			22
SCAN	ILA WEB TRAINING	Module 4, p	bage 2	Exit	Report	Go to test	
Chap Chap Chap Chap Chap Chap Chap Chap	pter 1 title title title title	The interm When the piston bac from the out towards th through the	nediate phase. cam pushes th k, the fuel is fo uter chamber e inner chamb e delivery valve	e rced er e.	₹ • Grayday, taka C/W		
		To s (you	tart the animation need Flash playe	r)	n County Gener Court		

SWBTC	Fuel supp	oly system DC9 E	DC MS5	SWBTC	C_XXX_3_3	_1_3_EN	Issue 2004-09-06
Eddy Depr	ez	+32 2 722 86 89	Animation b	121 518			Replace 2003-06-24
edo	dy.deprez@scan	ia.be	Text self mac	le			23
SCAN	WEB TRAINING	Module 4, p	age 3	Exit	Report	Go to test	
Char Char 2. Module 2. Module 3. Module 4. Module	pter 1 title title title title	Pump and s The pump p towards the spring. The outer chamb At the same inner chamb check valve	uction phase. lunger is force inner chambe fuel is drawn per. time, the fuel per is ejected	ed er by the into the I in the via the			

SWBTC	NBTC Fuel supply system DC9 EDC MS5		DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez		+32 2 722 86 89	New question	L	Replace 2003-0)6-24
eddy.c	deprez@	scania.be				24
						24

SCANIA WEB TRAINING	Module 4 Exit Report Go to test
Chapter 1 1. Module title	Question 1 (40 sec) The fuel pump is equipped with a hand pump. This is intended to:
 2. Module title 3. Module title 	 Introduce lubrication fluid. Eacilitate starting in cold weather
4. Module title	Enable bleeding of the circuit after service work.
	Check the sealing of the supply circuit.
	Skip Question
	Wrong answer. The correct answer is in this module on page 1.
Remarks	

SWBTC	Fuel supply system DC9 EDC		CDC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Depre	ez	+32 2 722 86 89	Links		Replace 2003-0)6-24
edd	dy.deprez@	scania.be				25
						23

SCANIA WEB TRAINING	Module 5 estimated time Exit Report Go to test	
Chapter 1 1. Module title		
🙄 2. Module title		
 3. Module title 4. Module title 	This module introduces the fuel filter, as well as its location on	
• 5. Fuel filter	the vehicle	
Remarks		

SWBTC	Fuel supply	v system DC9 E	DC MS5	SWBT	C_XXX_3_3	Issue 2004-09-06	
Eddy Depre	ez +3	2 2 722 86 89	Text WSM 0.	3:01-01 page	14		Replace 2003-06-24
eddy.deprez@scania.be			Picture 03_08	365			26
SCAN	KA WEB TRAINING	Module 5, p	bage 1	Exit	Report	Go to test	
Char 1. Module of 2. Module of 3. Module of 4. Module of 5. Module of (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	oter 1 title title title title title	The fuel f retainer w engine. The filter retainer w inserts. It cannot be chang	ilter is located hich is bolted consists of a r vith spirally wo be dismantled ed as a compl	on a filter to the metal ound paper and must ete unit.			to ones
Remarks							

SWBTC	NBTC Fuel supply system DC9 EDC MS5		DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez	[+32 2 722 86 89	New question		Replace 2003-0)6-24
eddy	.deprez@	scania.be				27

SCANIA WEB TRAINING	Module 5	Exit Report	Go to test	
Chapter 1	Question 1 (30 sec)			,
1. Module title	Is it possible to replace j	ust the paper carl	tridge of the filter?	
🙂 2. Module title	Yes			
🙂 3. Module title	No			
🙂 4. Module title	Yes, but only for M service			
☺ 5. Module title	Skip Question			
	vvrong answer. The cor	rrect answer is in tr	his module on page 1	
Remarks				

SWBTC	Fuel s	supply system DC9 I	CDC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy De	eprez	+32 2 722 86 89	New		Replace 2003-0)6-24
	eddy.deprez@	scania.be				20



SWBTC	Fuel supply system DC9 EDC MS:		EDC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Depr	rez	+32 2 722 86 89	Links		Replace 2003-0)6-24
ed	dy.deprez@	scania.be				20
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SCANIA WEB TRAINING	Chapter 2 estimated time Exit Report Go to test
Chapter 2	
	This chapter introduces the injection pump and the injectors
Remarks	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy De	eprez	+32 2 722 86 89	Links		Replace 2003-0)6-24
	eddy.deprez@	scania.be				20



SWBTC	Fuel supp	bly system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN			Issue 2004	-09-06
Eddy Depre	ez -	+32 2 722 86 89	Text WSM 0	3:01-01 page 15			Replace 2003	-06-24
edo	ly.deprez@scan	ia.be	Picture 03_0	/89				31
Char Char Char Char	WEB TRAINING pter 2 title	Module 1, p The injection the engine tir injection pum with a gear w Exchange rat injection pum engine speed Injection pum and tappets a from the engi The pump ele with fuel.	age 1 pump is drive ning gear. The p camshaft ha heel. io is such tha p is driven at l. p bearings, ca are lubricated ne lubricating ements are lul	Exit en from e as a hub t the half amshaft with oil system. bricated	Report (Go to test		31
		The injection element for e The pump ele the same stro	pump has on ach engine cy ements always oke.	e pump /linder. s have				

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0)9-06
Eddy De	eprez	+32 2 722 86 89	Text WSM 03	3:01-01 page 15	Replace 2003-	06-24
	eddy.deprez@	scania.be	Picture 03_02	59		27
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	Module 1, page 2 Exit	t Report Go to test
Chapter 2 1. Module title	Injection quantity is determined by how much the plunger in the pump element is turned.	
	Mechanically, the pump plunger is turned by the control rack which is controlled by the governor.	
	All plungers are turned at the same time and by the same amount.	
	Injection starts when the pump plunger closes the inlet and spill ports in the pump element. The control edge of the pump plunger is chamfered.	a = Fuel quantity in relation to control rack and pump element position
	Injection ceases when this chamfered control edge passes the spill port in the pump barrel.	

SWBTC Fuel s	upply system DC9 E	ly system DC9 EDC MS5 SWB7			_3_1_3_EN	Issue 2004-09-06
Eddy Deprez	+32 2 722 86 89	Text WSM 02 Picture 03 02	3:01-01 page 2 296 modified	6 modifie arrows + t	d text)	Replace 2003-06-24
eddy.deprez@s	scania.be	_			,	33
SCANIA WEB	ING Module 1, p	age 3	Exit	Report	Go to test	
Chapter 2 1. Module title	Above each delivery valv housing and plunger is he spring. The delivery pressure rea injector. The delivery 30 bar press	pump elemen ve which cons I valve plunge eld against its v valve opens aches the set v valve will kee sure in the del	nt, there is a ists of valve r. The valve seat by a when the value for the ep approx livery pipe.	1. Sprin 2. Seat 3. Delive	1 2 3 3	

SWBTC	Fuel su	oply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN			Issue 2004-09-06	
Eddy De	prez	+32 2 722 86 89	Text WSM 03:01-01 page 16 modified Picture 03 0296 modified (arrows + text)			Replace 2003-06-24		
6	eddy.deprez@sca	inia.be					L	21
							1	54
SCA	NKA WEB TRAININ	G Module 1, p	age 4	Exit	Report	Go to test		
							,	1

When the delivery valve plunger has closed, the available volume for the fuel in the delivery pipe increases. This lowers the pressure in the delivery pipe and injectors, decreasing the risk of flowing out from the injector.

The change in capacity is adapted to the length of the delivery pipe and this length must never be changed. The delivery valve is held in the pump housing by the delivery valve holder, which is bolted into the housing from above.



- 1. Spring 2. Seat
- 3. Delivery valve

Remarks

Chapter 2

1. Module title

SWBTC Fuel	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Deprez	+32 2 722 86 89	Text WSM 03	3:01-01 page 17 modified	Replace 2003-0	6-24
eddy.deprez@	eddy.deprez@scania.be		264 + 03_0265		25



SWBTC Fuel	supply system DC9 I	EDC MS5	SWBTC_	XXX_3	Issue 2004-09-06	
Eddy Deprez	+32 2 722 86 89	Text WSM 0 Picture 03_0	3:01-01 page 18	Replace 2003-06-24		
eddy.deprez()scania.be		200 and 05_020	,,		36
	NING Module 1, 1	page 6	Exit	Report	Go to test	
Chapter 2 1. Module title	Third pha from whe plunger h the spill p edge. Wh delivery v	se of piston st n the upper ed as closed the is ort is opened R ten inlet port is ralve is closed.	roke: ge of the inlet port until by the helix opened,		Fourth phase of from when the to top dead ce	of piston stroke: spill port opens ntre.

SWBTC	Fuel supp	ly system DC9 E	DC MS5	SWBTC_	_XXX_3_3_1	1_3_EN	N Issue 2004-09-0		
Eddy Depre	Z –	+32 2 722 86 89	2 2 722 86 89 Text WSM 03:01-01 page 18 Replace 2		Replace 2	003-06-24			
edd	y.deprez@scani	a.be	Picture 03_02	96				37	
SCAN	A WEB TRAINING	Module 1, p	age 7	Exit	Report 0	Go to test			
Chap 1. Module ti	ter 2 tle	The axia with the there is r When the the plung there is r order to	l groove is alig port. In this po no fuel deliver e control rack ger to this pos no fuel deliver stop the engin	Ined sition, /. turns tion / in e.	Non-	delivery			
Remarks									

SWBTC	Fuel supply	y system DC9 H	EDC MS5	SWBTC_XXX	K_3_3_1_3_EN	Issue 2004-09-06	
Eddy Deprez	z +3	32 2 722 86 89	Text WSM 0	3:01-01 page 16		Replace 2003-06-24	
eddy	eddy.deprez@scania.be			870		38	
SCANI	A WEB TRAINING	Module 1, j	page 8	Exit Rep	ort Go to test		
Chap 1. Module ti	ter 2 tle	In-line pur adjustable In-line pur injection tir "sleeve" or plunger. This allows prestroke in start of fee Injection qu controlled i as on a con	nps with injection tim ops with adjust ning have a sli the pump adjustment of n order to alter d and injection uantity is in the same wa nventional pun	ing able ding f the 1 Sett 2 Retu 3 Pres 4 Retu 5 Sett 6 Con 7 Stros 8 Pun	ting solenoid, injection urn spring stroke shaft urn spring ting solenoid, fuel sup trol rack ke position sleeve op plunger	timing	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	rez	+32 2 722 86 89	New question	l	Replace 2003-0)6-24
ed	ldy.deprez@	scania.be				20
						22

SCANIA WEB	Module 1	Exit	Report	Go to test	
Chapter 2	Question 1 (40 sec)				,
① 1. Module title	The injection pump run	is at a sp	eed:		
	Equivalent to double the	speed of	the cranksl	haft.	
	Independent to the spee	d of the c	rankshaft.		
	Equivalent to half the spo	eed of the	crankshaf	t	
	Equal to that of the cranl	kshaft.			
	Skip Question				
	Wrong answer. The c	orrect and	swer is in th	is module on page	- 1
					× 1.
Remarks					

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy De	prez	+32 2 722 86 89	New question	L	Replace 2003-0)6-24
e	eddy.deprez@	scania.be				40
						40

SCANIA WEB	Module 1	Exit	Report	Go to test		R
Chapter 2	Question 2 (40 sec)				,	
① 1. Module title	The rotation of a pun	np element	piston infl	uences:		
	The time point of injec	tion.				
	The opening pressure	of the injec	tor.			
	The quantity of fuel inj	ected.				
	The quantity of fuel all plunger.	owed into th	ne chamber	at the top of the	e pump	
	Skip Question					
	Wrong answer. The	e correct an	swer is in th	nis module on pa	age 2.	
Remarks	·					

SWBTC	VBTC Fuel supply system DC9 EDC		DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	orez	+32 2 722 86 89	New question	l	Replace 2003-0	06-24
e	ddy.deprez@	scania.be				11
						41

SCANIA WEB	Module 1	Exit	Report	Go to test		
Chapter 2	Question 3 (40 sec)				,	,
• 1. Module title	After injection, when the the delivery pipe:	e pressu	re valve is	closed again, p	pressure in	
	Increases.					
	Decreases.					
	Does not vary.					
	Skip Question					
	Wrong answer. The cor	rect answ	ver is in thi	s module on pag	je 4.	

SWBTC	Fuel s	supply system DC9 E	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy De	eprez	+32 2 722 86 89	Links		Replace 2003-0)6-24
	eddy.deprez@	scania.be				12



SWBTC	Fuel supp	ly system DC9 EDC MS5 SWBTC_			_XXX_3_3_1_3_EN	Issue 2004-09-06	
Eddy Deprez	Eddy Deprez+32 2 722 86 89eddy.deprez@scania.be		Text WSM (Picture 03_(Text WSM 03:01-01 page 20 Picture 03_0855		Replace 2003-06-24	
SCANK Chapt 1. Module ti 2. Module ti	WEB TRAINING er 2 tle tle	Module 2, p Delivery pipe steel piping, v at each end. The delivery clips in order pipe, reducin Broken, or ot pipes, must r soldering or v changed. Delivery pipe between diffe engine as dia on which eng	age 1 e s are manuface with cones and pipes are atta to damp vibra g the risk of it herwise dama not be repaired welding, but m s must not be erent types or ameter and ler jine type the p	Exit ctured from d cap nuts ched with tions in the breaking. ged delivery d by ust be switched designs of agth depend ipe fits.	Report Go to test Image: Constraint of the second secon	43 43 43 	

SWBTC	Fuel suppl	y system DC9 E	DC MS5	SWBTC_	XXX_3_3_1	_3_EN	Issue 2004-09-06	
Eddy Depr	rez +:	32 2 722 86 89	Text WSM 03	Text WSM 03:01-01 page 20 modified			Replace 2003-06-24	
edo	dy.deprez@scania	be	Picture 03_08	371			44	
SCAN	WEB TRAINING	Module 2, p	age 2	Exit	Report C	Go to test	0	
Char 1. Module 2. Module	pter 2 title title	Injectors The fuel is pipes to the atomises the chamber. The mover is controlle spring forc When fuel reaches a pressure), (start of inj	forced throug e injectors. Th he fuel in the o ment of the no ed by fuel pres e. from the injec certain pressu the nozzle neo ection).	h the delivery e injector combustion zzle needle sure and tion pump ire (opening edle lifts	1 2 3 4 5 6	Delivery pipe Cap nut Edge filter Leak-off fuel Spring Nozzle needl	1 2 3 4 5 6 from pump line e	
Remarks								

SWBTC Fuel sup	oply system DC9 E	DC MS5	SWBTC_XXX_3_3	3_1_3_EN	Issue 2004-09-06	
Eddy Deprez	+32 2 722 86 89	Text WSM 02 Picture 03 02	ext WSM 03:01-01 page 20 modified		Replace 2003-06-24	
eddy.deprez@sca	inia.be		5/1		45	
SCANIA WEB	G Module 2, p	age 3	Exit Report	Go to test	0	
Chapter 2 1. Module title 2. Module title	The fuel is form into the chamber the calibrated I The fuel the nozzle need routed bace leak-off lines injector.	then sprayed ne engine com nrough accura holes. at leaks betwe edle and nozzl k to the fuel ta e which is con	in atomised abustion itely een the e housing is ank via the nected to the	1 Delivery pipe 2 Cap nut 3 Edge filter 4 Leak-off fuel 5 Spring 6 Nozzle need	1 2 3 4 5 6 from pump line	

SWBTC	SWBTCFuel supply system DC9 ED0		DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-0	9-06
Eddy Dep	orez	+32 2 722 86 89	New question	1	Replace 2003-0)6-24
e	ddy.deprez@	scania.be				16
						40

SCANIA WEB	Module 2	Exit Report	Go to test	
Chapter 2	Question 1 (40 sec)			
1. Module title	The opening pressure o	f the injector dep	ends on:	
2. Module title	The pressure of the fuel in	n the tank.		
	The rotation speed of the	engine.		
	The length of the pipe cor	nnecting the injecto	or to the injection pur	ıp.
	The setting of the spring i	n the injector.		
	Skip Question			
				0
	wrong answer. The co	frect answer is in t	nis module on page :	2.
Remarks				

SWBTC	Fuel supply	system DC9 El	DC MS5	SWBTC_XXX_3_3_1_3_EN	Issue 2004-09-06
Eddy Deprez	+32	2 2 722 86 89	Links		Replace 2003-06-24
eddy.do	eprez@scania.t	be			47
	WED				т /
SCANIA	TRAINING	Chapter 2		Exit Rep	
Chapter 2	2				
1. Module title	e		In t	his chapter you learned:	
2. Module title	e		The princ gove	composition and the operating ciple of the injection pump with i ernor and of the injectors.	ts
			The elem	alternating motion of the pump nents is controlled by the camshaf	ît.
			The whic influ	governor acts on the control rack ch rotates the pump plungers, and lences the quantity injected.	, thus
			The plun the p	injection begins when the pump ger closes the inlet and spill ports pump element.	s in
			The pipe	diameter and the length of the de s depend on the type of engine.	livery