

**PROCEDURE FOR LONG TERM
PRESERVATION/DEPRESERVATION OF T-55 TANKS
WITH VpCI SYSTEMS**

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<p>A)</p>	<p>PREPARING FOR PRESERVATION</p> <p>1) Tank preservation preparation:</p> <ul style="list-style-type: none"> - Perform II TE of the tank (weapons, all equipment and semiautomatic gun) - Repair all faulty conditions during the II TE - Repair the damaged paint on inside and outside of tank - Clean and degrease surfaces before preservation <p>II) ORGANIZATION MEASURES</p> <p>For long term preservation of T-55 tank the following military personnel are required:</p> <ul style="list-style-type: none"> - 3 mechanics for tank weapons;.....for preservation of heavy guns and turrets - 3 tank mechanics;.....for engines, transmissions and armor preservation - 2 mechanics for infantry weapons;...for electrical equipment preservation - 2 tank electricians;.....for electrical equip. preservation - 2 mechanics for communication;.....for communication equipment preservation - 2 mechanics for optical equipment;.....for optical equipment preservation <p>This team is needed for safety and efficiency during the preservation process. Team should be formed with experts in each area for technical servicing. To reduce expenses, preservation should be coordinated to eliminate repetition. The procedure should be done during fair weather (max. relative humidity up to 60 %). All technical data should be documented in the logbook.</p> <p>III) PROTECTION MEASURES</p> <p>Protection during the preservation process (working protection, fire protection, environmental protection) is regulated by the manufacturer of VpCI products.</p>
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B)	PRESERVATION OF WEAPONS			
	I) TANK PRESERVATION			
No.	PROCEDURE	Personnel Needed	Needed tools and equipment	VpCI material
1.	Place the barrel in depression position.	Heavy gun mechanics		
2.	Take off gunpowder gas conductor, breech and parts of semi-automatic machine gun and overhaul. Clean all parts and protect them with VpCI-369M with a paintbrush.		-tools for heavy gun weapons -working table -towels; gloves -cleaner	-VpCI-369M (1,5 liter)
3.	Clean the barrel and cover all inside surfaces with VpCI-369M oil. On outside barrel surfaces, the gas drain is should also be protected. Coat outside barrel surfaces having damaged paint with VpCI-368M. NOTE: Protect the inside space of the armor from dirt during preservation.	Heavy gun mechanics	“	-VpCI-368M spray (1 liter) -VpCI-369M (1,5 l liter)
4.	Clean bearings and coat with VpCI-369M oil.	Heavy gun mechanics	“	-VpCI-369M (0.5 liter)
5.	Before installation, oily semiautomatic and breech parts should be drained. After the installation, coat the breech with VpCI-369M, to make homogeneous protective layer. Protect the square flat surface the same way.	Heavy gun mechanics	“	VpCI-369M (0.5 liter)
6.	Coat outside parts of tank anti-recoil system with damaged paint with VpCI-368M.	Heavy gun mechanics	“	VpCI-368M
7.	After preservation, reinstall prepared and protected damaged parts Place VpCI-170 inside gun barrel and cover with a cap to make it air-proof. Cover the heavy gun barrel with CorShield fabric (or Eco weave 126) and seal edges with tape or strapping.			-VpCI-170 (5m) -CorShield fabric (3m ²) -VpCI-369 Strap for preservation (1) Tape or strapping
II) MACHINE-GUN PRESERVATION				
8.	Remove machine-guns from heavy gun.	-mechanic arms	-tools for infantry guns	

9.	Overhaul machine-guns, clean and coat them by brushing or spraying with VpCI-325. Drain before installation.		-tools for pedestrian guns, brushes, gloves, working, table	-VpCI-325 (1.5 liter)
10.	Fold machine gun and proceed with outdoor preservation by lubricating the parts. Pack the machine guns in VpCI-126, and close them with tape.			-VpCI-126, bag (2) -VpCI-325 -Strap for preservation
11.	Protect the semiautomatic gun with same procedure.			“
12.	Keep machine-guns in wood boxes during the preservation.			-wood box

C) TRANSMISSION AND ENGINE PRESERVATION

I) VpCI- MATERIALS DOSAGES

1.	In the fuel system, add 200 liters D-2 fuel, 180 liters in front and 20 liters into the middle reservoir. Place Fuel pipe in “measuring” position. Add VpCI-705 additive (8% by fuel), and fill the front, lateral and mid reservoir With fuel enabling good mixing. Leave the outside reservoirs empty and protect them by adding 1liter of clean VpCI-705 in each reservoir.	- tank mechanics	-tool -work table, tunnel	-VpCI 705 -approx. 16+3 l liter)
2.	In instrument for motor lubrication add the VpCI-329 additive (in ratio 1:3). First drain the balance of oil. Add VpCI-329 into the semiautomatic gun regulator in the same way. Add 1 liter of VpCI -329 to outside reservoir for the engine oil.			-VpCI-329 - approx. 20+1 liter
3.	To engine cooling system, add M-640L (8% of liquid) after draining the balance of liquid.			-M640L approx. 6,4 liter
4.	To the multiplier, add VpCI-326, for hydraulic systems, add VpCI-329 for other oils, (10% by amount of oil) it is not necessary to drain rest of oil.			VpCI 326 approx. 0,7liter
5.	Into the gearshift level add VpCI-329, (10% by the amount of oil); it is not necessary to drain the rest of oil.			-VpCI-326 approx. 1.3 liter
6.	In planetary instruments add VpCI-326 hydraulic fluids or VpCI-329, (10% of oil capacity), balance of oil is not necessary to drain.			-VpCI-326 approx. 2x0.25 liter
7.	In lateral transmission add VpCI-326 or VpCI-329, (10 % by the oil), balance of oil is not necessary to drain.			-VpCI-326 Approx. 2x0.45 liter

II) STARTING ENGINES, SHORT DRIVE				
8.	Start engine, bring to optimum working temperature (around 5-10 min), fuel circulation is very important as is the cooling liquid and oil for lubrication, throughout all systems.			
9.	Turn off the engine,; drain the sediment with the compressed air. Let the airflow over the pipe, until the pressure 10-20 bars. Turn on engine, and fill it up to by adding the VpCI-329. Dosage drop is approx. 0,5 dl or add dispersed VpCI -329.			-VpCI-329 (0.5dl)
10.	Prepare tank for driving. During the short term driving, secure transmission parts lubrication and circulation of engine liquids through all engine parts. Open fuel pipes and water pipes. Put the engine heater and smoke curtain instruments. Drive into position until the air bottles are lower than 150 bars and engine temperature (water and oil) is lower than 70C.	-tank mechanics	“	
III) TANK PARKING				
11.	Turn tank engine off, cool down the engine liquids to 60C. Drain the sediment from the starting engine with compressed air. Disconnect lance corporal tube and protect installation. Open other pipes and pump air out, protect this part of installation with anticorrosive product. Pressure in the bottles should stay at a minimum of 120-130 bars. Keep the tank very clean.	“	“	
12.	With non-fuel, electric motor, start engine a few times for 5-8 seconds, to burn residue from engine.	“	“	
13.	Proceed with engine compression parts preservation by dosing heated (100C) preservation mixture (motor oil DS-50 and VpCI-329 in ratio 3:1) over the lance corporal. The preservation mixture amount should be by volume of compression space, or 0.86 deciliter per cylinder. Dosing should be done with pump (in this case do not allow air mixing with preservation mixture). After hand dosing of the preservation mixture, rotate the crankshaft 2 times with lever. In the goal of good lubrication, rotate the crankshaft with electric motor 2-3 times for a duration 5-6 sec. Connect the tube and lance corporal.	“		VpCI-329
14.	Protect Air filter and motor suction with VpCI-137 (100 mm thickness) impregnated foam, and single filter around the whirling chambers and then seal with tape.	“	“	VpCI-137

15.	Place VpCI-170 in motor exhaust measured to exact length. Cover exhaust stroke orifice with protective foil and tape.	-tank mechanics	-tools -scissors	-VpCI-126 (0.25 m ²) -VpCI-170 (1m)-VpCI-369M spray Preservation tape
16.	Let liquid flow through slot in tank.			
17.	Protect surfaces that can corrode with VpCI-369 M.	“	“	-VpCI-369M
18.	Protect joints and rotate mechanism with VpCI-369M.	“	“	“
19.	Spray Joints between transmission parts with VpCI-369M.	“	“	“
20.	Protect Clutch joints with VpCI-369M.	“	“	“
21.	Protect joints in gearbox with VpCI-369M.	“	“	“
22.	Coat joints of the main operating system cover with VpCI-369M.	“	“	“

D) PRESERVATION OF THE ELECTRICAL EQUIPMENT, COMMUNICATION AND OPTICAL EQUIPEMENT

I) ELECTRICAL EQUIPMENT

1.	Pull out battery from tank, and give to repair station.	-Tank mechanics	-tools	
2.	Clean the battery space and uncoated surfaces. Coat with VpCI-368.	“	“	-VpCI-368 spray
3.	Check the electric motor, generator, pump electric motors and ventilators, and protect with VpCI-238.	“	“	-VpCI-238
4.	Protect electric bendix with VpCI-238.			-VpCI-238
5.	Protect joint contact places in armored vehicle with VpCI-238 spray.	“	“	-VpCI-238

II) COMMUNICATION SYSTEM PRESERVATION

6.	Examine the communication system and clean	-mechanics for communication system	-Communication system tools	
7.	Spray unprotected parts with VpCI-238.	“	“	-VpCI-238 spray
8.	Protect interior communication system equipment with VpCI-126 bags with moth repellent.	“	“	-VpCI-126 (bags) -moth repellent tablets

III) OPTICAL INSTRUMENTS				
9.	Examine and clean all bearings, supports, and caps, which function with the optical and electrical instruments. Spray with VpCI-325.	-mechanics for optical instruments	-tools	VpCI-325 spray
10.	All optical instruments should be in their beds and protected with VpCI-101 in boxes.			- VpCI-101
E) PRESERVATION OF THE ARMOUR AND TURRET				
1.	Spray VpCI-368M on exterior and interior surfaces with damaged paint.	-tank mechanics		-VpCI-368M spray
2.	Washer covers with product for protection.		-brush	-protective gum coating
3.	Spray VpCI-369M onto orifices			-VpCI-369M spray
4.	Place impregnated foam (1m) VpCI-137 in combat tank unit, on the floor.	-mechanics	-scissors	-VpCI-137 (1m2)
5.	Protect machine guns and weapons with VpCI-325.	-mechanics for pedestrian weapons	-brush	-VpCI-325)
6.	Cover tank orifices that are not sealed with VpCI-126, and seal with tape.	-tank mechanics	-scissors	-VpCI-126 (3m2)
7.	Cover tank with a protective waterproof tarp.			
F) TANK DEPRESERVATION				
Tank depreservation, preserved long term, before or after the expiration date. Depreservation is the process of accomplishment of tasks, which will protect tank and lead to complete working conditions.				
I) DEPRESERVATION OF ARMOUR AND TURRET				
1.	Take off protective waterproof sheet.	-tank mechanics		
2.	Take off tape and VpCI-protective layers from tank.			
3.	Take off tape and impregnated foam.	-mechanics for heavy gun equipment	-tools	
II) MACHINE GUN AND HEAVY GUN DEPRESERVATION				
1.	Take off VpCI protective sheet from barrel and take tape out of the barrel.			
2.	Clean the gun and take off balance of lubricant.			
3.	Take out machine guns.	Weapons mechanic	-tools for guns	

4.	Clean remaining lubricant off of the machine guns.			
5.	Put machine guns in place on tank.			

III) ENGINE AND TRANSMISSION DEPRESERVATION				
1.	Take off protective VpCI film-and take out the protective VpCI tape from the engine.	-tank mechanics	-tools	
2.	Open engine cover leads and air filters			
3.	Take VpCI foam off the filter.			
4.	Connect the battery.	-tank electricians	-tools	
5.	Rotate by hand, working part of the motor a minimum of 4 full turns.	-tank mechanics	-tools	
6.	Turn the engine on 2 times for 2-5 min without fuel injection.			
7.	Examine the motor and transmission before use.			
8.	Start motor with electricity or by air.			

No.	Material	Amount	Quantity	Purpose	Taken care by:
1.	VpCI-126 bag	Ps	2	For machine guns	VP-3415-30
2.	VpCI-126 bag	Ps	2	Semi-machine gun	“
3.	VpCI-126 bag	Ps	4	For communication	
4.	CorrShield, roll, VpCI-126 (Eco Weave 126)	m ²	8	Barrel, heavy gun	CorteCros
5.	VpCI-137 8605-1083-1545-6		2	Inside of tank	VP-3415-30
6.	VpCI-170 8605-1083-1545-6	ps	2	Heavy gun barrel	“
7.	VpCI-238 spray 8605-1083-0300-8	Box (12 Ps)	1	Tank electricians	“
8.	VpCI-325		1	Machine guns	
9.	VpCI-325 spray	Ps	5		CorteCros
10.	VpCI-368M		2(25 l)	motor	VP-3415-30
11.	VpCI-368M	“	1	Heavy gun, battery, weapons	CorteCros
12.	VpCI-369M	“	1	Heavy gun	VP-3415-30
13.	VpCI-369M spray	Ps	2	Mechanism joints	CorteCros
14.	VpCI-M-640L 8605-1083-0105-6		1 (6,4 l)	Cooling system	VP-3415-30
15.	VpCI-705 8605-1083-0110-2	“	1 (16 l)	For fuel	“
16.	Tape for preservation, 50 mm	Ps	3		“
17.	Gum coating 8605-8019-1345-6	l	1		“
18.	Moth repellent tablets	Ps	4		“
19.	Gloves	pair	10		“
20.	Brush, 60 mm	Ps	10		“

Cleaning with Cortec products for T-55 tank engine protection



Product: VpCI-414, 419, 411, 422

Preparation and coating of engine for protection



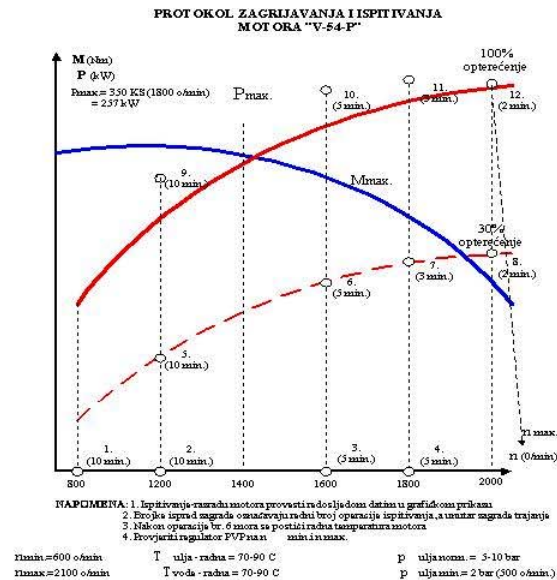
Product: CorrVerter, VCI-386

The engine during testing proces

(test table)



Parameters for engine test



Preparation of engine ready for interior protection

(Engine cylinder, cooling system, fuel system and oil system)



Product: VCI-329 (25%), M-640L(1,5-2%), 705 (1,5-2%)

Protection for exterior parts of engine

(engine block, electrical, exhaust pipe)



Product: VCI-368M, VCI-170 or150, VCI-238)

Engine with Ecoweave cover



The engine in box

(deep conservation)



Presentation of Cortec products for tank protection



Preparing and cleaning machine gun for protection



Product: VCI-325

Machine gun ready for packaging in box



Product: VCI-126 bag

The tank



Protection of fuel system



Product: VCI-705

Engine protection



Product: VpCI-137, VpCI-101&105, VpCI-329, VpCI-238, Corrrshield

Transmission protection



Product: VpCI-326