List of category 3000 messages – Stainer errors

The following table lists error messages related to the slide stainer modules.

Message code	Message	What to do
3000	{0} failed to prepare for handoff.	Contact Roche support.
3001	{0} failed to complete tray handoff.	Contact Roche support.
3002	The {0} stainer has failed to process a tray.	First, allow all other trays to finish processing. Second, choose the shutdown button to exit the application. Third, once complete, restart the application. Finally, choose the start button to initialize the instrument and report the error to your local support.
3003	{0} failed to Initialize.	Contact Roche support.
3004	{0} failed to stop processing.	Contact Roche support.
3007	{0} failed to abort process.	Contact Roche support.
3008	{0} failed to detect tray.	Contact Roche support.
3009	{0} Disable process failed.	Contact Roche support.
3010	{0} vacuum pressure is too low.	Restart the instrument or contact Roche support.
3011	{0} vacuum pressure is too high.	Restart the instrument or contact Roche support.
3012	No vacuum pressure is detected in the {0}.	Restart the instrument or contact Roche support.
3014	The following door failed to close: {0}.	Attempt to re-enable the stainer. If this does not work: First, choose the shutdown button to exit the application. Second, once complete, restart the application. Finally, choose the start button to initialize the instrument. If this error continues to appear, contact your local support for help.
3015	{0} door open failed.	Contact Roche support.
3016	{0} transport failed to go to home.	Contact Roche support.
3017	{0} airknife failed to go to home.	Contact Roche support.
3018	{0} door failed to go to home.	Contact Roche support.
3019	{0} temperature is too low (below threshold).	Contact Roche support.
3020	Temperature of the following component is too high (above threshold): {0}.	Make sure that all instrument ventilation is connected and within specifications. You may need to contact local facility support to make sure it is in the following specification: Venting specifications: 60–70 CFM; 1222–1426 ft/min. More information can be found in the User Guide. Contact your local support for help.

⊞ Slide stainer module errors

Message code	Message	What to do
3021	{0} cannot start up with tray present.	Contact Roche support.
3022	{0} temperature is extremely high (above extreme threshold).	The system module {0} is disabled due to high temperatures and will not finish the tray until it cools down. Wait for the module to cool down, and then re-enable the module through the Instrument view, or contact Roche support.
3027	Fluid overflow detected in {0}.	First, choose the shut down button to exit the application. Second, shut down the PC. Finally, turn the instrument power switch to off. DO NOT RESTART THE INSTRUMENT! Contact your local support for help.

⊞ Slide stainer module errors

List of category 4000 messages – Coverslipper errors

The following table lists error messages related to the coverslipper module.

Message code	Message	What to do
4000	Coverslipper failed to prepare for handoff. Contact your local support for help.	Contact Roche support.
4001	Coverslipper failed to complete handoff.	Contact Roche support.
4002	Coverslipper failed to process tray.	Contact Roche support.
4005	Coverslip Activator reservoir failed to fill.	Contact Roche support.
4006	Coverslip cassette failed to eject.	Restart the instrument or contact Roche support.
4007	Coverslipper abort process failed.	Contact Roche support.
4008	The coverslipper calibration values are not available.	Contact Roche support.
4009	Coverslipper disable process failed.	Restart the instrument or contact Roche support.
4010	Coverslipper start up failed.	Restart the instrument or contact Roche support
4011	Coverslipper failed to detect tray.	If necessary, manually remove the tray from the Coverslipper. Attempt to process another tray in the Coverslipper. If this error continues to appear, contact your local support for help.
4012	The coverslipper pressure is above the operating limits.	Restart the instrument or contact Roche support.
4013	The coverslipper pressure is below the operating limits.	First, choose the shutdown button to exit the application. Second, once complete, restart the application. Finally, choose the start button to initialize the instrument and report the issue to local support.
4016	The coverslipper tray carrier is not in the correct position.	Restart the instrument or contact Roche support.

⊞ Coverslipper errors

Message code	Message	What to do
4017	The coverslip cassette failed to reach the waste bin.	• Make sure the cassette is not stuck on the exit belt. • Check the coverslipper waste bin to ensure it is not full. • Check for broken coverslip debris on the exit track. • Re-enable the coverslipper module after removing any obstructions. If this error continues to appear, contact your local support for help.
4020	Coverslipper pressure sensor is generating invalid values.	Restart the instrument or contact Roche support.
4021	The coverslipper waste bin is full.	Remove empty cassettes from the waste bin.
4041	Coverslipper front head motor stalled after 10 attempts. Coverslipping has stopped.	Restart the instrument or contact Roche support.
4042	Front coverslip pickup failed after 3 attempts with 2 cassettes. Coverslipping has stopped.	Restart the instrument or contact Roche support.
4051	Coverslipper rear head motor stalled after 10 attempts. Coverslipping has stopped.	Restart the instrument or contact Roche support.
4052	Rear coverslip pickup failed after 3 attempts with 2 cassettes. Coverslipping has stopped.	Restart the instrument or contact Roche support.
4056	The coverslipper carriage did not return to home.	Restart the instrument or contact Roche support.
4057	The coverslipper carriage did not return to home during tray recovery.	Restart the instrument or contact Roche support.
4058	The coverslipper front vacuum head did not return to home.	Restart the instrument or contact Roche support.
4059	The coverslipper front vacuum head did not return to home during tray recovery.	Restart the instrument or contact Roche support.
4060	The coverslipper rear vacuum head did not return to home.	Disable and re-enable the Coverslipper. If this error continues to appear, disable the Coverslipper and coverslip the slides offline. Contact your local support for help.
4061	The coverslipper rear vacuum head did not return to home during tray recovery.	Restart the instrument or contact Roche support.
4111	The following Coverslipper motor failed: {0}. No further slides will be coverslipped until the problem is solved.	Let all trays finish processing in the current module. Contact your local support for more help.
4113	An unopened Coverslip Cassette is detected in the front position. Remove and then open the cassette before reinserting into the coverslipper.	Contact Roche support.
4114	An unopened Coverslip Cassette is detected in the rear position.	Remove and then open the cassette before reinserting into the coverslipper.
4115	Recovery from unopened coverslip cassette failed.	Restart the instrument or contact Roche support.
4116	Coverslipper failed to transition to stand by.	Restart the instrument or contact Roche support.
4117	Unable to eject cassette; waste bin full.	Remove empty cassettes from the waste bin.

⊞ Coverslipper errors

List of category 5000 messages – Slide dryer errors

The following table lists error messages related to the slide dryer.

Message code	Message	What to do
5000	Slide Dryer failed to prepare for handoff.	Contact Roche support.
5001	Slide Dryer failed to complete handoff.	Contact Roche support.
5002	Slide Dryer failed to process tray.	Contact Roche support.
5003	Slide Dryer initialization failed.	Contact Roche support.
5004	No tray is detected in Slide Dryer.	Contact Roche support.
5005	The slide dryer is operating below operating temperature.	Restart the instrument or contact Roche support.
5006	The slide dryer module temperature has exceeded the operating temperature threshold.	Allow all modules to complete processing. First, choose the shutdown button to exit the application. Second, once complete, restart the application. Finally, choose the start button to initialize the instrument. If this error continues to appear, contact your local support for help.
5008	Slide Dryer could not reach operating temperature.	Restart the instrument or contact Roche support.
5009	Slide Dryer heater is too hot (over temperature).	Restart the instrument or contact Roche support.
5010	Slide Dryer air temperature sensor failed.	Restart the instrument or contact Roche support.
5011	Slide Dryer heater temperature sensor failed.	Restart the instrument or contact Roche support.
5012	Slide Dryer could not reach the correct blower speed.	Contact Roche support.
5015	The slide dryer door failed to open.	Contact Roche support.
5017	The slide dryer door failed to close.	Contact Roche support.
5021	Slide Dryer failed to stop processing.	Contact Roche support.
5022	Slide Dryer is approaching over temperature.	Restart the instrument or contact Roche support.
5023	Slide Dryer is approaching under temperature.	Restart the instrument or contact Roche support.

⊞ Slide dryer errors

List of category 6000 messages – Curing oven errors

The following table lists error messages related to the curing oven.

Message code	Message	What to do
6000	Curing Oven failed to prepare for handoff.	Contact Roche support.
6001	Curing Oven failed to complete handoff.	Contact Roche support.
6002	Curing Oven failed to process tray.	Contact Roche support.
6003	The curing oven's process could not start.	Contact Roche support.
6004	The Curing Oven's heater is operating below operatingtemperature.	Restart the instrument or contact Roche support.
6005	The Curing Oven is operating below operating temperature.	Restart the instrument or contact Roche support.
6006	The curing oven temperature has exceeded the operating temperature threshold.	First, allow all trays to complete processing. Second, choose the shutdown button to exit the application. Third, once complete, restart the application. Finally, choose the start button to initialize the instrument. If this error continues to appear, contact your local support for help.
6008	The curing oven's sensor is reporting a lower than normal temperature.	Restart the instrument or contact Roche support.
6009	The curing oven's sensor is reporting a temperature that is above normal.	Restart the instrument or contact Roche support.
6010	The curing oven's air sensor is reporting the incorrect temperature.	Restart the instrument or contact Roche support.
6011	The curing oven's heater sensor is reporting the incorrect temperature.	Restart the instrument or contact Roche support.
6012	The curing oven could not reach the correct blower speed.	Contact Roche support.
6015	The door to the curing oven would not open.	Restart the instrument or contact Roche support.
6017	Curing Oven door failed to close.	Warning, trays may be wet. First, allow the system to finish processing and recover all trays. First, choose the shutdown button to exit the application. Second, once complete, restart the application. Finally, choose the start button to initialize the instrument and report the error to your local support.
6018	The curing oven will not shut down.	Contact Roche support.

⊞ Curing oven errors

List of category 7000 messages – Barcode reader errors

The following table lists error messages related to the barcode readers.

Message code	Message	What to do
7000	The slide ID process failed.	Contact Roche support.
7001	The barcode scanner failed.	Contact Roche support.
7002	The verification of the barcode scanner configuration failed.	Contact Roche support.
7003	The verification of the barcode scanner failed.	Contact Roche support.

⊞ Barcode reader errors

List of category 8000 messages – Tray portal errors

The following table lists error messages related to the tray portals.

Message code	Message	What to do
8001	During recovery, the portal door closed.	Restart the instrument or contact Roche support.
8002	The portal door failed to open.	Attempt to manually open the portal door without using excessive force. If this error continues to appear, contact your local support for help.
8003	The portal door failed to close.	Attempt to manually close the portal door without using excessive force. If this error continues to appear, contact your local support for help.
8004	The tray is not properly loaded in portal bay {0}.	Refer to the User Guide section on Loading Trays Into Portal for more information. If this error continues to appear, try a different tray. If a different tray does not resolve the issue, contact local support for help.

⊞ Tray portal errors

List of category 11000 messages – RFID errors

The following table lists error messages related to RFID readers.

Message code	Message	What to do
11000	There is an issue with the RFID: Unable to connect to reader on port {0:D}.	Contact Roche support.
11103	Unable to write to {0} tag. {0} is the name.	Contact Roche support.
11104	Unable to write to {0} tag.	Contact Roche support.

⊞ RFID errors

List of category 12000 messages – Scheduler errors

The following table lists error messages related to the scheduler.

Message code	Message	What to do
12008	Unable to abort schedule process, and it will continue.	Contact Roche support.

⊞ Scheduler errors

List of category 13000 messages – Database errors

The following table lists error messages related to the database.

Message code	Message	What to do
13002	Error occurred creating system backup. {0}	Contact Roche support.
13003	Attempted to execute backup/restore operation, while existing backup/restore operation in progress.	Contact Roche support.
13004	Error occurred restoring system from backup.	Contact Roche support.
13005	System backup completed.	Contact Roche support.
13006	System restore completed.	Contact Roche support.
13007	System backup completed. Backup was copied to fallback output location because copying to primary location failed: {0}	Contact Roche support.
13008	System backup completed. Old backup files could not be purged.	Contact Roche support.

⊞ Database errors

List of category 14000 messages – Communication errors

The following table lists error messages related to communication.

Message code	Message	What to do
14025	There is an issue with starting communications.	Contact Roche support.
14026	There is an issue connecting to the serial network provider.	Restart the instrument or contact Roche support.
14028	Failed to translate message {0} at {1} provider.	Contact Roche support.
14032	There is an incorrect firmware version. Contact your local support for help.	Contact Roche support.
14033	There is an incorrect FPGA version. Contact your local support for help.	Contact Roche support.
14034	An incorrect version of M-Code is being used.	Contact Roche support.
14035	An incorrect version of the transportation motor firmware is detected. Contact your local support for help.	Contact Roche support.
14036	There is an incorrect firmware version. Contact your local support for help.	Contact Roche support.
14037	There is an error with Ventana Connectivity communication settings.	Contact Roche support.
14038	Communication with the instrument has failed. Restart the instrument. If the problem persists, contact your local support for help.	Contact Roche support.

⊞ Communication errors

List of category 20000 messages – Maintenance errors

The following table lists error messages related to maintenance.

Message code	Message	What to do
20014	The following door appears to be open: {0}.	Verify it is completely closed. First, choose the shutdown button to exit the application. Second, once complete, restart the application. Finally, choose the start button to initialize the instrument. If this error continues to appear, contact your local support for help.
20016	The daily cleaning cycle cannot start.	Make sure that a full bottle of {0} is loaded. If the loaded reagent bottle is full, remove the bottle, wait 10 seconds, and then reload the bottle.
20019	The instrument is currently in its daily cleaning cycle. The instrument will be available and the start button is enabled after the displayed soak time has elapsed.	Wait until cleaning cycle is finished before processing slides.
20021	Initialization failed.	Contact Roche support.
20022	A preventive maintenance task is pending.	Contact Roche support.

⊞ Maintenance errors

Message code	Message	What to do
20023	A preventive maintenance task is overdue.	Contact Roche support.
20024	The maintenance record could not be created.	Contact Roche support.
20025	A preventive maintenance task was completed.	Contact Roche support.

⊞ Maintenance errors

List of category 22000 messages – Station errors

The following table lists error messages related to the station.

Message code	Message	What to do
22000	Unable to create station: {0}.	Restart the instrument or contact Roche support.
22001	There is an invalid station configuration.	Restart the instrument or contact Roche support.
22002	There is an invalid device configuration.	Restart the instrument or contact Roche support.
22003	Unable to find {0} in instrument.	Restart the instrument or contact Roche support.
22007	One or more critical modules has failed its firmware update. The instrument start-up action is disabled. Please contact local support.	Contact Roche support.
22008	One ore more non-critical modules has failed its firmware update. Instrument functionality will be limited until the problem is corrected. Please contact local support.	Contact Roche support.

⊞ Station errors

List of category 23000 messages – Tray recovery

The following table lists error messages related to tray recovery.

Message code	Message	What to do
23000	A detected tray is no longer detected in {0}:	• **Slide dryer**: First, restart the application to activate tray recovery; the recovery icon is presented for the slide dryer. If the station is in an error state as denoted by the icon, wait at least 20 minutes for the tray to cool down. Second, shut down the instrument, then manually remove the tray, and finally contact local support for help. • **Curing oven:** Caution, the tray may be hot; wait at least 20 minutes to cool down. First, shut down the instrument, then manually remove the tray and contact local support for help. • **Coverslipper**: First, shut down the instrument, then manually remove the tray from the Coverslipper and contact local support. • **Stainer:** First, shut down the instrument, then manually remove the tray from the stainer and contact local support. • **Transport:** First, shut down the instrument, then manually recover the tray from the fork, and contact local support for help. • **Portal or garage**: Manually recover the tray from the portal or garage, and contact local support for help.

⊞ Tray recovery

List of category 31000 messages – Module controller updates

The following table lists error messages related to module controller (firmware) updates.

Message code	Message	What to do
31000	Update file corrupt or not found for module controller update.	Contact Roche support.
31005	Unable to update FPGA at address {0}. 24 volt control circuit failure.	Contact Roche support.

⊞ Module controller updates

Tray recovery troubleshooter

If the system has stopped and slide trays need to be recovered, investigate the following cause of error.

🔆 Do not carry out this tray recovery procedure unless Roche Diagnostics has trained you to do so.

⚠ **WARNING**

Injury to operators and damage to the system

Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

▸ Power off the computer and system prior to manually removing any trays.

▸ Wait at least 20 minutes after powering off the system to allow all trays in the slide dryer, stainers, and curing oven to cool before handling trays manually.

▸ Wait 20 minutes after powering off the system before touching any internal components of the system.

▸▤ About the staining system (55)

▸▤ About the transportation system (57)

▸ **Turn off the system**

Restarting the system usually recovers all trays and delivers them to the tray portals.

In an extreme situation, (for example, a fluid leak, fire, power outage, transport error, or computer issue) the system may not be able to restart. Determine if you can restart the system to proceed to recover trays.
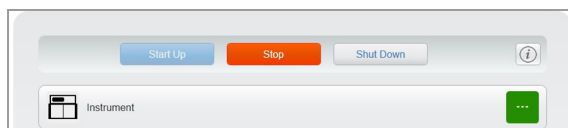

1 If the system is running, in the **Instrument view**, choose the **Stop** button.

➔ If a prompt about initiating system maintenance displays, choose the **No** button.

2 To open **Task Manager**, press Ctrl+Alt+Delete on the keyboard, or press and hold the Windows taskbar at the bottom of the screen and choose **Task Manager**.

❶ Do not shut down the system by choosing the **Shut Down** button or the red **X** in the user interface. A full shut down initiates the 60 minute cleaning cycle and delays tray recovery.

➔ Windows Task Manager displays.
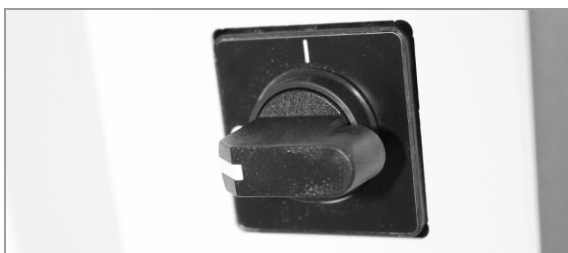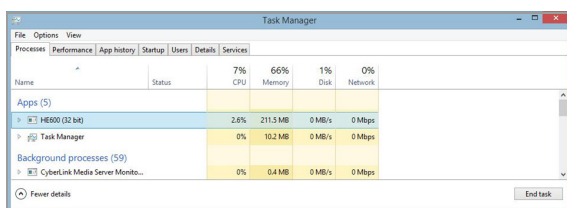
Can the system be restarted?

3 Choose **HE600 (32bit)** and then choose the **End Task** button.

4 Choose the Windows icon in the lower left corner of the screen.

5 In the menu that displays in the lower left corner, choose [icon] and choose then **Shut down**.

6 On the left-hand side of the system, turn the power switch from I to O.

7 Wait 20 minutes for the electricity to discharge and the trays and modules to cool.

8 Call Roche support to let them know you experienced a critical system error.

- Yes. The computer can be accessed and the system can be restarted. ► Remove a tray from the transportation system (212)
  or,
- No. The computer cannot be accessed, or there is an environmental hazard. ► Contact Roche Service (223)

▶ **Remove a tray from the transportation system**

The following video demonstrates the process for removing a tray from the transportation system step-by-step. The blue door that you open to access the transportation system is called the elevator door. Continue reading the entire procedure for additional details.

⚠ **CAUTION**

Injury to operators and damage to the system

▶ Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

Title: Removing a tray from the transportation system and restarting the system
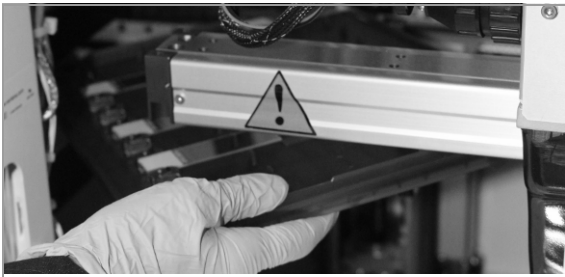
You need a 4 mm hex key to complete this task.

1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the transportation system.

   Place a 4mm hex key into the slot on the bottom right of the elevator door (the blue transportation system door).

2 Rotate the hex key to unlock the elevator door.
   → The elevator door is open.

3 Gently lift the slide tray from the transportation forks to bring the tray out of the system.
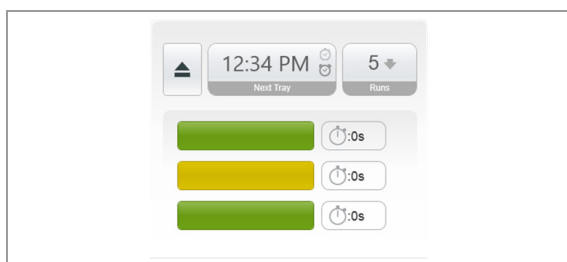
4 Close the elevator door.

5 Restart the system by turning the power switch from O to I, and pressing the power button on the computer.
   → The auto-recovery feature automatically moves all remaining trays to the tray portals.


6 Remove all trays from the tray portals.

7 In the **Operating** tab, determine number of trays in the system.

Are there trays remaining in the system?

- No. In the Operating tab, the tray count is zero.
  ► Review troubleshooting (223)
  or,
- Yes. In the Operating tab, the tray count is above zero.
  ► Prepare to remove the tray from other modules inside the system (214)

▶ **Prepare to remove the tray from other modules inside the system**

If the auto-recovery process has not moved all available trays to the tray portals, you must power down the system again to prepare to recover the trays from other parts of the system.
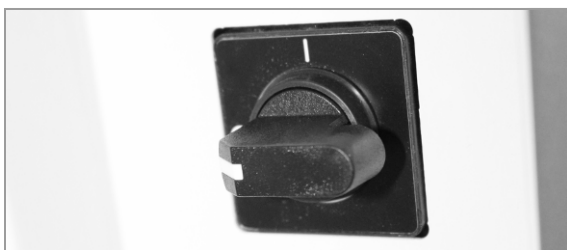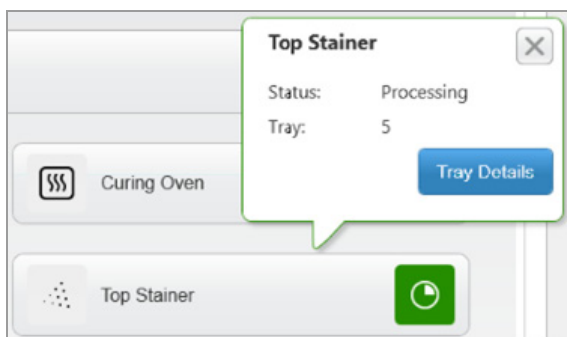
1 In the **Instrument** tab, choose each of the system modules to determine the location of the remaining trays.

❶ If the number of trays shown in the **Operating** tab is higher than the total number of trays shown in each of the modules, the remaining trays are probably in the garage.

2 Make a note of the locations of the trays in the system.

3 Shut down the system using **Task Manager** and turning the power switch from I to O.

❶ Do not use the **Shut Down** button to turn off the system.

Where are the remaining trays in the system?

- ▪ ► Remaining tray is in the garage (215)
  or,
- ▪ ► Remaining tray is in the slide dryer (216)
  or,
- ▪ ► Remaining tray is in the slide stainer module (218)
  or,
- ▪ ► Remaining tray is in the coverslipper (220)
  or,
- ▪ ► Remaining tray is in the curing oven (222)

▸ **Remaining tray is in the garage**

⚠ **CAUTION**

Injury to operators and damage to the system

▸ Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

You need a 4 mm hex key to complete this task.

1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 Reach through the elevator door to pull the tray out of the system.

3 Close the elevator door.

Are there trays remaining in the system?

- No, there are no trays remaining in the system. Restart the system. ► Review troubleshooting (223)
  or,
- ► Remaining tray is in the slide dryer (216)
  or,
- ► Remaining tray is in the slide stainer module (218)
  or,
- ► Remaining tray is in the coverslipper (220)
  or,
- ► Remaining tray is in the curing oven (222)

▶ Remaining tray is in the slide dryer

The following video demonstrates the process step-by-step. Continue reading the entire procedure for additional details.

⚠ **CAUTION**

Injury to operators and damage to the system

Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

▶ Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

NOTICE

Damage to the instrument

If trays are removed from the slide dryer incorrectly, the module can be damaged and require engineer repair.

▶ Only remove trays from the slide dryer if the system cannot restart or if the module failed to detect the tray.

NOTICE: Newer slide dryers have delicate switch sensors. If the tray is not correctly lifted off this sensor, it can be damaged.

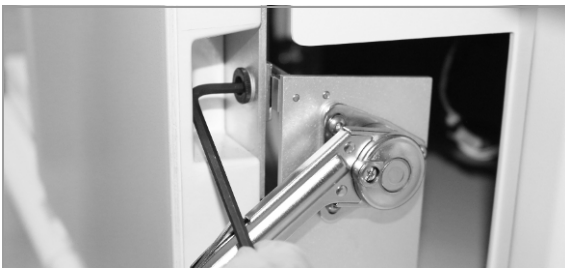These photos show the switch sensor on the slide dryer door.

Utility film (.hwls): ua_RecoverTrayDryingOven/UA_RemoveFromDryingOven.hwls
**Title:** Recovering a tray from the slide dryer

You need a 4 mm hex key to open the elevator door. After opening the elevator door, you can reach into the system to open the slide dryer.

1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the slide dryer.

   Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.
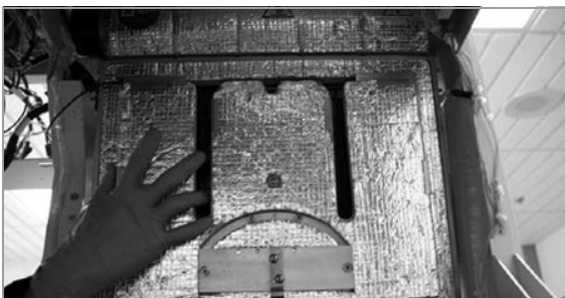
2 Open the slide dryer, reaching through the elevator door to grasp the slide dryer door.

3 With one hand, pull down the slide dryer door until it fully opens. Do not use excessive force.

4 With the other hand, lift the tray up and to the back of the system. Make sure to avoid contact with the switch sensor and tray arms. Gently pull the tray out of the system.

5 Gently close the slide dryer door.

Are there trays remaining in the system?

- No, there are no trays remaining in the system. Restart the system. ► Review troubleshooting (223)
  or,
- ► Remaining tray is in the garage (215)
  or,
- ► Remaining tray is in the slide stainer module (218)
  or,
- ► Remaining tray is in the coverslipper (220)
  or,
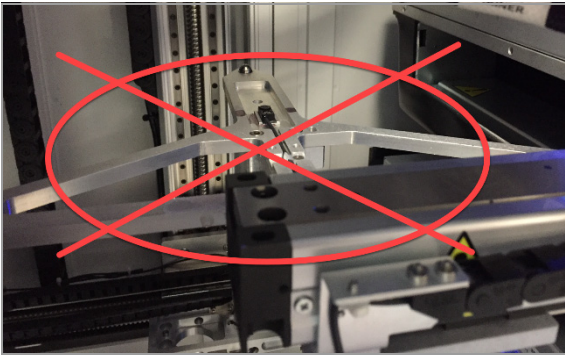- ► Remaining tray is in the curing oven (222)

▸ **Remaining tray is in the slide stainer module**

The following video demonstrates the process step-by-step. Continue reading the entire procedure for additional details.

Utility film (.hwls): ua_RecoverTrayStainers/UA_RemoveFromStainers.hwls
Title: Recovering trays from the slide stainer module

⚠ WARNING

Damage to the stainer or components

Pulling out a tray or moving the stainer mount arms before all obstacles have been cleared can damage the stainer and other components.

▸ Wait to push or pull the stainer mount arms or grab and pull the tray until all obstructions are cleared and the moving parts are stopped.
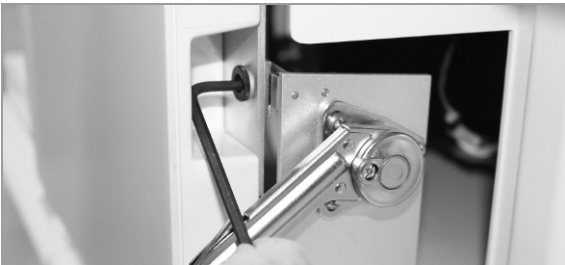
⚠ CAUTION

Injury to operators and damage to the system

Contact with the system without powering off the system and without waiting 20 minutes can result in a serious burn as some modules may be hot.

▸ Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

You need a 4 mm hex key to open the elevator door, and the stainer crank tool for the stainer module release. After opening the elevator door, you can reach into the system to open the stainer door.

Prepare wet paper towels in case of spills or wet trays that are stuck in a stainer module.

1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the slide dryer.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 CAUTION! Do not push or pull the stainer mount arms or grab and pull the tray. Use the crank to bring the tray out of the stainer.

Insert the stainer crank into the stainer release.

❶ If you do not have the stainer crank, you can use a 2 mm hex key instead.

3 Turn the crank clockwise until the tray and the tray mount are fully out of the stainer.

> ❶ Note that it takes some time to move the tray completely out.

4 Remove the tray from the stainer and carefully take it out of the system.

5 Reinsert the stainer crank into the stainer release.

6 Turn the stainer crank counterclockwise until the tray mount is inside the stainer.

Are there trays remaining in the system?

- No, there are no trays remaining in the system. Restart the system. ► Review troubleshooting (223)
  or,
- ► Remaining tray is in the garage (215)
  or,
- ► Remaining tray is in the slide dryer (216)
  or,
- ► Remaining tray is in the coverslipper (220)
  or,
- ► Remaining tray is in the curing oven (222)

▶ **Remaining tray is in the coverslipper**

The following video demonstrates the process step-by-step. Continue reading the entire procedure for additional details.

⚠ **CAUTION**

Injury to operators and damage to the system

▶ Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

Title: Recovering a tray from the coverslipper access area

You need a 4 mm hex key to open the elevator door. When the door is open, turn the coverslipper's air release valve counterclockwise to lower the tray out of the coverslipper, and then turn it clockwise to open the valve.

1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the coverslipper.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 Locate the air relief valve to the right of the elevator opening.

3 To lower the tray, close the blue air relief valve by turning it 90 degrees.
   → Releasing the air from the coverslipper lowers the tray safely.

4 Carefully pull out the tray from the coverslipper.

5 CAUTION! If you do not open the air relief valve after retrieving the tray, the coverslipper will not initialize properly on system restart.

Open the air relief valve by turning the air relief valve back to its original position.

Are there trays remaining in the system?

- No, there are no trays remaining in the system. Restart the system. ► Review troubleshooting (223)
  or,
- ► Remaining tray is in the garage (215)
  or,
- ► Remaining tray is in the slide dryer (216)
  or,
- ► Remaining tray is in the slide stainer module (218)
  or,
- ► Remaining tray is in the curing oven (222)

▸ ## Remaining tray is in the curing oven

The following video demonstrates the process step-by-step. Continue reading the entire procedure for additional details.

⚠ **CAUTION**

Injury to operators and damage to the system

▸ Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn as some modules may be hot.

Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the garage.

Utility film (.hwls): ua_RecoverTrayCuringOven/UA_removeFromCuringOven.hwls
Title: Recovering a tray from the curing oven

You need a 4 mm hex key to open the elevator door. The curing oven door opens automatically after the system is shut down.
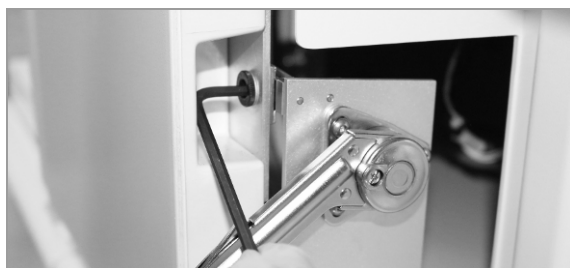
1 CAUTION! Wait at least 20 minutes after the system has been shut down before manually recovering a tray from the curing oven.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 On the top left of the system, locate the tray inside the curing oven.

  ❶ The curing oven door opens automatically after the system is shut down.

3 Lift the tray up and out of the curing over carefully to remove it from the system.

Are there trays remaining in the system?

▪ No, there are no trays remaining in the system. Restart the system. ► Review troubleshooting (223)
  or,
▪ ► Remaining tray is in the garage (215)
  or,
▪ ► Remaining tray is in the slide dryer (216)
  or,
▪ ► Remaining tray is in the slide stainer module (218)
  or,
▪ ► Remaining tray is in the coverslipper (220)
  or,
▪ ► Remaining tray is in the curing oven (222)

▶ **Review troubleshooting**

Yes. The trays have been recovered and the system is working.

1 After all trays have been removed from the system, ensure all panels and doors are closed.

2 Review a summary of your performed troubleshooting steps below.

  ➜ {{ExecutedTroubleshooterSteps}}

▶ **Contact Roche Service**

1 If you cannot recover a tray, or the system is unresponsive, contact your Roche Service representative.

Troubleshooting tray recovery

If the system turns off unexpectedly or the user interface freezes or experiences an error, you can manually remove trays from the transportation fork and use the auto-recovery to deliver the remaining trays to the portal upon restarting the system.

In this section

About tray recovery

To recover trays, you first turn off the system power, then remove all trays from the transportation forks, and then restart the system. This activates auto-recovery to move all the trays inside the system to the tray portals.

If all the trays were not recovered from the tray portals after restarting the system, or if it is not possible to restart the system, you can recover the trays manually from a different part of the system. You must turn off the power to the system completely before manually removing trays.

The following tasks detail the procedures for shutting down the system, restarting, and recovering trays from different modules in the system.

 Related topics

- Turning off the system (225)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Turning off the system

Turning off and then restarting the system usually recovers all trays and delivers them to the tray portals.

Do not carry out this tray recovery procedure unless Roche Diagnostics has trained you to do so.

⚠ **WARNING**

Injury to operators and damage to the system

Contact with the system without powering off the system and waiting 20 minutes can result in a serious burn because some modules can be hot.

▸ Power off the computer and system prior to manually removing any trays.

▸ Wait at least 20 minutes after powering off the system to allow all trays in the slide dryer, stainers, and curing oven to cool before handling trays manually.

▸ Wait 20 minutes after powering off the system before touching any internal components of the system.
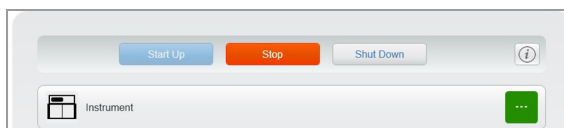
▸ **To turn off the system**

1 If the system is running, in the **Instrument view**, choose the **Stop** button.

2 If the user application is non-responsive, open the **Task Manager**. Press Ctrl+Alt+Delete on the keyboard, or press and hold the Windows taskbar at the bottom of the screen and choose **Task Manager**.

❶ Do not shut down the system by choosing **Shut Down** or the red **X**. A full shut down initiates the 60 minute cleaning cycle and delays tray recovery. If it has been more the 24 hours since the last cleaning cycle, the cleaning cycle will run when you restart the system.

➔ Windows Task Manager displays.

3 In the Windows **Task Manager** list, choose **HE600 (32bit)**, and then choose **End Task**.

➔ The monitor displays a purple Windows screen.

4 Choose the Windows icon in the lower left corner of the screen.

5 In the menu that displays in the lower left corner, choose and then **Shut down**.
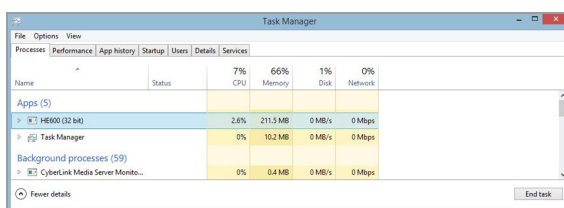
6 On the left-hand side of the system, turn the power switch from I to O.

7 Wait 20 minutes for the electricity to discharge and the trays and modules to cool.

8 Call Roche support to let them know you experienced a critical system error.

9 Now continue with "Removing trays from the transportation system and restarting the system" (⮞🖬 226).

🖬 **Related topics**

- About tray recovery (224)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Removing a tray from the transportation system and restarting the system

After you have shut down the system, remove any tray from the transportation system, and restart the system to activate auto-recovery.

In an extreme situation, (for example, a fluid leak, fire, power outage, transport error, or computer issue) the system might not be able to restart. Complete this task to determine if you can restart the system after turning it off.

The system then moves all remaining trays to the tray portals.

🛠 Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door

🗹 Make sure that the following prerequisites are completed before starting this procedure:

☐ Turn off the system.

⮞🖬 Turning off the system (225)

▸ To remove trays from the transportation system and restart

1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the transportation system.

Place a 4mm hex key into the slot on the bottom right of the elevator door.

2 Rotate the hex key to unlock the elevator door.
→ The elevator door is opened.
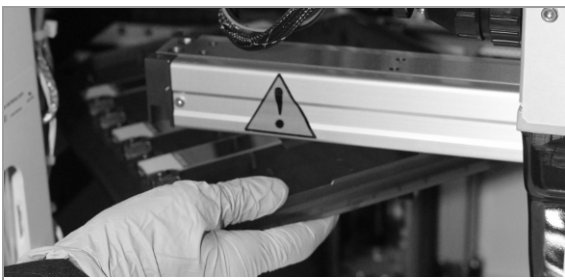
3 Gently lift the slide tray that is on the transportation fork to bring the tray out of the system.

4 Close the elevator door.

5 Restart the system by turning the power switch from O to I.
→ The auto-recovery feature automatically moves all remaining trays to the tray portals.

6 Remove all trays from the tray portals.
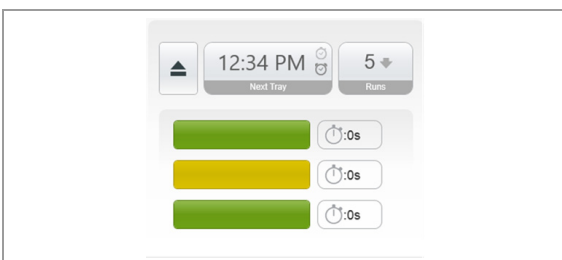
7 To determine if additional trays are in the system, choose the **Operating** tab, and view the number in the **Runs** box.

8 If the number of trays in the **Runs** box is higher than 0, then continue with "Determining the location of remaining trays"(▸ 🗐 228).

⁏▤ **Related topics**

- About tray recovery (224)
- Turning off the system (225)
- Determining the location of remaining trays (228)

Determining the location of remaining trays

If all the trays were not recovered after restarting the system or if the system could not be restarted, you need to determine where the remaining trays are.

After using the **Instrument** and **Operating** tabs to determine which modules you have to recover trays from, you must power down the system again to prepare to recover the trays.

Make sure that the following prerequisites are completed before starting this procedure:

☐ Remove trays from the transportation system and restart the system.

⁏▤ Removing a tray from the transportation system and restarting the system (226)

▶ **To determine the location of remaining trays**
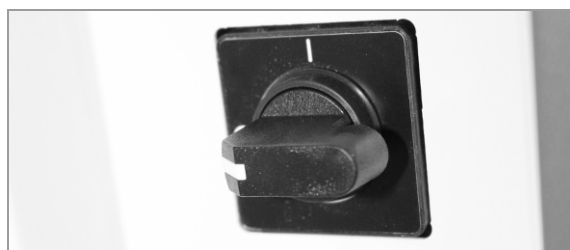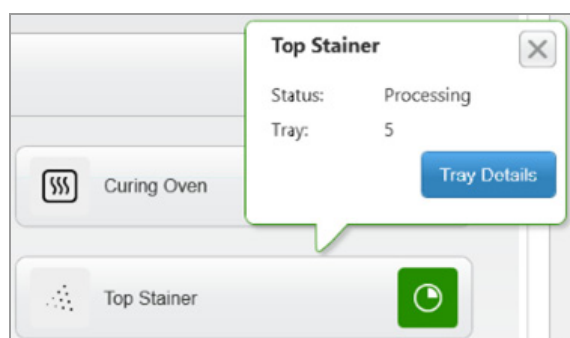
1 To determine the location of the remaining trays, choose the **Instrument** tab, and then choose each of the system modules.

➔ A dialog box displays to indicate which tray is present in the module (if any).

2 Note the locations of the trays in each of the modules.

❶ If the total number of trays shown in the **Operating** tab **Runs** box is larger than the total number of trays shown in each of the modules, the additional trays are probably in the garage.

3 To prepare to recover trays, turn off the system using **Task Manager** and turn the power switch from I to O. For more information, see "Turning off the system" (⁏▤ 225).

❶ Do not use the **Shut Down** button to shut down the system.

4 Now continue with the topic corresponding to the location of the remaining trays:

- ▪ 'Recovering a tray from the slide dryer' (▸🗐 229)
- ▪ 'Recovering trays from the slide stainer module' (▸🗐 230)
- ▪ 'Recovering a tray from the coverslipper access area' (▸🗐 232)
- ▪ 'Recovering a tray from the curing oven' (▸🗐 233)
- ▪ 'Recovering a tray from the garage' (▸🗐 235)

🗐 **Related topics**

- ▪ About tray recovery (224)
- ▪ Turning off the system (225)
- ▪ Removing a tray from the transportation system and restarting the system (226)

Recovering a tray from the slide dryer

If the remaining tray is in the slide dryer, you can recover it by opening the elevator door, and then opening the slide dryer door.

Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door

Make sure that the following prerequisites are completed before starting this procedure:

☐ Locate the tray in the Operating tab and turn off the system.

🗐 Determining the location of remaining trays (228)

▸ **To recover a tray from the slide dryer**

1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the slide dryer.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.
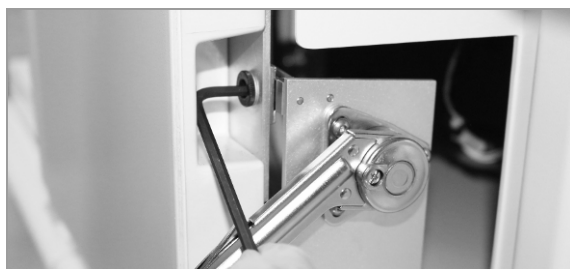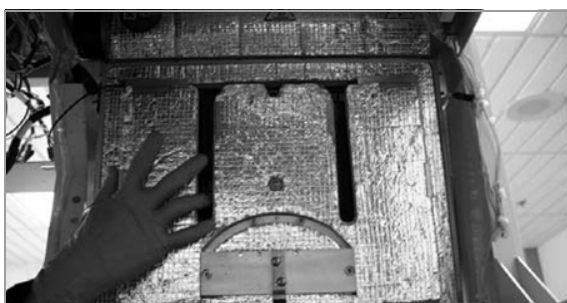
2 Reach through the elevator door to grasp the slide dryer door.

3 Pull down the slide dryer door until it fully opens.

4 Lift up the tray slightly, and pull it out of the system.

Related topics

- About tray recovery (224)
- Turning off the system (225)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Recovering a tray from the slide stainer module

If the remaining tray is in the slide stainer module, you can recover it by opening the elevator door, and then opening the slide stainer door.

Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door.
☐ A stainer crank to open the slide stainer door.

Make sure that the following prerequisites are completed before starting this procedure:

☐ Locate the tray in the Operating tab and turn off the system.
▸ Determining the location of remaining trays (228)

▶ **To recover trays from the slide stainer module**

1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the slide stainer module.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.
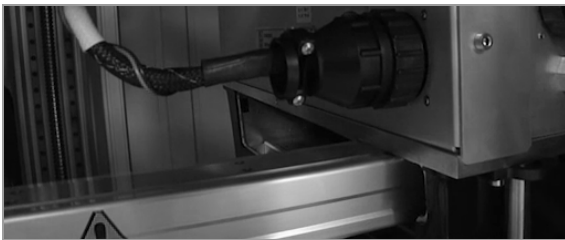
2 Push down the slide stainer door to open it.

3 CAUTION! Do not push or pull the stainer mount arms or grab and pull the tray. Use the crank to bring the tray out of the stainer.

Insert the stainer crank into the stainer release.

4 Turn the crank clockwise until the tray and the tray mount are fully out of the stainer.

5 Remove the tray from the stainer, and carefully take it out of the system.

ℹ There might be extra fluid in the tray.

6 Reinsert the stainer crank into the stainer release.

7 Turn the stainer crank counterclockwise until the tray mount is inside the stainer.

⊳ **Related topics**

- About tray recovery (224)
- Turning off the system (225)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Recovering a tray from the coverslipper module

If the remaining tray is in the coverslipper module, you can recover it by opening the elevator door, and then closing the air relief valve to lower the tray.

Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door.

Make sure that the following prerequisites are completed before starting this procedure:

☐ Locate the tray in the Operating tab and turn off the system.

⊳ Determining the location of remaining trays (228)

▶ **To recover a tray from the coverslipper access area**
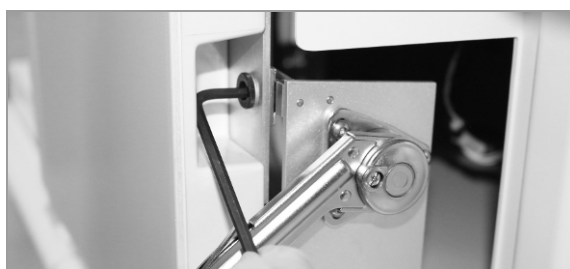
1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the coverslipper.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 Locate the air relief valve to the right of the elevator door opening.

3 To lower the tray, close the blue air relief valve by turning it 90 degrees.

➔ Releasing the air from the coverslipper lowers the tray safely.

4 Carefully pull out the tray from the coverslipper.

ⓘ Do not pull the tray upwards when removing it. Lifting the tray upwards could damage the coverslipper heads.

5 CAUTION! If you do not open the air relief valve to raise the tray mount back into the coverslipper after retrieving the tray, the coverslipper will not work correctly.

Open the air relief valve, and raise the tray mount by turning the air relief valve back to its original position.

⊟ **Related topics**

- About tray recovery (224)
- Turning off the system (225)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Recovering a tray from the curing oven

If the remaining tray is in the curing oven, you can recover it by opening the elevator door, and then reaching up to the top left of the system to retrieve the tray.

⚠ **WARNING**

Damage to the module

If a tray is incorrectly removed from the curing oven, the module can be damaged and require an engineer to repair it.

▸ Only remove trays from the curing oven if the system cannot restart or if the module failed to detect the tray.

Newer ovens have delicate switch sensors. If the tray is not properly lifted off of this sensor, it can be damaged.

Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door.

Make sure that the following prerequisites are completed before starting this procedure:

☐ Locate the tray in the Operating tab and turn off the system.

⬧ Determining the location of remaining trays (228)

▶ To recover a tray from the curing oven
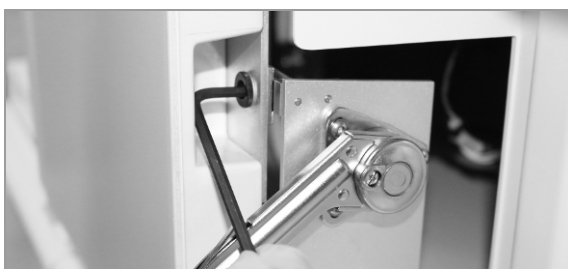
1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the curing oven.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 On the top right of the system, locate the tray inside the curing oven.

❶ The curing oven door opens automatically after the system is turned off.

3 Lift the tray up and out of the curing oven carefully to remove it from the system.

⬧ **Related topics**

▪ About tray recovery (224)
▪ Turning off the system (225)
▪ Removing a tray from the transportation system and restarting the system (226)
▪ Determining the location of remaining trays (228)

Recovering a tray from the garage

If the remaining tray is in the garage, you can recover it through the elevator door.

Before you begin the procedure, make sure that you have the following materials available:

☐ A 4 mm hex key to open the elevator door

Make sure that the following prerequisites are completed before starting this procedure:

☐ Determine the remaining number of trays and locations in the instrument.

▸▤ Determining the location of remaining trays (228)

▸ To recover a tray from the garage
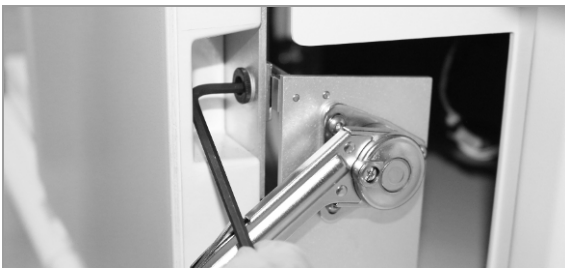
1 CAUTION! Wait at least 20 minutes after the system has been turned off before manually recovering a tray from the garage.

Place the hex key into the slot on the bottom right of the elevator door, and turn the hex key to open the door.

2 Reach through the elevator door to the garage to pull the tray out of the system.

3 Close the elevator door.

▸▤ **Related topics**

- About tray recovery (224)
- Turning off the system (225)
- Removing a tray from the transportation system and restarting the system (226)
- Determining the location of remaining trays (228)

Troubleshooting coverslip issues

In this section

Identifying coverslip issues (236)
Removing coverslips from slides (237)

Identifying coverslip issues

If you chose a protocol to coverslip slides, make sure that coverslips have been correctly applied to the slides after unloading them.

Make sure that the following prerequisites are completed before starting this procedure:

☐ Slides are processed with a protocol that includes coverslipping.

▶ **To inspect coverslips**

1 Check each slide for the following:
- Coverslips that are misaligned with the slides
- Double or missing coverslips
- Coverslips that are not adhering to the tissue or upside down
- Bubbles between coverslip and tissue

ⓘ You can remove and reapply coverslips as necessary.

2 If any of these issues occur often, contact your Roche service representative. Adjustments to the coverslipper might be needed to restore proper operation.

 Related topics
- Removing coverslips from slides (237)
- Unloading a tray from a portal (117)

Removing coverslips from slides

If you need to run a sample through the VENTANA HE 600 system again, you need to remove the coverslip from the slide first.

You can use a hot plate and forceps to remove a coverslip from a slide.

The following video demonstrates the process step-by-step. Continue reading the entire procedure for additional details.

Utility film (.hwls): ua_RemoveCoverslips/UA_RemovingCoverslips.hwls
Title: Removing coverslips from slides

⚠ **CAUTION**

Burns from direct contact with hot plate

Direct contact with the hot plate can result in a severe burn.

▸ Proceed with caution when using the hot plate.

Use metal forceps to move the coverslip and slide and wear protective gloves.

Make sure that the following supplies are ready before removing coverslips from slides:

☐ Hot plate
☐ Metal forceps

Make sure that the following prerequisites are completed before starting this procedure:

☐ Before performing this procedure on production slides, validate the procedure for your lab.

▸ **To remove coverslips from slides**

1 Turn on a hot plate to the medium setting, 100 °C.

2 Place the slide on the hot plate for 10 seconds or more.

    ❶ The longer a coverslip has been on a slide, the longer it takes to remove the coverslip.
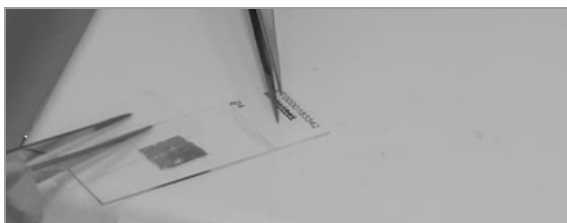
3 CAUTION! Do not lift up on the coverslip, or it may shatter, and be careful not to damage the tissue.

Remove the coverslip by sliding it down the slide using forceps.

4 Continue to slide the coverslip down and off the slide with the forceps to remove it.

    ❶ If there is additional mounting media on the slide, allow the slide to cool, then soak it in Xylene for 30 seconds.

Error recovery procedures

In this section

Restarting the user interface if software
unresponsive (239)

Disabling a stainer module (240)

Ejecting coverslip cassettes (241)

Restarting the user interface if software unresponsive

If the user interface freezes, and choosing tabs or buttons does not resolve the issue, you can restart the user interface by using Windows Task Manager.

-ᄋ- The screen shots in the following procedure illustrate the steps for a system running Windows 8. If your system has Windows 10 installed, some Windows screen elements have a different appearance.

▶ **To restart the user interface**

1 To open **Task Manager**, press Ctrl+Alt+Delete on the keyboard, or press and hold the Windows taskbar at the bottom of the screen and choose **Task Manager**.

➜ Windows Task Manager displays.

2 In the Windows **Task Manager** list, choose **HE600 (32bit)** and then choose **End Task**.

3 Choose the Windows icon in the lower left corner of the screen.

4 In the menu that displays in the lower left corner, choose 🔘 and then **Shut Down**.

5 On the left-hand side of the system, turn the power switch from I to O.
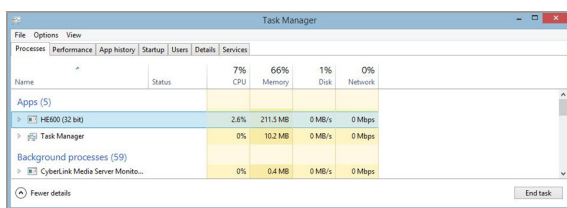
6 Restart the system by turning the power switch from O to I.
   ➔ The user interface restarts when the system is turned back on.

⊟ Related topics

- Viewing and filtering the error log (193)
- List of error messages (195)

Disabling a stainer module

If you suspect that staining issues are specific to a particular stainer module, you can disable the stainer module until the issue is resolved. Follow this procedure with guidance from Roche support.

▶ **To disable a stainer module**

1 Contact Roche support to determine which module needs attention.

2 Navigate to the **Instrument** view, and choose the stainer that needs to be disabled.
   ➔ A dialog box displays, showing that the stainer is enabled.

3 In the dialog box, choose **Off** to disable the stainer module.
   ➔ The dialog box shows the stainer is off and the stainer is disabled.
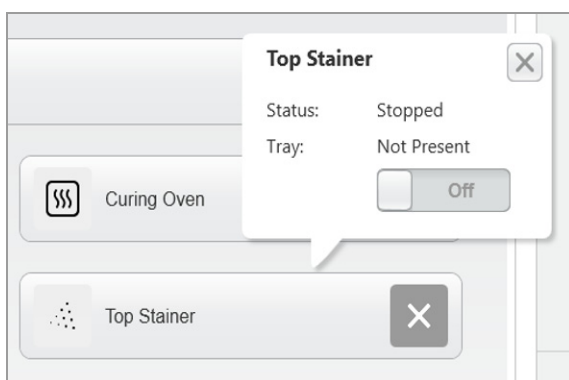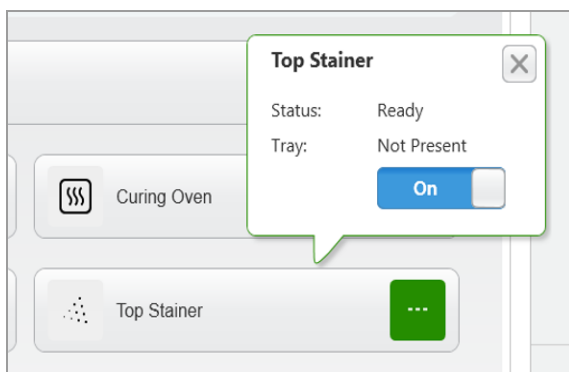
Ejecting coverslip cassettes

If needed, you can eject the expired cassette by choosing **Load Cassette** to move the expired cassette to the empty cassette position.

The coverslipper module can hold up to 7 cassettes.

NOTICE

Possible staining issues

If you eject coverslip cassettes while trays are running in the system, the trays will be aborted.

▸ Complete this task when no trays are processing in the system.

▸ **To eject expired coverslip cassettes**

1 Open the door to the coverslipper module.

2 In the **Operating** view, choose the expired cassette, and then choose **Load Cassette**.

3 Continue to choose **Load Cassette** until the expired cassette has been ejected.
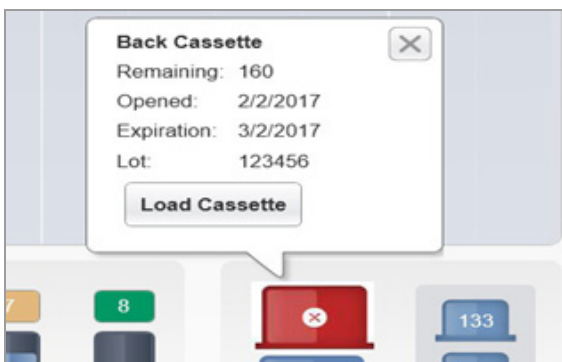
4 Remove empty coverslip cassettes from the waste bin as they are available, and replace them with new ones quickly.

 ❶ If you complete this step while trays are processing, they will be aborted.

Appendix

Open source license notifications and notices

About open source license notifications and notices

Portions of the VENTANA HE 600 system Software might include one or more Open Source or Commercial Software programs. For copyright and other notices and licensing information regarding such software programs included with VENTANA HE 600 system Software please see the appendix of the Operator Manual and the product on line help pages included with the product.

The product and the VENTANA HE 600 system Software as a whole may form a regulated device in accordance with the applicable laws – please refer to the Operator Manual and the labeling for details. Please note that the respective authorization in accordance with the applicable laws lapse in case of any unauthorized changes to the VENTANA HE 600 system Software.

The below terms and notices do not apply to the proprietary VENTANA HE 600 system software.

Open Source Software	Version No. of the Open Source Software	Link to Notice and License
The MIT License Simple MVVM Toolkit	4.0.0.0	The MIT License Simple MVVM Toolkit *http://opensource.org/licenses/mit-license.php*
Mozilla Public License	2.0	Mozilla Public License *https://www.mozilla.org/en-US/MPL/2.0/*
Apache License	2.0	Apache License *http://www.apache.org/licenses/LICENSE-2.0*
GNU General PublicLicense	3	GNU General Public License *http://www.gnu.org/licenses/gpl-3.0.en.html*

⊞ Open Source Software

The MIT License (MIT) Simple MVVM Toolkit

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Mozilla Public License Version 2.0

1.Definitions

1.1."Contributor" means each individual or legal entity that creates, contributes to the creation of, or owns Covered Software.

1.2. "Contributor Version" means the combination of the Contributions of others (if any) used by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution" means Covered Software of a particular Contributor.

1.4. "Covered Software" means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses" means

(a) that the initial Contributor has attached the notice described in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of version 1.1 or earlier of the License, but not also under the terms of a Secondary License.

1.6. "Executable Form" means any form of the work other than Source Code Form.

1.7. "Larger Work" means a work that combines Covered Software with other material, in a separate file or files, that is not Covered Software.

1.8. "License" means this document.

1.9. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently, any and all of the rights conveyed by this License.

1.10. "Modifications" means any of the following:

(a) any file in Source Code Form that results from an addition to, deletion from, or modification of the contents of Covered Software; or

(b) any new file in Source Code Form that contains any Covered Software.

1.11. "Patent Claims" of a Contributor means any patent claim(s), including without limitation, method, process, and apparatus claims, in any patent Licensable by such Contributor that would be infringed, but for the grant of the License, by the making, using, selling, offering for sale, having made, import, or transfer of either its Contributions or its Contributor Version.

1.12. "Secondary License" means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form" means the form of the work preferred for making modifications.

1.14. "You" (or "Your") means an individual or a legal entity exercising rights under this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available modify, display, perform, distribute, and otherwise exploit its Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution become effective for each Contribution on the date the Contributor first distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under this License. No additional rights or licenses will be implied from the distribution or licensing of Covered Software under this License.

Notwithstanding Section 2.1(b) above, no patent license is granted by a Contributor:

(a) for any code that a Contributor has removed from Covered Software; or

(b) for infringements caused by: (i) Your and any other third party's modifications of Covered Software, or (ii) the combination of its Contributions with other software (except as part of its Contributor Version); or

(c) under Patent Claims infringed by Covered Software in the absence of its Contributions.

This License does not grant any rights in the trademarks, service marks, or logos of any Contributor (except as may be necessary to comply with the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to distribute the Covered Software under a subsequent version of this License (see Section 10.2) or under the terms of a Secondary License (if permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its Contributions are its original creation(s) or it has sufficient rights to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under applicable copyright doctrines of fair use, fair dealing, or other equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code Form, as described in Section 3.1, and You must inform recipients of the Executable Form how they can obtain a copy of such Source Code Form by reasonable means in a timely manner, at a charge no more than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this License, or sublicense it under different terms, provided that the license for the Executable Form does not attempt to limit or alter the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice, provided that You also comply with the requirements of this License for the Covered Software. If the Larger Work is a combination of Covered Software with a work governed by one or more Secondary Licenses, and the Covered Software is not Incompatible With Secondary Licenses, this License permits You to additionally distribute such Covered Software under the terms of such Secondary License(s), so that the recipient of the Larger Work may, at their option, further distribute the Covered Software under the terms of either this License or such Secondary License(s).

3.4. Notices

You may not remove or alter the substance of any license notices (including copyright notices, patent notices, disclaimers of warranty, or limitations of liability) contained within the Source Code Form of the Covered Software, except that You may alter any license notices to the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the noncompliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of noncompliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

6. Disclaimer of Warranty

Covered Software is provided under this License on an "as is" basis, without warranty of any kind, either expressed, implied, or statutory, including, without limitation, warranties that the Covered Software is free of defects, merchantable, fit for a particular purpose or non-infringing. The entire risk as to the quality and performance of the Covered Software is with You. Should any Covered Software prove defective in any respect, You (not any Contributor) assume the cost of any necessary servicing, repair, or correction. This disclaimer of warranty constitutes an essential part of this License. No use of any Covered Software is authorized under this License except under this disclaimer

7. Limitation of Liability

Under no circumstances and under no legal theory, whether tort (including negligence), contract, or otherwise, shall and Contributor, or anyone who distributes Covered Software as permitted above, be liable to You for any direct, indirect, special, incidental, or consequential damages of any character including, without limitation, damages for lost profits, loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses, even if such party shall have been informed of the possibility of such damages. This limitation of liability shall not apply to liability for death or personal injury resulting from such party's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section 10.3, no one other than the license steward has the right to modify or publish new versions of this License. Each version will be given a distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version of the License under which You originally received the Covered Software, or under the terms of any subsequent version published by the license steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to create a new license for such software, you may create and use a modified version of this License if you rename the license and remove any references to the name of the license steward (except to note that such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible with Secondary Licenses

If You choose to distribute Source Code Form that is Incompatible With Secondary Licenses under the terms of this version of the License, the notice described in Exhibit B of this License must be attached.

Exhibit A – Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at *http://mozilla.org/MPL/2.0/*.

If it is not possible or desirable to put the notice in a particular file, then You may include the notice in a location (such as a LICENSE file in a relevant directory) where a recipient would be likely to look for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B – "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.

Apache License, Version 2.0, January 2004

http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

1. You must give any other recipients of the Work or Derivative Works a copy of this License; and

2. You must cause any modified files to carry prominent notices stating that You changed the files; and

3. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

4.If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License. You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

GNU General Public License

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc.
<*http://fsf.org/*>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copy left license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercial, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or nonconsumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAMPROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS