

User's Manual



R-PHOTO

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No warranty is made in regard to specifications or features.

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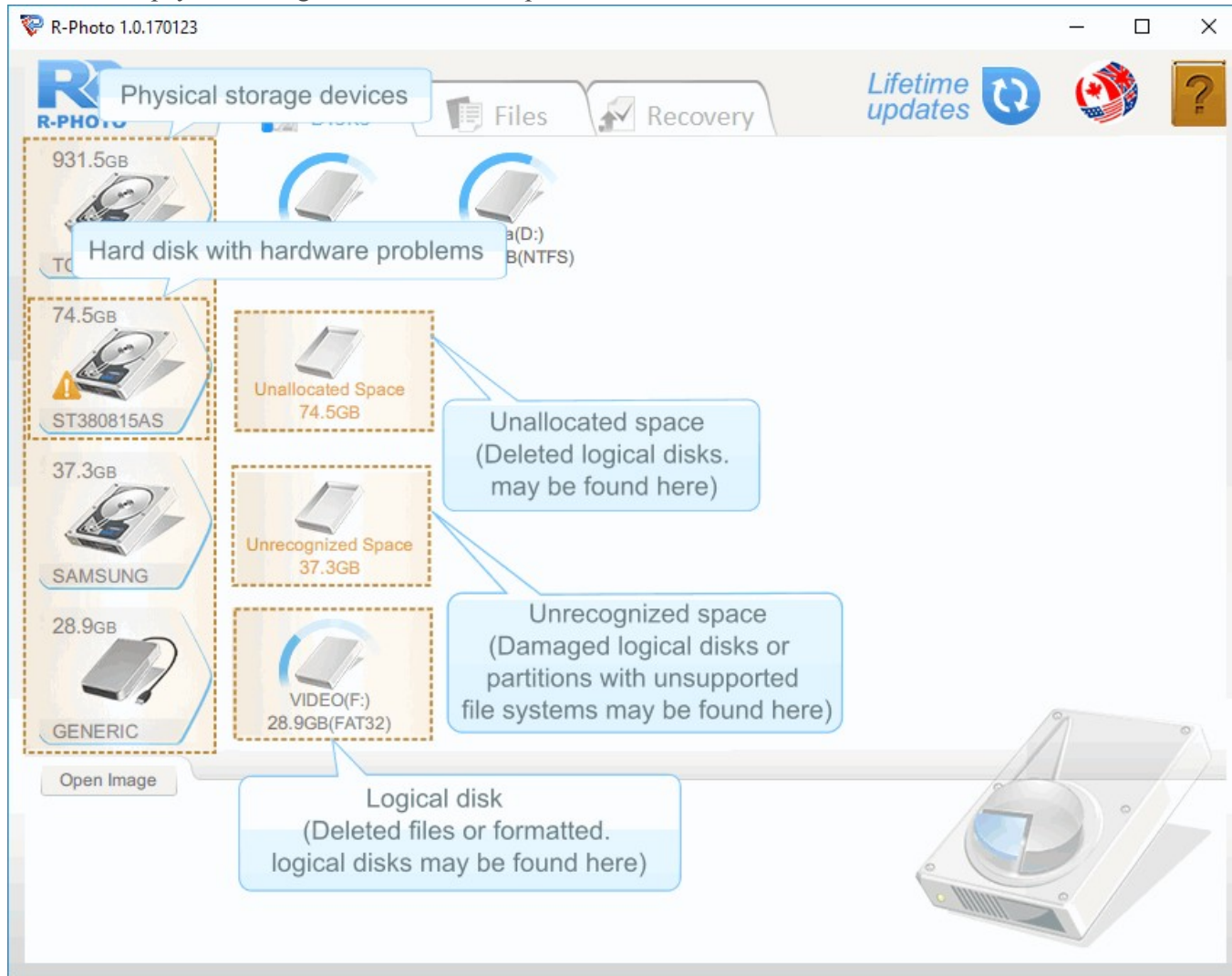
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I Start

II Quick Start Guide in 3 Steps

2.1 Step 1. Disk Selection




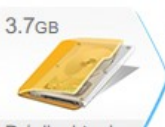

- Locate the physical storage device where lost photos and videos resided.



Disks panel

Storage Device Icons

 <p>931.5GB TOSHIBA</p>	<p>Computer's internal hard drives. Disks with files reside on them.</p>
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 <p>37.3GB USB</p>	<p>USB storage devices like external hard drives or memory sticks</p>
 <p>238.5GB M4-CT256M...</p>	<p>SSD storage devices. File recovery from such devices has some peculiarities described in the SSD and NVME storage devices section.</p>
 <p>128Gb NVME disk</p>	<p>NVME storage devices. SSD storage devices connected to the computer through a special interface. They have the same file recovery peculiarities of SSD devices described in the SSD and NVME storage devices section.</p>
 <p>3.7GB D:/rdi_virtual...</p>	<p>Disk image. A file that contains exact, byte by byte, copies of storage devices or disks. Files from such images can be recovered as if those images were real disks.</p>
 <p>3.7GB E:</p>	<p>CD/DVD discs or virtual disks.</p>

- Check if the hardware of the storage device with lost photos and videos is in a good condition. If the storage device has hardware problems, R-Photo marks such a device with an exclamation mark and gives a [S.M.A.R.T. Monitoring](#) warning. [Disk imaging](#) is the best solution in this situation.

- Select the disk on the device where the lost photos and videos might reside.

Recovery of deleted photos and videos or lost photos and videos from a formatted disk with the same file system

These files most likely reside on an existing disk.

To see the photos and videos resided on the disk, right-click and select Show Files ([Quick Scan operation](#)). Depending on the disk size, the number of photos and videos, and your computer hardware, it may take a few seconds or more. When they are found, R-Photo switches to the Files panel where found photos and videos are [selected for recovery](#).

Recovery of lost photos and videos from a formatted disk with a different file system

These files most likely reside on an existing disk.

To see the files resided on the formatted disk, right-click and select Show Files ([Quick Scan operation](#)). Depending on the disk size, the number of files, and your computer hardware, it may take a few seconds or more. When R-Photo switches to the Files panel, click the [Deep scan](#) button, wait for [Deep Scan](#) to finish, and select the previous [partition](#) where lost files resided. Then [select files for recovery](#).

Recovery of lost photos and videos from a deleted disk

Deleted disks are usually found on the unallocated space.

Right-click the unallocated space on the storage device of the disk, select Scan for partitions, and wait for R-Photo to finish scanning the device. Note that it may take a long time if the device is large. When the disk is found, right-click Show Files then [select files for recovery](#).

Recovery of lost photos and videos from a damaged disk or a partition with an unsupported file system

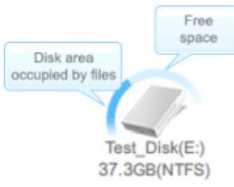


Damaged disks or partitions with unsupported file system are usually found on the unrecognized space.

This recovery is very similar to the case of lost files from a deleted disk.

Right-click the unrecognized space on the storage device of the disk, select Scan, and wait for R-Photo to finish scanning the device. Note that it may take a long time if the device is large. When the disk or a partition is found, right-click Show Files then [select files for recovery](#).

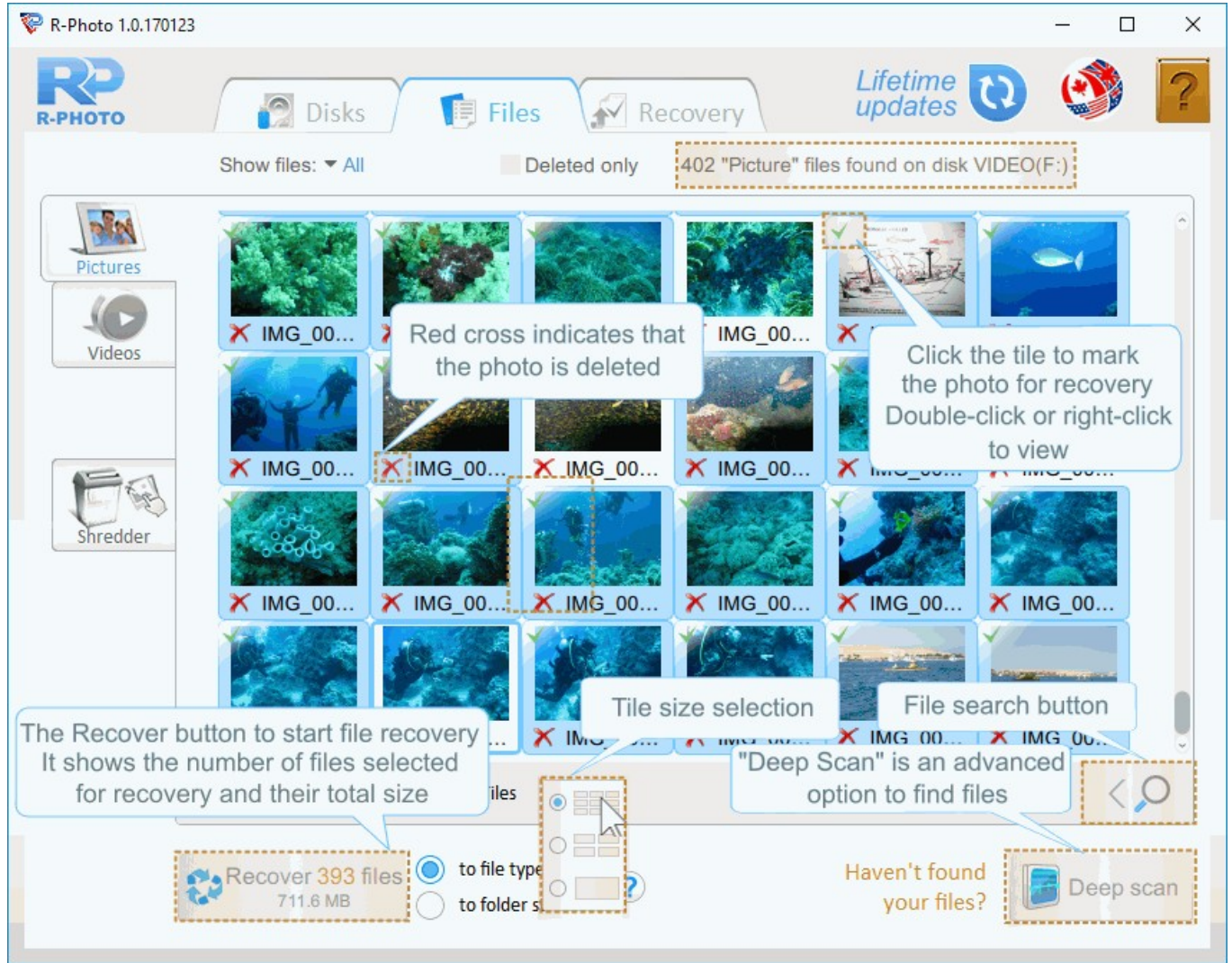
If the files are to be recovered from a partition with an unsupported file system, R-Photo will use only raw file search, and, therefore, will not recover file names and the original folder structure. See the [Definitions](#) help page for more details.

Disks, Unrecognized Space, and Unallocated Space Icons

	<p>A logical disk with letter (E:). Deleted files or files from formatted disks might reside on such disks.</p>
	<p>Unallocated space on a storage devices. A storage space that does not belong to any disk. A deleted disk (partition) might be found here.</p>
	<p>Unrecognized space on a storage devices. A storage space that is supposed to belong to a disk or partition, but R-Photo cannot detect any because of its damaged or unsupported file system. A damaged disk or a partition with an unsupported file system might be found here.</p>

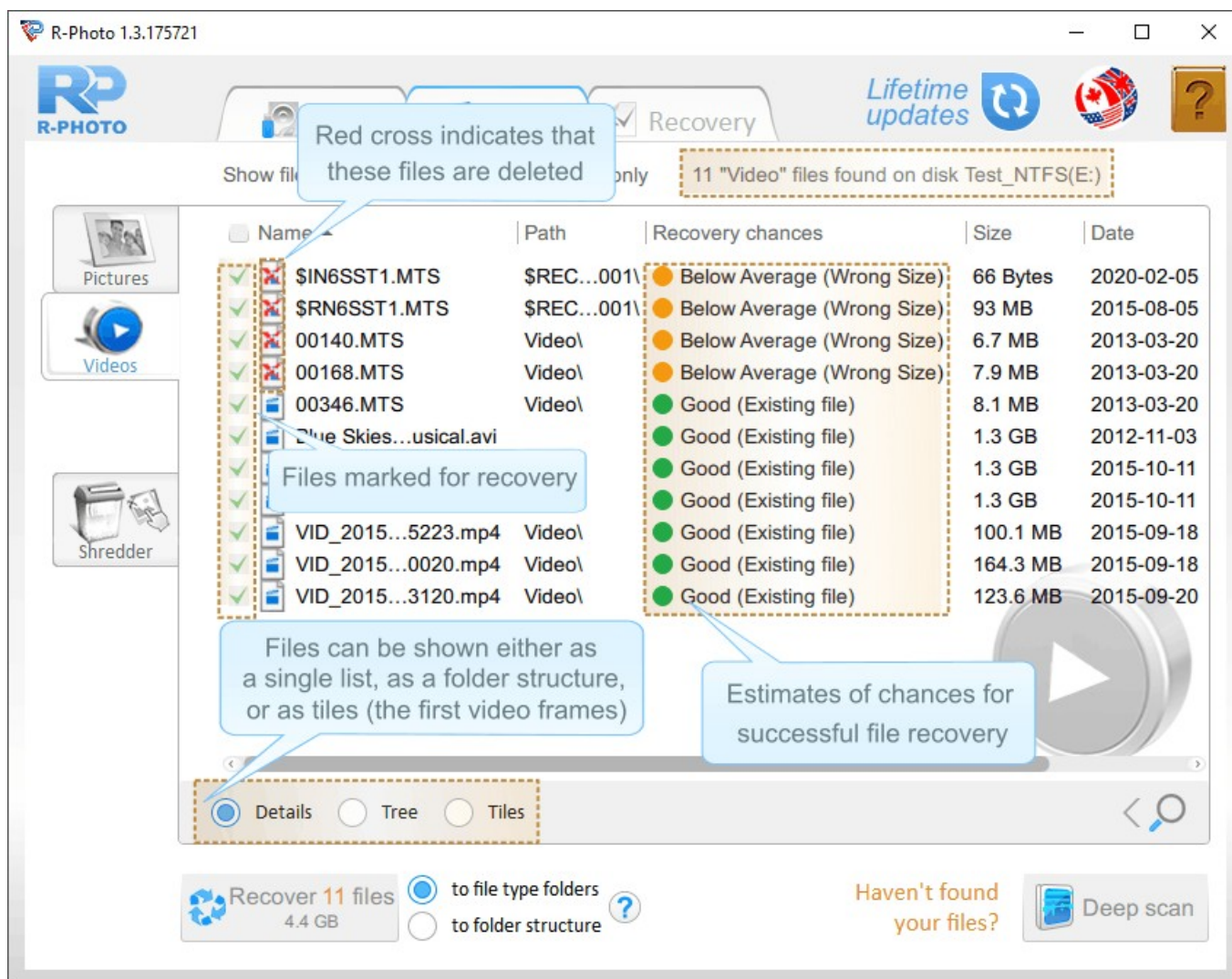
2.2 Step 2. Files Marking

Mark photos and videos for recovery.



Files panel - Pictures tab.

Files are shown in a [single file list](#) with details or as a [folder tree structure](#), or tiles on the Pictures tab.



Files panel - Videos tab.

The Recovery chances column shows the estimates of [chances for successful file recovery](#).

There are advanced sorting and searching options in R-Photo. See the [File Sorting](#) and [File Search](#) help pages for more details.

If a file is marked/cleared for recovery, it is applied to all tabs where it appears.

The build-in [file viewer](#) allows you to estimate chances for successful file recovery or to find a necessary file to recover.

If the required photos and videos are not found, or you are recovering them from the reformatted disk with a different file system, use the advanced [Deep scan](#) option

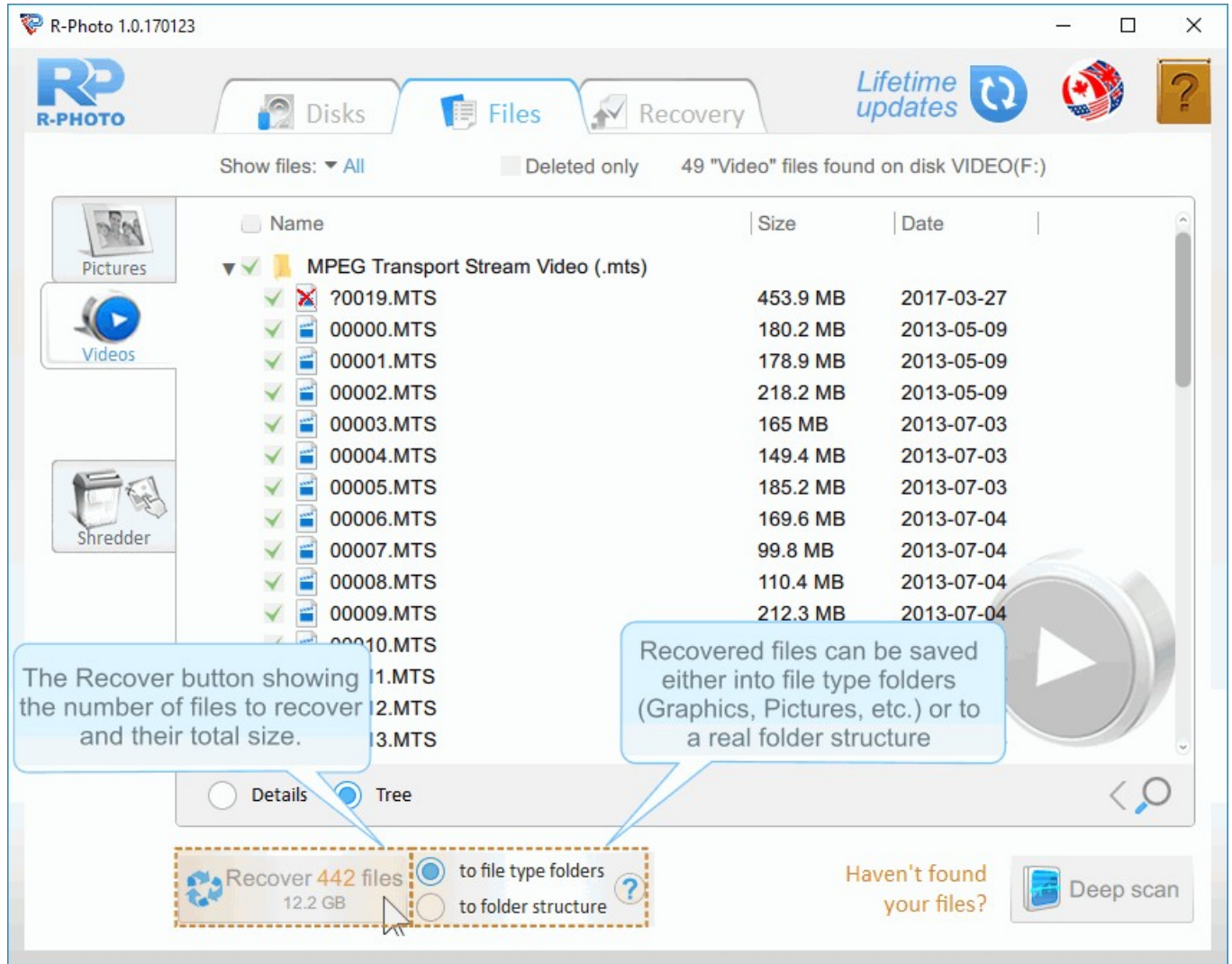
You may shred deleted photos and videos to render their content completely unrecoverable. Go to the [Shredder](#) help page for more details.

When photos and videos are marked, click the Recover button to start the [recovery](#).

2.3 Step 3. Recovery

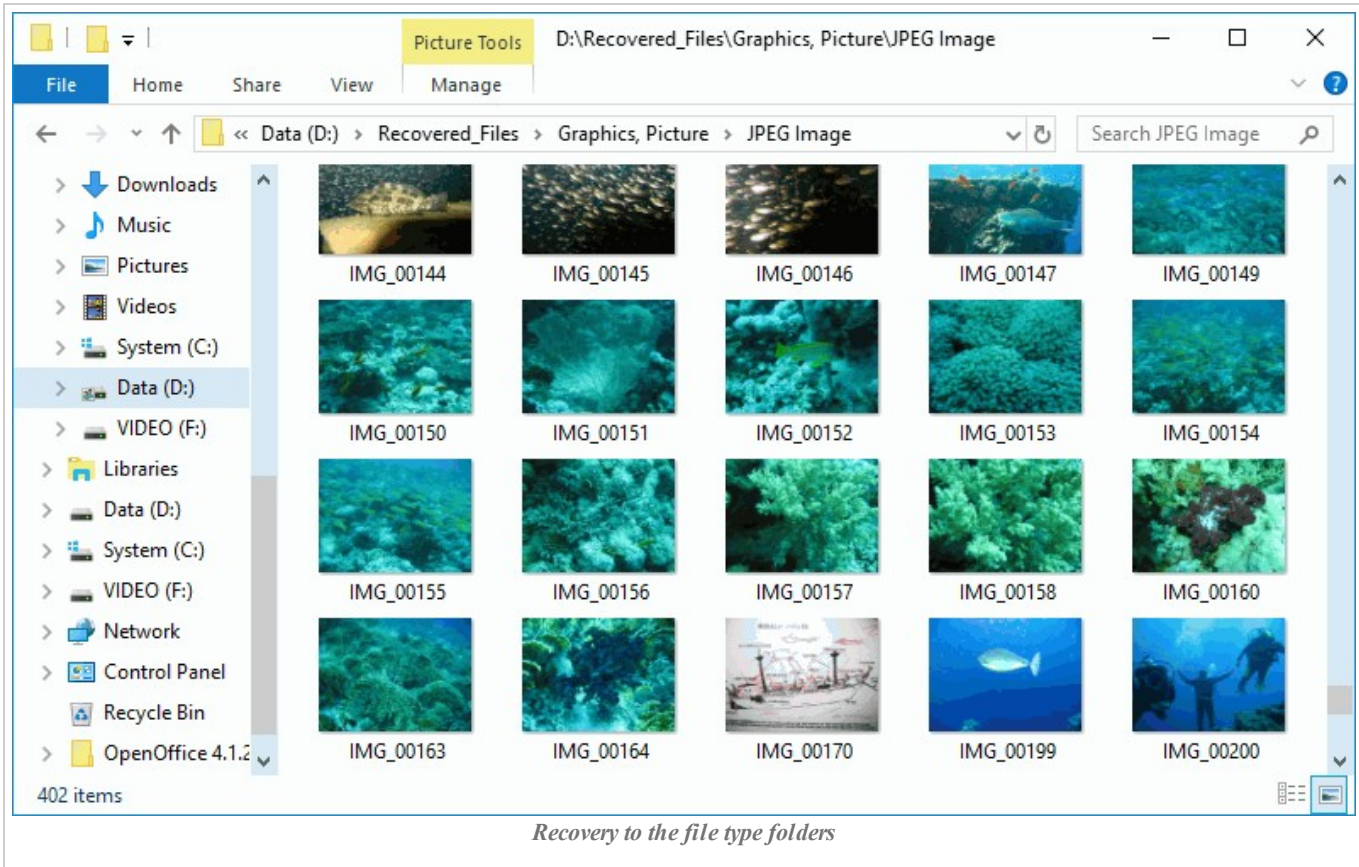
When the required photos and videos are found and marked for recovery, a sufficient storage space on another disk should be available to save them.

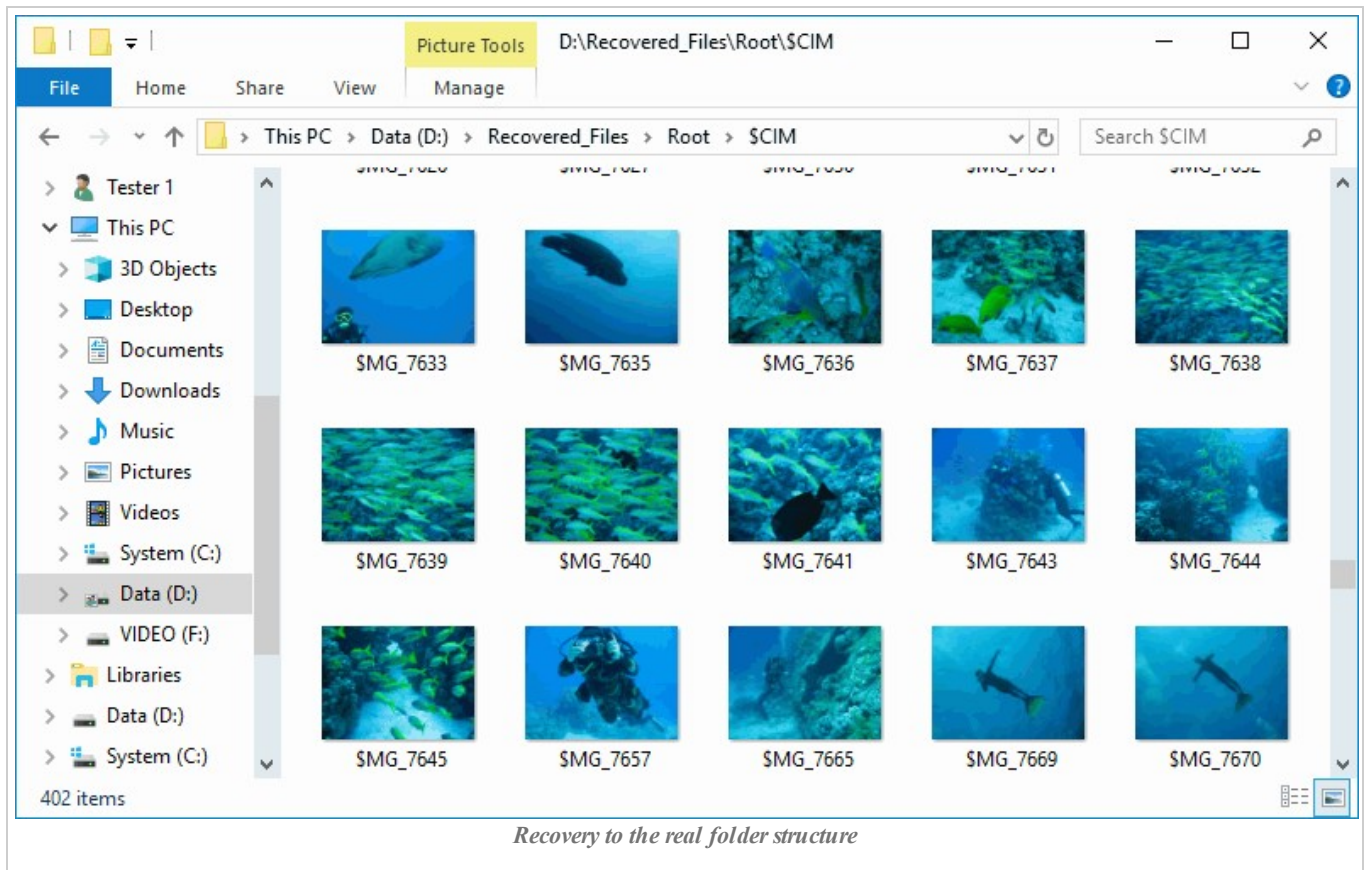
Never save the recovered files on the place where they resided, or you may completely loose them!



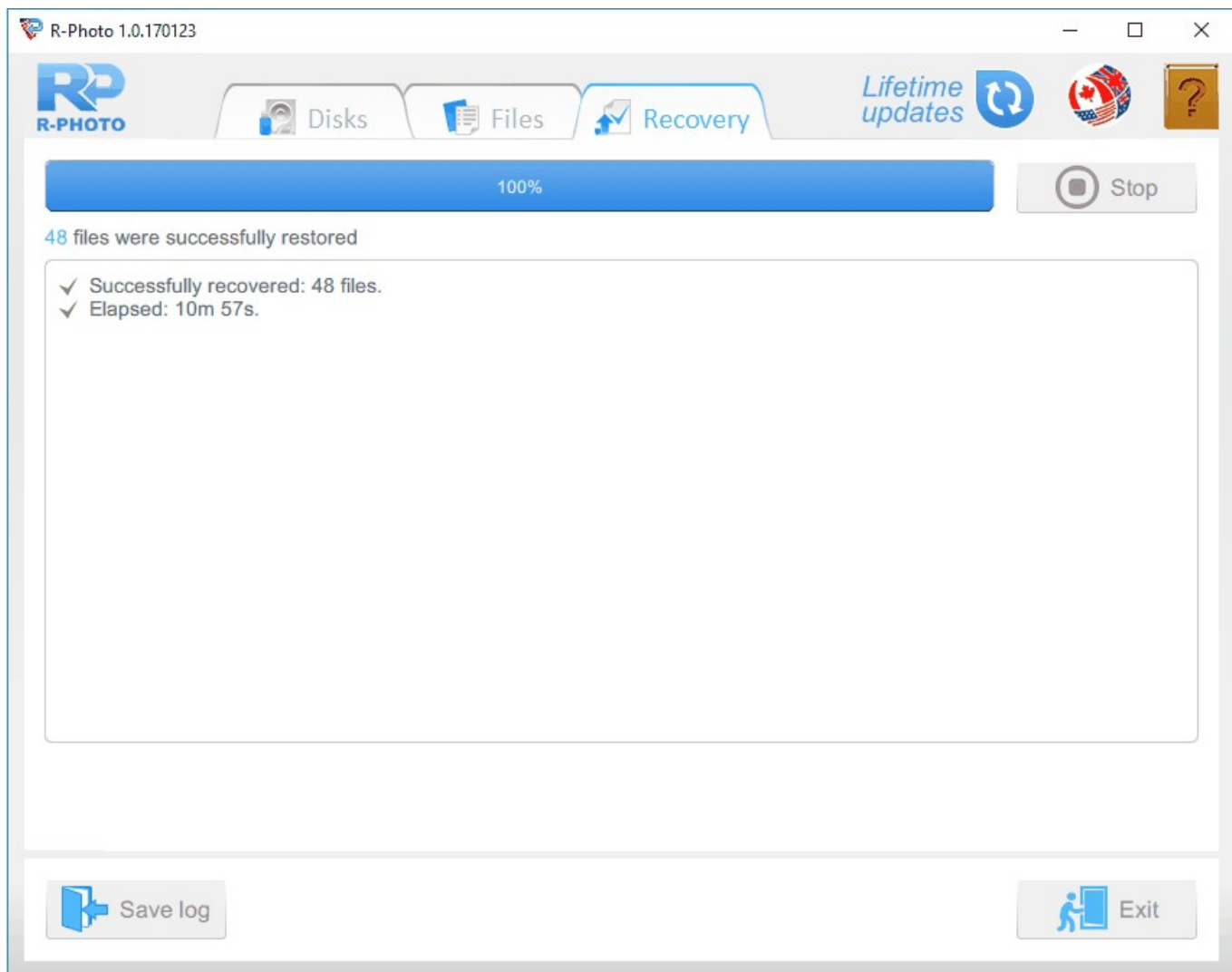
File recovery options

✓ Select the way R-Photo saves the files: either into the file type folders or to the real folder structure.





When all the necessary preparations are made, click the Recover button to start file recovery. Wait for R-Photo to recover the files and see the results.



File recovery results

A file recovery log can be saved by clicking the Save log button.

When the recovery is over, the folder with recovered files will be automatically opened.

Now the recovery session is over. Go to the Disks panel to start another session or click the Exit button to close the program.

III Features

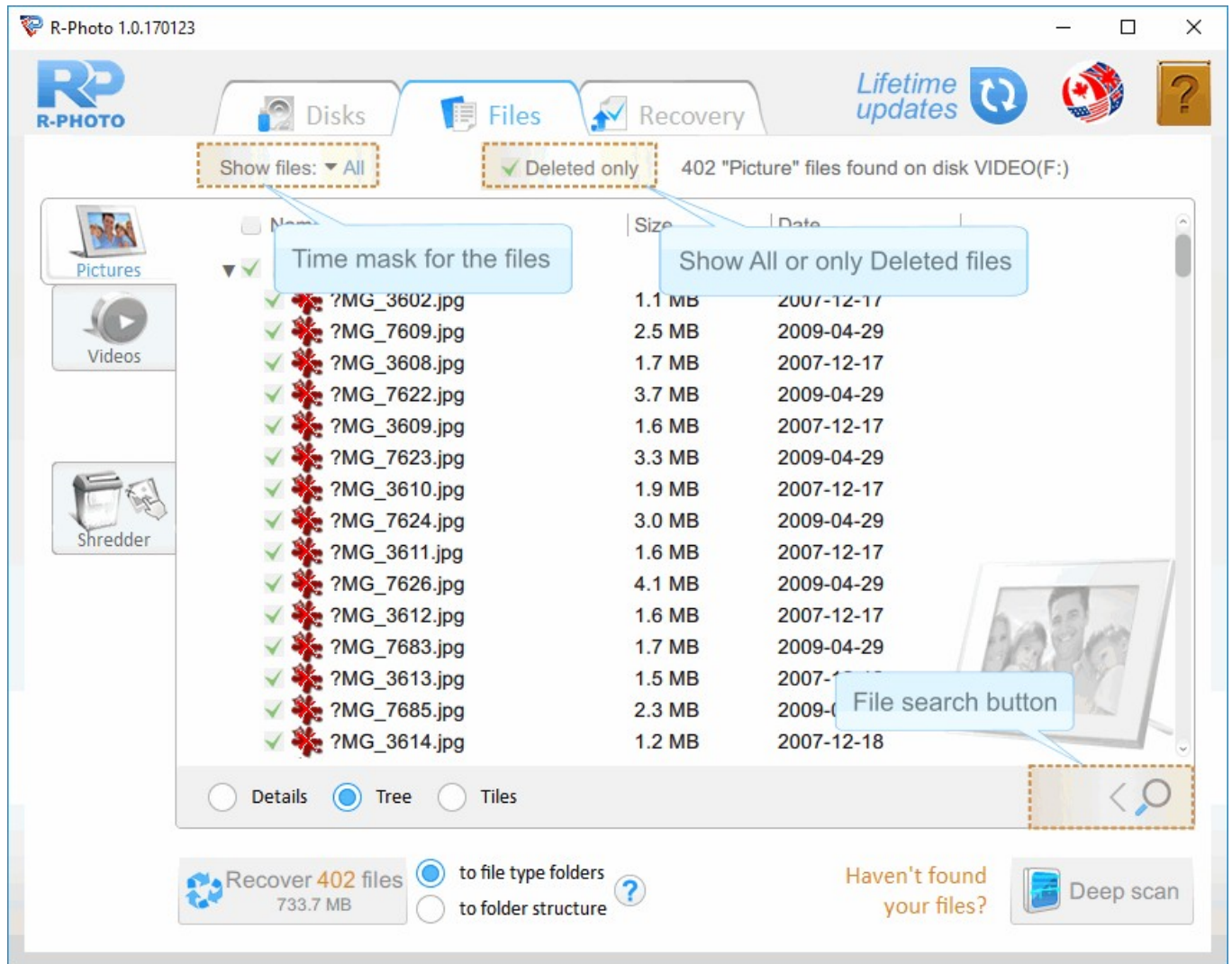
3.1 File Sorting

Within the tabs files can be sorted by their names, paths, sizes, or dates, and shown in a single file list with details or as a folder tree structure, or tiles.

R-Photo gives its users various means to find files for recovery. These means can be combined to make file search in R-Photo versatile.

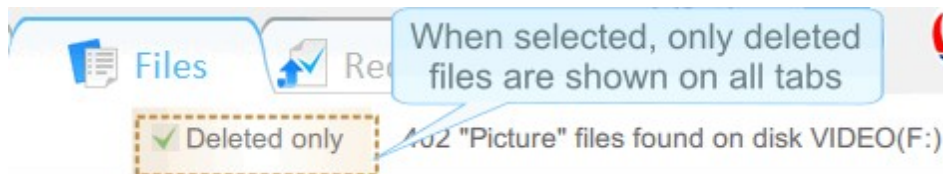
Global file sorting:

These settings are applied to all found files on the disk regardless of which tab is selected.

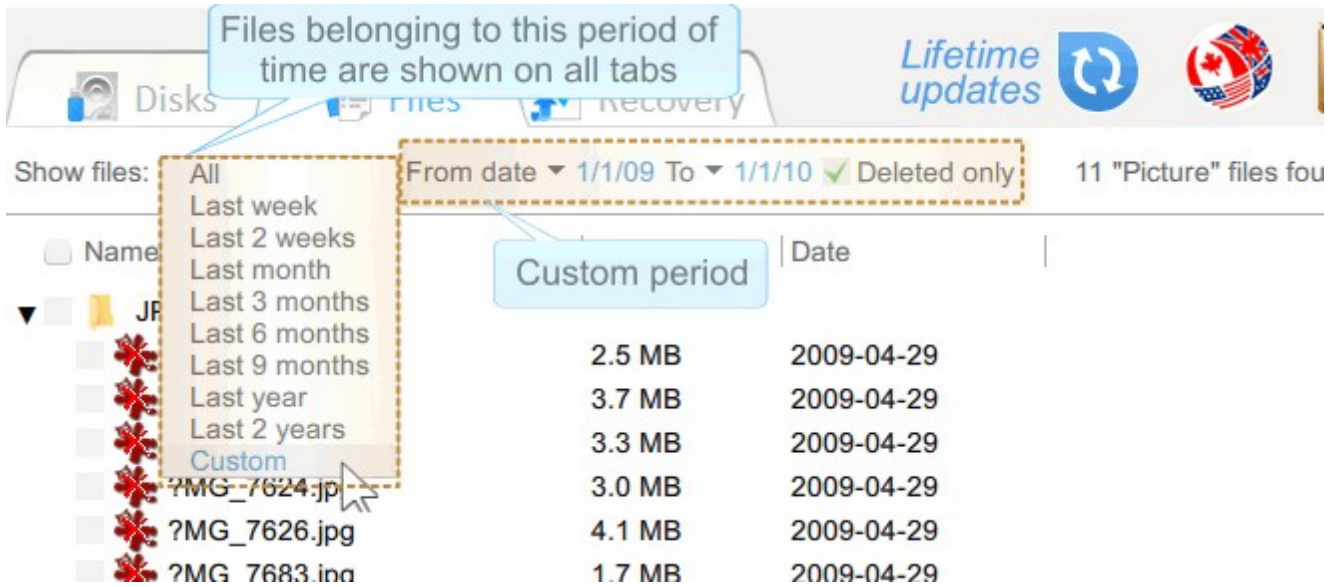


Global filtering tools

- Only deleted files are shown by default. Click this button to see all files.



- Files can be also rearranged to see files within a specified time period.



Files sorting by specific file types

For users convenience, files are already presorted by photo and video file types and placed to the corresponding tabs.

Within the tabs files can be shown in a [single file list](#) with details or as a [folder tree](#) structure, and as tiles for the Pictures tab only. Then files can be rearranged by their names, paths, sizes, and dates.

When the Pictures tab is selected, R-Photo can show picture files as tiles.

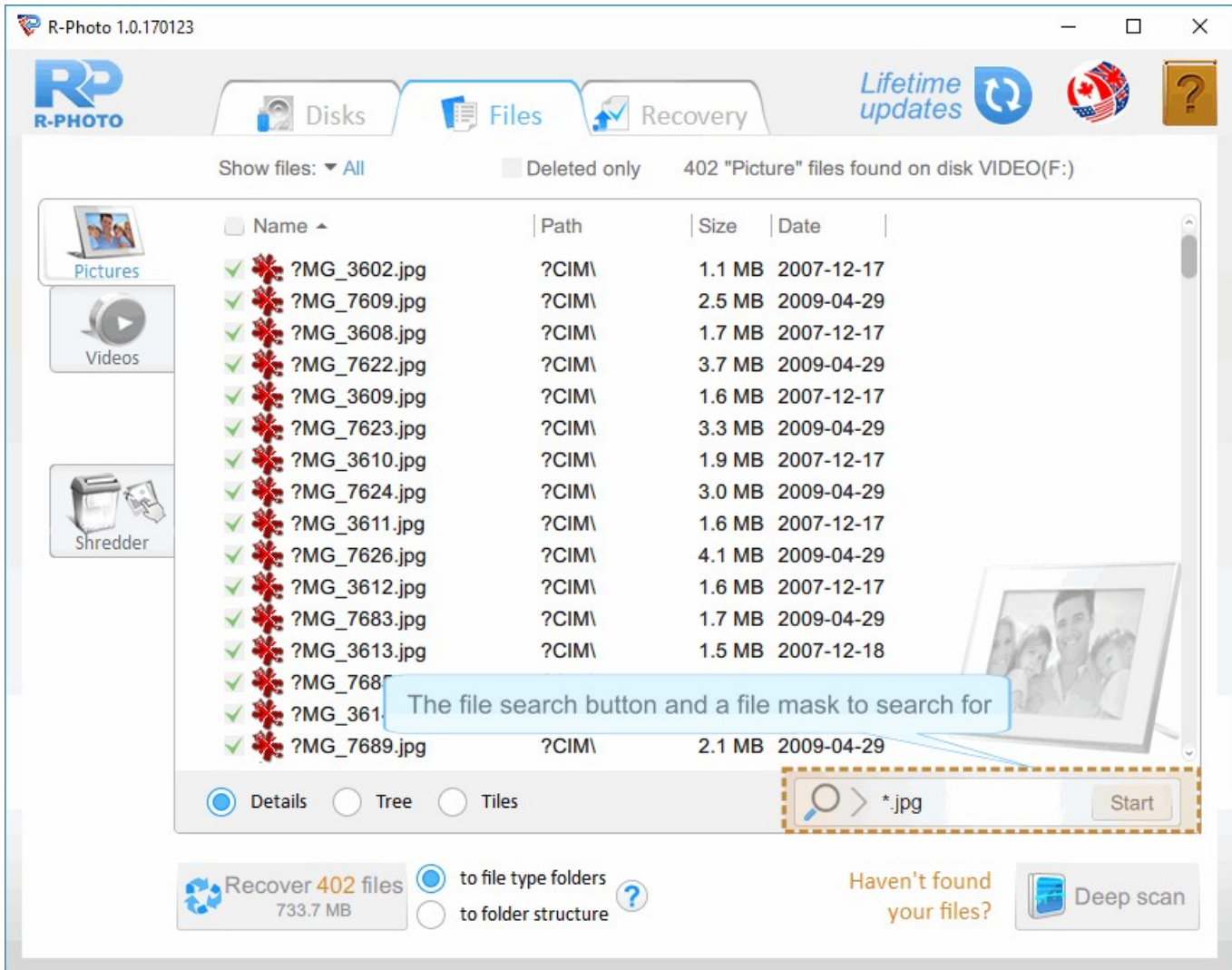


Pictures tab - Tiles view

Individual files can be [searched for](#) by clicking the Search button.

3.2 File Search

To search for individual file(s) use the Search button, specify the file name or [file mask](#), and click the Start button.



Search for files

Only the matched files will be shown.

File search is done on the files on the current tab. Select the All tab to search among all files.

File mask wildcards:

- * : matches all characters,
- ? : matches one character.

File mask examples:

- *.jpg matches all files with the jpg extension.
- myfile??.jpg matches files with any two last characters, like myfile01.jpg or myfilena.jpg.

3.3 File Viewer

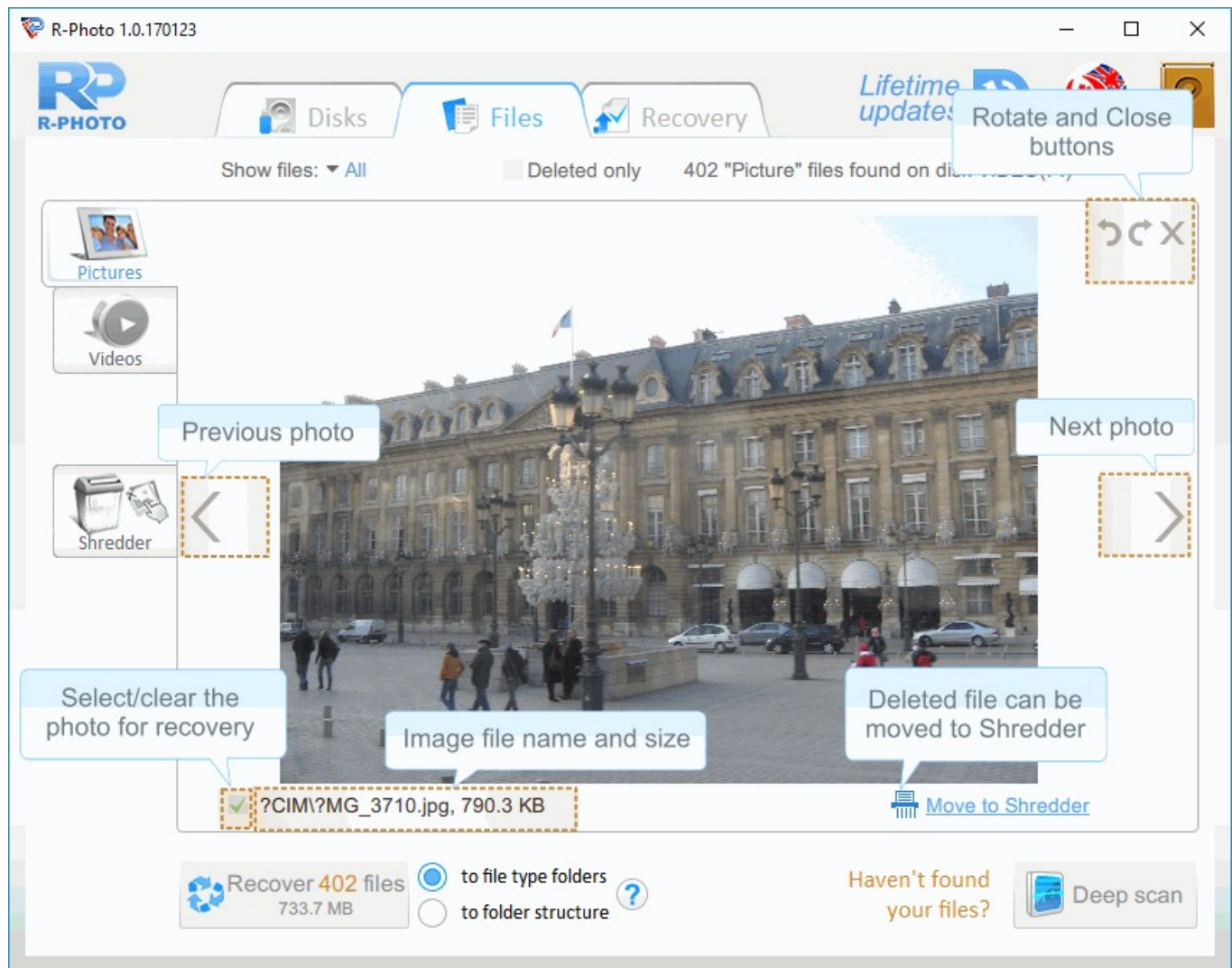
The built-in file viewer allows the user to view both existing and deleted files to estimate chances for successful file recovery or to find a necessary file to recover. All common photo and video types are supported.

To view a file, double-click or right-click the file.

Depending on its type, R-Photo will show or play file's content differently.

File viewer for photos

Photos are shown within the main program's window.

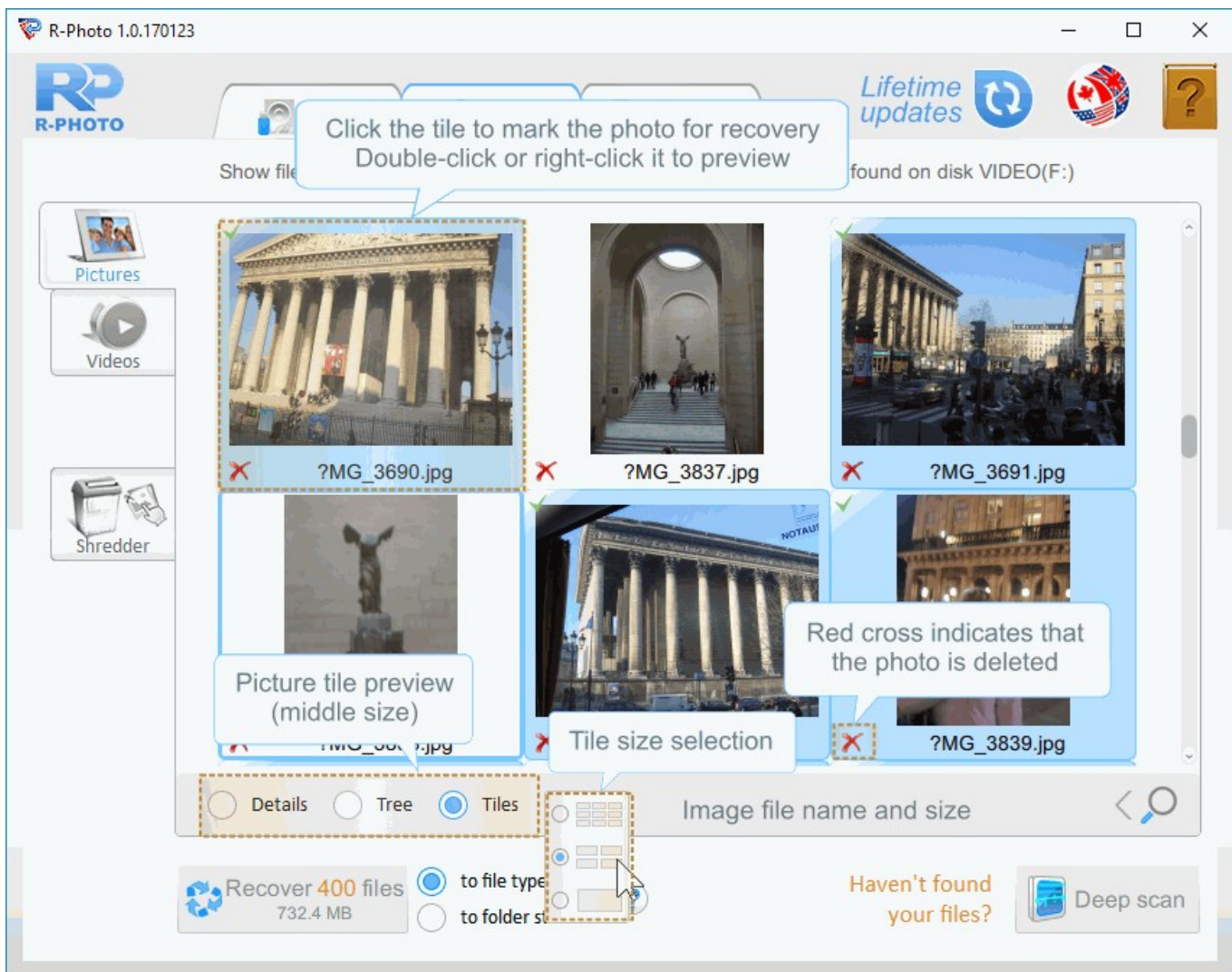


File view - Pictures

The photo can be rotated, if necessary. Use the arrows on the upper right corner. The photo can also be zoomed in/out by resizing the program's window.

Right-click the file to return to the previous view on the tab.

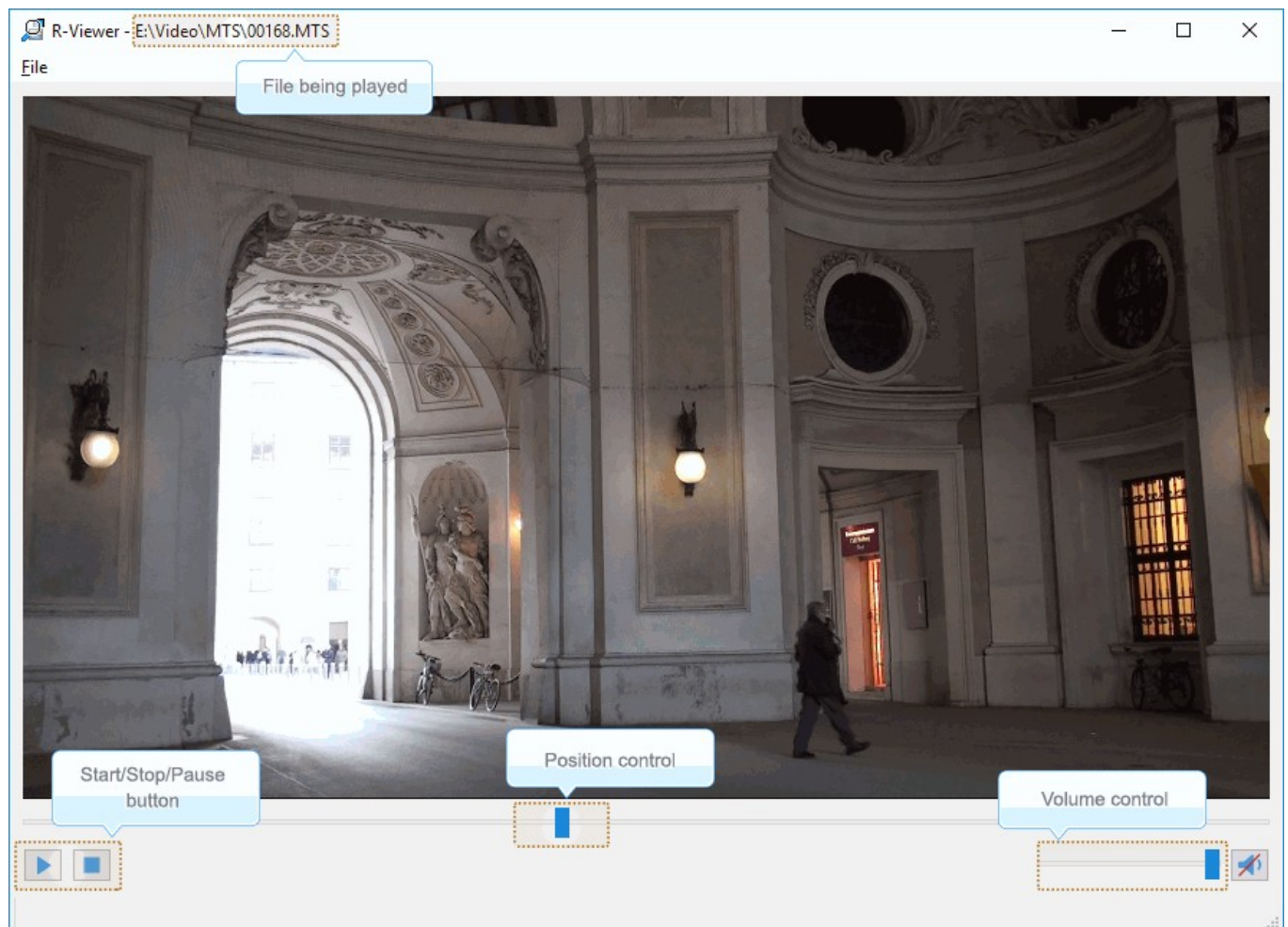
R-Photo can also show picture files as tiles.



File viewer - Picture tiles

File viewer for Video files

R-Photo plays video files in a separate viewer window. They can be shown (including embedded pictures) even without their respective applications installed.



File viewer - video files

Supported photo and video types:

Video Files

Video formats: AIFF, ASF, AVI, BFI, CAF, FLV, GIF, GXF, HLS, QuickTime, 3GP, MP4, Matroska, Maxis XA, MPEG-DASH, MPEG program stream, MPEG transport stream (including AVCHD), MXF, Material eXchange Format, SMPTE, MSN Webcam stream, NUT, Ogg, OMA, RL2, TXD, WTV.

Photo files

3DS Max thumbnail (max), AAA logo (bpr), ACE texture (ace), ADEX (img, rle), AIM Grey Scale (ima, im), AIPD image (aipd), ARF (arf), AT&T Group 4 (att), AT&T multigen (icn), AVHRR Image (sst), AVT RAW (raw), AWD (awd), Ability Photopaint Image (apx), Access (g4, acc), Aces200 (ace), Acorn Sprite (acorn), AdTech perfectfax (adt), Adobe Illustrator (ai), Adobe PhotoParade(images) (php), Adobe Photoshop (psd), Advanced Art Studio (ocp, art, pic), AirNav (anv), Album bébé (frm), Alias Image File (pix, als, alias), Alpha Microsystems BMP (bmp), Amapi

(2d), Amica Paint (ami, [b]), Amiga IFF (iff, blk), Amiga icon (info), Amstrad Cpc Screen (cpc), Analyze (avw), Analyze-7 (img), Andrew Toolkit raster object (atk), Apollo HDRU (hdru, hdr, gn), ArcInfo Binary (hdr), Art Director (art), Artisan (art), Artist 64 (a64), Artrage (ptg), Artweaver Document (awd), Astronomical Research Network (arn), Atari grafik (pcp), Aurora (sim), Auto F/X (afx), AutoCAD DWG (dwg, dwt), AutoCAD DXF (dxf), Autocad CAD-Camera (img), Autodesk Animator (fli, flc), Autodesk QuickCAD thumbnail (cad), Autodesk SKETCH thumbnail (skf), Autodesk SketchUp component (skp, skb), Autologic (gm, gm2, gm4), Award Bios Logo (epa), Axialis Screensaver(images) (ssp), B3D(images) (b3d), BFLI (bfl, bfli, fli, flp, afl), BIAS FringeProcessor (msk, img, raw, flt), BLP textures (blp), BMF (bmf), BSB/KAP (kap), BYU SIR (sir), Bert's Coloring (bmg, ibg), Bfx Bitware (bfx), Bio-Rad confocal (pic), Blazing Paddles (pi), Bob Raytracer (bob), Brender (pix), Brooktrout 301 (brk, 301, brt), Brother Fax (uni), Buttonz & Tilez texture (til), CALS Raster (cal, cals, gp4, mil), CDU Paint (cdu), CGM (cgm), CImage (dsi), CMU Window Manager (cmu), CP8 256 Gray Scale (cp8), CSV (csv), Calamus (cpi, crg), Camera RAW (raw), Canon EOS-1D Mark II RAW (cr2), Canon Navigator Fax (can), Canon PowerShot (crw), Cartes Michelin (big), Casio QV-10/100 Camera (cam), Casio RAW (bay, raw), Chinon ES-1000 digital camera (cmt), Cisco IP Phone (cip), Cloe Ray-Tracer (clo, cloe), ColorIX (rix, sci, scx, sc?), CompW (wlm), CompuServe GIF (gif, giff), Computer Eyes, Digital Vision (ce), ComputerEyes Raw (ce1, ce2), Contax RAW (bay, raw), Core IDC (idc), Corel Draw Bitmap(preview) (cdr), Corel Draw Pattern(preview) (pat), Corel Flow(preview) (bmf), Corel Metafile Exchange(preview) (cmx), Corel PhotoPaint 6.0 (cpt), CoverDesigner(images) (ncd), CoverDesigner Template(images) (nct), Crayola (art), Creative PC-CAM RAW (bay, raw), DBW Render (), DIV Game Studio Map (map), DIV Game Studio Multi Map (fpg), DKB Ray-Tracer (dis), DNG (dng), DPX (dpx), Dali Raw (sd0, sd1, sd2), Datacopy (img), Degas & Degas Elite (pil, pc1, pi2, pc2, pi3, pc3, pi4, pi5, pi6), Deluxe Paint, Electronic Arts (lbm, ilbm), Dicom (dcm, acr, dic, dicom, dc3), Digital F/X (tdim), Digital Research(GEM Paint) (img, gem), Direct Draw Surface (dds), Discorp CMP Image (cmp), DjVu (djvu, djv, iw4), DolphinEd (dol), Doodle Atari (doo), Doodle C64 (dd), Doodle C64(Compressed) (jj), Dr Halo (cut), Draz Paint (drz), EA Sports FSH (fsh), EPS Interchange Format (epi, ept), ERI-chan(Entis Rasterized Image) (eri), ESM Software Pix (pix), Ecchi (ecc), Eclipse (tile), Edmics (c4), Egg Paint (trp), Electric Image (ei, eidi), Embroidery (bmc), Encapsulated Postscript (ps, eps), Encapsulated Postscript (Preview) (eps), Enhance Simplex (esm), Enhanced Compressed Wavelet (ecw), Epson RAW (erf), Eroica (eif), Everex Everfax (efx, ef3), Explore(TDI) & Maya (iff, tdi), FIF(Iterated System) (fif), FIT (fit), Face Painter (fpt), Fast Piecewise-constant (pwc), Fax Group 3 (g3, fax), Fax man (fmf), Faxable PCX (fcx), Faxable TIFF (ftf), Fenix Map (map), Fenix Multi Map (fpg), FileMagic (mag), Flash Image (fi), FlashCam Frame (ncy), FlashPix Format (fpx), Flexible Image Transport System (fts, fits, fit), Foculus RAW (bay, raw), Fantasy Grafik (bsg), Fremont Fax96 (f96), Fugawi Map (fx3), Fuji S2 RAW (raf), Fun Painter II (fp2, fun), Fun Photor (fpr), Fuzzy bitmap (fbm, cbm), GRS16 (gl6), Gamma Fax (gmf), GeoPaint (geo), Gfa Raytrace (sul), GigaPaint Hi-res (gih), GigaPaint Multi (gig), Gimp Bitmap (xcf), Gimp Brush (gbr), Gimp Icon (ico), Gimp Pattern (pat), GoDot (4bt, 4bit, clp), GunPaint (gun, ifl), HD Photo (wdp, hdp), HDRI (hdr, hdri), HF (hf), HP-48/49 GROB (gro, grb), HP-49 OpenFire (gro2, gro4), HPGL-2 (hp, hpg, hgl, plt, hppl, hppl2, gl2, prn, prt, spl), HRU (hru), HSI Raw (raw), Half-Life Model (mdl), Hasselblad RAW (3fr), Hayes JTFax (jtf), Hemera Photo Image (hpi), Hemera Thumbs (hta), Heretic II MipMap (m8), Hi-Eddi (hed), Hires C64 (hir, hbm),

Homeworld Texture (lif), IBM Kips (kps), IBM Printer Page Segment (pse), IM5(Visilog) (im5), IMNET Image (imt), IOCA (ica, ioca, mod), IPLab (ipl), IPod thumb (ithmb), ISS (iss), IcoFX (ifx), Icon Library (icl), Imacon/Hasselblad RAW (fff), Image Capture Board (icb), Image Magick file (mif, miff), Image Speeder (ish), Image System(Hires) (ish), Image System(Multicolor) (ism), Image Systems RLC2 Graphic (rlc), ImageLab (b&w, b_w), ImagePro Sequence (seq), Imaging Fax (g3n), Imaging Technology (img), Img Software Set (img), Inshape (iim), InterPaint(Hires) (iph), InterPaint(Multicolor) (ipt), Intergraph Format (itg, cit, rle), Interleaf (iimg), Iris CT (ct), Iris Graphics (iris), J Wavelet Image Codec (wic), JBIG (jbg, bie, jbig), JBIG-2 (jb2), JFIF based file (jb2), JPEG / JFIF (jpg, jpeg, jif, jfif, J, jpe), JPEG 8BIM header(Mac) (jpg, jpeg, jif, jfif, J, jpe), JPEG XR (jxr), JPEG-2000 Code Stream (jpc), JPEG-2000 JP2 File Format (jp2, j2k, jpx, jpf), JPEG-LS (jls), Jeff's Image Format (jif), Jigsaw (jig), Jovian VI (vi), Jpeg Network Graphics (jng), JustButtons animated bitmap (btn), KONTRON (img), Khoros Visualization Image file (vif, viff, xv), KinuPix Skin (thb), Kiss Cel (cel), Koala Paint (koa, kla), Koala Paint(Compressed) (gg), Kodak Cineon (cin), Kodak DC120 Digital Camera (kdc), Kodak DC25 Camera (k25), Kodak Photo CD (pcd), Kodak Pro Digital RAW (dcr), Kofax Group 4 (kfx), Kolor Raw Format (kro), Konica Camera File (kqp), LSS16 (lss, 16), LView Pro (lvp), LaserData (lda), Leaf RAW (mos), Leica RAW (bay, raw), Light Work Image (lwi), LucasFilm Format (lff), Lumena CEL (cel), LuraDocument Format (ldf), LuraDocument.jpm Format (jpm), LuraWave Format (lwf), LuraWave JPEG-2000 Code Stream (jpc), LuraWave JPEG-2000 Format (jp2, j2k, jpx, jpf), MAKIchan Graphics (mag), MGI Photosuite Project(images) (pzp), MGR bitmap (mgr), MRC(Medical Research Council) (mrc), MTV Ray-Tracer (mtv), Mac Paint (mac, mpnt, macp, pntg, pnt, paint), Mac icon (icns), Macintosh Quickdraw/Pict (pic, pict, pict2, pct), Mac OSX Resource (rsc, rsrc), Maggi Hairstyles & Cosmetics (fff), Male MRI (pd, t1, t2), Male Normal CT (fre), Mamiya RAW (mef), Marks Russel File (mrf), Mavica (411), Maw-Ware Textures (mtx), Mayura Draw (pdx), MegaPaint (bld), Megalux Frame (frm), Micro Dynamics MARS (pbt), Micro Illustrator Uncompressed (mil), Micrografx Picture Publisher 4.0 (pp4), Micrografx Picture Publisher 5.0 (pp5), Micron RAW (bay, raw), Microsoft Image Composer (mic), Microsoft Paint (msp), Microtek Eyestar (img), Mindjonn Format (ipg), Minolta DiIMAGE RAW (mrw), Mobile FAX (rfa), MonkeyCard (pdb), MonkeyLogo (pdb), MonkeyPhoto (mph), MrSid (sid), Msx 2 Screen (sc2), Multiple Network Graphics (mng), NCR Image (ncr), NIST ihdr (pct), National Imagery Transmission F. (ntf, nitf), NeoBook Cartoon (car), Neochrome(ST & TT) (neo), Neopaint Mask (npm), Neopaint Stamp (stw), NewsRoom (nsr, ph, bn), Nifti (img), Nikon RAW (nef), Nokia Group Graphics (ngg), Nokia Logo File (nlm), Nokia OTA bitmap (otb), Nokia Operator Logo (nol), OAZ Fax (oaz, xfx), OS/2 Bitmap (bmp, bga), Olicom Fax (ofx), Olympus RAW (orf), Open Image Library Format (oil), OpenEXR (exr), Optigraphics (ctf), Optigraphics Tiled (ttf), Optocat (abs), Oric Hires (hir), Oric TAP (tap), Os/2 Warp (bga), PABX background (pix), PAX (pax), PC Paint / Pictor Page (pic, clp), PCO (b16), PM (pm), Page Control Language (pcl), Paint Magic (pmg), PaintShopPro Browser Cache File (jbf), PaintShopPro Brush (pspbrush), PaintShopPro Brush (jbr), PaintShopPro Frame (pfr, pspframe), PaintShopPro Image (psp, pspimage), PaintShopPro Mask (pspmask), PaintShopPro Mask (msk), PaintShopPro Pattern (pat), PaintShopPro Picture Tube (tub, psptube), PaintShopPro Texture (tex), Palm Pilot (pdb), Panasonic DMC-LC1 RAW (srf), Panasonic LX3 RAW (rw2), Panasonic RAW (bay, raw), Pegs (pxs, pxa), Pentax *ist D (pef), Pfs Art Publisher (art), Photo Deluxe (pdd, pdb), Photo Filtre Studio (pfi), PhotoFantasy Image (fsy), PhotoFrame (frm), PhotoStudio File (psf), PhotoStudio

Stamp (stm), Photomatrix (cat), Pic2 (p2), Picasso 64 (p64), Picture Gear Pocket (prc), Picture It! (mix), Pixar picture file (pic, pxr, picio, pixar), Pixel Power Collage (ib7, il7, il8, if9), Pixia (pxa), Pixibox (pxb), Planetary Data System (pds, img), Playback Bitmap Sequence (bms), Pocket PC Bitmap (2bp), Pocket PC Themes(images) (tsk), Polychrome Recursive Format (prf), Portable Bitmap (pbm, rpbm, ppma), Portable Document Format (pdf), Portable Greyscale (pgm, rpgm), Portable Image (pnm, rpnm, pbm, rpbm, pgm, rpgm, ppm, rppm), Portable Network Graphics (png, apng), Portable Pixmap (ppm, rppm), Portfolio Graphics (pgf), Portfolio Graphics Compressed (pgc), Portrait (cvp), Poser Bump (bum), Postscript (ps, ps1, ps2, ps3, eps, prn), PowerCard maker (crd), PowerPoint(images) (pps), PowerPoint Presentation(images) (ppt), Print Master (pm), Print Shop (psa, psb), Printfox/Pagefox (bs, pg, gb), Prism (cpa), Prisms (pri), Psion Series 3 Bitmap (pic), Psion Series 5 Bitmap (mbm), Punk Productions Picture (ppp), Puzzle (pzl), Q0 (q0, rgb), Qdv(Random Dot Software) (qdv), Qrt Ray-Tracer (qrt), Quake Texture (wal), Quantel VPB (vpb), QuickTime Image Format (qtif, qti), RAW DVR (raw), RIPTerm Image (icn), Radiance (rad, img, pic), Rainbow Painter (rp), Raw (raw, gry, grey), Rawzor (rwz), Rayshade (pic), Red Storm File Format (rsb), Ricoh Digital Camera (j6i), Ricoh Fax (001, ric), Ricoh IS30 (pig), Rm2K XYZ (xyz), Rollei RAW (rdc, ia), RoverShot RAW (bay, raw), RunPaint(Multicolor) (rpm), Saracen Paint (sar), SBIG CCD camera ST-4 (st4), SBIG CCD camera ST-X (stx, st4, st5, st6, st7, st8), SciFax (sci), SciTex Continuous Tone (sct, ct, ch), Seattle Film Works (sfw), Seattle Film Works multi-image (pwp, sfw), SecretPhotos puzzle (xp0), Sega SJ-1 DIGIO (sj1), Sharp GPB (img), Siemens Mobile (bmx), SIF MICHEL-Soft (sif), Sigma RAW (x3f), Silicon Graphics RGB (rgb, rgba, bw, iris, sgi, int, inta), Sinar RAW (cs1, sti), Skantek (skn), Slow Scan Television (hrz), SmartDraw 6 template (sdt), SmartFax (1), SmoothMove Pan Viewer (pan), Softimage (pic, si), Solitaire Image Recorder (sir), Sony DSC-F1 Cyber-shot (pmp), Sony DSC-F828 RAW (srf), Sony PS2 TIM (tm2), Sony Playstation TIM (tim), Sony RAW (sr2, arw), Spectrum 512 (spu), Spectrum 512(Compressed) (spc), Spectrum 512(Smooshed) (sps), SPOT (dat), SriSun (ssi), Stad (pic, pac, seq), Star Office Gallery (sdg), Starbase (img), Stardent AVS X (x, avs, mbfs, mbfavs), Starlight Xpress SX (RAW), Stereo Image (jps), ST Micro RAW (bay, raw), Structured Fax Format (sff), Sun Icon/Cursor (icon, cursor, ico, pr), Sun Rasterfile (ras, rast, sun, sr, scr, rs), Sun TAAC file (iff, vff, suniff, taac), Syberia texture (syj), Synthetic Universe (syn, synu), SVG (svg), TG4 (tg4), TI Bitmap (92i, 73i, 82i, 83i, 85i, 86i, 89i), TIFF Revision 6 (tif, tim, tiff), TMSat image (imi), TRS 80 (hr), TealPaint (pdb), Teli Fax (mh), Thumbnail (tnl), TilePic (tjp), Tiny (tny, tn1, tn2, tn3), TopDesign Thumbnail (b3d, b2d), Total Annihilation (gaf), Truevision Targa (tga, targa, pix, bpx, ivb), Ulead Pattern (pst), Ulead PhotoImpact (upi), Ulead Texture(images) (pe4), Usenix FaceServer (fac, face), Utah raster image (rle, urt), VIPS Image (v), VITec (vit), VRML2 (wrl), Venta Fax (vfx), Verity (vif), Vicar (vic, vicar, img), Vidcom 64 (vid), Video Display Adapter (vda), Vista (vst), Vivid Ray-Tracer (img), Vort (pix), Vue d'esprit (vob), WAD(Half life) (wad), WSQ (wsq), WaveL (iwc), Wavefront Raster file (rla, rlb, rpf), WebShots(images) (wb1, wbc, wbp, wbz), Weekly Puzzle (jig), WebP (webp, wep), Whypic (ypc), WinFAX (fxs, fxo, wfx, fxr, fxd, fxm), WinMIPS (pic), Windows & Aldus Metafile (wmf), Windows Animated Cursor (ani), Windows Bitmap (bmp, rle, vga, rl4, rl8, sys), Windows Clipboard (clp), Windows Comp. Enhanced Metafile (emz), Windows Compressed Metafile (wmz), Windows Cursor (cur), Windows DIB (dib), Windows Enhanced Metafile (emf), Windows Icon (ico), Winzle Puzzle (wzl), Wireless Bitmap(level 0) (wbmp, wbm, wap), Word Perfect Graphics(images) (wpg),

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Worldport Fax (wfx), X Windows System dump (xwd, x11), X11 Bitmap (xbm, bm), X11
Pixmap (xpm, pm), XV Visual Schnauzer (p7), Xara(images) (xar), Xerox DIFF
(xif), Ximage (xim), Xionics SMP (smp), YUV 16Bits (yuv, qtl, uyvy), YUV 16Bits
Interleaved (yuv, qtl, uyvy), YUV 4:1:1 (yuv, qtl), YUV 4:2:2 (yuv, qtl), YUV
4:4:4 (yuv, qtl), ZX Spectrum Hobetta ($s, $c, !s), ZX Spectrum Snapshot(sna),
ZX Spectrum standard (screen scr), ZZ Rough (rgh), Zeiss BIVAS (dta), Zeiss LSM
(lsm), Zoner Callisto Metafile(zmf), Zoner Zebra Metafile (zbr), Zsoft Multi-
page Paintbrush (dcx), Zsoft Publisher's Paintbrush (pcx, pcc, dcx), byLight
(bif)
```

3.4 Life Time Update

Life Time Update guarantees that R-Photo will always stay up-to-date with all new features and bugfixes.

R-Photo shows the update status automatically on the Lifetime updates button.



When updates become available, R-Photo will notify that an update is available.



Click the button, and R-Photo will start downloading the update files. You may stop that by clicking the Stop Download button.



The update will then be installed. R-Photo may request you to restart the program to complete the update.



Once the update is over, the Lifetime updates button will return to its initial appearance until the next updates become available.

3.5 Interface Languages

You may change the interface language of R-Photo. Click the Language button and select the required one.



Languages supported: English, French, Spanish, German, Russian, Portuguese, Traditional and Simplified Chinese, and Japanese.

IV Advanced Options

4.1 Deep Scan

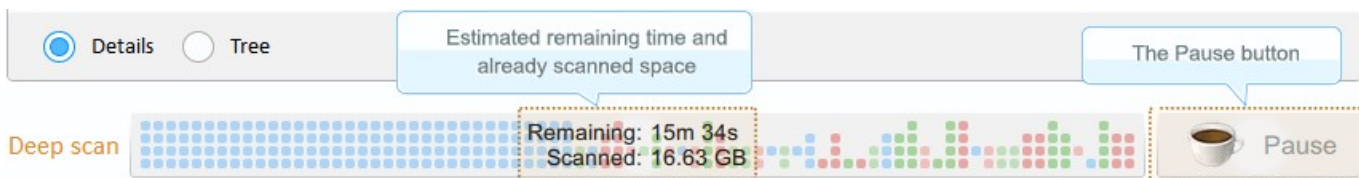
Deep Scan should be used when lost photos and videos have not been found during Quick Scan. During this procedure, R-Photo deeply analyzes all data on the disk including parsing information about files and searching for files using their [file signatures](#).

While Deep Scan starts, additionally found files are added to the corresponding tabs automatically. All file search settings and marking will be cleared.

Deep Scan is also greatly improves estimations for [chances of successful file recovery](#).

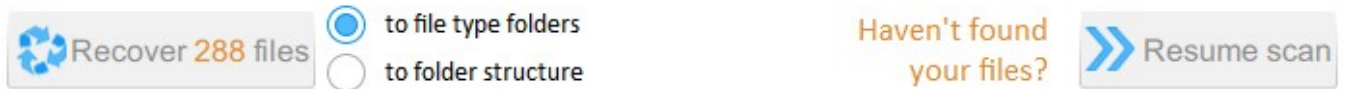
To start Deep Scan click the [Deep Scan](#) button on the Files tab.

Deep Scan progress appears at bottom of the the R-Photo window.



Deep Scan in Progress

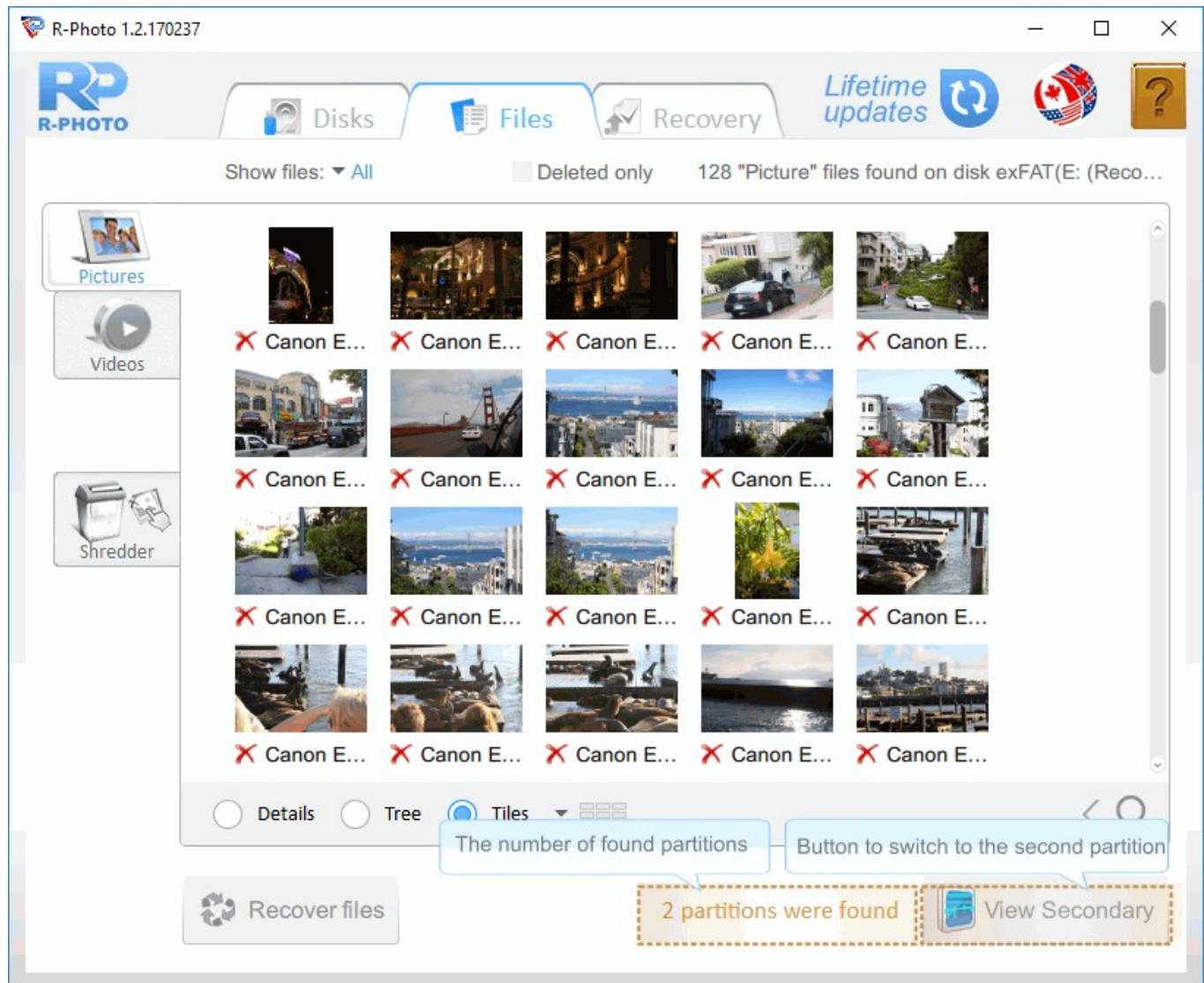
Depending on your hardware, scan time may vary, even within the same scan process, and may be quite lengthy for large disks. Deep scan may be paused then resumed it by clicking the Resume scan button.



R-Photo stores the scan information for a scanned storage device or its disk(s) and loads it automatically once the storage device is connected again.

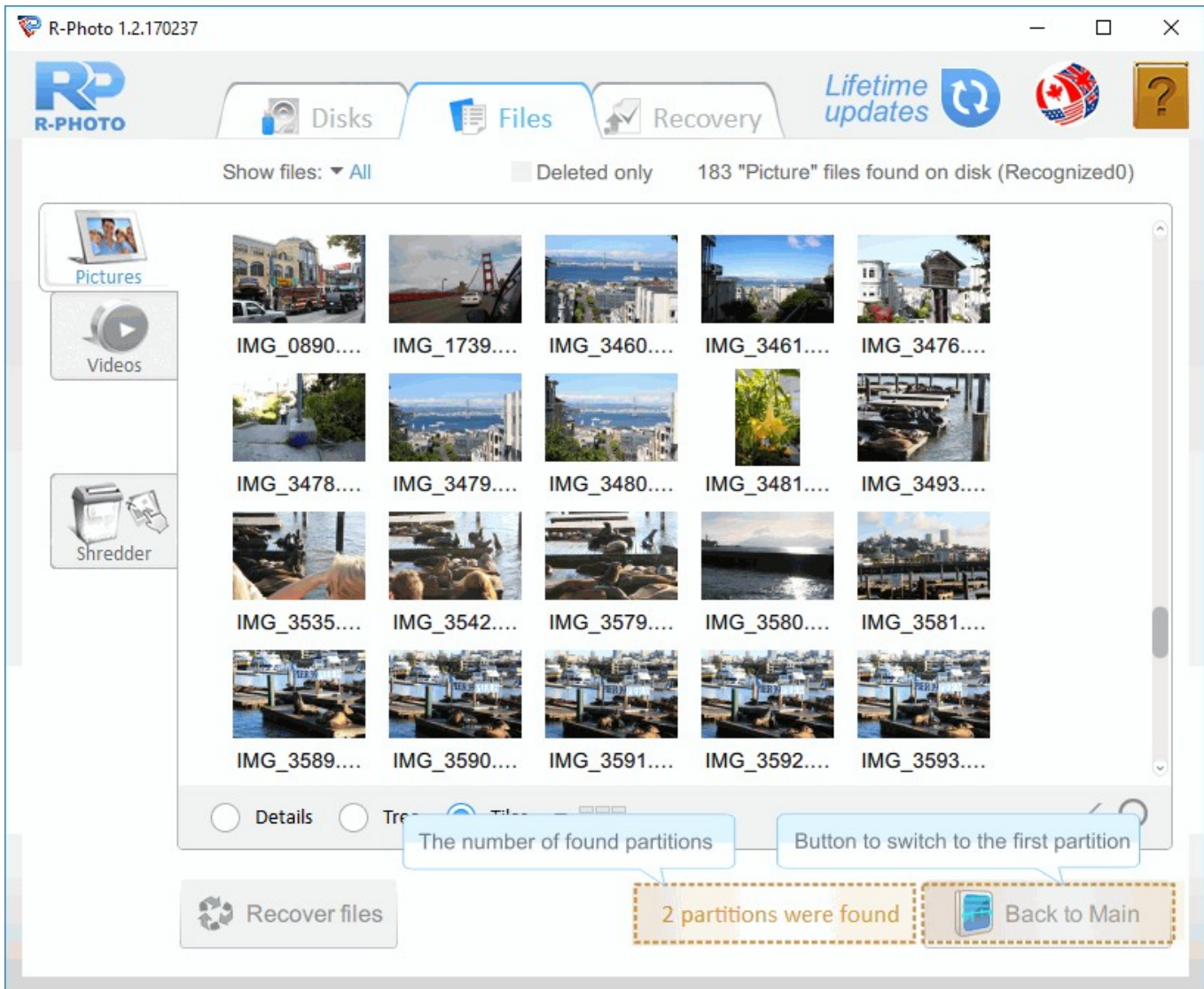
It also warns the user that the scan information is obsolete if it's seven or more days old and deletes it after 30 days.

If R-Photo finds a previous [partition](#) with a different file system, it shows a special message:



Deep Scan - two partitions

You may switch to the second partition and recover files from it:



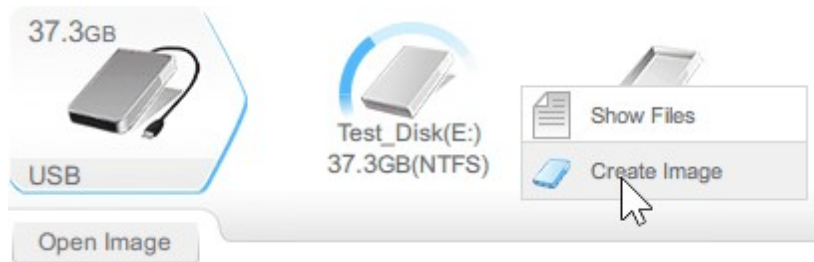
Deep Scan - second partition

4.2 Disk Images

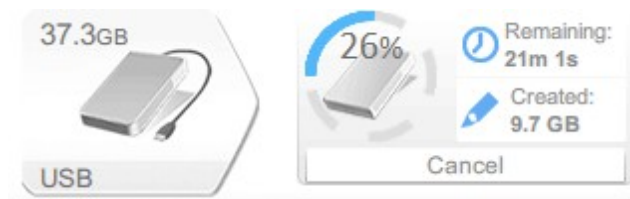
Images are very useful if there is a risk of total data loss due to hardware malfunction. If bad blocks are constantly appearing on a hard drive or its S.M.A.R.T. state is poor, an image of this hard drive should be immediately created. All data search and recovery can be done from this image.

To create an image,

1. Right-click a disk and select Create Image on the shortcut menu. Highlight the required field.



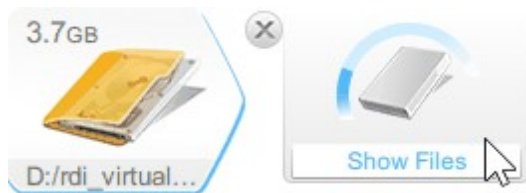
2. Select a place to store the image file and click the Save button.
R-Photo will start creating the image showing the progress.



To load an image,

* Click the Open image button and select the file with the image.

The image will appear. You may recover files from that image as if it was a real device.



4.3 S.M.A.R.T. Monitoring

The hardware conditions of a drive can be checked by viewing its [S.M.A.R.T.](#) data. To see it, right-click the drive and select S.M.A.R.T. on the shortcut menu.

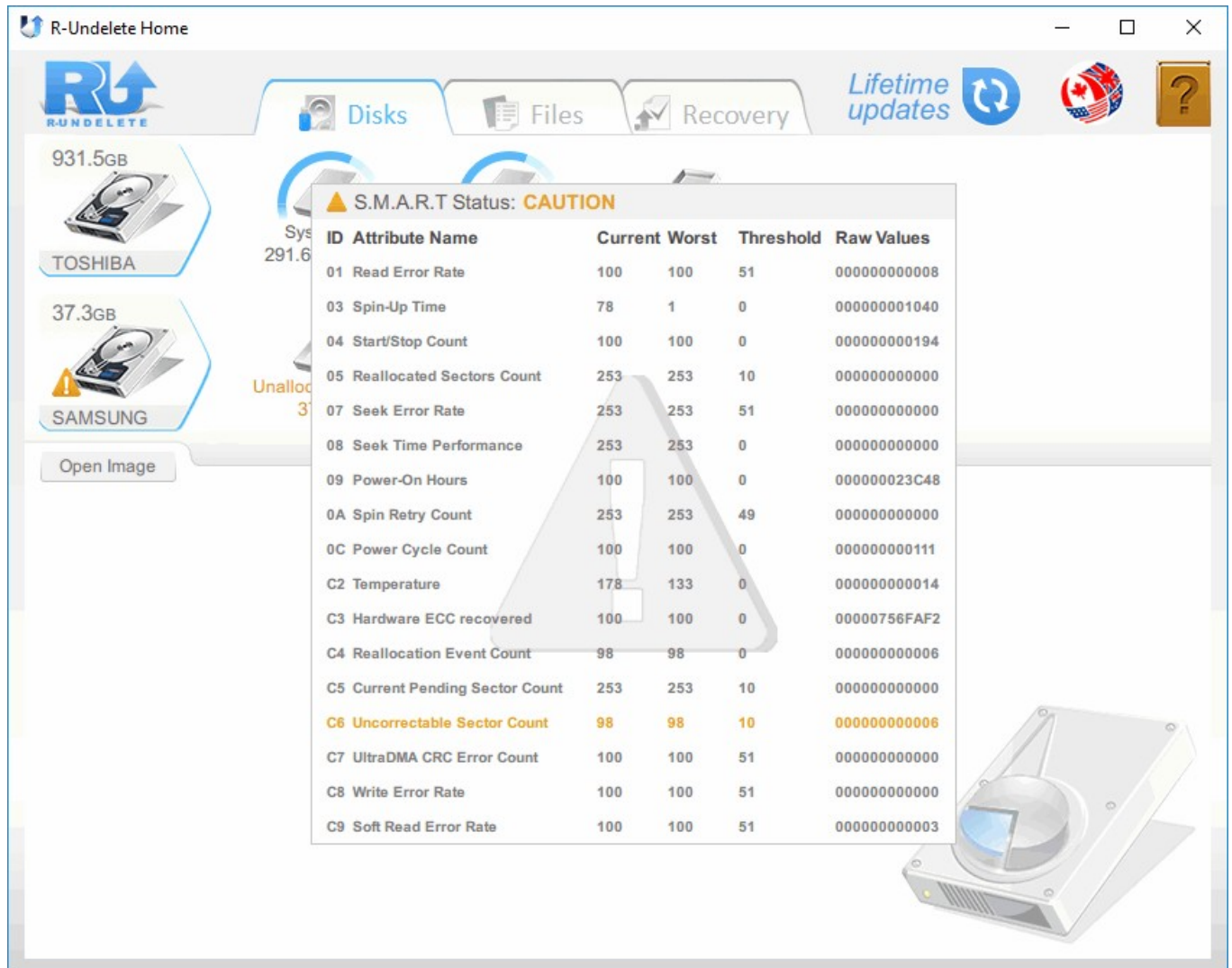
The screenshot shows the R-Undelete Home application window. The 'Disks' panel is active, displaying a list of disks. A pop-up window shows the S.M.A.R.T. status for a selected disk, which is 'HEALTHY'. The S.M.A.R.T. data is as follows:

ID	Attribute Name	Current	Worst	Threshold	Raw Values
01	Read Error Rate	100	100	16	000000000000
02	Throughput Performance	141	141	54	00000000004A
03	Spin-Up Time	123	123	24	000300B800BB
04	Start/Stop Count	100	100	0	0000000003D4
05	Reallocated Sectors Count	100	100	5	000000000000
07	Seek Error Rate	100	100	67	000000000000
08	Seek Time Performance	100	100	20	000000000000
09	Power-On Hours	100	100	0	000000000494
0A	Spin Retry Count	100	100	60	000000000000
0C	Power Cycle Count	100	100	0	0000000003CF
C0	Power-off Retract Count	100	100	0	0000000003D4
C1	Load/Unload Cycle Count	100	100	0	0000000003D4
C2	Temperature	162	162	0	002D00150025
C4	Reallocation Event Count	100	100	0	000000000000
C5	Current Pending Sector Count	100	100	0	000000000000
C6	Uncorrectable Sector Count	100	100	0	000000000000
C7	UltraDMA CRC Error Count	200	200	0	000000000000

Disks panel with the S.M.A.R.T. data of a healthy disk

When R-Photo determines hardware problems with a hard drive, it shows the exclamation mark on the drive icon. Check the S.M.A.R.T. data and decide what to do with the hard drive.

The yellow exclamation mark signals hardware problems:



The screenshot shows the R-Undelete Home software interface. On the left, there are two hard drive icons: a Toshiba drive with 931.5GB and a Samsung drive with 37.3GB. The Toshiba drive has a yellow warning triangle next to it. In the center, a modal window displays the S.M.A.R.T. status for the Toshiba drive, which is 'CAUTION'. The modal window contains a table with the following data:

ID	Attribute Name	Current	Worst	Threshold	Raw Values
01	Read Error Rate	100	100	51	000000000008
03	Spin-Up Time	78	1	0	00000001040
04	Start/Stop Count	100	100	0	00000000194
05	Reallocated Sectors Count	253	253	10	000000000000
07	Seek Error Rate	253	253	51	000000000000
08	Seek Time Performance	253	253	0	000000000000
09	Power-On Hours	100	100	0	00000023C48
0A	Spin Retry Count	253	253	49	000000000000
0C	Power Cycle Count	100	100	0	000000000111
C2	Temperature	178	133	0	000000000014
C3	Hardware ECC recovered	100	100	0	00000756FAF2
C4	Reallocation Event Count	98	98	0	000000000006
C5	Current Pending Sector Count	253	253	10	000000000000
C6	Uncorrectable Sector Count	98	98	10	000000000006
C7	UltraDMA CRC Error Count	100	100	51	000000000000
C8	Write Error Rate	100	100	51	000000000000
C9	Soft Read Error Rate	100	100	51	000000000003

Disks panel with the S.M.A.R.T. data of a disk with small hardware problems

This sign indicates that some small problems with the disk are possible in the future, caution is required when working with the hard drive, and these parameters should be checked regularly.

[Disk imaging](#) is recommended. Then files may be recovered later from that image.

The red exclamation mark signals that the hard drive is in critical condition:

The screenshot shows the R-Undelete Home software interface. On the left, there are three disk icons: a Toshiba drive (931.5GB), System (C:) (291.6GB NTFS), and an ST380021A drive (76.4GB) with a red warning triangle. The ST380021A drive is selected, and its S.M.A.R.T. status is displayed as **CRITICAL**. A table of S.M.A.R.T. attributes is shown, with a large warning triangle overlaid on it. The table includes columns for ID, Attribute Name, Current, Worst, Threshold, and Raw Values. The '0A Spin Retry Count' attribute is highlighted in red, showing a current value of 100, a worst value of 100, and a threshold of 193. Other attributes include Read Error Rate, Spin-Up Time, Start/Stop Count, Reallocated Sectors Count, Seek Error Rate, Power-On Hours, Power Cycle Count, Temperature, Hardware ECC recovered, Current Pending Sector Count, Uncorrectable Sector Count, UltraDMA CRC Error Count, Write Error Rate, and Data Address Mark Error.

ID	Attribute Name	Current	Worst	Threshold	Raw Values
01	Read Error Rate	85	72	25	00000DFFC795
03	Spin-Up Time	73	70	0	000000000000
04	Start/Stop Count	100	100	20	000000000005
05	Reallocated Sectors Count	100	100	36	000000000000
07	Seek Error Rate	84	60	30	000013BCFF72
09	Power-On Hours	100	100	0	00000000012D
0A	Spin Retry Count	100	100	193	000000000000
0C	Power Cycle Count	100	100	20	000000000054
C2	Temperature	25	50	0	000000000019
C3	Hardware ECC recovered	84	77	0	00000A3A47A0
C5	Current Pending Sector Count	100	100	0	000000000000
C6	Uncorrectable Sector Count	100	100	0	000000000000
C7	UltraDMA CRC Error Count	200	200	0	000000000000
C8	Write Error Rate	100	253	0	000000000000
CA	Data Address Mark Error	100	253	0	000000000000

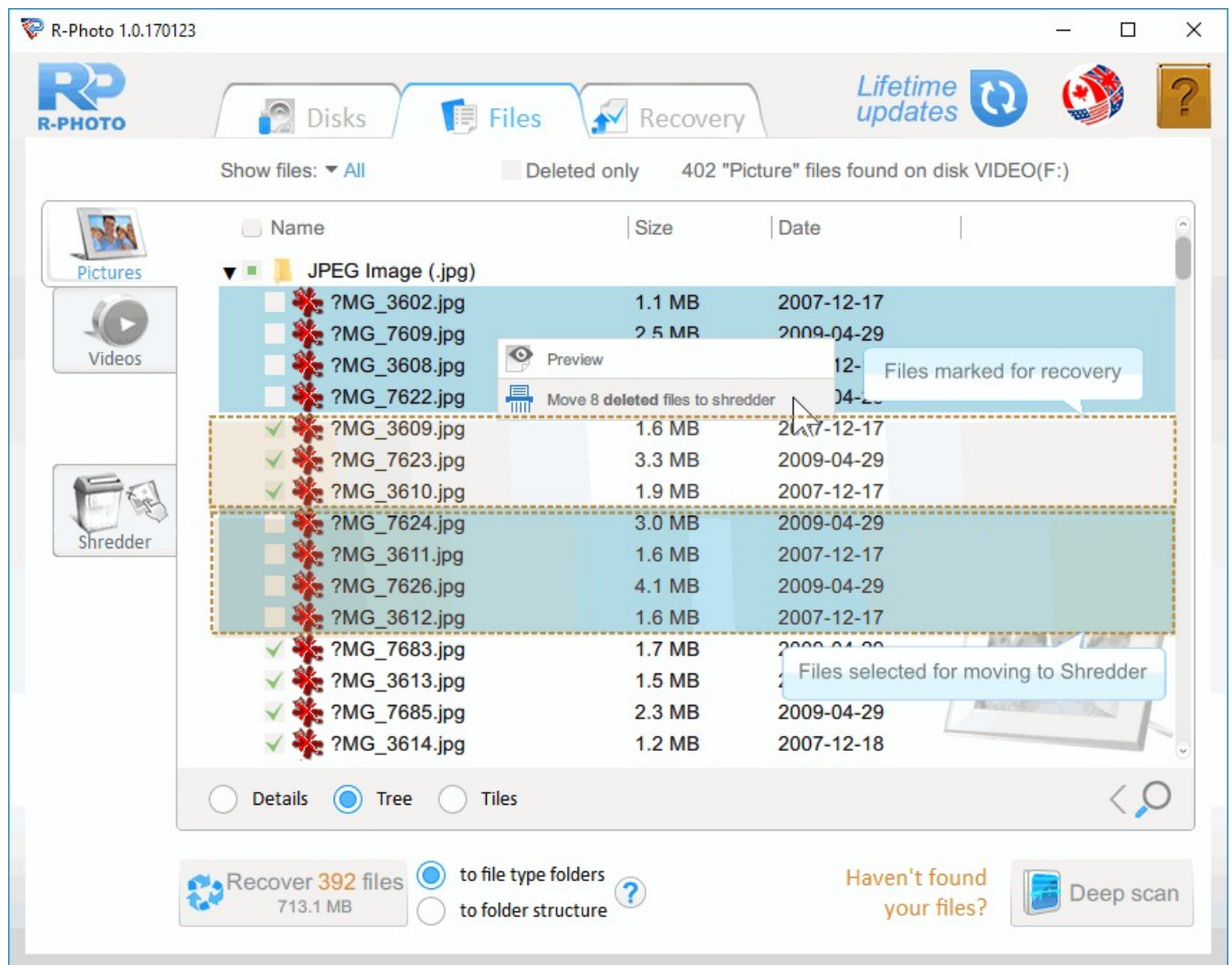
Disks panel with the S.M.A.R.T. data of a disk with heavy hardware problems

This sign indicates that the hard drive conditions are critical and chances of hardware failure are high. The best recommendation for this case is to stop working with the hard drive and bring it to professional data recovery specialists. Work with the disk is possible, but at your own risk. Disk imaging is very strongly recommended. Then files may be recovered later from that image.

4.4 Shredder

You may shred deleted photos and videos to render their content completely unrecoverable. During this procedure, the content of these files will be zeroed out and any attempt to recover them will retrieve files that cannot be opened.

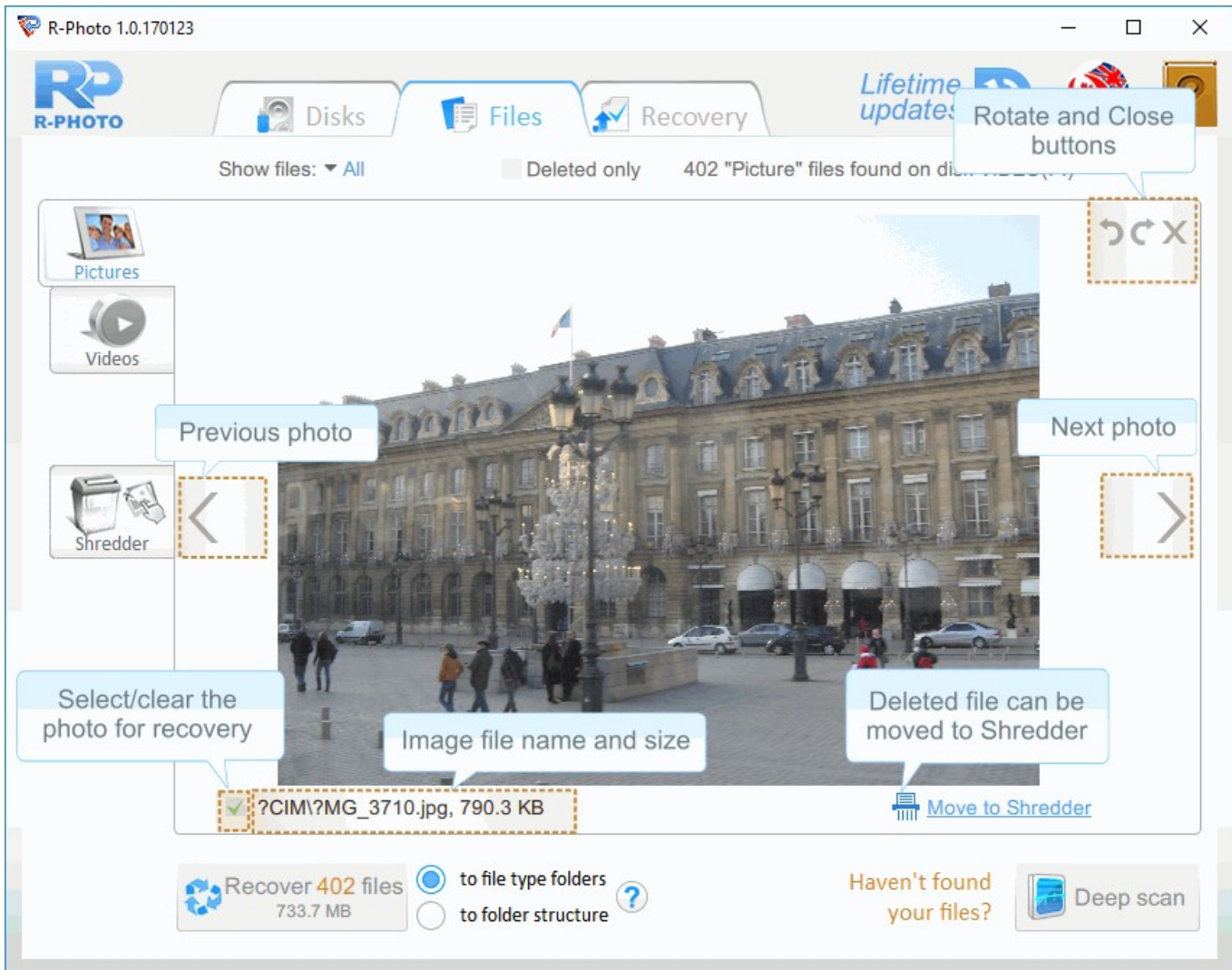
- Select the deleted photos and videos you want to shred, right-click them, then select Move to Shredder on the shortcut menu.



Files panel

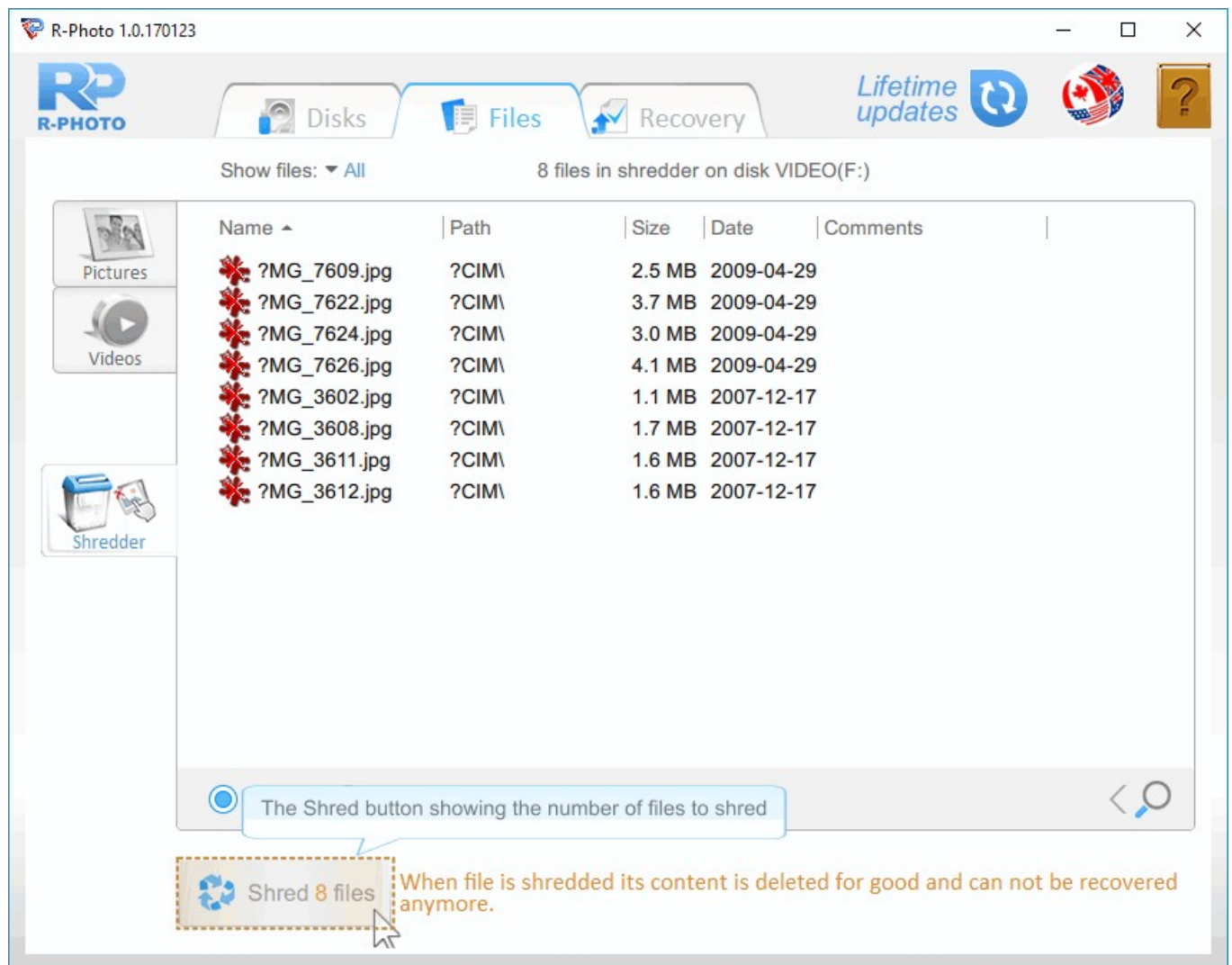
Use the mouse cursor and arrow/Shift/Control keys to select the files. Please note that the selected files rather than the marked files will be moved to Shredder.

You may use the link on the File viewer to move the file being viewed to Shredder.



File viewer panel.

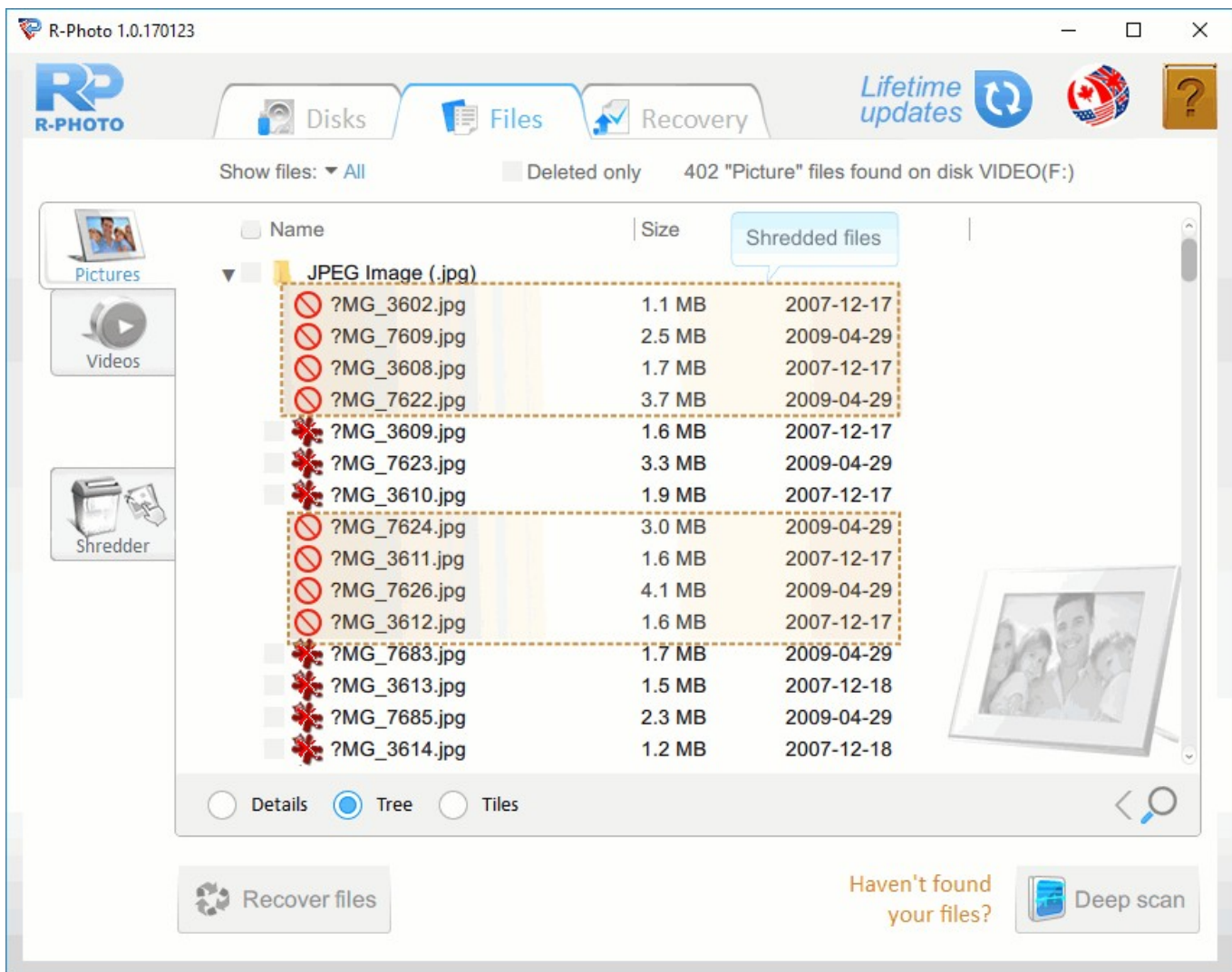
- Switch to the Shredder tab, view the files on it, and click the Shred button.



Shredder tab

You may move the files from the Shredder tab back to their original places. Right-click the files and select Remove from Shredder on the shortcut menu.

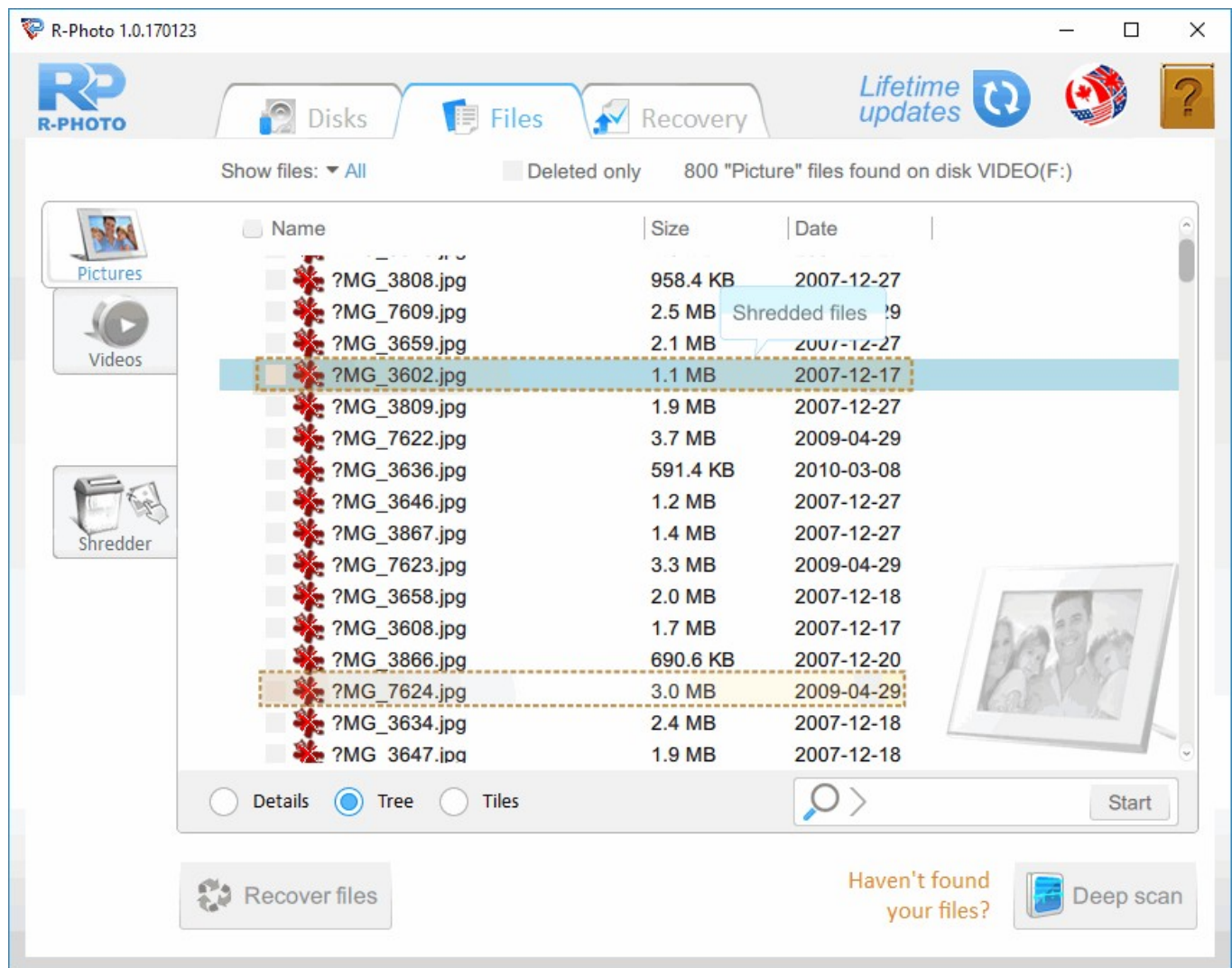
R-Photo shows shredded photos and videos with a special icon.



Files panel with shredded photos and videos

Please note that shredded photos and videos cannot be marked for recovery.

When the disk is reopened, the shredded photos and videos will be shown as normal ones, but their content will remain zeroed out.



Files panel with shredded photos and videos

V Definitions

Hard drive

A hard drive (often abbreviated as HD, or HDD) is a storage device that permanently stores and retrieves data on a computer. It consists of a spinning magnetic disk to which data is written using a read/write magnetic head on a mechanical arm called an actuator, all inside of an air-sealed casing.


Partition and (logical) disk

A partition is an area on a physical storage device separated from other device segments. For the operating system and computer users, although the separation is pure logical, it appears as an independent storage device with a separate file system. There are several reasons for such partitioning. For example, Windows 10 creates several service partitions, apart from the system partition (disk C:), like boot and recovery partitions that it uses to ensure system stability and recoverability. Another reason to separate the system and user data partitions is if the system has to be re-installed, the user data will remain untouched.

To be accessible for the computer user, a partition must have an assigned letter. In this case such a partition is called a logical disk and is referred to by its letter.

SSD and NVME storage devices

SSD Device Icons

	SSD storage devices.
	NVME storage devices: SSD devices connected to the computer through a special interface.

A solid-state drive (SSD) is a storage device that stores data on nonvolatile solid-state flash memory and has no moving parts, unlike hard drives or optical disks. They are much faster than traditional hard drives and more shock-resistant, but their life span is shorter and storage space is more expensive. NVME devices are SSD devices connected to the computer through a special interface.

Peculiarities of file recovery from SSD and NVME storage devices

All considerations below are applicable for files deleted from or without Recycle Bin. If you must recover files after a system crash, it will not differ much from file recovery from conventional hard drives.

SSD devices have some specific obstacles for file recovery, especially for files deleted from or without the Recycle Bin. Periodically, Windows issues a special command TRIM that informs the SSD device that some files have been deleted and their storage space is needed no more. Upon receiving this command, the device frees its internal space where the deleted files have resided. When the OS accesses that space, the device simply returns zeros even without reading the actual data. Moreover, Microsoft uses a so called DZAT procedure (deterministic zeroes after TRIM) that fully and permanently cleans that space by overwriting it with zeros. It is impossible to recover files after this procedure.

The main question is when that will happen. Depending on many circumstances, it may take from several seconds to several days. Within this time period, the file data will remain stored on the SSD device, and R-Photo can recover them.

Usually, Windows executes the TRIM command during shutdown and startup. That is why the main advice for the case of deleted files is to power your computer off by long-pressing the Power button of your computer. Do not shut down it. Then remove the SSD disk from the computer and connect it to another one. Use that second computer for file recovery.







Quick Scan

A disk operation in which R-Photo quickly analyzes information about files stored on the disk, including search for deleted files. Then it lists all found files in its Files panel.

Recovery chances

R-Photo estimates chances for successful file recovery while listing the files. Those estimations may not be quite accurate immediately upon file listing, but [Deep Scan](#) greatly improves those estimations.

Recovery chances

	Undefined
	Good
	Above average
	Average
	Below average
	Bad

File mask

A file mask is a pattern of characters and wildcards used to match folder and file names.

File signatures and raw file search

A file signature (sometimes is called as a file magic number) is a data pattern within the file that is unique to certain file types. It can be used to identify the format of the file and recover its content even when the disk file system contains no information about such a file. This method of file recovery is called "raw file search" or search for known file types and used to recover deleted files from damaged, deleted, or re-formatted disks, as well as from partitions with unrecognized file systems. R-Photo uses raw file search when performing [Deep Scan](#).

List of known file types

Graphics/Picture		
3D XML file: .3dxml	3DStudio Mesh: .3ds	Adobe InDesign File: .indd
Adobe Photoshop Image: .psd	Agfa/Matrix Scodl Image: .scd	Alias Wavefront Raster Image: .rla
ArcView Shape: .shp	AutoCAD Binary Image: .dxf	AutoCAD Drawing: .dwg
AutoCAD Image: .dxf	Autodesk Animator Image: .pic	Autodesk Animator Pro color map: .col
Autodesk Animator Pro Image: .pic	Autologic Image: .gm	AVHRR Satellite Image: .sst
Bentley MicroStation CAD Drawing: .dgn	BMF Image: .bmf	Canon RAW graphics file: .crw
Canon RAW graphics file*: .cr2	Canon RAW graphics file: .crw	ColorIX Image: .rix
CompuServe GIF Image: .gif	ComputerEyes Raw Image: .ce1	Continous Edge Graphic Image: .ceg
Corel Texture Image: .tex	CorelDraw CMX Image: .cmx	CorelDraw Image: .cdr
Cubicomp Picture Maker Image	Dr. Halo palette: .pal	Enhanced MetaFile Image: .emf

Epson Stylus Image: .prn	Erdas LAN/GIS Image: .lan	Fractal Image Format: .fif
Freehand (MX) Database: .fh10	GEM Raster Image: .img	GEM VDI Image: .gdi
GOES Satellite Image: .goe	Graphics Workshop for Windows Thumbnail: .thn	Gridded Binary Image: .grb
Hitachi Raster Image: .hrf	Hotspot Image: .shg	HP Command Language Image: .pcl
HP Raster Image: .rtl	HSI JPEG Image: .hsi	IBM Picture Maker Image: *.pic
iPhoto Image: .attr	Jovian Logic Image: .vi	JPEG 2000: .j2k
JPEG Digital Camera*: .jpg	JPEG Image: .jpg	Kodak PhotoCD Image: .pcd
LBM/IFF Image: .lbm	Lightwave Object: .lwo	Lotus PIC Image: .pic
Macintosh Paint Image: .mac	Macintosh PICT Image: .pct	Microsoft Paint Image: .msp
Minolta RAW image: .mrw	Nikon RAW image*: .nef	Olympus RAW image: .orf
PaintShop Pro Image: .psp	PaperPort Image: .max	PBM Image: .pbm
PGM Image: .pgm	Pictor PC Paint Image: .pic	PIX Image: .pix
PM Image: .pm	PNG Image: .png	PPM Image: .ppm
Print Shop Image: .pds	QuarkXpress Database: .qxp	QuarkXPress file: .qxd
Quick Link II fax Image: .qfx	QuickDraw 3D Metafile: .3dmf	RenderMan Image: .rib
SGI Image: .sgi	Sigma RAW image: .x3f	Sketch Image: .sk
SmartDraw file: .sdr	SmartDraw template: .sdt	Sony RAW image: .arw
STAD Image: .pac	Sun Raster Image: .sun	SymbianOS Image: .mbm
Tagged Image Format File: .tif	TI Image: .tiff	TrueVision Image: .tga
Utah Raster Toolkit Image: .rle	VITec Image: .vit	Windows Animated cursor: .ani
Windows Bitmap Image: .bmp	Windows cursor: .cur	Windows Fax Cover Image: .cpe
Windows icon: .ico	Windows MetaFile Image: .wmf	WordPerfect Graphics Image: .wpg
X PixMap Image: .xpm	X Window Dump Image: .xwd	Xara Drawing: .xar
ZSoft PCX Image: .pcx		
Multimedia: Video Files		
3GPP multimedia audio? /video: .3gp	3GPP2 multimedia audio? /video: .3g2	4X Movie Video: .4xm
Adobe Filmstrip Animation: .fsf	AMV Video: .amv	ANIM Animation: .cel
Autodesk Animator: .fli	BCS Video: .bcs	BINK Video: .bik
DeluxePaint Animation: .anm	Director Video: .dcr	DriveCam Video: .dce
DVM Video: .dvm	Eyemail Video: .eye	Flash Video: .flv
Google Video: .gvi	Intel DVI Video: .dvi	Intel Indeo Video File: .ivf
Interplay MVE Video: .mve	Lotus ScreenCam Video: .scm	LZA Animation: .lza
MPEG Video: .mpg	Nancy Codec Video: .noa	NEOchrome Animation: .ani

Nullsoft Video: .nsv	NuppelVideo (MythTV) Video: .nuv	QuickTime Video: .mov
QV-10 Video: .cam	RPL Video: .rpl	Sega FILM/CPK Video: .cpk
SGI movie format: .mv	Shockwave Video: .swf	Smacker Video: .smk
SMJPEG Video: .mjpg	Sony Movie Player Video: .mqv	VideoCD MPEG: .dat
VideoCD Video: .vcd	Vivo streaming Video: .viv	VOB video files: .vob
VP6 encoded Video: .vp6	Windows AVI Video: .avi	Windows Media Video: .wmv
Multimedia Files		
Material Exchange File: .mxf	MP4 file: .mp4	Real Networks audio/video: .rm
RIFF Multimedia File		

Note: Using scan for Known File Types, R-Photo can successfully recover only un-fragmented files.

Disk Image

An image is a file containing an exact, byte by byte, copy of a hard drive or a disk. When created, images can be connected to R-Photo and processed like their original objects.

Images are very useful if there is a risk of total data loss due to hardware malfunction. If bad blocks are constantly appearing on a hard drive or its S.M.A.R.T. state is poor, an image of this hard drive should be immediately created. All data search and recovery can be done from this image.

The [Disk Images](#) help page explains how to create and work with images.

Smart technology

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a technology widely used in hard drives and solid-state devices that monitors their reliability conditions to predict possible hardware failures.

VI Contact and Support

To obtain the latest version of R-Photo, go to:

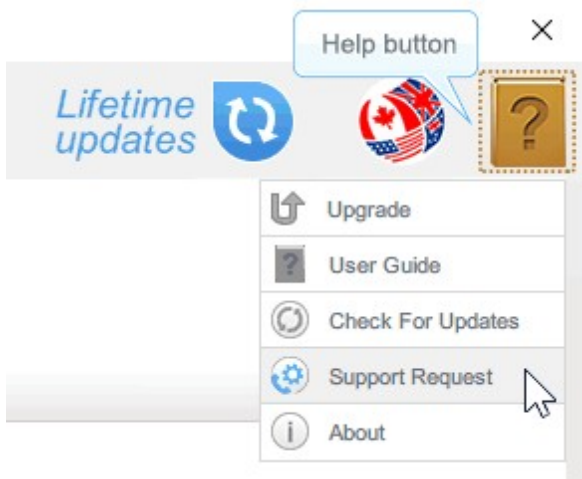
Product Site: http://www.r-undelete.com/free_photo_recovery/

Sales Department: sales@r-tt.com

R-Photo Technical Support Team is available 24 hours a day, seven days a week, and has an average response time less than 4 hours.

Tech. Support: support@r-tt.com

Click the Help button and select Support Request on the shortcut menu



Or send manually your support request to: <http://www.r-tt.com/SupportRequest.shtml>

File Recovery FAQ: http://www.r-tt.com/File_Recovery_FAQ.shtml

R-TT Forum: <http://forum.r-tt.com>

VII System Requirements

Operating System: Windows XP SP3/Vista/7/8/8.1/10

Enough storage space to save recovered files.

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