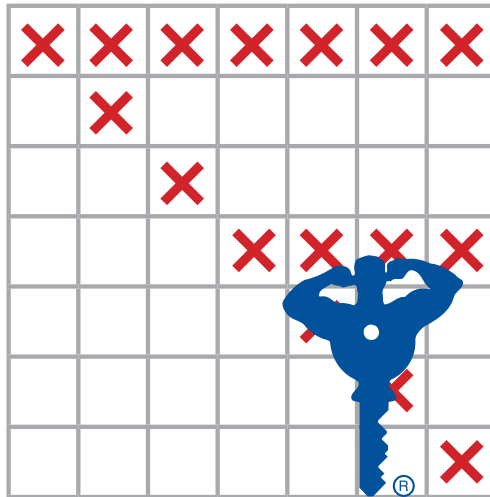




MASTERpiece

Designing of master key systems

User Manual



Version 5.15

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1. System requirements

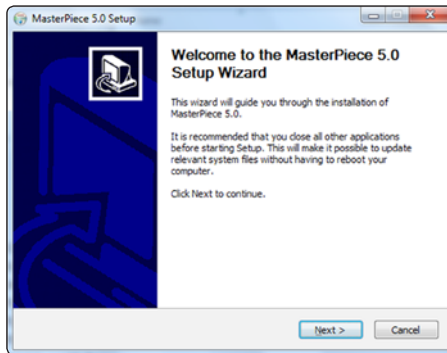
- PC with operating system XP (SP1), Vista, Win7. All 32 or 64 bits.
- PC internet connection. During installation the SW will look for Microsoft® .NET framework 3.5 or higher. If not found, it will need to download it from the internet. This is especially relevant for old XP platforms.
- Minimum screen resolution of 1024x768

2. Software installation

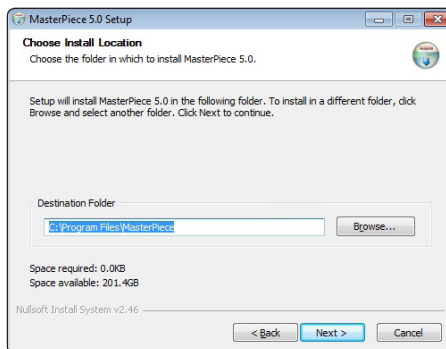
It is recommended to close any running programs prior to installation process.

Start the installation process by clicking on the SETUP icon.

Follow the on screen instructions. The setup wizard will guide you through the installation process.



To continue with installation click "**Next**", to exit the installation click "**Cancel**".

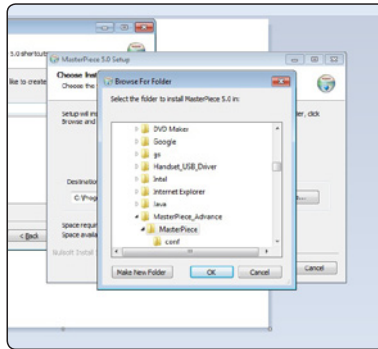


2.1 Select destination directory

To continue installation in the default directory (C:\Program Files\MPiece), click "**Next**", to exit the installation click "**Cancel**".

To change the directory chosen by the installation setup click on the "**Browse**" button.

Browse or type in the name of the directory you wish to use and click "**OK**". to go back to previous screen click "**Cancel**".

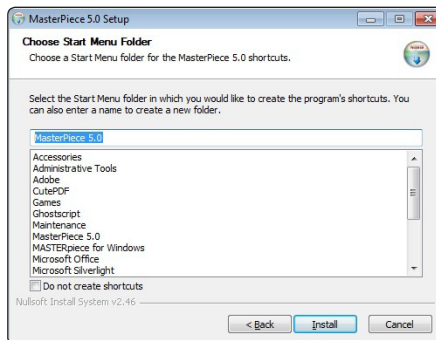


2.2 Start menu folder

Select the start menu folder in which you would like to create the programs shortcuts.

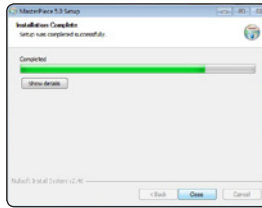
Click "**Install**" to continue installation, to exit the installation click "**Cancel**".

To go back click on the "**Back**" button.



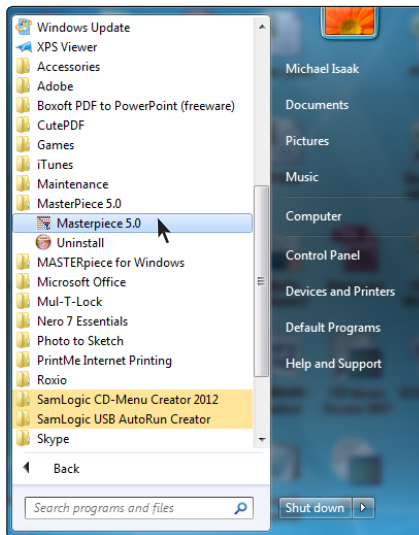
2.3 Installation completed

Click "Close" to exit the installation wizard.



3. Software operation

To start the software locate the software shortcut created on your desktop. In Windows "Start" menu choose "All Programs" and click on MASTERpiece 5.0.

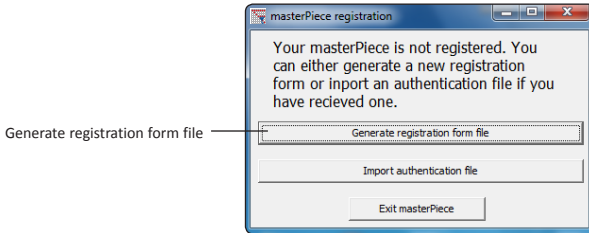


3.1 MasterPiece registration

The process of reregistering the software is done automatically. MasterPiece registration window will open.

To request a license file click on the **"Generate registration form file"**.

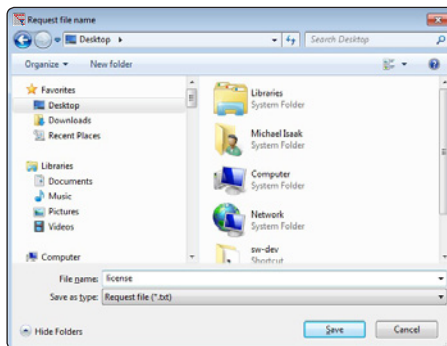
To register the software click on the **"Import authentication file"**.



Note: The license file should be available in order to register the software.

3.2 License request

Click on the **"Generate registration form"**. this will create a text file that will be used as a license request form. Specify a name for this file in the file name box and the location that the file will be saved. Click **"Save"**.

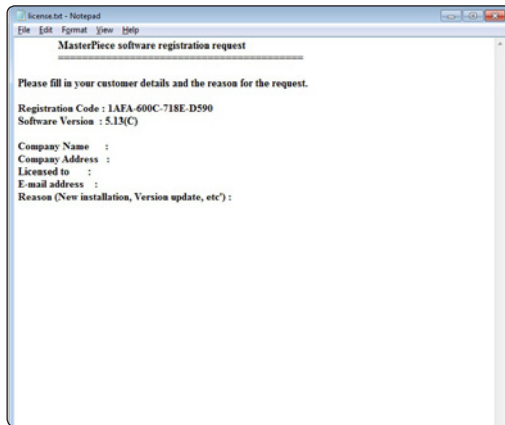


3.3 Request file

Locate the saved file and open it. Fill in the required details:

1. Company name
2. Company address
3. Licensed to
4. E-mail address and the
5. Reason for this request

Save the file and mail it to Technical Support Department at the following address:
tech.support@mul-t-lock.com



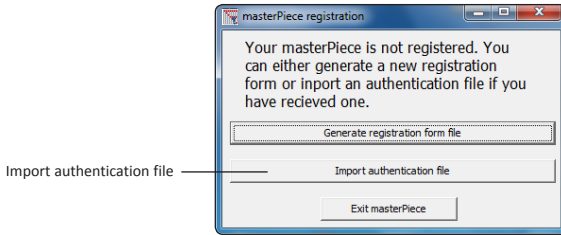
Note: After receiving the request file by Mul-T-Lock a license file will be generated and send back. The license file should be presented at the first operation of the software.

3.4 Import authentication file

Start the software by clicking on the software shortcut Icon created on your desktop.

In Windows choose **"Start"** and **"Programs"**. Click on MASTERpiece 5.0.

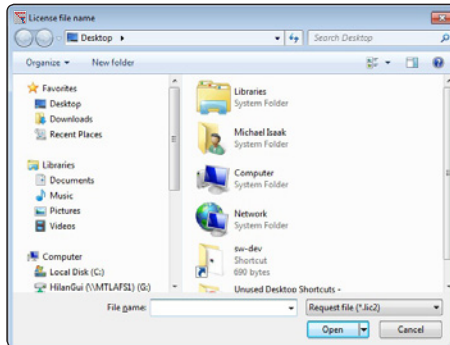
Click on the **"Import authentication file"** to register the MasterPiece software.



3.5 Authentication file

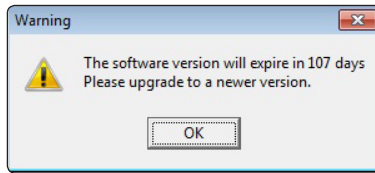
Locate the license file received from Mul-T-Lock and click on **"Open"**.

Note: The file type requested is *.lic2



3.6 Expiration date

When starting the software a warning window will be displayed. This window will display the period of time remains until expiration date.

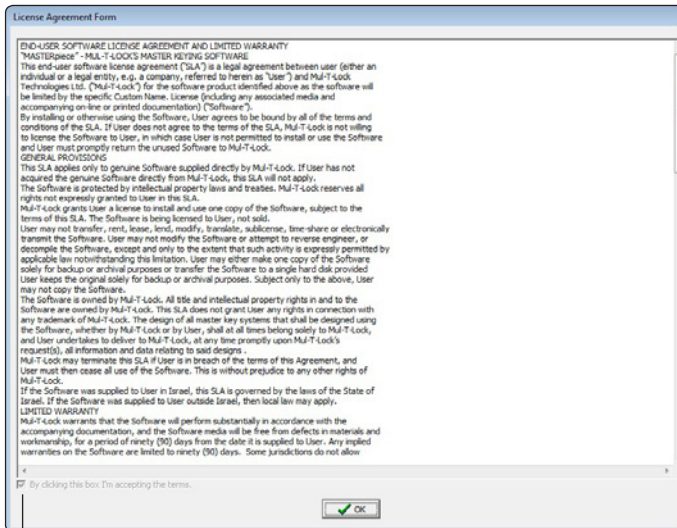


Click "OK".

Note: The time the expiration date is over there is a need to request a new licence.

3.7 User agreement

Accept the terms presented in the end-user agreement by marking the check box. Click "OK" to continue.



Accept terms

4. Designing in Tree mode (hierarchal mode)

4.1 Enter system information

Field	Value
System Number	600221
System Name	E.M.B.
Locksmith	M.I LOCKS
Customer	UNKNOWN
Description	The installation requires special tools

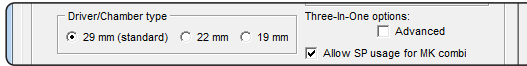
1. System number - printed on the GM combination page according to platform.
2. System name - enter the system name for future reference.
3. Locksmith - locksmith details.
4. Costumer - any details required to identify the costumer.
5. Description - any additional description required.

4.2 Select working (system) mode

System Mode	Profile Selection
<input checked="" type="radio"/> Mechanical	<input checked="" type="radio"/> Single Profile
<input type="radio"/> Electronic	206S
<input type="checkbox"/> Allow multiple items	<input type="radio"/> Profile Set
Product Type: Interactive+	<input checked="" type="checkbox"/> 99
<input checked="" type="radio"/> Matrix	<input type="checkbox"/> 11
<input type="radio"/> Tree	<input type="checkbox"/> Gamma
	<input checked="" type="checkbox"/> 05
	<input type="checkbox"/> 23
	<input type="checkbox"/> 35
	<input type="checkbox"/> 13
	<input type="checkbox"/> 25
	<input type="checkbox"/> 37

- Mechanical - designing mechanical system only.
- Electronic - designing electromechanical systems i.e. CLIQ.
- Product type - use the drop box menu to select cylinder platform (i.e. Classic, Interactive etc.)
- Profile selection - choose the product profile or profile set for profiles hierarchy.
- Working method - choose the designing method, Tree or Matrix.

4.3 Select driver pin type



- Driver pin type - select driver pin type according to product size, 29mm, 22mm or 19mm. For mixed product sizes in the same system select driver type according to the smallest product in the system.

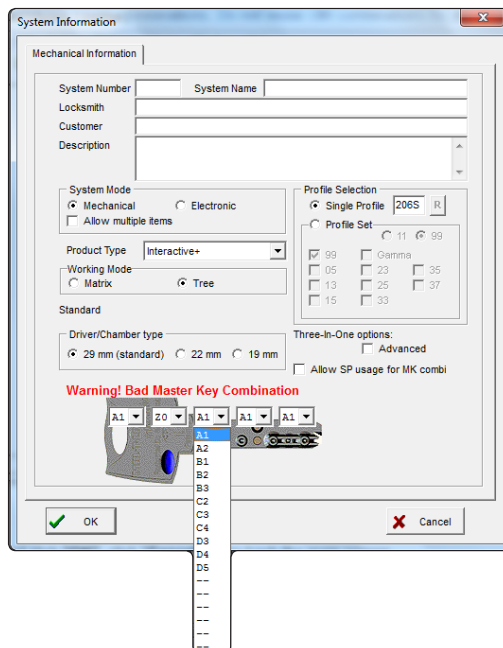
Example: Euro profile cylinder and cam 22 lock in the same system, driver pin type will be 22mm.

- Three-in-one options - select this option if the system contains changeable combination products (licence depended function).
- Allow SP usage for MK combination - not marked as a default. Automatically creating the use of side pins as a part of the solution.

4.4 GM key combination

Use the drop menu to enter the GM combination. GM combination is printed on the combinations list page (according to product profile) next to system number.

Note: Mark (or delete) used combinations. Do not reuse GM combinations for other systems. When finished click "OK", click "Cancel" to go back the main screen.



4.5 Master key combinations list

Each page contain 10 GM combinations to be used for each system.



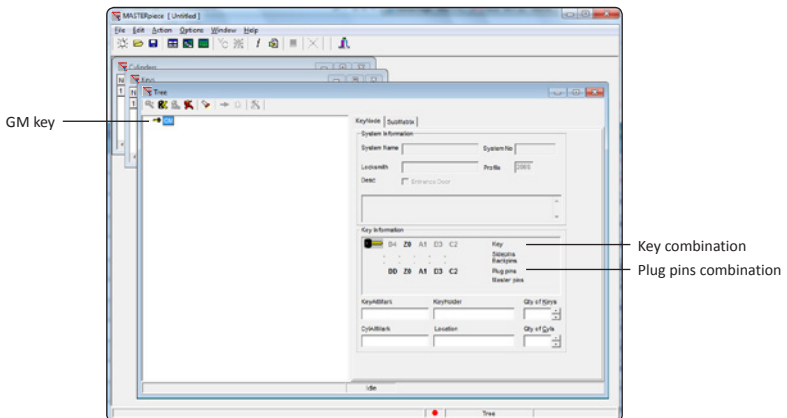
Classic–Master key combination

System number	037810	A2 D3 C4 D4 C2	GM combination
	037811	A2 D3 A2 D3 D5	
	037812	B2 D3 B2 A1 C3	
	037813	A2 D3 D5 C3 A1	

By clicking on the "OK" button the software will create and display 3 different screens, Cylinders, Keys and Tree.

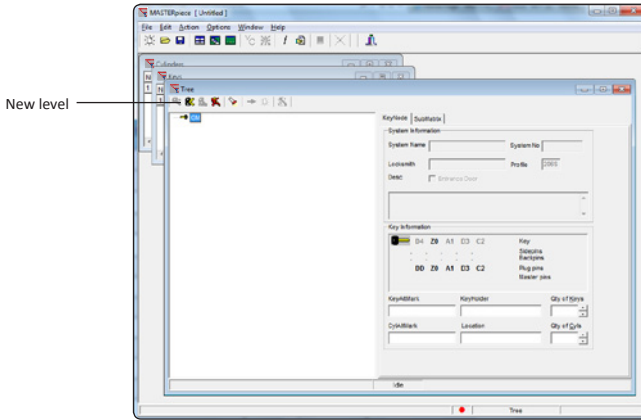
In the Tree screen the GM key is created (entered in the previous screen).

A display of the key and cylinder information is located on the lower right side.



4.6 First level

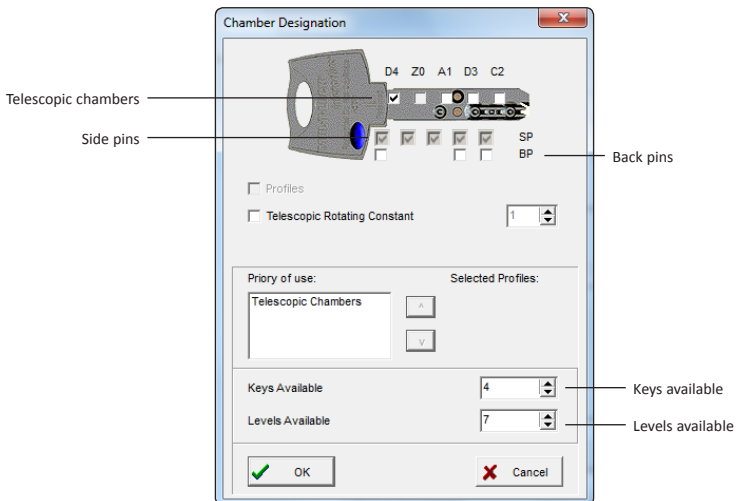
Click on the  "New level" command to create a new level for the system.



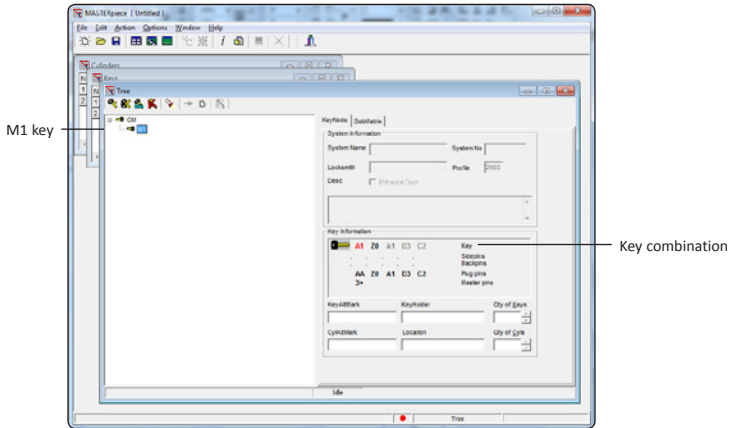
4.7 selecting Telescopic chambers to be used

Check mark the number of telescopic chambers you wish to use. Select the number of chambers according to the number of combinations required for this level. Keys and levels available (remaining) are shown on the right lower part of the screen.

Note: Side pins are add automatically.

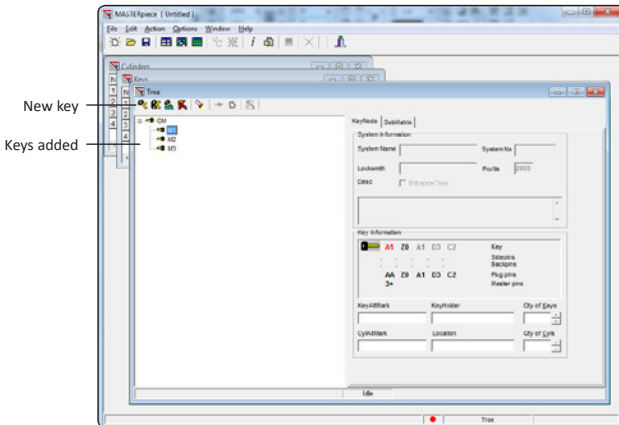


Click **"OK"** to continue, click **"Cancel"** to go to previous screen.
 M1 key for the new level is created under the GM key. The same key is created also in the Keys and Cylinders screens.




4.8 Adding keys to a level

To add keys to a level click on the **"New key"** command to add one key at a time or on the **"New key auto"** command to add more then one key.

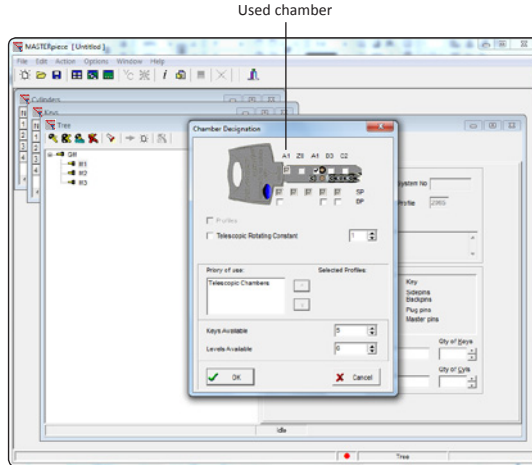


4.9 Creating second level



Mark (mouse click) the M1 key created and click on the  **"New level"** command to create a new level.

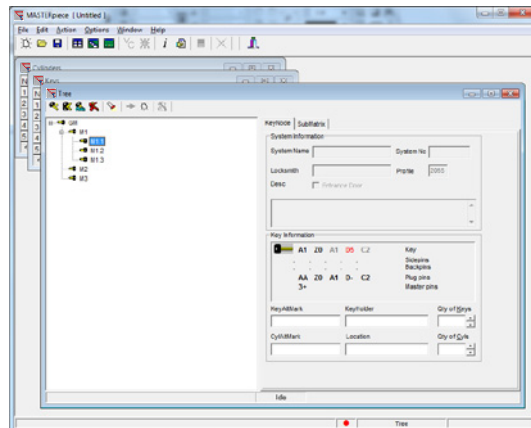
Check mark the number of chambers you wish to use according to the number of combination required. Gray check boxes means telescopic chambers already used in the upper level and can't be used again.

Click **"OK"** to continue, click **"Cancel"** to go to previous screen.



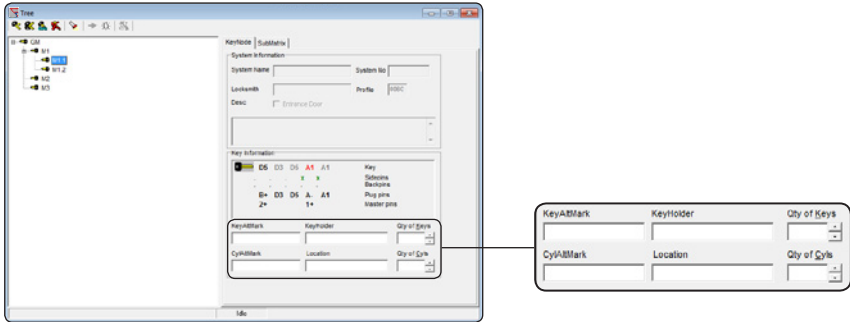
M1.1 key for the new level is created under the M1 key. The same key is created also in the Keys and Cylinders screens.

To add keys to a level click on the  **"New key"** command to add one key at a time or on the  **"New key auto"** command to add more than one key to this level.



4.10 Keys and cylinders information

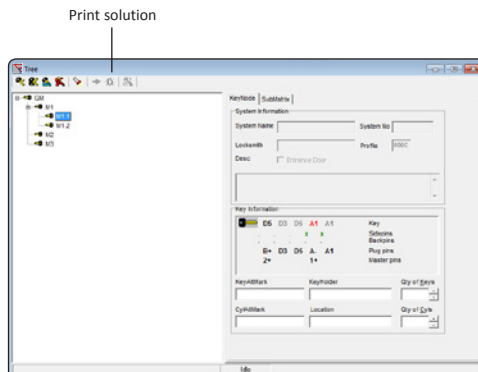
Complete additional information for the keys and cylinders into the text boxes. All information typed is automatically copied to the keys and cylinders screens.



- KeyAltMark - marking that the customer requires embossed on the key(s) for identification.
- KeyHolder - person/position key holding the key.
- Qty of Keys - number of copies required from a specific key.
- CylAltMark - marking that the customer requires embossed on the cylinder(s) for identification.
- Location - location of the cylinder(s) i.e. room number, front door etc.
- Qty of Cyls - quantity of this particular cylinder.

4.11 Print solution

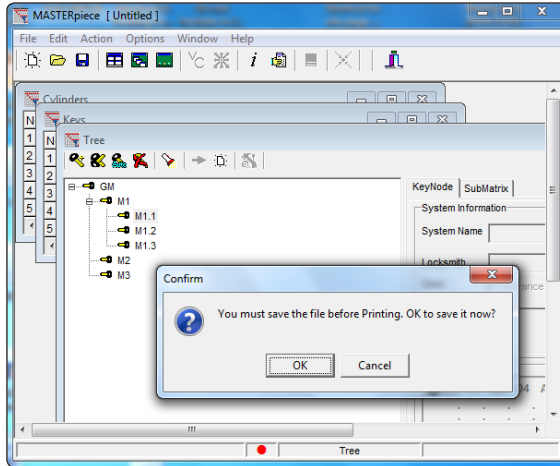
From the menu bar select **"Actions"** and **"Print solution"** or click on the  **"Print Solution"** command.



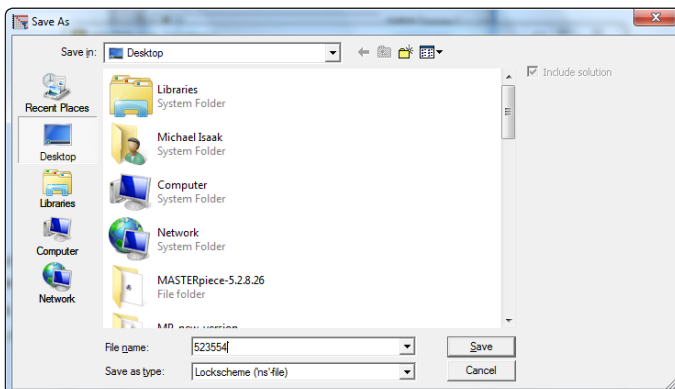
4.12 Save file

Click **"OK"** to save the solution file. Browse for the required location. Click **"Cancel"** to go back to previous screen.

Specify the system name and the location you wish to save it. It is recommend to save it by system number for future follow up.



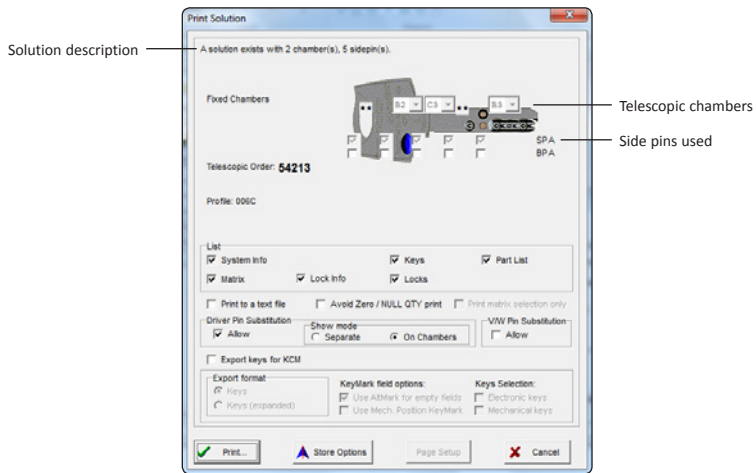
Click **"Save"** to save the file or **"Cancel"** to quit the saving process.
The file extension type will be *.ns (* marks the file name)



4.13 Print solution information

Mark the check boxes for the desired options you wish to include in the solution printout.

- System info - information entered in the information screen (system number etc).
- Matrix - presentation of the system as Matrix.
- Lock info - information entered for the locks.
- Keys - keys combinations for this system.
- Locks - locks (cylinders) pinning combinations.
- Part List - list of the parts and quantities of each part required to built this system.

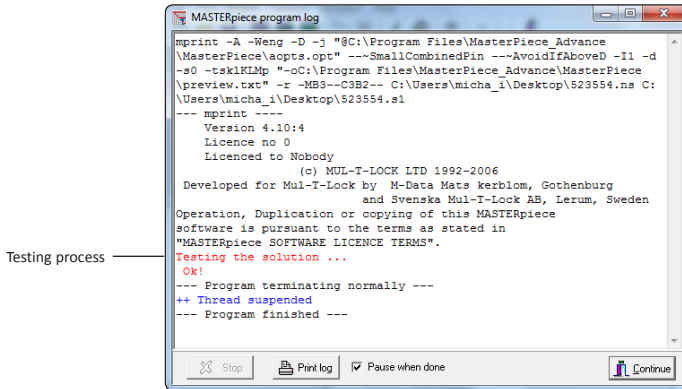


Click **"OK"** to print the solution, click **"Cancel"** to cancel the print.

4.14 Solution testing

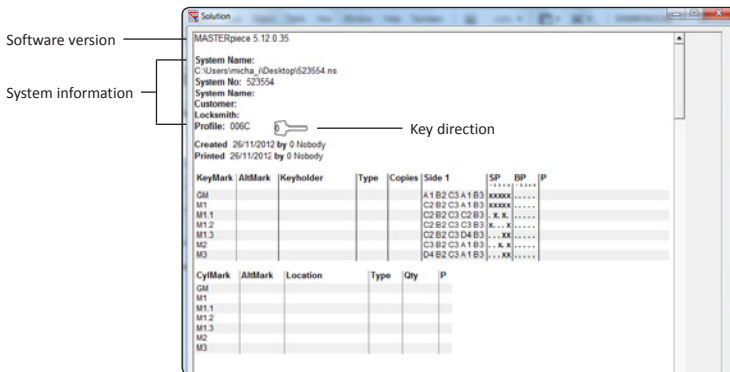
The software is testing the solution before printing. Click "**Continue**" to print.

Note: In case of illegal solution no solution will be printed.



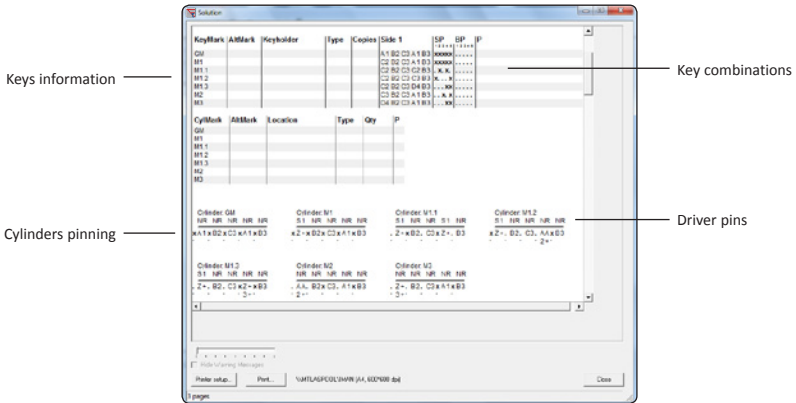
4.15 Solution printout - System information

The solution printout contains the information for the specific system



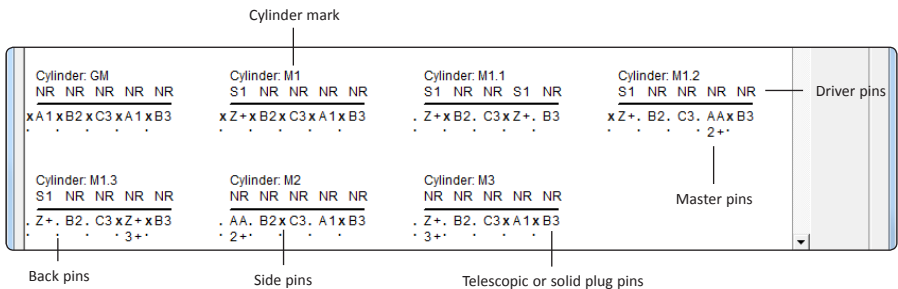
- System information - relevant information filled in the first screen. System name, system number, costumer, locksmith and profile used for designing the system.
- Key direction - pointing on the direction of how to read the combinations. The combination description for key and cylinders will be presented according to key direction printed on the solution printout.

4.16 Solution printout - keys and cylinders information



- Keys information - description of the position of the key in the system
- AltMark - fill this field for different marking on the key blank
- Key holder - information about the person who is holding the key
- Type - type of the key
- Copies - number of copies from a specific key
- Side one - combination of a specific key
- SP - side pins in the specific chambers
- BP - back pins in the specific chambers
- P - profiles of the keys used (will be printed if multiple profiles has been used)

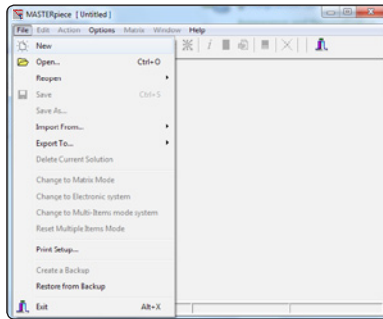
4.17 Cylinder pinning



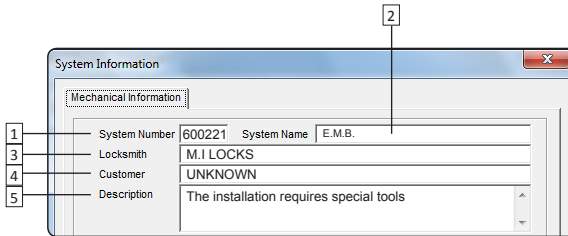
Side or Back pins - will be marked with an X in the specific chambers. Side pins mark will print next to the telescopic combination. Back pins will be printed in the line below the telescopic combination. If Side or Back pins are not specified only a dot (·) will be printed.

5. Designing in Matrix mode

On the upper command bar click on **"File"** then **"New"** or click on the  command to start a new system designing.

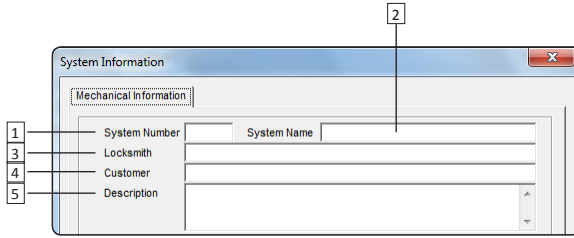


5.1 System information window



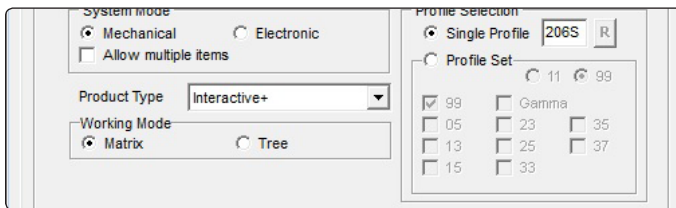
1. System number - printed on the GM combination page according to platform.
2. System name - enter the system name for future reference.
3. Locksmith - locksmith details.
4. Customer - any details required to identify the customer.
5. Description - any additional description required.

5.2 Enter required system information



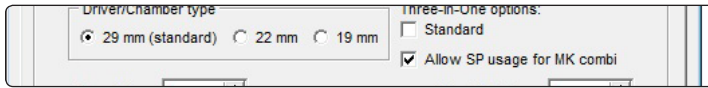
1. System number - printed on the GM combination page according to platform.
2. System name - enter the system name for future reference (optional).
3. Locksmith - locksmith details (optional).
4. Costumer - any details required to identify the costumer (optional).
5. Description - any additional description required (optional).

5.3 Select working (system) mode



- Mechanical - designing mechanical system only.
- Electronic - designing electromechanical systems i.e. CLIQ.
- Product type - use the drop box menu to select cylinder platform (i.e. classic, interactive etc.)
- Profile selection - choose the product profile or profile set for profiles hierarchy.
- Working method - choose the designing method, Tree or Matrix.

5.4 Select Driver pin type



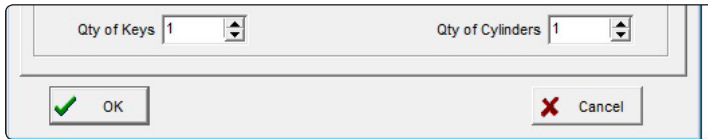
- Driver pin type - select driver pin type according to product size, 29 mm, 22 mm or 19 mm. In case of mixed product sizes in the system select driver type according to the smallest product in the system.

Example: Euro profile cylinder and cam 22 lock both in the same system, driver pin type will be 22 mm.

- Three-in-one options - select this option if the system contains changeable combination products. (Licence depended function).
- Allow SP usage for MK combination - not marked as a default. Automatically creating the use of side pins as a part of the solution.


5.5 Qty of Keys, Qty of cylinders


Define the number of keys and the number of cylinders going to be used in the system




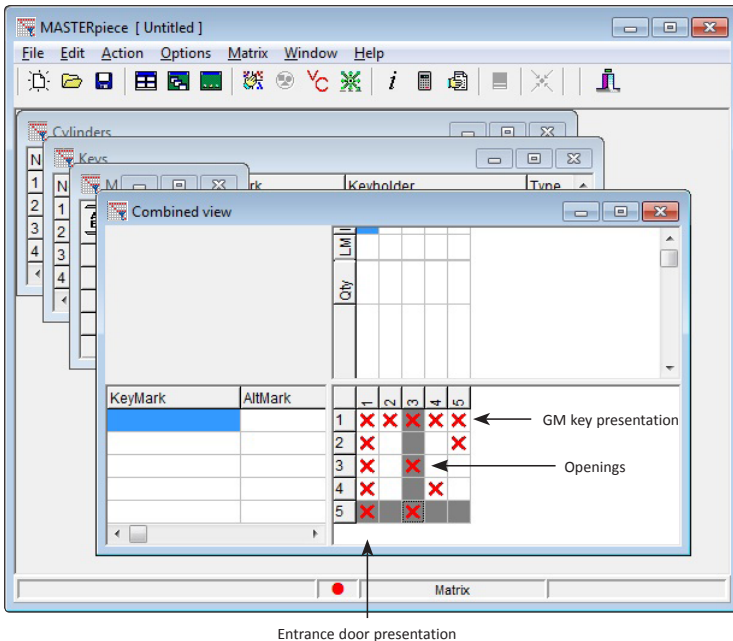
Click "**OK**" to continue. The software will create 4 different screens: Cylinders, Keys, Matrix and Combined view.

5.6 Marking an entry/opening

There are several methods to define an entry/opening 

1. By double clicking (left mouse click) on the appropriate intersection of a key and a cylinder.
2. Left mouse click once on an intersection (highlights in gray for easy identification) and click the "Space" bar once.
3. Use the Auto-fill Matrix mark  command to define a large amount of openings.

To undo any of the opening definitions simply repeat the procedure on top of the unwanted  .



5.7 Re-sizing the Matrix

In case of a large Matrix you can re size the Matrix and see more of the Matrix in one time. It is possible to reduce or to enlarge (zoom in, zoom out) the size by "grabbing" with the left mouse button, one of the lines of the Matrix, moving it left to reduce or right to enlarge. This operation can be done for both keys and cylinders.

	1	2	3	4	5
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4	X	X	X	X	X


Reduced view

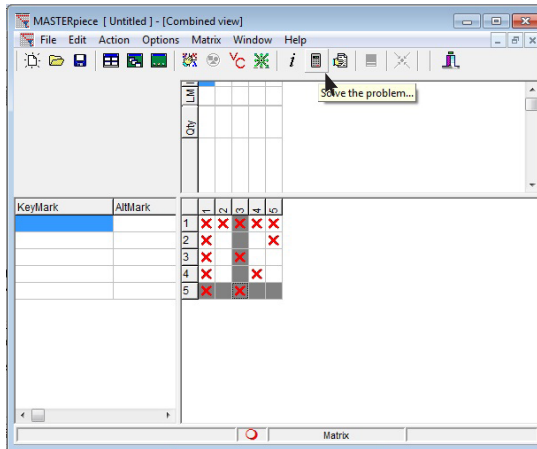
	1	2	3	4	5
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4	X	X	X	X	X
5	X	X	X	X	X

Enlarged view

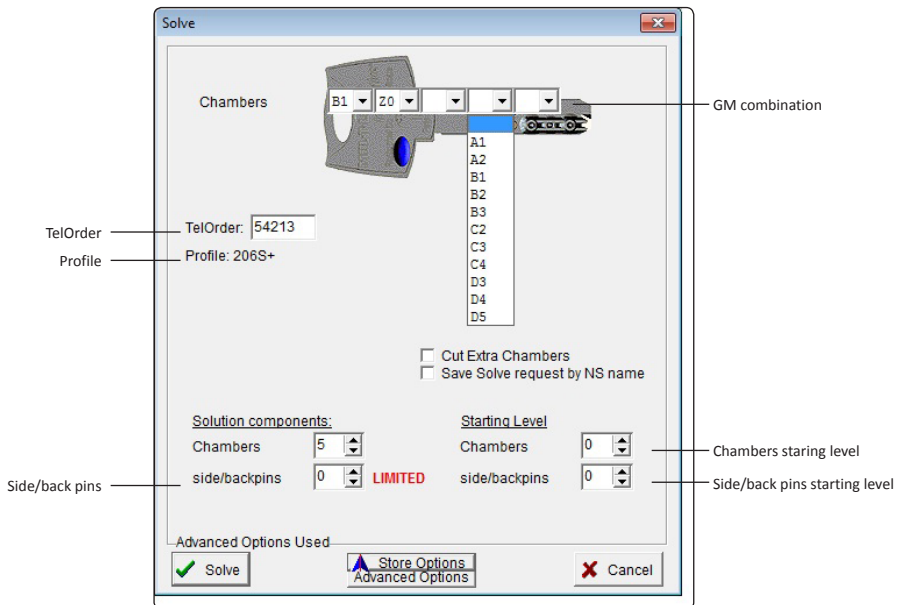
Complete entering all information in this window. The content of the key and lock lists are not used to solve the problem. However it is easier to recognise the keys and locks in the Matrix if key-marks are entered. This information is also required to identify the different keys and locks in the solution printout. Enter the information in the Cylinders, Keys or Matrix windows according to the information received from the customer. Entering information in one screen is copied automatically to the other screens.

6. Solve the problem

When completing entering all the information required, select **"Actions"** from the menu bar and **"Solve"** or click on the **"Solve the problem"**  command.



6.1 Solve screen



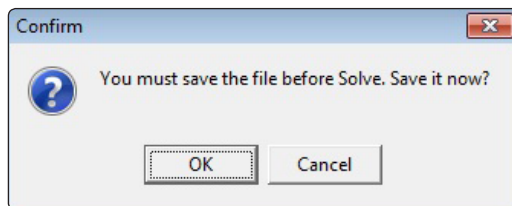
6.2 Solve screen

- GM combination - GM combination is printed on the combinations list page (according to product profile) next to system number (see page 12). Use the drop boxes to enter the GM combination.

Important: Mark (or delete) used combinations. Do not reuse GM combinations for other systems.

- Chamber starting level - determine the starting level for the telescopic chambers in the solution (used after determining groups levels - see groups chapter).
- Side/back pins starting level - determine the starting level for the back pins in the solution.
- Telorder - the order that the software is using for the telescopic pins in the solution.
- Profile - indication of the profile used.
- Side/back pins - the use of side and back pins in the solution. Red indication **LIMITED** is printed next to this box as the use of side pins is automatically generated as a part of the solution. It is possible to use up to 3 additional back pins for Interactive® platform or up to 5 back pins for the Classic platform.

Click on the "**Solve**" to command the software to attempt to solve the problem or click "**Cancel**" to go back to previous screen.



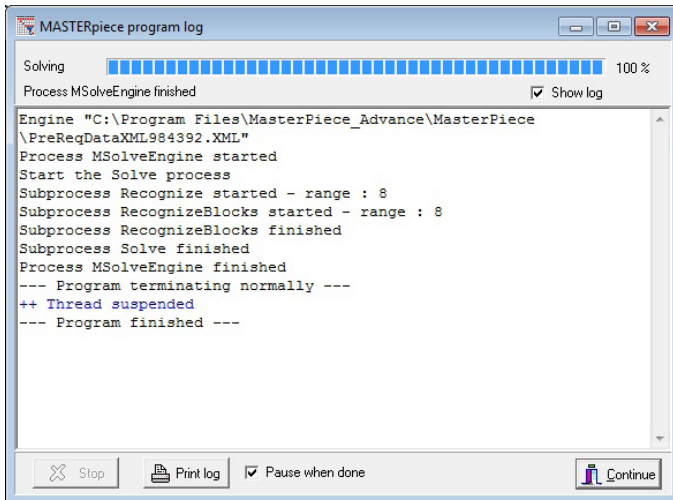
6.3 Confirm file saving

Save the file before the solving process. Confirm by clicking "**OK**".

Browse for the location you wish to save the file. Specify the name of the file.

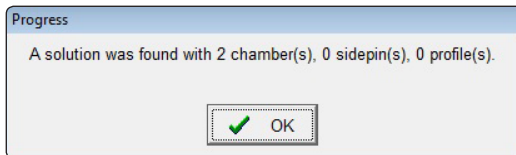
6.4 Solve the problem

The software will then commence to attempt to solve the problem. Masterpiece software log shows the progress of the solving process.



Progress of the solving process

When completing, the program will present the following window with the information about the solution.




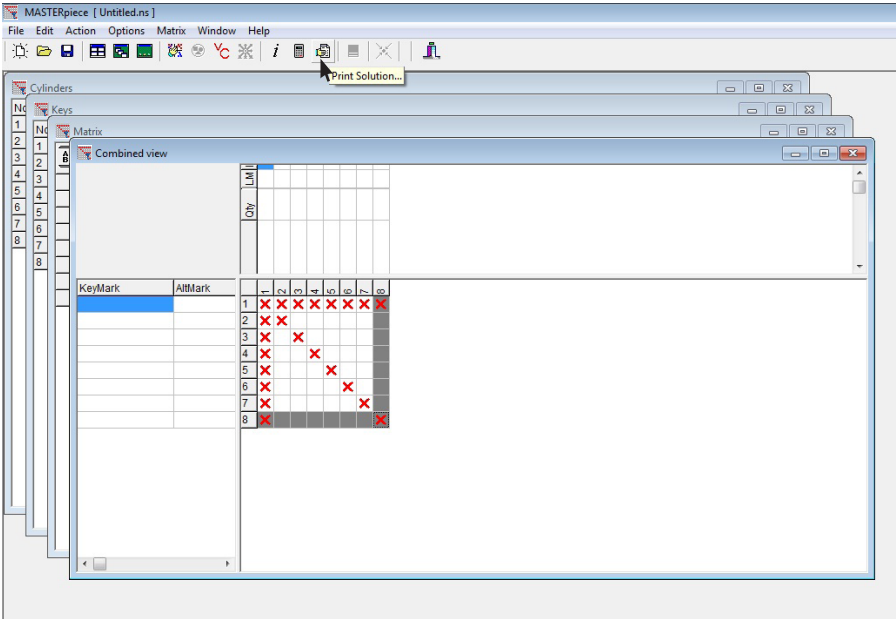
If no solution was found the program will present the following window announcing the result.



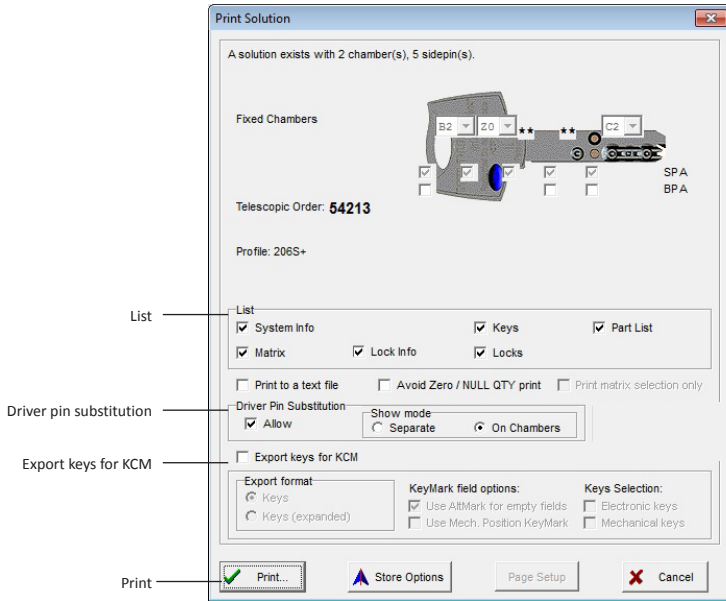
Click "OK" to continue.

7. Print solution

To print a solution, select **"Actions"** from the menu bar and **"Print Solution"** or click on the  **"Print Solution"** command.



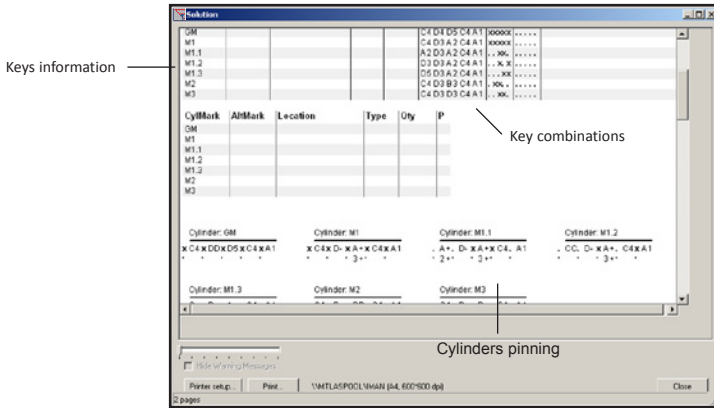
7.1 Selecting printout information



Check mark selected boxes of the relevant information you wish to be displayed on the solution printout.

- System info: all information entered in the information screen.
- Matrix: system presentation as Matrix.
- Lock info: all information about the locks entered in the locks information (i.e. length, type etc).
- Keys: presentation of key combination.
- Locks: presentation of locks pinning.
- Part list: a list of all components required to build the system.
- Export keys to KCM: the software will generate a new file. This file will be loaded to the KC5 Key Cutting Machine software for cutting keys from the system.

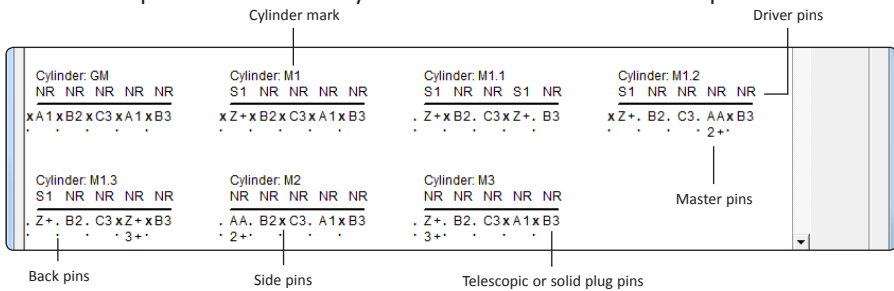
7.3 Solution printout - keys and cylinders information



- Keys information - description of the position of the key in the system
- AltMark - fill this field for different marking on the key blank
- Key holder - information about the person who is holding the key
- Type - type of the key
- Copies - number of copies from a specific key
- Side one - combination of a specific key
- SP - side pins in the specific chambers
- BP - back pins in the specific chambers
- P - profiles of the keys used (will be printed if multiple profiles has been used)

7.4 Cylinder pinning

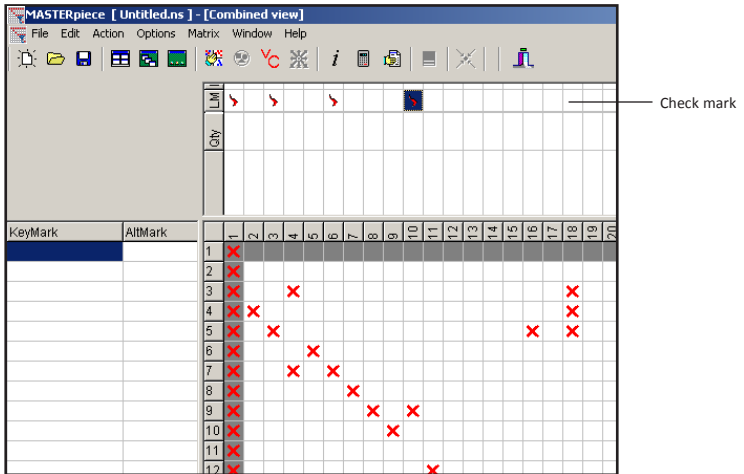
Side or Back pins - if exist in the system will be marked as X in the specific chambers.



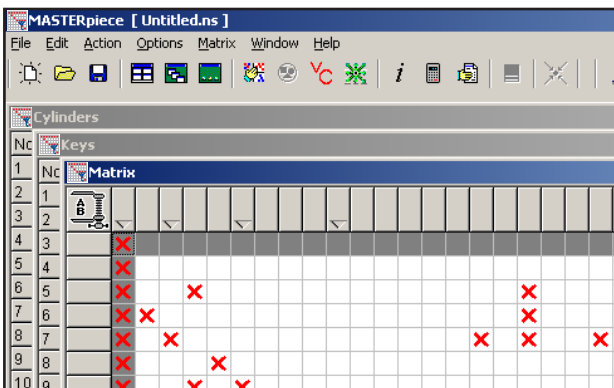
Side pins mark will print next to the telescopic combination. Back pins will be printed in the line below the telescopic combination. If Side or Back pins are not specified only a dot (·) will be printed.

8. Two sided solution

In complex systems it may be possible that no solution will be found as the solution is using up to 4 chambers for a specific solution. Alternative working method is to define different dimple cuts on the two sides of the key. The meaning is to use two different GM combination on two sides of the key blank. It is up to the user to decide which locks should work on which side of the key. Specifying the different sides is done by marking the locks in the LM (Lock Mask) column in the lock list with a red check mark (✓).



The locks with the check mark will use one side of the key (side A) and the unchecked locks will use the other side of the key (side B). The locks chosen to use the A side will be marked with a triangle (▾) in the Matrix window.

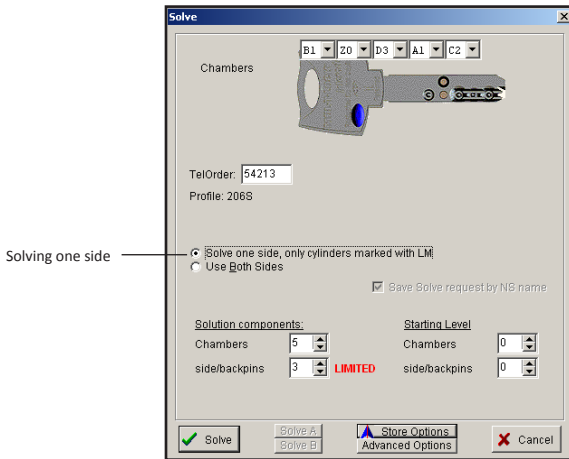


8.1 Find a solution

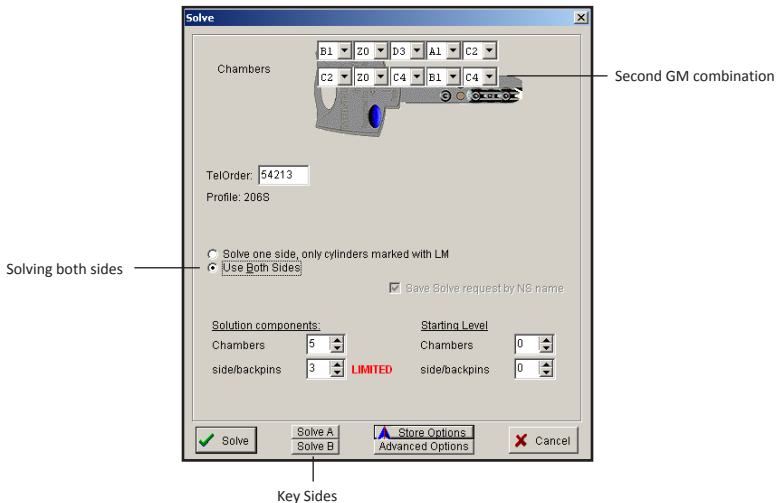
When using the LM (Lock Mask) in the lock list, the "Solve" window is different and contains new check boxes.

You may choose to solve only one side, only cylinders marked with LM.

Click "Solve" to find a solution to side A.



You may choose to solve both sides. Mark this box to solve both sides. Another row of GM combination appears on the key picture. Choose which side of the key you want to solve A or B.



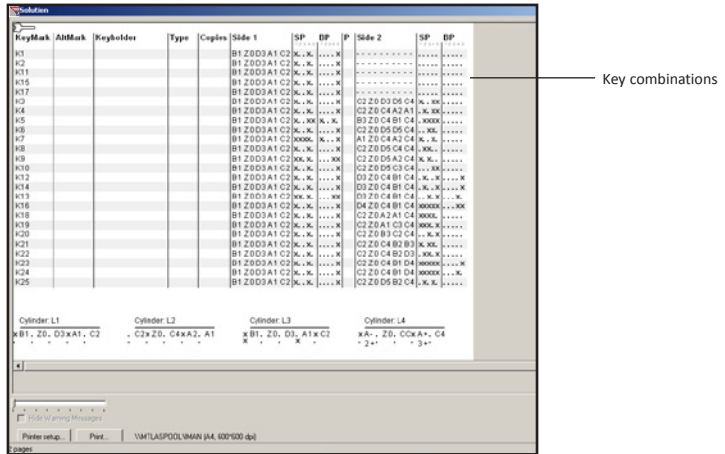
Note: As the system was split into two different problems (two sides of the key) each problem (side) needs its own GM combination.

8.2 Two sided key - solution printout

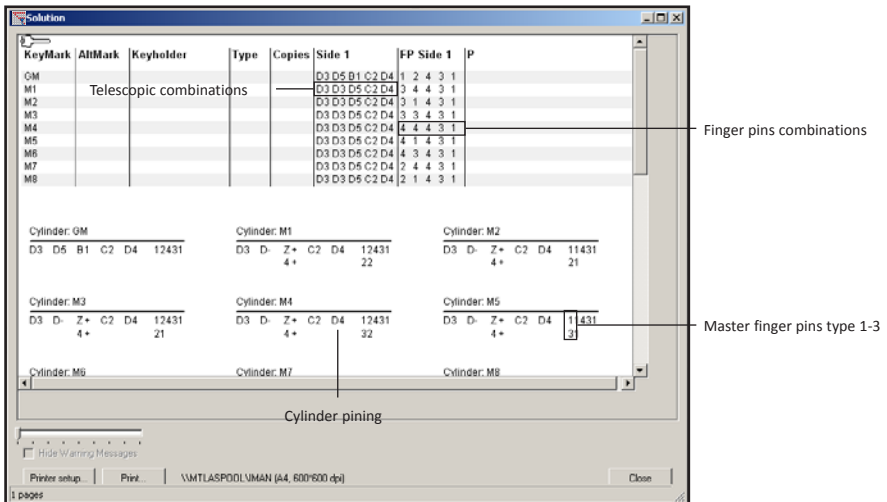
The solution printout display for two sides is different than the display for only one combination for both sides (one side).

Key combinations are displayed for both sides of the key, side 1 and side 2. Side and back pins will be marked in the specific chambers.

There is no difference in the display of the solution for the cylinders pining.



8.3 MT5+ solution printout



Note: Finger pin type for each chamber is presented from top to bottom. For example finger pin type 1-3 will be printed as $\begin{matrix} 1 \\ 3 \end{matrix}$ in a specific chamber.

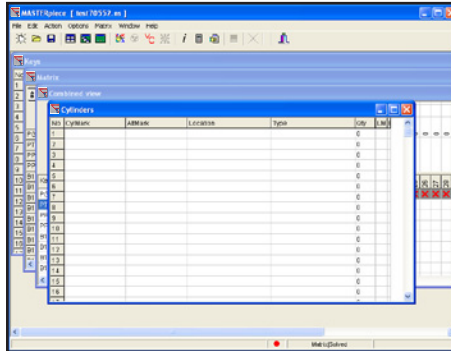
9. Cylinders and locks quantity (for small MKS systems)

9.1 Setting to 0 (zero) quantity for all keys and locks

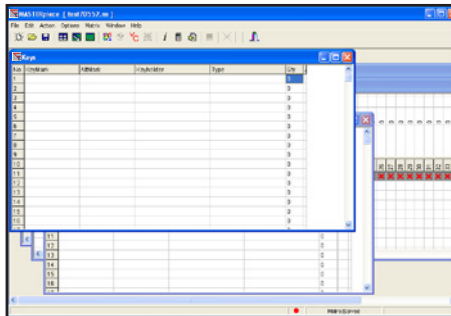
Option 1

In the cylinders window print 0 in the first row of the QTY column. Press Ctrl+D. The entire column will be filled with the number 0.

In the keys window print 0 in the first row of the QTY column. Press Ctrl+D. The entire column will be filled with the number 0.



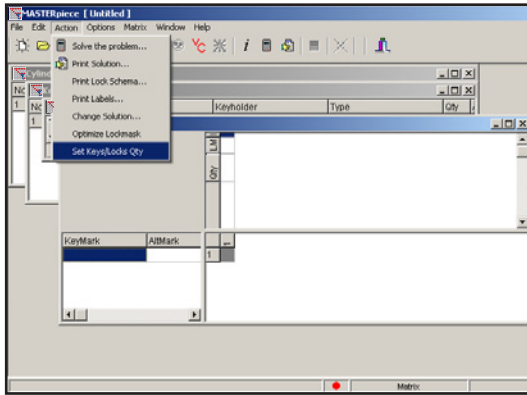
Cylinders window



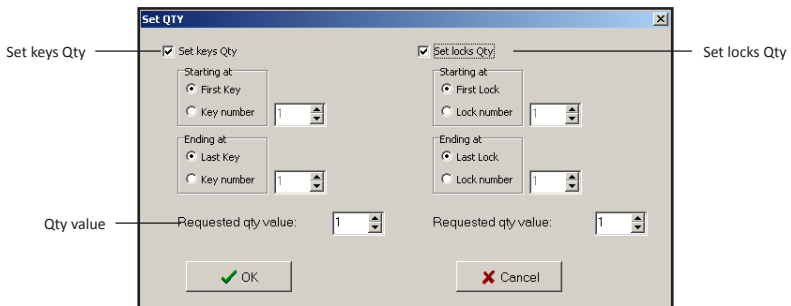
Keys window

Option 2

In the command line click on **"Action"** followed by **"Set Keys/Locks Qty"**.



Set required quantity for cylinder and locks.



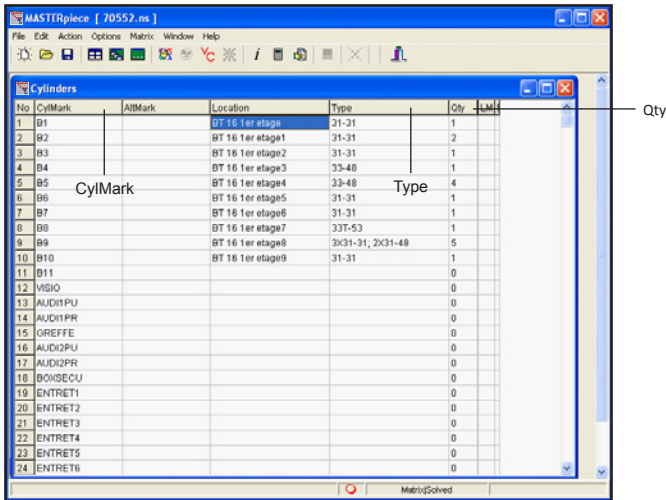
When done click **"OK"**, to exit click **"Cancel"**

10. Cylinders mark, Type and Quantity

In the cylinder window fill in Cyl mark, Type and Qty fields. Those fields are mandatory if sending the system to Mul-T-Lock. Alt mark and Key holder are optional.

In the keys window fill in Key mark, Type and Qty fields. Those fields are mandatory if sending the system to Mul-T-Lock. Alt mark and Key holder are optional.

Note: In Tree mode Cyl Mark/Key Mark is filled-up automatically.

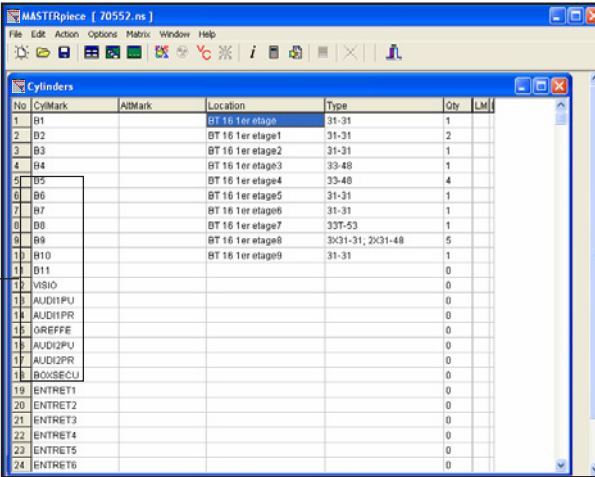


No	CylMark	AltMark	Location	Type	Qty
1	B1		BT 16 1er etage	31-31	1
2	B2		BT 16 1er etage1	31-31	2
3	B3		BT 16 1er etage2	31-31	1
4	B4		BT 16 1er etage3	33-40	1
5	B5	CylMark	BT 16 1er etage4	33-48	4
6	B6		BT 16 1er etage5	31-31	1
7	B7		BT 16 1er etage6	31-31	1
8	B8		BT 16 1er etage7	33T-53	1
9	B9		BT 16 1er etage8	3X31-31; 2X31-48	5
10	B10		BT 16 1er etage9	31-31	1
11	B11				0
12	VISIO				0
13	AUDI1PU				0
14	AUDI1PR				0
15	GREFFE				0
16	AUDI2PU				0
17	AUDI2PR				0
18	BOXSECU				0
19	ENTRET1				0
20	ENTRET2				0
21	ENTRET3				0
22	ENTRET4				0
23	ENTRET5				0
24	ENTRET6				0

10.1 Setting an order with Mul-T-Lock

- If the Alt Mark is filled in, an Alt Mark will be stamped as a default on the cylinders and keys. If the Alt Mark fields are empty, the Cyl Mark/Key Mark will be stamped on the cylinder/keys. Special requests should be sent by email.
- All the names in the Mark/Alt Mark fields, for cylinders and keys, should be different one from another.
- All the names in the Mark/Alt Mark fields, for cylinders and keys, should be in English letters. Other language might be displayed differently on the stamping machines.
- In case there is more than one type of product for a certain combination, it should be typed in the Type field (See example).

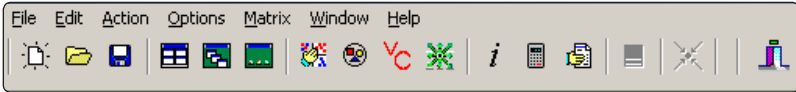
10.2 Example of filled in cylinders window
















The screenshot shows the MASTERpiece software interface with a window titled 'Cylinders'. The window contains a table with the following columns: No, CylMark, AltMark, Location, Type, Qty, and Lmt. The table is filled with data for various cylinders, including B1 through B10, and other components like v83i0, AUDI1PU, AUDI1PR, GREFFE, AUDI2PU, AUDI2PR, BOU1SECU, and ENTRET1 through ENTRET6. An arrow points to the 'CylMark' column with the label 'English letters'.

No	CylMark	AltMark	Location	Type	Qty	Lmt
1	B1		BT 16 1er etage	31-31	1	
2	B2		BT 16 1er etage1	31-31	2	
3	B3		BT 16 1er etage2	31-31	1	
4	B4		BT 16 1er etage3	33-48	1	
5	B5		BT 16 1er etage4	33-48	4	
6	B6		BT 16 1er etage5	31-31	1	
7	B7		BT 16 1er etage6	31-31	1	
8	B8		BT 16 1er etage7	33T-53	1	
9	B9		BT 16 1er etage8	3X31-31; 2X31-48	5	
10	B10		BT 16 1er etage9	31-31	1	
11	B11				0	
12	v83i0				0	
13	AUDI1PU				0	
14	AUDI1PR				0	
15	GREFFE				0	
16	AUDI2PU				0	
17	AUDI2PR				0	
18	BOU1SECU				0	
19	ENTRET1				0	
20	ENTRET2				0	
21	ENTRET3				0	
22	ENTRET4				0	
23	ENTRET5				0	
24	ENTRET6				0	

11. Program command line



-  New file
-  Open file (Ctrl+O)
-  Save file (Ctrl+S)
-  Tile windows
-  Cascade windows
-  Arrange minimized windows
-  Use the sort order
-  Group Info (Ctrl+G)
-  Validate for duplicate key / lock combination
-  Auto-fill Matrix marks
-  System Information (Ctrl+I)
-  Solve the problem.
-  Print Solution.



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