Spot heights

"kotvysk.lsp" is a tool for Autodesk AutoCAD to insert spot height and automatic fill value of the height. LISP application finds out the Y coordinate of inserted block and writes this value as a text to the atribute of the spot height. Tool automatically adds prefix +/- according to the possition a height which depends on the base level. It's necessary to put blocks **Kota_vysky_R_GG** and **Kota_vysky_R_GG-POLE-m** or **Kota_vysky_R_GG-POLE-mm** or **Kota_vysky_R_GG-POLE-in** into AutoCAD's Support Paths (see *OPTIONS*, tab *Files*).

Commands

VKS … Spot height (static) – inserts *Kota_vysky_R_GG block*

VKS-NADM … Spot height (static) – inserts *Kota_vysky_R_GG block*
(+ prefix is not added)

VKS-POLE … Spot height (dynamic) with dynamic field - inserts
Kota_vysky_R_GG-POLE-m or *Kota_vysky_R_GG-POLE-mm* block or
Kota_vysky_R_GG-POLE-in block

The height value in dynamic block is also dynamic and if move a spot height a value is changed too. For correct display a valu you need to save, print or refresh drawing. Prefix + is neccesary input manually.

The height value is dected automatically a updated at saving, regenerating, or printing. The + sign is not displayed automatically, it has to be added manually.

The function is able to recognize the units that are used in the drawing and according to this fact is able to put the Kota_vysky_R_GG-POLE block with –m, -mm, or –in sufix which can digger by the way of a height spot conversion.

VKO … Spot height value correction of *Kota_vysky_R_GG and previous versions of the height spot block quote.*

VKNULA … Sets the beginning (0,000ú (change UCS) for dimensioning

VKNULAZPET … Sets previous elevation. Gives the begging back to original value.

Load application
Load the application kotvysk into AutoCAD by *_APPLOAD* command.

How use a tool (dimensioning process):
1. Firstly it is necessary to determine the level which refers to 0,000 (usually the 1ˢᵗ floor). It is possible to manage working plane choices eirher by moving of the object a some of its height spots into 0,000 point, or by using **VKNULA** command.
2. Insert commands **VKS**, **VKS-NADM**, or **VKS-POLE**, quote demanded items and edges.
3. In order to update spot heights quotes it is necessary to use **VKO** command because the height is not automatically updated durint the static dynamic quotes moving.
4. In order to give the drawing back to original value it is necessary to use **VKNULAZPET** command (this can be applied in choices of working plane by **VKNULA** command).

Height value update in static spot height:

Use command VKO to update the spot height value. The Tool ignores blocks where the attribute value is modified, or more precisely in blocks where the attribute value is something different than a number or recognitable chain. **Warning:** Tool works with current UCS! (Pay attention to user's system of coordinates during the updating process because the updating is proceeded according to current USS!)

Units

Tools use current AutoCAD's units setting (command *UNITS*, variable *LUPREC*) for units and number of decimal places in spot heights.

Scale of inserted block: (Inserted block scale, Block size)

The inserted spot height block size or inserted block scale depends on the actual dimension style settings and drawing units (*INSUNITS*). The block scale is so that the type height of attribute in block is the same as the font height of in actual dimension style. The number of decimal places is set according to *LUPREC* (in *UNITS settings*). Attribut value formatting is set according to the variable *DIMLUNIT*.

- If is actual dimension style set to "annotation" (*DIMANNO* = 1), block scale is by: *CANNOSCALEVALUE* a *DIMTXT*
- If isn't actual dimension style set to "annotation" (*DIMANNO* = 0), block scale is by: *DIMSCALE* a *DIMTXT*

If the dimension style is "annotation" the "Annotation" property is activated and the block size depends on the CANNOSCALEVALUE a DIMTXT variables.
If the dimension style is not "annotation" the "Annotation" property is not activated (DIMANNO=0) and the block size depends on the DIMSCALE a DIMTXT variables.
The Dimension Style regime (mode) of „Scale by layout" is not supported.

Dimension style setting "Scale by layout" isn't supported.

Note: Function VKS and VKS-NADM after insertting block automatically adjust dynamic block property („Délka kóty" – „dimension length" in english) to conform length of string in atribute (value of spot height), but only if length of string is greater than default. Function VKO doesn't adjust dynamic block property.
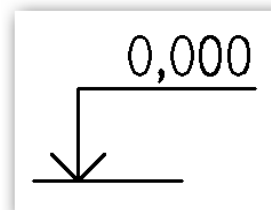
The property of the dynamic block "Dimension Length" is automatically adjusted by VKS and VKS-NADM function after the block inserting and is confomed to the lenghth of text written in VYSKA attribute. This is accepted only in length prolongation. The dimension length is not adjusted by VKO function (height value updation).

Spot height block

Dynamic block for use in architectural section. Block contains second row with multiline attribute for add custom description (eg. name of level etc.).

Display options:

- spot height elements extension,
- show or hide underline,
- spot height mirroring (vertically, horizontally),
- text mirroring
- show or hide wipeout behind dimension value

How to work with the block

- Insert the block into the drawing by the tool kotvysk or command **Insert – Block…** It is possible to control the block by „blue" grips, which are displayed after its selection . Default size of the block is 1:1. To change the size use the command _SCALE or change the scale value in the block properties. Example: *Scale factor 50 is for scale 1:50.*
- Use command _**REGEN** to refresh the value of dynamic spot height. Other way for refreshing is to save or print the drawing
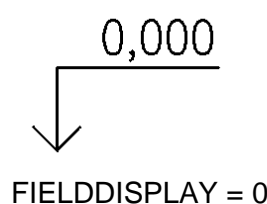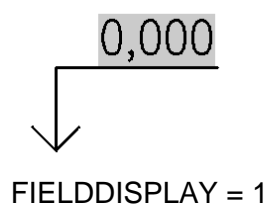
Spot height value refreshing
The method of refreshing is controled by variable **FIELDEVAL**. According to the variable setting. it is sufficient only to regenerate or save the drawing for the updating. The variable setting FIELDEVAL is saved as sum of values (for more information see AutoCAD Help). Recommended value for variable: **31**.

Grey background in dynamic field
Gray background at the block attributes is controled by the variable **FIELDDISPLAY**.
Recommended value for variable: **0**. If you wish to turn the gray background off, sett he variable value for 0.

FIELDDISPLAY = 1   FIELDDISPLAY = 0

Text mirroring in the block
Text mirroring is controled by variable **MIRRTEXT**.
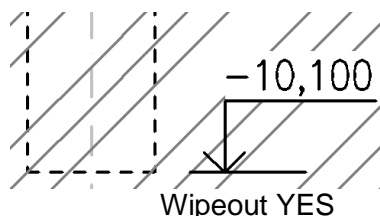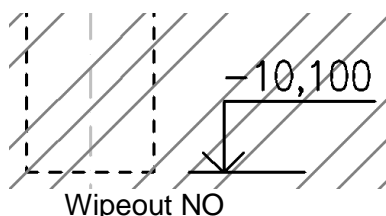Recommended value for variable: **0**. (Please, set it as value 0).

Variable setup
Write the variable name into AutoCAD's command line, enter the variable value of and confirm entered value.

Wipeout
Spot heights support wipeouts, masks underlying objects with the current background color. You can turn on into visibilte states of block. For correct position above other objects use command _DRAWORDER and option *Above Objects*.
The wipeouts behind the height value is supported by the spot height (if there is a section line behing the height value, the readability will be kept by the overpassing of the section line – not cutting). Wipeout is standardly off and it is possible to turn it on in visibility parametr. It is necessary to point out that the wipeouts are influenced by object drawing (command _DRAWORDER) and spot height block is reguired to be above (Above Objects).
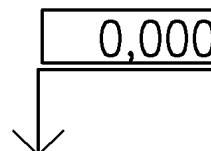

Wipeout NO   Wipeout YES

The frames determining the wipeouts range can be displayed. The frame display is advised to be off in command _WIPEOUT setting.
Turn off frames for wipeouts i sone of options command _WIPEOUT.

Command: _WIPEOUT
Specify first point or [Frames/Polyline] <Polyline>: *F*
Enter mode [ON/OFF]: <varies> *OFF*

Units for dynamic spot height (*Kota_vysky_R_GG-POLE*)

- Block contains suffix **-m** is used for drawing created with units meters [m] and value a height is not modified.
- Block contains sufix **-mm** is used for drawing created with units milimeters [m] and value a height is modified (divide by 1000).
- Block contains suffix **-in** is used for drawing created with units inches [in] and value a height is not modified. Value is in format feet and fractional inches (0'-0").

- The block with **–m** suffix is supposed to be a drawing drawn in m and the height is not adjuste.
- The block with **–mm** suffix is supposed to be a drawing drawn in mm a the height is divided by 1000.
- The block with **–in** suffix is supposed to be a drawing drawn in inches [in], The values is displayed in format feet and fractional inches (0'-0'').

Comments

- Dynamic blocks can be used in AutoCAD 2006 and newer versions.
- It is possible that tha dimension doesn't work properly in some not-updated AutoCAD versions.
- Spot height with the textfield is not able to add automatically + for positive values.
- When increasing the scale via Properites the deformation is possible in some cases. In this case use command _SCALE.
- Incorrect behaviour at the block attributes alignment is caused by the turning on the Annotation Property (AutoCAD bug ;-( ).

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