OMV Vienna MRS-TD AUTOCAD Symbolica

Design Guide for Projects using AutoCAD

1. Fundamentals

Requirement for the creation of CAD plans by means of Symbolica is the installation under according to Symbolica manual specified AutoCAD version.

How Symbolica is properly installed is described in each case in the actual version in the document "Symbolica_Installation_Manual.doc".

This execution regulation is to be applied in addition to the norm OMV 351.

Before the project beginning a clarification conversation with MRS-TD is to be carried out.

It is recommended to tune examples of Drawings with OMV to intercept discrepancies before admission of the production.

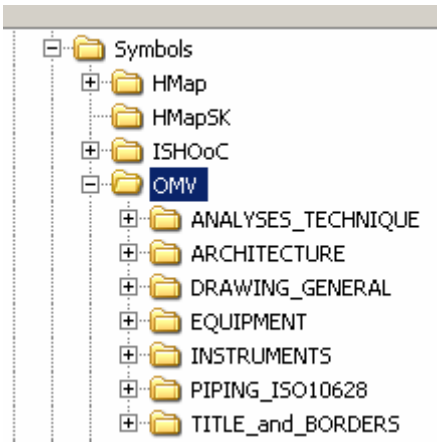
2. Basic settings

See OMV norm 351 item 2.2

3. AutoCAD DesignCentre

3.1. Data structure

All symbols are placed within the directory
…\ISHAcadAppsBaseNET\Symbols\OMV (including subdirectories)

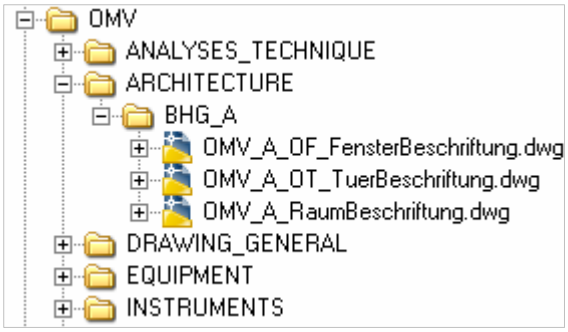


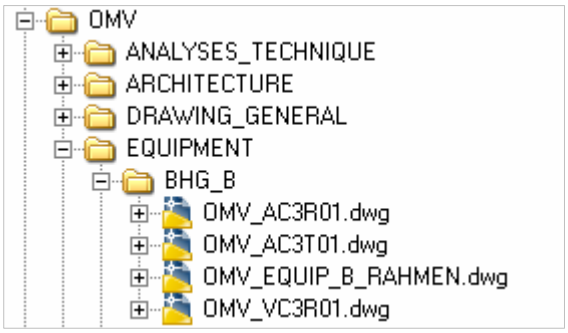
The Directories shown above contain all blocks/symbols required for the drawing production including the matching attributes.

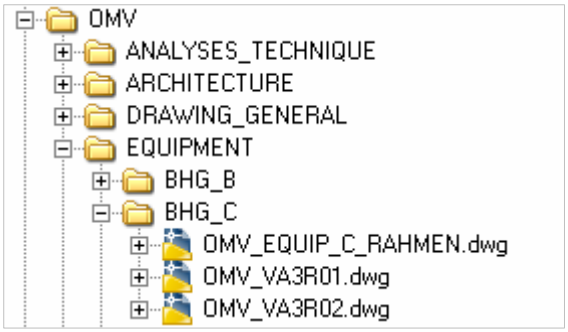
The symbols directory structure divides in departments and construction main groups after OMV norm 302 parts 2.

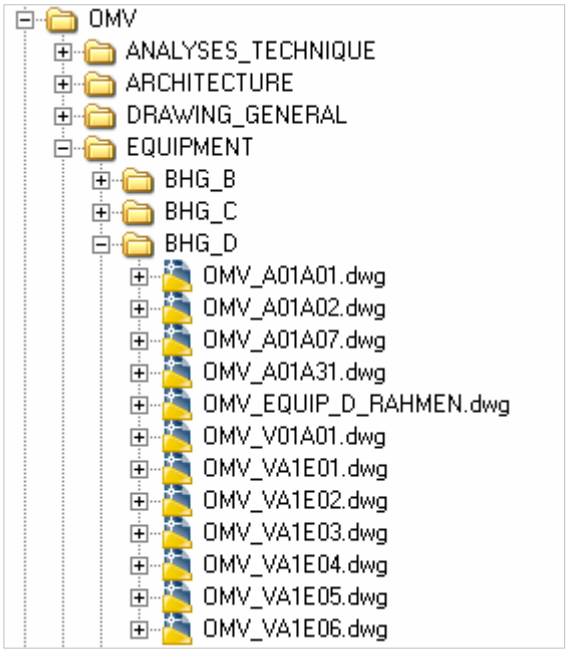
3.2. Samples for OMV main groups

3.2.1. Samples for OMV main groups "A" to "D":

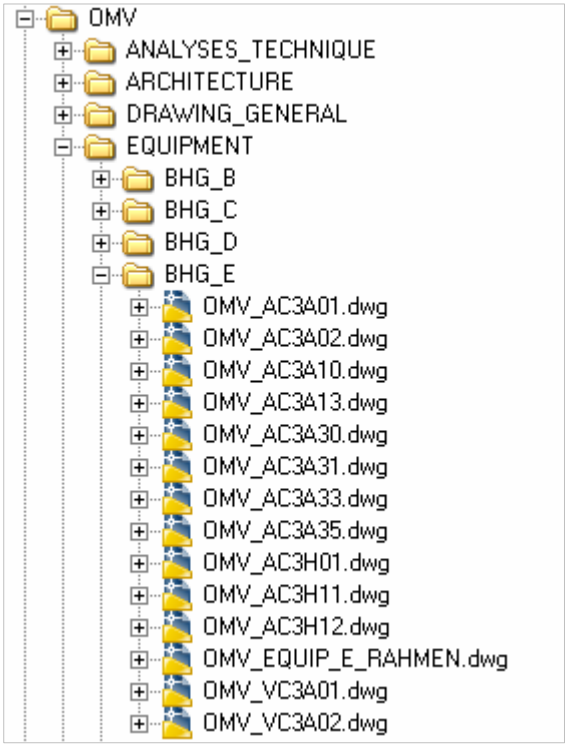






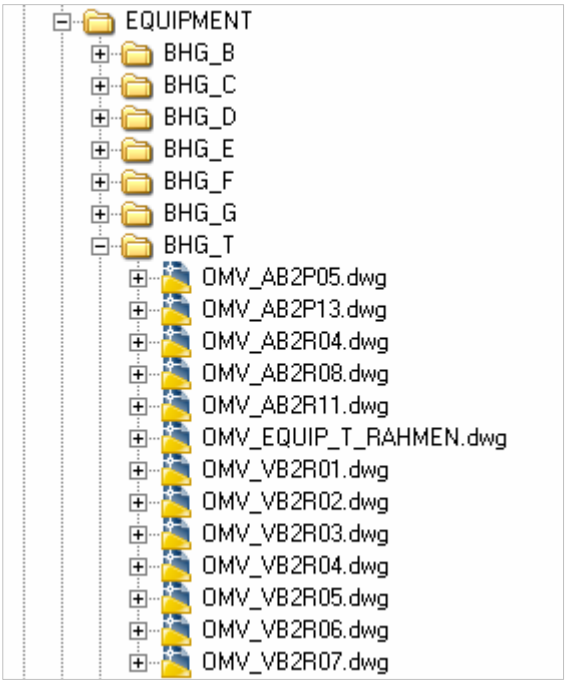


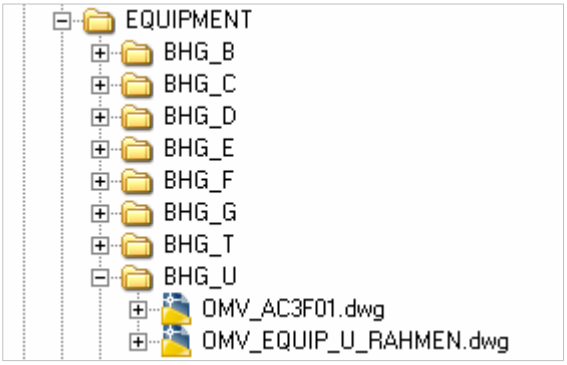
3.2.2. Samples for OMV main groups “E”

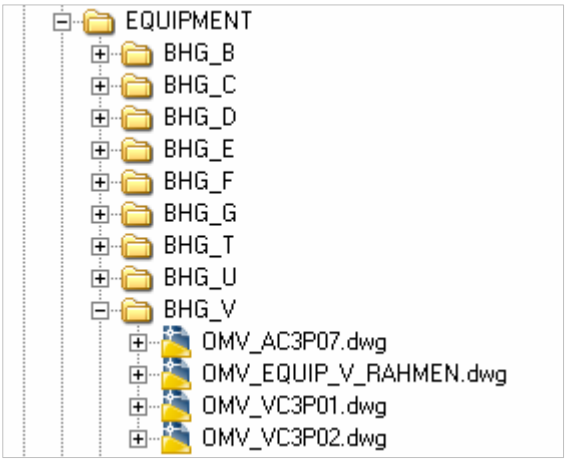


3.2.3. Samples for OMV main groups "F" to "G"

3.2.4. Samples for OMV main groups “T” to “V”

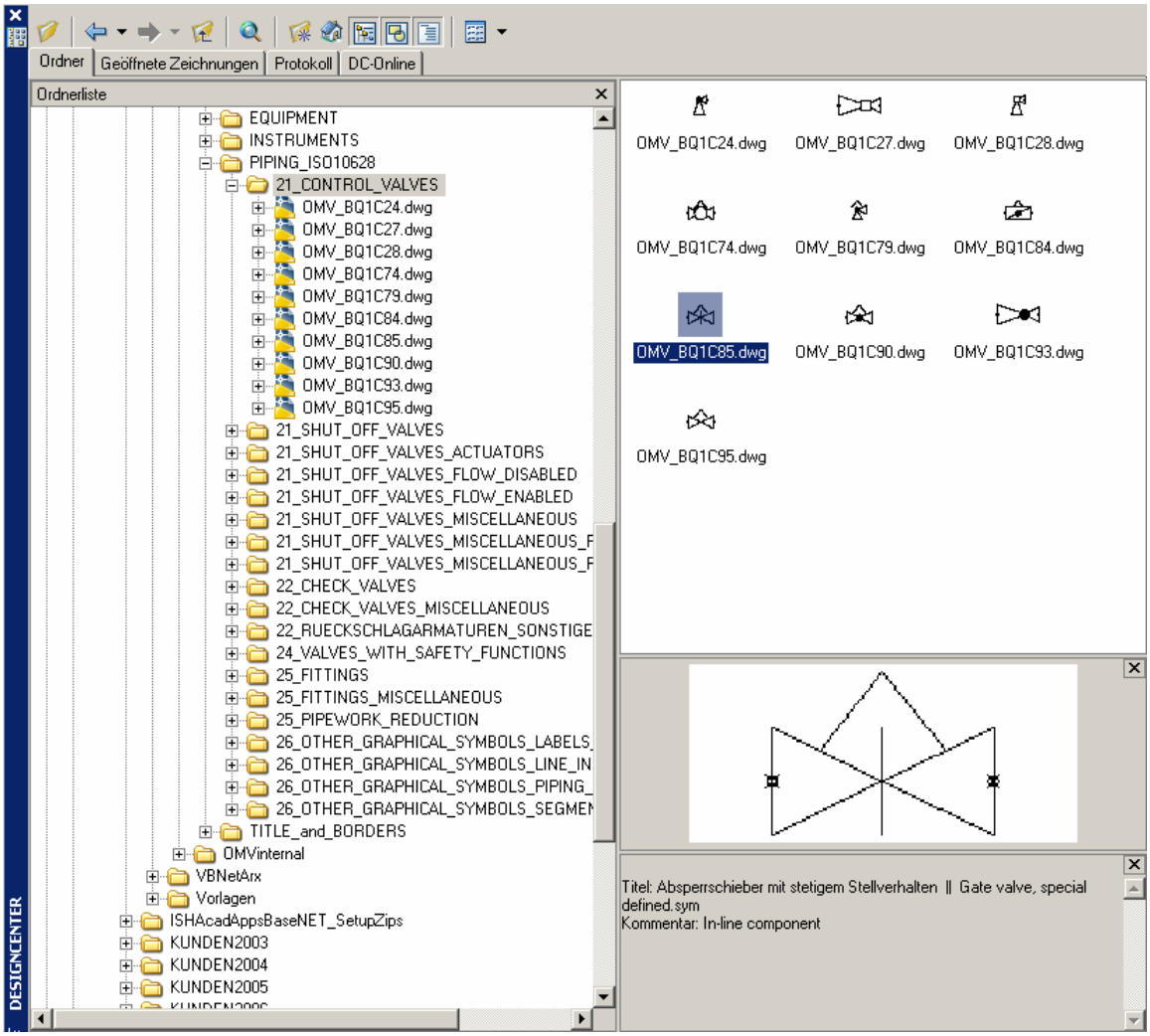






3.3. Block description

Within the AutoCAD DesignCenter the advantage is to see a preview of the symbols and – within 2 additional windows – a larger preview and below the preview a short description.



4. Layer-structure

The layer-structure is to apply like in OMV norm 351 item 2.4 and as in the document "Layerdefinition AUTOCAD Symbolica_xx" (xx stands for the current version-number of the document) described.

5. properties

The properties of each single geometry-element have to be carried out after OMV standard. The color, line weight and line type can differ according to documents type and design. These element properties are to tread like in OMV norm 351 items 3.3 specified.

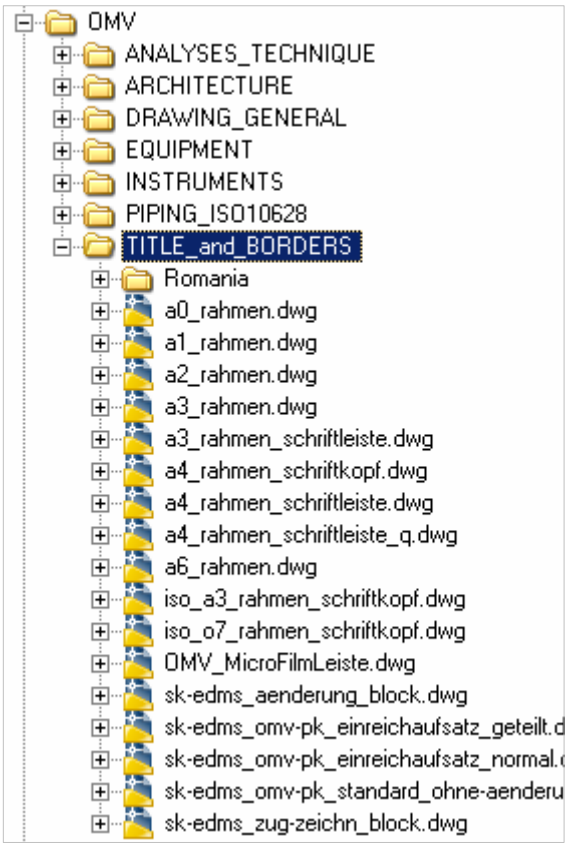
The font styles are to apply like in OMV norm 351 items 3.4 described.

6. Templates

See OMV norm 351 item 2.3

6.1. Drawing templates

Are to be found in the directory
„…\ISHAcadAppsBaseNET\Symbols\OMV\TITLES_and_BORDERS“
There are the template files for the various layout-frames and title blocks.



6.2. Layer templates

Are to be found in the directory
„…\ISHAcadAppsBaseNET\Vorlagen\OMV“

There are template files which basically contains the layer definitions, these are also additional (with the AutoCAD-insert-command) usable.

Precise descriptions about layer definitions could be found in the document "Layerdefinition AUTOCAD Symbolica_xx".

The naming of the template files occurs after following syntax:

OMVvorlage_1111_22_33.dwg

1111 stands for construction main group

- *BHG_ everything except architecture*
- *BHGA only architecture*
- *XXXX only general drawing layer (character font head, border...)*

22 stands for plan kinds

- *W1 architect's plans, general plans, ground plans*
- *W3 underground sums plans*
- *W4 flow charts, PID, RTB, ...*

33 stands for colour assignments with the drawing state

- *C1 project state*
- *C2 continuance state*
- *C3 filing state*
- *C4 filing state - detail*

Or with speaking names:

OMVvorlage_BHGA_LageplanAllgemein.dwg

- *Elements specific for ground plan (e.g.: Building outlines)*

If these layer templates are imported in the actual drawing, selection- and filtering of layers could be achieved with the tool "ISH_LayerStrukturDialog".

7. Layer application

The layer like in the OMV norm 351 item 3.1 specified, are to be applied as follows.

The separation of the layer occurs with the architectural borders

(e.g.: Container carbines - piping carbine).

Some examples:

Piping layer (H_KON_GRA_BES_) contains:

- *piping*
- *piping name*
- *piping isolation*
- *piping armatures*
- *piping parts*

Piping layer (H_KON_TXT_BES_) contains:

- *additional text information which the piping concerns (e.g.: all low points of the piping are isolated)*

Piping layer (H_KON_SFF_BES_) contains:

- *shadings which parts highlight (selection elements)*
- *piping filling*

Equipment layer (G_PUM_GRA_BES_) contains:

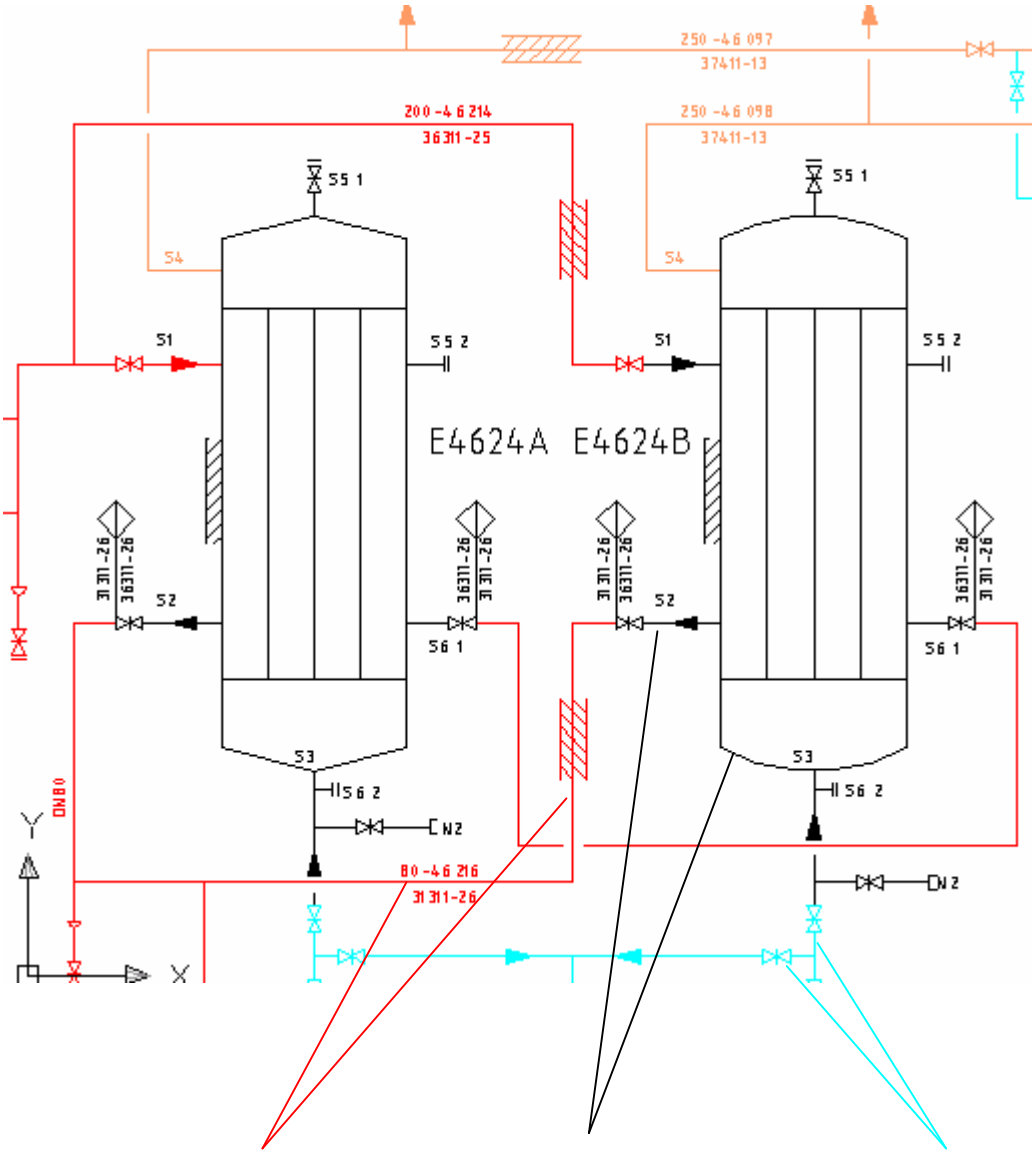
- *graphics of the equipment*
- *inscription block*
- *isolation of the equipment*
- *fittings of the equipment*

Equipment layer (G_PUM_TXT_BES_) contains:

- *Additional text information which the equipment concerns (e.g.: additional information which not given in the attributes.)*

Equipment layer (G_PUM_SFF_BES_) contains:

- *shadings which parts highlight (selection elements)*



Piping layer *Equipment layer* *Piping layer*

8. Attribute usage

The attributes of the blocks has to be filled. According to group type there are different attribute-values requested within a dialog or in the command line.

The `TAG_Nummer` *is to be equated to the position number.*

*Basically: The attribute name part „*_OMV??“ serves the automation. This part is not stated in the following definitions.*

Explanation of the function way equipment labeling:

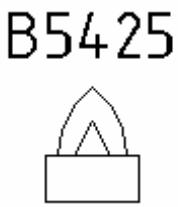
> *The labeling block for equipment becomes automatically updated when the* `TAG_Nummer` *within the equipment component agrees to the attribute value of the attribute* `TAG_Nummer` *in the labeling block (and Symbolica is loaded and active within AutoCAD).*
>
> *The data has to be entered on the equipment component.*

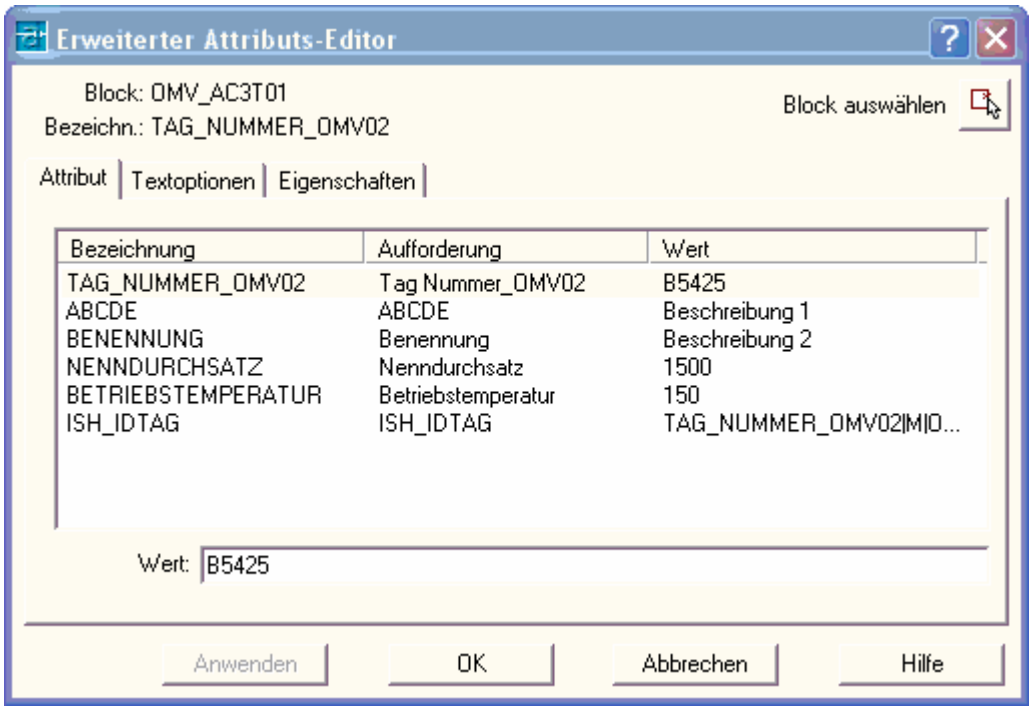
8.1. Equipment

8.1.1. Construction main group B

(stoves, treater, heater)

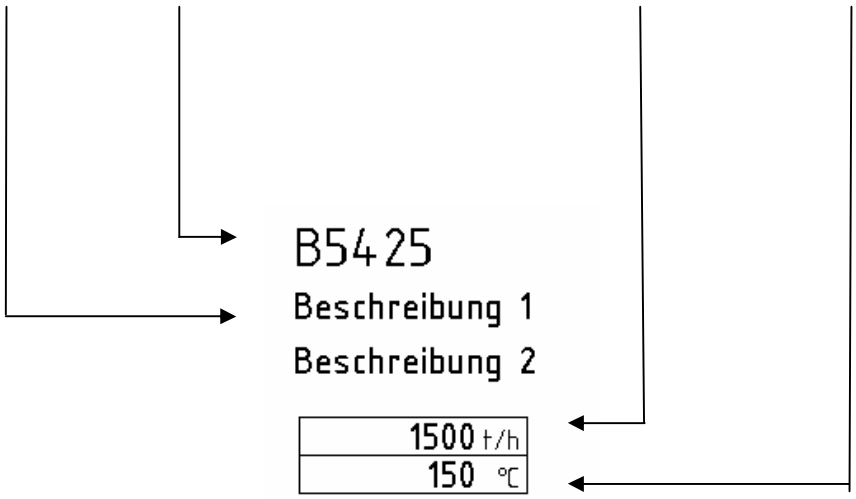
8.1.1.1. Attribute usage example

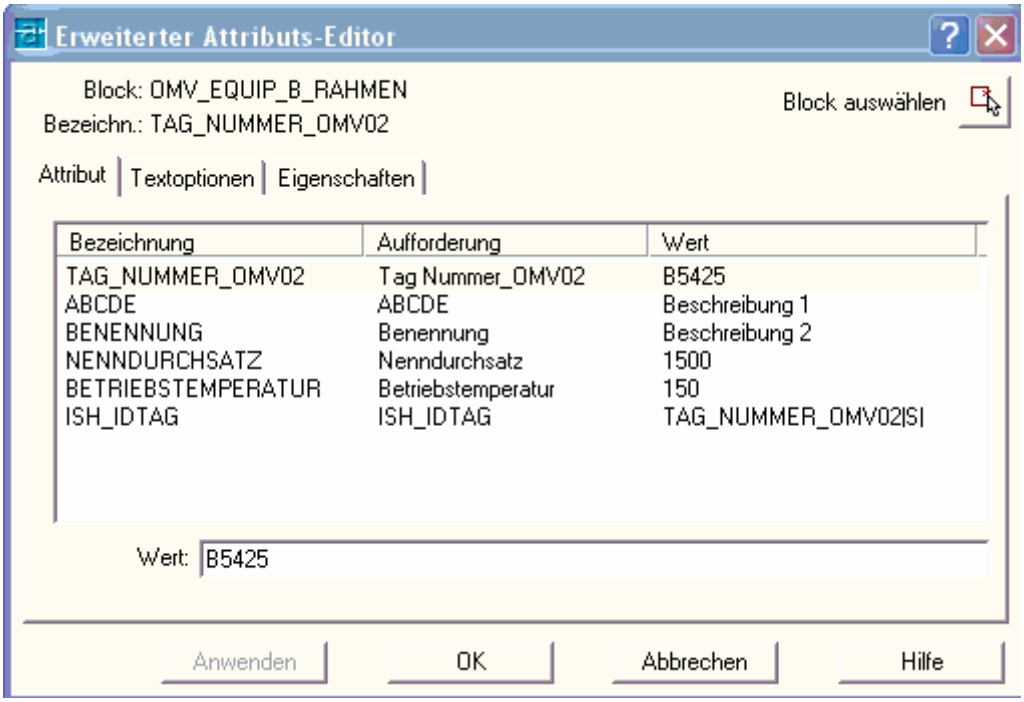




8.1.1.2. Labeling block

Naming *TAG_Nummer* *Nominal throughput* *operating temp.*



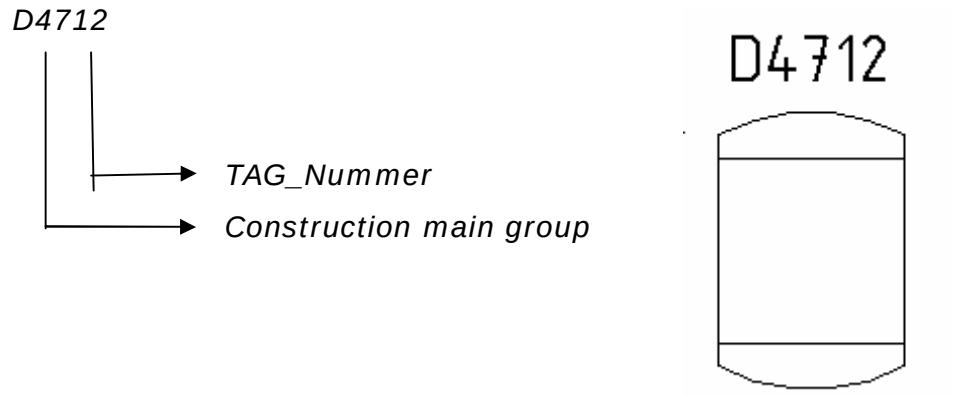


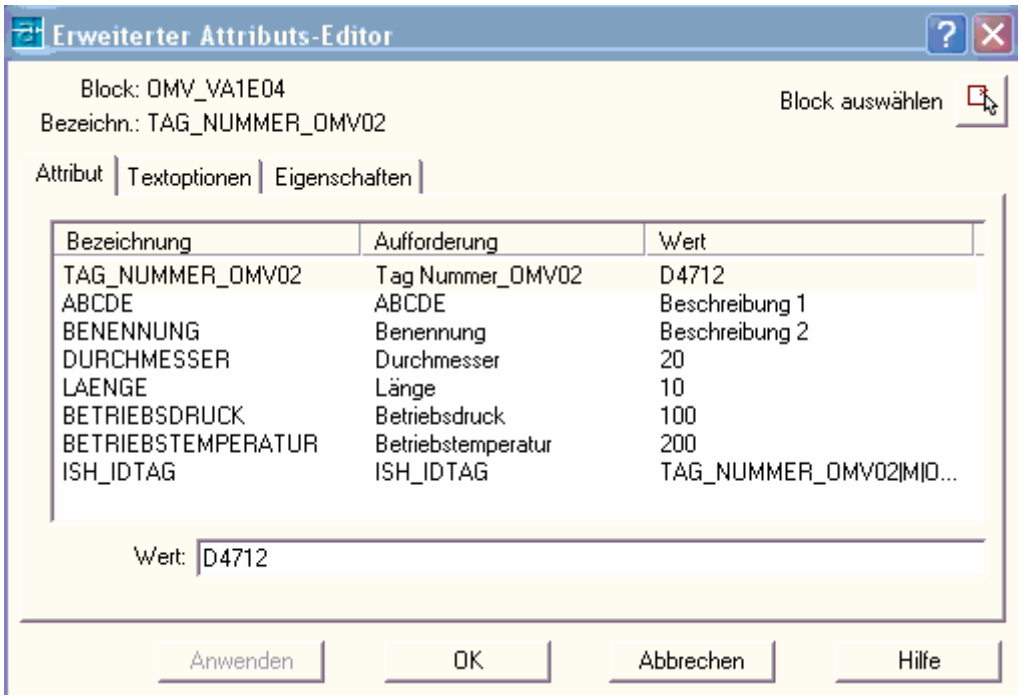
8.1.2. Construction main group C,D

C (chimneys, torch)

D (columns, reactors, Agiteure)

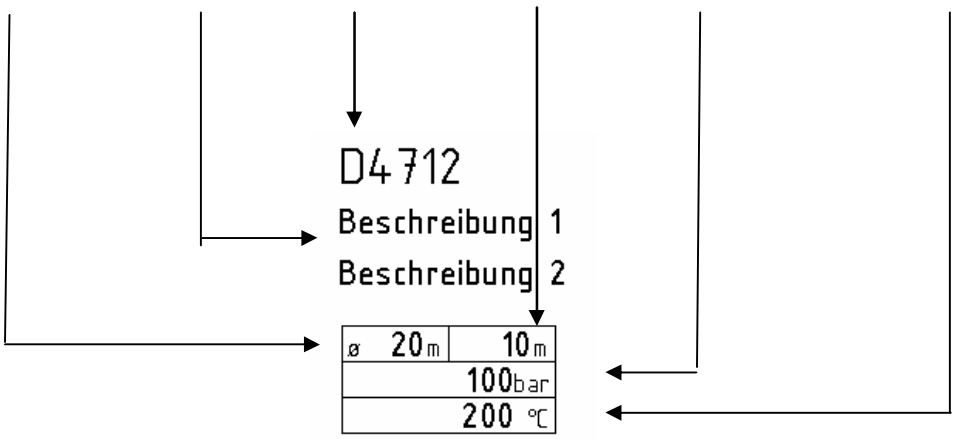
8.1.2.1. Attribute usage example

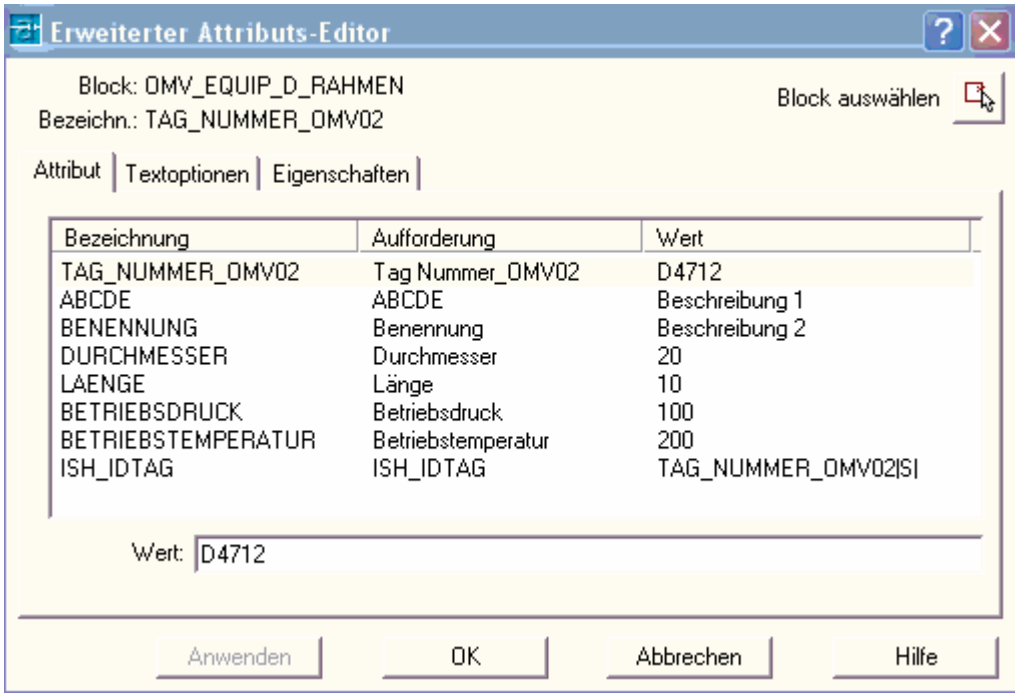




8.1.2.2. Labeling block

Diameter naming TAG_nummer length working pressure operating temp.

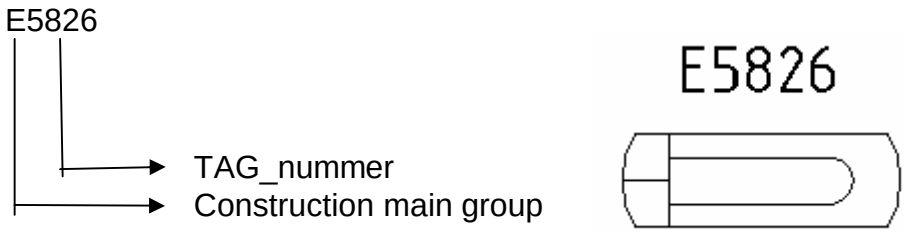




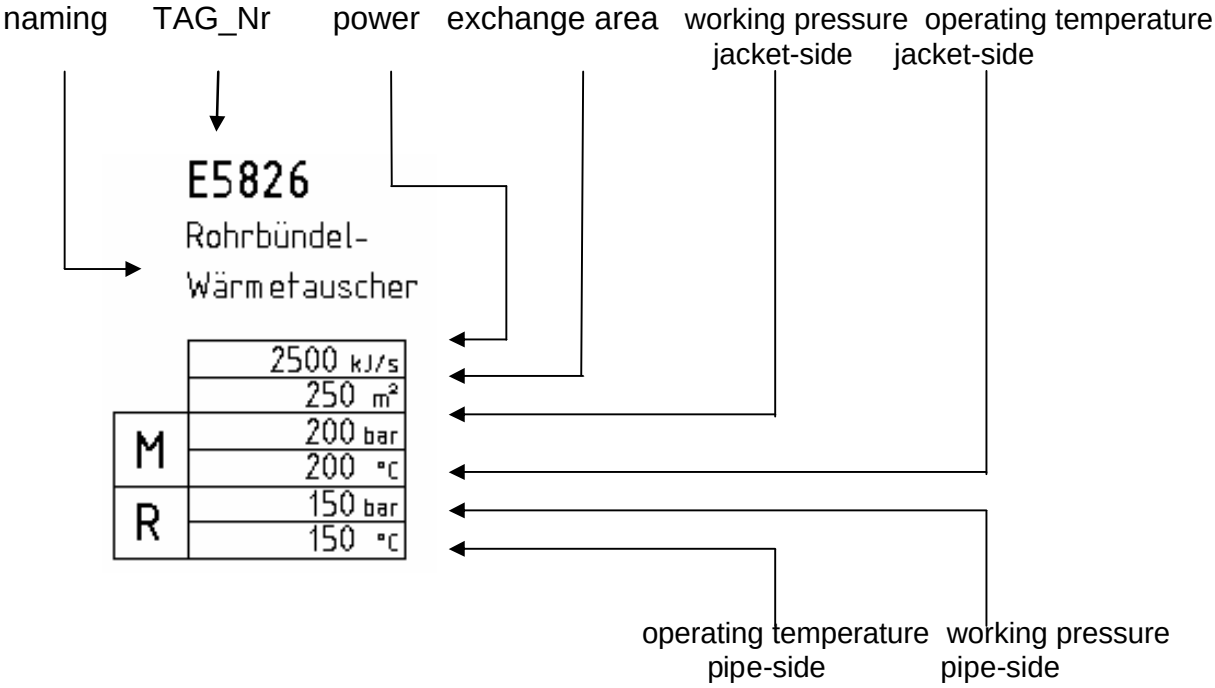
8.1.3. Construction main group E

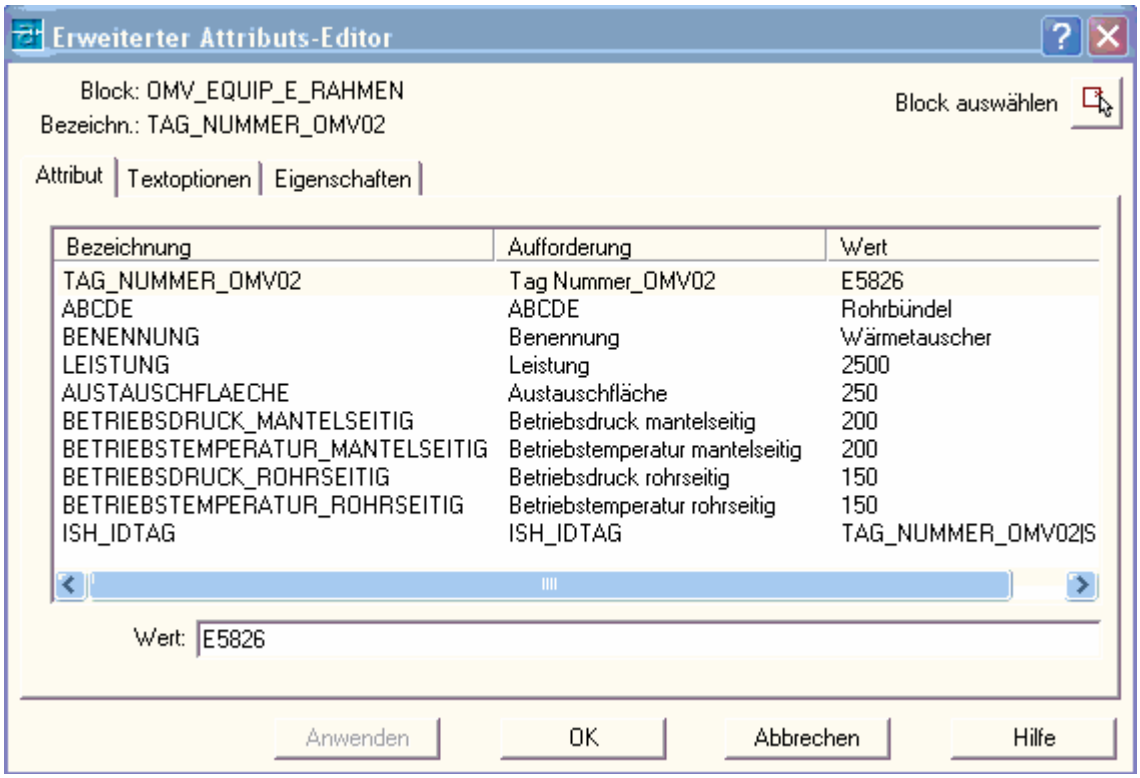
(heat exchanger, cooler)

8.1.3.1. Attribute usage example



8.1.3.2. Labeling block

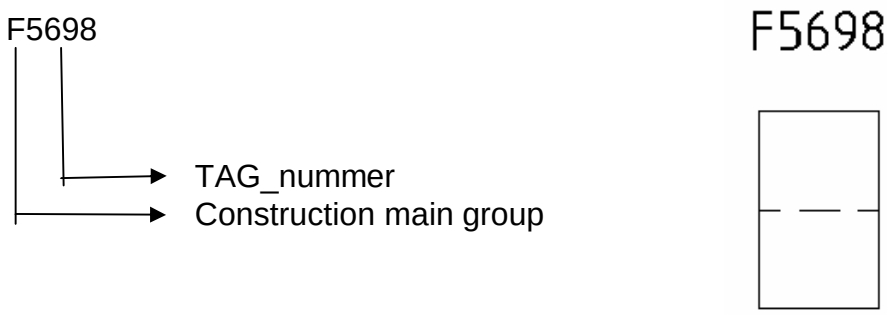


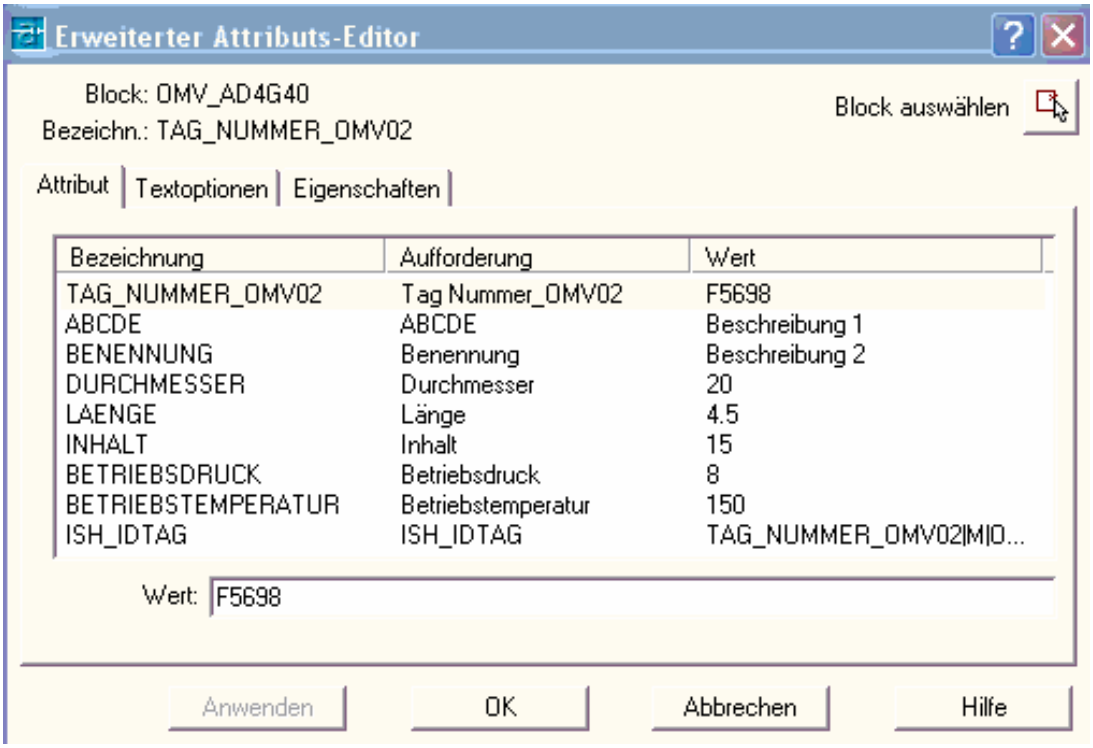


8.1.4. Construction main group F

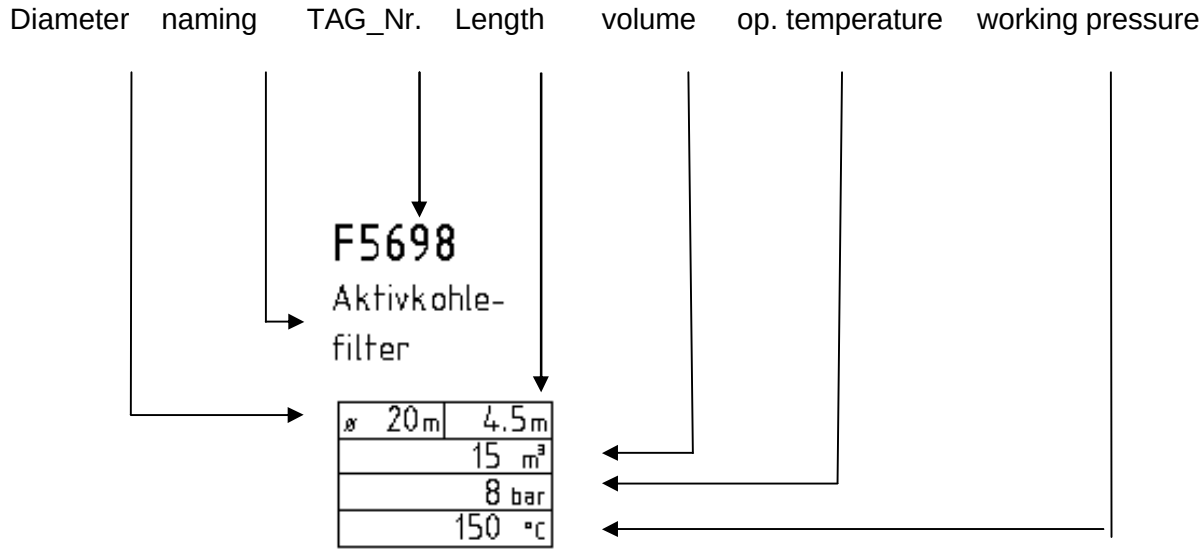
(container, separator, filter)

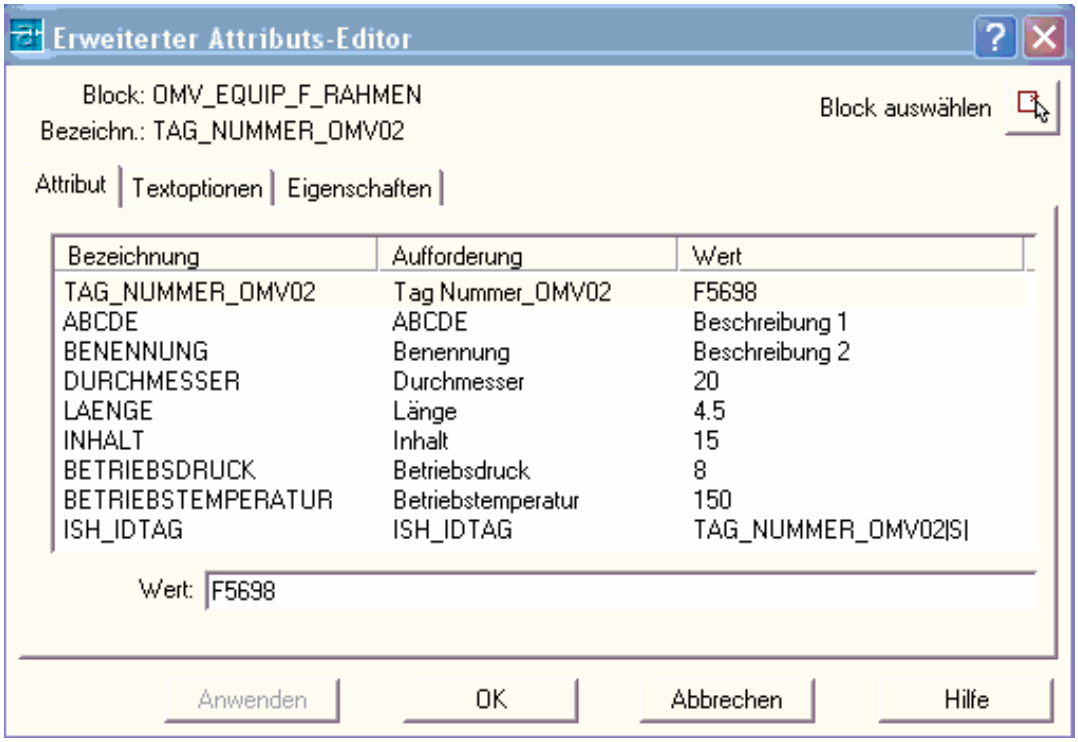
8.1.4.1. Attribute usage example





8.1.4.2. Labeling block

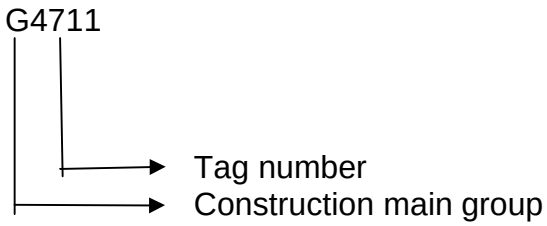


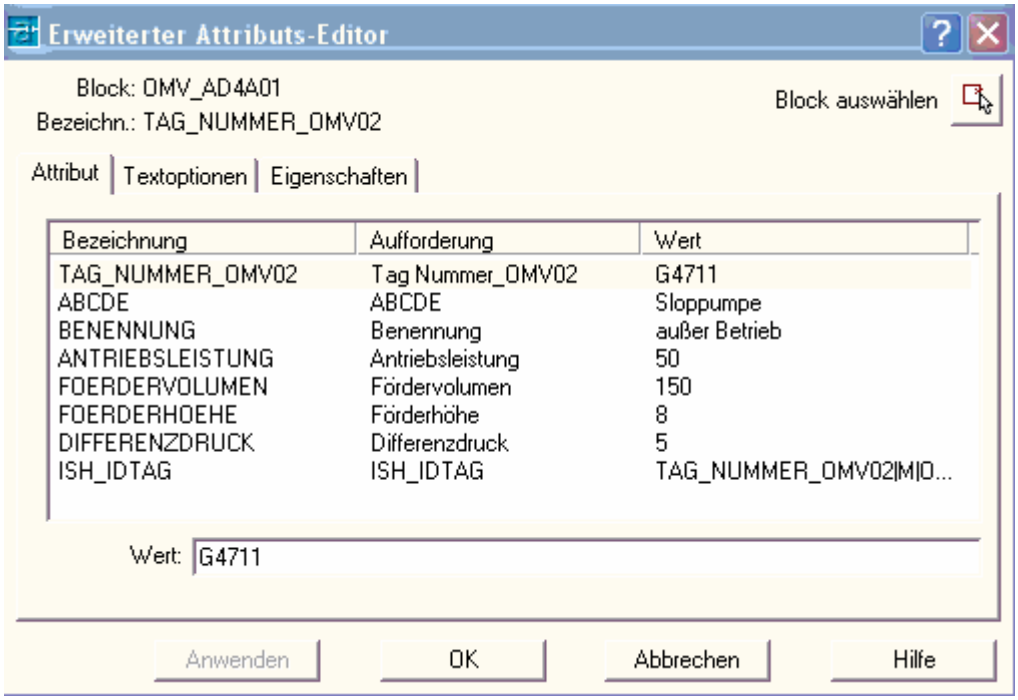


8.1.5. Construction main group G

(pumps, compactor, drives, blender, supercharger, centrifuges, Ejektoren)

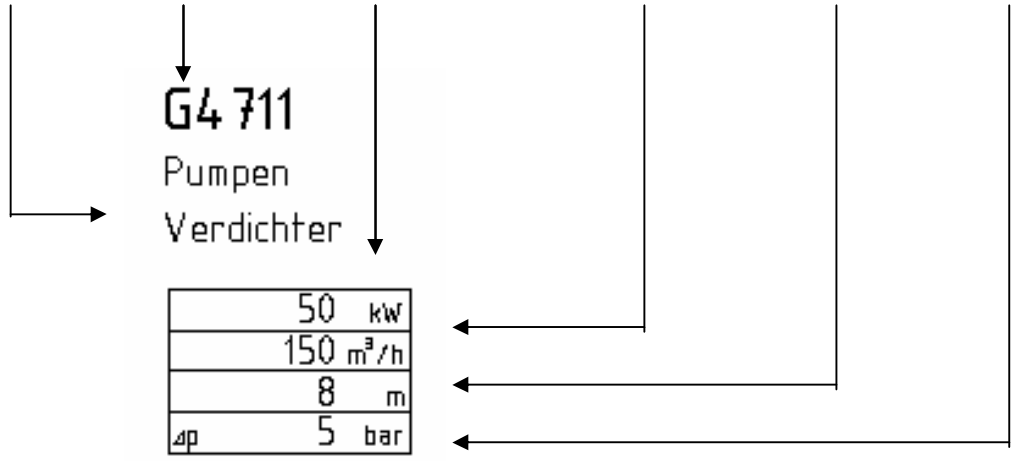
8.1.5.1. Attribute usage

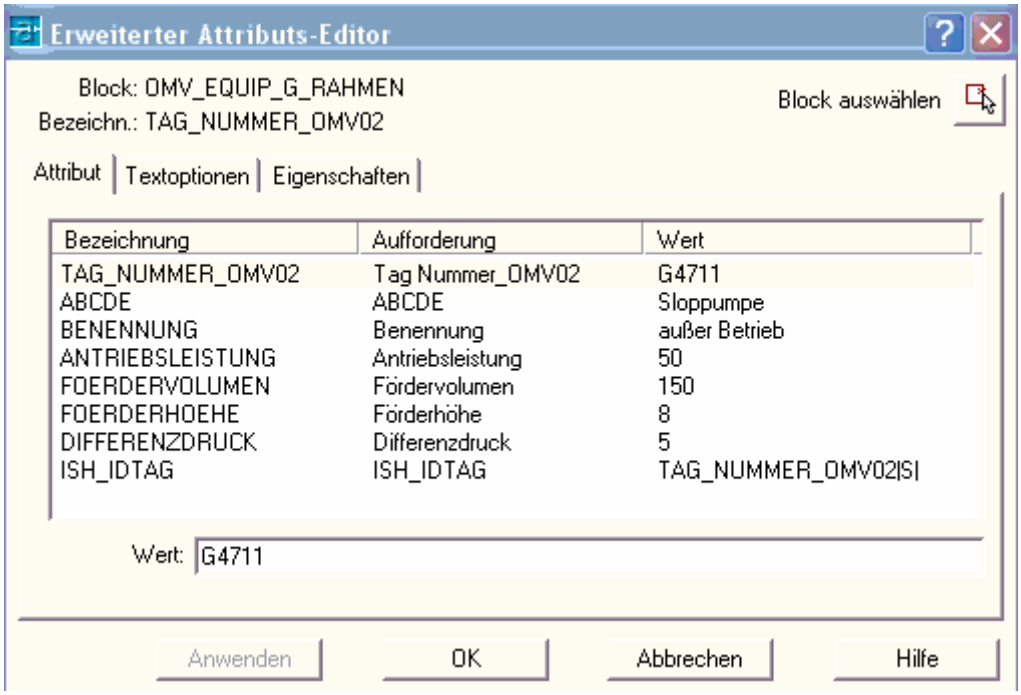




8.1.5.2. Labeling block

Naming Tag Nr. Driving power Fördervolumen Förderhöhe differential pressure

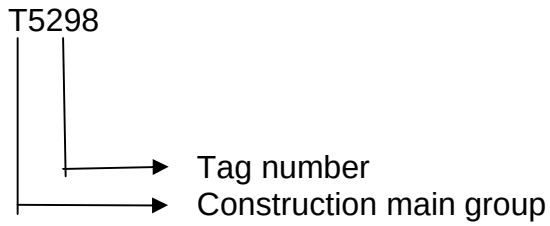


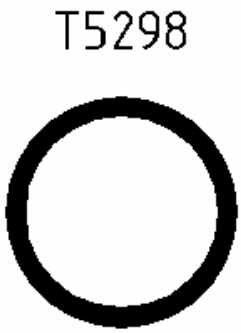


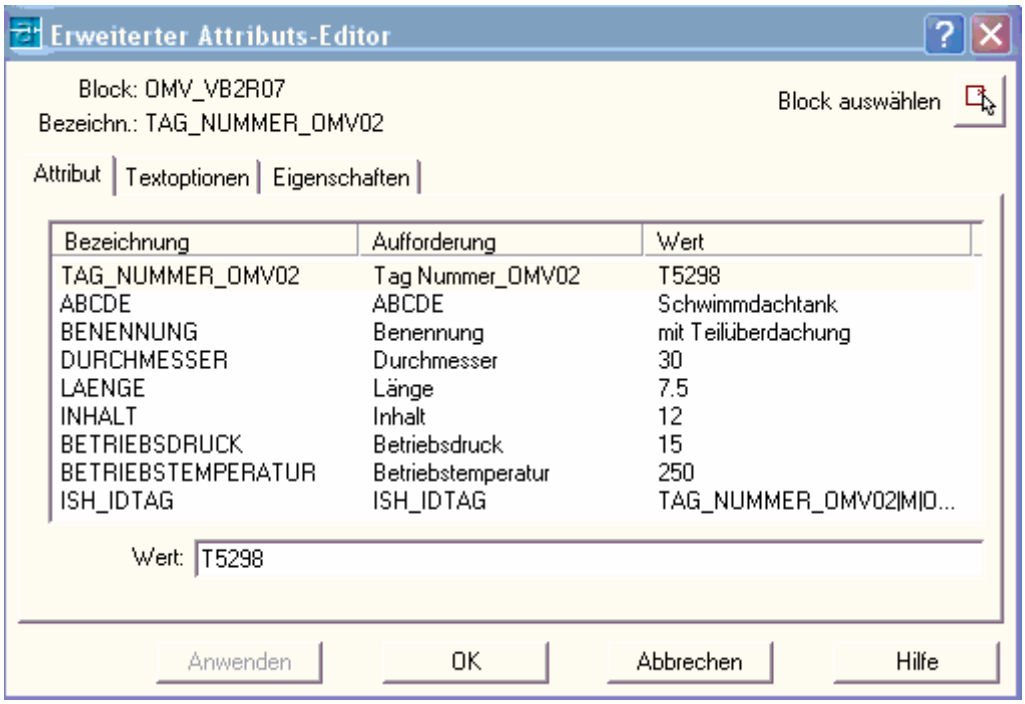
8.1.6. Construction main group T

(tanks)

8.1.6.1. Attribute application

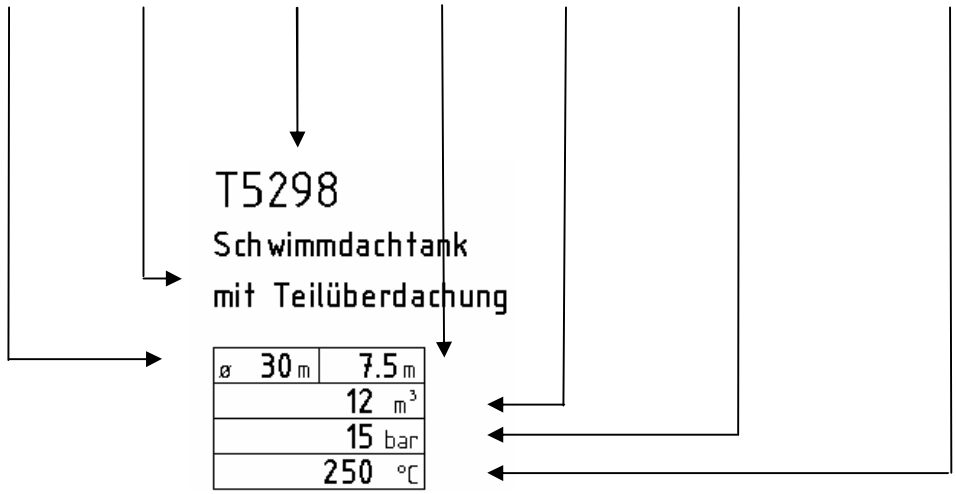


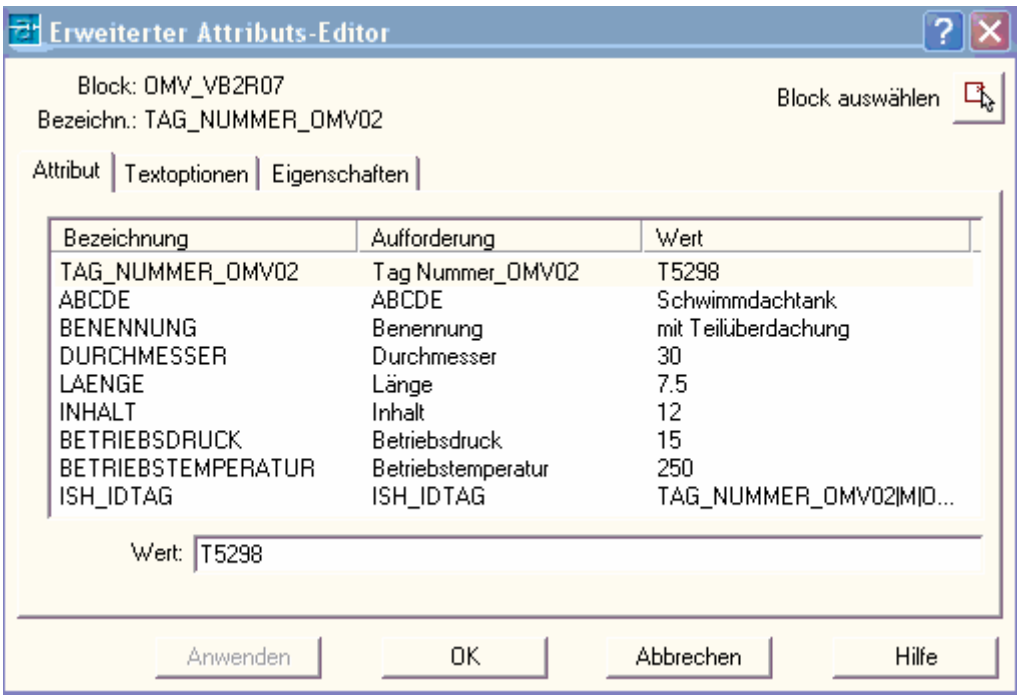




8.1.6.2. Labeling block

Diameter naming ItemTag Length volume working pressure Operating temperature

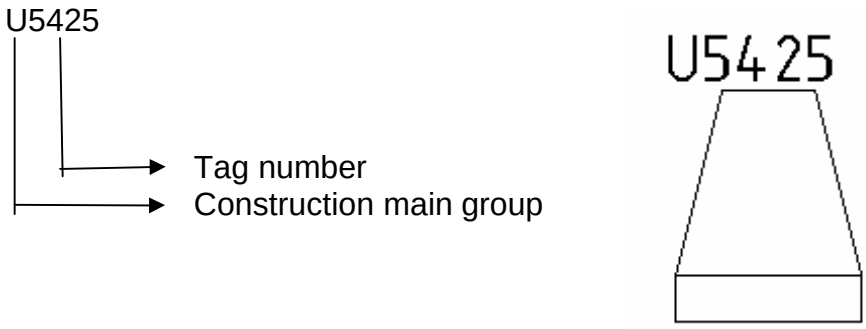


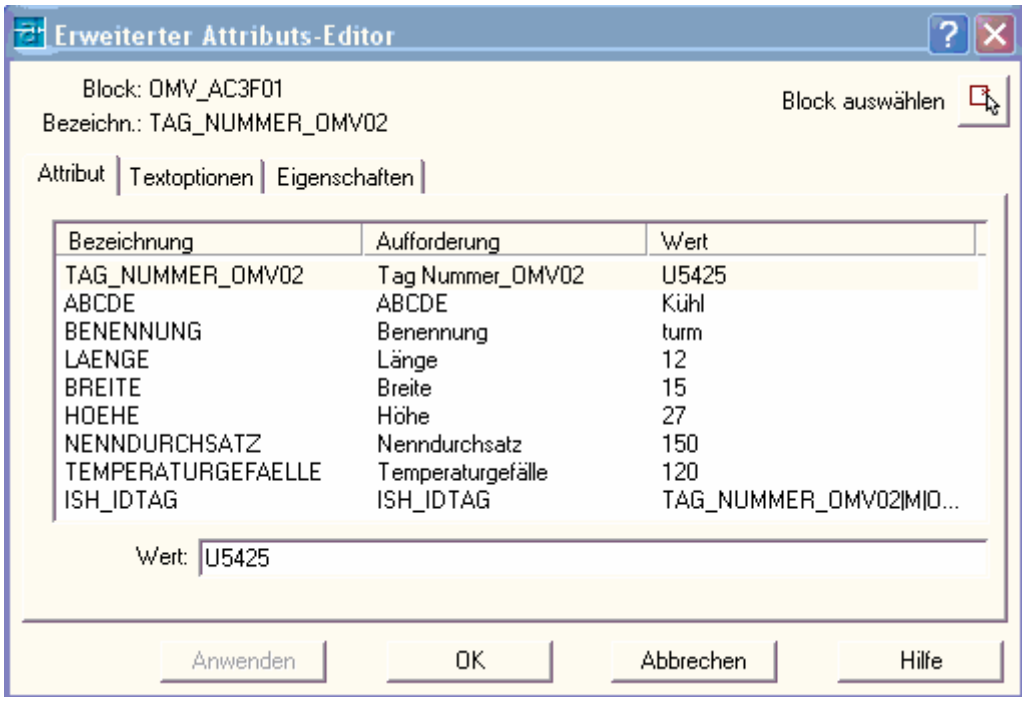


8.1.7. Construction main group U

(cooling tower)

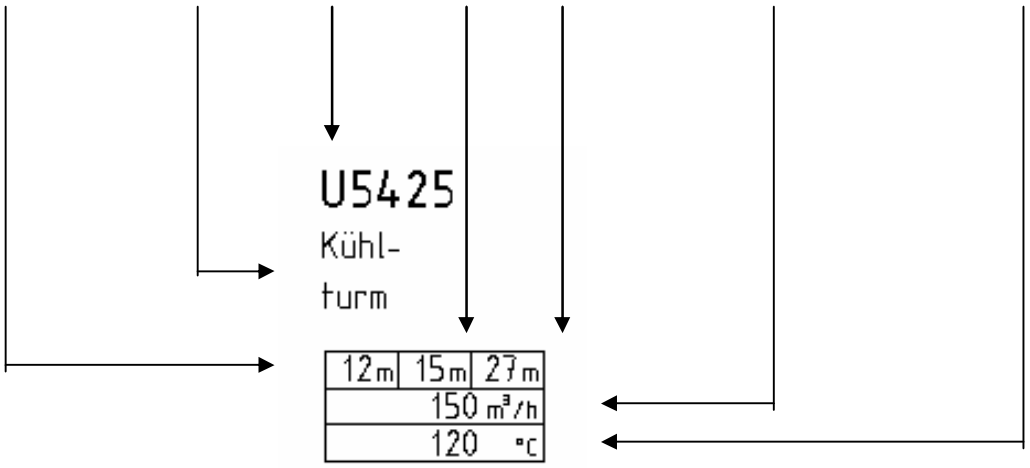
8.1.7.1. Attribute application

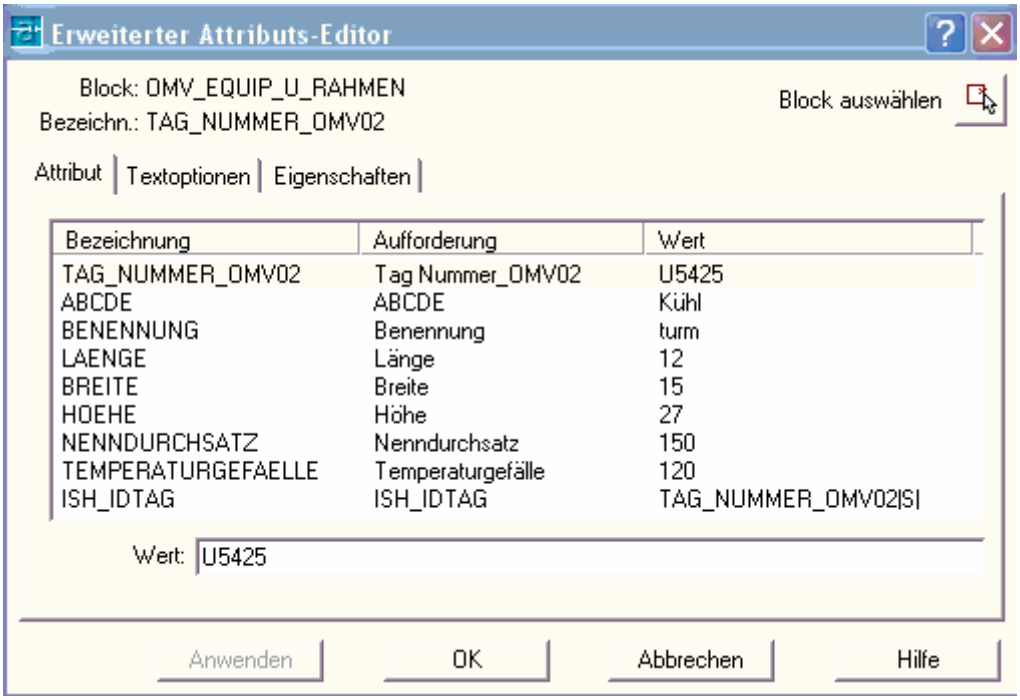




8.1.7.2. Labeling block

Length Naming Item Tag Width Height Nenndurchsatz Temperature inclines

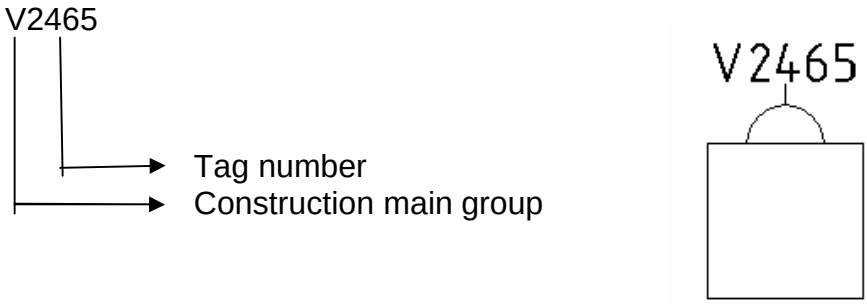


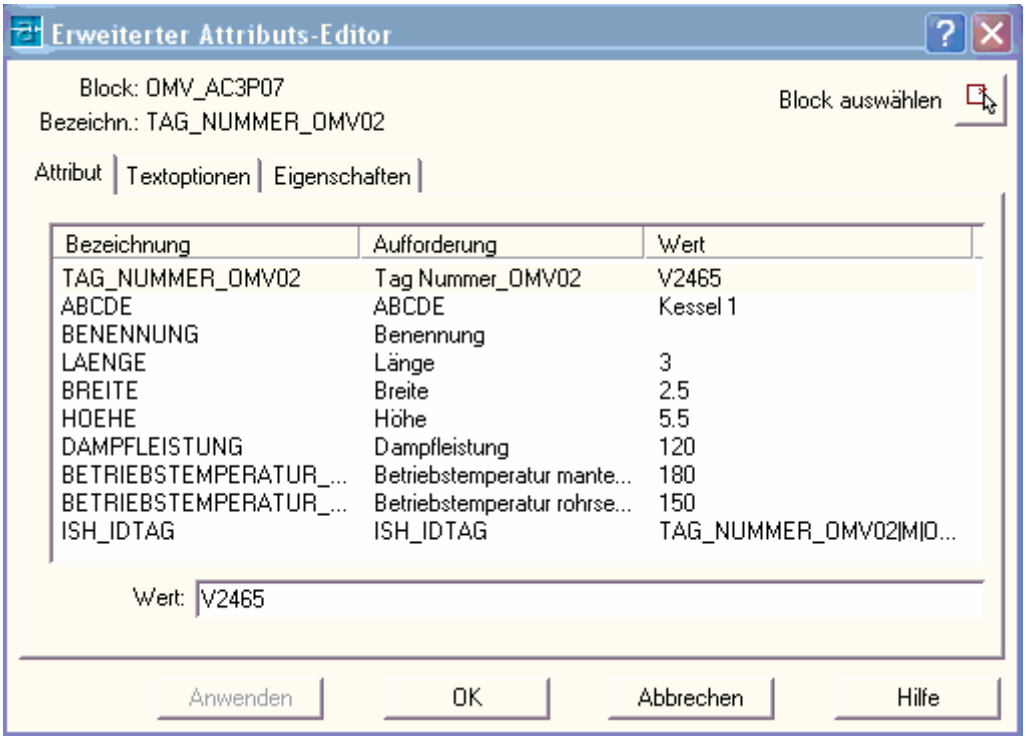


8.1.8. Construction main group V

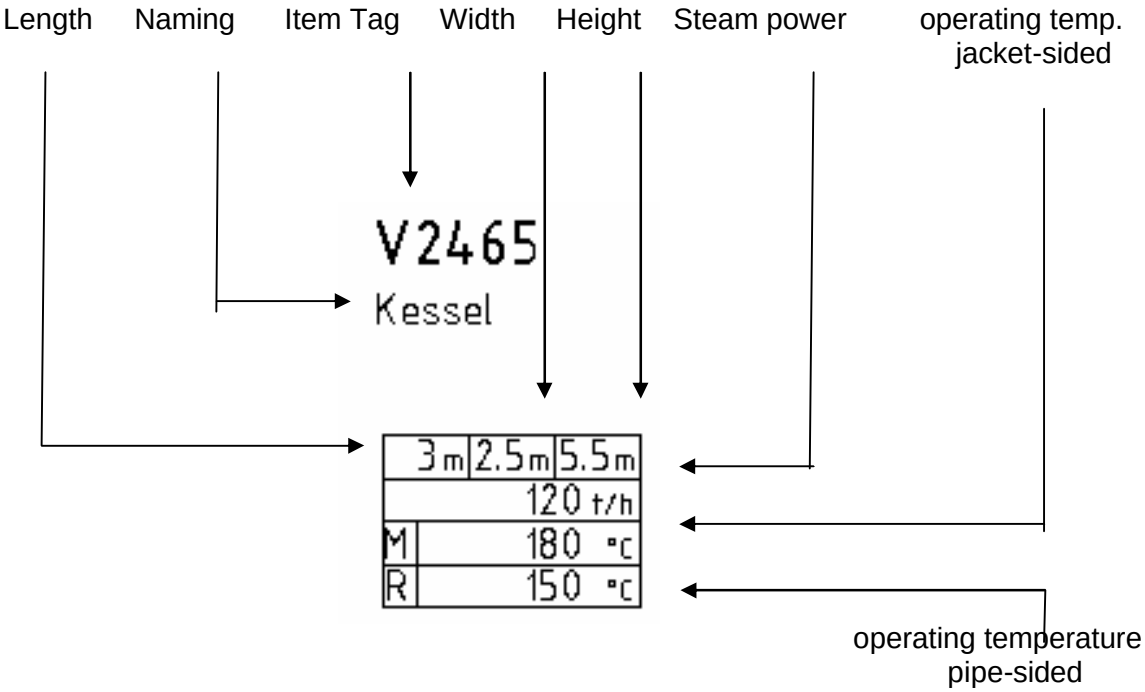
(boiler)

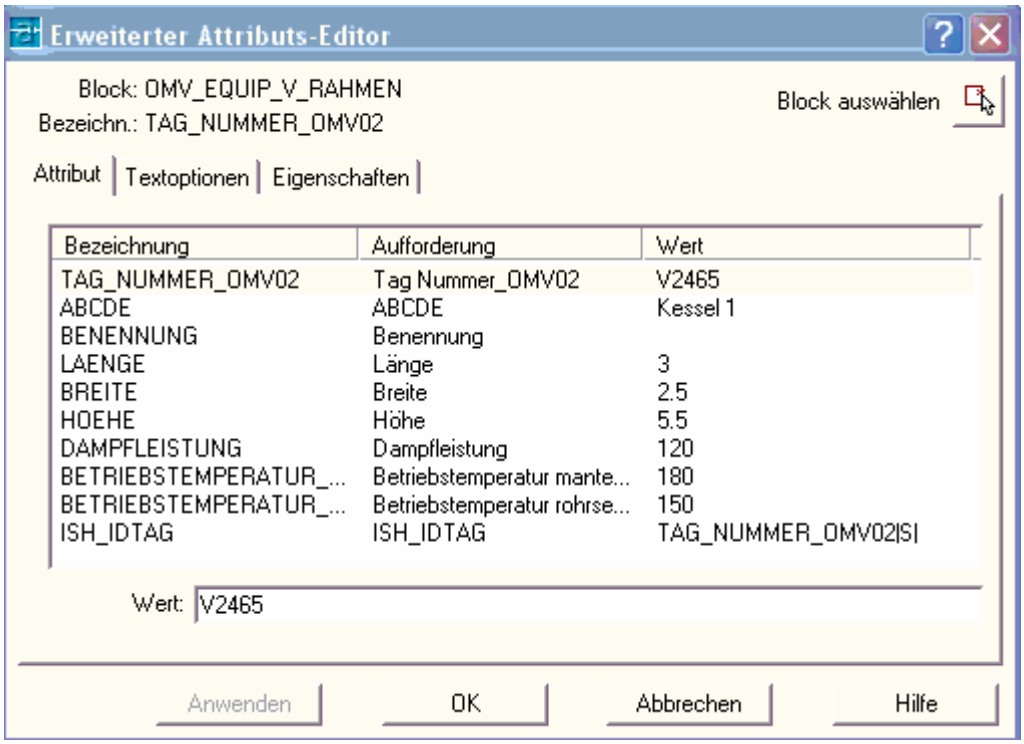
8.1.8.1. Attribute application





8.1.8.2. Labeling block





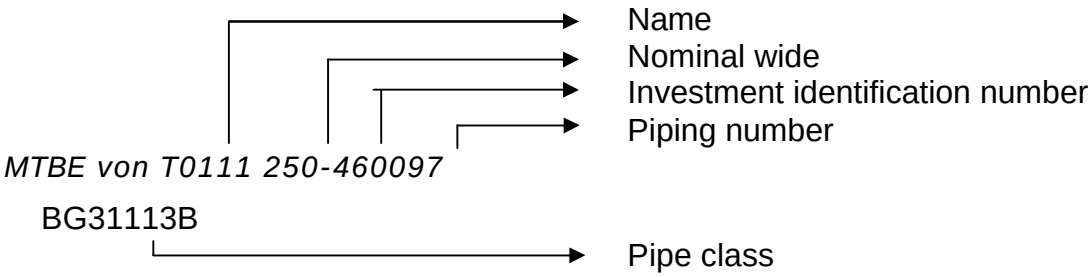
8.1.9. Equipment Komponenten

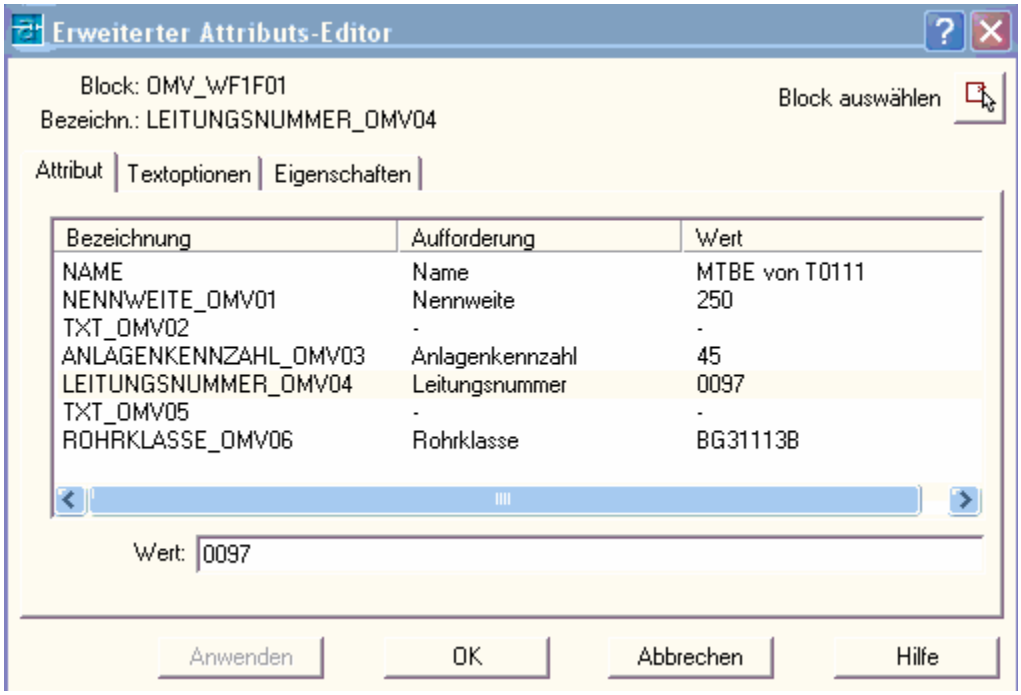
Blocks for components with equipment are loadable from the directory ...\Symbols\OMV\Equipment\Components

The attributes insulating width and insulating first-class key are to be filled out.

8.2. Piping name

i.e.:



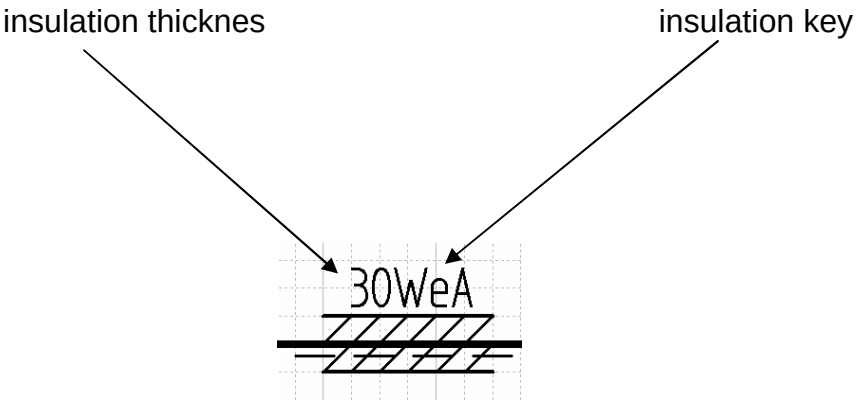


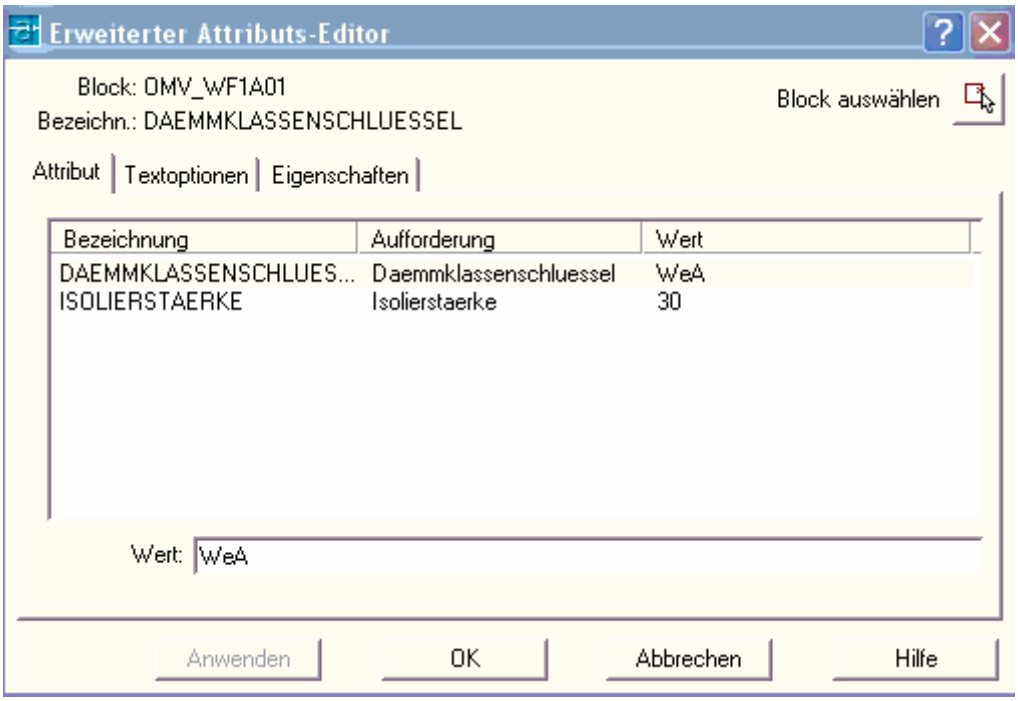
8.2.1. Piping isolation

Blocks for isolations are loadable from the directory `...\Symbols\OMV\Piping_ISO10628\26_OTHER_GRAPHICAL_SYMBOLS_LINE_INSCRIPTION`

The attributes insulating width and insulating first-class key are to be filled out.

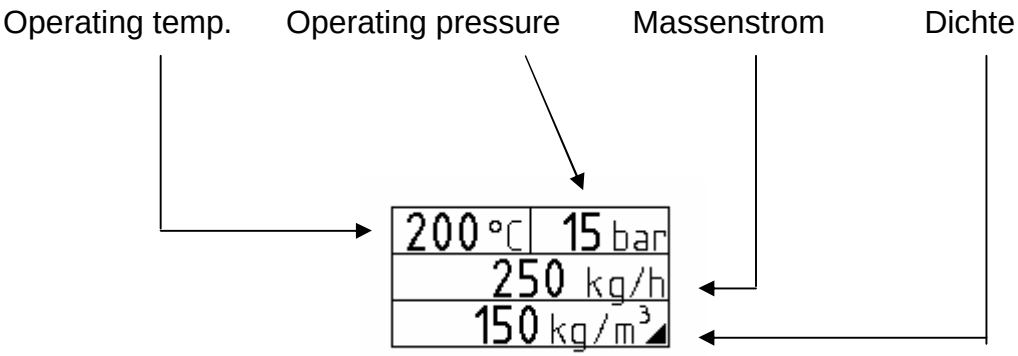
The insulating first-class key has to be applied according to OMV norm.



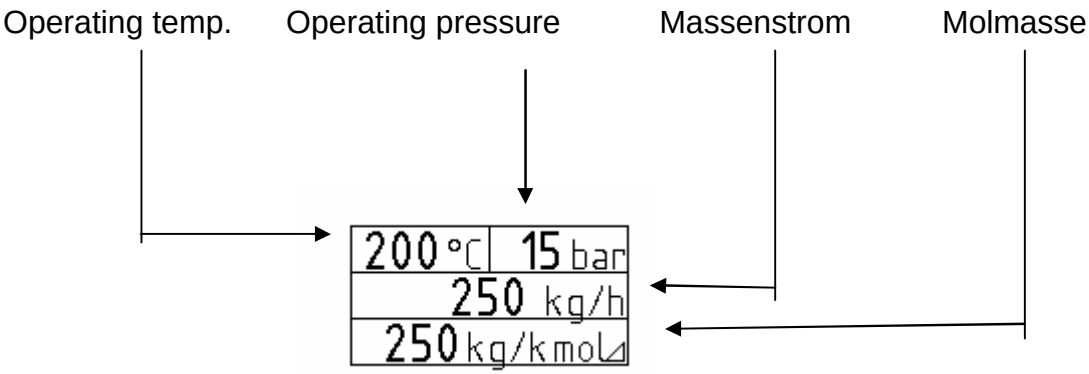


8.2.2. Labeling block

8.2.2.1. OMV Management label liquidly



8.2.2.2. OMV Management label gas-shaped

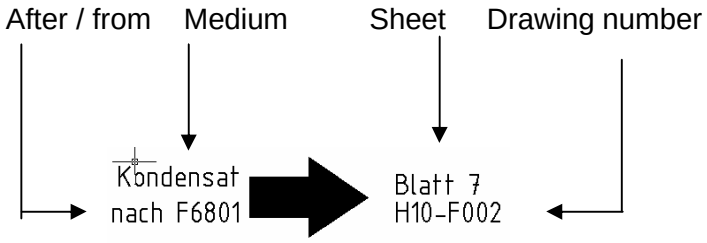


8.2.3. Connection references

OMV-main line

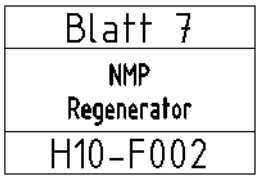
OMV-Capital assets management

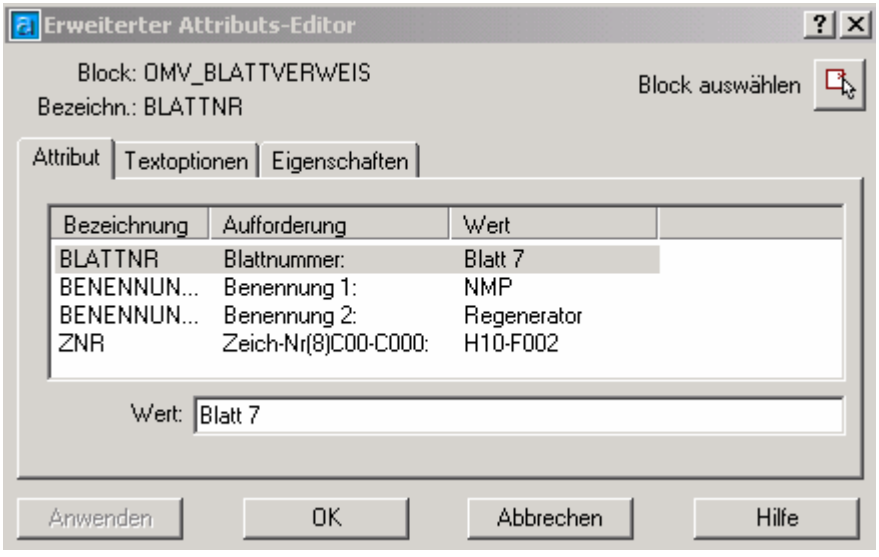
8.2.3.1. Connection references within an arrangement



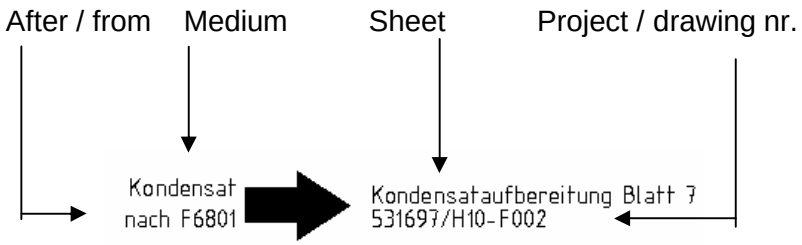
The blocks are also usable reflected (river direction), in consideration of the command (MIRRTXT = 0).

This data box should be arranged in the left lower edge of the sheet.





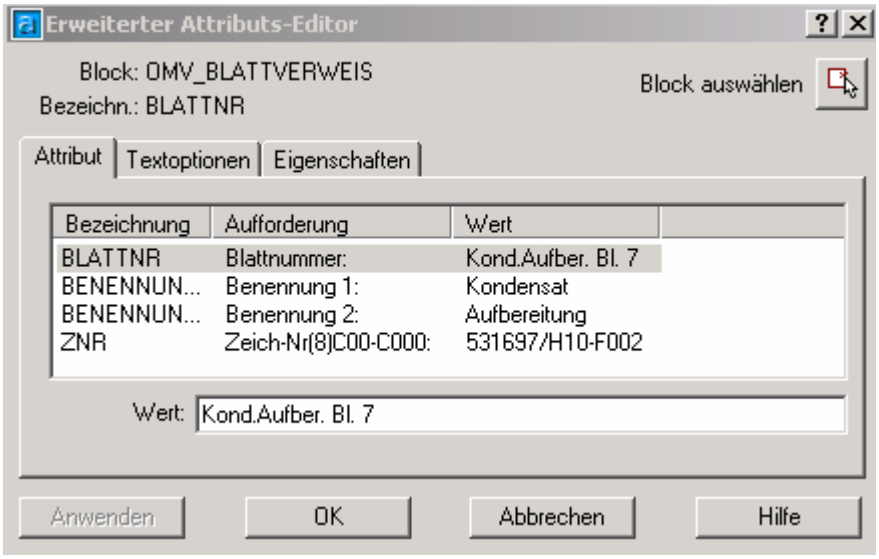
8.2.3.2. Connection references investment-general



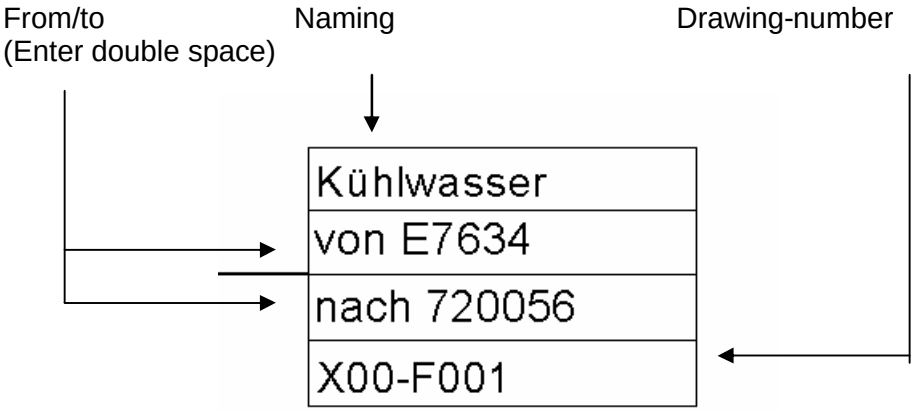
The blocks are also usable reflected (river direction), in consideration of the command (MIRRTXT = 0).

This data box is to be arranged in the left lower edge of the sheet.

Kond.Aufber. Bl. 7
Kondensat Aufbereitung
531697/H10-F002



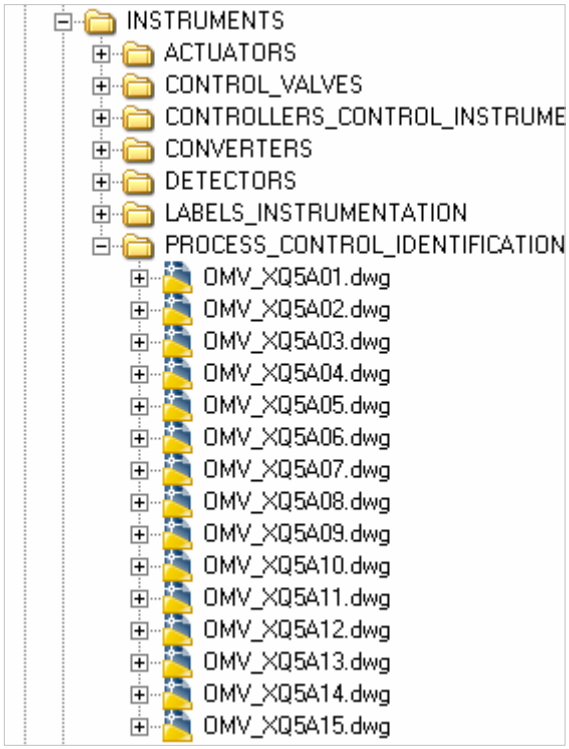
8.2.4. Capital assets-connection boxes



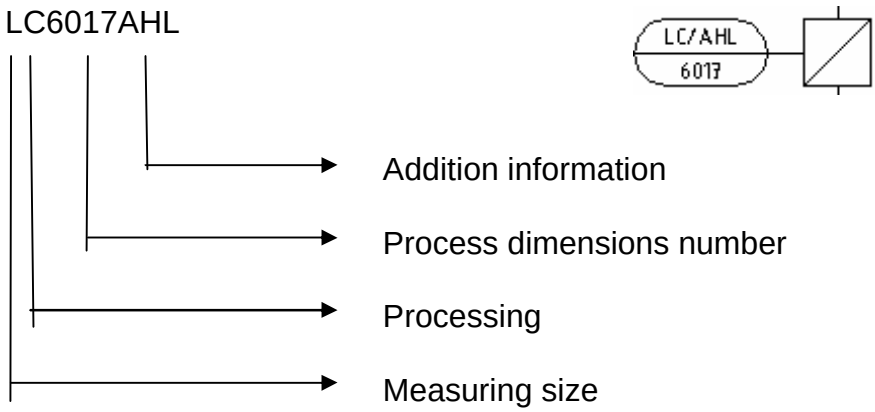
8.3. Measuring place (PLT - place circles)

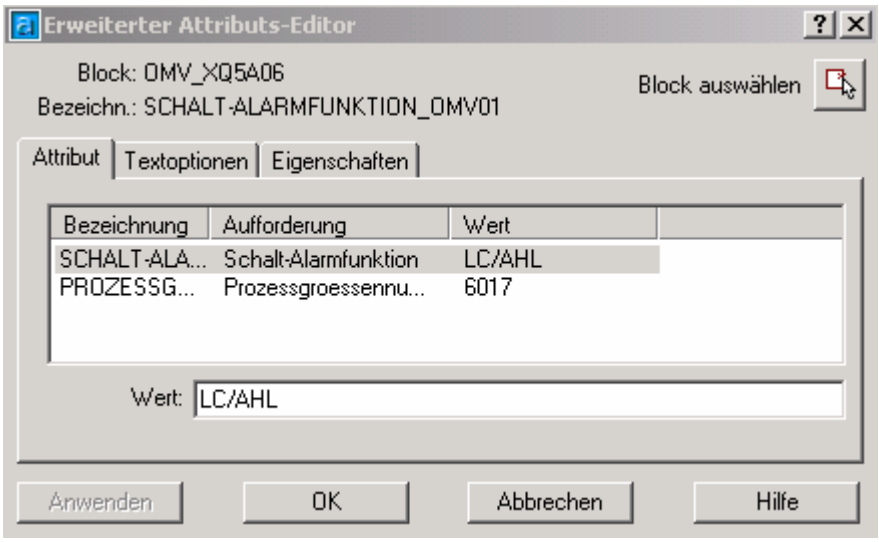
Blocks for measuring places are loadable from the directory ...\Symbols\OMV\Instruments\PROCESS_CONTROL_IDENTIFICATION

The attributes have to be filled out.



i.e.:

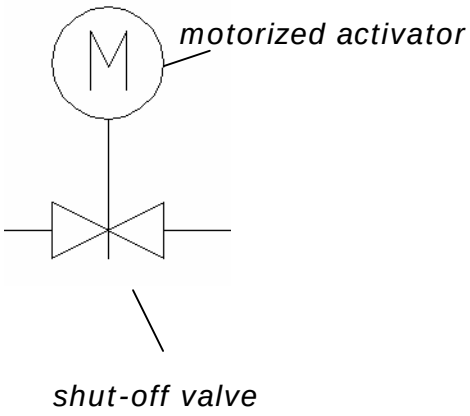


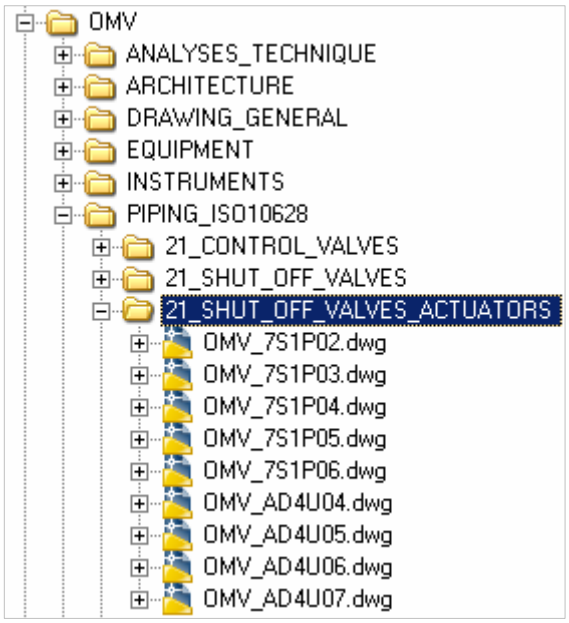


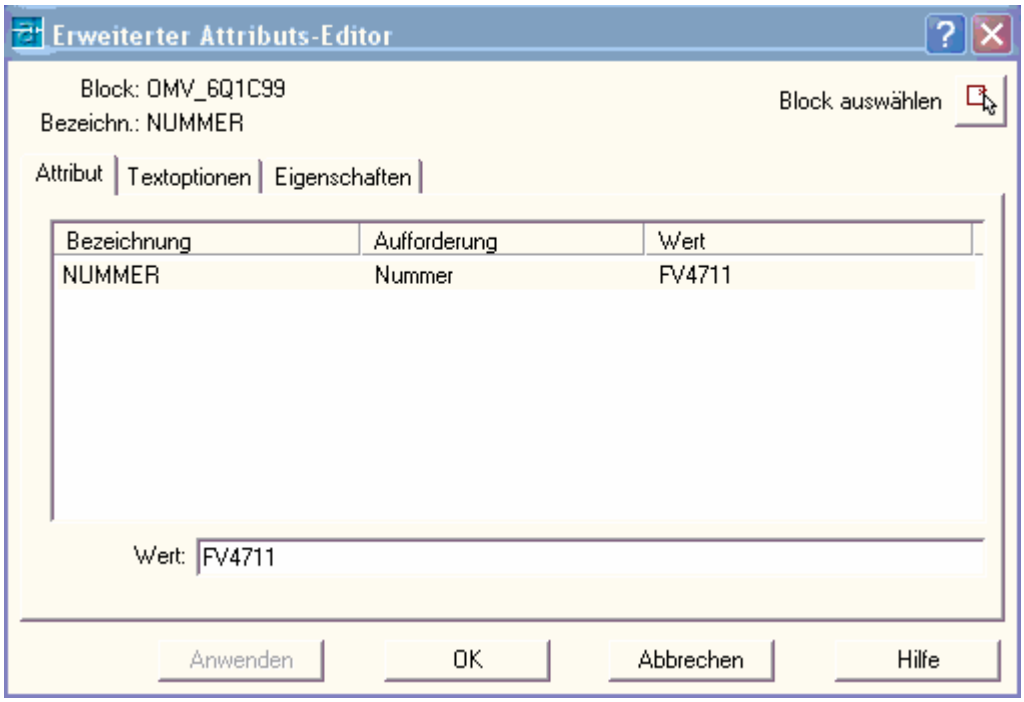
8.4. Motorized activator

Blocks for motorized activators are loadable from the directory …\Symbols\OMV\Piping_ISO10628\21_SHUT_OFF_VALVES_ACTUATORS

Motorized activators can be put only on shut-off valve. It is not allowed to put instruments.

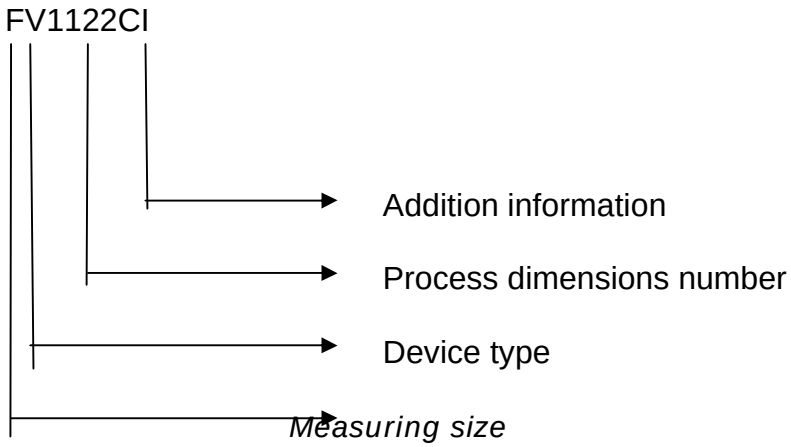


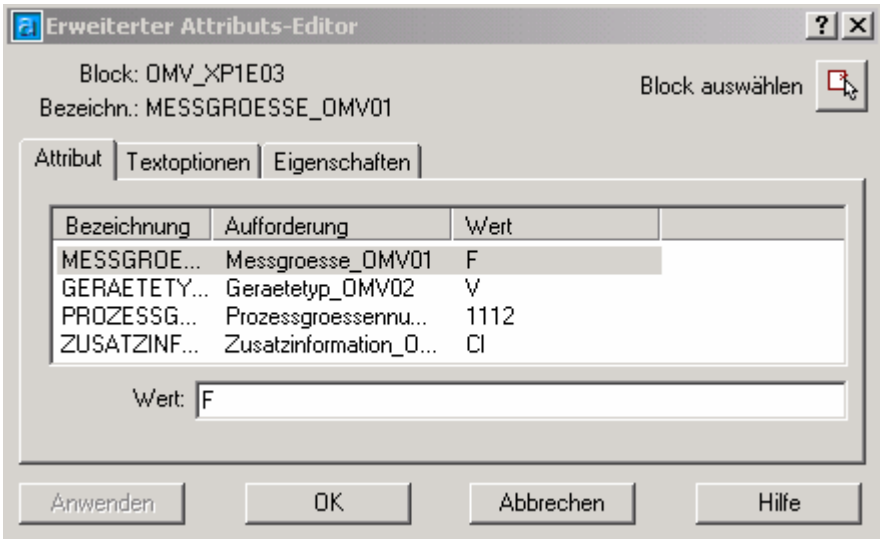

OMV
ANALYSES_TECHNIQUE
ARCHITECTURE
DRAWING_GENERAL
EQUIPMENT
INSTRUMENTS
PIPING_ISO10628
21_CONTROL_VALVES
21_SHUT_OFF_VALVES
21_SHUT_OFF_VALVES_ACTUATORS
OMV_7S1P02.dwg
OMV_7S1P03.dwg
OMV_7S1P04.dwg
OMV_7S1P05.dwg
OMV_7S1P06.dwg
OMV_AD4U04.dwg
OMV_AD4U05.dwg
OMV_AD4U06.dwg
OMV_AD4U07.dwg


Erweiterter Attributs-Editor
Block: OMV_6Q1C99
Bezeichn.: NUMMER
Block auswählen
Attribut
Textoptionen
Eigenschaften
Bezeichnung
Aufforderung
Wert
NUMMER
Nummer
FV4711
Wert:
FV4711
Anwenden
OK
Abbrechen
Hilfe

8.5. Instrument

i.e.:





It is not allowed to place piping components instead of instruments.

9. Title block/sheet frame

See OMV norm 351 items 2.10, 2.11, 2.12.

It may happen only one OMV-written head per plan (=Drawing file). The written head is to be filled out completely. There are no abbreviations with the names (Creator, examiner) allowed.

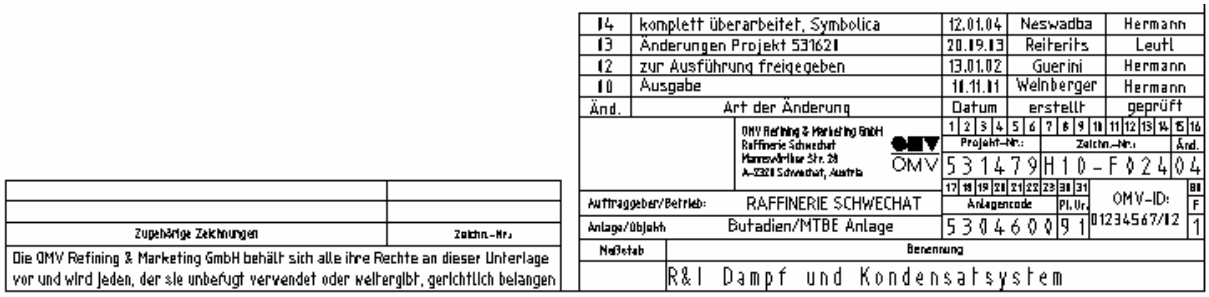
Accompanying drawings are to be specified if available.

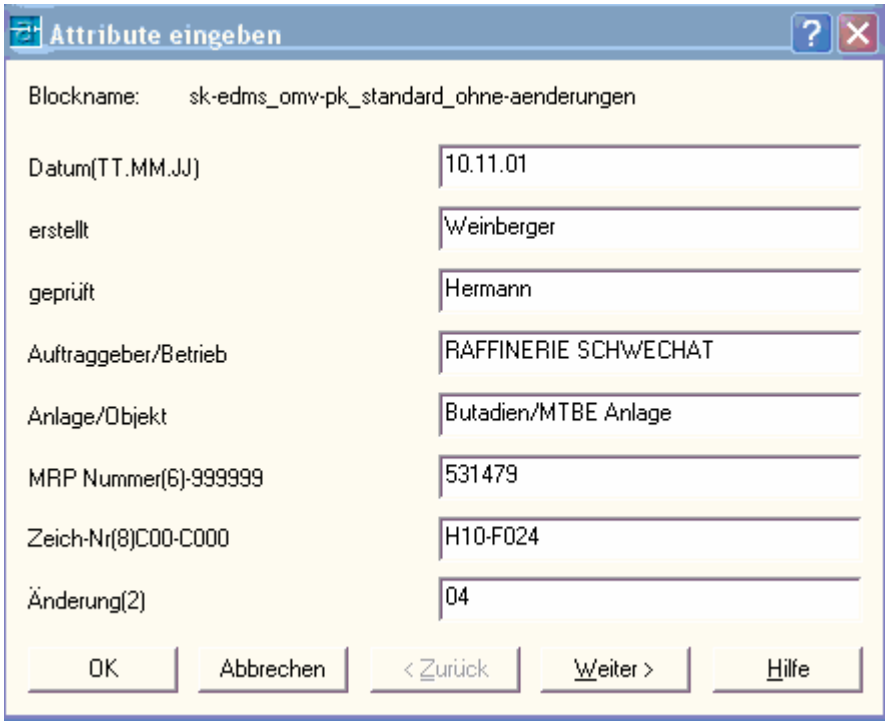
At least 2 drawing reference blocks in the plan are to be explained.

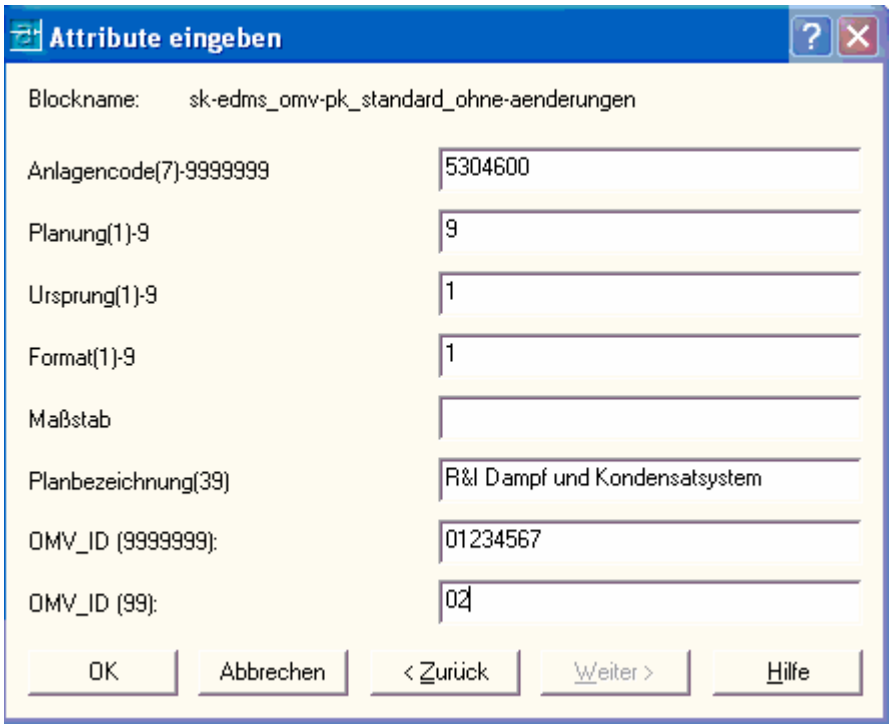
At least 4 appeal lines are to be explained in the plan (change number is to be filled out).

With place lack with the appeal lines are the oldest appeals with exception of Rev. 0 (issues) to eliminate.

e.g.:




Attribute eingeben
Blockname: sk-edms_omv-pk_standard_ohne-aenderungen
Datum(TT.MM.JJ) 10.11.01
erstellt Weinberger
geprüft Hermann
Auftraggeber/Betrieb RAFFINERIE SCHWECHAT
Anlage/Objekt Butadien/MTBE Anlage
MRP Nummer(6)-999999 531479
Zeich-Nr(8)C00-C000 H10-F024
Änderung(2) 04
OK
Abbrechen
< Zurück
Weiter >
Hilfe


Attribute eingeben
Blockname: sk-edms_omv-pk_standard_ohne-aenderungen
Anlagencode(7)-9999999 5304600
Planung(1)-9 9
Ursprung(1)-9 1
Format(1)-9 1
Maßstab
Planbezeichnung(39) R&I Dampf und Kondensatsystem
OMV_ID (9999999): 01234567
OMV_ID (99): 02
OK
Abbrechen
< Zurück
Weiter >
Hilfe

10. For Symbolica important AutoCAD commands/settings

FILEDIA	*0 or 1*	*during command "open"/"insert" AutoCAD will show a dialog for file-selection (1).*
ATTDIA	*0 or 1*	*after block insert attributes will be prompted in a dialog (1).*
ATTREQ	*0 or 1*	*after block insert attributes will be prompted (1)*
MIRRTXT	*0 or 1*	*when mirroring Text and Blocks (containing attributes) the Text stays readable and not mirrored (0)*
CMDDIA	*0 or 1*	*AutoCAD-commands do echo into command-area (1)*

1. Fundamentals 2
2. Basic settings 2
3. AutoCAD DesignCentre 2
3.1. Data structure 2
3.2. Samples for OMV main groups 3
3.3. Block description 7
4. Layer-structure 8
5. properties 8
6. Templates 9
6.1. Drawing templates 9
6.2. Layer templates 10
7. Layer application 11
8. Attribute usage 13
8.1. Equipment 14
8.2. Piping name 30
8.3. Measuring place (PLT - place circles) 36
8.4. Motorized activator 37
8.5. Instrument 39
9. Title block / sheet frame 40
10. For Symbolica important AutoCAD commands / settings 42