

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.

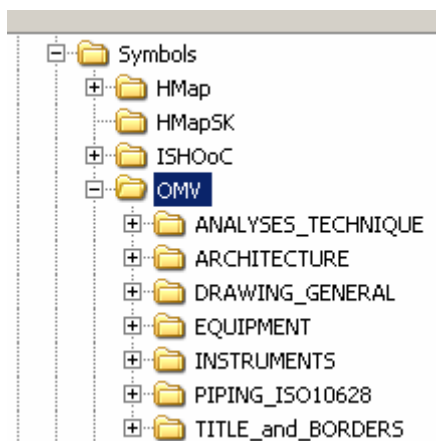
2. Basic settings

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)*

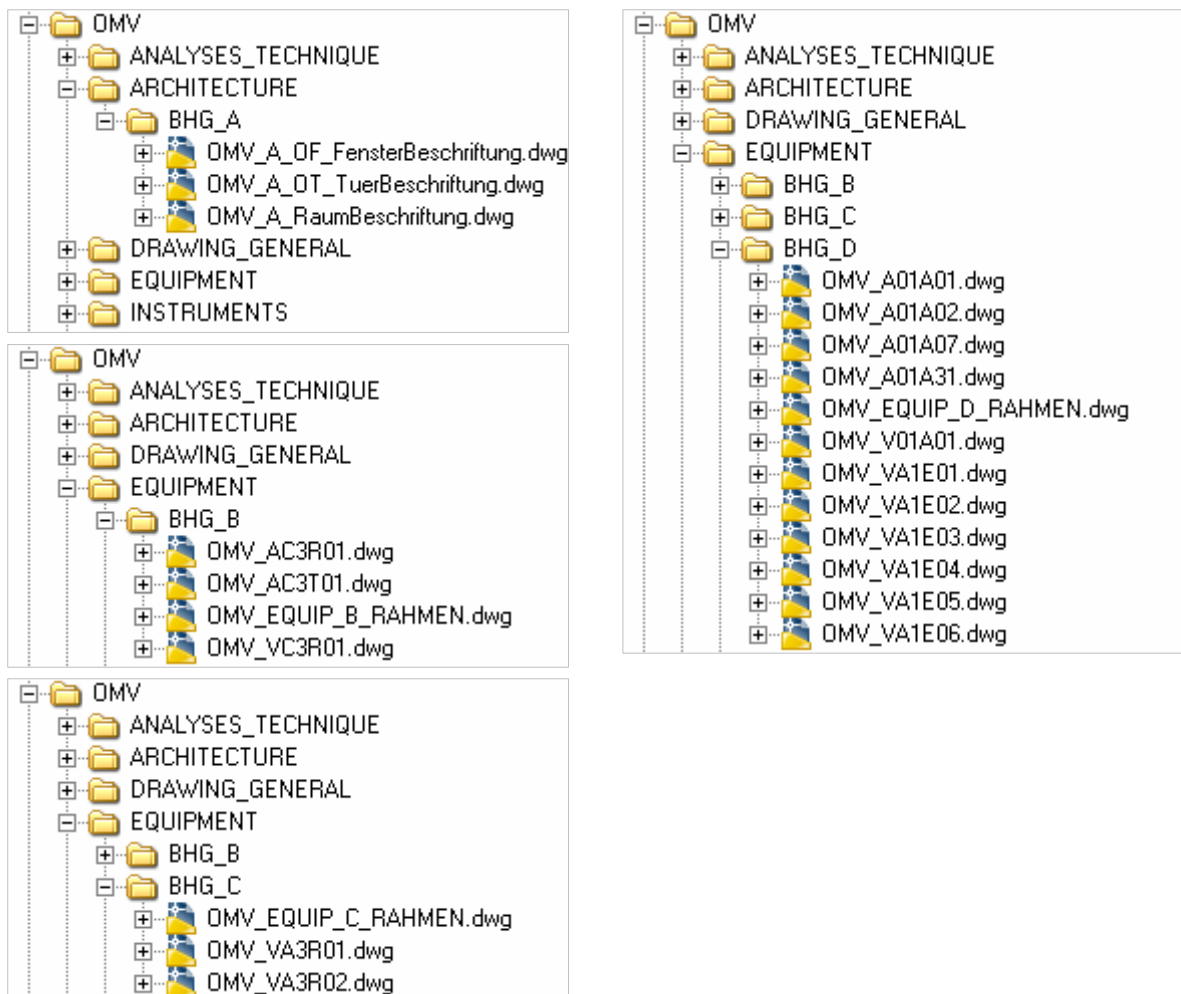


The Directories shown above contain all blocks/symbols required for the drawing production including the matching attributes.

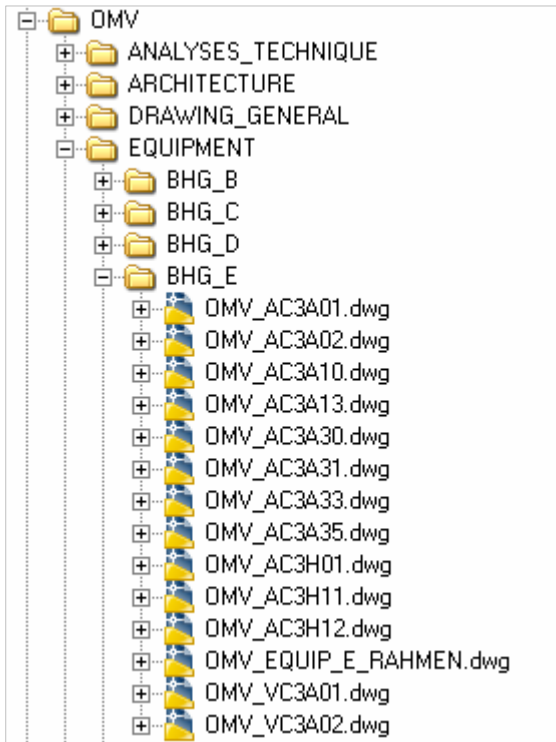
The symbols directory structure divides in departments and construction main groups after OMV norm 302 parts 2.

3.2. Samples for OMV main groups

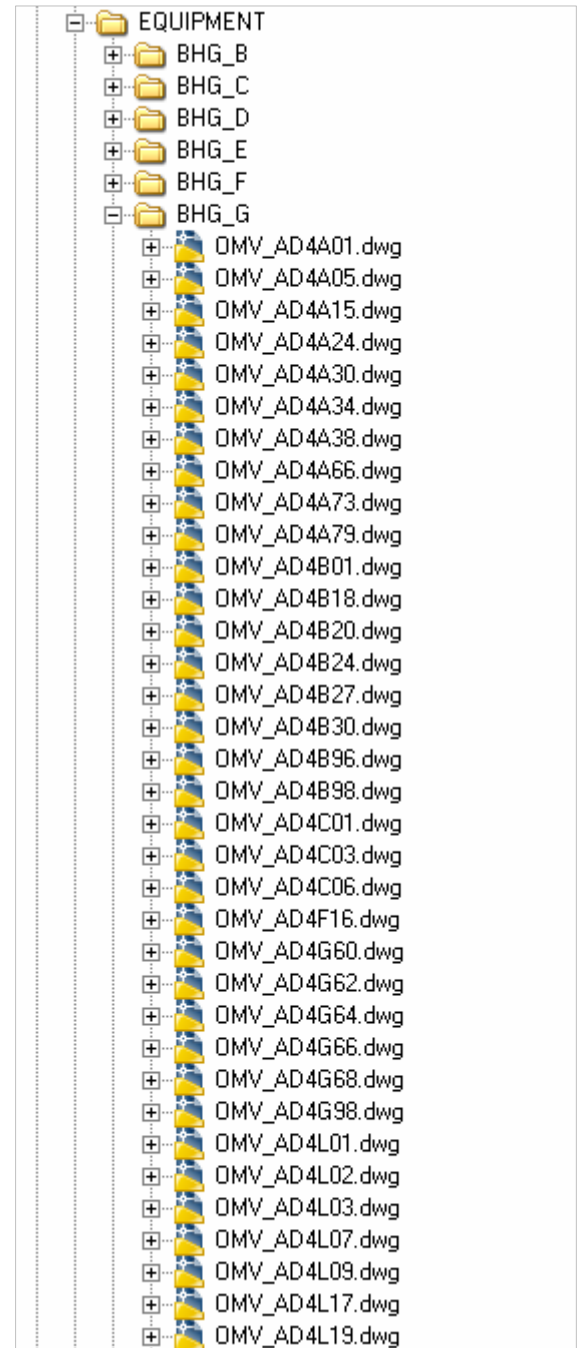
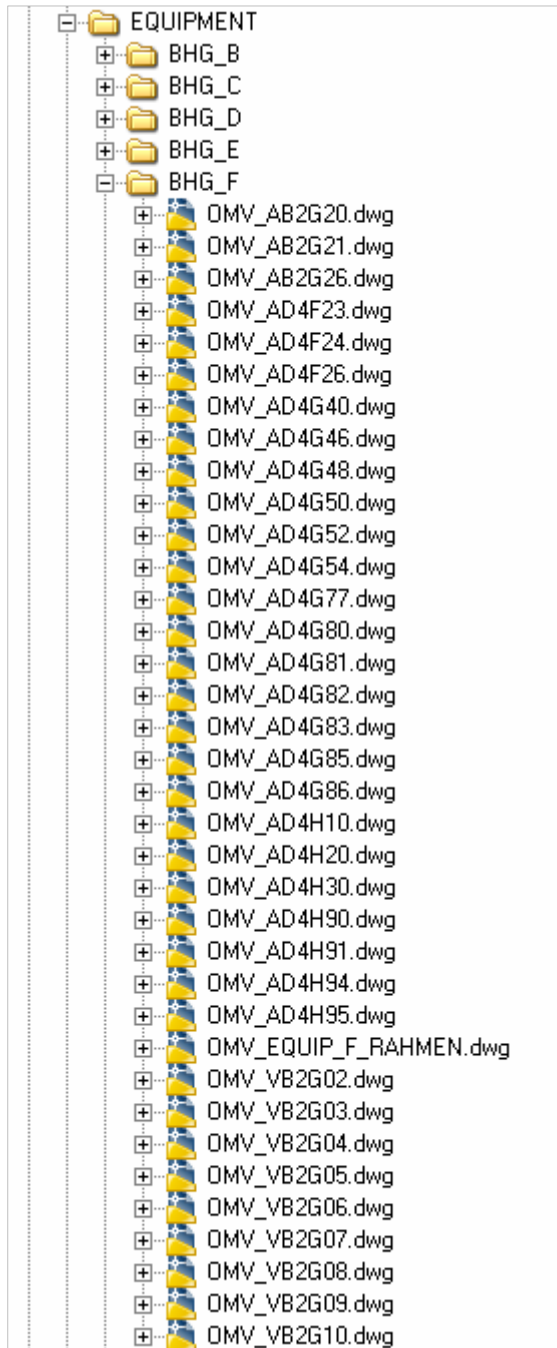
3.2.1. Samples for OMV main groups "A" to "D":



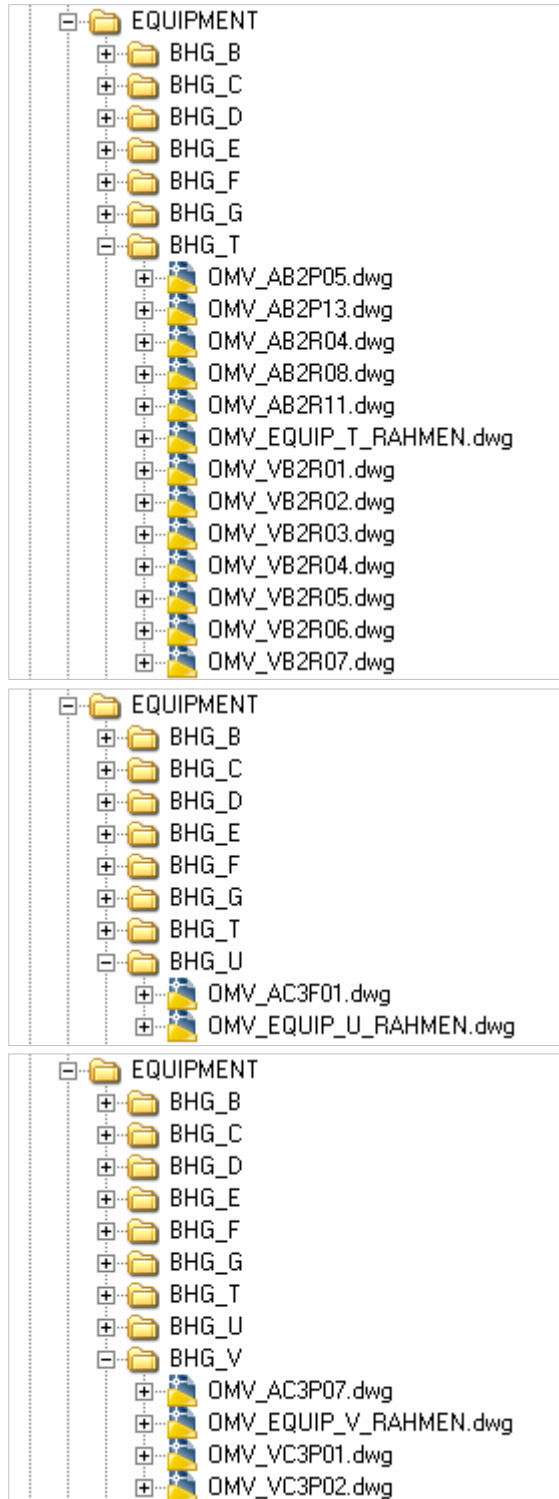
3.2.2. *Samples for OMV main groups "E"*



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

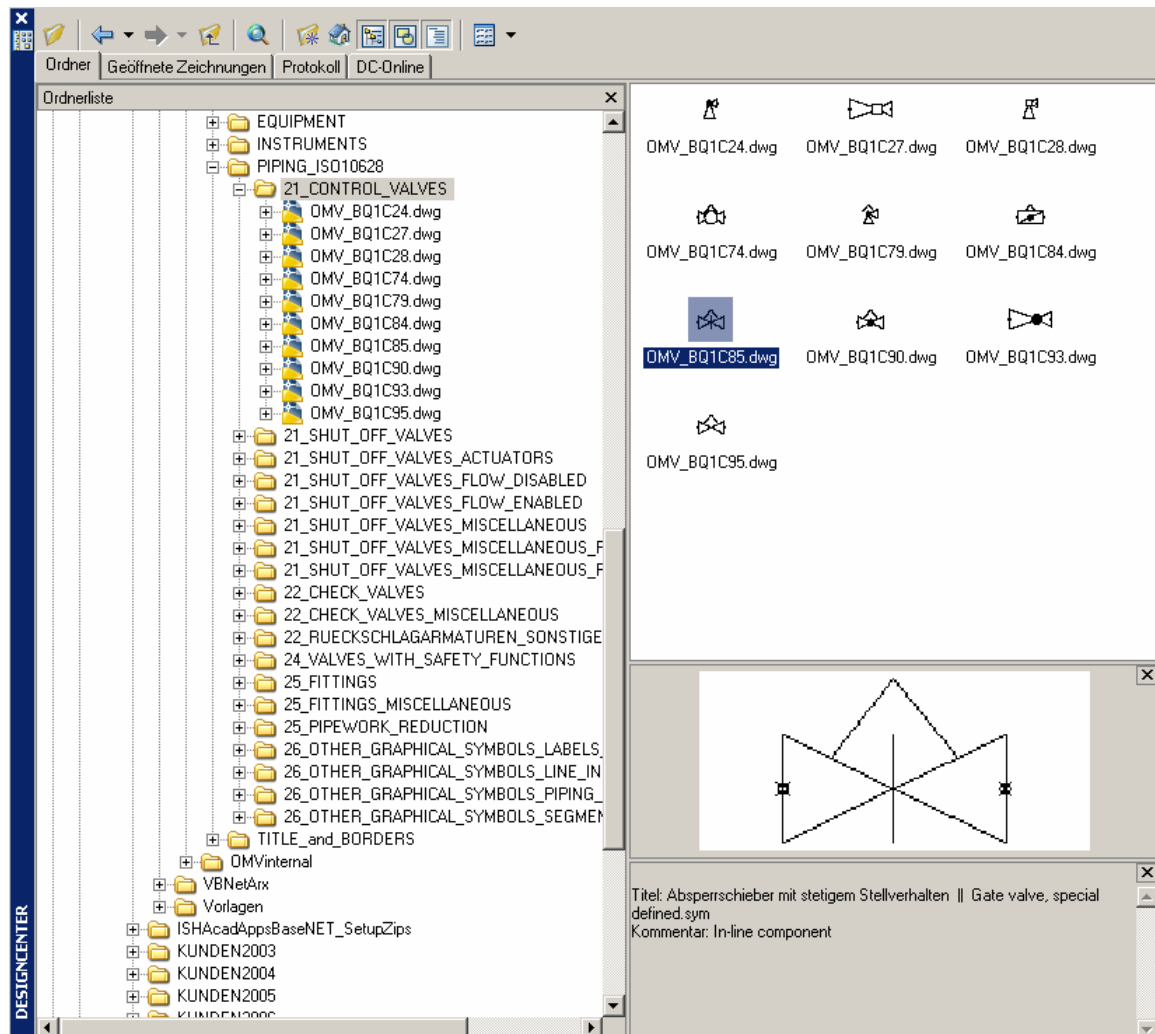


3.2.4. Samples for OMV main groups "T" to "V"



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

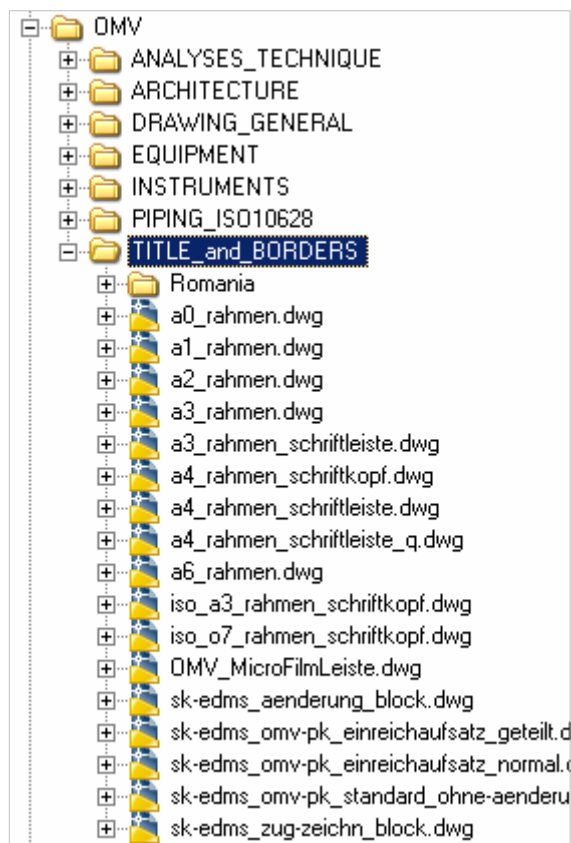
See OMV norm 351 item 2.3

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:

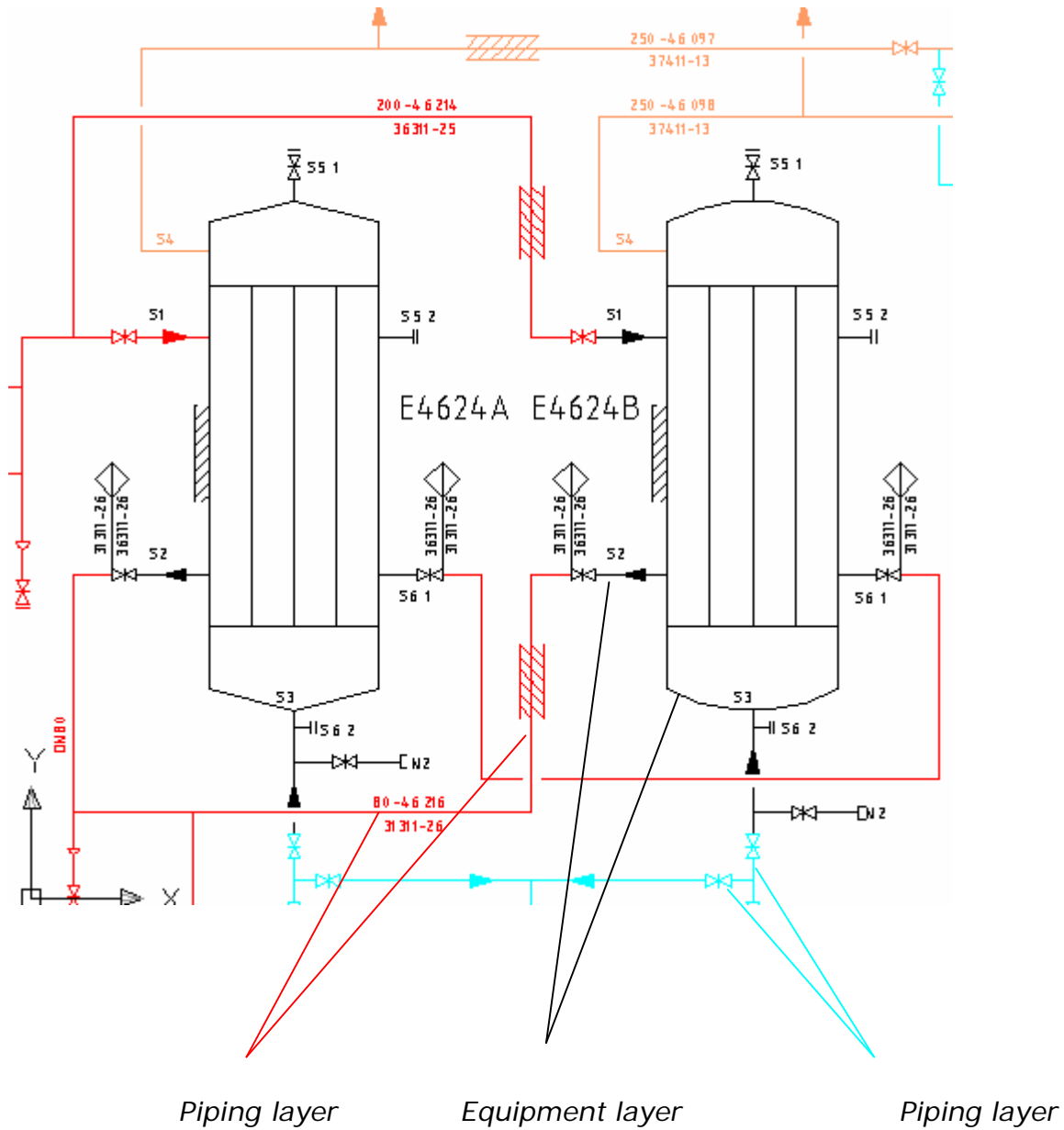
- graphics of the equipment
- inscription block
- isolation of the equipment
- fittings of the equipment

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)



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).*

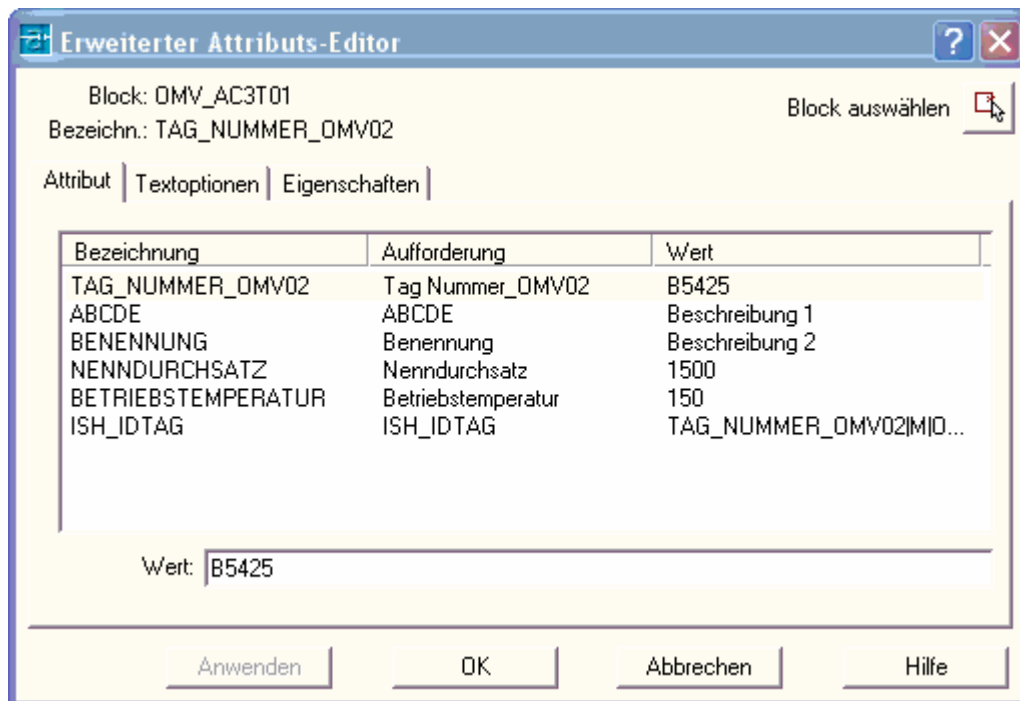
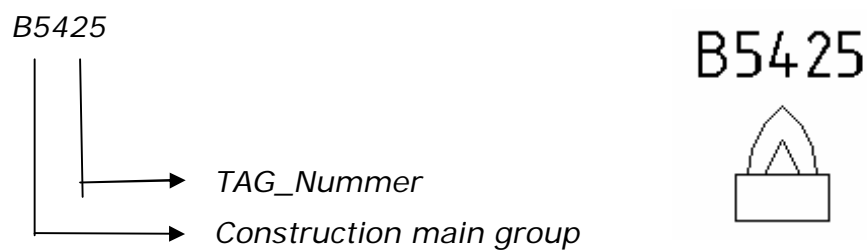
The data has to be entered on the equipment component.

8.1. Equipment

8.1.1. Construction main group B

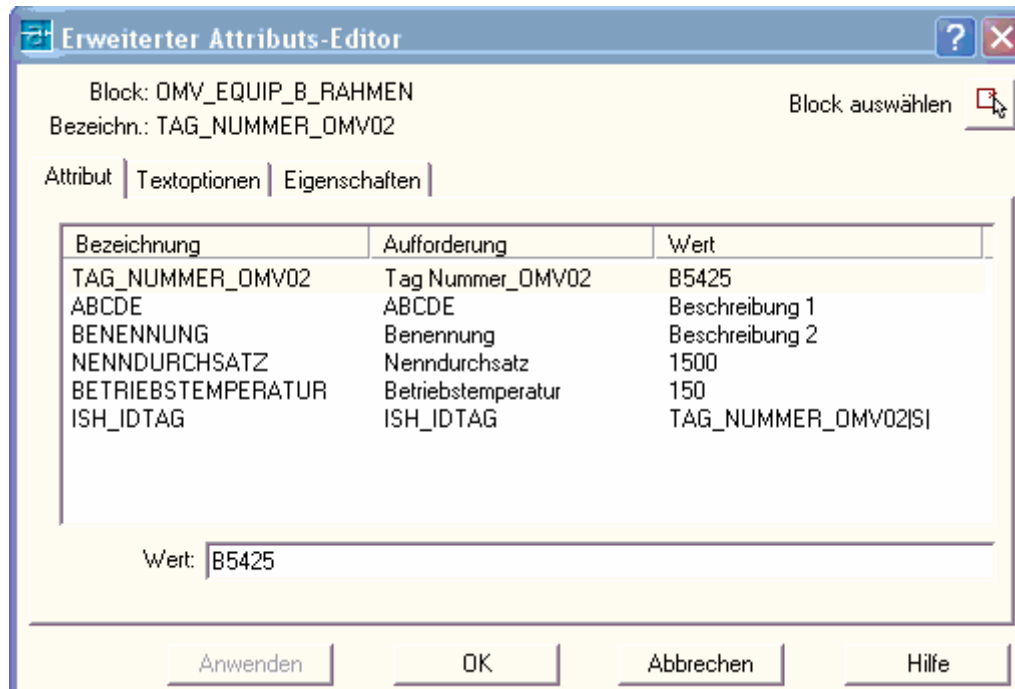
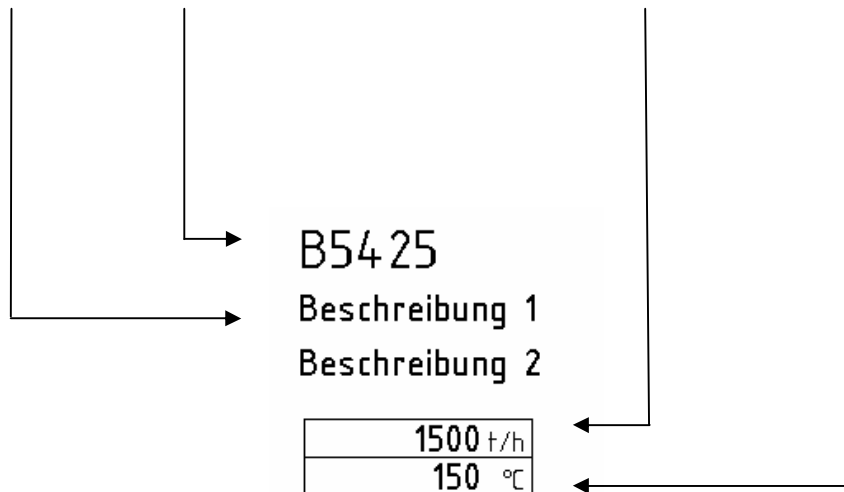
(stoves, treater, heater)

8.1.1.1. Attribute usage example



8.1.1.2. Labeling block

Naming TAG_Nummer Nominal throughput operating temp.



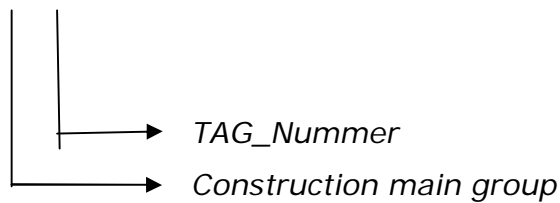
8.1.2. Construction main group C,D

C (chimneys, torch)

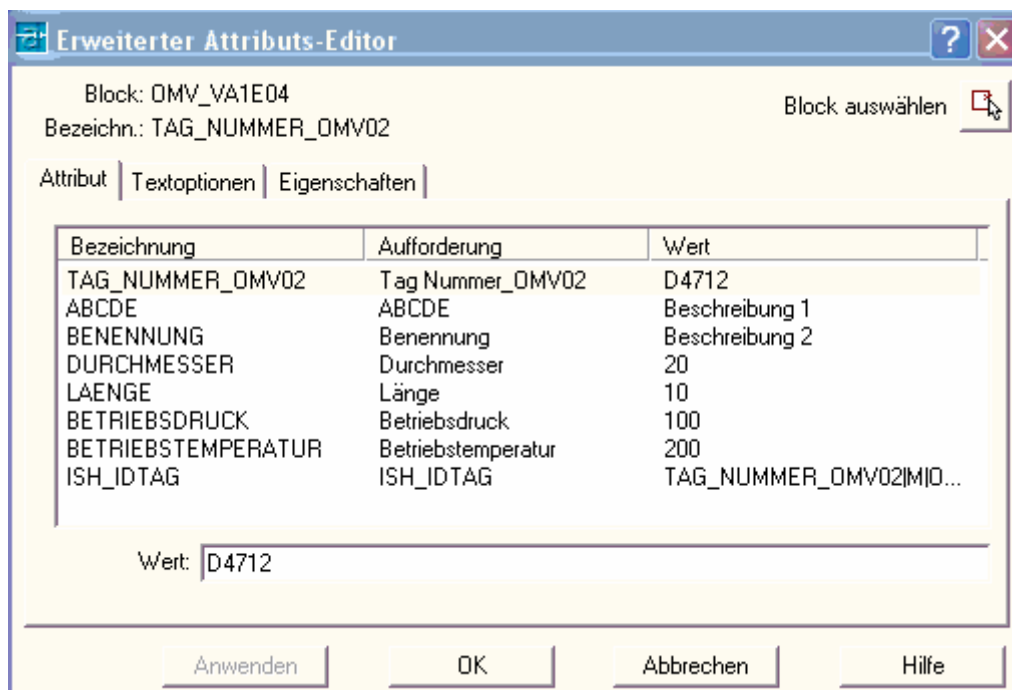
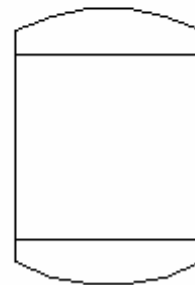
D (columns, reactors, Agiteure)

8.1.2.1. Attribute usage example

D4712

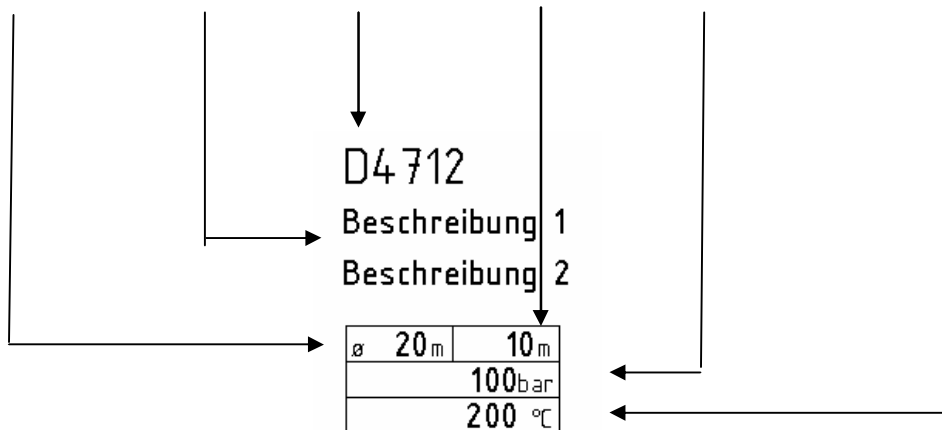


D4712



8.1.2.2. Labeling block

Diameter naming TAG_nummer length working pressure operating temp.



Erweiterter Attributs-Editor

Block: OMV_EQUIP_D_RAHMEN
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	D4712
ABCDE	ABCDE	Beschreibung 1
BENENNUNG	Benennung	Beschreibung 2
DURCHMESSER	Durchmesser	20
LAENGE	Länge	10
BETRIEBSDRUCK	Betriebsdruck	100
BETRIEBSTEMPERATUR	Betriebstemperatur	200
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 S

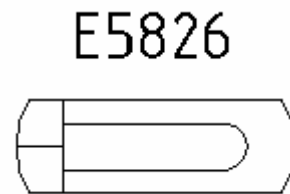
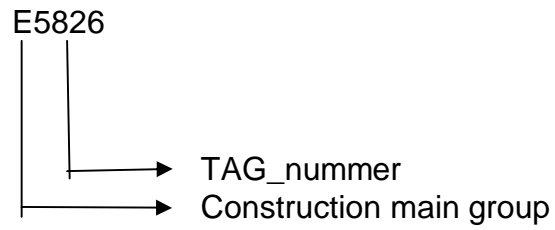
Wert: D4712

Anwenden OK Abbrechen Hilfe

8.1.3. Construction main group E

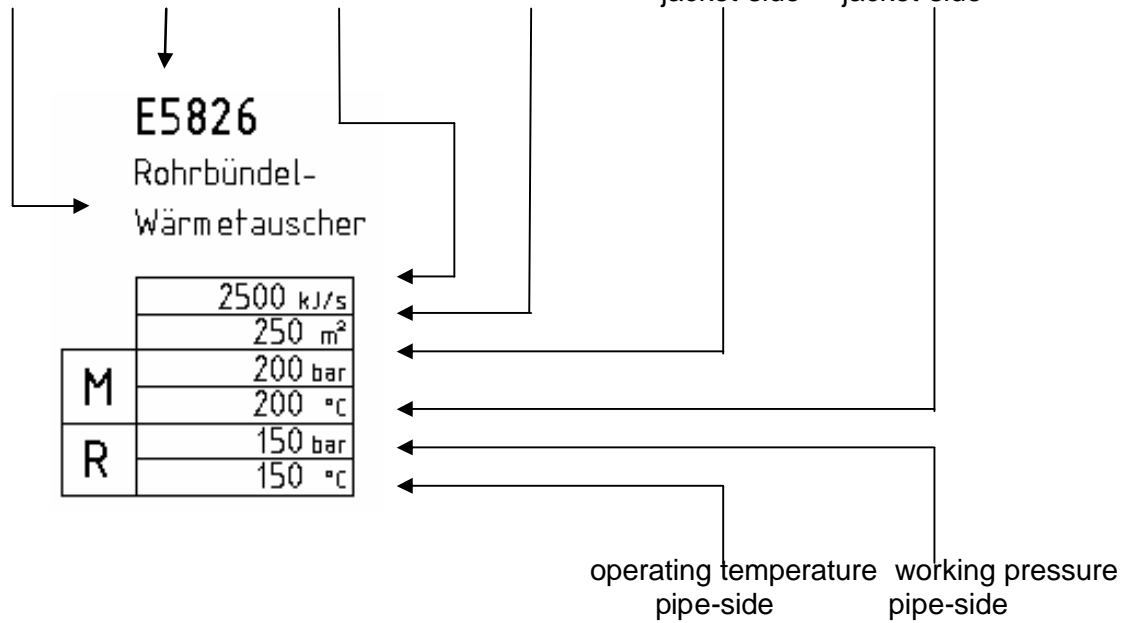
(heat exchanger, cooler)

8.1.3.1. Attribute usage example



8.1.3.2. Labeling block

naming TAG_Nr power exchange area working pressure operating temperature
 jacket-side jacket-side



Erweiterter Attributs-Editor

Block: OMV_EQUIP_E_RAHMEN
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	E5826
ABCDE	ABCDE	Rohrbündel
BENENNUNG	Benennung	Wärmetauscher
LEISTUNG	Leistung	2500
AUSTAUSCHFLAECHE	Austauschfläche	250
BETRIEBSDRUCK_MANTELSEITIG	Betriebsdruck mantelseitig	200
BETRIEBSTEMPERATUR_MANTELSEITIG	Betriebstemperatur mantelseitig	200
BETRIEBSDRUCK_ROHRSEITIG	Betriebsdruck rohrseitig	150
BETRIEBSTEMPERATUR_ROHRSEITIG	Betriebstemperatur rohrseitig	150
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02IS

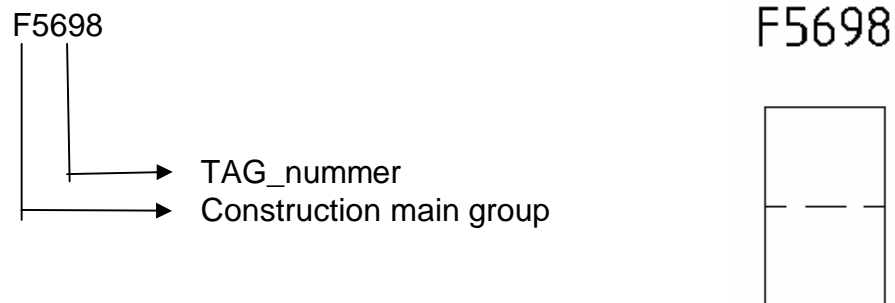
Wert: E5826

Anwenden OK Abbrechen Hilfe

8.1.4. Construction main group F

(container, separator, filter)

8.1.4.1. Attribute usage example



Erweiterter Attributs-Editor

Block: OMV_AD4G40
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

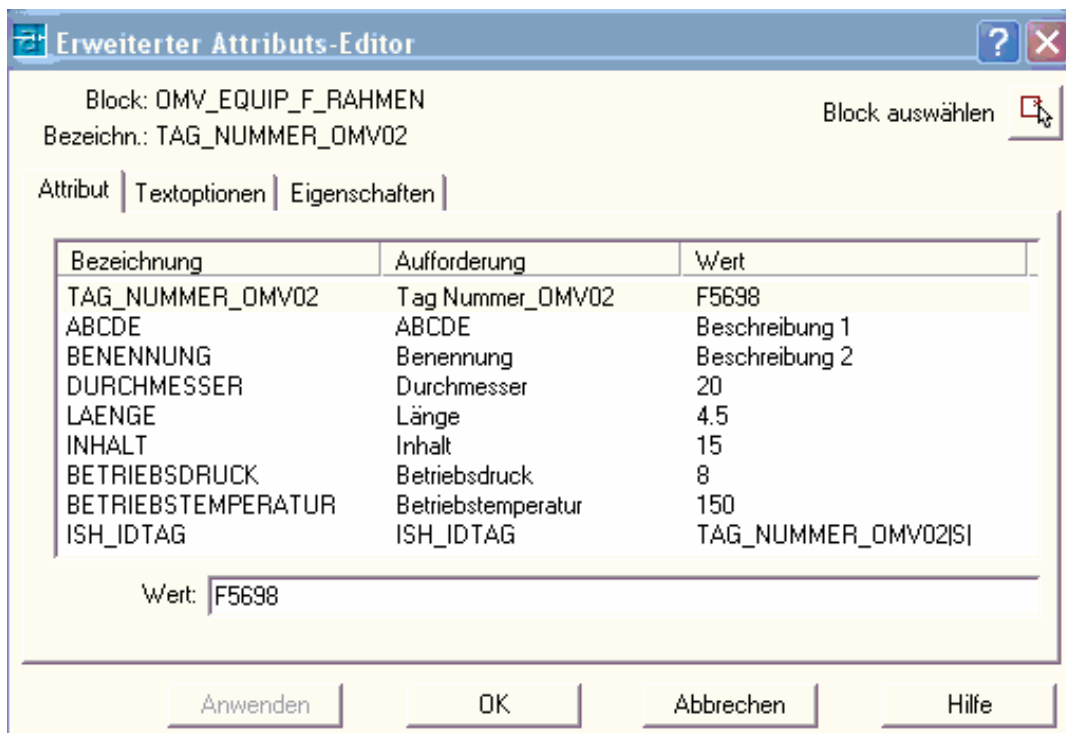
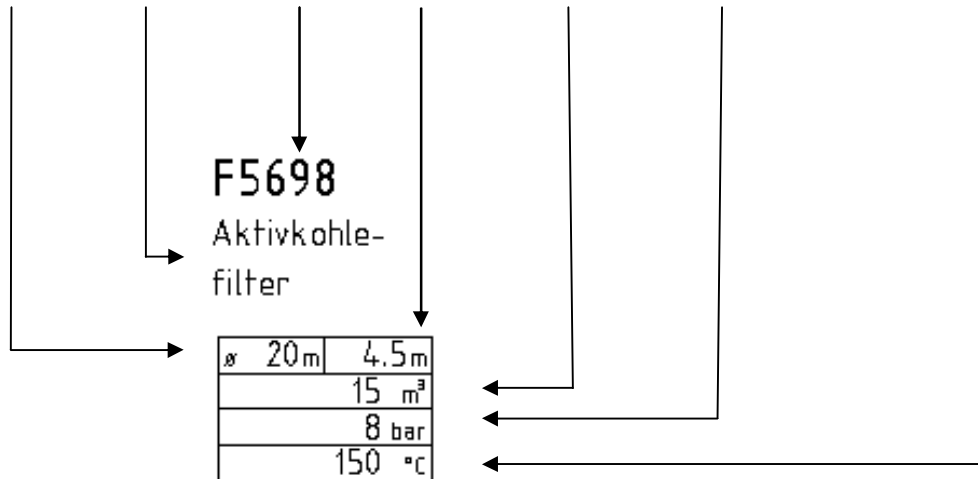
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	F5698
ABCDE	ABCDE	Beschreibung 1
BENENNUNG	Benennung	Beschreibung 2
DURCHMESSER	Durchmesser	20
LAENGE	Länge	4.5
INHALT	Inhalt	15
BETRIEBSDRUCK	Betriebsdruck	8
BETRIEBSTEMPERATUR	Betriebstemperatur	150
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 MD...

Wert: F5698

Anwenden OK Abbrechen Hilfe

8.1.4.2. Labeling block

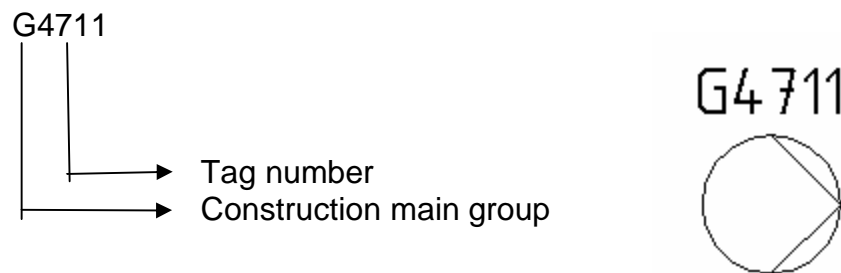
Diameter naming TAG_Nr. Length volume op. temperature working pressure



8.1.5. Construction main group G

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

8.1.5.1. Attribute usage



Erweiterter Attributs-Editor

Block: OMV_AD4A01
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

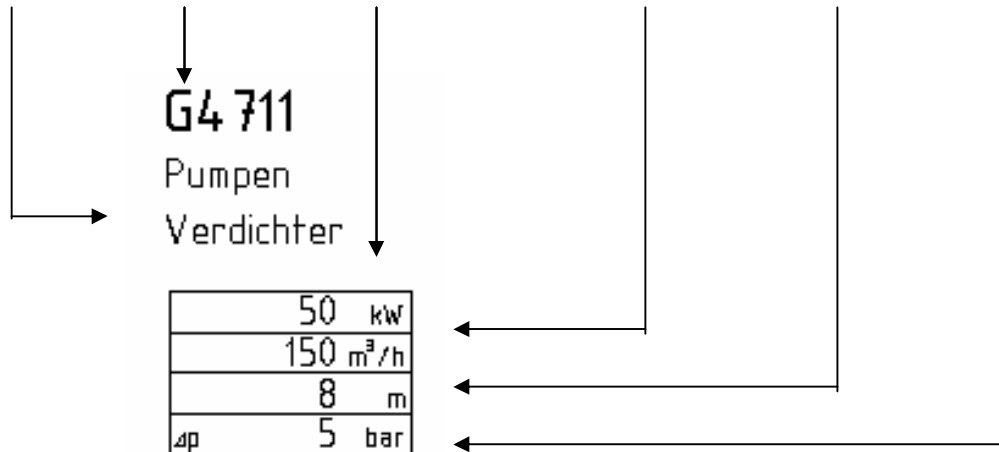
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	G4711
ABCDE	ABCDE	Stoppumpe
BENENNUNG	Benennung	außer Betrieb
ANTRIEBSLEISTUNG	Antriebsleistung	50
FOERDERVOLUMEN	Fördervolumen	150
FOERDERHOEHE	Förderhöhe	8
DIFFERENZDRUCK	Differenzdruck	5
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 MI0...

Wert: G4711

Anwenden OK Abbrechen Hilfe

8.1.5.2. Labeling block

Naming Tag Nr. Driving power Fördervolumen Förderhöhe differential pressure



Erweiterter Attributs-Editor

Block: OMV_EQUIP_G_RAHMEN
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

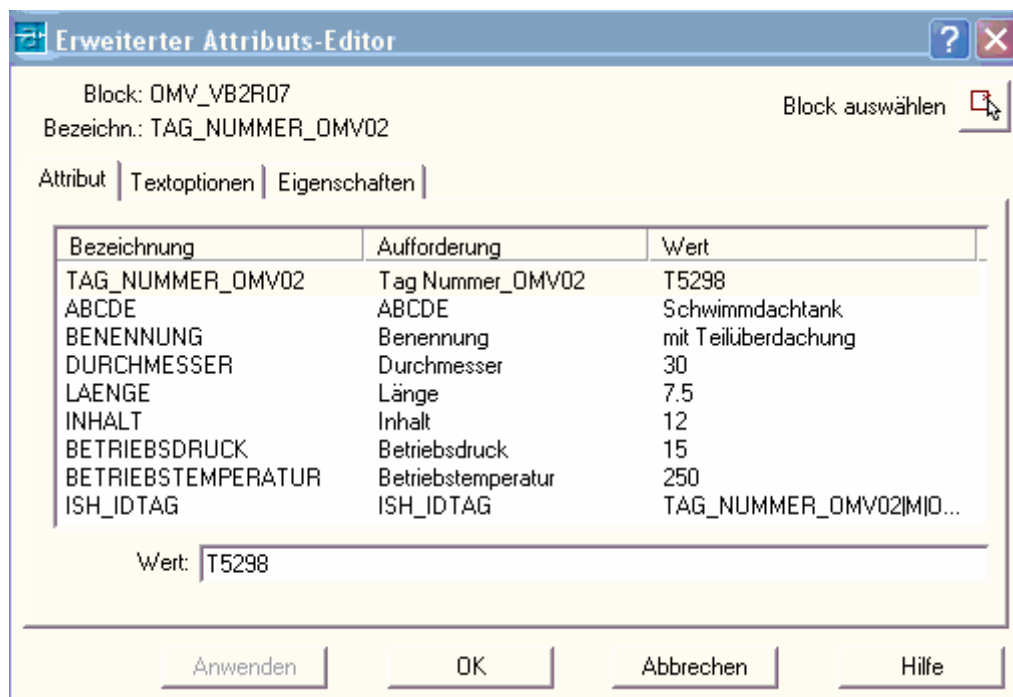
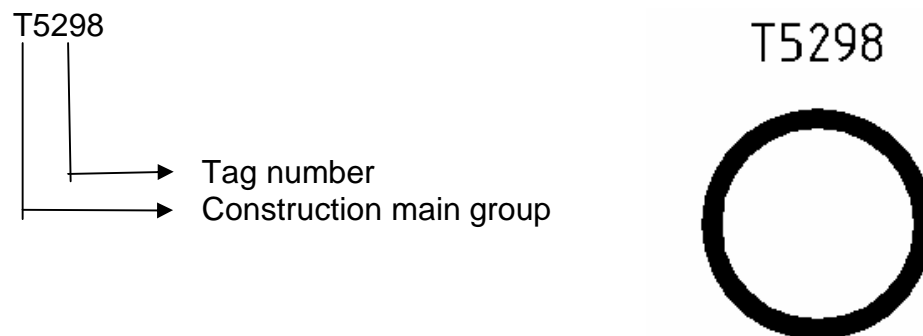
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	G4711
ABCDE	ABCDE	Stoppumpe
BENENNUNG	Benennung	außer Betrieb
ANTRIEBSLEISTUNG	Antriebsleistung	50
FOERDERVOLUMEN	Fördervolumen	150
FOERDERHOEHE	Förderhöhe	8
DIFFERENZDRUCK	Differenzdruck	5
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 SI

Wert: G4711

Anwenden OK Abbrechen Hilfe

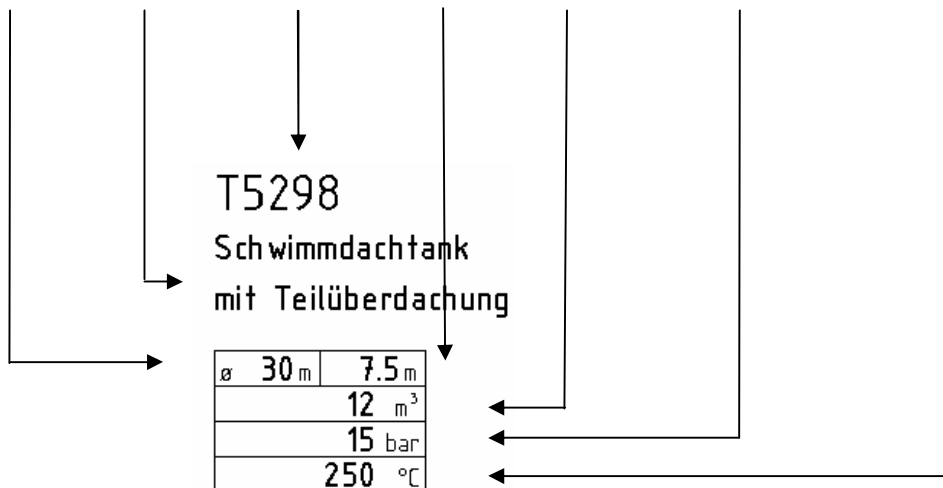
8.1.6. Construction main group T (tanks)

8.1.6.1. Attribute application



8.1.6.2. Labeling block

Diameter naming ItemTag Length volume working pressure Operating temperature



Erweiterter Attributs-Editor

Block: OMV_VB2R07
 Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

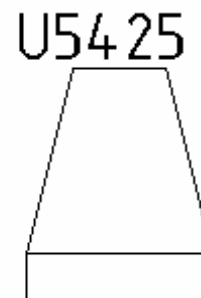
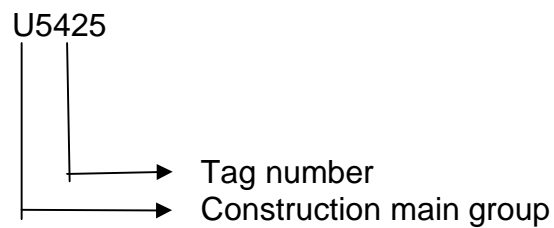
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	T5298
ABCDE	ABCDE	Schwimmdachtank
BENENNUNG	Benennung	mit Teilüberdachung
DURCHMESSER	Durchmesser	30
LAENGE	Länge	7.5
INHALT	Inhalt	12
BETRIEBSDRUCK	Betriebsdruck	15
BETRIEBSTEMPERATUR	Betriebstemperatur	250
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02IMID...

Wert: T5298

Anwenden OK Abbrechen Hilfe

8.1.7. Construction main group U (cooling tower)

8.1.7.1. Attribute application



Erweiterter Attributs-Editor

Block: OMV_AC3F01
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

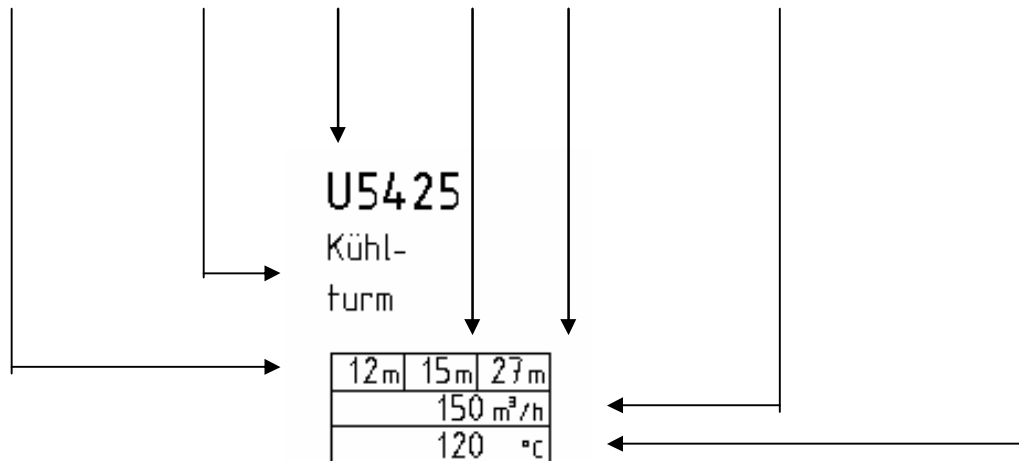
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	U5425
ABCDE	ABCDE	Kühl
BENENNUNG	Benennung	turm
LAENGE	Länge	12
BREITE	Breite	15
HOEHE	Höhe	27
NENNDURCHSATZ	Nenndurchsatz	150
TEMPERATURGEFAELLE	Temperaturgefälle	120
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02IMID...

Wert: U5425

Anwenden OK Abbrechen Hilfe

8.1.7.2. Labeling block

Length Naming Item Tag Width Height Nenndurchsatz Temperature inclines



Erweiterter Attributs-Editor

Block: OMV_EQUIP_U_RAHMEN
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

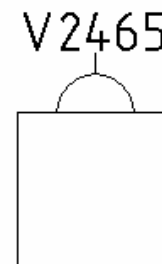
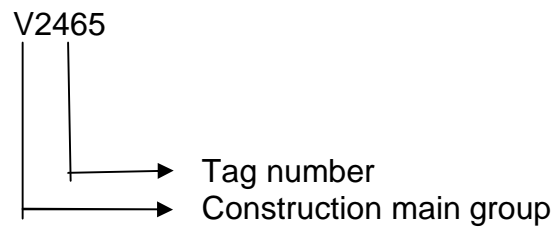
Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	U5425
ABCDE	ABCDE	Kühl
BENENNUNG	Benennung	turm
LAENGE	Länge	12
BREITE	Breite	15
HOEHE	Höhe	27
NENNDURCHSATZ	Nenndurchsatz	150
TEMPERATURGEFAELLE	Temperaturgefälle	120
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 S

Wert: U5425

Anwenden OK Abbrechen Hilfe

8.1.8. Construction main group V (boiler)

8.1.8.1. Attribute application



Erweiterter Attributs-Editor

Block: OMV_AC3P07
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

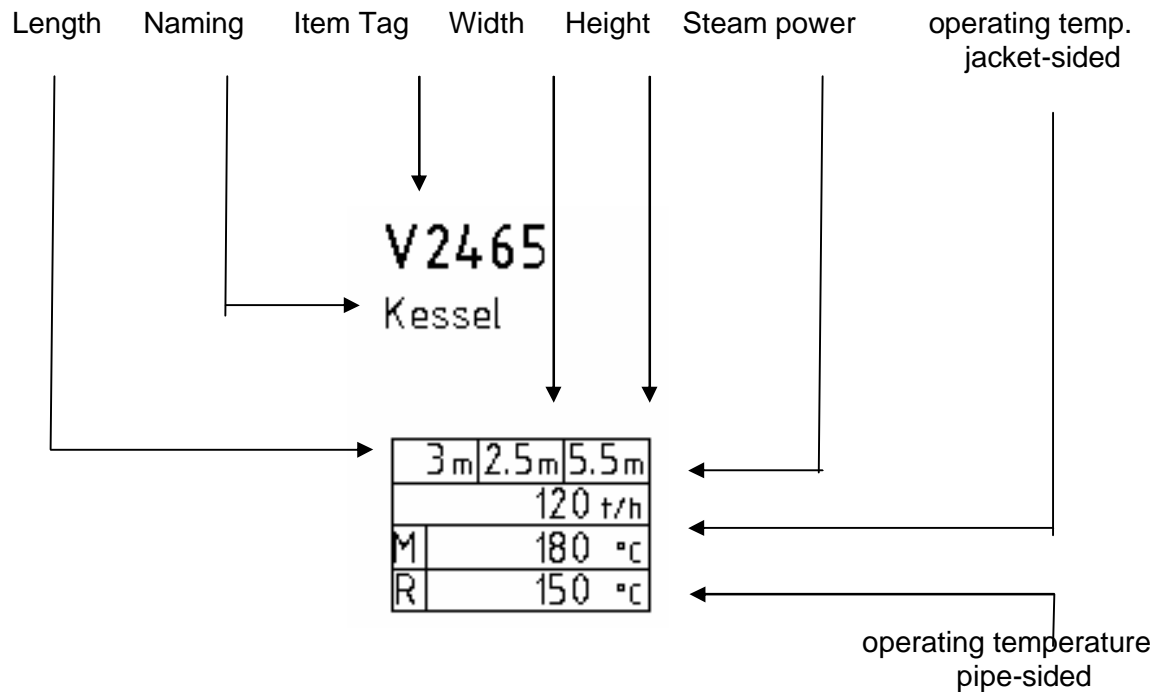
Attribut | Textoptionen | Eigenschaften

Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	V2465
ABCDE	ABCDE	Kessel 1
BENENNUNG	Benennung	
LAENGE	Länge	3
BREITE	Breite	2.5
HOEHE	Höhe	5.5
DAMPFLEISTUNG	Dampfleistung	120
BETRIEBSTEMPERATUR_...	Betriebstemperatur mante...	180
BETRIEBSTEMPERATUR_...	Betriebstemperatur rohse...	150
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 MIO...

Wert: V2465

Anwenden OK Abbrechen Hilfe

8.1.8.2. Labeling block



Erweiterter Attributs-Editor

Block: OMV_EQUIP_V_RAHMEN
Bezeichn.: TAG_NUMMER_OMV02

Block auswählen

Attribut | Textoptionen | Eigenschaften

Bezeichnung	Aufforderung	Wert
TAG_NUMMER_OMV02	Tag Nummer_OMV02	V2465
ABCDE	ABCDE	Kessel 1
BENENNUNG	Benennung	
LAENGE	Länge	3
BREITE	Breite	2.5
HOEHE	Höhe	5.5
DAMPFLEISTUNG	Dampfleistung	120
BETRIEBSTEMPERATUR_...	Betriebstemperatur mante...	180
BETRIEBSTEMPERATUR_...	Betriebstemperatur rohrse...	150
ISH_IDTAG	ISH_IDTAG	TAG_NUMMER_OMV02 S

Wert: V2465

Anwenden OK Abbrechen Hilfe

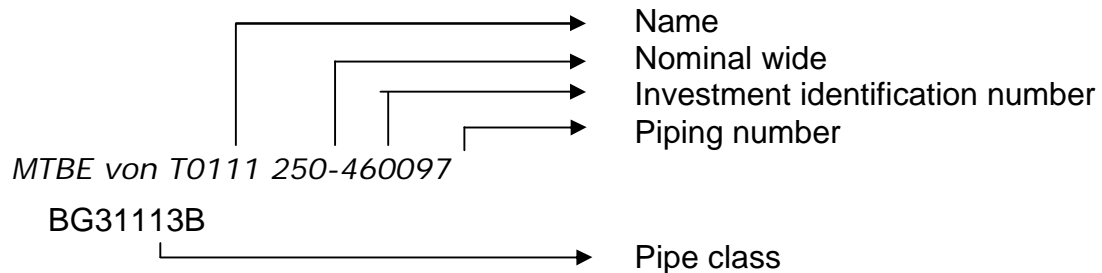
8.1.9. Equipment Komponenten

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.:




Block: OMV_WF1F01
Bezeichn.: LEITUNGSNUMMER_OMV04

Attribut | Textoptionen | Eigenschaften

Bezeichnung	Aufforderung	Wert
NAME	Name	MTBE von T0111
NENNWEITE_OMV01	Nennweite	250
TXT_OMV02	-	-
ANLAGENKENNZAHLE_OMV03	Anlagenkennzahl	45
LEITUNGSNUMMER_OMV04	Leistungsnummer	0097
TXT_OMV05	-	-
ROHRKLASSE_OMV06	Rohrklasse	BG31113B

Wert: 0097

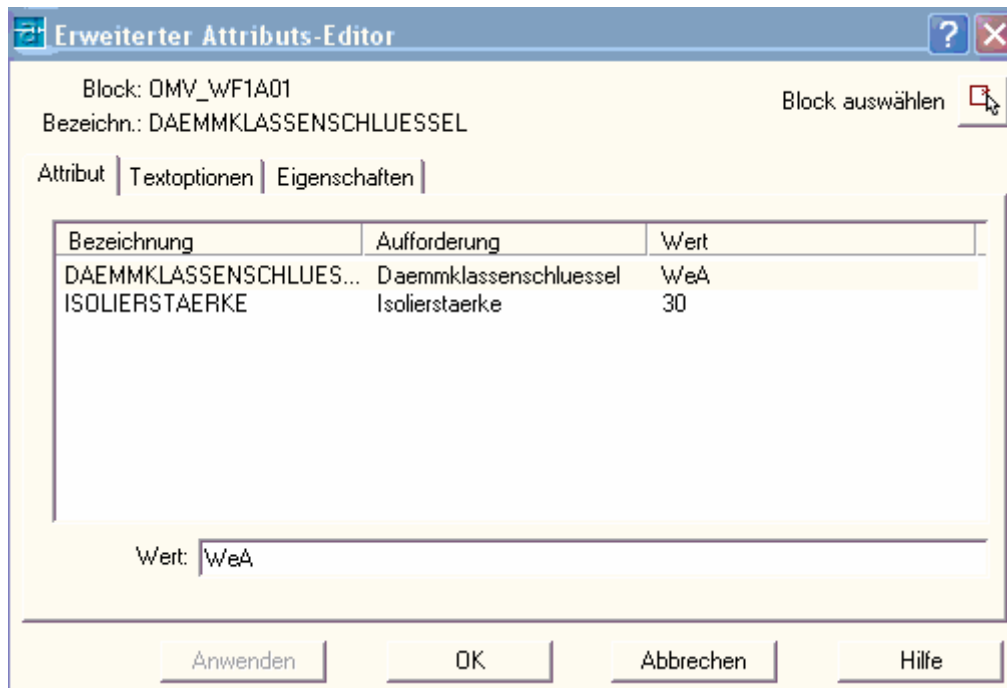
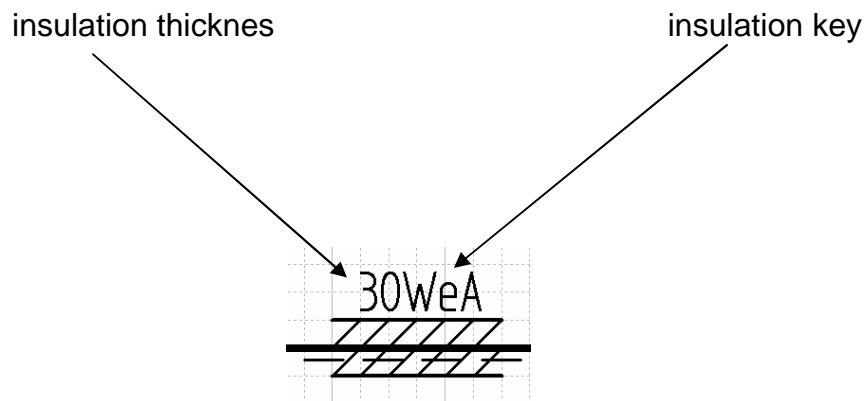
Anwenden OK Abbrechen Hilfe

8.2.1. Piping isolation

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

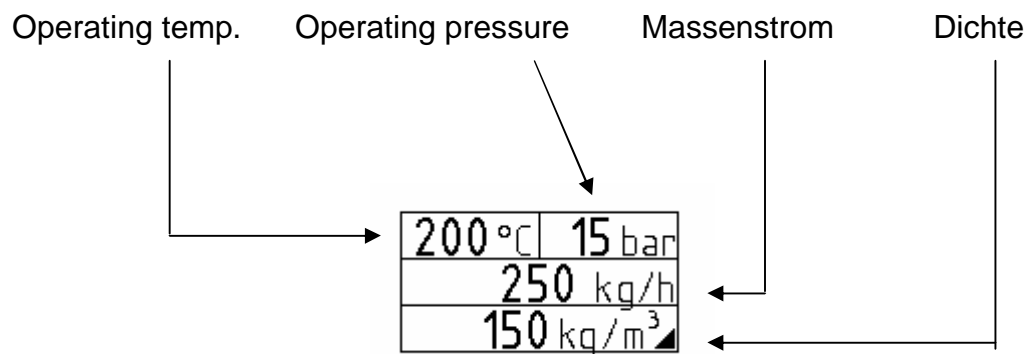
The attributes insulating width and insulating first-class key are to be filled out.

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

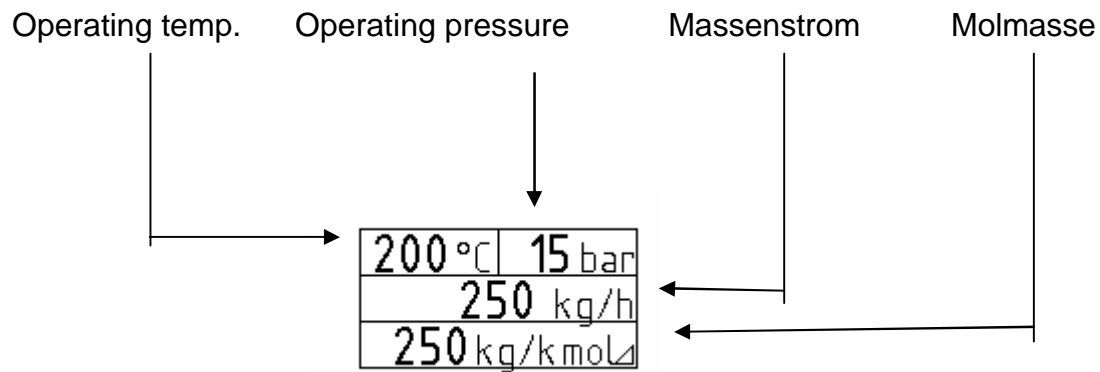


8.2.2. Labeling block

8.2.2.1. OMV Management label liquidly



8.2.2.2. OMV Management label gas-shaped

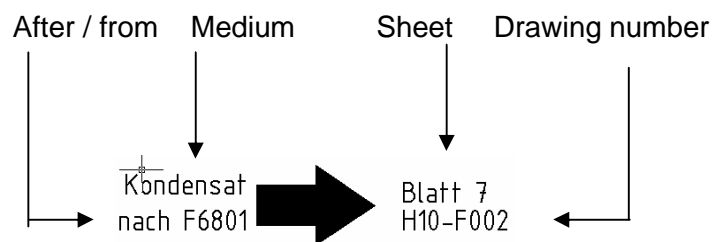


8.2.3. Connection references

OMV-main line

OMV-Capital assets management

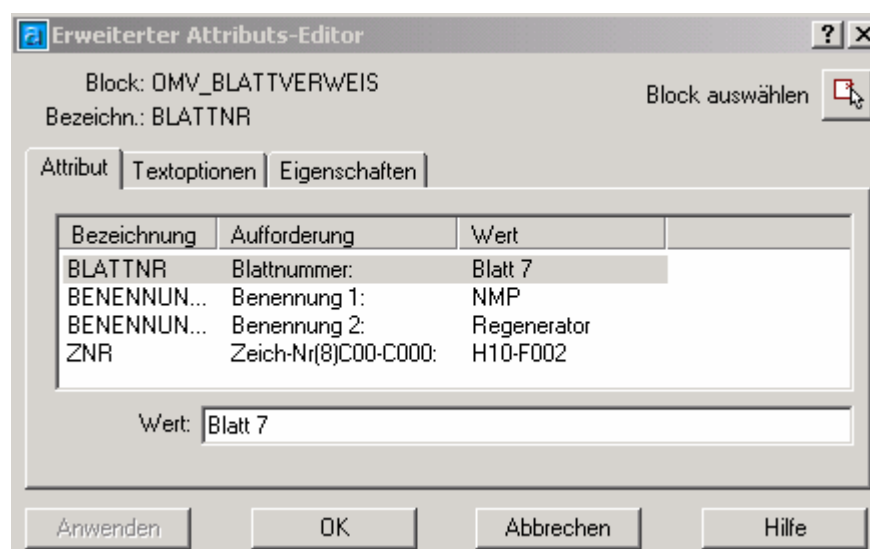
8.2.3.1. Connection references within an arrangement



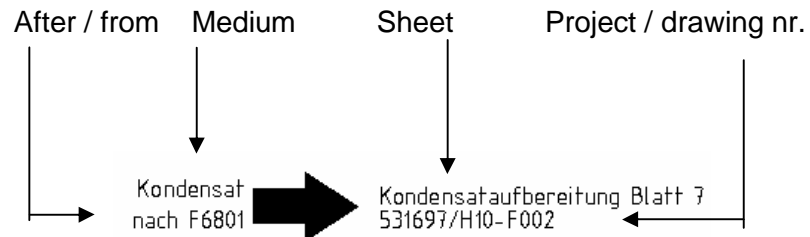
The blocks are also usable reflected (river direction), in consideration of the command (MIRRTXT = 0).

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

Blatt 7
NMP Regenerator
H10-F002



8.2.3.2. Connection references investment-general



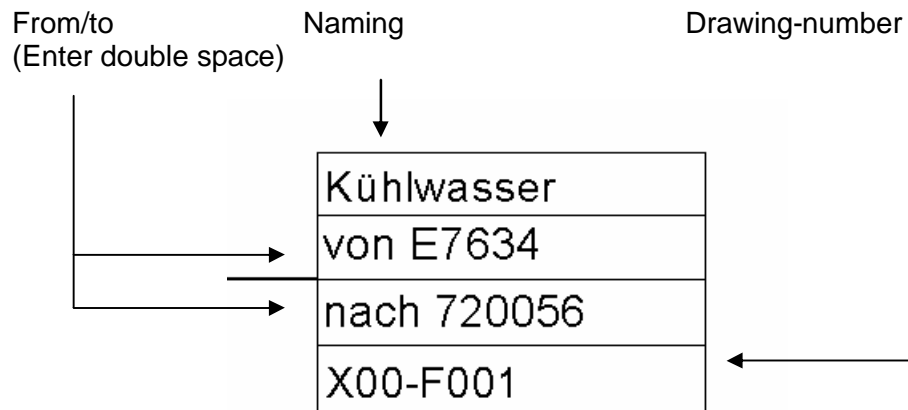
The blocks are also usable reflected (river direction), in consideration of the command (MIRRTXT = 0).

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

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



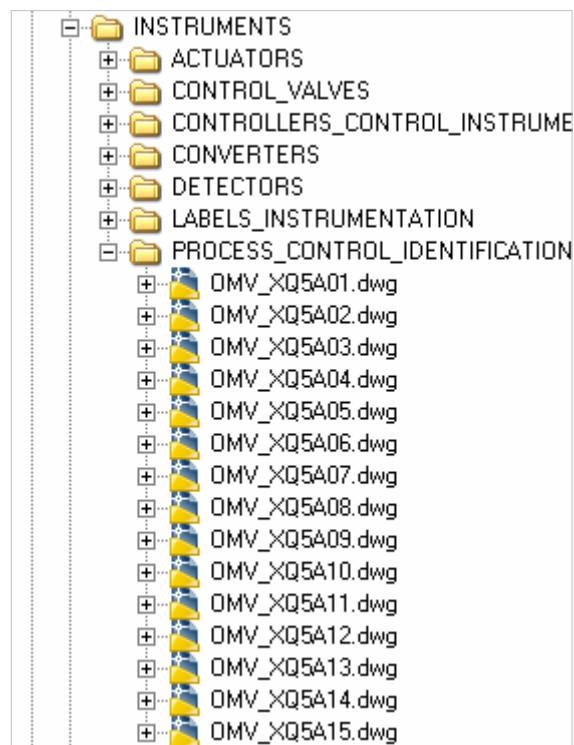
8.2.4. Capital assets-connection boxes



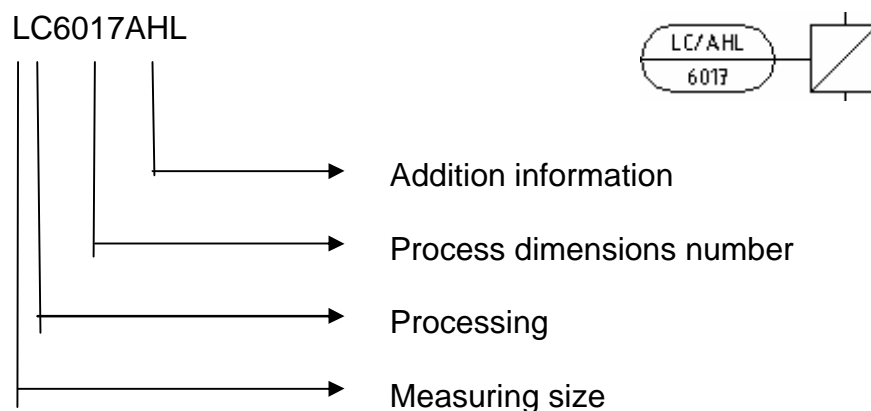
8.3. Measuring place (PLT - place circles)

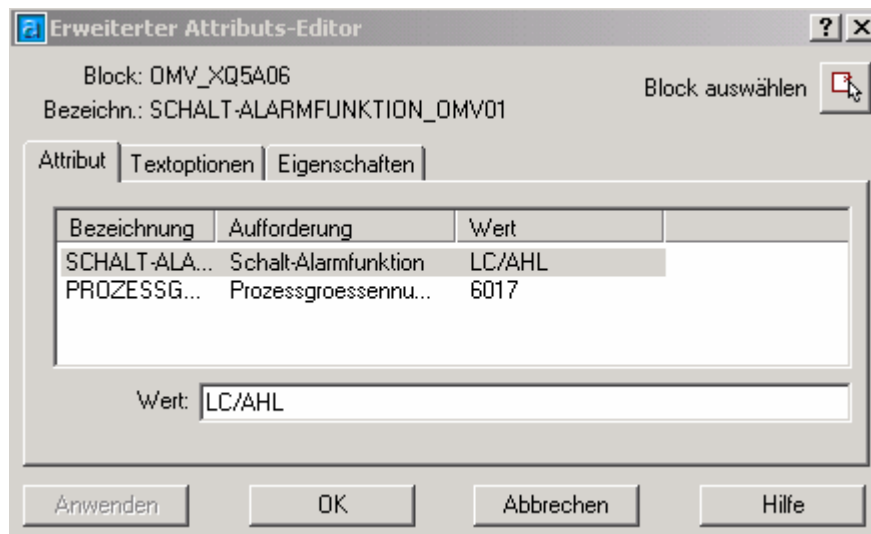
Blocks for measuring places are loadable from the directory
`... \Symbols\OMV\Instruments\PROCESS_CONTROL_IDENTIFICATION`

The attributes have to be filled out.



i.e.:

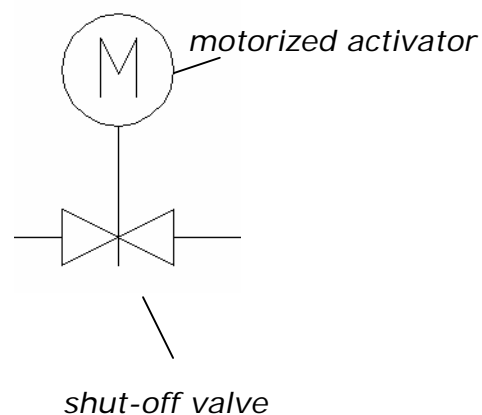


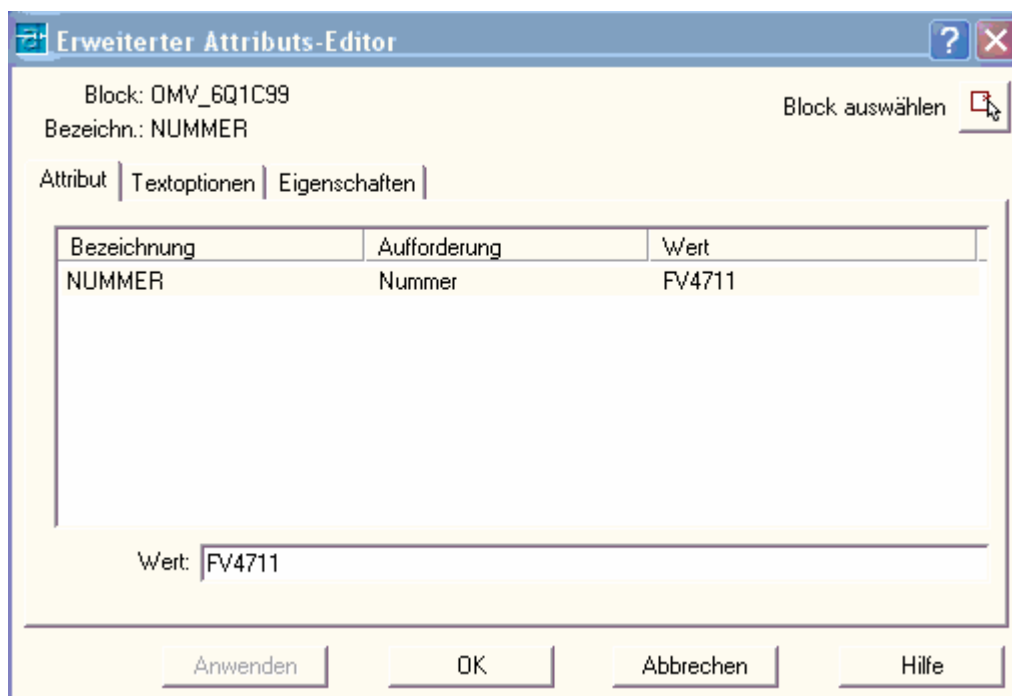
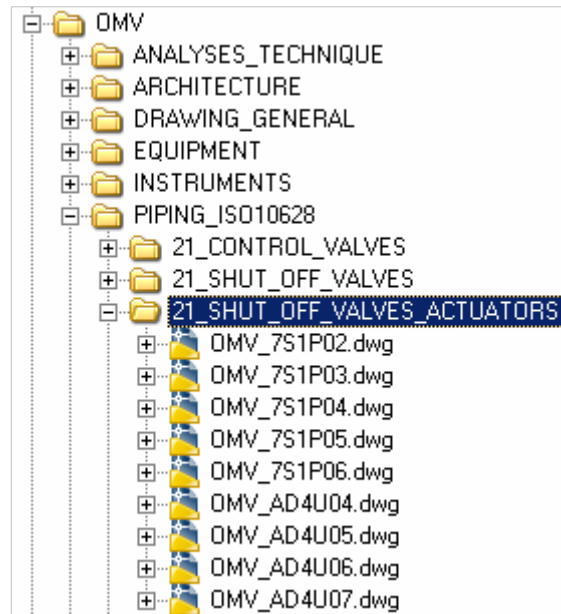


8.4. Motorized activator

Blocks for motorized activators are loadable from the directory
 ...\\Symbol s\\OMV\\Pi pi ng_ISO10628\\21_SHUT_OFF_VALVES_ACTUATOR
 S

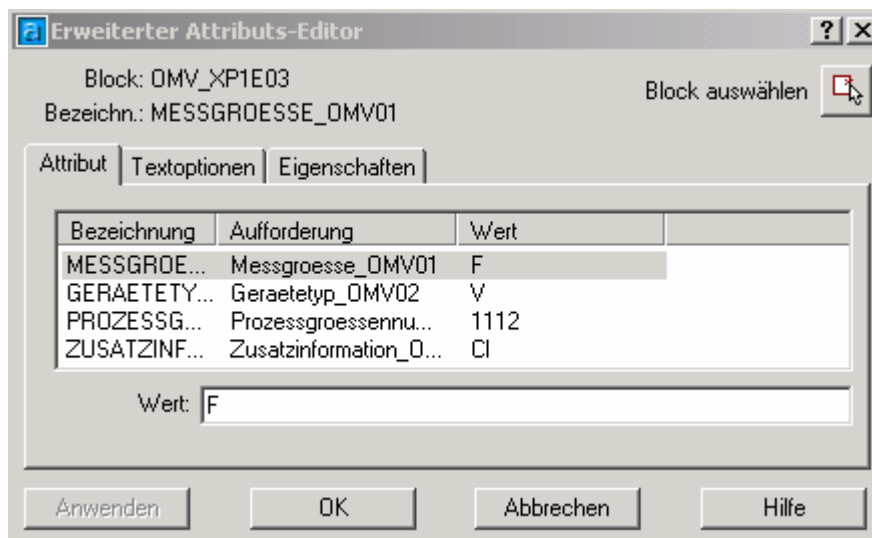
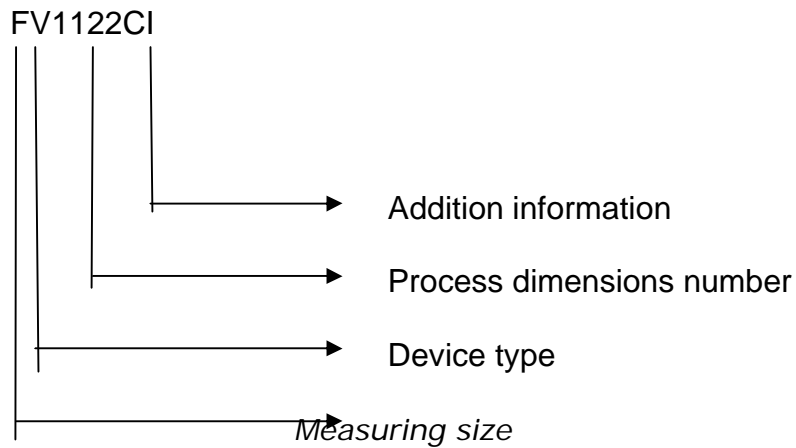
Motorized activators can be put only on shut-off valve. It is not
 allowed to put instruments.





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.:

14	komplett überarbeitet, Symbolica	12.01.04	Neswadba	Hermann
13	Änderungen Projekt 531621	20.10.13	Reiterits	Leutl
12	zur Ausführung freigegeben	13.01.02	Guerini	Hermann
10	Ausgabe	11.11.11	Wenberger	Hermann
Änd.	Art der Änderung	Datum	erstellt	geprüft
	OMV Refining & Marketing GmbH Raffinerie Schwechat Hornwödlstr. 29 A-1220 Schwechat, Austria	Projekt-Nr.	Zeichn.-Nr.	Änd.
	OMV	531479	H10-F024	04
Auftraggeber/Betrieb:	RAFFINERIE SCHWECHAT	Anlagencode	Pl. Nr.	OMV-ID:
Anlage/Objekt	Butadien/MTBE Anlage	530460091	0123456712	F
Maßstab	Benennung			
	R&I Dampf und Kondensatsystem			

Zugehörige Zeichnungen	Zeichn.-Nr.
Die OMV Refining & Marketing GmbH behält sich alle ihre Rechte an dieser Unterlage vor und wird jeden, der sie unbefugt verwendet oder weitergibt, gerichtlich belangen.	

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

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

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