

DIN EN ISO 10628-2

ICS 01.080.30; 71.020

Einsprüche bis 2010-09-26
Vorgesehen als
teilweiser Ersatz für
DIN EN ISO 10628:2001-03

Entwurf

**Schemata für die chemische und petrochemische Industrie –
Teil 2: Graphische Symbole (ISO/DIS 10628-2:2010);
Deutsche Fassung prEN ISO 10628-2:2010**

Diagrams for chemical and petrochemical industry –
Part 2: Graphical symbols (ISO/DIS 10628-2:2010);
German version prEN ISO 10628-2:2010

Schémas de procédé pour les unités de fabrication/de production –
Partie 2: Schémas de procédé (ISO/DIS 10628-2:2010);
Version allemande prEN ISO 10628-2:2010

Anwendungswarnvermerk

Dieser Norm-Entwurf mit Erscheinungsdatum 2010-07-26 wird der Öffentlichkeit zur Prüfung und Stellungnahme vorgelegt.

Weil die beabsichtigte Norm von der vorliegenden Fassung abweichen kann, ist die Anwendung dieses Entwurfes besonders zu vereinbaren.

Stellungnahmen werden erbeten

- vorzugsweise als Datei per E-Mail an fnca@din.de in Form einer Tabelle. Die Vorlage dieser Tabelle kann im Internet unter www.din.de/stellungnahme oder für Stellungnahmen zu Norm-Entwürfen der DKE unter www.dke.de/stellungnahme abgerufen werden;
- oder online im Norm-Entwurfs-Portal des DIN unter www.entwuerfe.din.de, sofern dort wiedergegeben;
- oder in Papierform an den Normenausschuss Chemischer Apparatebau (FNCA) im DIN, 10772 Berlin (Hausanschrift: Burggrafenstr. 6, 10787 Berlin).

Die Empfänger dieses Norm-Entwurfs werden gebeten, mit ihren Kommentaren jegliche relevanten Patentrechte, die sie kennen, mitzuteilen und unterstützende Dokumentationen zur Verfügung zu stellen.

Gesamtumfang 85 Seiten

Normenausschuss Chemischer Apparatebau (FNCA) im DIN

Nationales Vorwort

Dieses Dokument (prEN ISO 10628-2:2010) wurde von dem Technischen Komitee ISO/TC 10/SC 10 „Process plant documentation and tpd-symbols“ erarbeitet und durch das Europäische Gremium CEN/SS F01 „Technical drawings“, dessen Sekretariat vom CEN (Europäisches Komitee für Normung) gehalten wird, übernommen.

Das zuständige deutsche Gremium ist der Arbeitsausschuss NA 012-00-03 AA „Dokumentation für Prozessanlagen“ im Normenausschuss Chemischer Apparatebau (FNCA).

Änderungen

Gegenüber DIN EN ISO 10628:2001-03 wurden folgende Änderungen vorgenommen:

- a) Präzisierung der graphischen Symbole;
- b) Aufnahme von Änderungsmöglichkeiten für graphischen Symbole.

Schemata für die chemische und petrochemische Industrie — Teil 2: Graphische Symbole (ISO/DIS 10628-2:2010)

Schémas de procédé pour les unités de fabrication/de production — Partie 2: Schémas de procédé (ISO/DIS 10628-2:2010)

Diagrams for chemical and petrochemical industry — Part 2: Graphical symbols (ISO/DIS 10628-2:2010)

ICS:

Deskriptoren:

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Vorwort

Dieses Dokument (prEN ISO 10628-2:2010) wurde vom Technischen Komitee ISO/TC 10 „Technical product documentation“ in Zusammenarbeit mit dem Technischen Komitee CEN/TC F01 „Technical drawings“ erarbeitet, dessen Sekretariat vom gehalten wird.

Dieses Dokument ist derzeit zur parallelen Umfrage vorgelegt.

Anerkennungsnotiz

Der Text von ISO/DIS 10628-2:2010 wurde vom CEN als prEN ISO 10628-2:2010 ohne irgendeine Abänderung genehmigt.

1 Anwendungsbereich

Diese Internationale Norm legt graphische Symbole für die Erstellung von Fließschemata für verfahrenstechnische Anlagen fest.

Dieser Teil von ISO 10628 ist eine Anwendungsnorm der Normenreihe ISO 14617.

Diese Fließschemata zeigen den Aufbau und die Funktion verfahrenstechnischer Anlagen und bilden Teil der vollständigen technischen Dokumente, die für Planung, Bau, Montage, Verwaltung, Inbetriebnahme, Betrieb, Wartung und Außerbetriebnahme einer Anlage benötigt werden.

Diese Internationale Norm findet keine Anwendung für elektrotechnische Fließschemata, siehe IEC 61617.

2 Normative Verweisungen

Die folgenden zitierten Dokumente sind für die Anwendung dieses Dokuments erforderlich. Bei datierten Verweisungen gilt nur die in Bezug genommene Ausgabe. Bei undatierten Verweisungen gilt die letzte Ausgabe des in Bezug genommenen Dokuments (einschließlich aller Änderungen).

ISO ab-c:199x, *Einführendes Element — Haupt-Element — Teil c: Titel des Teils*

ISO xyz (alle Teile), *Haupt-Element der Internationalen Norm*

3 Begriffe

Für die Anwendung dieses Dokuments gelten die Begriffe nach ISO 14617, ISO 10628-1 und ISO 10209-1.

4 Einteilung der graphischen Symbole

Die graphischen Symbole wurden hinsichtlich ihrer funktionellen und/oder ihrer zeichnerischen Merkmale eingeteilt. Die ersten Symbole sind die grundlegenden gefolgt von Anwendungsbeispielen (siehe Tabelle 1).


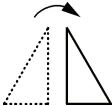
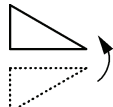

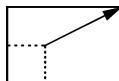

Die Registriernummern beziehen sich auf ISO 14617.

Die graphischen Symbole für die Änderungen sind in Tabelle 2 enthalten.

Tabelle 1

Abschnitt	Gruppe
5	Behälter und Tanks
6	Kolonnen mit Einbauten
7	Wärmeaustauscher
8	Dampferzeuger, Öfen, Rückkühlapparate
9	Kernkraftwerk
10	Kühlturm
11	Filter, Flüssigkeitsfilter, Gasfilter
12	Siebapparate und Rechen
13	Abscheider
14	Zentrifugen
15	Trockner
16	Zerkleinerungsmaschinen
17	Mischer/Knetter
18	Formgebungsmaschinen – Verarbeitung in vertikaler Richtung
19	Formgebungsmaschinen – Verarbeitung in horizontaler Richtung
20	Flüssigkeitspumpen
21	Kompressoren, Verdichter, Vakuumpumpen
22	Gebälse, Ventilatoren
23	Hebe-, Förder- und Transporteinrichtung
24	Waagen
25	Zuteil-, Verteileinrichtung
26	Kraft- und Arbeitsmaschine
27	Armaturen (analog Fluidtechnik)
28	Rückschlagarmaturen
29	Armaturen mit Sicherheitsfunktion
30	Rohrleitungsteile
31	Sonstige graphische Symbole für Rohrleitung
32	Rohrleitung für Kraftwerkstechnik
50	Heiz-/Kühlelemente
51	Apparatus elements
52	Einbauten
53	Rührer
54	Spezifizierungen
55	Mess-, Steuer- und Regeltechniken
56	Sonstige

Tabelle 2 — Graphische Symbole für Änderungen

Symbol	Beschreibung
	drehbar
	spiegelbar horizontal
	spiegelbar vertikal
	1:1 skalierbar
	frei skalierbar
	Bearbeitung erlaubt

5 Graphische Symbole für Fließschemata der chemischen und petrochemischen Industrie

Graphische Symbole für Einrichtungen, Maschinen und Rohrleitungen sind in Tabelle 3 zusammengefasst.

Tabelle 3 — Graphische Symbole, Einteilung, Bezeichnung und Kodierung

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5		Behälter und Tanks					
5.1	301		Gehäuse, Tank, Behälter				
5.2	2061		Container, Tank, Becken für Atmosphärendruck				
5.3	X 2063		Behälter mit konischem Dach und Flachboden				
5.4	X8200		Behälter mit gewölbten Dach und Flachboden				

Tabelle 3 (fortgesetzt)

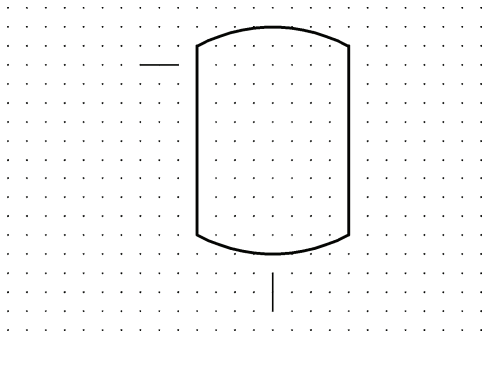


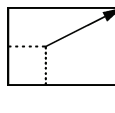

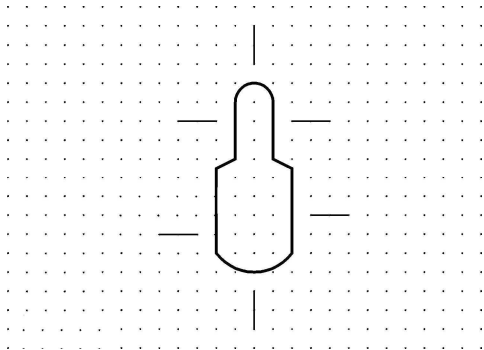

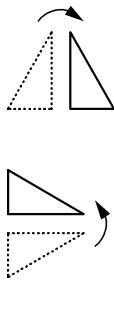
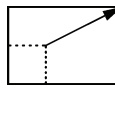

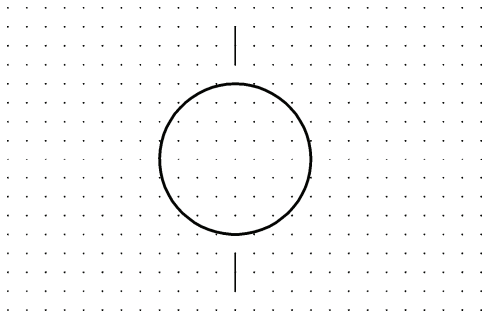

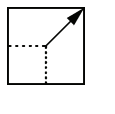
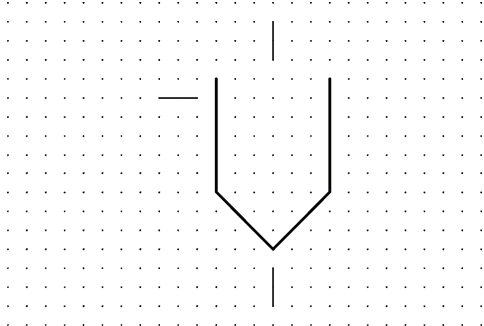
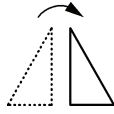
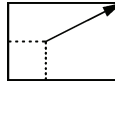

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.5	2062		Behälter mit gewölbten Böden				
5.6	X8201		Behälter mit zwei unterschiedlichen Durchmessern				
5.7	2063		Kugelbehälter				
5.8	2064		Oben offener Behälter mit konischem Boden, Bunker				

Tabelle 3 (fortgesetzt)

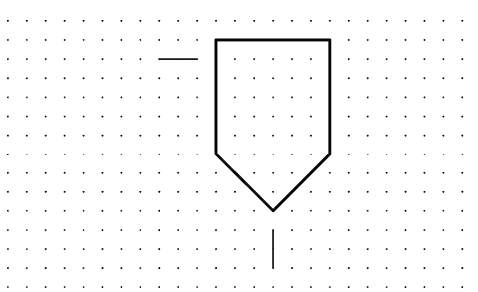
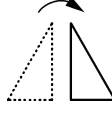
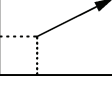

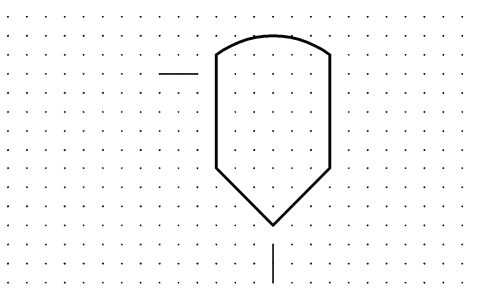
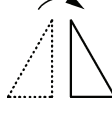
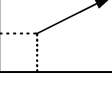

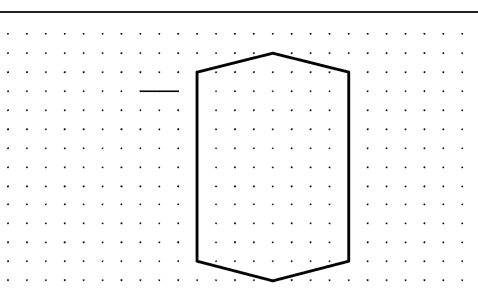
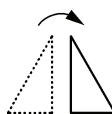

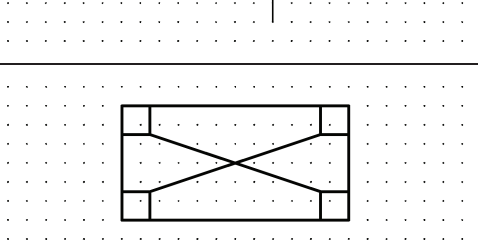
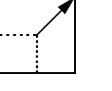
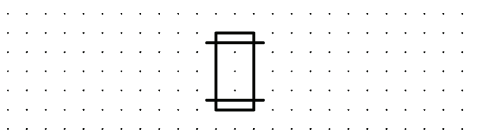

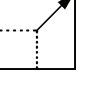
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.9	X2062		Behälter mit flachem Dach und konischem Boden, Bunker				
5.10	X8008		Behälter mit gewölbtem Dach und konischem Boden				
5.11	X8009		Behälter mit konischem Dach und Boden				
5.12	C0001		Container für feste, flüssige, gasförmige Stoffe				
5.13	2067		Gebinde, Fass, Trommel				

Tabelle 3 (fortgesetzt)




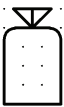


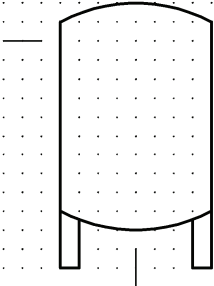
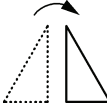
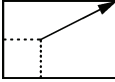

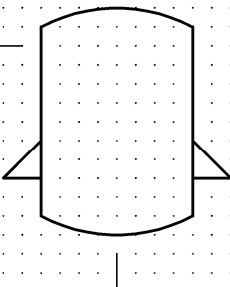
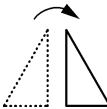
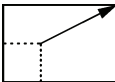

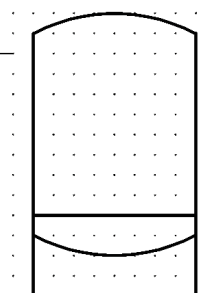
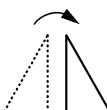
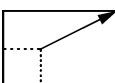

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.14	C0002		Gasflasche				
5.15	2068		Sack				
5.16	X8002		Behälter mit gewölbten Böden und Füßen				
5.17	X8003		Behälter mit gewölbten Böden und Prätzen				
5.18	X8004		Behälter mit gewölbten Böden und Standzarge				

Tabelle 3 (fortgesetzt)

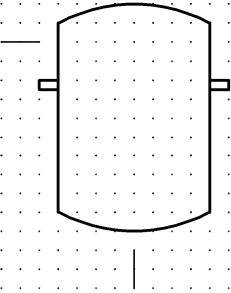
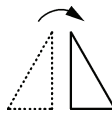
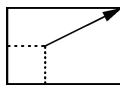

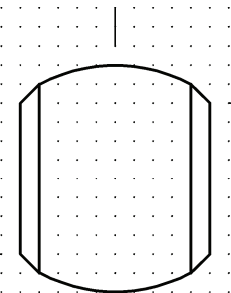

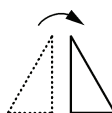
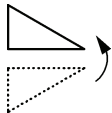
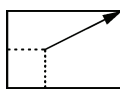

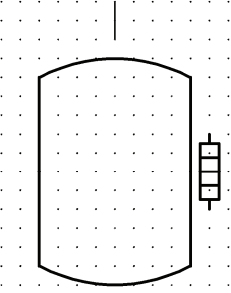

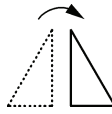
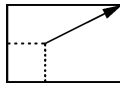

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.19	X8005		Behälter mit gewölbten Böden und Tragrings				
5.20	X2069		Behälter mit gewölbten Böden und Heiz-/Kühlmantel		 		
5.21	X2070		Behälter mit gewölbten Böden und elektrischer Außenheizung				

Tabelle 3 (fortgesetzt)

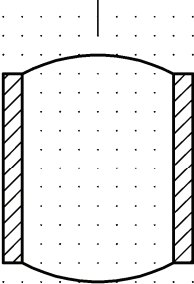

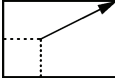

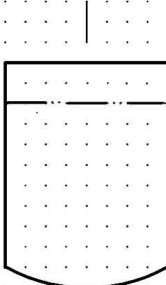
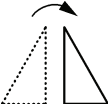
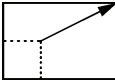

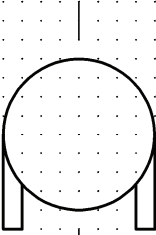

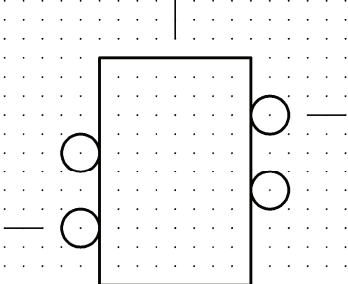

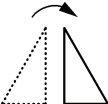
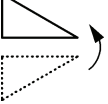
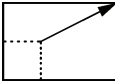

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.22	X8098		Behälter mit gewölbten Böden und Dämmung				
5.23	X8007		Behälter mit gewölbtem Boden und Flüssigkeitsoberfläche				
5.24	X8010		Kugelbehälter auf Füßen				
5.25	X8000		Behälter mit Heiz-, Kühl-Vollrohrschlange		 		

Tabelle 3 (fortgesetzt)

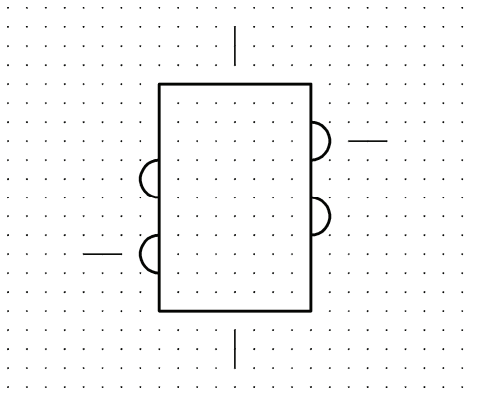


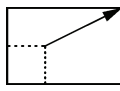

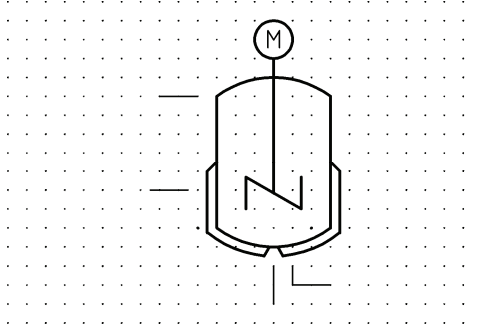
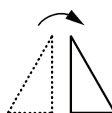
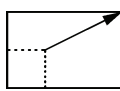

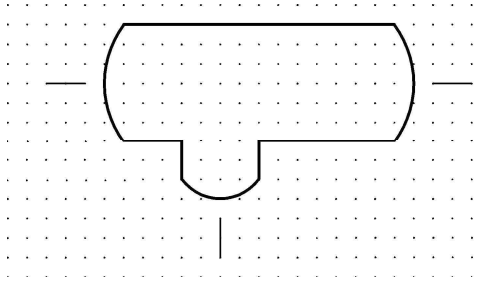
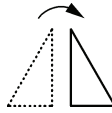
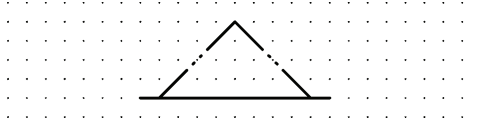
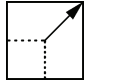
Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
5.26	X8001		Behälter mit Heiz-, Kühl-Halbrohrschlange				
5.27	X8006		Behälter mit gewölbten Böden, Mantel und Rührwerk mit Antrieb durch Elektromotor				
5.28	X8202		Druckbehälter mit Sumpf				
5.29	2065		offene Schüttgutlagerung				

Tabelle 3 (fortgesetzt)

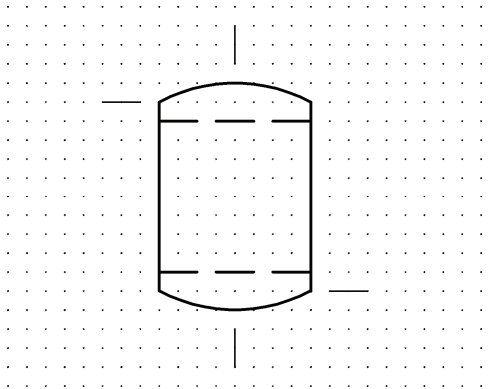
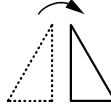
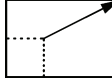
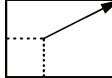

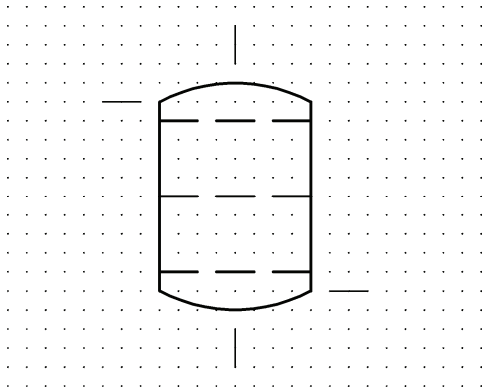
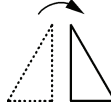
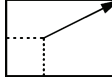
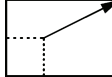

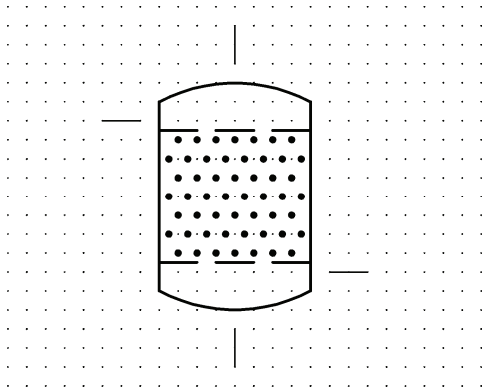
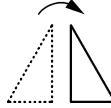
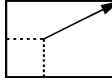
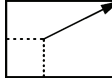

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen				
				drehen	spiegeln	skalieren	bearbeiten	
6		Kolonnen mit Einbauten						
6.1	X8100		Kolonne (allgemein)					
6.2	X8101		Bodenkolonne (allgemein)					
6.3	X8014		Kolonne mit Fließbett					

Tabelle 3 (fortgesetzt)

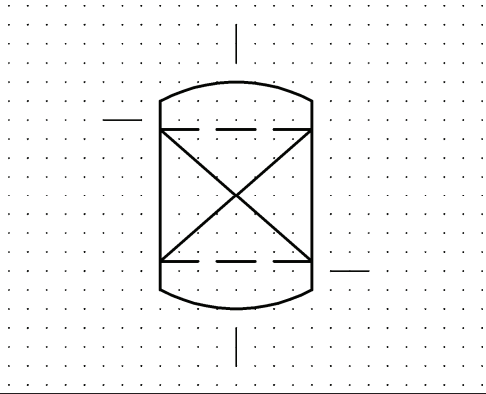
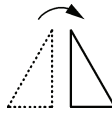
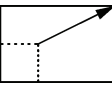

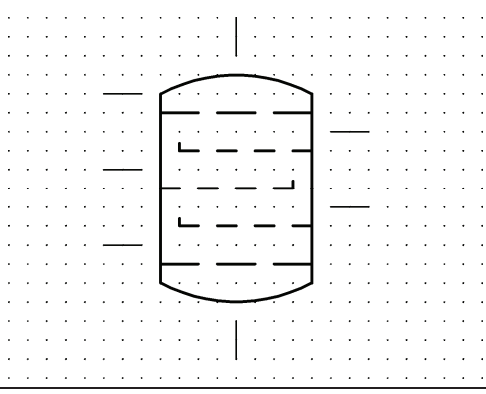
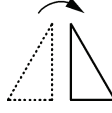
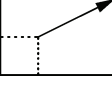

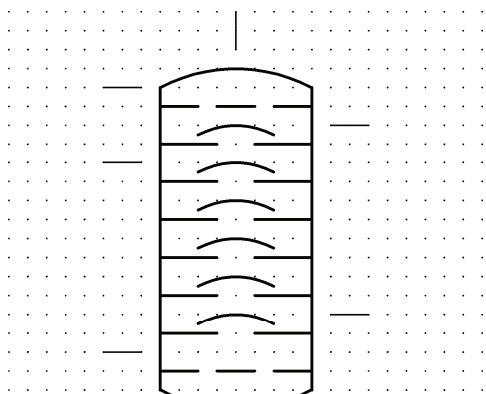
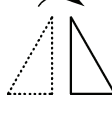
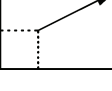

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
6.4	X8015		Kolonne mit Festbett				
6.5	X2626		Kolonne mit versetzten Böden und Wehren				
6.6	X8011		Glockenboden- kolonne				

Tabelle 3 (fortgesetzt)

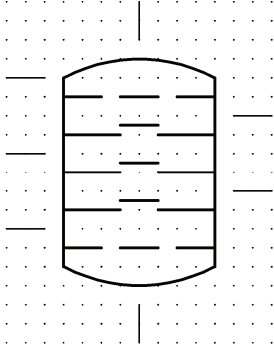
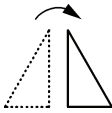
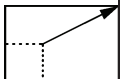

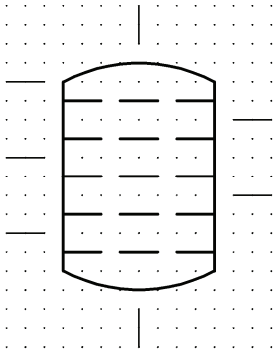
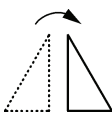

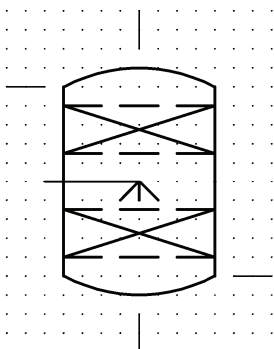
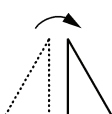
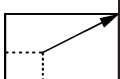

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
6.7	X8012		Ventilboden- kolonne				
6.8	X8013		Siebboden- kolonne				
6.9	X8016		Kolonne mit zwei Festbett- zonen und dazwischen- liegender Sprühdüse				

Tabelle 3 (fortgesetzt)

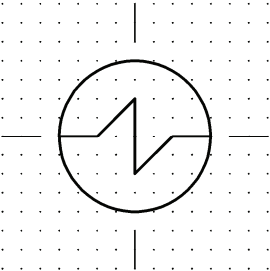

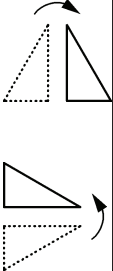
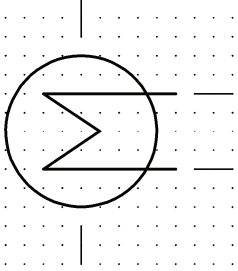

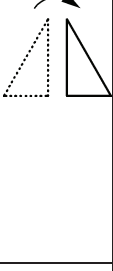
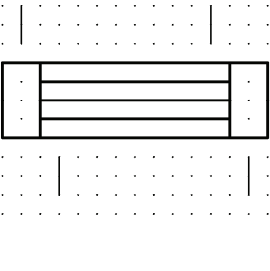

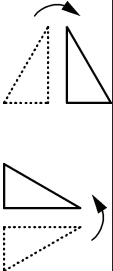
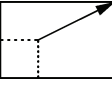
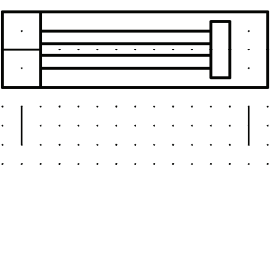

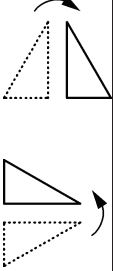
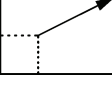
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
7		Wärmeaustauscher					
7.1	X2501		Wärmeaus- tauscher (allgemein)				
7.2	X8017		Wärmeaus- tauscher (M- Form)				
7.3	2511		Rohrbündel- Wärmeaus- tauscher mit Festböden				
7.4	2512		Rohrbündel- Wärmeaus- tauscher mit Schwimmkopf				

Tabelle 3 (fortgesetzt)

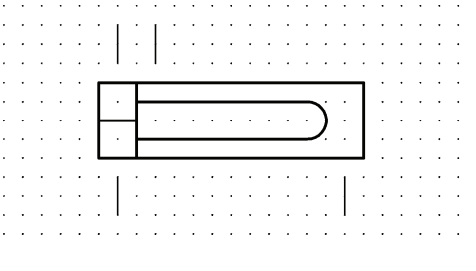
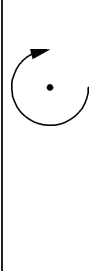
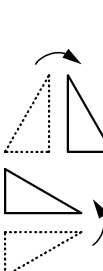
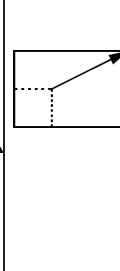
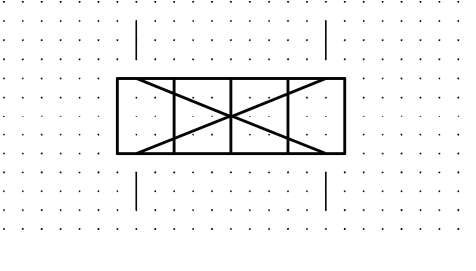
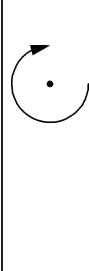
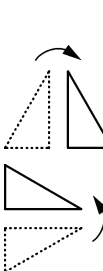
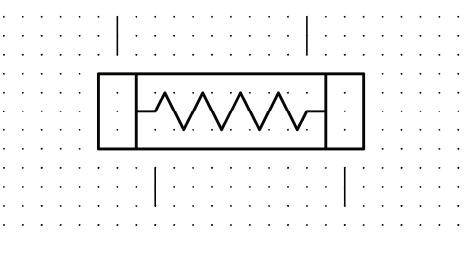
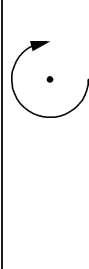
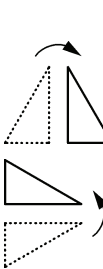
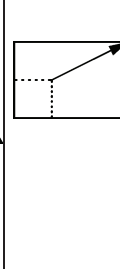

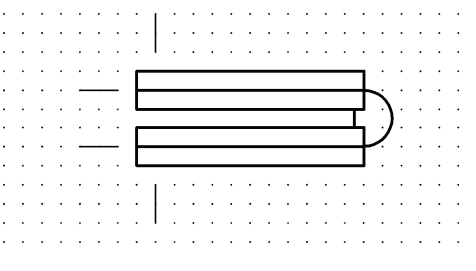
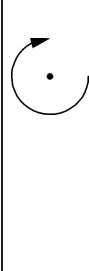
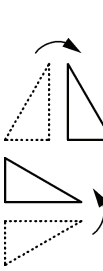
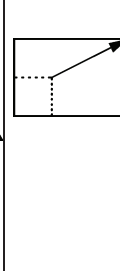
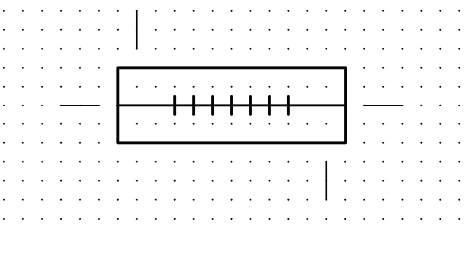
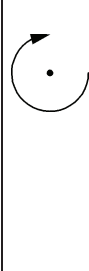
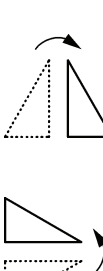
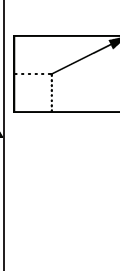

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
7.5	2513		Rohrbündel- Wärmeaus- taucher mit U-Rohr				
7.6	2516		Platten- Wärmeaus- taucher				
7.7	2514		Wärmeaus- taucher mit Rohrschlange				
7.8	2515		Doppelrohr- Wärmeaus- taucher				
7.9	X8018		Rippenrohr- Wärmeaus- taucher				

Tabelle 3 (fortgesetzt)

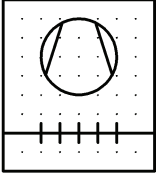

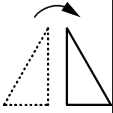
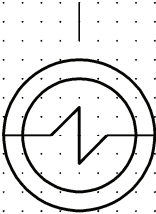

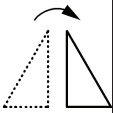
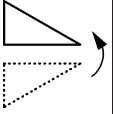
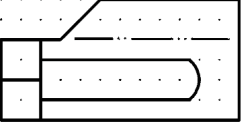

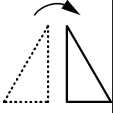
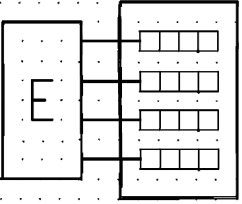

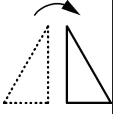
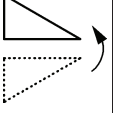
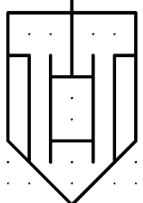

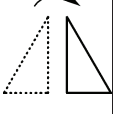
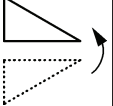
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
7.10	X2505		Rippenrohr- Wärmeaus- taucher mit Lüfter				
7.11	C0005		Spiral- Wärmeaus- taucher		 		
7.12	X8131		Rohrbündel- Wärmeaus- taucher mit integriertem Brüdenraum				
7.14	X8132		Elektroerhitzer		 		
7.15X	X8133		Dünnschicht- verdampfer		 		

Tabelle 3 (fortgesetzt)

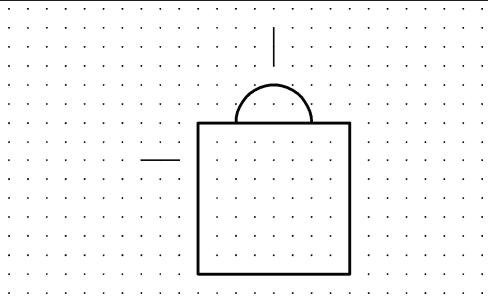
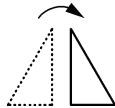

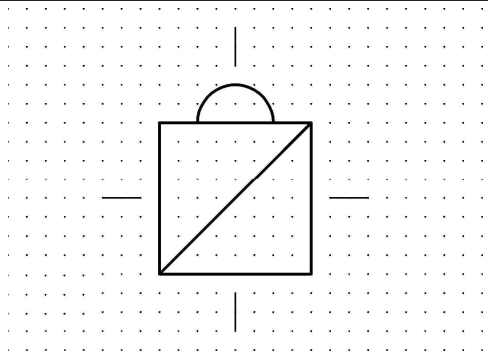

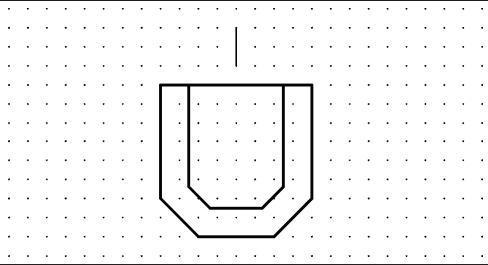

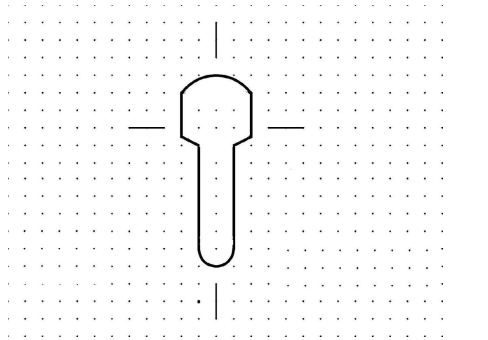
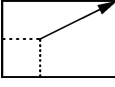

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
8		Dampferzeuger, Öfen, Rückkühlapparate					
8.1	2532		Dampfkessel, Wasserdampf- erzeuger				
8.2	X8103		Wasser-/ Dampf- umformer				
8.3	2533		Ofen				
8.4	X8102		Dampf- erzeuger				

Tabelle 3 (fortgesetzt)

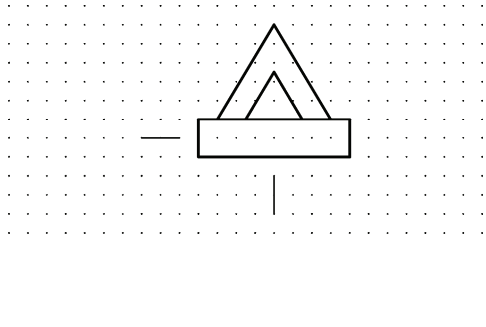

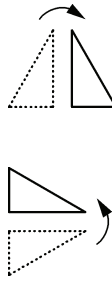
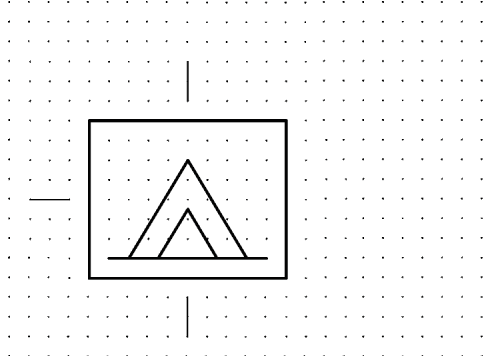

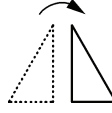

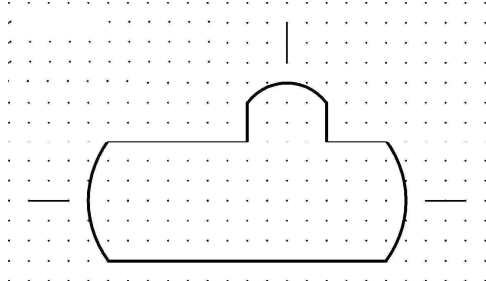
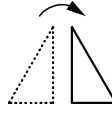
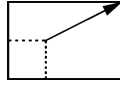

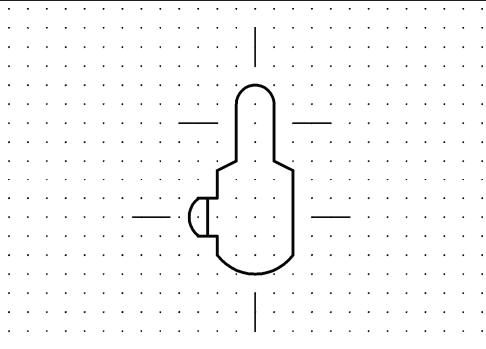
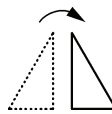
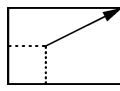

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
8.5	X8107		Feuerung, Brenner (allgemein)				
8.6	X8106		Brennkammer				
8.7	X8108		Druckbehälter mit Dampfdom				
8.8	X8104		Entgaser, Verdampfer- kolonne				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
8.9	X8105		Druckhalter				
8.10	2041		Schornstein, Kamin				
8.11	2591		Fackel für Gase				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
9		Kernkrafttechnik					
9.1	C0036		Reaktor- behälter, Kernreaktor				
9.2	C0037		Reaktordruck- behälter, Schnitt				
9.3	C0038		Druckwasser- reaktor				
9.4	C0039		Siedewasser- reaktor				

Tabelle 3 (fortgesetzt)

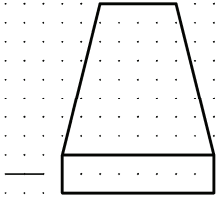
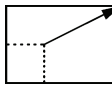

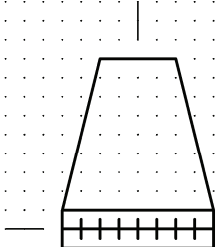
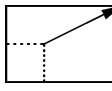

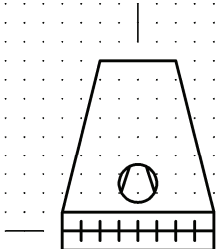
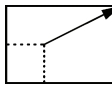

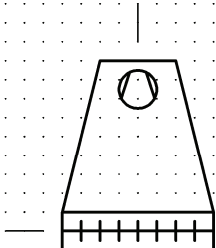
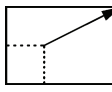

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
10		Kühlturm					
10.1	C0036		Kühlturm (allgemein)				
10.2	X8109		Trocken- kühlturm mit natürlichem Zug				
10.3	X8110		Trocken- kühlturm mit drückendem Lüfter				
10.4	X8111		Trocken- kühlturm mit saugendem Lüfter				

Tabelle 3 (fortgesetzt)

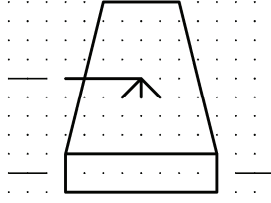
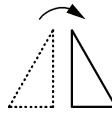
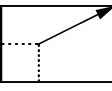

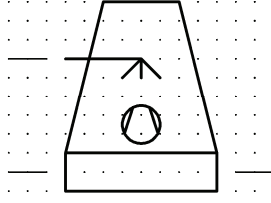
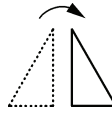
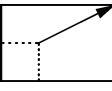

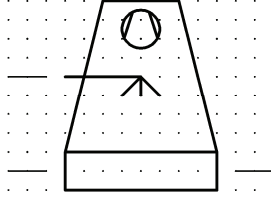
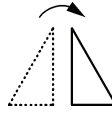
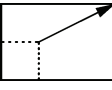

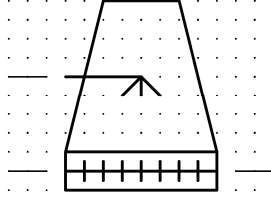
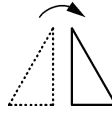
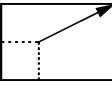

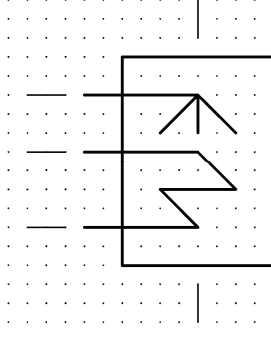
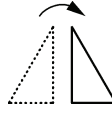
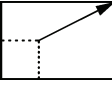

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
10.5	X8112		Nasskühlturm mit natürlichem Zug				
10.6	X8113		Nasskühlturm mit drückendem Lüfter				
10.7	X8114		Nasskühlturm mit saugendem Lüfter				
10.8	X8115		Nass- und Trocken- kühlturm mit natürlichem Zug				
10.9	X2504		Rieselkühler				

Tabelle 3 (fortgesetzt)

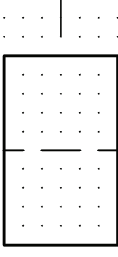
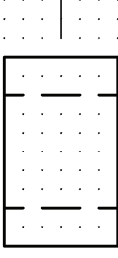

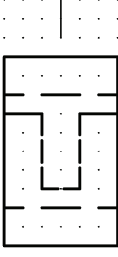
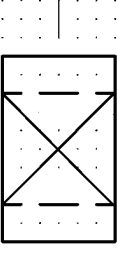
Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
11	Filter, Flüssigkeitsfilter, Gasfilter						
11.1	2601		Filterapparat, Fluidfilter (allgemein)				
11.2	X8116		Flüssigkeitsfilter (allgemein)				
11.3	X8117		Schlauch-, Taschen-, Kerzen-, Patronenfilter für Flüssigkeiten				
11.4	X8118		Festbettfilter, Schüttschichtfilter (allgemein)				

Tabelle 3 (fortgesetzt)

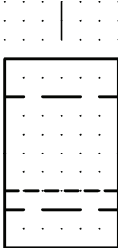
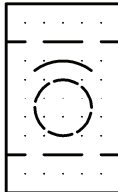
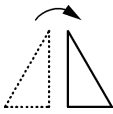
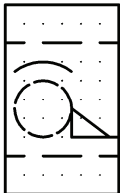
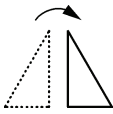
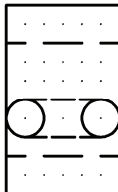
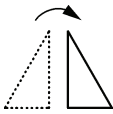
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
11.5	X8019		Nutsenfilter				
11.6	X8119		Trommel- drehfilter, Scheiben- drehfilter				
11.7	X8120		Trommel- drehfilter, Scheiben- drehfilter mit Schaber				
11.8	X8121		Bandfilter				

Tabelle 3 (fortgesetzt)

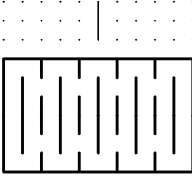
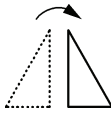
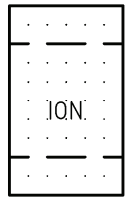
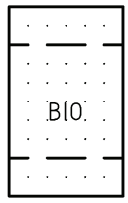
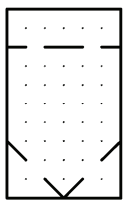
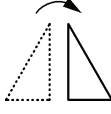
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
11.9	X2611		Filterpresse				
11.10	X8020		Ionenaus- tauschfilter				
11.11	X8021		Biologischer Filter (Aktivmasse- filter)				
11.12	X8122		Gasfilter, Luftfilter (allgemein)				

Tabelle 3 (fortgesetzt)

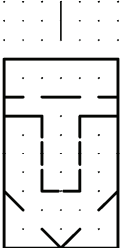
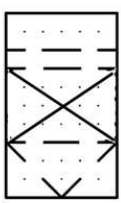
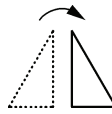
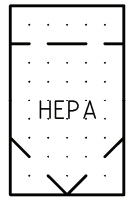
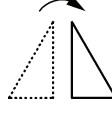
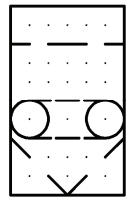
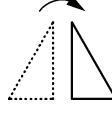
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
11.13	X8022		Schlauch-, Taschen-, Kerzen-, Patronenfilter für Gase				
11.14	X8023		Festbettfilter/ Schütt- schichtfilter für Gase				
11.15	X8024		Rollbandfilter für Gase				
11.16	X8025		Gasfilter mit Rollband				

Tabelle 3 (fortgesetzt)

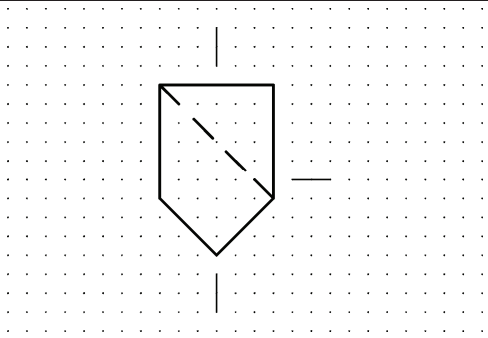
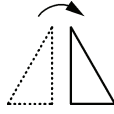
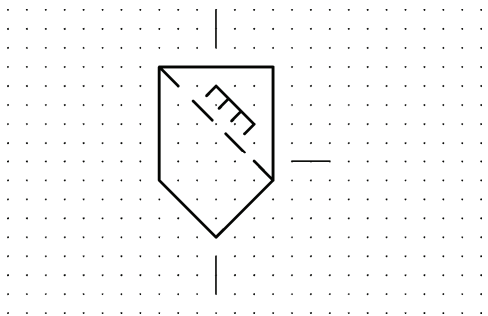
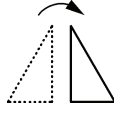
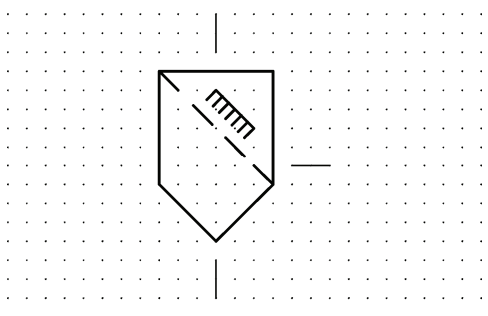
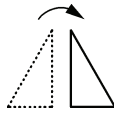
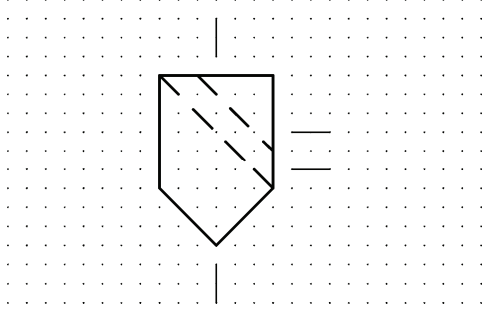
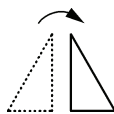
Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
12	Siebapparate und Rechen						
12.1	X8123		Siebapparat				
12.2	X8026		Grobrechen				
12.3	X8027		Feinrechen				
12.4	X8028		Siebapparat mit zwei Sieben				

Tabelle 3 (fortgesetzt)

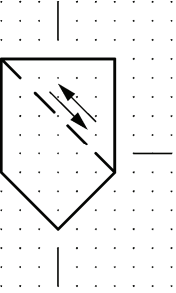
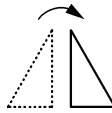
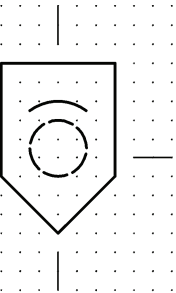
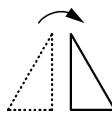
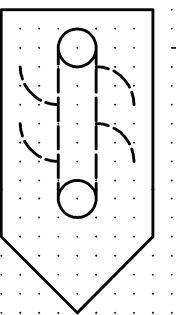
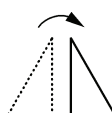
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
12.5	X2605		Vibrierender Sieb				
12.6	X8029		Trommel(dreh) sieb				
12.7	X8030		Korbbandsieb- maschine				

Tabelle 3 (fortgesetzt)

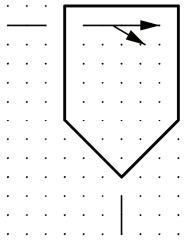
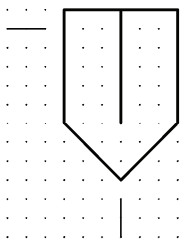
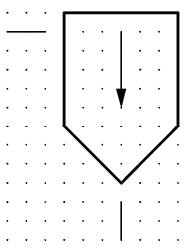
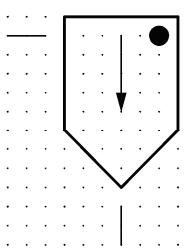
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
13	Abscheider						
13.1	X2601		Abscheider/ Sichter (allgemein)				
13.2	X2616		Prall- abscheider				
13.3	X8031		Schwerkraftab- scheider, Absetzkammer				
13.4	X8032		Abscheider, trocken arbeitend (allgemein)				

Tabelle 3 (fortgesetzt)

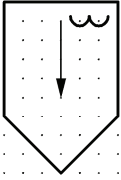
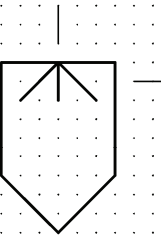
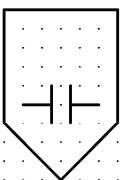
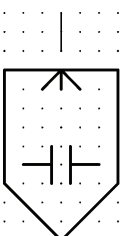
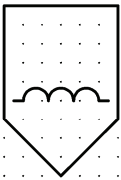
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
13.5	X8124		Naßabscheider (allgemein)				
13.6	X2621		Abscheider mit Sprühdüse und konischem Boden				
13.7	X8125		Elektro- statischer Abscheider				
13.8	X8033		Elektro- statischer Nass- abscheider				
13.9	X8126		Elektro- magnetischer Abscheider				

Tabelle 3 (fortgesetzt)

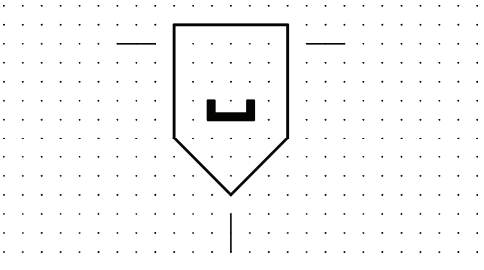
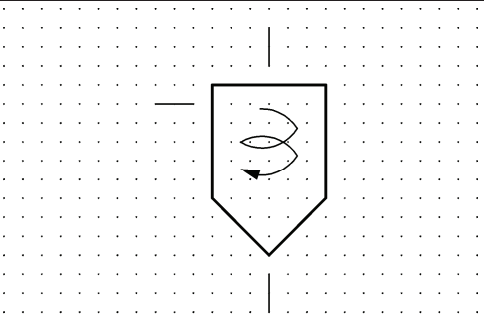
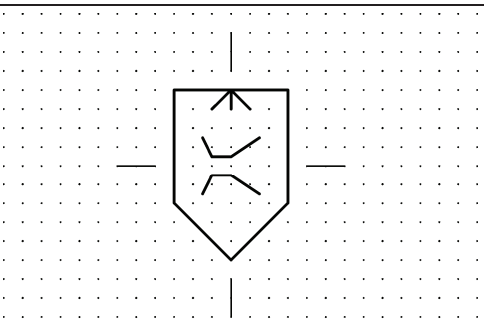
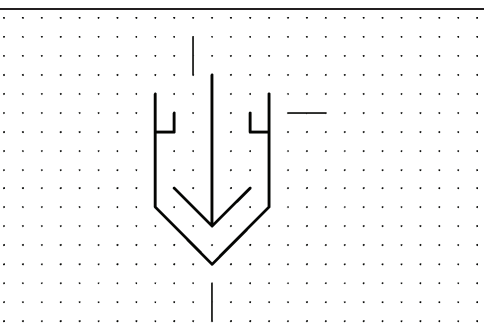
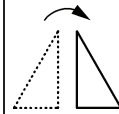

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
13.10	X8127		Abscheider mit Permanentmagnet				
13.11	X2618		Fliehkraft-, Rotationsabscheider, Zyklon				
13.12	X8034		Venturiabscheider, Venturiwäscher				
13.13	X8128		Eindicker (offen) für Kläranlagen				

Tabelle 3 (fortgesetzt)

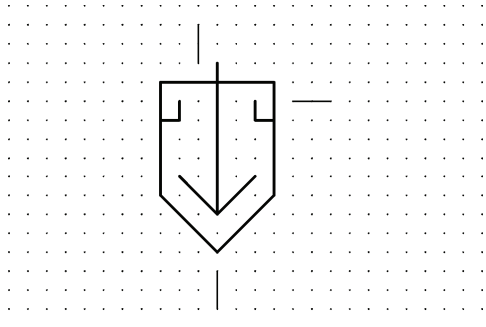
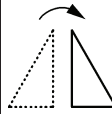

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
13.14	X8129		Eindicker (geschlossen)				

Tabelle 3 (fortgesetzt)

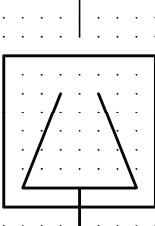
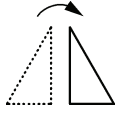
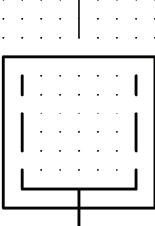
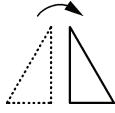
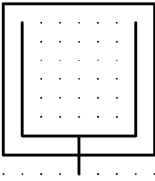
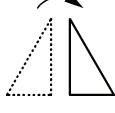
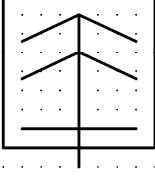
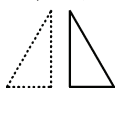
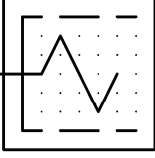
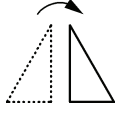
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
14	Zentrifugen						
14.1	X2619		Zentrifuge (allgemein)				
14.2	X2614		Zentrifuge mit Siebmantel				
14.3	X8035		Zentrifuge mit Vollmantel				
14.4	X8036		Teller- zentrifuge, Tellerseparator				
14.5	X8037		Sieb- schnecken- zentrifuge				

Tabelle 3 (fortgesetzt)

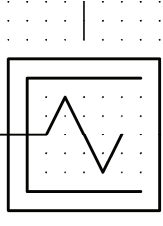
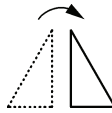
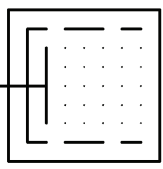
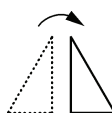
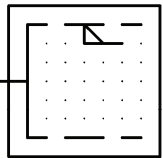
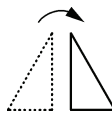
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
14.6	X2620		Vollmantel- schnecken- zentrifuge, Dekanter				
14.7	X8038		Schub- zentrifuge				
14.8	X8039		Schäl- zentrifuge				

Tabelle 3 (fortgesetzt)

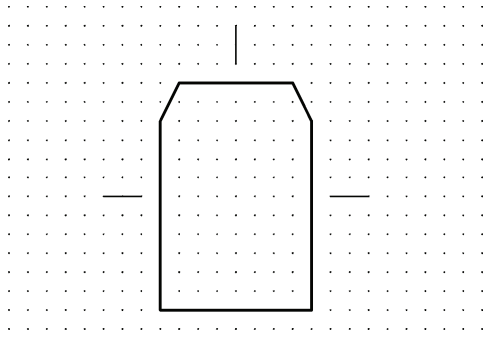
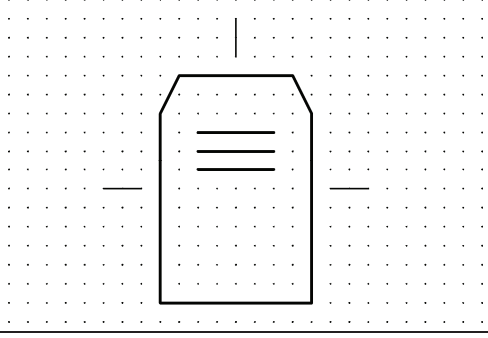
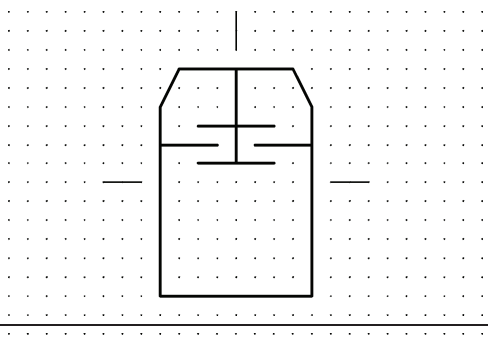
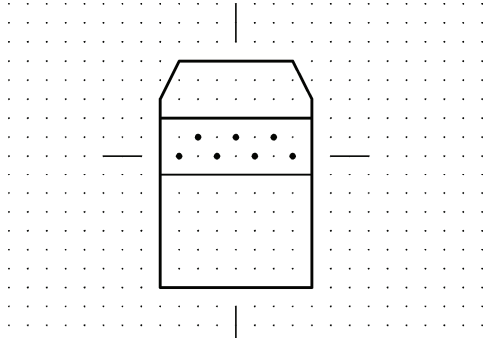

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
15		Trockner					
15.1	C0046		Trockner (allgemein)				
15.2	C0047		Schrank-, Kammer-, Horden- trockner				
15.3	X8040		Tellertrockner, Hordenumlauf- trockner, Ring- Etagentrockner				
15.4	X8041		Wirbelschicht- trockner, Fließbett- trockner				

Tabelle 3 (fortgesetzt)

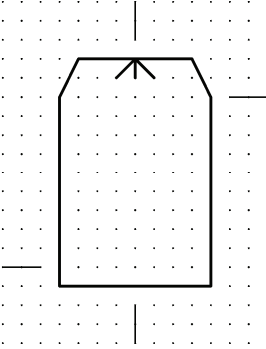

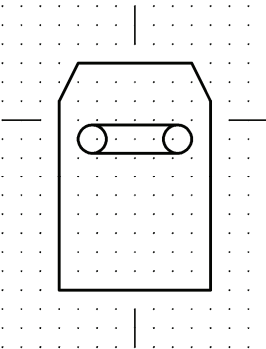

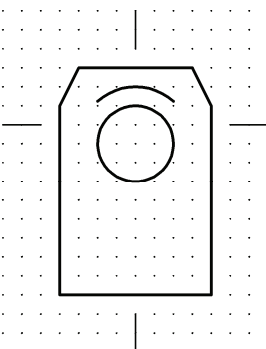
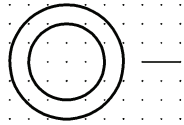

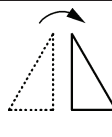
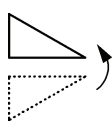

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
15.5	X8042		Zerstäubungstrockner				
15.6	X8043		Bandtrockner, Rollenbandtrockner				
15.7	X8044		Drehtrommel-trockner, Taumel-trockner				
15.8	C0016		Wärme-verbraucher		 		

Tabelle 3 (fortgesetzt)

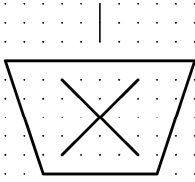
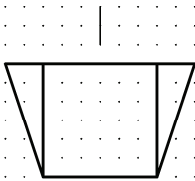
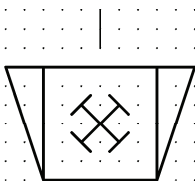
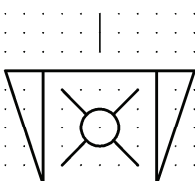
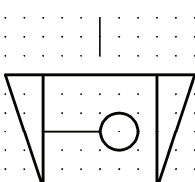
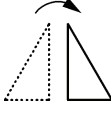
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
16	Zerkleinerungsmaschinen						
16.1	C0048		Zerkleinerungsmaschine (allgemein)				
16.2	C0049		Brecher (allgemein)				
16.3	X8045		Hammerbrecher				
16.4	X8046		Prallbrecher				
16.5	X8047		Backenbrecher				

Tabelle 3 (fortgesetzt)

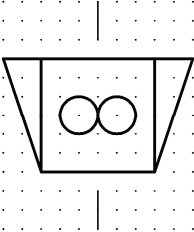
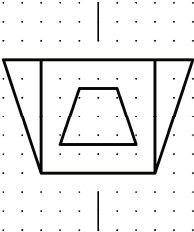
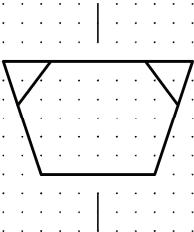
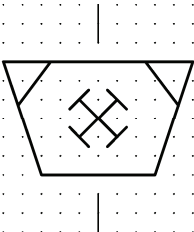
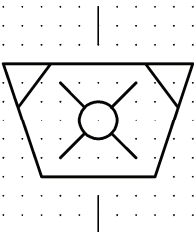
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
16.6	X8048		Walzenbrecher				
16.7	X8049		Kegelbrecher				
16.8	C0050		Mühle (allgemein)				
16.9	X8050		Hammer-, Schlägermühle				
16.10	X8051		Prallmühle				

Tabelle 3 (fortgesetzt)

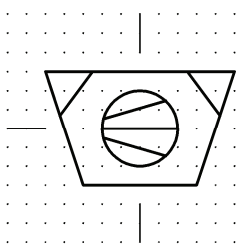
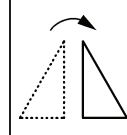
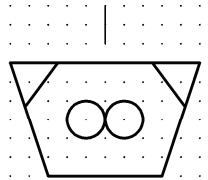
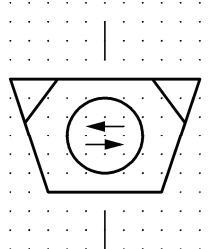
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
16.11	X8052		Gas-, Strahlmühle				
16.12	X8053		Walzenmühle				
16.13	X8054		Schwingmühle				

Tabelle 3 (fortgesetzt)

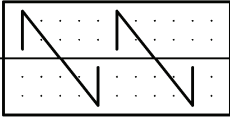
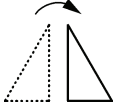

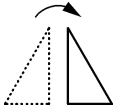

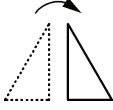
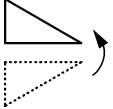
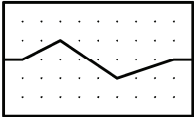
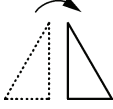
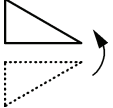
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
17		Mischer/Kneter					
17.1	X2672		Dynamischer Mischer (allgemein)				
17.2	X2673		Statischer Mischer (allgemein)				
17.3	X8184		Mischstrecke		 		
17.4	X8134		Kneter		 		

Tabelle 3 (fortgesetzt)

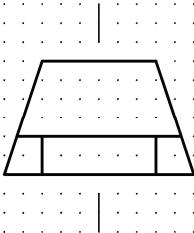
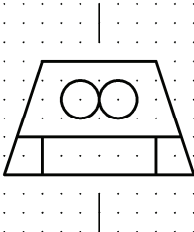
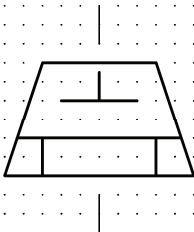
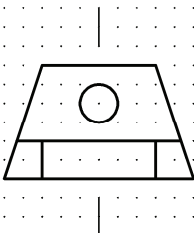
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
18	Formgebungsmaschinen — Verarbeitung in vertikaler Richtung						
18.1	C0052		Vertikal arbeitende Formgebungsmaschine (allgemein)				
18.2	X8055		Walzenpresse				
18.3	X8056		Stempelpresse				
18.4	X8057		Pelletierteller				

Tabelle 3 (fortgesetzt)

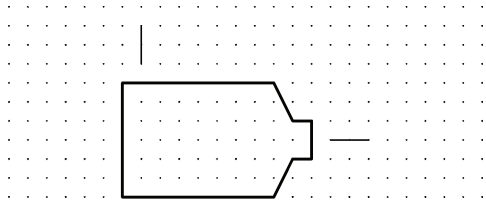
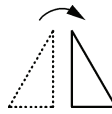
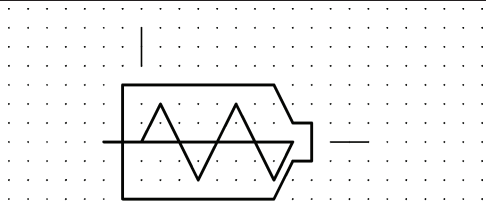
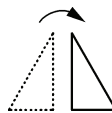
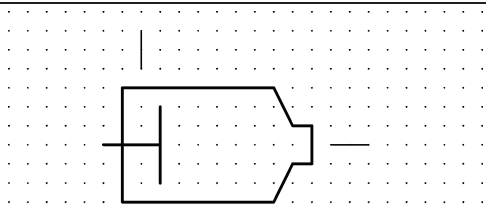
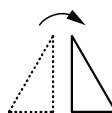
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
19	Formgebungsmaschinen — Verarbeitung in horizontaler Richtung						
19.1	C0053		Horizontal arbeitende Formgebungsmaschine (allgemein)				
19.2	X8058		Schnecken- presse				
19.3	X8059		Strangpresse				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
20	Flüssigkeitspumpen						
20.1	2301		Flüssigkeits- pumpe (allgemein)				
20.2	X8135		Verdränger- pumpe (allgemein)				
20.3	2322		Kreiselpumpe				
20.4	C0054		Zahnradpumpe				
20.5	C0055		Schrauben- spindelpumpe				
20.6	C0056		Exzenter- schnecken- pumpe				
20.7	C0057		Hubkolben- pumpe				

Tabelle 3 (fortgesetzt)

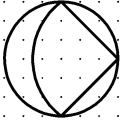

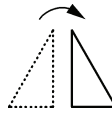


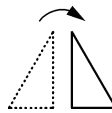
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
20.8	C0058		Membran- pumpe				
20.9	C0059		Strahlflüssig- keitspumpe				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
21		Kompressoren, Verdichter, Vakuumpumpen					
21.1	2302		Verdichter, Kompressor, Vakuumpumpe (allgemein)				
21.2	X8179		Zentrifugal- verdichter				
21.3	X8180		Verdränger- verdichter				
21.4	C0060		Hubkolben- verdichter, Hubkolben- vakuumpumpe				
21.5	C0061		Hubkolben- Membran- verdichter, Membran- vakuumpumpe				
21.6	C0062		Turbo- verdichter, Turbovakuum- pumpe				
21.7	C0063		Drehschieber- verdichter, Rotations- verdichter, Drehschieber- vakuumpumpe				

Tabelle 3 (fortgesetzt)

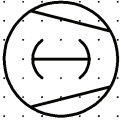

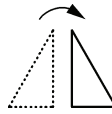


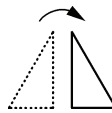
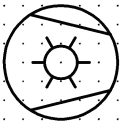

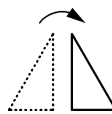
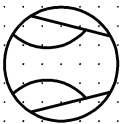

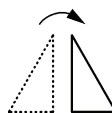
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
21.8	C0064		Rotations- verdichter, Wälzkolben- vakuumpumpe				
21.9	C0065		Schrauben- verdichter				
21.10	C0066		Flüssigkeits- ringverdichter, Flüssigkeits- ringvakuumpumpe				
21.11	C0067		Strahl- verdichter, Treibmittel- vakuumpumpe				

Tabelle 3 (fortgesetzt)

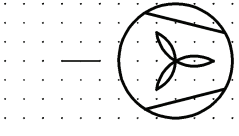

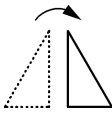
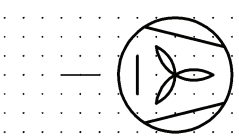


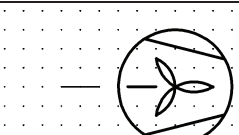

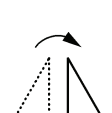
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
22		Gebälse, Ventilatoren					
22.1	C0068		Ventilator (allgemein)				
22.2	C0069		Radial- ventilator				
22.3	C0070		Axialventilator				

Tabelle 3 (fortgesetzt)

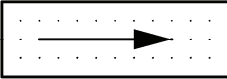

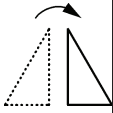
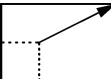

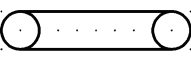

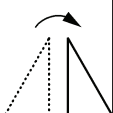
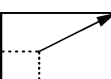

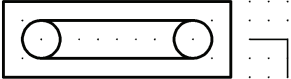

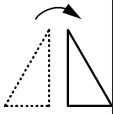
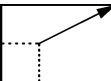

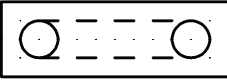

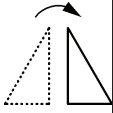
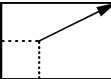

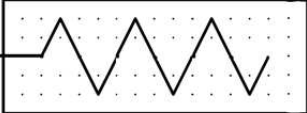

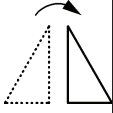
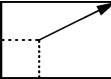



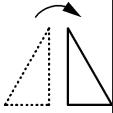
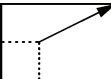

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
23		Hebe-, Förder- und Transporteinrichtung					
23.1	X8060		Stetigförderer				
23.2	X8061		Bandförderer				
23.3	X8061 A		Bandförderer allgemein mit Einhausung				
23.4	X8062		Kettenförderer				
23.5	X8063		Schneckenförderer				
23.6	X8064		Schwingförderer, Schwingrohr, Schwingrinne				

Tabelle 3 (fortgesetzt)

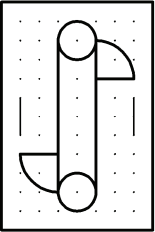

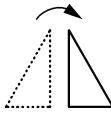
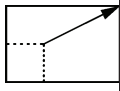

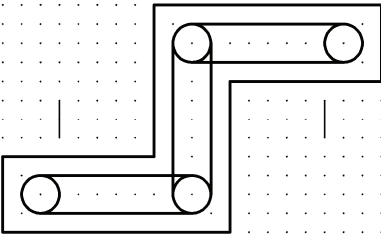
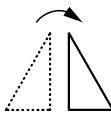
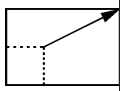

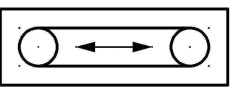
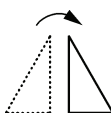
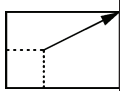

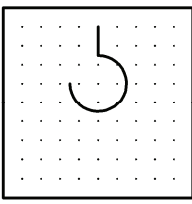

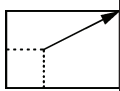

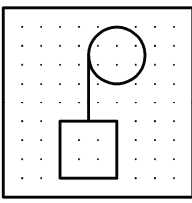
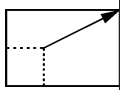

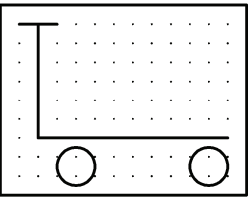
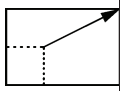

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
23.7	X8065		Becherwerk mit Einhausung				
23.8	X8066		Becherwerk Z-Form mit Einhausung				
23.9	X8175		Bandförderer wechselseitig				
23.10	3841		Kran				
23.11	3842		Aufzug				
23.12	C0094		Hubwagen				

Tabelle 3 (fortgesetzt)

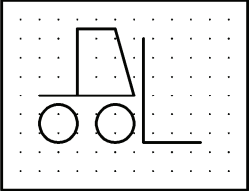
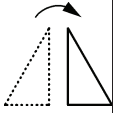
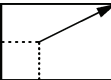

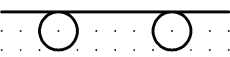
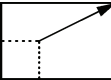

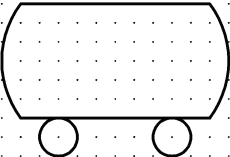
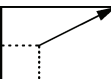

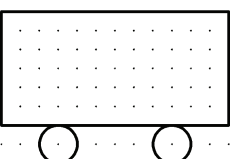
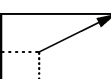

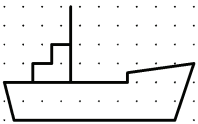
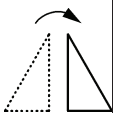
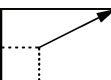


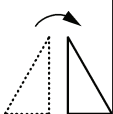
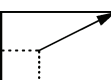

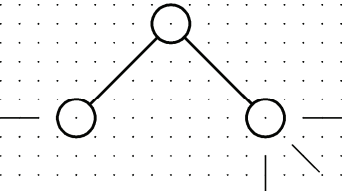
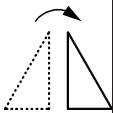
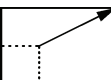

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
23.13	3862		Gabelstapler				
23.14	3871		Flurförderer				
23.15	3874		Tankwagen, Kesselwagen				
23.16	3872		Kastenwagen				
23.17	3881		Schiff				
23.18	X8142		Rollenbahn				
23.19	X8143		Verladearm				

Tabelle 3 (fortgesetzt)

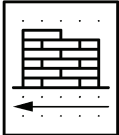
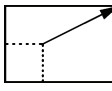

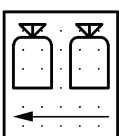
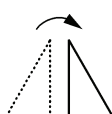
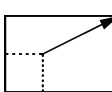

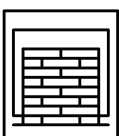
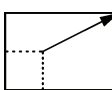

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
23.20	X8145		Palettierung				
23.21	X8146		Absack- maschine				
23.22	X8144		Paletten- sicherer				

Tabelle 3 (fortgesetzt)

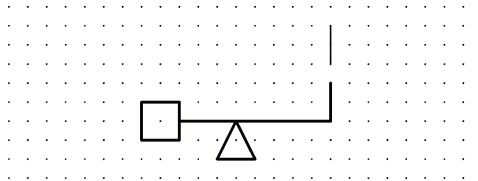
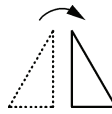
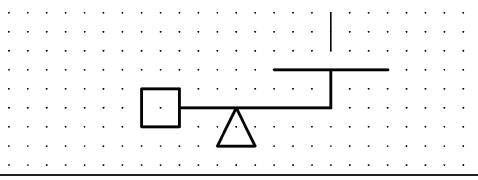
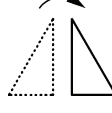
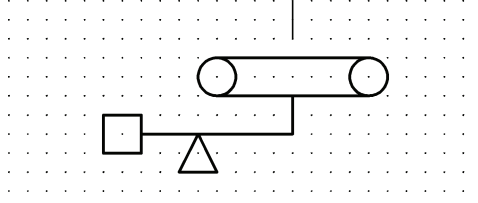
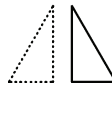
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
24		Waagen					
24.1	C0071		Waage (allgemein)				
24.2	C0072		Plattform-, Boden-, Brückenwaage				
24.3	C0073		Bandwaage				

Tabelle 3 (fortgesetzt)


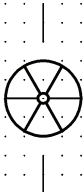
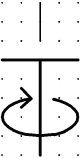
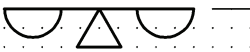


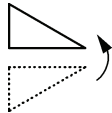
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
25		Zuteil-, Verteileinrichtung					
25.1	C2056		Zuteil- einrichtung				
25.2	X8067		Zellrad- schleuse				
25.3	C0074		Drehteller				
25.4	C0035		Dosier- einrichtung				
25.5	2037		Sprühdüse				

Tabelle 3 (fortgesetzt)

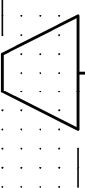

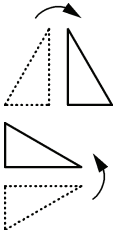
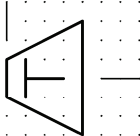

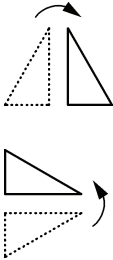
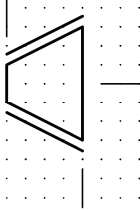

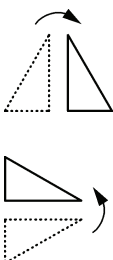
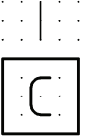

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
26	Kraft- und Arbeitsmaschine						
26.1	2571		Antriebs- maschine				
26.2	X8081		Antriebs- maschine mit Hubkolben				
26.3	X8082		Antriebs- maschine mit Expansion des Arbeitsstoffes (Turbine)				
26.4	C0077		Kupplung				
26.5	C0078		Getriebe				

Tabelle 3 (fortgesetzt)

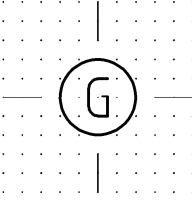
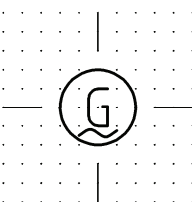
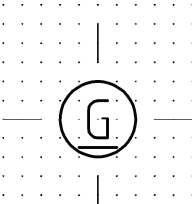
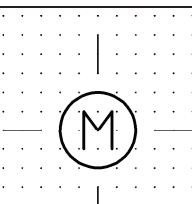
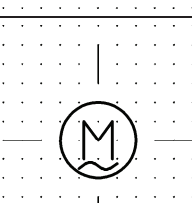
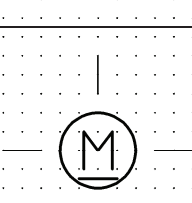
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
26.6	C0079		Stromerzeuger (allgemein)				
26.7	C0080		Stromerzeuger Wechselstrom AC				
26.8	C0081		Stromerzeuger Gleichstrom DC				
26.9	C0082		Elektromotor (allgemein)				
26.10	C0083		Elektromotor, Wechselstrom AC				
26.11	C0084		Elektromotor, Wechselstrom AC				

Tabelle 3 (fortgesetzt)

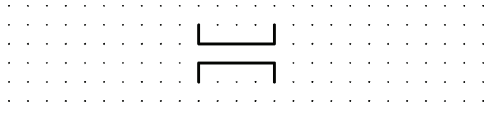

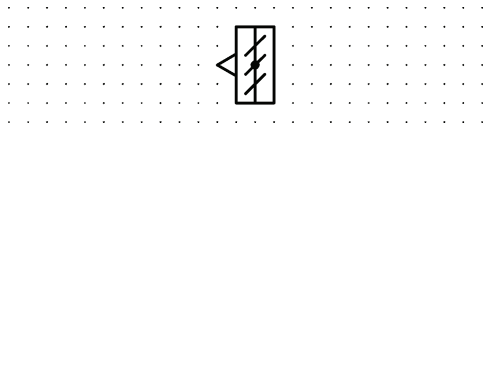

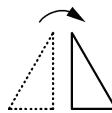
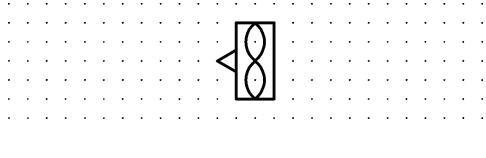

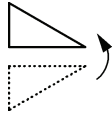
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
26.12	C0033		Lager				
26.13	C0026		Leitschaufel- Verstellein- richtung				
26.14	C0027		Laufschaufel- Verstellein- richtung				

Tabelle 3 (fortgesetzt)



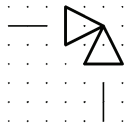

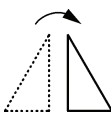
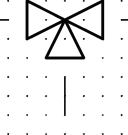

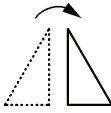


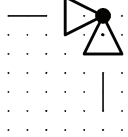

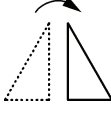
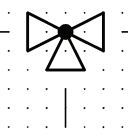

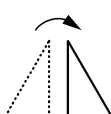
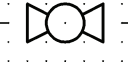

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
27		Armaturen (analog Fluidtechnik)					
27.1	2101		Absperr- armatur (allgemein)				
27.2	2102		Absperr- armatur in Eckform (allgemein)				
27.3	2103		Dreiweg- armatur (allgemein)				
27.4	X8068		Absperrventil				
27.5	X8069		Absperrventil in Eckform				
27.6	X8070		Absperr- Dreiwegventil				
27.7	X8071		Absperrhahn				

Tabelle 3 (fortgesetzt)

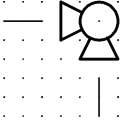

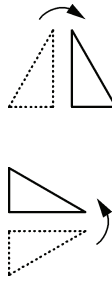
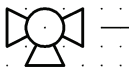

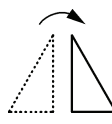






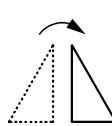
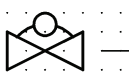

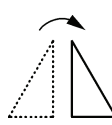


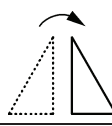
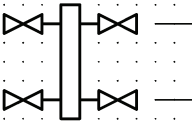

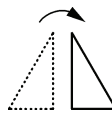
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
27.8	X8072		Absperrhahn in Eckform (allgemein)				
27.9	X8073		Dreiwegehahn (allgemein)				
27.10	X8074		Absperr- schieber				
27.11	X8075		Absperrklappe				
27.12	X8076		Nadelventil				
27.13	C0011		Absperr- armatur mit Umföhrung				
27.14	C0086		Armatur mit stetigem Stellverhalten				
27.15	X8147		Verteiler 4fach				

Tabelle 3 (fortgesetzt)

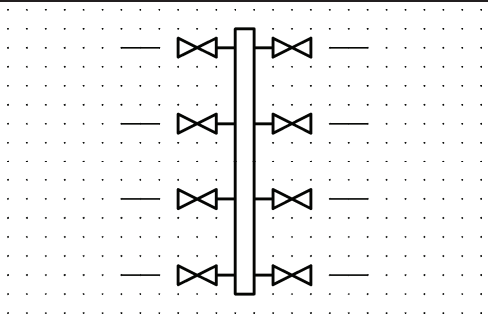

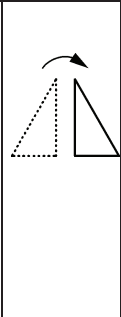
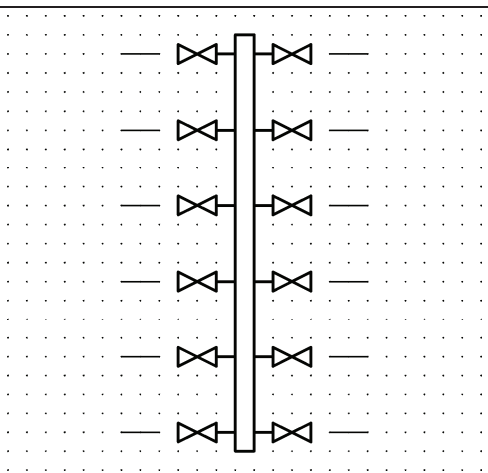

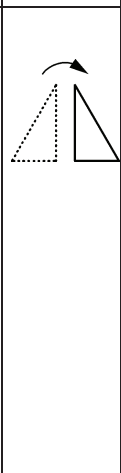
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
27.16	X8148		Verteiler 8fach				
27.17	X8149		Verteiler 12fach				

Tabelle 3 (fortgesetzt)



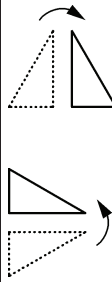


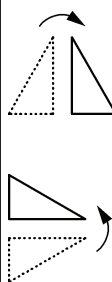


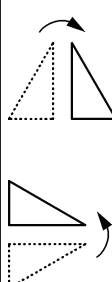
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
28		Rückschlagarmaturen					
28.1	X8077		Rückschlag- armatur (allgemein)				
28.2	X2113		Rückschlag- ventil				
28.3	X8078		Rückschlag- klappe				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
29		Armaturen mit Sicherheitsfunktion					
29.1	2112		Sicherheits- ventil (allgemein)				
29.2	X2124		Sicherheits- ventil (federbelastet)				
29.3	X8079		Sicherheits- ventil in Eckform (allgemein)				
29.4	X2125		Sicherheits- ventil in Eckform, federbelastet				
29.5	X8080		Berstscheibe				
29.6	C0013		Rohrtrenner, Systemtrenner für Trinkwasser- systeme				

Tabelle 3 (fortgesetzt)

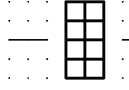

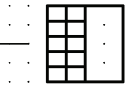

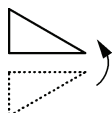
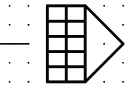

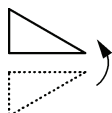
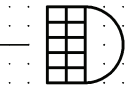

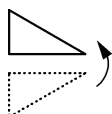
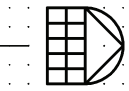

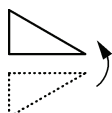
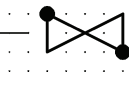

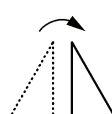
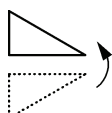
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
29.7	2036		Flammen- sperre				
29.8	C0087		Explosions- sichere Flammen- sperre				
29.9	C0088		Detonations- sicherung				
29.10	C0091		Dauerbrand- sicherung				
29.11	C0089		Dauerbrand- sichere Detonations- sicherung mit Auslass zur Atmosphäre				
29.12	C0090		Be- und Entlüftungs- armatur, Über-/ Unterdruck- sicherung		 		

Tabelle 3 (fortgesetzt)



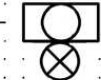

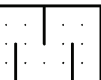

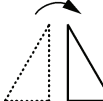

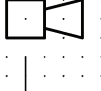

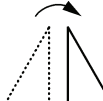
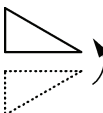




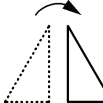
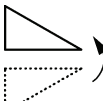
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
30		Rohrleitungsteile					
30.1	2034		Schauglas				
30.2	C0092		Lichtglas				
30.3	2033		Schalldämpfer				
30.4	C0093		Mischdüse, Injektor		 		
30.5	533		Kompensator				
30.6	C0095		Schmutzfänger		 		

Tabelle 3 (fortgesetzt)

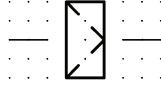

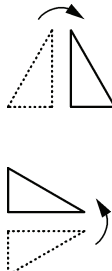
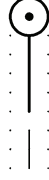

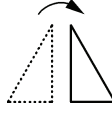
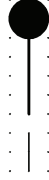

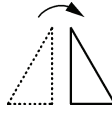
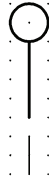

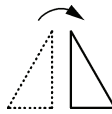
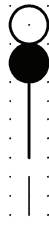

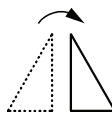


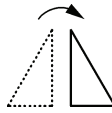
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
30.7	X8150		Hutsieb/ Anfahrtsieb				
30.8	C0096		Drosselscheibe				
30.9	C0097		Blindscheibe				
30.10	C0098		Offenscheibe				
30.11	C0099		Umsteck- scheibe (Blindscheibe in Funktion)				
30.12	X8145		Umsteck- scheibe (Offenscheibe in Funktion)				

Tabelle 3 (fortgesetzt)


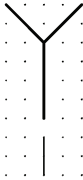



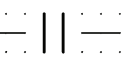



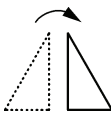


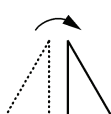
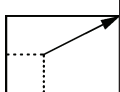

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
30.13	2039		Auslass zur Atmosphäre für Dampf/Gas				
30.14	2040		Trichter				
30.15	2181		Kondensat- ableiter				
30.16	511		Flanschpaar (allgemein)				
30.17	516		Reduzierung (allgemein)				
30.18	X411		Schlauch				

Tabelle 3 (fortgesetzt)



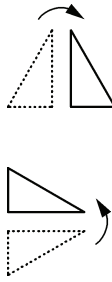
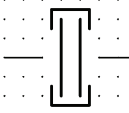

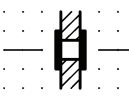


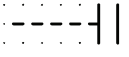

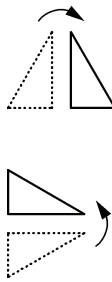

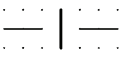

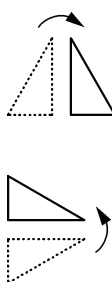


Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
30.19	C0100		Kupplung				
30.20	513		Klemmflansch				
30.21	C0108		Mauerdurch- bruch/Wand- durchbruch				
30.25	X8151		geflossener Blinddeckel				
30.26	X8126		Einzelner Flansch				
30.27	X8153		Blinddeckel				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
31		Sonstige graphische Symbole für Rohrleitung					
31.1	X8155		Rohrleitung				
31.2	X8156		Nebenleitung				
31.3	241		Bewegung in Flussrichtung				
31.4	C0103		Pfeil für Ein- bzw. Ausgang wichtiger Stoffe				
31.5	X8158		Pendel Ein- bzw. Ausgang wichtiger Stoffe				
31.6	3061		Gefälle				
31.7	C0105		Grenze (allgemein)				
31.8	2038		Syphon				

Tabelle 3 (fortgesetzt)

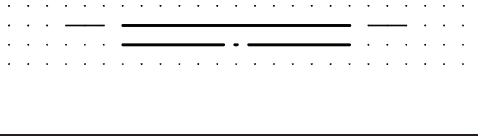

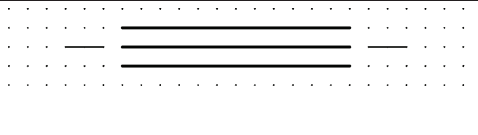

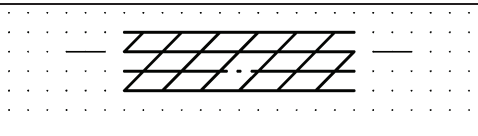

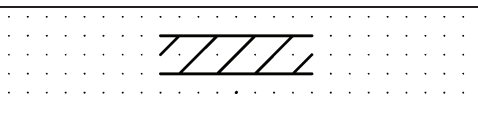

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
31.9	C0106		Rohr beheizt oder gekühlt				
31.10	X409		Rohr mit Mantelrohr oder mit Schutzrohr				
31.11	X8174		Rohr beheizt oder gekühlt und gedämmt				
31.12	X8157		Rohr gedämmt				

Tabelle 3 (fortgesetzt)

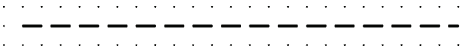



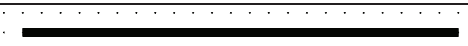

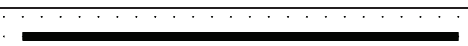



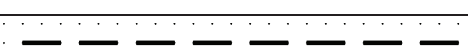

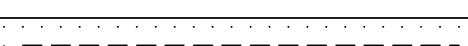

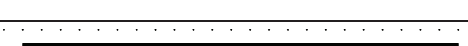

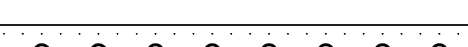

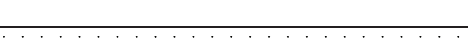

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
32	Rohrleitung für Kraftwerkstechnik						
32.1	C0109		Wirklinie				
32.2	C0110		Rohrleitung von angrenzenden Systemen				
32.3	C0111		Verbraucherleitung				
32.4	C0112		Druckleitung				
32.5	C0113		Tankleitung				
32.6	C0114		Steuerleitung				
32.7	C0115		Leckölleitung				
32.8	C0116		Dampf				
32.9	C0017		Ölhaltiger Dampf				
32.10	C0118		Wasser (Hauptrohrleitung)				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
32.11	C0119		Ölhaltiges Wasser				
32.12	C0120		Rohwasser				
32.13	C0121		Schlammwasser, Schmutzwasser				
32.14	C0122		Lösungen, Chemikalien				
32.15	C0123		Öl (z. B. Heizöl, Steueröl, Schmieröl)				
32.16	C0124		Luft				
32.17	C0125		Brennbare Gase				
32.18	C0126		Nicht brennbare Gase				
32.19	C0127		Feste Brennstoffe				
32.20	C0128		Brennbare Abfälle				
32.21	C0129		Sonstige Stoffe				

Tabelle 3 (fortgesetzt)





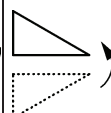

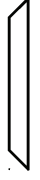

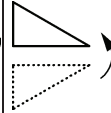

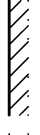

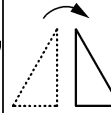

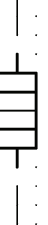


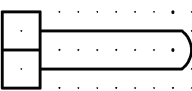

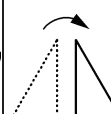
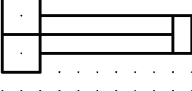

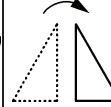
Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
50	Heiz-/Kühlelemente						
50.1	C2000		Vollrohrschlange				
50.2	C2001		Halbrohrschlange				
50.3	C2003		Heiz-/Kühlmantel (wird an die Kontur des Apparates angepasst)				
50.4	C2045		Dämmung (wird an die Kontur des Apparates angepasst)				
50.5	C2004		Elektrische (Außen-) Heizung				
50.6	X8136		U-Rohrbündel				
50.7	X8137		Schwimmkopf-Bündel				

Tabelle 3 (fortgesetzt)

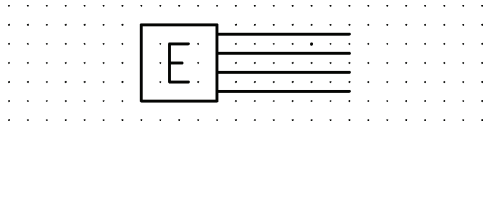
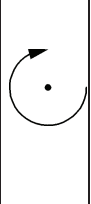
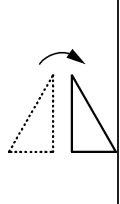
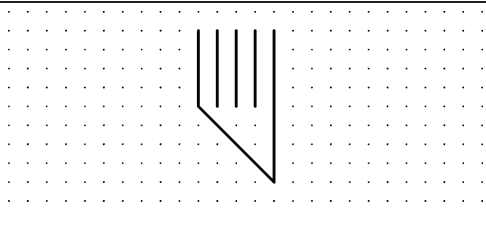
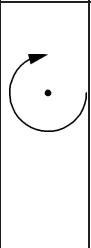
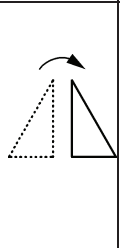
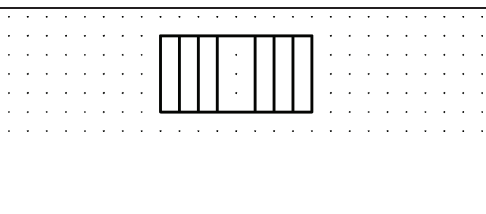
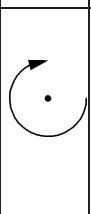
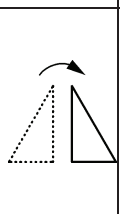
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
50.8	X8138		Elektroerhitzer, Einsteckbündel				
50.9	X8139		Innenliegender Plattenwärme- austauscher				
50.10	X8140		Innenliegender Rohrbündel- wärmeaus- tauscher				

Tabelle 3 (fortgesetzt)

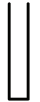


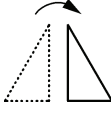

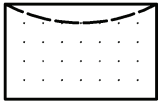




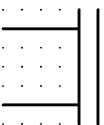

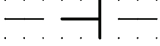

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
51	Apparatus elements						
51.1	C2005		Fuß, Standfuß				
51.2	C2006		Pratze				
51.3	C2007		Standzarge				
51.4	C2008		Tragring				
51.5	C0033		Lager				
51.6	X8159		Mannloch				
51.7	X8160		Stutzen				

Tabelle 3 (fortgesetzt)

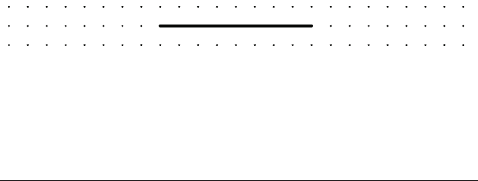
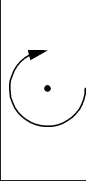

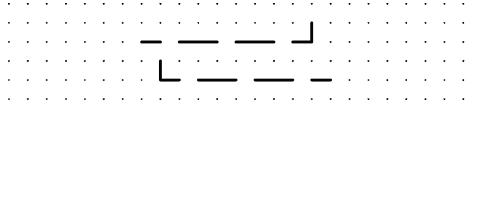
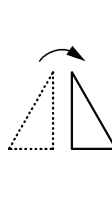

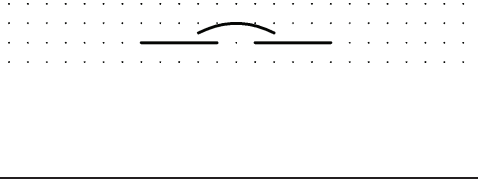


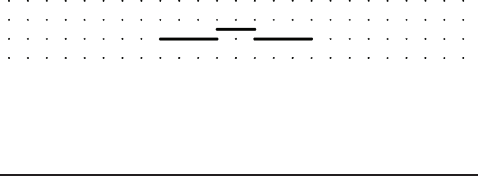


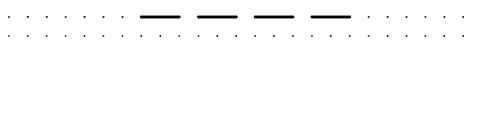


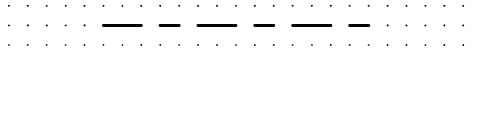


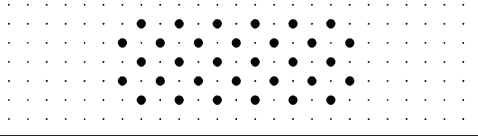


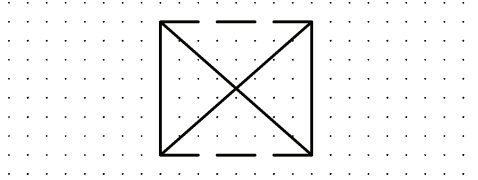


Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
52		Einbauten					
52.1	C2044		Boden (allgemein)				
52.2	C2009		Boden mit Wehr				
52.3	C2010		Glockenboden				
52.4	C2011		Ventilboden				
52.5	2602		Siebboden, Sieb-/Rechen- element				
52.6	C2047		Filterelement				
52.7	2604		Wirbelbett				
52.8	X8141		Packung				

Tabelle 3 (fortgesetzt)





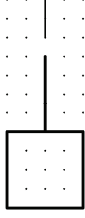



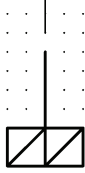















Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
53		Rührer					
53.1	2672		Rührer (allgemein)				
53.2	C2019		Blattrührer				
53.3	C2020		Giterrührer				
53.4	C2021		Kreuzbalkenrührer				
53.5	C2022		Ankerührer				
53.6	C2023		Wendelrührer				

Tabelle 3 (fortgesetzt)

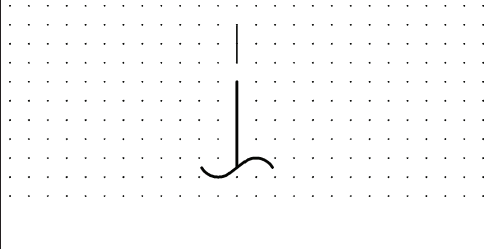

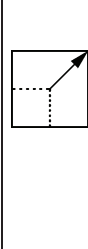

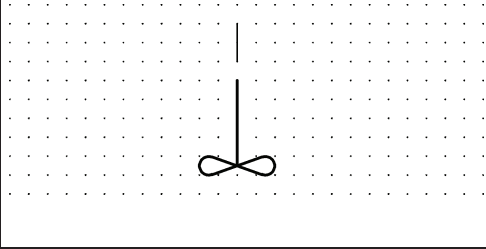

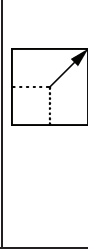

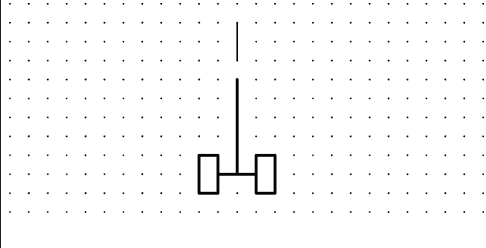

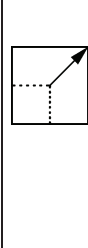

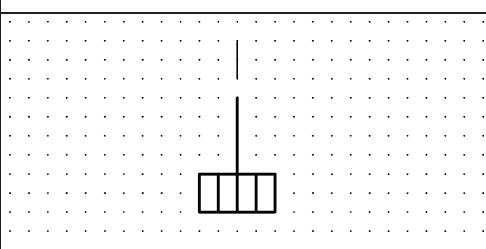

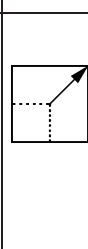

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
53.7	C2024		Impellerrührer				
53.8	C2025		Propeller- rührer				
53.9	C2026		Scheiben- rührer				
53.10	C2027		Kreiselrührer, Turbinen- rührer				

Tabelle 3 (fortgesetzt)

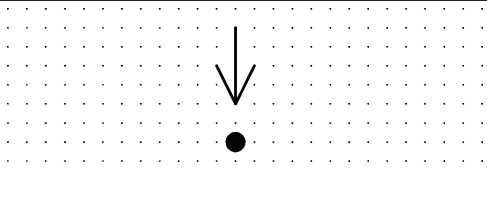
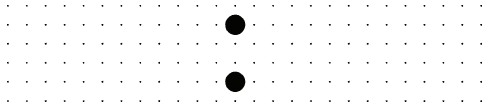
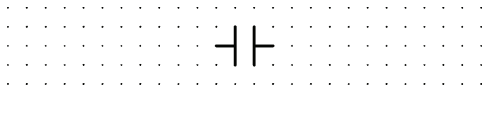

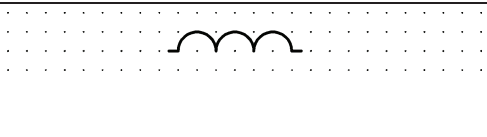

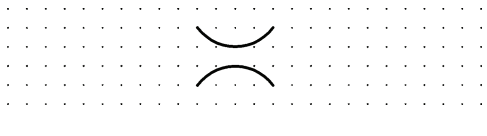


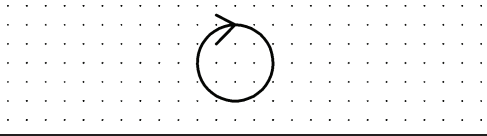

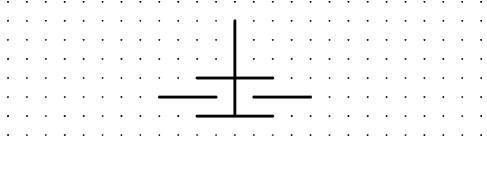

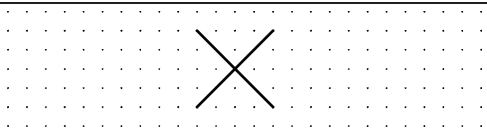

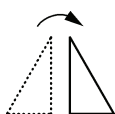
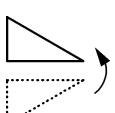
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
54	Spezifizierungen						
54.1	C2028		Schwerkraft-, Absetz-				
54.2	C2029		Trocken-				
54.3	C2030		Elektrostatisch				
54.4	C2031		Elektro- magnetisch				
54.5	C2032		Venturi-				
54.6	2621		Zyklon-, Fliehkraft-				
54.7	C2033		Teller-, Tellerrotor				
54.8	C0240		Zerkleinerung-				
							

Tabelle 3 (fortgesetzt)




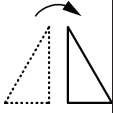





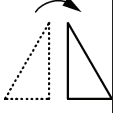
Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
54.9	C2034		Hamme-				
54.10	C2035		Prall-				
54.11	C2036		Backen-				
54.12	C2037		Walzen-				
54.13	C2038		Kegel-				
54.14	X8176		Strahl-/Gas-				
54.15	3831		Vibration-				

Tabelle 3 (fortgesetzt)







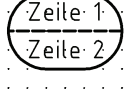
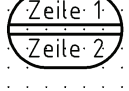
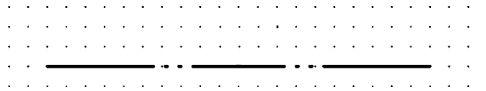
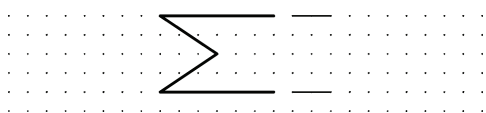
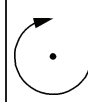
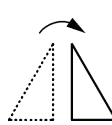
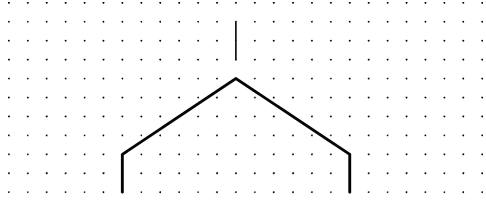

Abschnitt	ISO 14617 Reg.-No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
55		Meß-, Steuer- und Regeltechnik					
55.1	1041		MSR-Stellenkreis				
55.2	C2050		MSR-Stellenkreis; Messwarte				
55.3	C2051		MSR-Stellenkreis; zentrale Messwarte				
55.4	C2052		MSR-Stellenkreis; Instrument extern				
55.5	R1043		MSR-Stellenoal				
55.6	C2053		MSR-Stellenoal; Messwarte				
55.7	C2054		MSR-Stellenoal; zentrale Messwarte				
55.8	C2055		MSR-Stellenoal; Instrument extern				

Tabelle 3 (fortgesetzt)

Abschnitt	ISO 14617 Reg.- No.	Grafik	Beschreibung	Änderungen			
				drehen	spiegeln	skalieren	bearbeiten
56	Sonstige						
56.1	C2040		Material- oberfläche (flüssig)				
56.3	C2041		M-Form				
56.6	C2043		Abzugshaube (allgemein)				
56.7	C0104		Bezugszeichen für Niveauangabe	