

Şekil 2.24 . Enstrümanın kodlanması

TI	Sıcaklık Göstergesi	FI	Akış Göstergesi
TT	Sıcaklık Transmitteri	FT	Akış Transmitteri
TR	Sıcaklık Kaydedici	FR	Akış Kaydedici
TC	Sıcaklık Kontrolörü	FC	Akış Kontrolörü

Tablo 2.4: Sıcaklık ve akış sembolleri

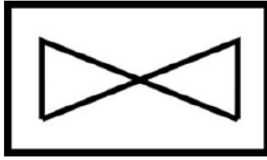
LI	Seviye Göstergesi	PI	Basınç Göstergesi
LT 65	Seviye Transmitteri	PT 55	Basınç Transmitteri
LR 65	Seviye Kaydedici	PR 55	Basınç Kaydedici
LC 65	Seviye Kontrolörü	PC 55	Basınç Kontrolörü

Tablo 2.5: Seviye ve basınç sembolleri

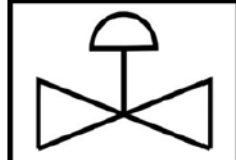
I/P	Transdüser	FE	Akış Elemanı
PIC 105	Basınç Gösteren Kontrolör	TE	Sıcaklık Elemanı
PRC 40	Basınç Kaydeden Kontrolör	LG	Seviye Göstergesi
LA 25	Seviye Alarmı	AT	Analizör Vericisi

Tablo 2.6: Diğer cihaz sembolleri

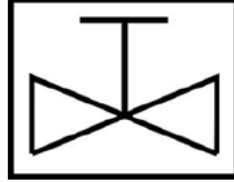
ENSTRÜMAN SEMBOLLERİ			
ACIKLAMA	SAHADA MONTELI	PANOYA MONTELI	PANO ARKASI
BAGIMSIZ ENSTRÜMAN			
DISTINCT ELEMENTS			
PAYLASMILI GÖRÜNTÜLEME KONT.			
SHARED DISPLAY CONTROL in DCS			
BILGISAYAR FONKSIYON			
COMPUTER LOGIC FUNCTION			
PLC			



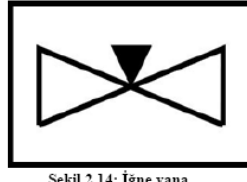
Şekil 2.11: Vana



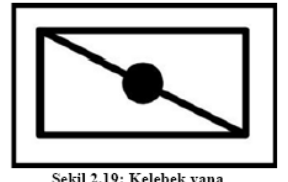
Şekil 2.12: Kontrol vanası



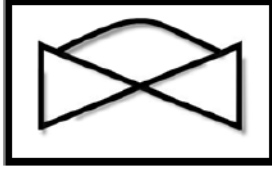
Şekil 2.13: Manuel vana



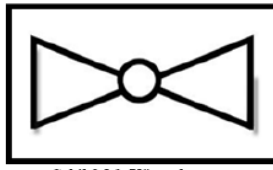
Şekil 2.14: İğne vana



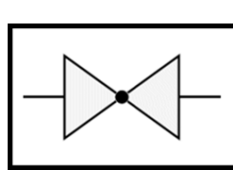
Şekil 2.19: Kelebek vana



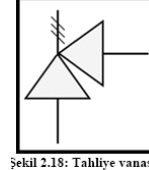
Şekil 2.15: Diyafram vana



Şekil 2.16: Küresel vana



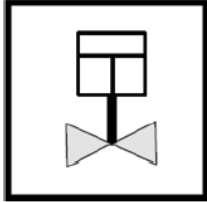
Şekil 2.17: Glob vana



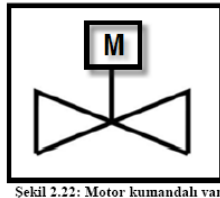
Şekil 2.18: Tahliye vanası



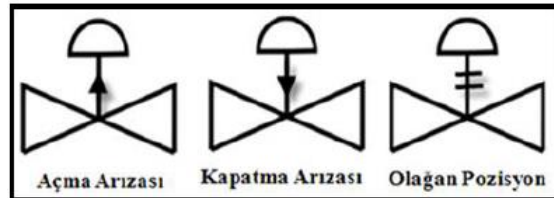
Şekil 2.20: Çek vanası



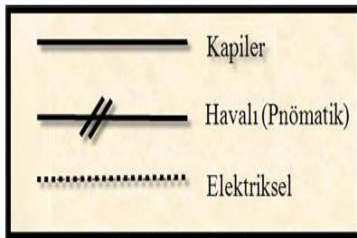
Şekil 2.21: Elektrikli vana



Şekil 2.22: Motor kumandalı vana



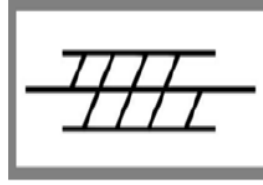
Şekil 2.23: Uygulayıcı arızasının vana üzerindeki konumu



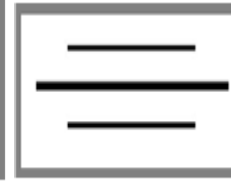
Şekil 2.26: Cihaz bağlantıları



Şekil 2.6: Boru



Şekil 2.7: Yalıtımlı boru



Şekil 2.8: Çekeli boru



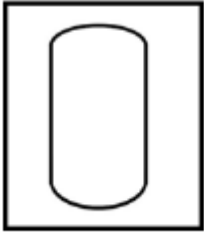
Şekil 2.9: Soğutulmuş ve ısıtılmış boru

Ölçülen Özellik	İlk harf	Gösterge	Kayıt	Kontrol	Gösterge / Kayıt	Kayıt/ Kontrol
		(I)	(R)	(C)	(IC)	(RC)
Akış hızı	F	FI	FR	FC	FIC	FRC
Seviye	L	LI	LR	LC	LIC	LRC
Boyutlar	U	UI	UR	UC	UIC	URC
Basınç	P	PI	PR	PC	PIC	PRC
Kalite	Q	QI	QR	QC	QIC	QRC
Işımın	R	RI	RR	RC	RIC	RRC
Hız	S	SI	SR	SC	SIC	SRC
Sıcaklık	T	TI	TR	TC	TIC	TRC
Ağırlık	W	WI	WR	WC	WIC	WRC
Diğer Özellikler	X	XI	XR	XC	XIC	XRC
Farklı Özellikler	D	DI	DR	DC	DIC	DRC

Tablo 2.3: Kontrol edici cihazlar ve yazısal kodlanması

XX	Ekipman sınıflandırması için tanımlanmış bilgiler
C	Kompresör veya Türbin
E	Isı Değiştiricisi
H	Ateşli ısıtıcı
P	Pompa
R	Reaktör
T	Kule
TK	Depolama Tankı
V	Kap
Y	Tesisin tasarlanmış alanı
ZZ	Her bir ekipman sınıfının tasarım numarası
A/B	PFD'de yer almayan paralel üniteleri gösterir.

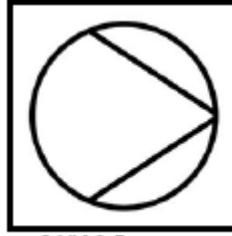
Tablo 2.1: Proses ekipmanlarının tanımı için kullanılan harfler



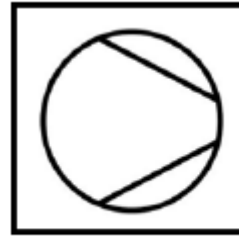
Şekil 1.7: Dikey basınçlı kap



Şekil 1.10: Santrifuj pompa



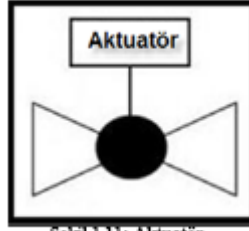
Şekil 1.8: Pompa



Şekil 1.9: Vakum pompası veya kompresör



Şekil 1.10: Santrifuj pompa



Şekil 1.11: Aktuatör



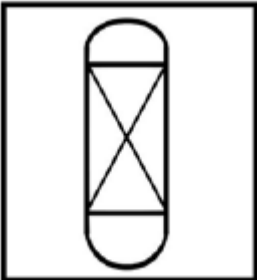
Şekil 1.12: Fan



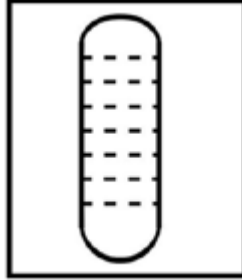
Şekil 1.13: Axial fan



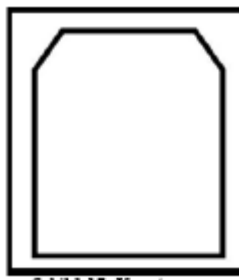
Şekil 1.14: Radyal fan



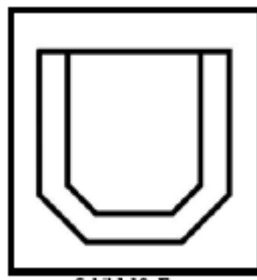
Şekil 1.15: Sıvı temaslı kolon



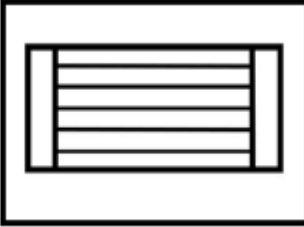
Şekil 1.16: Destilasyon kolonu



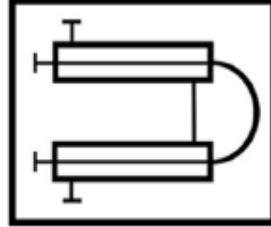
Şekil 1.17: Kurutucu



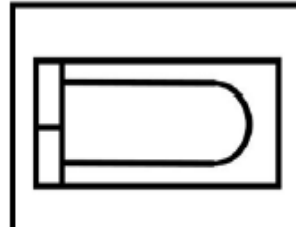
Şekil 1.18: Fırın



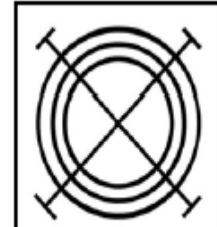
Şekil 1.21: Sabit düz borulu ısı değiştirici



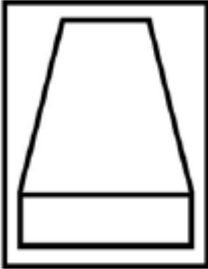
Şekil 1.22: Çift borulu ısı değiştirici



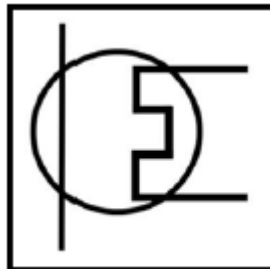
Şekil 1.23: U tüplü ısı değiştirici



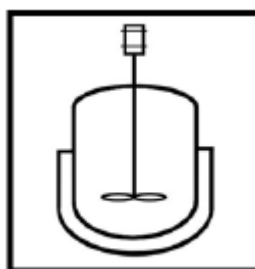
Şekil 1.24: Spiral borulu ısı değiştiricileri



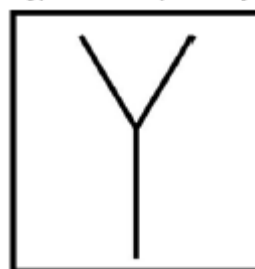
Şekil 1.25: Soğutma kulesi



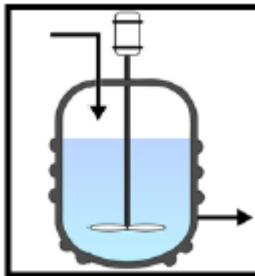
Şekil 1.26: Soğutucu



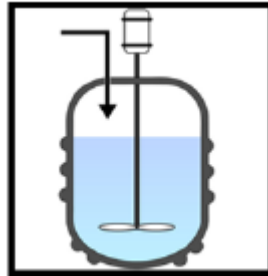
Şekil 1.27: Otoklav



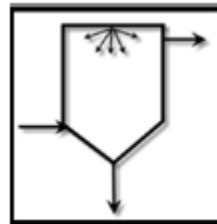
Şekil 1.28: Huni



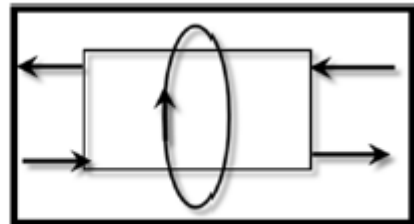
Şekil 1.29: Sürekli reaktör



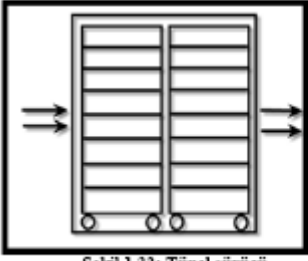
Şekil 1.30: Kesildi reaktör



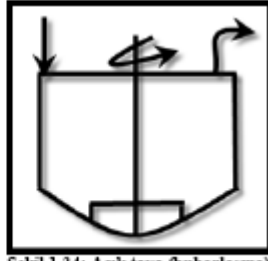
Şekil 1.31: Püskürtümlü kurutucu



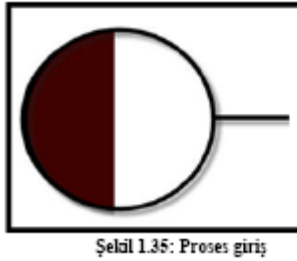
Şekil 1.32: Döner kurutucu



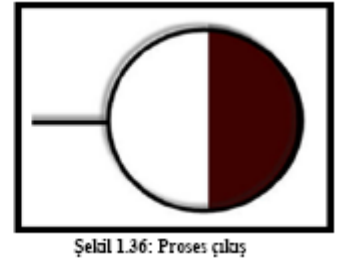
Şekil 1.33: Tünel sürücü



Şekil 1.34: Açık tava (buharlaştırma)



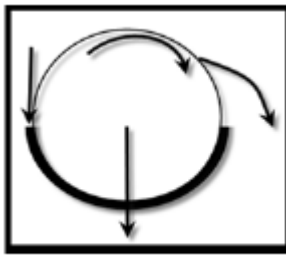
Şekil 1.35: Proses giriş



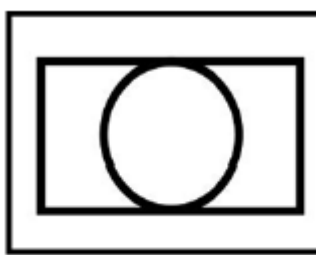
Şekil 1.36: Proses çıkış



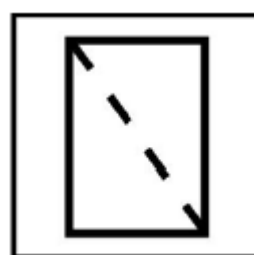
Şekil 1.37: Kazan



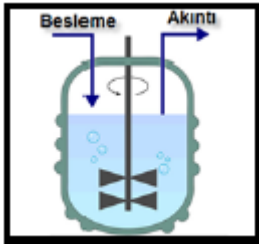
Şekil 1.38: Döner filtre



Şekil 1.39: Gözetleme camı



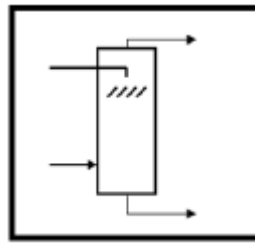
Şekil 1.40: Toz tutucu



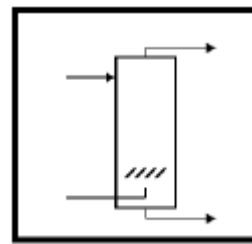
Şekil 1.41: Kemostat



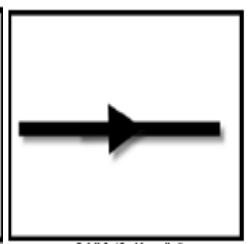
Şekil 1.42: Buhar tutucu



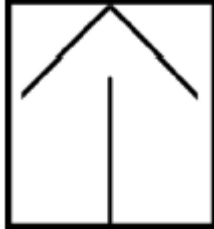
Şekil 1.43: Gaz - sıvı teması (soyuma)



Şekil 1.44: Gaz - sıvı teması (absorpsiyon)



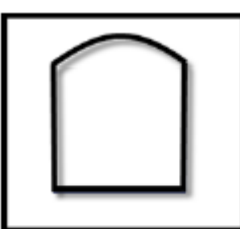
Şekil 1.45: Akış yönü



Şekil 1.46: Kapalı gaz çıkışı



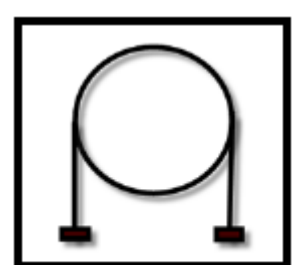
Şekil 1.47: Karıştırıcı



Şekil 1.48: Depolama tankı



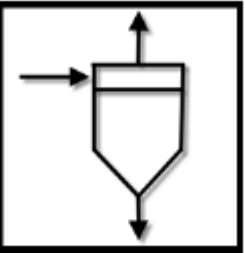
Şekil 1.49: Gaz tutucu



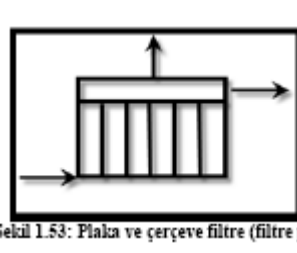
Şekil 1.50: Küre (basınç kap)



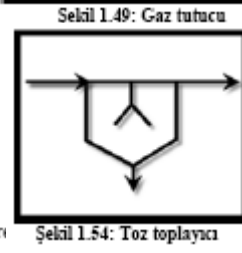
Şekil 1.51: Kondanser



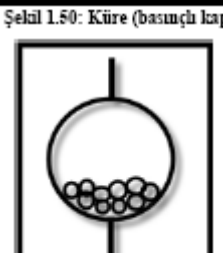
Şekil 1.52: Sildon ayırıcı



Şekil 1.53: Plaka ve çerçeve filtre (filtre pres)



Şekil 1.54: Toz toplayıcı



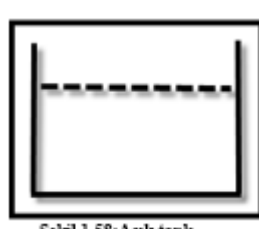
Şekil 1.55: Çalın veya çubuk değirmeni



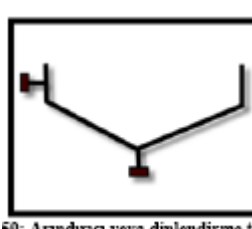
Şekil 1.56: Rulo ezici



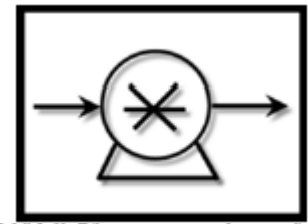
Şekil 1.57: Koni ezici



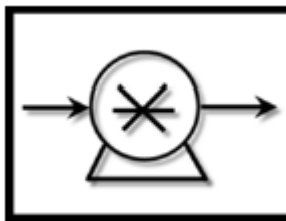
Şekil 1.58: Açık tank



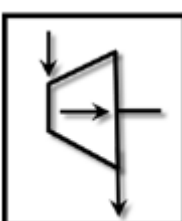
Şekil 1.59: Arındırıcı veya dinlendirme tankı



Şekil 1.60: Döner pompa veya kompresör



Şekil 1.60: Döner pompa veya kompresör



Şekil 1.61: Türbin



Şekil 1.62: Santrifüj