



HD

HAVA DAMPERİ

HAVA DAMPERLERİ

HD SERİSİ

Tanım:

- HD100** : Hava damperi 100 mm genişlikte kanat ile
HD 75 : Hava damperi 75 mm genişlikte kanat ile
HD 150 : Hava damperi 150 mm genişlikte kanat ile
HD-Y : Yuvarlak hava damperi
HD-DA : Denge ağırlıklı hava damperi

Malzeme:

Ekstrude alüminyum profilden mamul kasa ve kanatları edilmektedir.

Uygulama:

Volume damperleri havalandırma sistemlerinde debi ve basınç kontrolünde kullanılır. Zıt kanatlar dişliler yardımı ile tahrik edilir.

Yüzey Kaplama:

- Mat eloksal

Montaj:

- Montaj delikleri vasıtası ile civata montajı

Aksesuarlar / Opsiyonlar

- **G**: Galvaniz sac kasa
- **M**: Elektrikli damper motoru

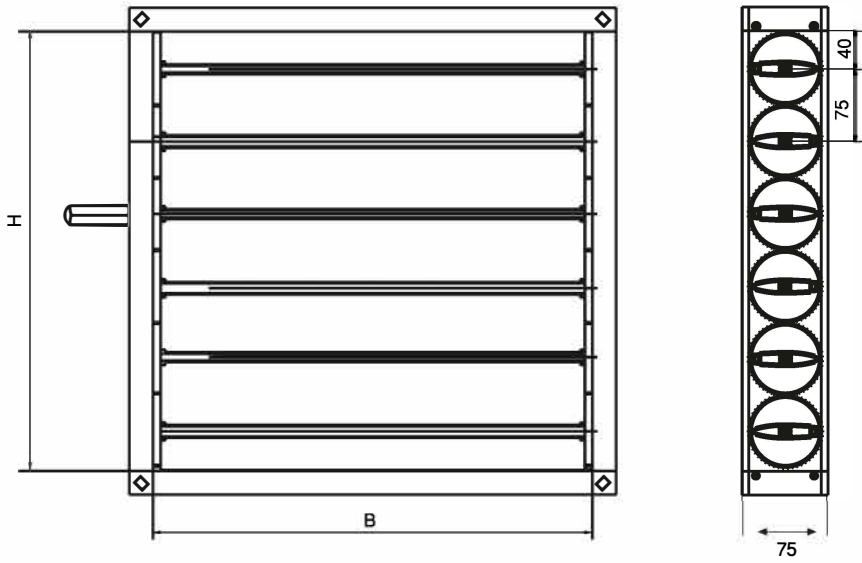


HD 75 STANDART ÖLÇÜLER ve Ak (m²) DEĞERLERİ

H/B (mm)	200	300	400	500	600	800	1000	1200	1400
75	0.015	0.022	0.029	0.037	0.059	0.044	0.074	0.088	0.103
150	0.029	0.044	0.059	0.074	0.118	0.088	0.147	0.177	0.206
225	0.044	0.066	0.088	0.110	0.177	0.132	0.221	0.265	0.309
300	0.059	0.088	0.118	0.147	0.236	0.177	0.294	0.353	0.412
375	0.074	0.110	0.147	0.184	0.294	0.221	0.368	0.442	0.515
450	0.088	0.132	0.177	0.221	0.265	0.353	0.442	0.530	0.618
525	0.103	0.155	0.206	0.258	0.309	0.412	0.515	0.618	0.721
600	0.118	0.177	0.236	0.294	0.353	0.471	0.589	0.707	0.824
675	0.132	0.199	0.265	0.331	0.397	0.530	0.662	0.795	0.927
750	0.147	0.221	0.294	0.368	0.442	0.589	0.736	0.833	1.030
825	0.162	0.243	0.324	0.405	0.486	0.648	0.810	0.972	1.133
900	0.177	0.265	0.353	0.442	0.530	0.707	0.883	1.060	1.236
975	0.191	0.287	0.383	0.478	0.574	0.765	0.957	1.148	1.340
1050	0.206	0.309	0.412	0.515	0.618	0.824	1.030	1.236	1.443
1125	0.221	0.331	0.442	0.552	0.662	0.883	1.104	1.325	1.546
1200	0.236	0.353	0.471	0.589	0.707	0.942	1.413	1.413	1.649

Tablo 1

HD 75 İÇTEN DİŞLİ HAVA DAMPERİ



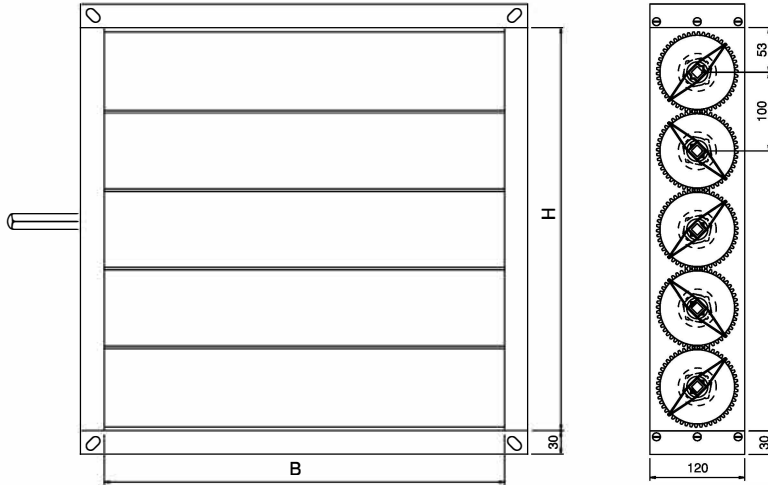
HD 75

HD 100 STANDART ÖLÇÜLER ve Ak (m²) DEĞERLERİ

H/B (mm)	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
105	0.021	0.031	0.041	0.052	0.062	0.083	0.103	0.124	0.144	0.165	0.186	0.206
205	0.040	0.060	0.081	0.101	0.121	0.161	0.201	0.242	0.282	0.322	0.363	0.403
305	0.060	0.090	0.120	0.150	0.180	0.240	0.300	0.360	0.419	0.479	0.539	0.599
405	0.080	0.119	0.159	0.199	0.239	0.318	0.398	0.477	0.557	0.636	0.716	0.796
505	0.099	0.149	0.198	0.248	0.298	0.397	0.496	0.595	0.694	0.794	0.893	0.992
605	0.119	0.178	0.238	0.297	0.357	0.475	0.594	0.713	0.832	0.951	1.070	1.188
705	0.138	0.208	0.277	0.346	0.415	0.554	0.692	0.831	0.969	1.108	1.246	1.385
805	0.158	0.237	0.316	0.395	0.474	0.632	0.791	0.949	1.107	1.265	1.423	1.581
905	0.178	0.267	0.356	0.444	0.533	0.711	0.889	1.067	1.244	1.422	1.600	1.778
1005	0.197	0.296	0.395	0.494	0.592	0.790	0.987	1.184	1.382	1.579	1.777	1.974
1105	0.217	0.326	0.434	0.543	0.651	0.868	1.085	1.302	1.519	1.736	1.953	2.170
1205	0.237	0.355	0.473	0.592	0.710	0.947	1.183	1.420	1.657	1.893	2.130	2.367
1305	0.256	0.384	0.513	0.641	0.769	1.025	1.282	1.538	1.794	2.051	2.307	2.563
1405	0.276	0.414	0.552	0.690	0.828	1.104	1.330	1.656	1.932	2.208	2.484	2.760
1505	0.296	0.443	0.591	0.739	0.887	1.181	1.478	1.774	2.069	2.365	2.660	2.956
1605	0.315	0.473	0.630	0.788	0.946	1.261	1.576	1.891	2.207	2.522	2.837	3.152
1705	0.335	0.502	0.670	0.837	1.005	1.340	1.640	2.009	2.344	2.679	3.014	3.349

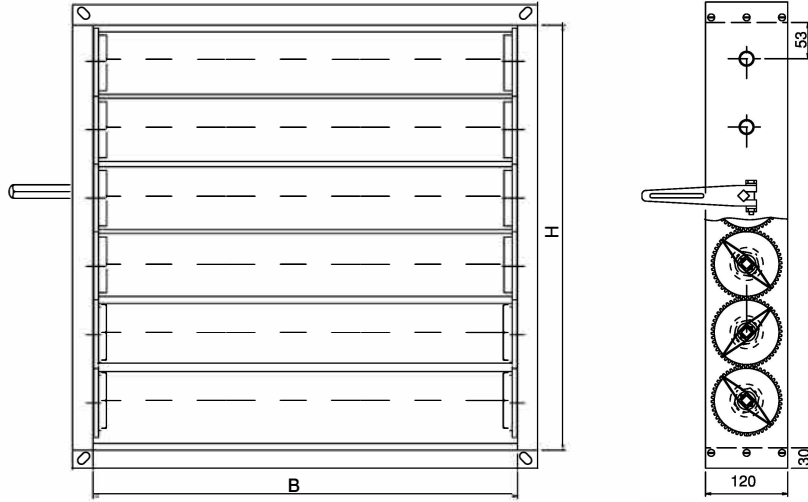
Tablo 2

HD100 DIŞTAN DIŞLI HAVA DAMPERİ



HD 100

HD 100 İÇTEN DIŞLI HAVA DAMPERİ



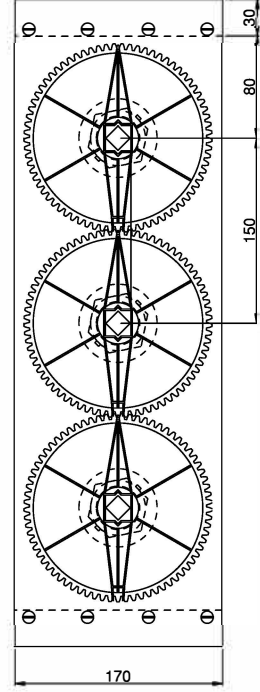
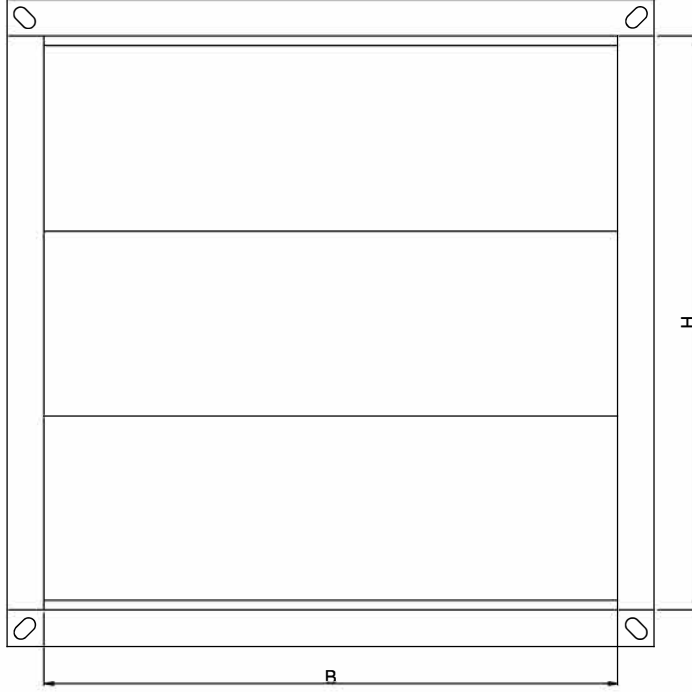
HD 100

HD 150 STANDART ÖLÇÜLER ve Ak (m²) DEĞERLERİ

H/B mm	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
150	0.030	0.044	0.059	0.074	0.089	0.118	0.148	0.177	0.207	0.236	0.266	0.295
300	0.059	0.089	0.118	0.148	0.177	0.236	0.295	0.354	0.413	0.472	0.531	0.590
450	0.089	0.133	0.177	0.221	0.266	0.354	0.443	0.531	0.620	0.708	0.797	0.886
600	0.118	0.177	0.236	0.295	0.354	0.472	0.590	0.708	0.827	0.945	1.063	1.181
750	0.148	0.221	0.295	0.369	0.443	0.590	0.738	0.886	1.033	1.181	1.063	1.476
900	0.177	0.266	0.354	0.443	0.531	0.708	0.886	1.063	1.240	1.417	1.328	1.771
1050	0.207	0.310	0.413	0.517	0.620	0.827	1.033	1.240	1.446	1.653	1.860	2.066
1200	0.236	0.354	0.472	0.590	0.708	0.945	1.181	1.471	1.653	1.889	2.125	2.362
1350	0.266	0.399	0.531	0.664	0.797	1.063	1.328	1.594	1.860	2.215	2.391	2.657
1500	0.295	0.443	0.590	0.738	0.886	1.181	1.476	1.771	2.066	2.362	2.657	2.952
1650	0.325	0.487	0.649	0.812	0.974	1.299	1.624	1.984	2.273	2.598	2.922	3.247
1800	0.354	0.531	0.708	0.886	1.063	1.471	1.771	2.125	2.480	2.834	3.188	3.542
1950	0.384	0.576	0.768	0.959	1.151	1.535	1.919	2.303	2.686	3.070	3.454	3.838
2100	0.413	0.620	0.827	1.033	1.240	1.653	2.066	2.480	2.893	3.306	3.720	4.133

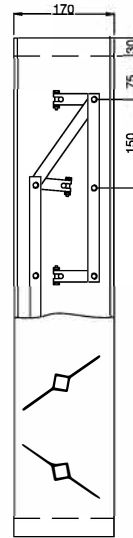
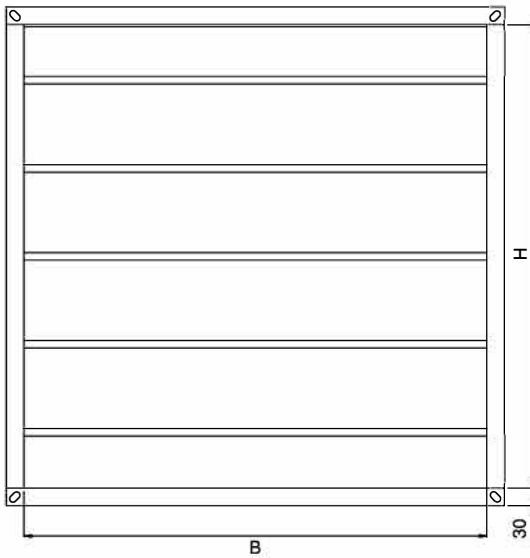
Tablo 3

HD150 DIŞTAN DİŞLİ HAVA DAMPERİ



HD 150

HD 150 KOL TAHRİKLİ HAVA DAMPERİ



HD 100-K

HD-Y YUVARLAK HAVA DAMPERİ STANDART ÖLÇÜLERİ

DN (mm)	100	125	150	160	200	250	300	350	400	500	600	800	1000	1200
L (mm)	300	300	300	300	300	300	300	400	400	400	400	500	500	500
D1 (mm)	160	185	210	240	260	310	360	410	480	580	680	880	1080	1280

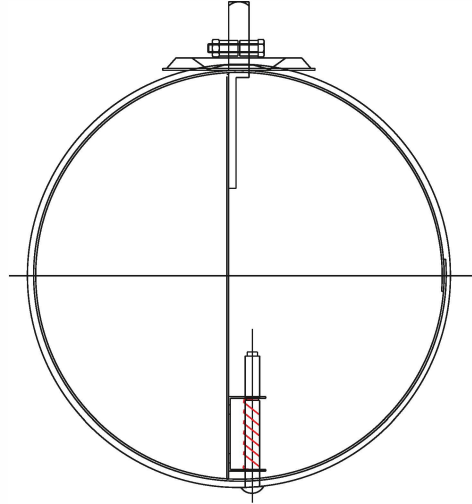
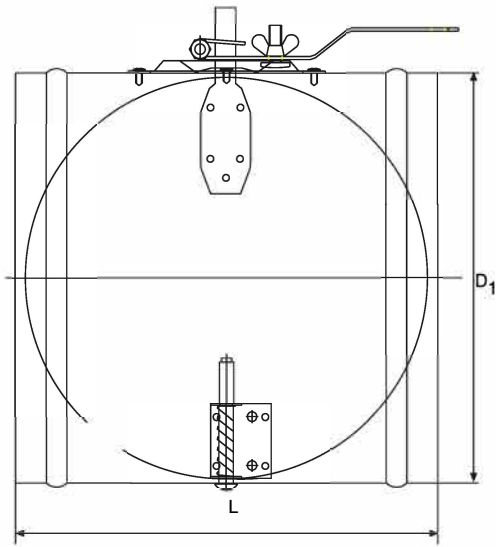
Tablo 4

HD-Y YUVARLAK HAVA DAMPERİ Ak (m²) DEĞERLERİ

DN (mm)	100	125	150	160	200	250	300	350	400	500	600	800	1000	1200
Ak (m ²)	0,01	0,01	0,02	0,02	0,03	0,05	0,07	0,09	0,12	0,19	0,27	0,49	0,77	1,11

Tablo 5

HD-Y YUVARLAK HAVA DAMPERİ

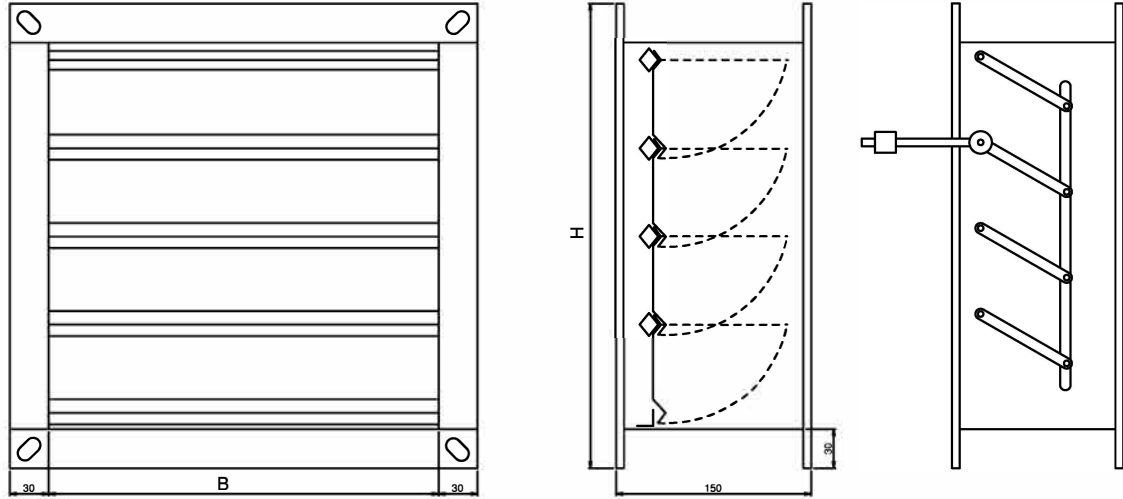


HD-DA STANDART ÖLÇÜLER VE EFEKTİF ALAN A_k (m²) DEĞERLERİ

H	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
105	0.021	0.031	0.041	0.052	0.062	0.083	0.103	0.124	0.144	0.165	0.186	0.206
205	0.040	0.060	0.081	0.101	0.121	0.161	0.201	0.242	0.282	0.322	0.363	0.403
305	0.060	0.090	0.120	0.150	0.180	0.240	0.300	0.360	0.419	0.479	0.539	0.599
405	0.080	0.119	0.159	0.199	0.239	0.318	0.398	0.477	0.557	0.636	0.716	0.796
505	0.099	0.149	0.198	0.248	0.298	0.397	0.496	0.595	0.694	0.794	0.893	0.992
605	0.119	0.178	0.238	0.297	0.357	0.475	0.594	0.713	0.832	0.951	1.070	1.188
705	0.138	0.208	0.277	0.346	0.415	0.554	0.692	0.831	0.969	1.108	1.246	1.385
805	0.158	0.237	0.316	0.395	0.474	0.632	0.791	0.949	1.107	1.265	1.423	1.581
905	0.178	0.267	0.356	0.444	0.533	0.711	0.889	1.067	1.244	1.422	1.600	1.778
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1105	0.217	0.326	0.434	0.543	0.651	0.868	1.085	1.302	1.519	1.736	1.953	2.170
1205	0.237	0.355	0.473	0.592	0.710	0.947	1.183	1.420	1.657	1.893	2.130	2.367
1305	0.256	0.384	0.513	0.641	0.769	1.025	1.282	1.538	1.794	2.051	2.307	2.563
1405	0.276	0.414	0.552	0.690	0.828	1.104	1.330	1.656	1.932	2.208	2.484	2.760
1505	0.296	0.443	0.591	0.739	0.887	1.181	1.478	1.774	2.069	2.365	2.660	2.956
1605	0.315	0.473	0.630	0.788	0.946	1.261	1.576	1.891	2.207	2.522	2.837	3.152
1705	0.335	0.502	0.670	0.837	1.005	1.340	1.640	2.009	2.344	2.679	3.014	3.349

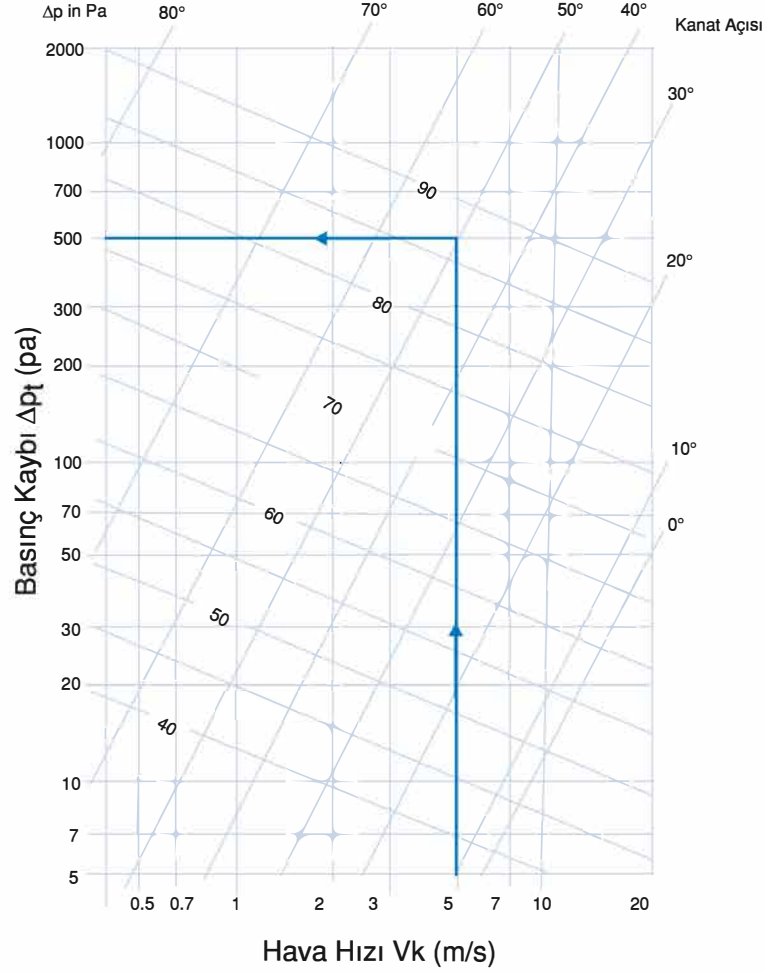
Tablo 5

HD DENGİ AĞIRLIKLİ HAVA DAMPERİ



(HD 75, 100, 150 ve HD-DA için)

1 m² DAMPER EFEKTİF ALANI İÇİN BASINÇ KAYBI DİYAGRAMI



Diyagram 1

SEÇİM ÖRNEĞİ

İSTENEN:

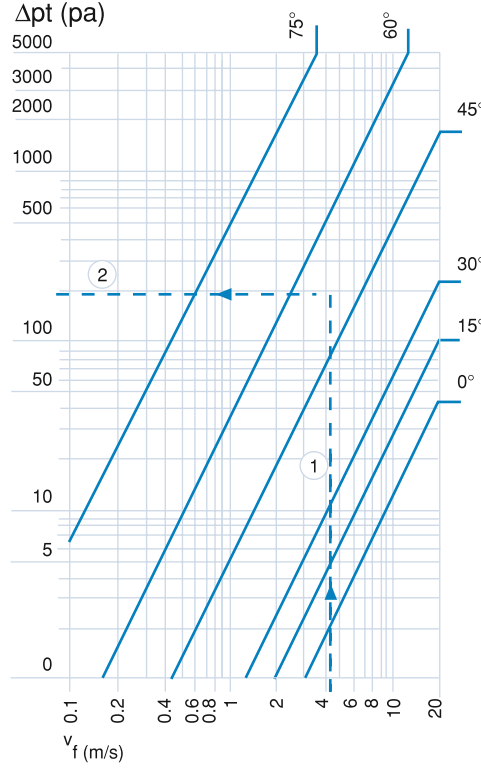
Hava debisi $v = 18.000 \text{ m}^3/\text{h}$
Damper %50 kapalı
Hava hızı $V_k = 5 \text{ m/s}$

SONUÇ:

Diyagram 1'den
 $A_k = 1 \text{ m}^2$
 $\Delta p_t = 500 \text{ pa}$

Tablo 2'den BxH 1200 x 1005 seçilir.

HD-Y İÇİN BASINÇ KAYBI SEÇİM DİYAGRAMI



Diyagram 2

SEÇİM ÖRNEĞİ

VERİLEN:

Hava debisi: $Q_v = 2000 \text{ m}^3/\text{h}$
 Damper %50 kapalı
 $V_k = 4.2 \text{ m/s}$ ①

SONUÇ:

Tablo 5'den
 $Q_v = A_k \times V_k$
 $A_k = 0.12 \text{ m}^2$
 $\varnothing 400$ seçilir
 Diyagram 2'den
 $\Delta p_t = 200$ ②

HAVA DAMPERİ ALANINA GÖRE DAMPER MOTORU SEÇİM TABLOSU

	LM	NM	SM	GM	LF	AF
Çalışma Voltajı			24 VDC 24 VAC 230 VAC			
Tork (Nm)	4	8	15	30	4	15
Çalışma Alanı (m ²)	0,8	1,5	3	6	0,8	3
Yay Geri Dönürlü					X	X

HAVA DAMPELERİ SİPARİŞ TABLOSU

HD	75	A	I	E	B 1000X700
75mm KANATLAR 75					B BOĞAZ ÖLÇÜSÜ
100mm KANATLAR 100					
150mm KANATLAR 150					
YUVARLAK HAVA DAMPERİ Y					
DENGE AĞ IRLIKLI DA					
				E ELLE KUMANDA M MOTOR İLE KUMANDA	
			I İÇTEN DİŞLİ O DIŞTAN DİŞLİ K KOL TAHRİKLİ		
		A ALUMİNYUM KASA G GALVANİZ SAC KASA			