

MEHRASL

MANUFACTURING CORPORATION



AIR HANDLING & AIR WASHER UNITS

Horizontal, Vertical and L-Type Models

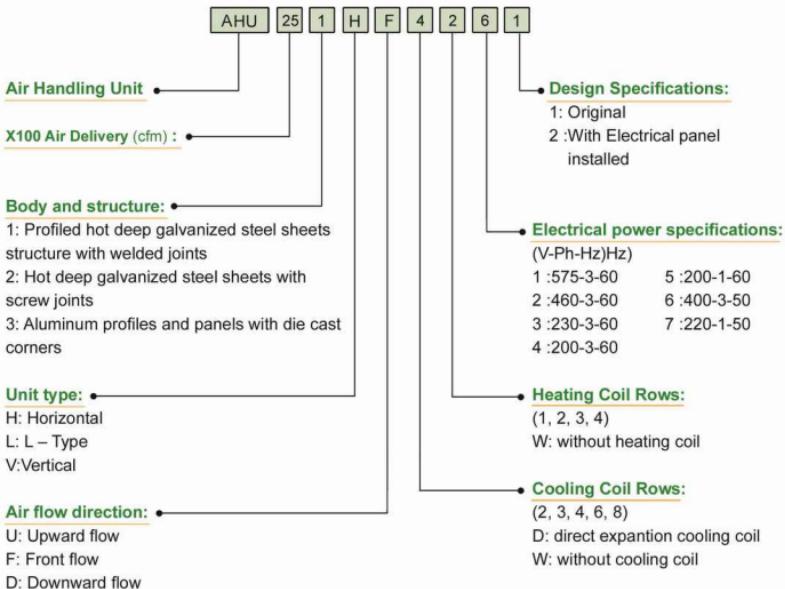


AH UW 9402

توجه: این مجلد برای اطلاعات عمومی کاربر میباشد و استفاده غیر مجاز و نقل کلیه مطالب این مجلد بدون اخذ مجوز کتبی از شرکت همراه اصل غیر قانونی است. مشخصات فنی بدون اطلاع قبلی قابل تغییر هستند و در موارد قراردادی مبایستی برای هر مردمی تاییده کتبی از همراه اصل اخذ شود.

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MODEL KEYWORD



Prefix S in model keyword means special design (custom design): hygienic air handling unit, ...



MEHR ASL Air Handling units are manufactured in 14 different standard models with 2,500 – 60,000 cfm air flow capacities. Their bodies and structures are designed and manufactured in three models:

- 1-Structure made of profiled hot deep galvanized steel with welded joints. Panels are made of hot deep galvanized steel sheet.
- 2-Bodies are formed by hot deep galvanized steel sheet panels that screwed to each other.
- 3-Structure made of Aluminum profiles with die cast Aluminum corners and panels made of hot deep galvanized steel sheet.

All the structures and panels, which made of hot deep galvanized steel sheet, are coated with electrostatic paint. All parts of units are insulated by 1/2" insulation materials at coil section and 1/4" at the rest.

All models are assembled in the factory and their size do not contradict with Iran's traffic rules.

هواسازهای شرکت مهر اصل با هوادهی 2,500 – 60,000 cfm در چهار ده مدل استاندارد ساخته می‌شوند. این هواسازها از نظر بدنه با سه روش طراحی و ساخته می‌باشند:

۱: استراکچر و پانلها از ورق فولادي گرم با ضخامت مناسب می‌باشند که استراکچر از ورق پروفیل شده با اتصال جوشی می‌باشد.

۲: بدون استراکچر بوده و بدنه پانلها از ورق فولادي گالوانیزه با اتصال بیپی می‌باشد.

۳: استراکچر از پروفیلهای آرمیتیجی پیش ساخته که به صورت کجاهای آرمیتیجی دیباست به هم متصل می‌شوند و پانلها از ورق فولادي گالوانیزه گرم می‌باشند.

کلیه بدنه و پانلها که از ورق فولادي گالوانیزه گرم ساخته می‌شوند بر روی التکرو استانیک کورهای پوشیده می‌شوند و در کلیه مدلها اناقلک کوپل با عایق به ضخامت ۱/۲ اینچکس (کاتوجو) و لکنتره سفت نشده و سایر قسمتهای با عایق ۱/۴ از نظر حرارتی و صوتی عایق می‌شوند.

به جزدهای که در قسمت پایینی جداول مربوط به اندازه دستگاهها به آنها اشاره شده است باید به صورت دموتاژ به محل حمل شوند سایر مدلها

به صورت یکپارچه به محل نصب حمل می‌شوند و اندازه آنها ناقص و اوانیز ترا فیکر اهمیاتی و اندیگی ایران نمی‌باشد.



MEHR ASL Air handling units are made of three main sections:
Mixing box section, Coil section and Fan section.

1- Mixing Box section:

Air enters Mixing box from Fresh & return Air Inlet. Both Air flows are controlled by Dampers*. Mixed air passes through washable Aluminum filters. These filters are arranged in V form for higher surface contact and lower pressure drop**.

* Size of dampers are calculated based on 20%fresh air and 80%return air.

Air pressure drop in full position is 0.07 inch H2O.

** Flat filters are used in some models .Upon order ,for higher dust absorption,other types of filters can be mounted.



هواسازهای استاندارد مهر اصل از سه قسمت اصلی تشکیل شده است :

۱) اتاقک اختلاط

هوا از طریق دو درجه که دارای دمپرهای قابل تنظیم میباشد وارد اتاقک اختلاط میشود اندازه دمپرهای اساس 20% هوا و ترازو و 80% هوا برگشتی طراحی شده است و در حالت تمام بار افت فشار هوا در دمپرهای 0.07 in.H₂O میباشد هوا برگشتی و ترازو پس از اختلاط از روی فیلتر آلمینیومی قابل شستشو و غیر میباشد. فیلترها از توری آلمینیومی موج دار دو لایه به ضخامت 5 cm ساخته میشوند که برای افزایش سطح فیلتر و تقلیل افت فشار هوا به محور است. میباشد ممکن است در بعضی از مدلها فیلتر نخت باشد.

۷) شکل میباشد امکن است در بعضی از مدلها فیلتر نخت باشد.

جهت افزایش جذب گرد و غبار و تصفیه هوا با درخواست مشتری استفاده از سایر فیلترها مقدور میباشد.



2- Coil section :

After passing through filters, the air reaches and passes through coils . Following Coils are available and can be selected according to tables 2, 3 and 6.

- a) Hot water coils
- b) Steam coils
- c) Chilled water coils
- d) Electrical coils

Coils are generally made of aluminum fins and copper tubes with 5/8" OD and 50 x 25 cm geometry.

*For more details on Coils please refer to MEHR ASL Coils and Heat Exchanger catalogue.

**DX coils, reheating Coils and Steam Coils with steel tubes are also available by order.



(۲) اتاقک کویل ها پس از عبور از روی فیلتر و جذب گرد و غبار آن توسط فیلتر برای کسب شرایط مطلوب از روی کویلهای مختلفی که در اتاقک کویل تعیین شده است عبور می‌کند. در اتاقک کویل طبق انتخاب مشتری از جداول ۲ و ۳ و ۶ کویلهای زیر قابل نصب می‌باشند:
 الف) کویل آب گرم (ب) کویل آب سرد (ج) کویل آب گرم (د) کویل الکتریکی
 بطور کلی کویلهای از فلزات آلومینیمی و لولهای مسی ۵/۸" x ۵۰ سانتیمتر با آرایش ۲۵ x ۲۵ cm می‌شوند و مشخصات ورود و خروج آب یا بخار در جداول ۱۷ و ۱۶ داده شده است.
 کویلهای ابیساط مستقیم، کویل باز گرمایی و کویل بخار با لولهای فولادی به سفارش مشتری وطبق مشخصات ارسالی در اتاقک کویل نصب می‌شوند.

3- Fan section :

After passing through coils, The Air is led to ducts by Centrifugal double suction, forward bladed fans. Fan Section outlets are installed on to the ducts with flexible joints in order to prevent any possible vibration transmission to ducts/**.

*MEHRASL usually uses world renowned, belt driven NICOTRA AT series Fans. Also for Electro motors we use MOTOGEN F and IP54 class brand

**Other types of fans, such as centrifugal fans with backward blades, And other brands of electromotors are available upon order.

(۳) اتاقک فن و الکتروموتورهای
 ها پس از عبور از اتاقک کویل به وسیله فن نصب شده در اتاقک فن به داخل کنایهای توزیع هوا فرستاده می‌شود. فنهای مورد استفاده در این ها اسازهای مهر اصل ساخت شرکت نیکوترا ایتالیا سری AT با تیغههای انتخاب به جلو و مکش دوبل می‌باشند که توسط تسمه و پوای با الکترو موتور ساخت شرکت موتوژن با کلاس حرارتی F کلاس حفاظتی IP54 مرتبه می‌باشند.



برای جلوگیری از انتقال لرزش فن و الکتروموتور به قسمتهای دیگر دستگاه و ساختهای از کانال قابل انعطاف جهت اتمام دهانه فن به کانال استفاده می‌شود و برای تعليق فن و الکتروموتور از شش عدد لرزه‌گیر لاستیک استفاده می‌شود تا لرزش کاملاً ازوله شود. انواع دیگر فنها مانند فنوهای سانتریفیوز با تیغه‌های اختباعقب و الکتروموتور از مارکهای دیگر در صورت سفارش قابل استفاده می‌باشد.



Optional additional parts:

- 1- Bag filters with 45-90% dust absorption, class EU2-EU5, HEPA and ULPA filters.
- 2- Air washers(appendix A)
- 3- Steam humidifiers
- 4- Electrical humidifiers
- 5- Water spray humidifiers
- 6- Electrical heaters
- 7- Control panel with following options:
 - a- Micro controls
 - b- Motorized dampers
 - c- Differential pressure transmitters for air flow
 - d- Motorized three way valves
 - e- Motorized steam valves
 - f- Return or supply air temperature controllers



متفرقات و امکانات قابل سفارش :

۱- نصب فیلترهای کیسیهای با قابلیت جذب غبار ۴۵-۹۰٪ در کلاس‌های EU2-EU5 با قابلیت جذب غبار ۰.۳ میکرون و فیلتر ULPA با قابلیت جذب غبار ۰.۱۲ میکرون و افت فشار $1 \text{ in.H}_2\text{O}$

۲- نصب ایر واشر

۳- نصب رطوبت زن بخار

۴- نصب رطوبت زن الکتریکی آب

۵- نصب رطوبت زن پاششی

۶- نصب هیتر الکتریکی

۷- نصب سیستم کنترل هوشمند با امکانات زیر :

(الف) میکرو بروپرسور جهت مدیریت بار امترهای عملکرد دستگاه

(ب) تجهیز دهیر به الکتروموتور الکتریکی

(ج) سنسور اختلاف فشار هوا

(ج) شیر موتوری سه راهه

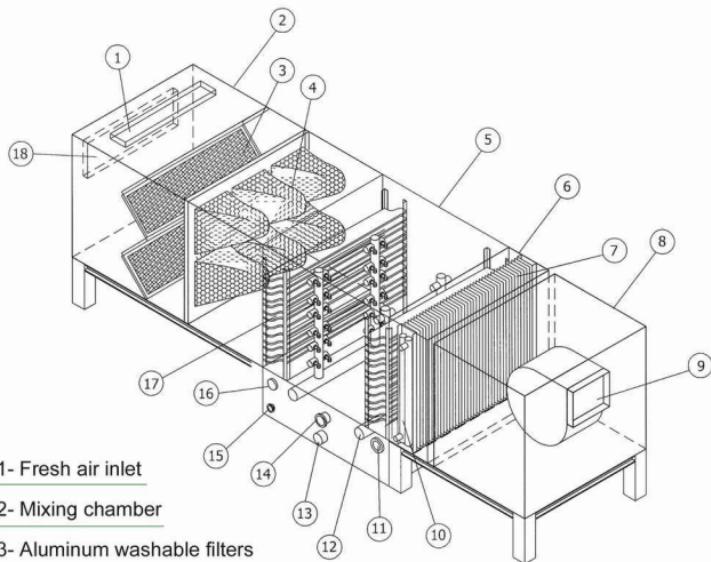
(خ) سنسور موتوری بخار

(خ) سنسور کنترل کننده دمای هوای برگشتی

یا هوای رفت



-General view of a horizontal Air Handling unit:



1- Fresh air inlet

2- Mixing chamber

3- Aluminum washable filters

4- Bag filters

5- Air washer chamber

6- Coil section

7- Coils

8- Fan section

9- Fan

10- Coil collectors

11- Quick fill orifice

12- Spray header

13- Suction flow tube

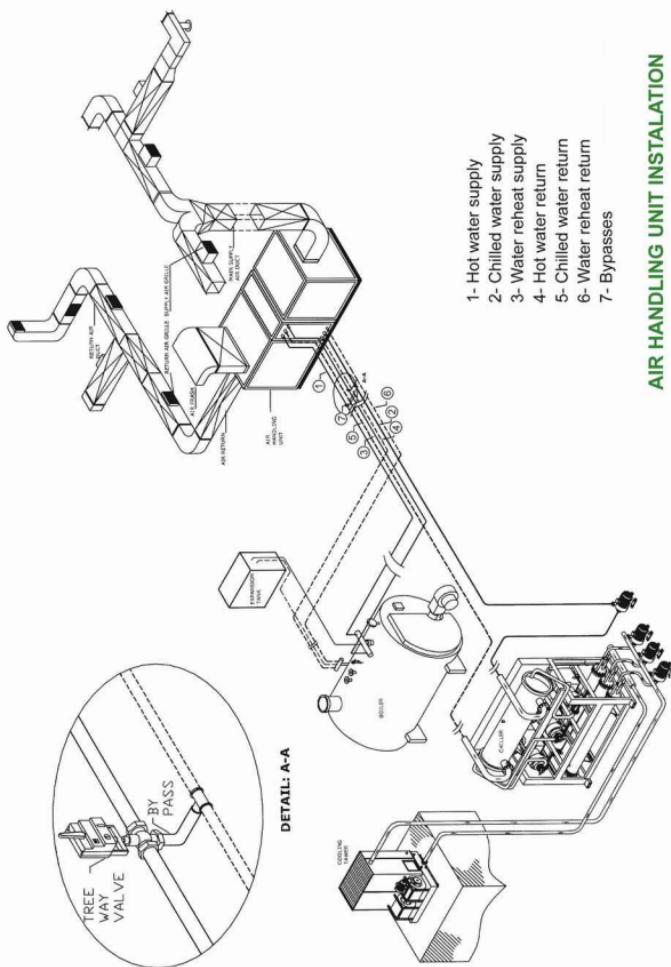
14- Floater

15- Drain cap

16- Over flow tube

17- Louvers

18- Return air inlet



AIR HANDLING UNIT INSTALLATION

Table1: Physical data for Air Handlers and Air Washers:

Models	Fan				Coil			Motor power (Kw)
	model	No.	Cfm	Cfm Range	Length M (ft)	Height M (ft)	Face area M ² (ft ²)	
AHU25A	AT 10 x 10 S	1	2500	2000-3000	0.8 (2.62)	0.6 (1.97)	0.48 (5.16)	2.2
AHU35A	AT 12 x 12 S	1	3500	3000-4500	0.95 (3.12)	0.7 (2.30)	0.67 (7.17)	3
AHU60A	AT 15 x 15 S	1	6000	4500-7000	1.2 (3.94)	0.9 (2.95)	1.08 (11.62)	4
AHU100A	AT 18 x 18 S	1	10000	7000-12000	1.5 (4.92)	1.2 (3.94)	1.80 (19.38)	7.5
AHU120B	AT 15 x 15 S	2	12000	9000-14000	1.8 (5.90)	1.2 (3.94)	2.16 (23.24)	2 x 5.5
AHU150A	AT 22 x 22 TCI	1	15000	12000-18000	2 (6.56)	1.3 (4.26)	2.6 (27.95)	11
AHU200A	AT 25 x 25 TCI	1	20000	18000-25000	2.2 (7.22)	1.6 (5.25)	3.52 (37.90)	15
AHU220B	AT 18 x 18 S	2	22000	18000-25000	2.2 (7.22)	1.8 (5.90)	3.96 (42.60)	2 x 5.5
AHU240A	AT 28 x 28 TCI	1	24000	19000-28000	2.2 (7.22)	2 (6.56)	4.40 (47.36)	15
AHU300A	AT 30 x 28 TCI	1	30000	23000-34000	2.2 (7.22)	2.4 (7.87)	5.28 (56.82)	18.5
AHU300B	AT 22 x 22 TCI	2	30000	23000-34000	2.2 (7.22)	2.4 (7.87)	5.28 (56.82)	2 x 11
AHU400B	AT 25 x 25 TCI	2	44000	32000-48000	3.1 (9.84)	2.4 (8.20)	7.44 (80.70)	2 x 15
AHU480B	AT 28 x 28 TCI	2	50000	36000-55000	3.5 (11.15)	2.4 (8.20)	8.40 (91.43)	2 x 15
AHU600B	AT 30 x 28 TCI	2	60000	43000-65000	4.1 (13.12)	2.4 (8.20)	9.84 (107.6)	2 x 18.5

A: ONE FAN

B: TWO FANS

Maximum Air Delivery could be found in Column "cfm range".

Higher range will produce higher velocity on coils, surface area.

Higher ranges are suited for heating coils and only these ranges should be selected for heating coils.

Electro motors powers, given in this table, are calculated for maximum air deliveries .In case of lower air delivery or lower speed ,less powerful electromotors can be used

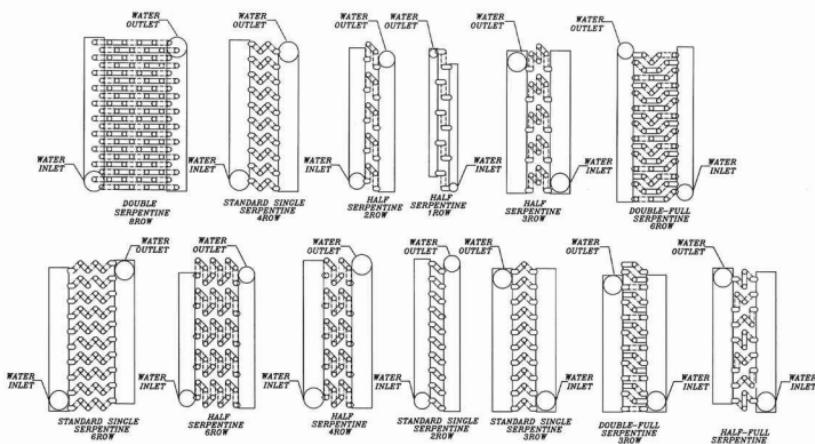


Table2: Cooling coil capacities and pressure drops

Models	4 Rows				6 Rows				8 Rows				
	FPI	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.w)	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.w)	T.C. (MBH)	S.C. (MBH)	W.P.D. (ft.w)			
AHU25	8	62.2	48.2	1.7	H	74	52.3	3.3	H	72	58.2	0.8	F
	10	67.2	52.7	1.9	H	78.5	60.3	3.7	H	77.3	61.1	1.0	F
	12	70	55.3	2.0	H	83.1	63	4.2	H	80.7	63	1.1	F
	14	72.8	57.6	2.1	H	85.8	64.6	4.4	H	82.5	64	1.3	F
AHU35	8	89.6	69.3	2.8	H	94.5	76.5	0.8	F	107	84	1.4	F
	10	96.7	74.8	3.2	H	99	80	1.0	F	113	87.5	1.6	F
	12	100.7	78.5	3.5	H	105	84	1.1	F	116.3	89.3	1.8	F
	14	106.5	82.4	3.8	H	108.5	86	1.3	F	120.5	91.4	2.0	F
AHU60	8	134	110	0.8	F	169	133	1.5	F	188	145	2.5	F
	10	145	120	0.9	F	179	141	1.6	F	199	152	2.8	F
	12	154	127	0.9	F	187	146	1.8	F	207	156	3.0	F
	14	163	133	1.0	F	194	150	2.0	F	212	159	3.1	F
AHU100	8	238	190	1.4	F	297	228	3.0	F	322	246	4.7	F
	10	261	207	1.6	F	308	238	3.3	F	336	255	5.1	F
	12	277	220	1.8	F	326	249	3.6	F	350	262	5.5	F
	14	290	229	1.9	F	337	256	3.8	F	363	268	5.8	F
AHU120	8	300	233	2.4	F	357	275	5.1	F	393	298	7.8	F
	10	323	252	2.8	F	380	290	5.5	F	414	310	8.4	F
	12	342	267	3.1	F	397	300	5.9	F	426	317	9.0	F
	14	357	278	3.3	F	410	309	6.4	F	441	327	9.7	F
AHU150	8	382	293	3.4	F	451	344	7	F/D	455	357	1.5	D
	10	413	317	4	F	480	363	7.7	F/D	482	373	1.6	D
	12	432	334	4.3	F	510	380	8.5	F/D	504	384	1.7	D
	14	458	351	4.7	F	526	390	9	F/D	523	393	1.8	D
AHU200	8	520	395	4.5	F	586	453	2.8	F/D	626	484	1.9	D
	10	560	427	5	F	623	478	3	F/D	653	501	2	D
	12	595	453	5.6	F	652	497	3.3	F/D	682	516	2.1	D
	14	620	473	6.1	F	674	510	3.5	F/D	707	528	2.3	D
AHU220	8	574	437	4.3	F	647	500	2.7	F/D	680	530	1.8	D
	10	620	472	5	F	687	527	3	F/D	720	552	1.9	D
	12	656	500	5.5	F	720	547	3.2	F/D	751	570	2.1	D
	14	685	522	6	F	743	562	3.4	F/D	780	582	2.2	D
AHU240	8	621	473	4.5	F	702	542	2.8	F/D	740	576	1.8	D
	10	671	512	5.3	F	747	573	3.1	F/D	783	600	2	D
	12	712	542	5.8	F	781	595	3.4	F/D	818	620	2.2	D
	14	743	566	6.3	F	808	612	3.6	F/D	850	534	2.3	D
AHU300	8	778	593	4.4	F	880	680	2.8	F/D	940	726	1.8	D
	10	841	641	5.2	F	935	717	3.1	F/D	994	757	2	D
	12	792	680	5.7	F	978	745	3.3	F/D	1023	775	2.1	D
	14	930	710	6.2	F	1011	765	3.5	F/D	1061	793	2.3	D
AHU400	8	947	756	1.1	D	1205	918	5.6	F/D	1290	982	3.8	D
	10	1009	811	1.3	D	1281	970	6.2	F/D	1361	1024	4.2	D
	12	1070	860	1.4	D	1340	1007	6.6	F/D	1002	1047	4.4	D
	14	1116	897	1.5	D	1385	1035	7	F/D	1453	1072	4.7	D
AHU480	8	1167	917	1.9	D	1462	1107	9	F/D	1565	1185	6.1	D
	10	1262	992	2.2	D	1555	1170	10	F/D	1655	1236	6.3	D
	12	1340	1051	2.4	D	1627	1215	11	F/D	1705	1265	7.2	D
	14	1400	1100	2.6	D	1685	1250	12	F/D	1765	1295	7.7	D
AHU600	8	1513	1163	3.7	D	1845	1387	16	F/D	1980	1490	11	D
	10	1615	1250	4.1	D	1963	1466	18	F/D	2065	1541	12	D
	12	1713	1326	4.5	D	2055	1526	20	F/D	2155	1590	13	D
	14	1791	1390	4.9	D	2128	1570	21	F/D	2235	1630	14	D

Table3-Heating coil capacities and pressure drops (Air Handlers and Air Washers):

Models	1 Row		2 Rows		3 Rows		4 Rows	
	Capacity (MBH)	P.P (ft-water)						
AHU25	87.5	1.1 H	134	0.7 H	170	1.7 H	192	2.8 H
AHU35	124	1.3 H	191	1.1 H	240	2.8 H	270	4.6 H
AHU60	211	2.9 H	328	2.5 H	410	5.7 H	447	1.2 F
AHU100	341	1.0 H	556	4.8 H	676	3.2 H	754	2.3 F
AHU120	417	1.6 H	660	5.6 H	817	5.3 F/H	914	3.8 F
AHU150	520	2 H	800	1.4 F	1023	6.6 F/H	1150	5.3 F
AHU200	700	2.6 H	1085	1.7 F	1320	8.3 F/H	1542	6.7 F
AHU220	780	2.7 H	1200	1.6 F	1520	8.7 F/H	1700	6.1 F
AHU240	840	2.6 H	1300	1.7 F	1650	9.7 F/H	1840	6.4 F
AHU300	1050	2.6 H	1630	1.8 F	2060	8.9 F/H	2315	6.7 F
AHU400	1420	5.3 H	2205	3.4 F	2710	2.7 F/H	3050	2.1 D
AHU480	1700	8.6 H	2650	5.6 F	3250	3.8 F/H	3636	3.2 D
AHU600	2120	15 H	3300	9.6 F	4040	6.9 F/H	4515	5.5 D

Entering air Dry bulb Temp. = 60 (°F)

Entering water Temp / Living water Temp. = 180 / 160 (°F)

F: Full Circuit

H: Half Circuit

D: Double Circuit

جدول فوق برای کوبیهای 8 F.P.I با شرایط دمای هوای ورودی 60 °F و دمای آب ورودی 180 °F تنظیم شده است برای محاسبه ظرفیت در سایر موارد از جداول زیر استفاده کنید.

Table4: Capacity correction factor for other F.P.I (for heating coils)

	6 F.P.I	8 F.P.I	10 F.P.I	12 F.P.I	14 F.P.I
1 Row	0.83	1	1.17	1.30	1.40
2 Rows	0.88	1	1.12	1.22	1.30
3 Rows	0.89	1	1.11	1.20	1.25
4 Rows	0.90	1	1.08	1.14	1.20

Table5: Capacity correction factor for different entering water temp and air dry bulb temp (for hot water coils)

Entering water temp.(°F)	Entering air dry bulb temp. (°F)									
	25	30	35	40	45	50	55	60	65	70
200	1.55	1.53	1.46	1.40	1.35	1.30	1.24	1.19	1.13	1.08
190	1.49	1.43	1.37	1.31	1.25	1.19	1.14	1.09	1.04	1
180	1.38	1.32	1.26	1.18	1.14	1.09	1.04	1	0.93	0.88
170	1.28	1.22	1.16	1.10	1.05	1	0.93	0.88	0.83	0.78
160	1.19	1.13	1.06	1	0.95	0.90	0.85	0.79	0.74	0.69
150	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.69	0.64	0.60

Table6-Steam coils capacities (MBH):

Models	1 Row	2 Rows	3 Rows	4 Rows
AHU25	126	198	247	278
AHU35	176	278	340	383
AHU60	270	446	560	636
AHU100	450	744	934	1062
AHU120	545	895	1122	1275
AHU150	690	1131	1411	1600
AHU200	920	1504	1878	2127
AHU220	996	1645	2060	2335
AHU240	1102	1810	2256	2555
AHU300	1380	2256	2816	3190
AHU400	1832	3011	3770	4270
AHU480	2235	3633	4335	5130
AHU600	2802	4578	5710	6434

Entering air Dry bulb Temp. = 60 (°F)

Entering steam pressure = 15 P.S.I

جدول فوق برای کوپلهای ۸ F.P.I و با شرایط دمای هوا و رودی ۶۰ °F و فشار بخار و رودی ۱۵ تنشیم شده است برای محاسبه ظرفیت در سایر موارد از جداول زیر استفاده کنید.

Table7-Capacity correction factor for different entering steam pressure and air dry bulb temp(for steam coils)

Entering air dry bulb temp (°F)	Steam pressure (Psi)					
	5	15	30	45	60	90
-10	1.31	1.66	1.94	2.14	2.28	2.48
10	1.08	1.43	1.72	1.9	1.91	1.87
30	0.90	1.25	1.51	1.67	1.79	1.98
50	0.71	1.08	1.32	1.47	1.59	1.77
60	0.64	1	1.23	1.38	1.50	1.67
70	0.57	0.91	1.14	1.29	1.40	1.57
90	0.44	0.74	0.97	1.12	1.23	1.40

در صورت که هواساز قطداری کوپل گرمایی باشد طبق استاندارد ARI 410-18 سرعت هوا در کوپلهای گرمایی ۱۲۰۰ F.P.M می‌تواند افزایش پیدا کند در این حالت به جای استاندارد هوا اصل می‌توانید هواساز با فن مناسب را که هوادهی مورد نظر شما را مامن کند استفاده کنید به عنوان مثال اگر ۹۳۰-۱۱۶۰ FMP از کوپل هواساز AHU15 با سطح ۲.۶ M² با فن ۲۶-۳۲۵۰۰ cfm AT 30 ۲۸ TCI با هوا دهی ۲۶۰۰۰-۲۶۲۰۰ استفاده کنید سرعت هوا روی کوپل خواهد بود و اندازه هواساز ۱۵ تقریباً AHU30 مانند هواساز AHU30 بود در این صورت برای محاسبه ظرفیت از جداول زیر استفاده کنید.

Table8-Face velocity correction factor (for heating coil)

Face velocity (FPM)	400	500	600	700	800	900	1000	1100	1200
1 Row	0.82	0.95	1.01	1.07	1.23	1.25	1.24	1.18	1.10
2 Row	0.80	0.95	1.03	1.11	1.27	1.31	1.89	1.33	1.29
3 Row	0.79	0.94	1.05	1.15	1.30	1.38	1.43	1.46	1.46
4 Row	0.79	0.95	1.06	1.18	1.34	1.43	1.50	1.56	1.59

Table9-Steam description

Gage pressure (Psi)	5	15	30	45	60	90
Hfg Enthalpy (Btu/Lb)	960	945	928	915	904	886
Steam Temperature (°F)	227	250	274	292	307	331

Air outlet temperature, water and steam flow rate

For heating coils:

$$\text{Leaving air Temp. } (^{\circ}\text{F}) = \text{entering air Temp. } (^{\circ}\text{F}) + \frac{\text{Heating capacity (Btu/Hr)}}{\text{Air flow rate (cfm)} \times 1.08}$$

$$\text{Water flow rate (GPM)} = \frac{\text{Heating capacity (Btu/Hr)}}{10,000}$$

For Steam coils:

$$\text{Condensed steam mass (Lb/Hr)} = \frac{\text{Heating capacity (Btu/Hr)}}{H_{fg} \text{ Enthalpy (Btu/Lb)}}$$

For cooling coils:

$$\text{Water flow rate (GPM)} = \frac{\text{Cooling capacity (Btu/Hr)}}{5,000}$$

$$\text{Leaving air Dry Bulb Temp. } (^{\circ}\text{F}) = \text{entering air Dry bulb Temp. } (^{\circ}\text{F}) - \frac{\text{Sensible capacity (Btu/Hr)}}{\text{Air flow (cfm)} \times 1.08}$$

Table10- Outlet wet bulb Temp:

Outlet wet bulb Temp.(°F)	Outlet dry bulb Temp.(°F)							
	56	58	60	62	64	66	68	70
	56.0	57.4	58.5	59.5	60.6	61.6	62.6	63.7

Table11- Cooling coil bypass factor:

Rows depth	F.P.I	Air velocity (fpm)					
		400	450	500	550	600	650
4	8	0.2	0.22	0.23	0.25	0.27	
	10	0.14	0.16	0.17	0.19	0.2	
	12	0.1	0.11	0.12	0.14	0.15	
	14	0.07	0.08	0.09	0.1	0.11	
6	8	0.09	0.1	0.11	0.12	0.14	
	10	0.05	0.06	0.07	0.08	0.09	
	12	0.03	0.04	0.04	0.05	0.06	
	14	0.02	0.02	0.03	0.03	0.04	
8	8	0.04	0.05	0.05	0.06	0.07	
	10	0.02	0.03	0.03	0.04	0.04	
	12	0.01	0.01	0.02	0.02	0.02	
	14	-	-	0.01	0.01	0.01	

Water and air pressure drop for Air Handlers and Air Washers:

Table12- Accessories air pressure drop (inch H2O):

Damper	electrical heater	Air washer		Mixing box
		C4	C8	
0.07	0.02	0.32	0.4	0.04

Table13-Washable corrugated aluminum pressure drop:

Standard panel size	500 x 500 x 50 (mm)											
	300	350	400	450	500	550	600	650	700	750	800	850
pressure drop (inch H2O)	0.03	0.05	0.06	0.08	0.09	0.11	0.13	0.15	0.19	0.22	0.26	0.29

Table14-Coil air pressure drop for optimal cfm (inch H2O):

A.P.D1	1 Row	2 Row	3 Row	4 Row	6 Row	8 Row
6 F.P.I	0.02	0.04	0.07	0.09	0.14	0.18
8 F.P.I	0.03	0.07	0.10	0.14	0.20	0.27
10 F.P.I	0.04	0.09	0.14	0.19	0.28	0.36
12 F.P.I	0.06	0.12	0.18	0.25	0.37	0.50
14 F.P.I	0.08	0.15	0.23	0.31	0.47	0.63

برای محاسبه افت فشار آب و هوا در کوپلها در سایر شرایط از فرمولهای زیر استفاده کنید W.P.D1 و W.P.D2 و A.P.D1 و A.P.D2
مندرج در جداول ۱۰ و ۱۳ می‌باشد.

$$W.P.D2 = \left(\frac{GPM_2}{GPM_1} \right)^2 \times W.P.D1$$

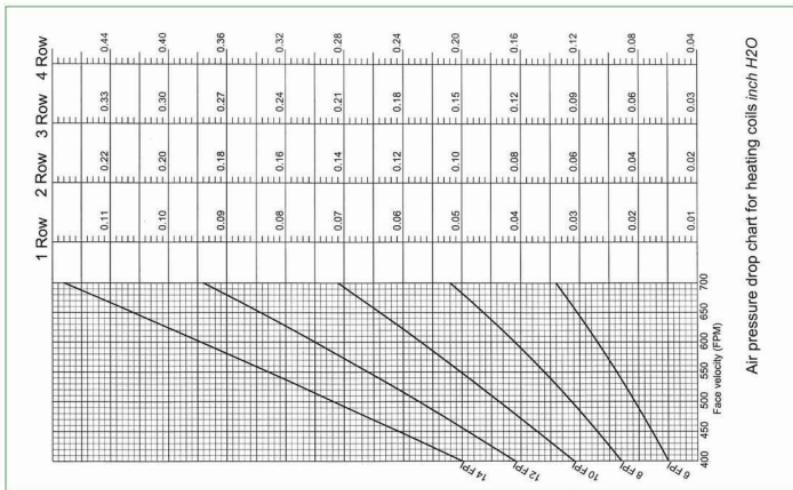
$$A.P.D2 = \left(\frac{cfm_2}{cfm_1} \right)^2 \times A.P.D1$$

Table15- Filters :

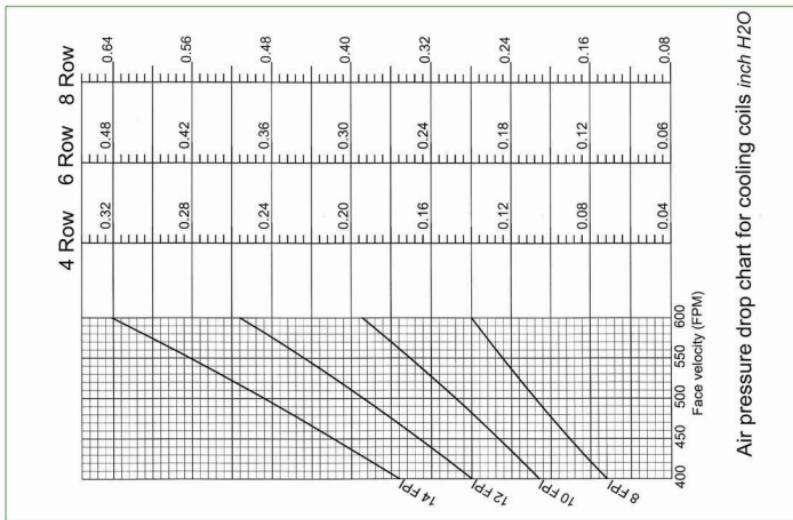
Filter type	Media type	Efficiency %	Pressure drop (inch H2O)		Face velocity (FPM)	Eurovent (EU)	Description
			initial	final			
Metallic pre-filter	Aluminum	30-45	0.03	0.2	300	3	Washable corrugated aluminum filter.
Bag filter*	Polyester	60-65	0.3	0.68	500	6	Second stage filter after aluminum filter and before HEPA and ULPA filters.
		80-85	0.44	0.8		7	
		90-95	0.68	1		8	
		99	1	1.3		9	
Hepa*	Glass micro fiber	99.99	1	1.4	500	10-13	High Efficiency Particulate Filter (HEPA) is designed to arrest Particulate ranging from 0.3 micron and above.

* Bag filter and HEPA filter will be installed by order.

Water and air pressure drop for Air Handlers and Air Washers:



Air pressure drop chart for heating coils $inch\ H2O$



Air pressure drop chart for cooling coils $inch\ H2O$

Coil connections:

Table16-Hot water and steam coils connections

Models	1 Row	2 Rows	3 Rows	4 Rows
AHU25	1"	1 1/4"	1 1/4"	1 1/2"
AHU35	1 1/4"	1 1/2"	1 1/2"	2"
AHU60	1 1/2"	2"	2"	2"
AHU100	2"	2 1/2"	2 1/2"	2 1/2"
AHU120	2"	2 1/2"	2 1/2"	3"
AHU150	2 1/2"	2 1/2"	3"	3"
AHU200	2 1/2"	3"	3"	3"
AHU220	2 1/2"	3"	3"	3"
AHU240	3"	3"	3"	2 x 2 1/2"
AHU300	3"	3"	2 x 2 1/2"	2 x 2 1/2"
AHU400	2 x 2"	2 x 2 1/2"	2 x 3"	2 x 3"
AHU480	2 x 2"	2 x 2 1/2"	2 x 3"	2 x 3"
AHU600	2 x 2"	2 x 2 1/2"	2 x 3"	2 x 3"

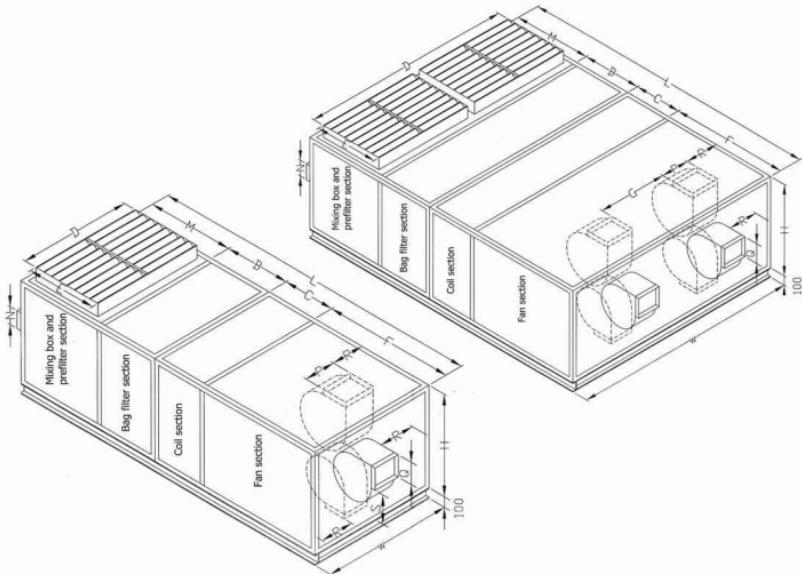
Table17-Chilled water coils connections

Models	4 Row	6 Rows	8 Rows
AHU25	1 1/4"	1 1/2"	1 1/2"
AHU35	1 1/2"	1 1/2"	2"
AHU60	2"	2"	2"
AHU100	2 1/2"	2 1/2"	2 1/2"
AHU120	2 1/2"	3"	3"
AHU150	3"	3"	3"
AHU200	3"	3"	2 x 2 1/2"
AHU220	3"	2 x 2 1/2"	2 x 2 1/2"
AHU240	2 x 2 1/2"	2 x 2 1/2"	2 x 2 1/2"
AHU300	2 x 2 1/2"	2 x 3"	2 x 3"
AHU400	2 x 2 1/2"	2 x 3"	2 x 3"
AHU480	2 x 3"	2 x 3"	2 x 3"
AHU600	2 x 3"	2 x 3"	2 x 3"

Horizontal Type Units Dimensions: (Hot deep galvanized steel sheet with welded joints)

Models	L	W	H	D	E	N	M	B	C	F	P	Q	R	S	G
AHU25A1H*	3710	1100	870	1010	340	240	930	960	620	1200	335	293	372	380	-
AHU35A1H*	3860	1250	970	1160	340	240	930	960	620	1350	400	345	422	460	-
AHU60A1H*	3960	1500	1170	1410	340	240	930	960	620	1450	475	410	512	600	-
AHU100A1H*	3980	1800	1470	1710	340	240	950	960	620	1450	566	487	617	700	-
AHU120B1H*	4080	2100	1470	2010	340	240	1050	960	620	1450	475	410	300	600	550
AHU150A1H*	4630	2300	1570	2210	340	240	1150	960	620	1900	700	700	800	710	-
AHU200A1H*	5030	2500	1870	2410	340	240	1250	960	620	2200	875	875	812	800	-
AHU220B1H*	4280	2500	2070	2410	340	240	1250	960	620	1450	566	487	334	700	700
AHU240A1H*	5130	2500	2270	2410	540	340	1350	960	620	2200	875	875	812	800	-
AHU300A1H*	5280	2500	2670	2410	640	340	1450	960	620	2250	875	945	812	760	-
AHU300B1H*	4930	2500	2670	2410	640	340	1450	960	620	1900	700	700	300	710	500
AHU400B1H*	5230	3300	2770	3210	640	340	1450	960	620	2200	875	875	400	800	750
AHU480B1H*	5230	3700	2770	3610	740	440	1450	960	620	2200	875	875	650	800	1300
AHU600B1H*	5280	4300	2770	4210	740	440	1450	960	620	2250	875	945	750	760	1050

Models AHU300B1H* to AHU600B1H* Are manufactured in 2 or 3 separate parts for transportation purpose.

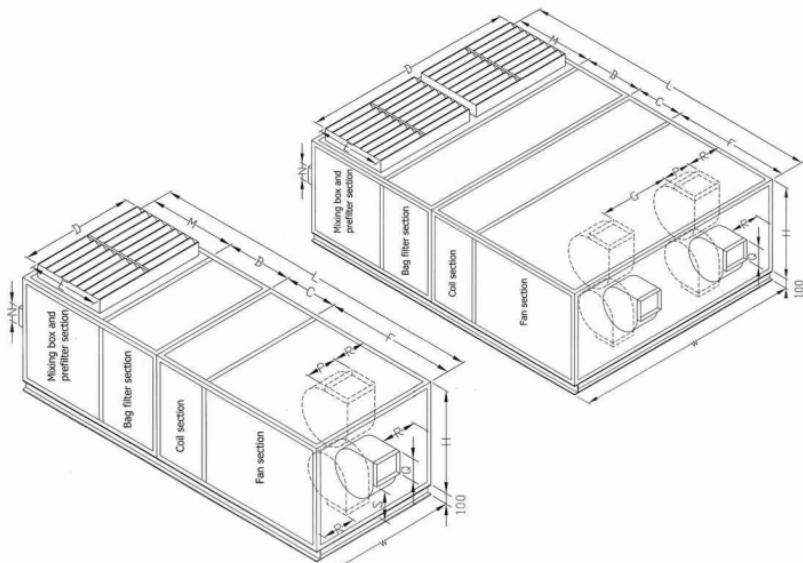


- C dimensions, mentioned here, are only for air handling units. These dimensions will be decreased by 350mm in case of absent of cooling coils .In case of absent of heating coils they will decrease by 250mm respectfully.
- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.
- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.
- Bag filters are installed upon order.
- Any customized units (specific dimensions) can be produced upon request.

Horizontal Type Units Dimensions:(Hot deep galvanized steel sheet with screw joints)

Models	L	W	H	D	E	N	M	B	C	F	P	Q	R	S	G
AHU25A2H*	3720	1100	740	1010	340	240	950	980	620	1170	335	293	372	320	-
AHU35A2H*	3870	1250	840	1160	340	240	950	980	620	1320	400	345	422	400	-
AHU60A2H*	3970	1500	1040	1410	340	240	950	980	620	1420	475	410	512	540	-
AHU100A2H*	3990	1800	1340	1710	340	240	970	980	620	1420	566	487	617	640	-
AHU120B2H*	4090	2100	1340	2010	340	240	1070	980	620	1420	475	410	300	540	550
AHU150A2H*	4640	2300	1440	2210	340	240	1170	980	620	1870	700	700	800	650	-
AHU200A2H*	5040	2500	1740	2410	340	240	1270	980	620	2170	875	875	812	760	-
AHU220B2H*	4290	2500	1940	2410	340	240	1270	980	620	1420	566	487	334	640	700
AHU240A2H*	5140	2500	2140	2410	540	340	1370	980	620	2170	875	875	812	740	-
AHU300A2H*	5290	2500	2540	2410	640	340	1470	980	620	2220	875	945	812	700	-
AHU300B2H*	4940	2500	2540	2410	640	340	1470	980	620	1870	700	700	300	650	500
AHU400B2H*	5240	3400	2540	3210	640	340	1470	980	620	2170	875	875	400	740	750
AHU480B2H*	5240	3800	2540	3610	740	440	1470	980	620	2170	875	875	650	740	1300
AHU600B2H*	5290	4400	2540	4210	740	440	1470	980	620	2220	875	945	750	700	1050

Models AHU400B2H* to AHU600B2H* will be disassembled and re-assembled in location.



- C dimensions, mentioned here, are only for air handling units. These dimensions will be decreased by 350mm in case of absent of cooling coils. In case of absent of heating coils they will decrease by 250mm respectively.

- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.

- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.

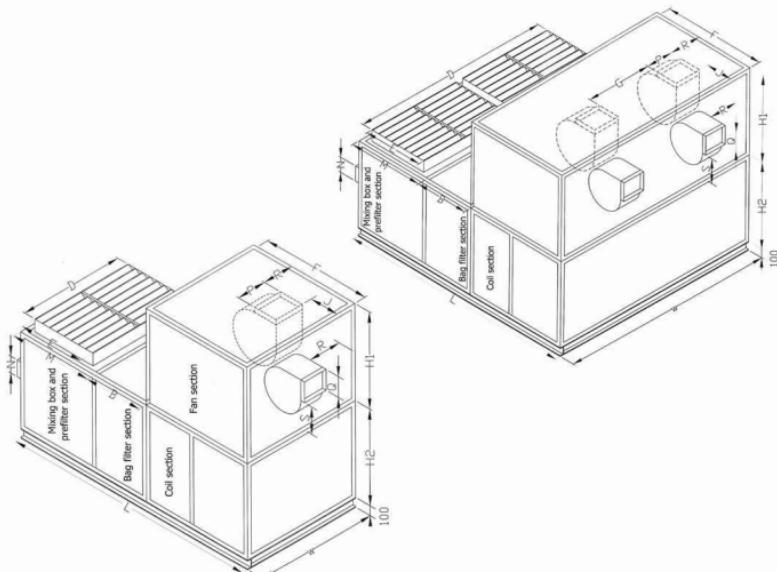
- Bag filters are installed upon order.

- Any customized units (specific dimensions) can be produced upon request.

L-Type Units Dimensions:(Hot deep galvanized steel sheet with welded joints)

Models	L	W	H2	H1	D	E	N	M	B	F	P	Q	R	S	G
AHU25A1L*	3280	1100	870	970	1010	340	240	950	980	1350	335	293	372	320	-
AHU35A1L*	3280	1250	970	1000	1160	340	240	950	980	1350	400	345	422	400	-
AHU60A1L*	3430	1500	1170	1000	1410	340	240	950	980	1500	475	410	512	540	-
AHU100A1L*	3650	1800	1470	1150	1710	340	240	970	980	1700	566	487	617	640	-
AHU120B1L*	3550	2100	1470	1000	2010	340	240	1070	980	1500	475	410	300	540	550
AHU150A1L*	4150	2300	1570	1500	2210	340	240	1170	980	2000	700	700	800	650	-
AHU200A1L*	4550	2500	1870	1750	2410	340	240	1270	980	2300	875	875	812	760	-
AHU220B1L*	3950	2500	2070	1150	2410	340	240	1270	980	1700	566	487	334	640	700
AHU240A1L*	4650	2500	2270	1750	2410	540	340	1370	980	2300	875	875	812	740	-
AHU300A1L*	4850	2500	2670	1900	2410	640	340	1470	980	2400	875	945	812	700	-
AHU300B1L*	4450	2500	2670	1500	2410	640	340	1470	980	2000	700	700	300	650	500
AHU400B1L*	4750	3400	2670	1750	3210	640	340	1470	980	2300	875	875	400	740	750
AHU480B1L*	4750	3800	2670	1750	3610	740	440	1470	980	2300	875	875	650	740	1300
AHU600B1L*	4850	4400	2670	1900	4210	740	440	1470	980	2400	875	945	750	700	1050

Models AHU150A1L* to AHU600B1L* will be disassembled and re-assembled in location.

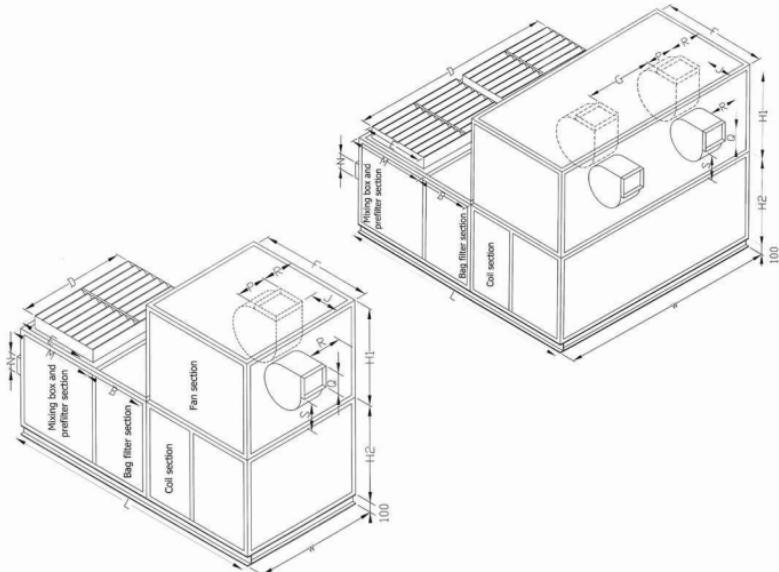


- F dimensions, mentioned here, are only for air handling unit. These dimensions will be decreased by 350mm in case of absent of cooling coils. In case of absent of heating coils they will decrease by 250mm respectively.
- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.
- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.
- Bag filters are installed upon order.
- Any customized units (specific dimensions) can be produced upon request.

Type Units Dimensions: (Hot deep galvanized steel sheet with screw joints)

Models	L	W	H2	H1	D	E	N	M	B	F	P	Q	R	S	G
AHU25A2L*	3280	1100	740	970	1010	340	240	950	980	1350	335	293	372	320	-
AHU35A2L*	3280	1250	840	1000	1160	340	240	950	980	1350	400	345	422	400	-
AHU60A2L*	3430	1500	1040	1000	1410	340	240	950	980	1500	475	410	512	540	-
AHU100A2L*	3650	1800	1340	1150	1710	340	240	970	980	1700	566	487	617	640	-
AHU120B2L*	3550	2100	1340	1000	2010	340	240	1070	980	1500	475	410	300	540	550
AHU150A2L*	4150	2300	1440	1500	2210	340	240	1170	980	2000	700	700	800	650	-
AHU200A2L*	4550	2500	1740	1750	2410	340	240	1270	980	2300	875	875	812	760	-
AHU220B2L*	3950	2500	1940	1150	2410	340	240	1270	980	1700	566	487	334	640	700
AHU240A2L*	4650	2500	2140	1750	2410	540	340	1370	980	2300	875	875	812	740	-
AHU300A2L*	4850	2500	2540	1900	2410	640	340	1470	980	2400	875	945	812	700	-
AHU300B2L*	4450	2500	2540	1500	2410	640	340	1470	980	2000	700	700	300	650	500
AHU400B2L*	4750	3400	2540	1750	3210	640	340	1470	980	2300	875	875	400	740	750
AHU480B2L*	4750	3800	2540	1750	3610	740	440	1470	980	2300	875	875	650	740	1300
AHU600B2L*	4850	4400	2540	1900	4210	740	440	1470	980	2400	875	945	750	700	1050

Models AHU150A2L* to AHU600B2L* will be disassembled and re-assembled in location.



- Dimensions, mentioned here, are only for air handling units. These dimensions will be decreased by 350mm in case of absent of cooling coils. In case of absent of heating coils they will decrease by 250mm respectively.

- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.

- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.

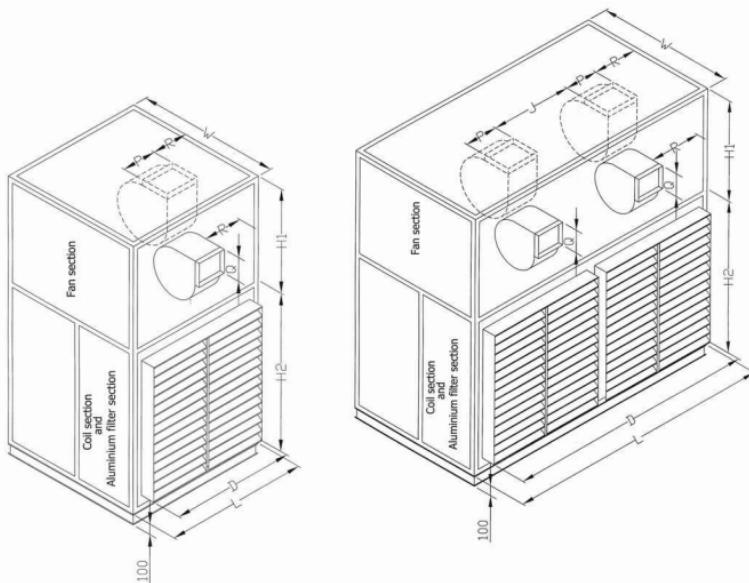
- Bag filters are installed upon order.

- Any customized units (specific dimensions) can be produced upon request.

Vertical Type Units Dimensions: (Hot deep galvanized steel sheet with screw joints)

Models	L	D	H2	H1	W	P	Q	R	J
AHU25A2V*	1100	1010	740	970	1350	335	293	372	-
AHU35A2V*	1250	1160	840	1000	1350	400	345	422	-
AHU60A2V*	1500	1410	1040	1000	1500	475	410	512	-
AHU100A2V*	1800	1710	1340	1150	1700	566	487	617	-
AHU120B2V*	2100	2010	1340	1000	1500	475	410	300	550
AHU150A2V*	2300	2210	1440	1500	2000	700	700	800	-
AHU200A2V*	2500	2410	1740	1750	2300	875	875	812	-
AHU220B2V*	2500	2410	1940	1150	1700	566	487	334	700
AHU240A2V*	2500	2410	2140	1750	2300	875	875	812	-
AHU300A2V*	2500	2410	2540	1900	2400	875	945	812	-
AHU300B2V*	2500	2410	2540	1500	2000	700	700	300	500
AHU400B2V*	3400	3210	2540	1750	2300	875	875	400	750
AHU480B2V*	3800	3610	2540	1750	2300	875	875	650	1300
AHU600B2V*	4400	4210	2540	1900	2400	875	945	750	1050

Models AHU150A2V* to AHU600B2V* will be disassembled and re-assembled in location.

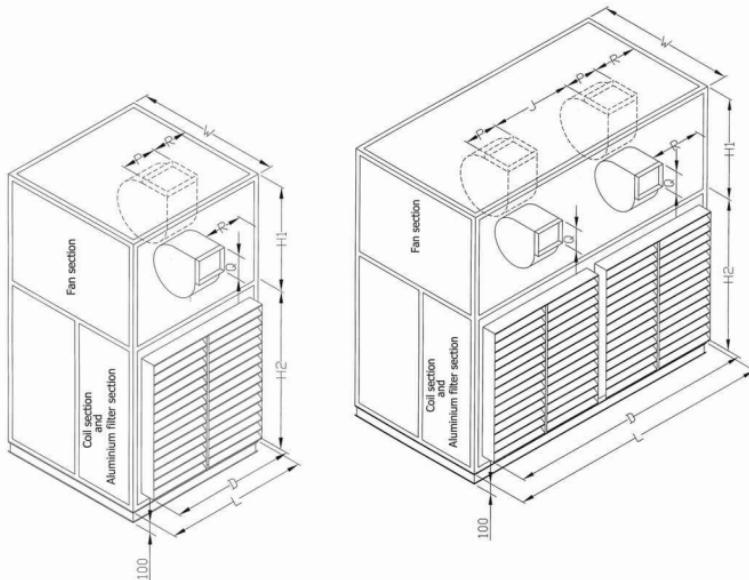


- W dimensions, mentioned here, are only for air handling units. These dimensions will be decreased by 350mm in case of absent of cooling coils and in case of absent of heating coils. They will decrease by 250mm respectfully. In case of ordering any extra coils,
- excess of two coils total coil length for single or double rows coils will be extended by 250mm
- Any customized units (specific dimensions) can be produced upon request.

Vertical Type Units Dimensions: (Hot deep galvanized steel sheet with welded joints)

Models	L	D	H2	H1	W	P	Q	R	J
AHU25A1V*	1100	1010	870	970	1350	335	293	372	-
AHU35A1V*	1250	1160	970	1000	1350	400	345	422	-
AHU60A1V*	1500	1410	1170	1000	1500	475	410	512	-
AHU100A1V*	1800	1710	1470	1150	1700	566	487	617	-
AHU120B1V*	2100	2010	1470	1000	1500	475	410	300	550
AHU150A1V*	2300	2210	1570	1500	2000	700	700	800	-
AHU200A1V*	2500	2410	1870	1750	2300	875	875	812	-
AHU220B1V*	2500	2410	2070	1150	1700	566	487	334	700
AHU240A1V*	2500	2410	2270	1750	2300	875	875	812	-
AHU300A1V*	2500	2410	2670	1900	2400	875	945	812	-
AHU300B1V*	2500	2410	2670	1500	2000	700	700	300	500
AHU400B1V*	3400	3210	2670	1750	2300	875	875	400	750
AHU480B1V*	3800	3610	2670	1750	2300	875	875	650	1300
AHU600B1V*	4400	4210	2670	1900	2400	875	945	750	1050

Models AHU150A1V* to AHU600B1V* will be disassembled and re-assembled in location



- W dimensions, mentioned here, are only for air handling units. These dimensions will be decreased by 350mm in case of absent of cooling coils. In case of absent of heating coils they will decrease by 250mm respectively.

- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.

- Bag filters are installed upon order.

- Any customized units (specific dimensions) can be produced upon request.

AIR WASHER

KEYWORD

AW 25 C-4 1 H

Air washer
X100Air Delivery (CFM)
Water consumption:
C-4: 4 gpm/1000cfm of water
C-8: 8 gpm/1000cfm of water
Body And Structure
1-profiled hot deep galvanized steel sheet structure with welded joints
2-profiled hot deep galvanized steel sheet structure with screw joints
3-Aluminum profiled and panels, with die cast corner
Unit Type:
H: Horizontal
L: L-Type

F W 1 1 1

Design Specifications:
1: Original
2: With Electrical panel installed

No. of nozzles bank:
1: one row bank
2: two rows bank

Electrical power specifications (V-ph-Hz)
1:575-3-60 5:200-1-60
2:480-3-60 6:400-3-50
3:230-3-60 7:220-1-50
4:200-3-60

Heating coil rows:
(1, 2, 3, 4)
W: without heating coil

Air Flow Direction:
U:Up ward flow
F:Front ward flow
D:Down ward flow

MEHR ASL Air Washer units are manufactured with 2500-60000 cfm air flow capacities. Their bodies and structures are designed and manufactured in three models.

1: Models which:

Structure and panels of units are made of profiled hot deep galvanized steel sheets with welded joints.

2: Models which:

Body of units are made of profiled hot deep galvanized steel sheets with panels that are screwed to each other.

3: Models which:

Structure of units are made of Aluminum profiles with die cast aluminum corners. These models are made of hot deep galvanized steel sheets.

**All Structures and bodies, which made of profiled hot deep galvanized steel sheets, are coated with electrostatic paint.*

**All parts of these units are insulated with 1/2" insulation materials at coil sections and 1/4" insulation materials, at the other parts.*

**All models are transported to installation location as whole.*

(Except for large models that their transportation contradicts with regulations.

These models are subject to disassembling in factory and re-assembling in installation location.)



بطور کالی خاصیت ایرواشر اینست که دمای شبنم هوای کننده از آبراهه‌های آب گذرانده از نزدیک کند. حال بسته به اینکه اختلاف نسبتی هوا و دمای آب ورودی به سیستم مثبت با مخفی پاشده‌ها روبرو نباشد، آب در ایرواشر آب با دمای معمولی به هواشی خشک اسپری شود در واقع این ایرواشر مانند سرد کن عمل می‌کند. در این حالت اگر انرژی را که از شفت پمپ به سیستم وارد می‌شود و یا تبادل حرارتی از دیواره‌های ایر واشر را در نظر نگیریم تحول هوای آبیابانیک خواهد بود. پارامتر تعیین کننده وضعیت هوای خروجی و ارتباط آن با عملکرد نازلها پارامتری به نام ضریب تاثیر است. ضریب تاثیر بصورت زیر تعریف می‌شود:

$$E = \frac{DBin - DBout}{DBin - WBin} \times 100\%$$

Where:

DBin: dry-bulb temperature of inlet air

دمای حباب خشک هوای ورودی

DBout: dry-bulb temperature of outlet air

دمای حباب خشک هوای خروجی

WBin: wet-bulb temperature of inlet air

دمای حباب تر هوای ورودی

MEHR ASL Air Washer units are made in 2 classes:

Class 4: In these models all Spray Nozzles are located in one side against air flow direction (up stream).

Class 8: In these models all Spray Nozzles are located in both side of spray water in opposite directions.

MEHRASL Air Washer units are made of three main sections:

- 1) Mixing Box Section
- 2) Coil Section
- 3) Fan Section

These sections structures and specifications are exactly like MEHR ASL Air Handling units.

**The below mentioned parts are for Air Washers Units only:*

ALUMINUM Eliminators for Air Washes units with Heating Coils and with Steam Coils

Nozzles with High Spraying Capacities

Submersible Pumps Adequate water delivery and heads

*** Other types of pumps can be installed upon order*

General Mechanism of Air Washer Units:

When Air passes through Air Washer unit, its dew point approaches the temperature of water supplied to unit.

More humid air de-humidified and less humid air is humidified.

In very dry and hot climates, The units acts as evaporative coolers as well.



Selection method:**An example:**

Total Air Delivery :20,000cfm

Entering dry bulb temperature : 95°F

Entering wet bulb temperature : 75°F

Considering Air Delivery of air washer, and data obtained from table 18, model AW200 C-4 would be the best suited choice.

Formula :

$$V_{Face} = \frac{\text{Airdelivery}}{\text{Area}}$$

In this case, air washer total surface area is 37.89 ft² and velocity on surface area will be calculated as follow:

$$V_{Face} = \frac{20000}{37.89} = 528 \text{ cfm}$$

considering velocity of 550fpm, from table 21, performance ratio is found to be 61% so exiting dry bulb air temperature could be found form this formula:

Formula :

$$E = \frac{DBin - DBout}{DBin - WBout} \longrightarrow 0.61 = \frac{95 - DBout}{95 - 75} \longrightarrow DBout = 83 \text{ °F}$$

Using Air washer class 8 air and data from table 21 exiting dry bulb air temperature could be calculated as follow:

$$E = \frac{DBin - DBout}{DBin - WBout} \longrightarrow 0.9 = \frac{95 - DBout}{95 - 75} \longrightarrow DBout = 77 \text{ °F}$$

Table 18- Class 4 air washers specifications

Model	Water flow (GPM)	Face Area (ft ²)	No. of nozzle	Connection						Pump head Head (bar)
				D1	D2	D3	D4	D5	D6	
AW 25C-4	10	5.16	4	1"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 35C-4	14	7.16	6	1 1/4"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 60C-4	24	11.62	10	1 1/2"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 100C-4	40	19.37	16	2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
AW 120C-4	48	23.24	20	2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
AW 150C-4	60	27.99	25	2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
AW 200C-4	80	37.89	33	2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
AW 220C-4	88	42.61	36	2 1/2"	3"	1 1/2"	3/4"	2"	3/4"	3
AW 240C-4	96	47.34	40	3"	4"	1 1/2"	3/4"	2"	3/4"	3
AW 300C-4	120	56.81	50	3"	4"	1 1/2"	1"	2"	1"	3
AW 400C-4	160	80.70	65	3"	4"	2"	1"	2"	1"	3
AW 480C-4	192	91.46	80	3"	4"	2"	1"	2"	1"	3
AW 600C-4	240	107.6	100	4"	5"	2"	1"	2"	1"	3

*Models with one bank nozzle (upstream)***Table 19- Class 8 air washers specifications**

Model	Water flow (GPM)	Face Area (ft ²)	No. of nozzle	Connection						Pump head Head (bar)
				D1	D2	D3	D4	D5	D6	
AW 25C-8	20	5.16	8	2 x 1"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 35C-8	28	7.16	12	2 x 1 1/4"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 60C-8	48	11.62	20	2 x 1 1/2"	1 1/2"	3/4"	1/2"	1 1/2"	1/2"	3
AW 100C-8	80	19.37	32	2 x 2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
AW 120C-8	96	23.24	40	2 x 2"	2 1/2"	1"	1/2"	1 1/2"	1/2"	3
AW 150C-8	120	27.99	50	2 x 2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
AW 200C-8	160	37.89	66	2 x 2 1/2"	3"	1 1/2"	3/4"	1 1/2"	3/4"	3
AW 220C-8	176	42.61	72	2 x 2 1/2"	3"	1 1/2"	3/4"	2"	3/4"	3
AW 240C-8	192	47.34	80	2 x 3"	4"	1 1/2"	3/4"	2"	3/4"	3
AW 300C-8	240	56.81	100	2 x 3"	4"	1 1/2"	1"	2"	1"	3
AW 400C-8	320	80.70	130	2 x 3"	4"	2"	1"	2"	1"	3
AW 480C-8	384	91.46	160	2 x 3"	4"	2"	1"	2"	1"	3
AW 600C-8	480	107.6	200	2 x 4"	5"	2"	1"	2"	1"	3

Models with tow bank nozzle (opposing)

D1) discharge D2) suction D3) drain D4) makeup D5) overflow D6) quick fill

In case that submersible pump is used, D1 & D2 will be omitted.

Table 20 - Water flow, Evaporation rate, Bleed off rate and Make up rate of air washer

Model	Class 4				Class 8			
	Water flow (GPM)	Evaporation of rate (GPM)	Bleed off rate (GPM)	Make up rate (GPM)	Water flow (GPM)	Evaporation of rate (GPM)	Bleed off rate (GPM)	Make up rate (GPM)
AW 25C-	10	0.05	0.03	0.08	20	0.09	0.03	0.12
AW 35C-	14	0.08	0.05	0.13	28	0.12	0.05	0.17
AW 60C-	24	0.13	0.07	0.20	48	0.21	0.07	0.28
AW 100C-	40	0.25	0.08	0.33	80	0.36	0.08	0.44
AW 120C-	48	0.30	0.09	0.39	96	0.43	0.09	0.52
AW 150C-	60	0.37	0.11	0.48	120	0.53	0.11	0.64
AW 200C-	80	0.53	0.14	0.67	160	0.72	0.14	0.86
AW 220C-	88	0.58	0.18	0.76	176	0.79	0.18	0.97
AW 240C-	96	0.63	0.25	0.88	192	0.86	0.25	1.11
AW 300C-	120	0.84	0.31	1.15	240	1.14	0.31	1.45
AW 400C-	160	1.24	0.39	1.63	320	1.67	0.39	2.06
AW 480C-	192	1.41	0.47	1.88	384	1.90	0.47	2.37
AW 600C-	240	1.69	0.56	2.25	480	2.28	0.56	2.84

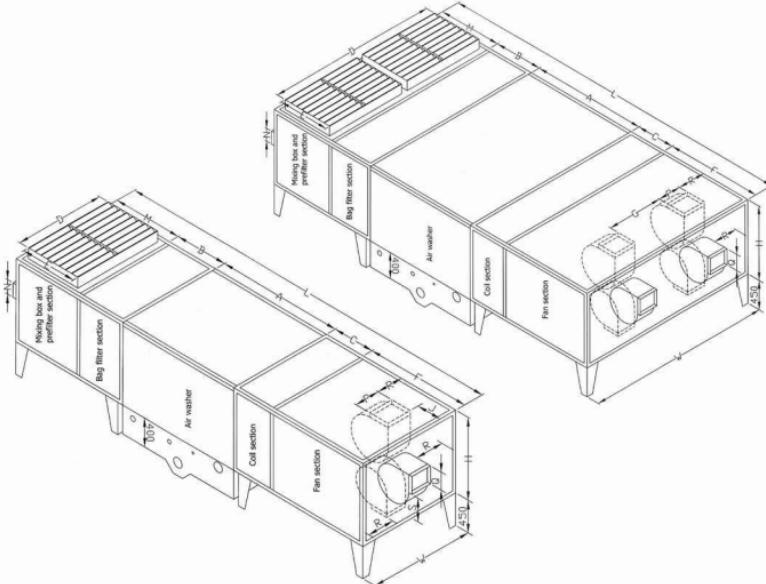
Table 21 - Air washer Efficiency

Model	Class 4				Class 8			
	450	500	550	600	450	500	550	600
AW 25C-	0.59	0.57	0.55	0.54	0.86	0.85	0.84	0.82
AW 35C-	0.59	0.57	0.55	0.54	0.86	0.85	0.84	0.82
AW 60C-	0.60	0.58	0.56	0.55	0.88	0.86	0.85	0.83
AW 100C-	0.62	0.60	0.58	0.57	0.90	0.88	0.87	0.85
AW 120C-	0.63	0.61	0.59	0.58	0.91	0.89	0.88	0.86
AW 150C-	0.63	0.61	0.59	0.58	0.91	0.89	0.88	0.86
AW 200C-	0.65	0.63	0.61	0.60	0.93	0.91	0.90	0.88
AW 220C-	0.67	0.65	0.63	0.62	0.95	0.93	0.92	0.90
AW 240C-	0.67	0.65	0.63	0.62	0.95	0.93	0.92	0.90
AW 300C-	0.69	0.67	0.65	0.64	0.97	0.95	0.94	0.92
AW 400C-	0.70	0.68	0.66	0.65	0.98	0.96	0.95	0.93
AW 480C-	0.70	0.68	0.66	0.65	0.98	0.96	0.95	0.93
AW 600C-	0.70	0.68	0.66	0.65	0.98	0.96	0.95	0.93

Horizontal Type Air Washers (class 4) Dimensions:
(Hot deep galvanized steel sheet with welded and screw joints)

Models	L	W	H	D	E	N	M	B	C	F	P	Q	R	S	A	G
AW25AC4*H*1	5170	1100	870	1010	340	240	950	980	270	1170	335	293	372	320	1800	-
AW35AC4*H*1	5320	1250	970	1160	340	240	950	980	270	1320	400	345	422	400	1800	-
AW60AC4*H*1	5420	1500	1170	1410	340	240	950	980	270	1420	475	410	512	540	1800	-
AW100AC4*H*1	5440	1800	1470	1710	340	240	970	980	270	1420	566	487	617	640	1800	-
AW120BC4*H*1	5540	2100	1470	2010	340	240	1070	980	270	1420	475	410	300	540	1800	550
AW150AC4*H*1	6090	2300	1570	2210	340	240	1170	980	270	1870	700	700	800	650	1800	-
AW200AC4*H*1	6490	2500	1870	2410	440	240	1270	980	270	2170	875	875	812	760	1800	-
AW220BC4*H*1	5740	2500	2070	2410	540	240	1270	980	270	1420	566	487	334	640	1800	700
AW240AC4*H*1	6590	2500	2270	2410	540	340	1370	980	270	2170	875	875	812	740	1800	-
AW300AC4*H*1	6740	2500	2670	2410	640	340	1470	980	270	2220	875	945	812	700	1800	-
AW300BC4*H*1	6390	2500	2670	2410	640	340	1470	980	270	1870	700	700	300	650	1800	500
AW400BC4*H*1	6690	3400	2670	3210	640	340	1470	980	270	2170	875	875	400	740	1800	750
AW480BC4*H*1	6690	3800	2670	3610	740	440	1470	980	270	2170	875	875	650	740	1800	1300
AW600BC4*H*1	6790	4400	2670	4210	740	440	1470	980	270	2220	875	945	750	700	1800	1050

Models AW400AC4*H*1 to AW600BC4*H*1 will be disassembled and re-assembled in location



- C dimensions, mentioned here, are only for air handling units equipped with heating coils.

- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm

- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.

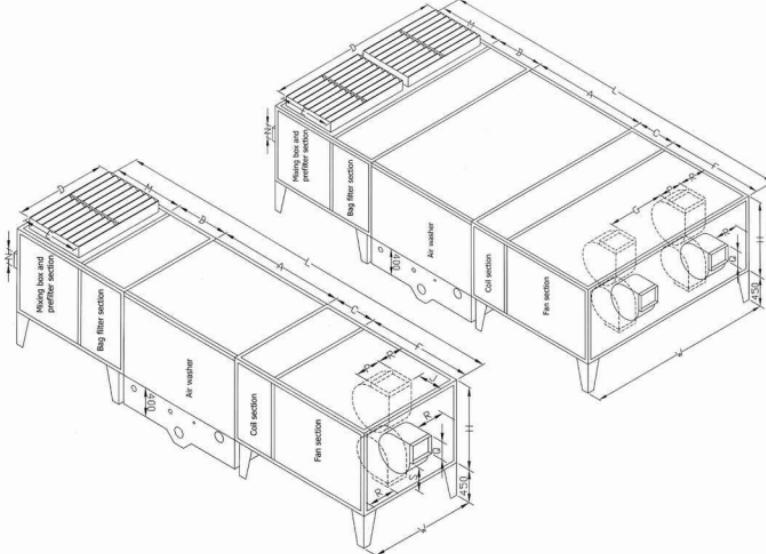
- Bag filters are installed upon order.

- Any customized units (specific dimensions) can be produced upon request.

Horizontal Type Air Washers (class 8) Dimensions:
 (Hot deep galvanized steel sheet with welded and screw joints)

Models	L	W	H	D	E	N	M	B	C	F	P	Q	R	S	A	G
AW25AC8*H*2	5770	1100	870	1010	340	240	950	980	270	1170	335	293	372	320	2400	-
AW35AC8*H*2	5920	1250	970	1160	340	240	950	980	270	1320	400	345	422	400	2400	-
AW60AC8*H*2	6020	1500	1170	1410	340	240	950	980	270	1420	475	410	512	540	2400	-
AW100AC8*H*2	6040	1800	1470	1710	340	240	970	980	270	1420	566	487	617	640	2400	-
AW120BC8*H*2	6140	2100	1470	2010	340	240	1070	980	270	1420	475	410	300	540	2400	550
AW150AC8*H*2	6690	2300	1570	2210	340	240	1170	980	270	1870	700	700	800	650	2400	-
AW200AC8*H*2	7090	2500	1870	2410	440	240	1270	980	270	2170	875	875	812	760	2400	-
AW220BC8*H*2	6340	2500	2070	2410	540	240	1270	980	270	1420	566	487	334	640	2400	700
AW240AC8*H*2	7190	2500	2270	2410	540	340	1370	980	270	2170	875	875	812	740	2400	-
AW300AC8*H*2	7340	2500	2670	2410	640	340	1470	980	270	2220	875	945	812	700	2400	-
AW300BC8*H*2	6990	2500	2670	2410	640	340	1470	980	270	1870	700	700	300	650	2400	500
AW400BC8*H*2	7290	3400	2670	3210	640	340	1470	980	270	2170	875	875	400	740	2400	750
AW480BC8*H*2	7290	3800	2670	3610	740	440	1470	980	270	2170	875	875	650	740	2400	1300
AW600BC8*H*2	7390	4400	2670	4210	740	440	1470	980	270	2220	875	945	750	700	2400	1050

Models AW400AC8*H*2 to AW600BC8*H*2 will be disassembled and re-assembled in location

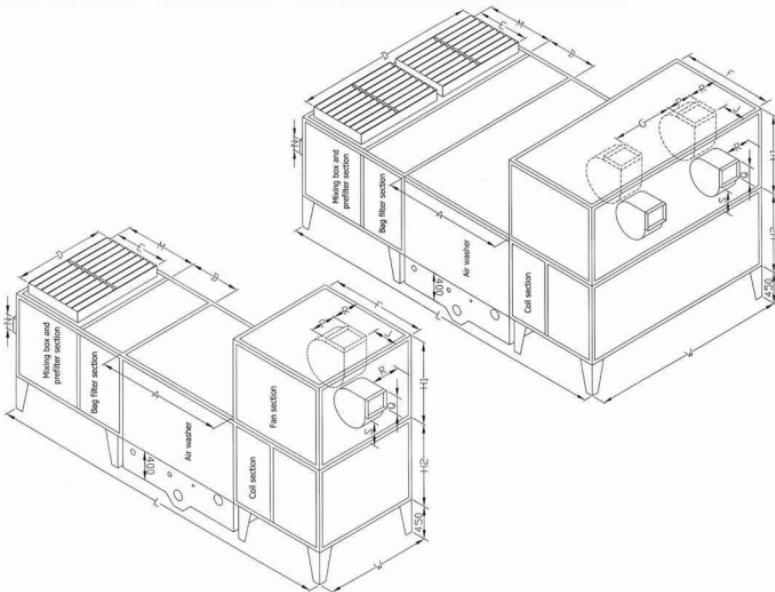


- C dimensions, mentioned here, are only for air handling units equipped with heating coils.
- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.
- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air
- Bag filters are installed upon order.
- Any customized units (specific dimensions) can be produced upon request.

Horizontal L-Type Air Washers (class 4) Dimensions:
(Hot deep galvanized steel sheet with welded and screw joints)

Models	L	W	H2	D	E	N	M	B	H1	F	P	Q	R	S	A	G
AW25AC4*L*1	5080	1100	870	1010	340	240	950	980	970	1350	335	293	372	320	1800	-
AW35AC4*L*1	5080	1250	970	1160	340	240	950	980	1000	1350	400	345	422	400	1800	-
AW60AC4*L*1	5230	1500	1170	1410	340	240	950	980	1000	1500	475	410	512	540	1800	-
AW100AC4*L*1	5450	1800	1470	1710	340	240	970	980	1150	1700	566	487	617	640	1800	-
AW120BC4*L*1	5350	2100	1470	2010	340	240	1070	980	1000	1500	475	410	300	540	1800	550
AW150AC4*L*1	5950	2300	1570	2210	340	240	1170	980	1500	2000	700	700	800	650	1800	-
AW200AC4*L*1	6350	2500	1870	2410	440	240	1270	980	1750	2300	875	875	812	760	1800	-
AW220BC4*L*1	5750	2500	2070	2410	540	240	1270	980	1150	1700	566	487	334	640	1800	700
AW240AC4*L*1	6450	2500	2270	2410	540	340	1370	980	1750	2300	875	875	812	740	1800	-
AW300AC4*L*1	6650	2500	2670	2410	640	340	1470	980	1900	2400	875	945	812	700	1800	-
AW300BC4*L*1	6250	2500	2670	2410	640	340	1470	980	1500	2000	700	700	300	650	1800	500
AW400BC4*L*1	6550	3400	2670	3210	640	340	1470	980	1750	2300	875	875	400	740	1800	750
AW480BC4*L*1	6550	3800	2670	3610	740	440	1470	980	1750	2300	875	875	650	740	1800	1300
AW600BC4*L*1	6650	4400	2670	4210	740	440	1470	980	1900	2400	875	945	750	700	1800	1050

Models AW150AC4*L*1* to AW600BC4*L*1* will be disassembled and re-assembled in location



- F dimensions, mentioned here, are only for air handling units equipped with heating coils.

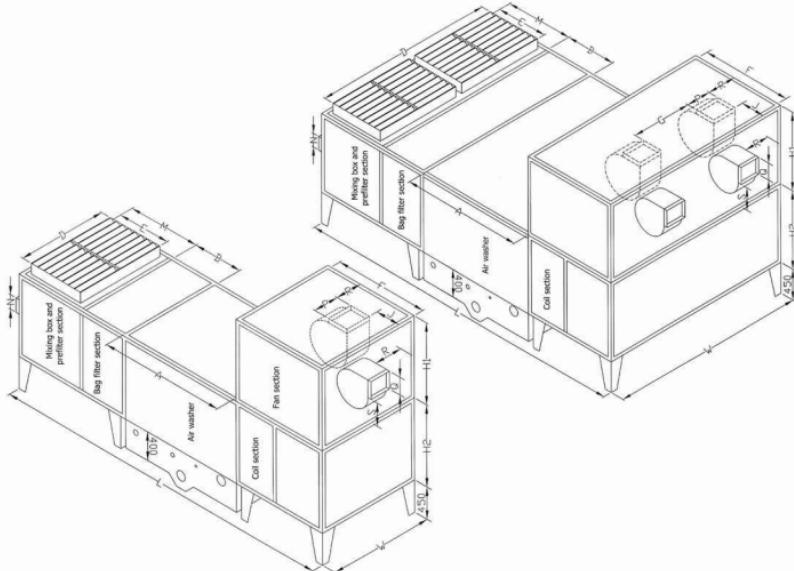
- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm.
- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air.
- Bag filters are installed upon order
- Any customized units (specific dimensions) can be produced upon request.

H0rizontal L-Type Air Washers (class 8) Dimensions:

(Hot deep galvanized steel sheet with welded and screw joints)

Models	L	W	H2	D	E	N	M	B	H1	F	P	Q	R	S	A	G
AW25AC8*L*2	5680	1100	870	1010	340	240	950	980	970	1350	335	293	372	320	2400	-
AW35AC8*L*2	5680	1250	970	1160	340	240	950	980	1000	1350	400	345	422	400	2400	-
AW60AC8*L*2	5830	1500	1170	1410	340	240	950	980	1000	1500	475	410	512	540	2400	-
AW100AC8*L*2	6050	1800	1470	1710	340	240	970	980	1150	1700	566	487	617	640	2400	-
AW120BC8*L*2	5950	2100	1470	2010	340	240	1070	980	1000	1500	475	410	300	540	2400	550
AW150AC8*L*2	6550	2300	1570	2210	340	240	1170	980	1500	2000	700	700	800	650	2400	-
AW200AC8*L*2	6950	2500	1870	2410	440	240	1270	980	1750	2300	875	875	812	760	2400	-
AW220BC8*L*2	6350	2500	2070	2410	540	240	1270	980	1150	1700	566	487	334	640	2400	700
AW240AC8*L*2	7050	2500	2270	2410	540	340	1370	980	1750	2300	875	875	812	740	2400	-
AW300AC8*L*2	7250	2500	2670	2410	640	340	1470	980	1900	2400	875	945	812	700	2400	-
AW300BC8*L*2	6850	2500	2670	2410	640	340	1470	980	1500	2000	700	700	300	650	2400	500
AW400BC8*L*2	7150	3400	2670	3210	640	340	1470	980	1750	2300	875	875	400	740	2400	750
AW480BC8*L*2	7150	3800	2670	3610	740	440	1470	980	1750	2300	875	875	650	740	2400	1300
AW600BC8*L*2	7250	4400	2670	4210	740	440	1470	980	1900	2400	875	945	750	700	2400	1050

Models AW150AC8*L*2 to AW600BC8*L*2 will be disassembled and re-assembled in location



- F dimensions, mentioned here, are only for air handling units equipped with heating coils.

- In case of ordering any extra coils, in excess of two coils total coil length for single or double rows coils will be extended by 250mm .

- Dampers dimensions are calculated for ratio of 20% entering fresh air and 80% return air

- Bag filters are installed upon order

- Any customized units (specific dimensions) can be produced upon request.

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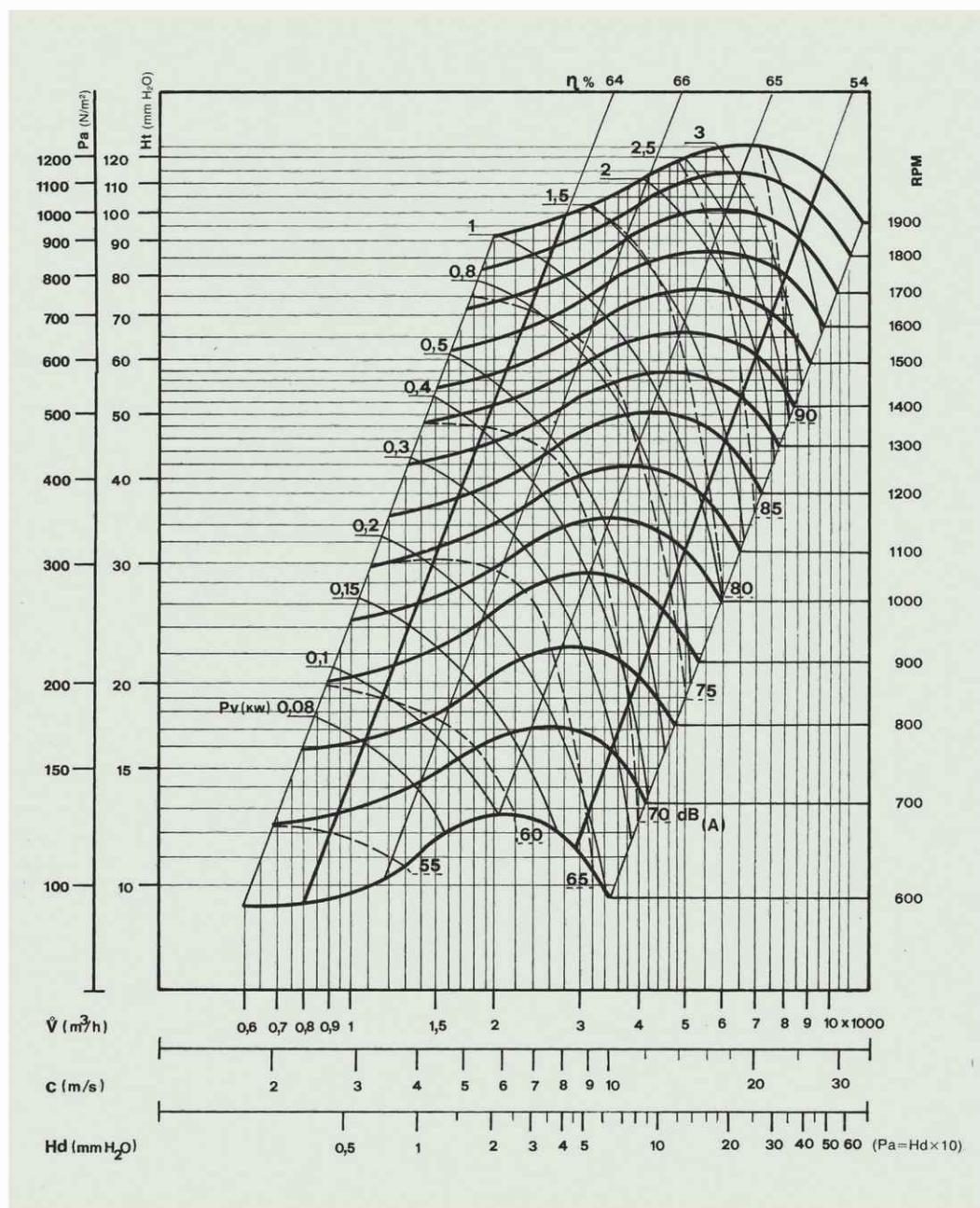


Fan Diagrams

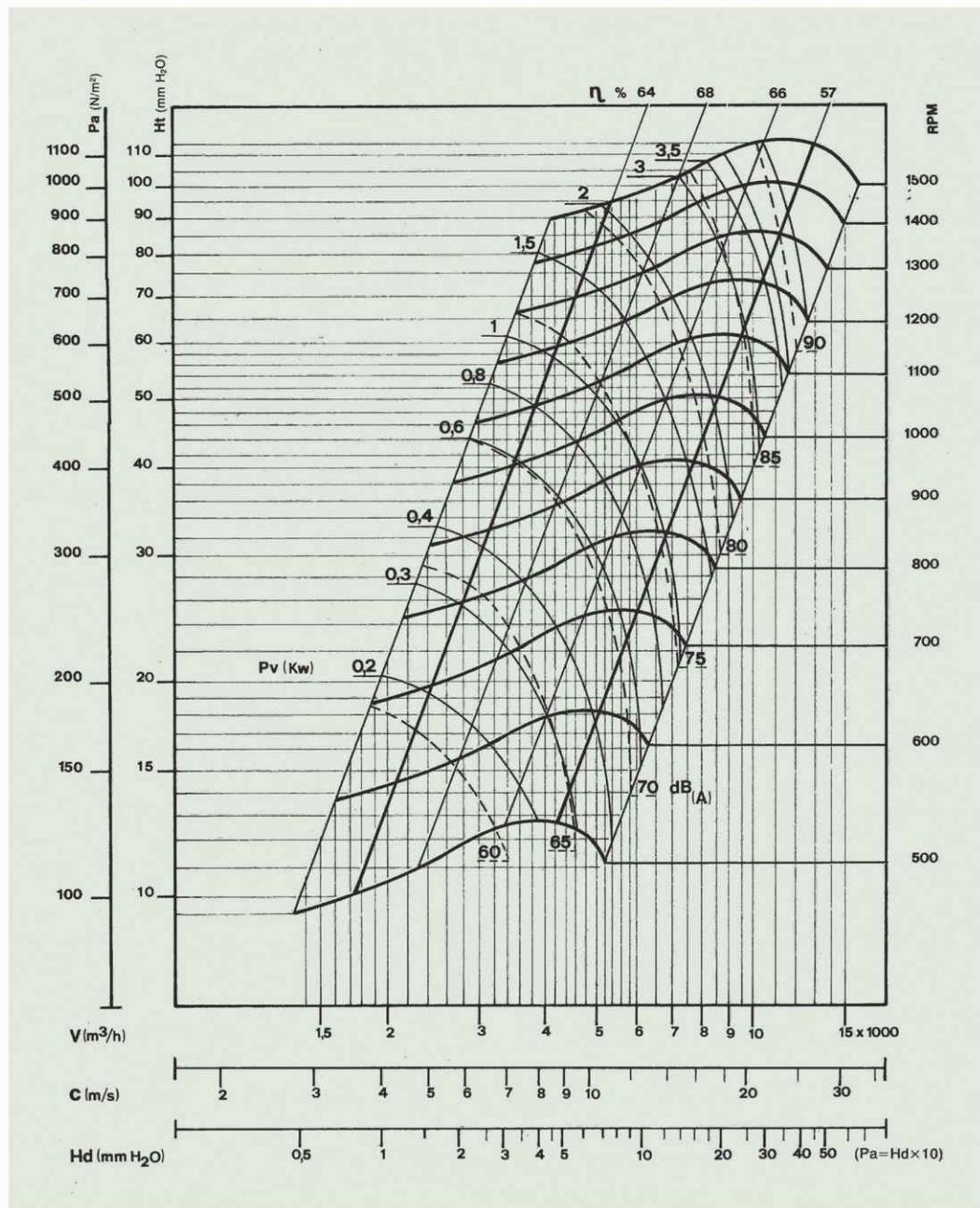
نوجه: دیاگرام فنهای استفاده شده در هواسازها توسط شرکت سازنده فن (نیکوترا) تهیه و تنظیم گردیده است و شرکت مهر اصل این دیاگرامها را صرف احتجت استفاده مشتری از کاتالوگ سازنده نقل مطلب کرده است.

All charts and diagrams are based on information obtained from Nicotra Fan catalogue.
Mehr Asl assumes no responsibilities and liabilities for data given in this catalogue.

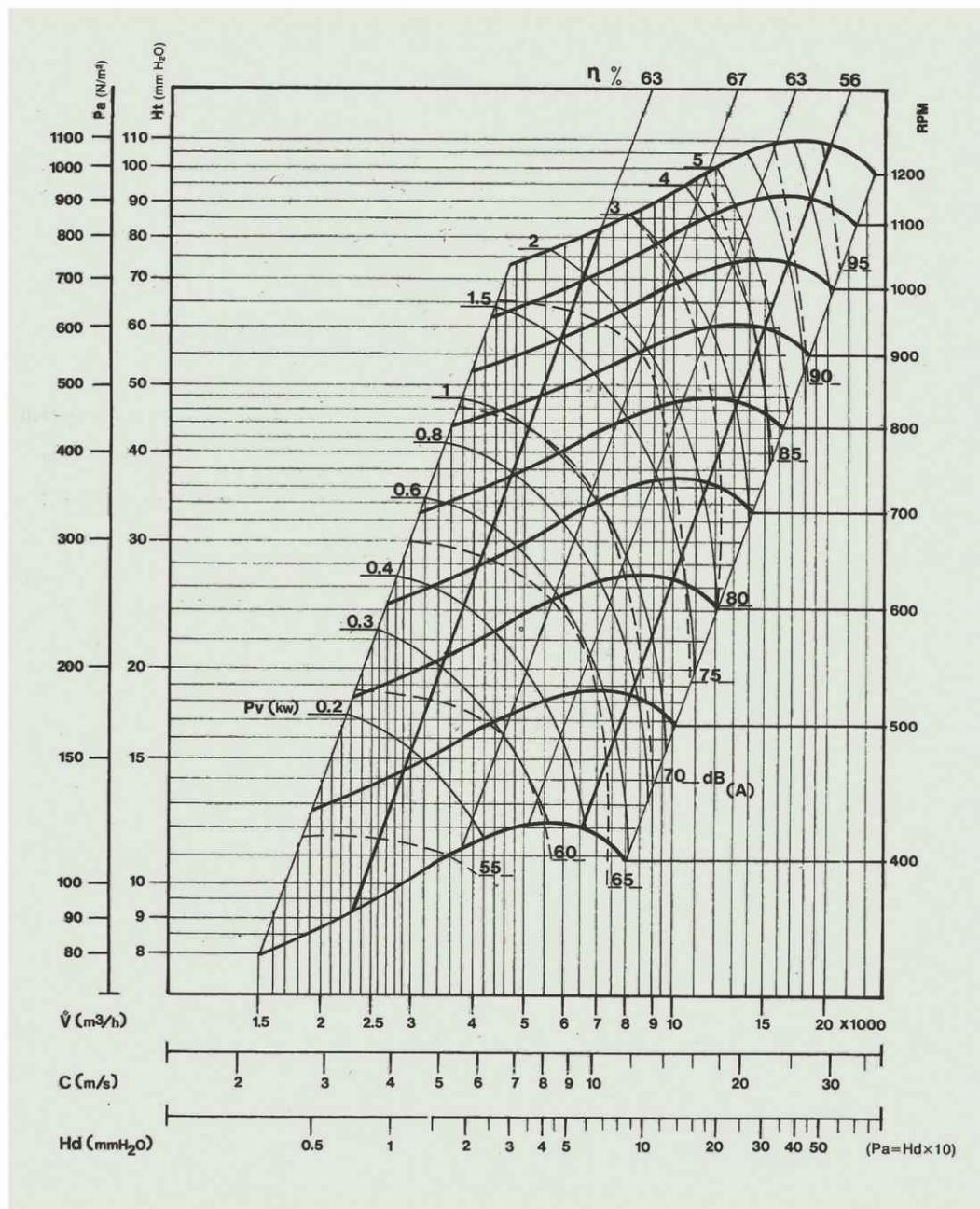
AT 10-10 Series



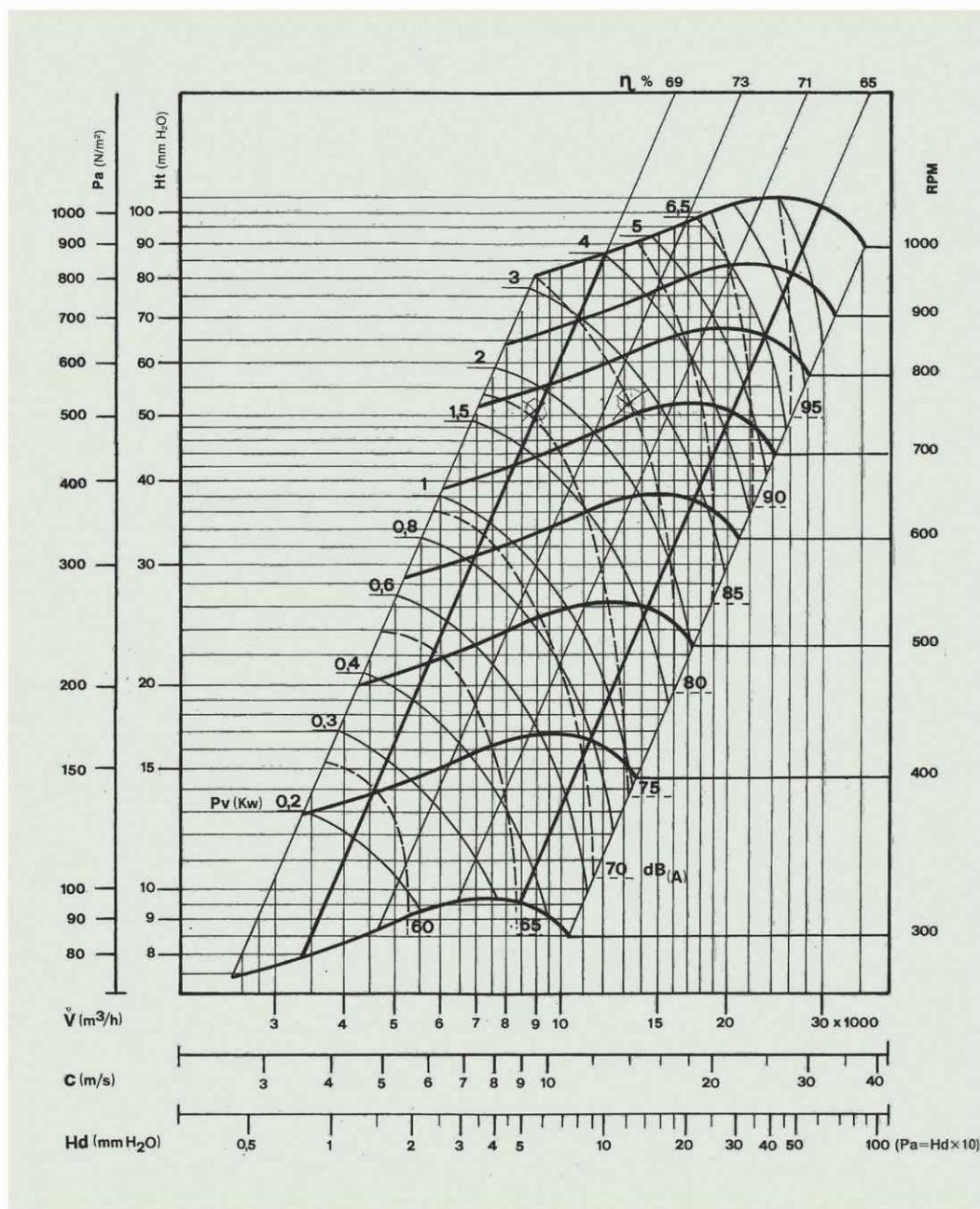
AT 12-12 Series



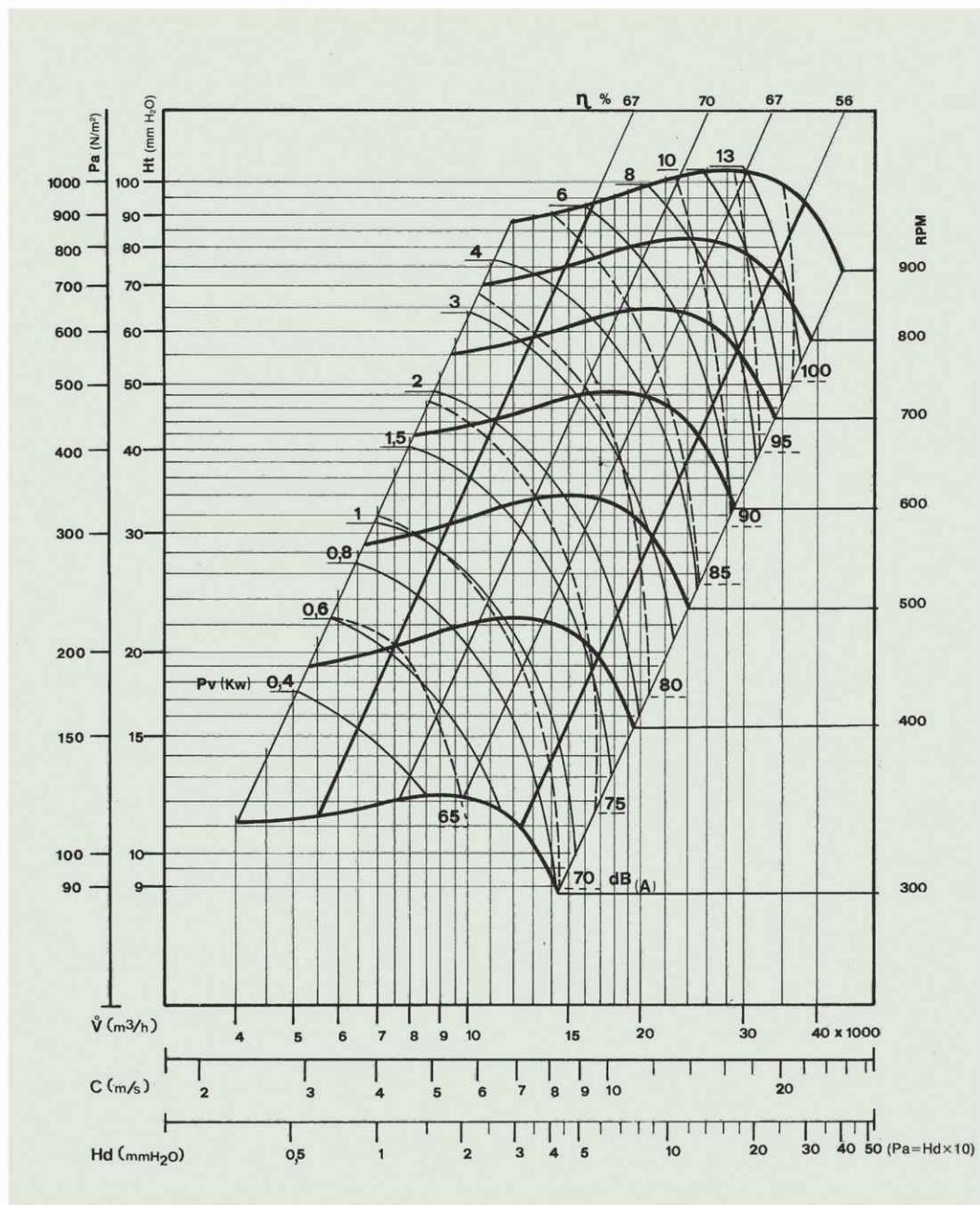
AT 15-15 Series



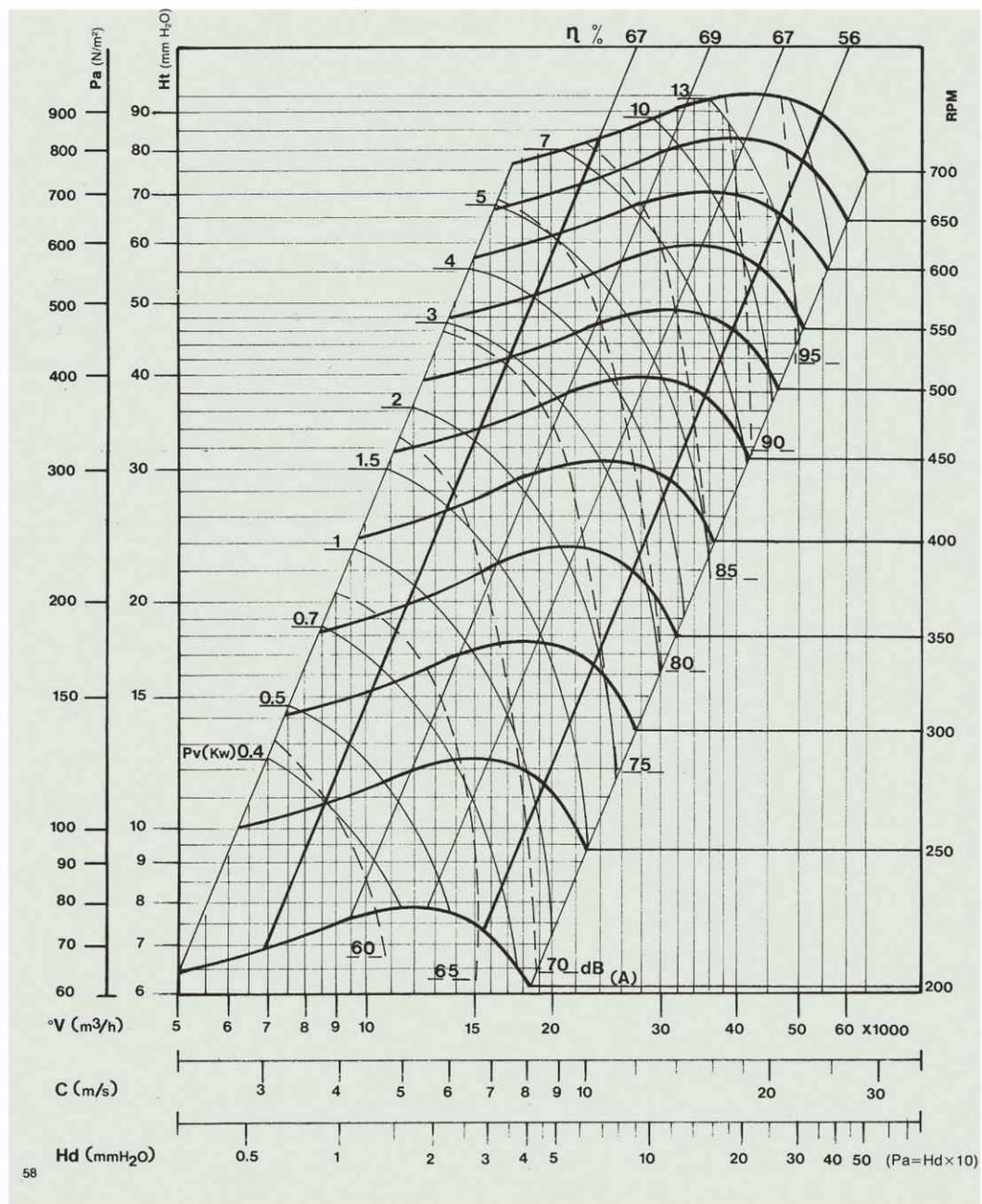
AT 18-18 Series



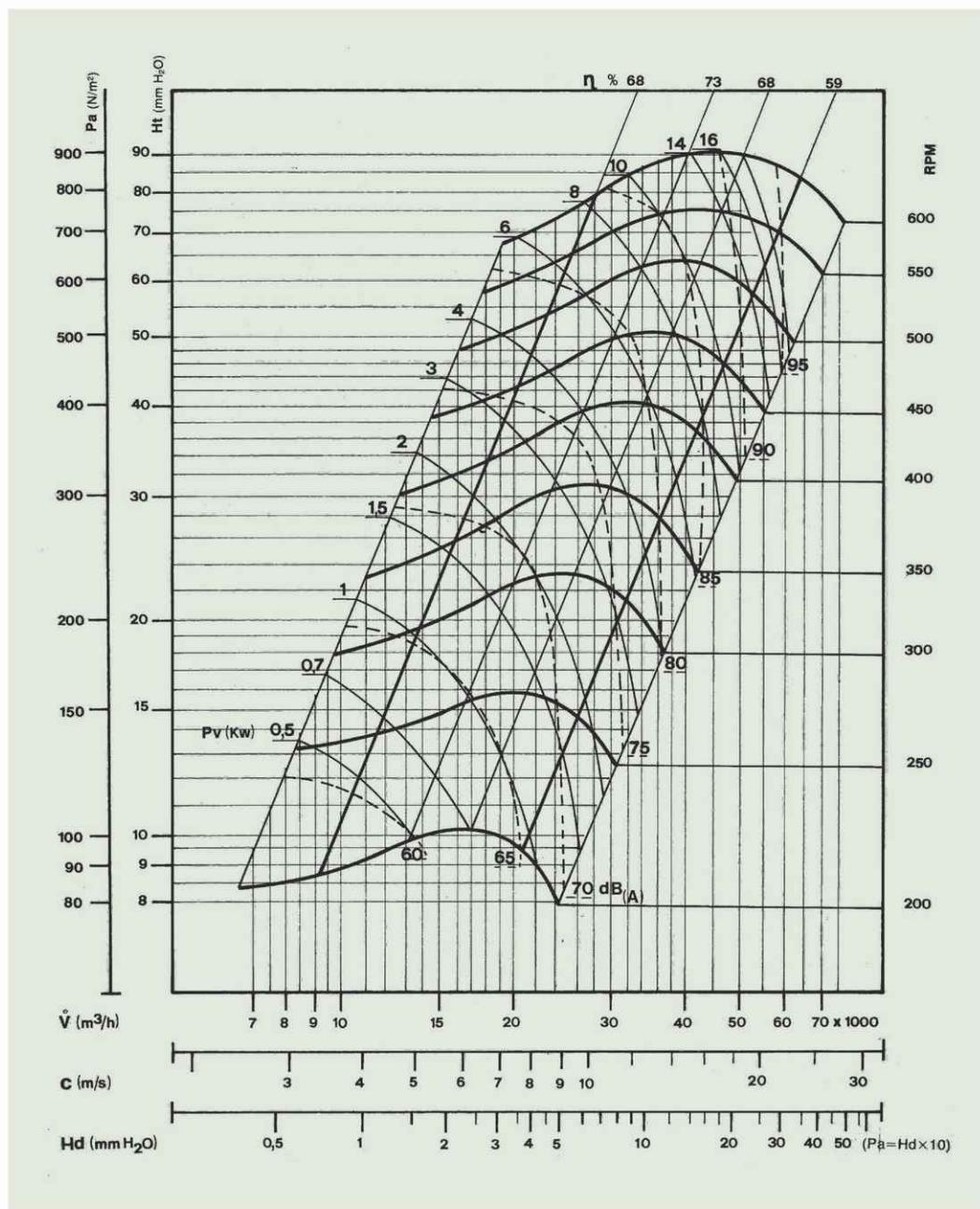
AT 22-22 Series



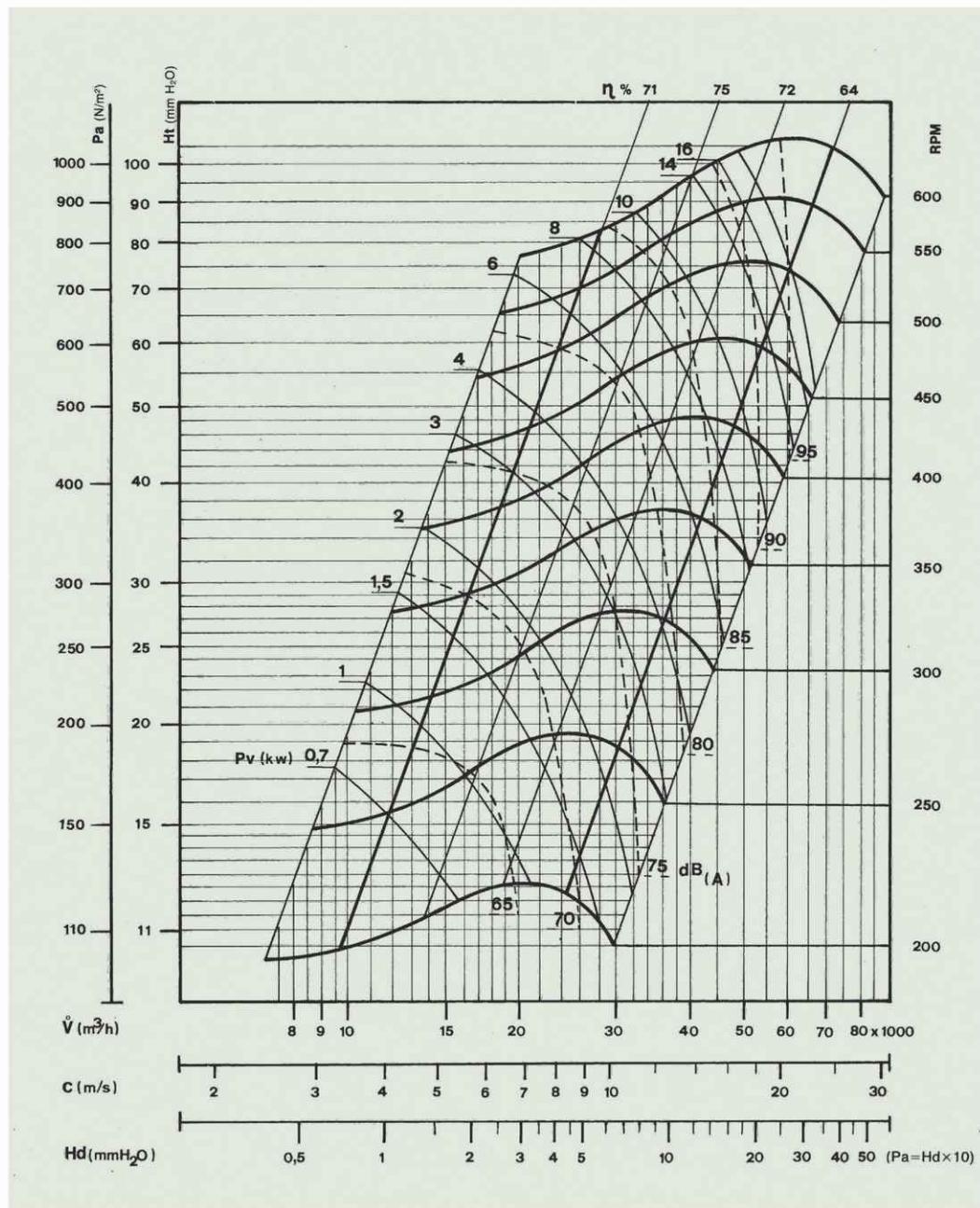
AT 25-25 Series



AT 28-28 Series



AT 30-28 Series





انواع سمت را با برآوردهای موبایل اینکن کنید!

پالایشگار

MEHRASL

MANUFACTURING CORPORATION

HEAD OFFICE: No. 17 - ZOHREH St. - MOFATTEH Ave.
TEHRAN 15-888-36981 IRAN

TEL: (0098-21) 88300801 FAX: (0098-21) 88304147

FACTORY: SALIMI Industrial Zone - TABRIZ - IRAN

TEL: (0098-41) 34328941-50 FAX: (0098-41) 34328955

مفتر مرکزی: تهران ۱۵-۸۸۸-۳۶۹۸۱ خیابان مجتبی شهابی

کیان زرده - شهریار

تلفن: ۰۲۱-۸۸۴۰۰۴۷ فaks: ۰۲۱-۸۸۴۰۰۴۷

کارخانه: تبریز - شهرک صنعتی شهداد سلیمانی

تلفن: ۰۴۱-۳۴۳۴۸۹۵۵ فaks: ۰۴۱-۳۴۳۴۸۹۵۵

Email: headoffice@mehrasl.com http://www.mehrasl.ir