CENTRIFUGAL FANS

COMPONENTS DESCRIPTION

SCROLL

Hot dip galvanised sheet steel is used to manufacture the scroll.

IMPELLERS

The impellers are constructed of hot dip galvanised sheet steel with forward- curved blades, specially profield in order to obtain a maximum efficiency and low noise level.

FRAME

This consists of steel angular bars. Bearing mountings are fixed inside the frame itself in order to free the scroll completely from any reactions on the supports due to the wheel rotation or the belt tensions.

BEARINGS

All bearings used on OMRAN TAHVIEH fans are of top quality and are selected for a low noise level. Bearings are equipped with grease point.

HUBS

The impeller- shaft connection is ensured by a flanged hub. The hub - to - shaft connection is made by a full length key.

SHAFTS

These are made of C-40 steel.

ABSORBED POWER AND INSTALLED POWER

The power curve shown on every diagram represents the absorbed power at the shaft of the fan, measured in kilo watts. The user is interesed in the motor power, which is always higher, as overheating of the motor has to be avoided, transmission losses have to be calculated and one has to take precautions against an increased absorption which can occur when - owing to a calculation error or an unforeseen variation in the resistance of the system.

To determine the power of the motor to be installed, just multiply the value of the fan absorbed power indicated on the diagram, by 1.25

Motor power = absorbed power at the fan shaft x 1.25

FAN CHOICE

The diagram shown on page 2 indicate approximately the performance of the different models.

Exact data on performances and working conditions are shown by the curve of each fan given later.
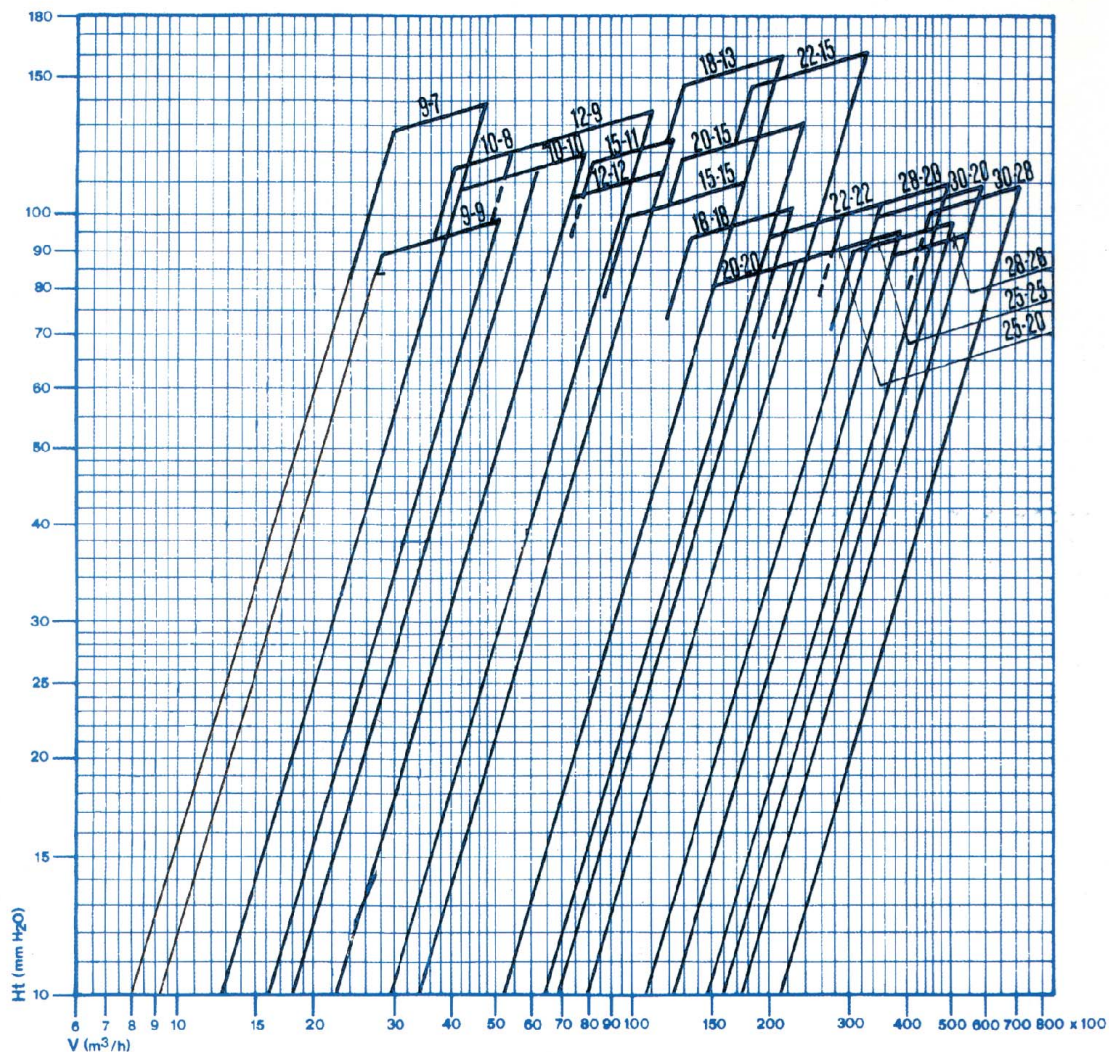
The fan function is based on the operation with clean air, within the limits indicated by table on page 2 If the working conditions of a fan do not meet with those required in this table, any guarantee on performance and life of the fan will automatically become void.
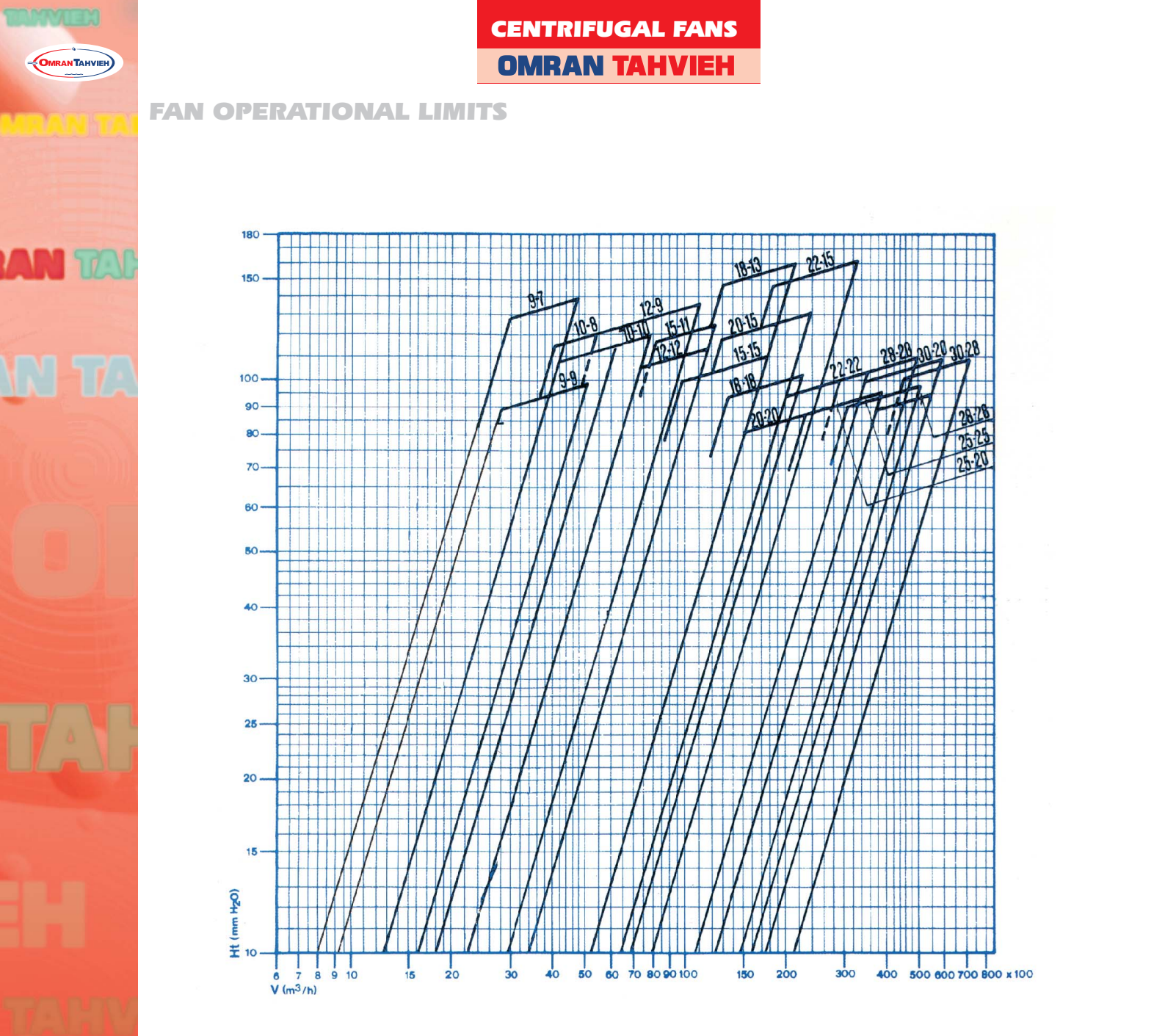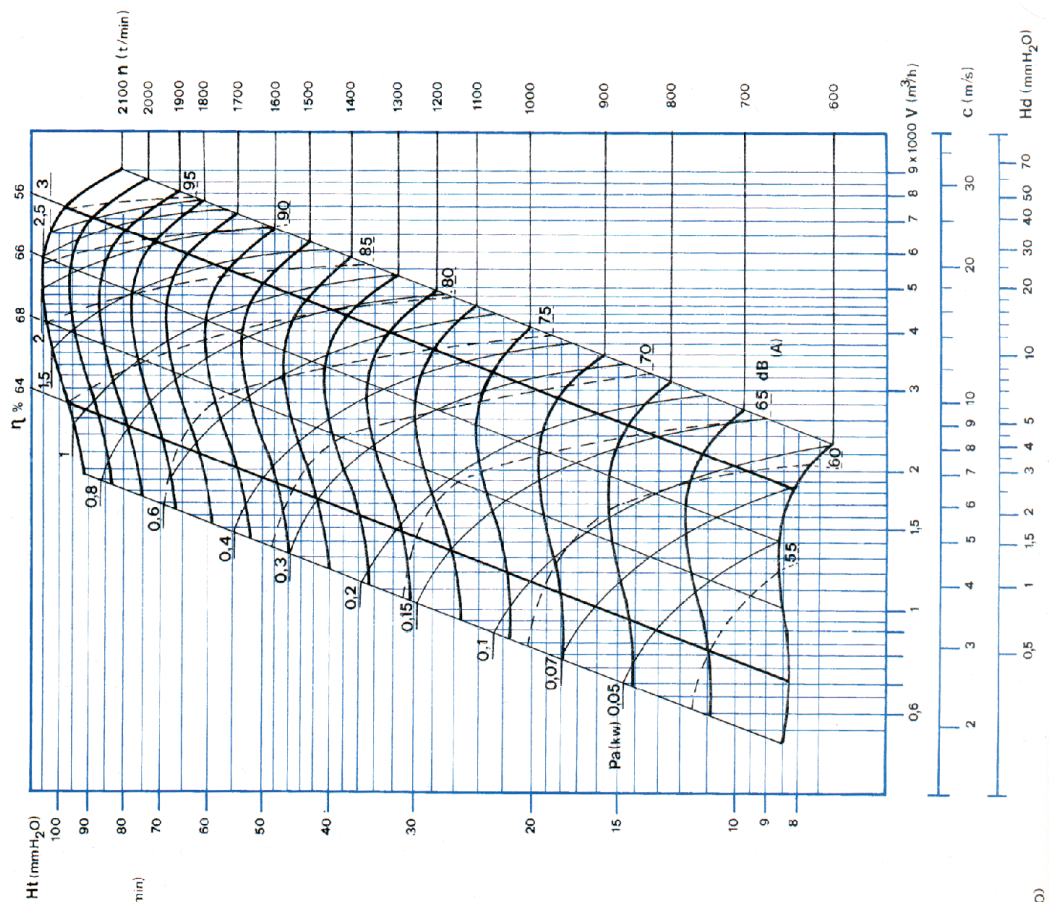
FAN OPERATIONAL LIMITS

FANS OPERATIONAL LIMITS

|		9-7	9-9	10-8	10-10	12-9	12-12	15-11	15-15	18-13	18-18	20-15	20-20	22-15	22-22	25-20	25-25	28-20	28-28	30-20	30-28
Max.absorbed power al fan shaft	One Fan Kw	3	3	3	3	3.5	3.5	5	5	6.5	6.5	13	13	13	13	13	13	16	16	16	16
	Two Fans Kw	3	3	3	3	6.5	6.5	9.5	9.5	13	13	16	16	16	16	16	16	16	16	16	16
	Three Fans Kw					6.5	6.5	13	13	13	13	16	16	16	16	16	16	19	19	19	19
Wheel max. torque	One Fan Kgm	5.5	5.5	5.5	5.5	10	10	10	10	16	16	40	40	40	40	40	40	6.5	6.5	6.5	6.5
	Two Fans Kgm	10	10	10	10	10	10	10	10	16	16	30	30	30	30	30	30	30	30	30	30
	Three Fans Kgm					10	10	10	10	16	16	30	30	30	.30	30	30	30	30	30	30
Wheel max. R.P.M	One Fan n	2100	1800	2100	1700	1700	1200	1600	1000	900	850	1000	950	1000	950	800	700	650	650	650	650
	Two Fans n	2100	1800	2100	1700	1700	1200	1600	1000	900	850	1000	750	1000	700	600	600	500	500	500	500
	Three Fans n					1700	1100	1200	850	900	650	700	650	650	550	500	450	500	350	450	350
Max.load on bearing housing	One Fan Kg	110	110	110	110	150	150	150	150	150	150	450	450	450	450	450	450	550	550	550	550
	Two Fans Kg	110	110	110	110	240	240	450	450	450	450	550	550	550	550	550	550	600	600	600	600
	Three Fans Kg					240	240	450	450	450	450	550	550	550	550	550	550	600	600	600	600

9 - 9

9 - 7
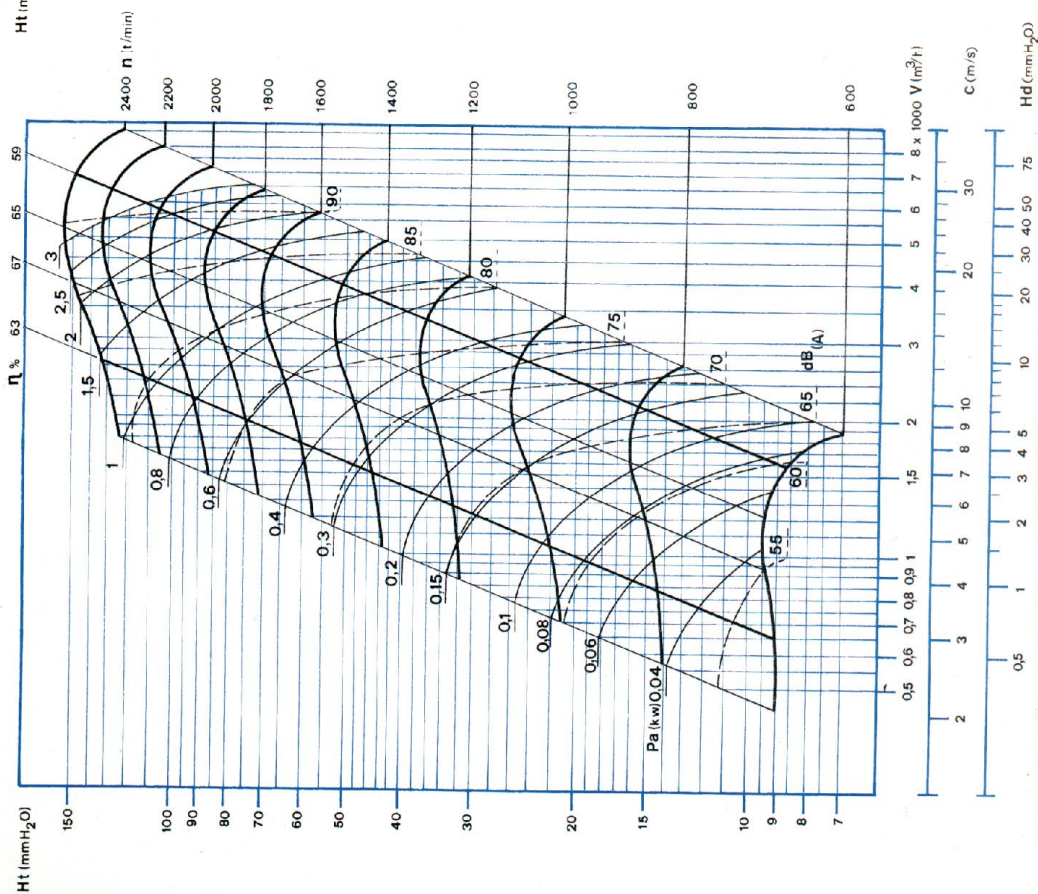
10 - 10
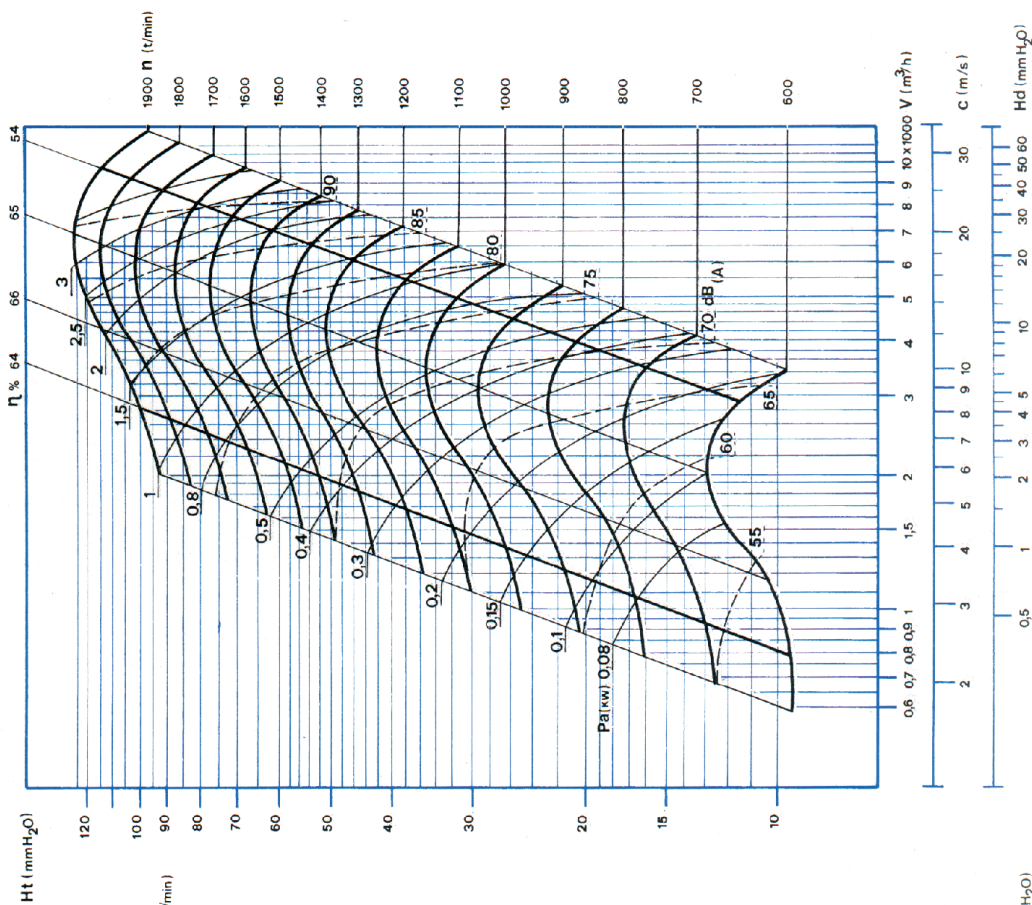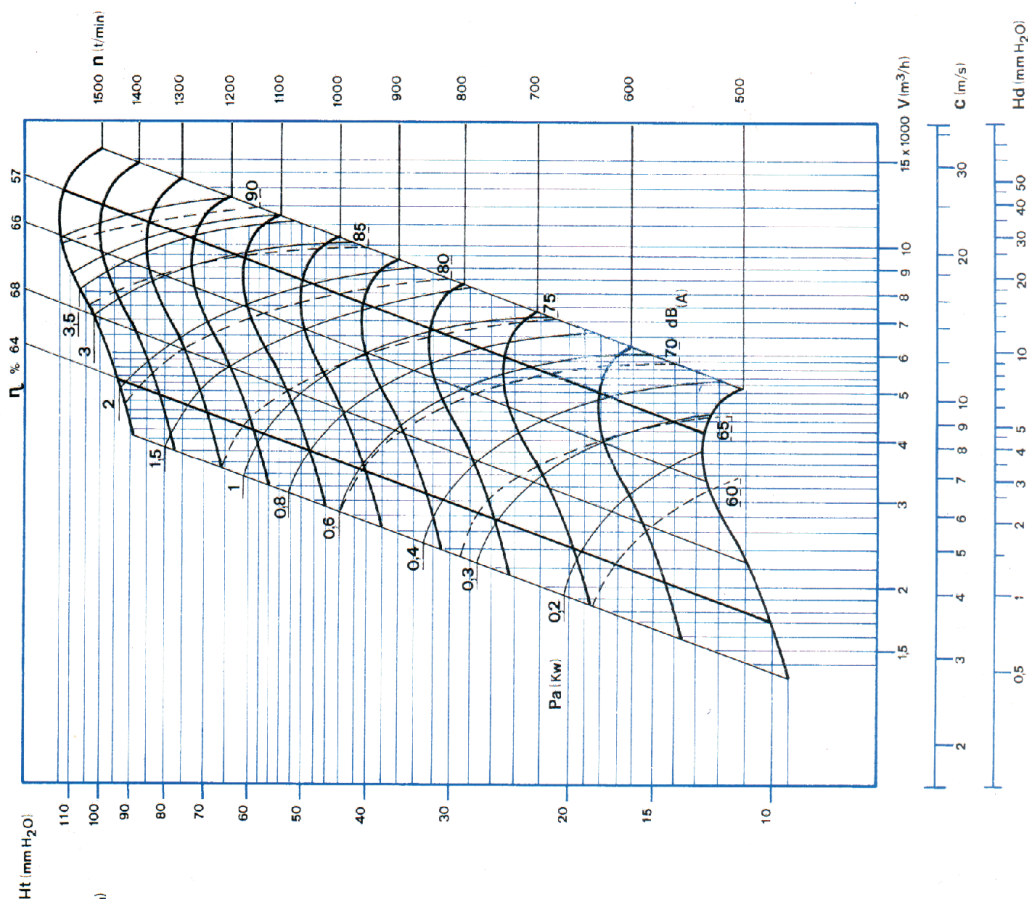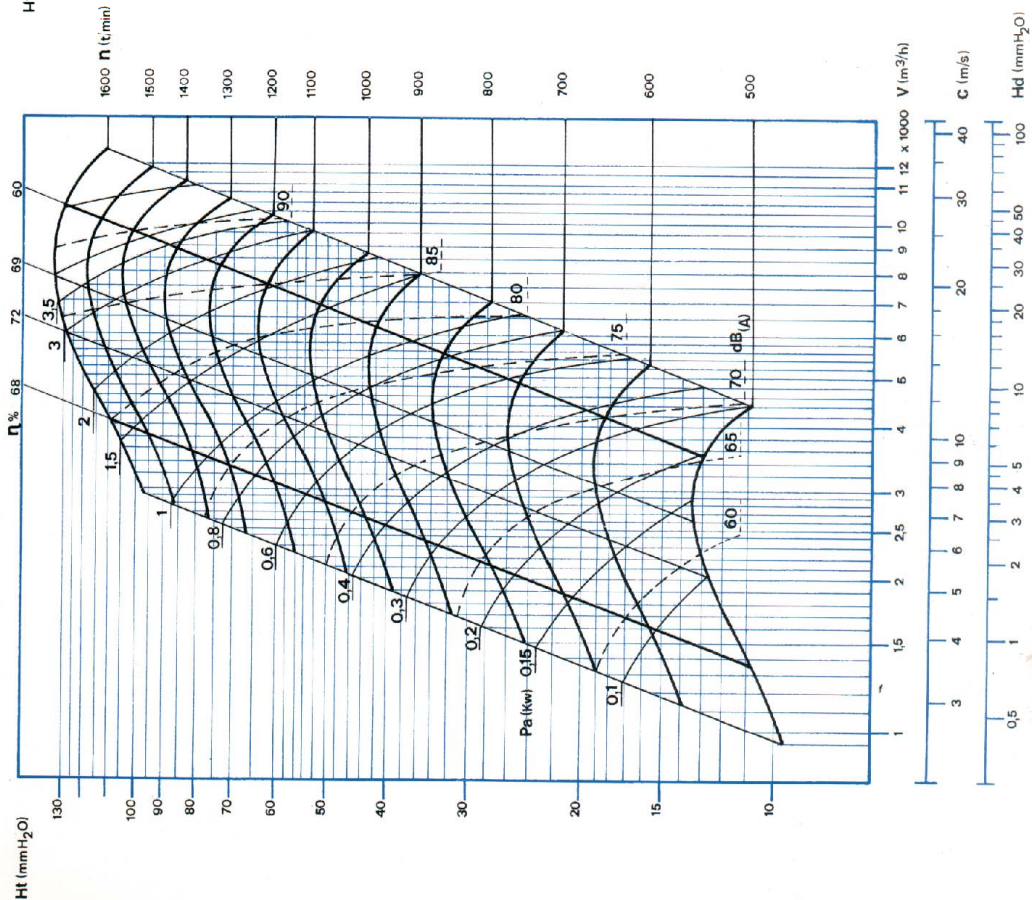
10 - 8
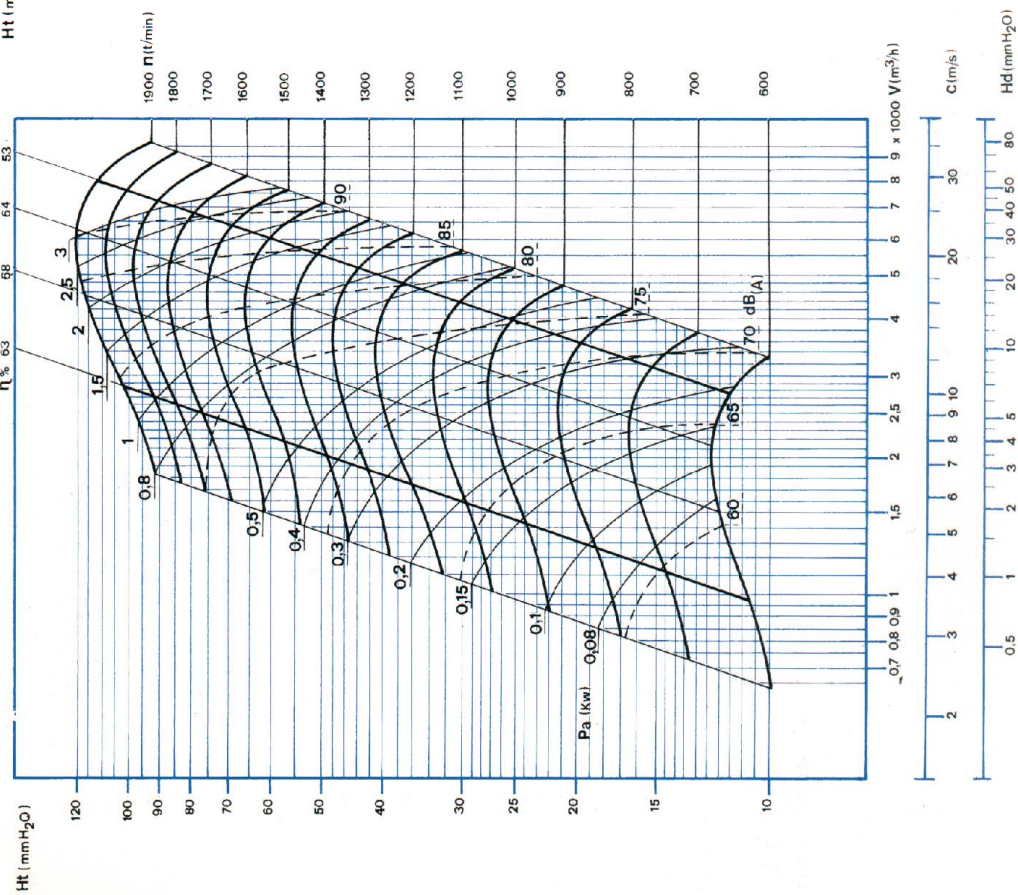
OPERATIONAL LIMITS

12 - 12

12 - 9

OPERATIONAL LIMITS

15 - 15
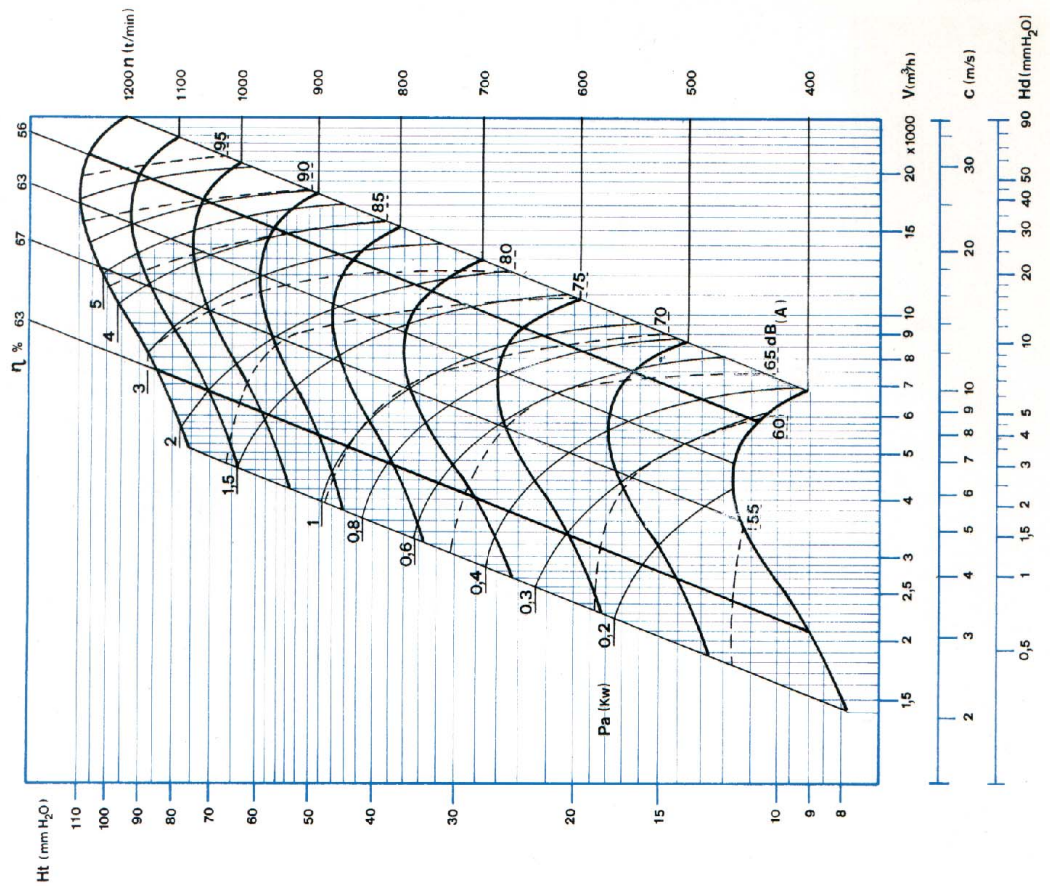
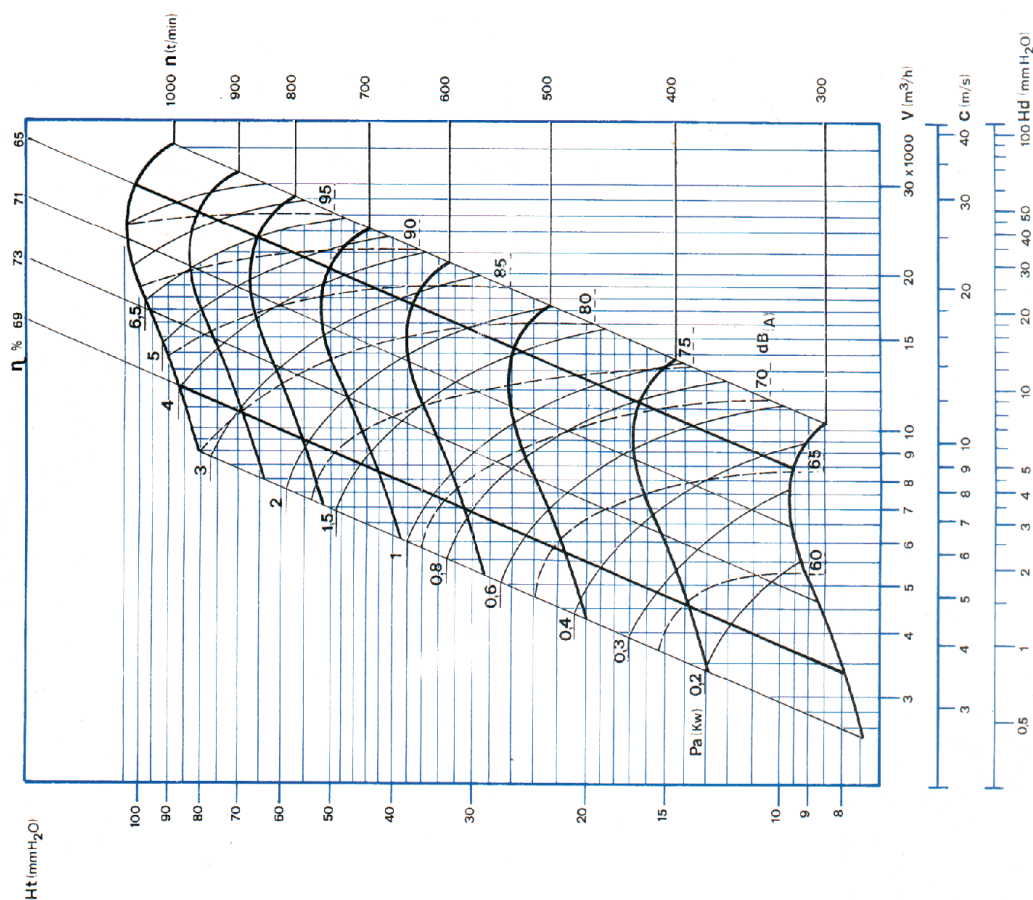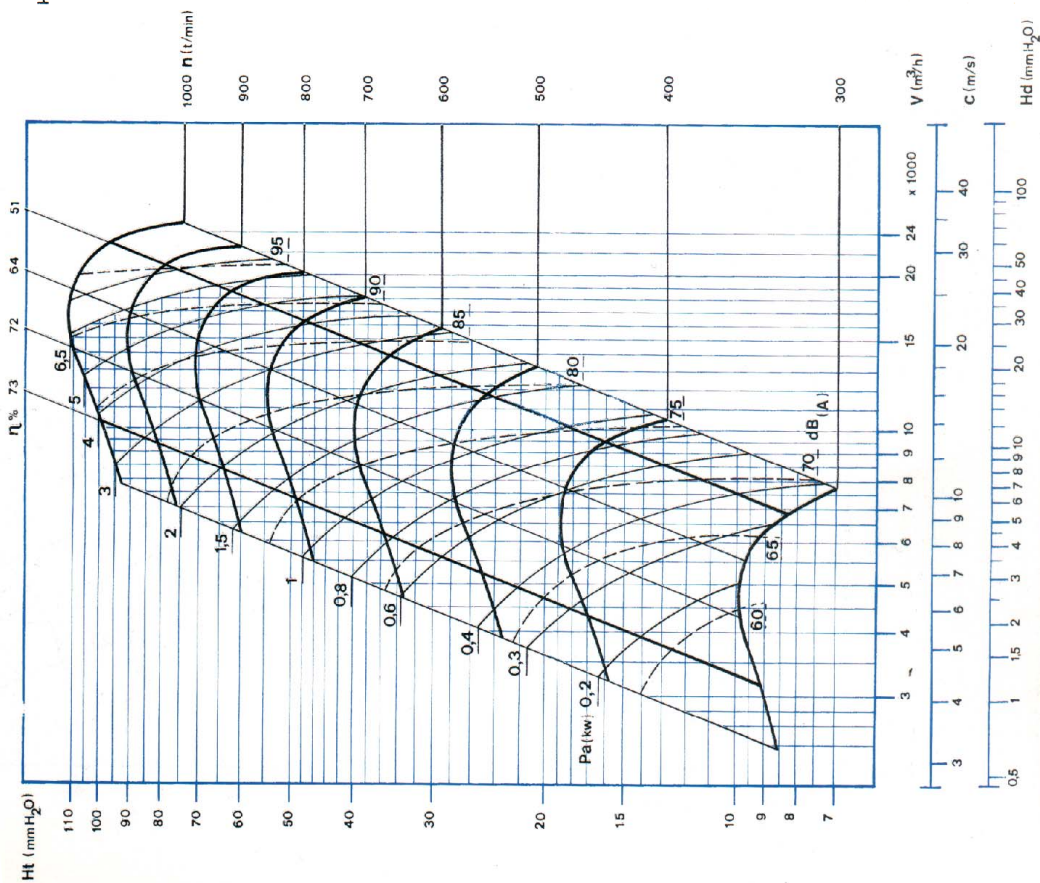## 15 - 11
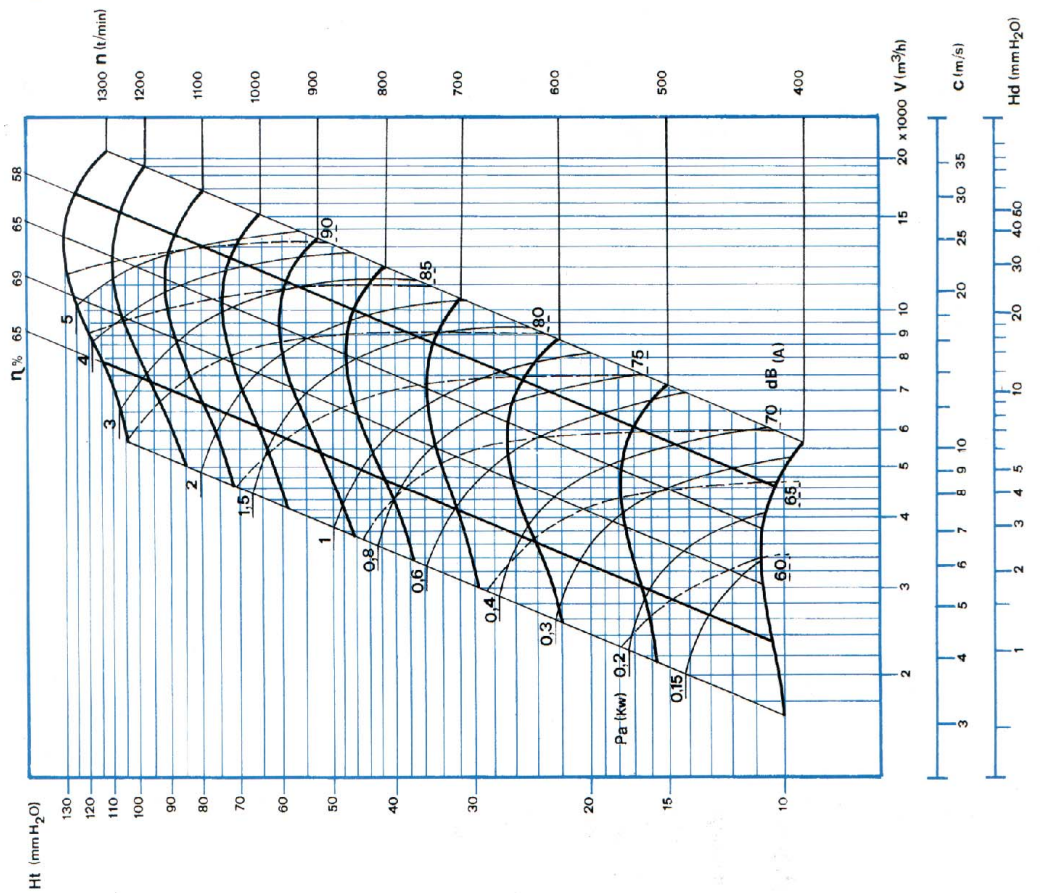
18 - 18

18 - 13

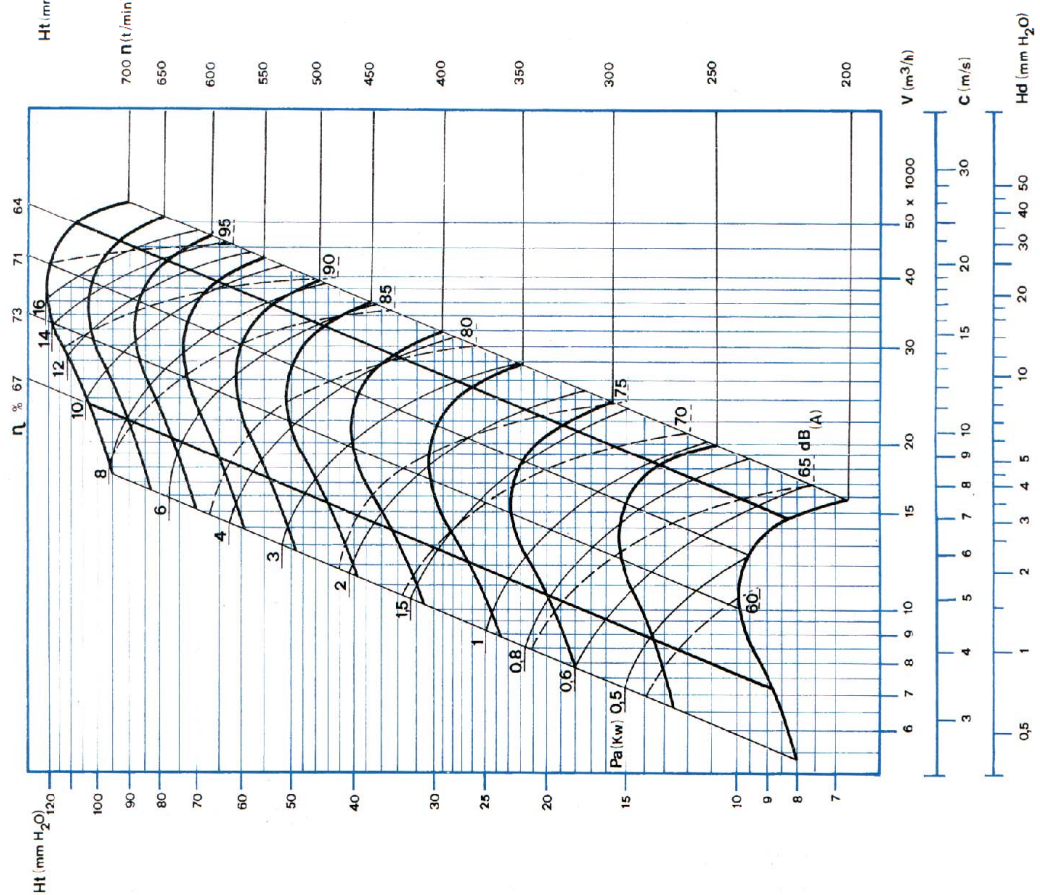OPERATIONAL LIMITS

20 - 20
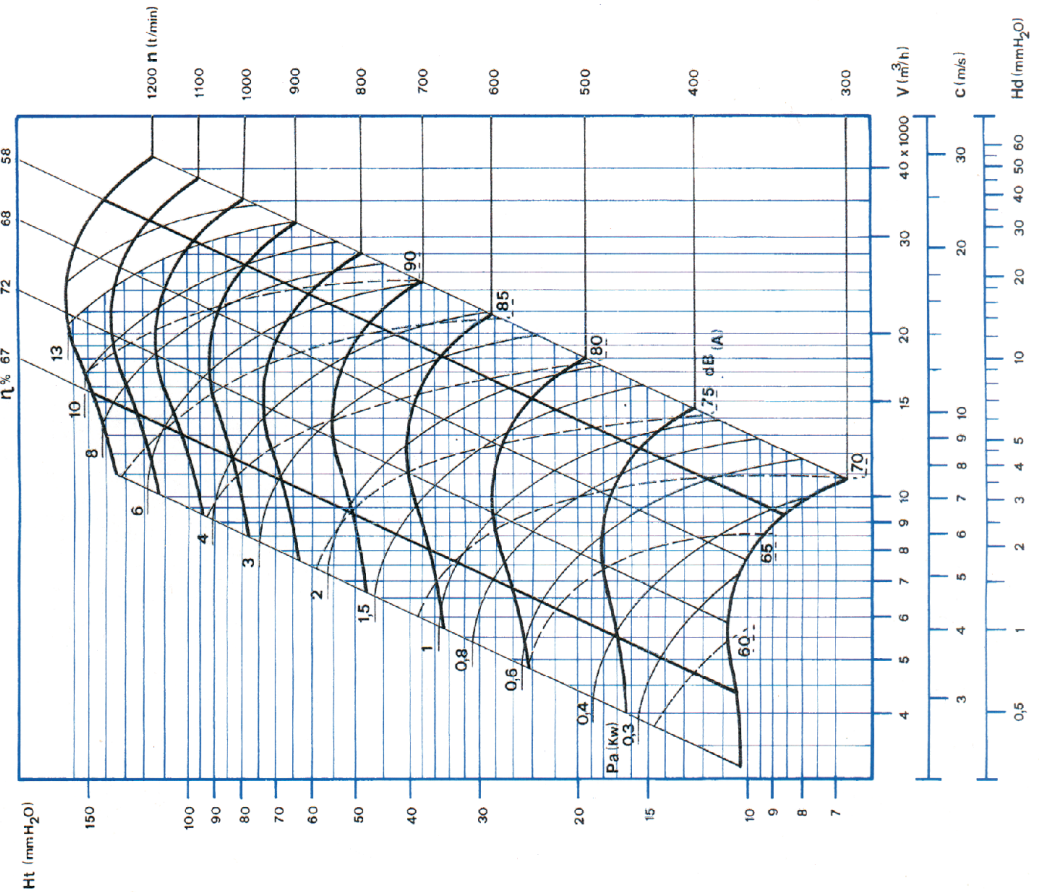
20 - 15
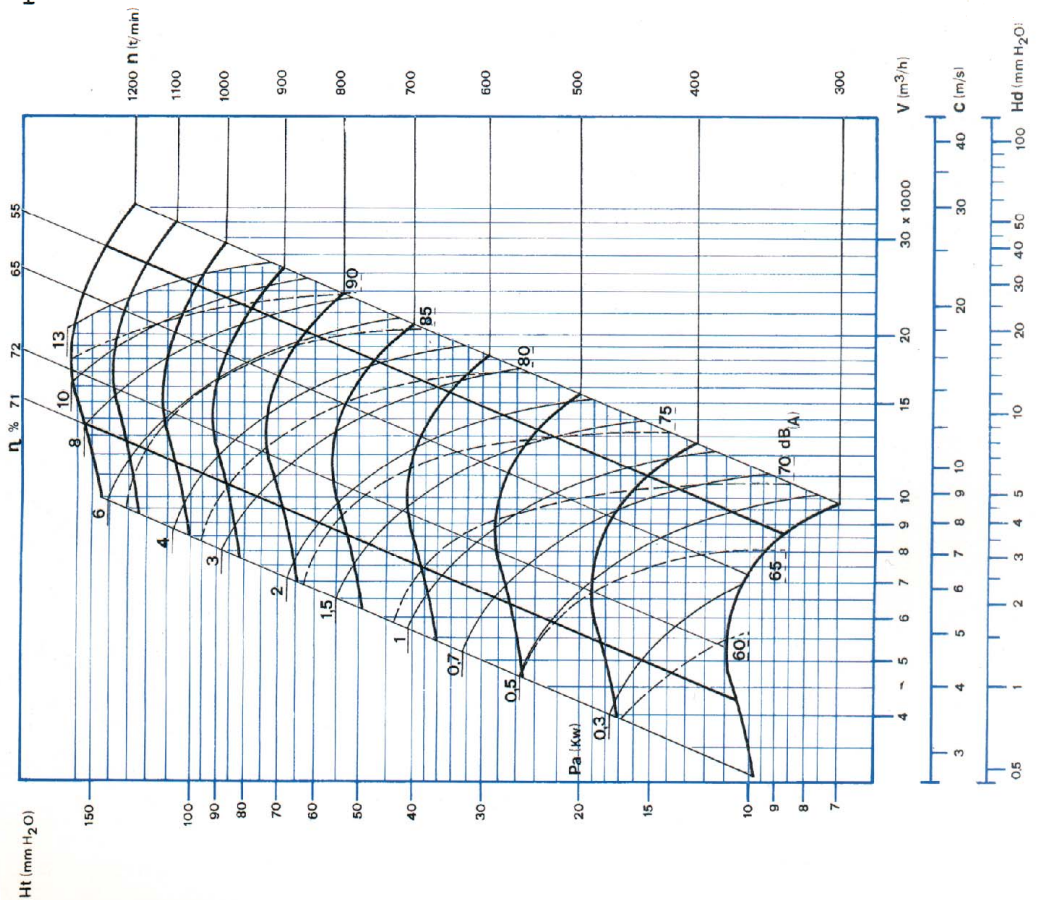
22 - 22
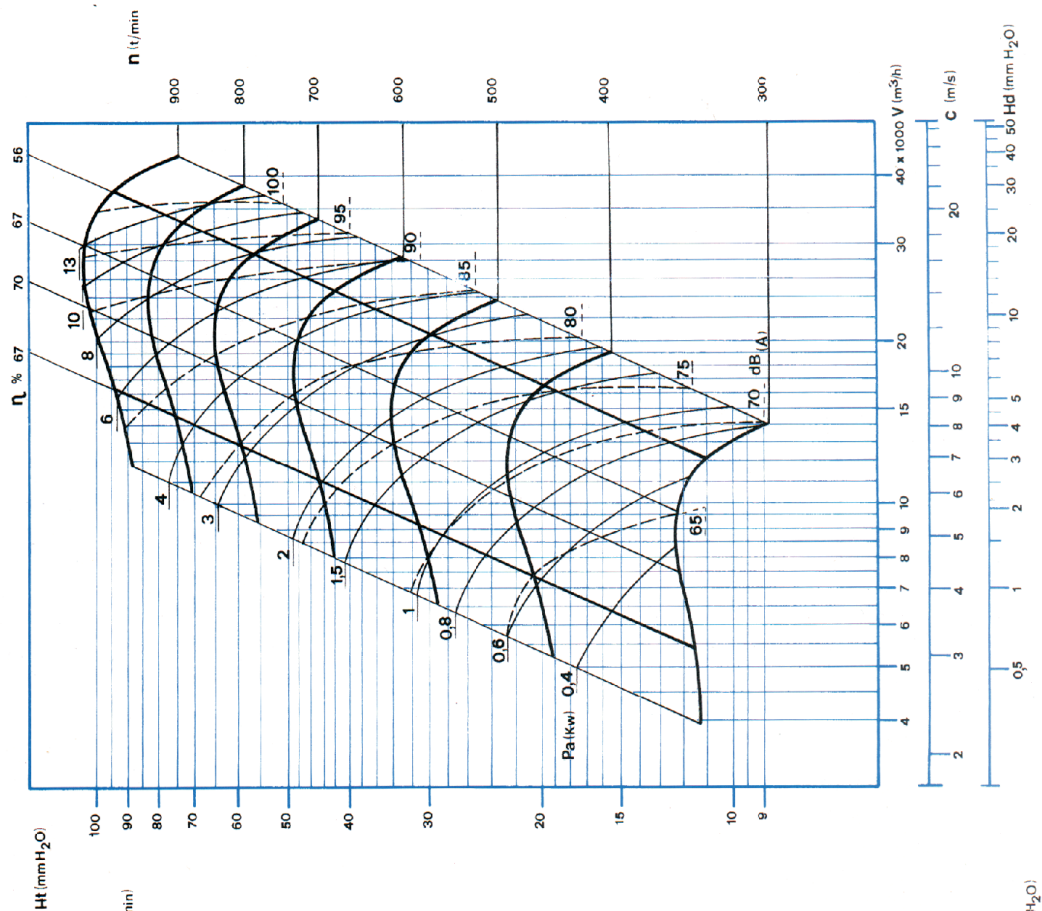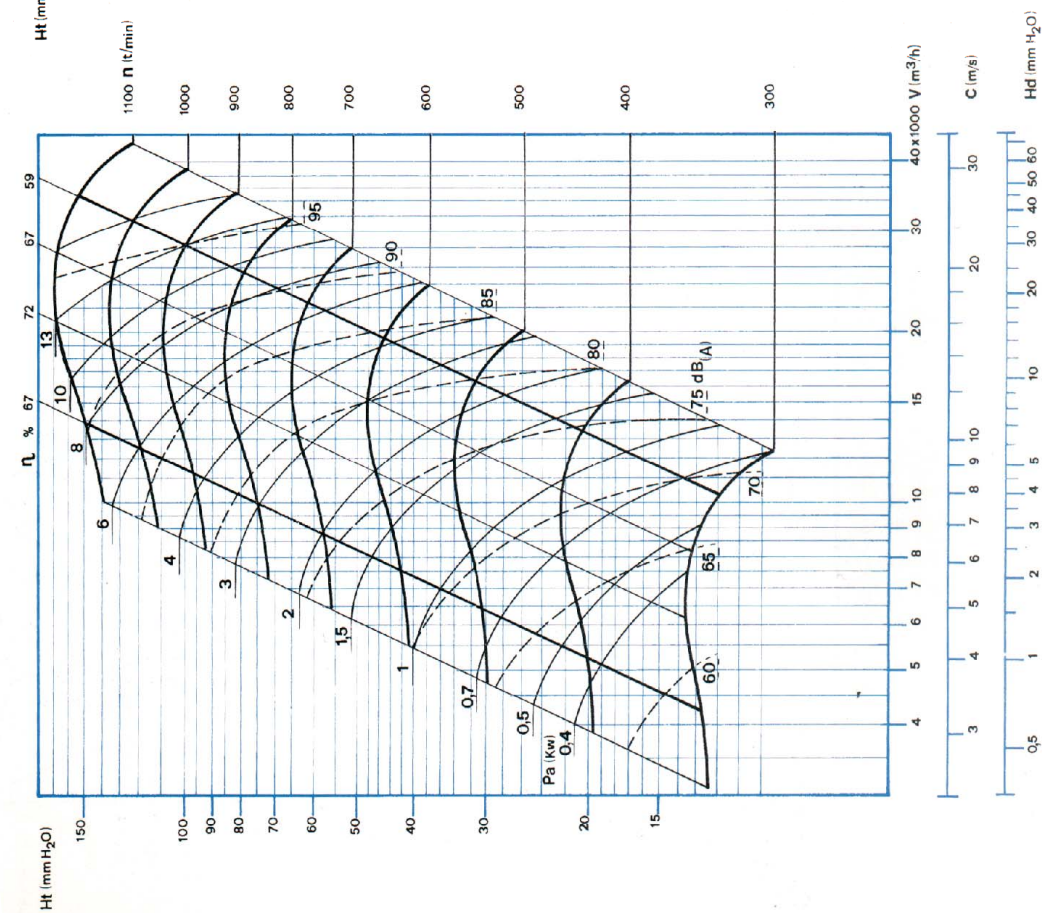
22 - 15

25 - 25
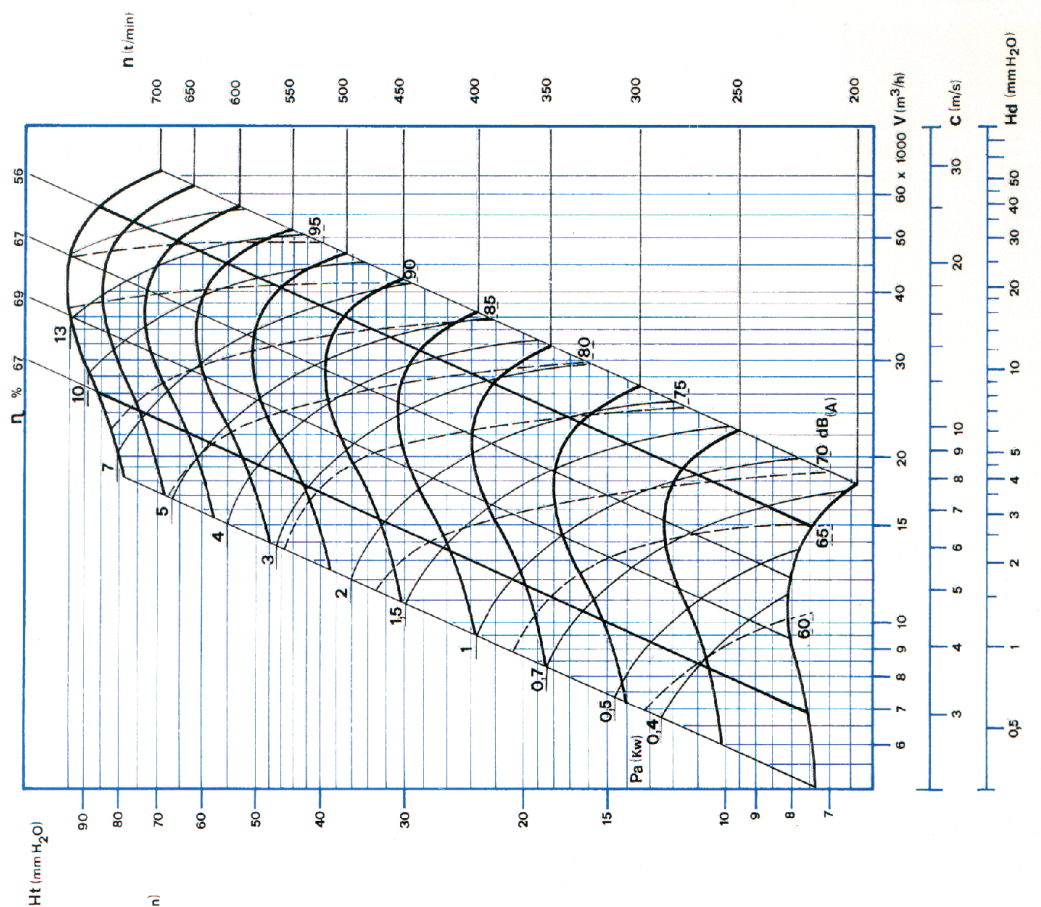
25 - 20
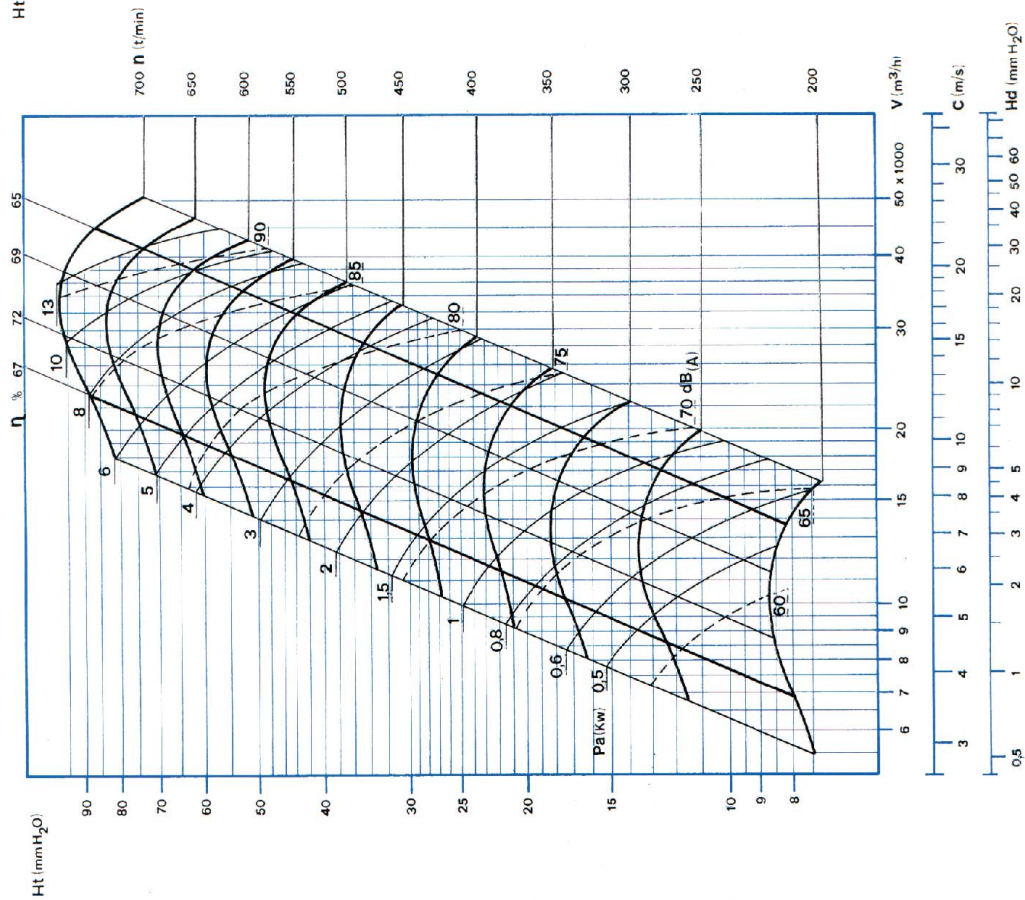
OPERATIONAL LIMITS

28 - 28

28 - 20

30 - 28
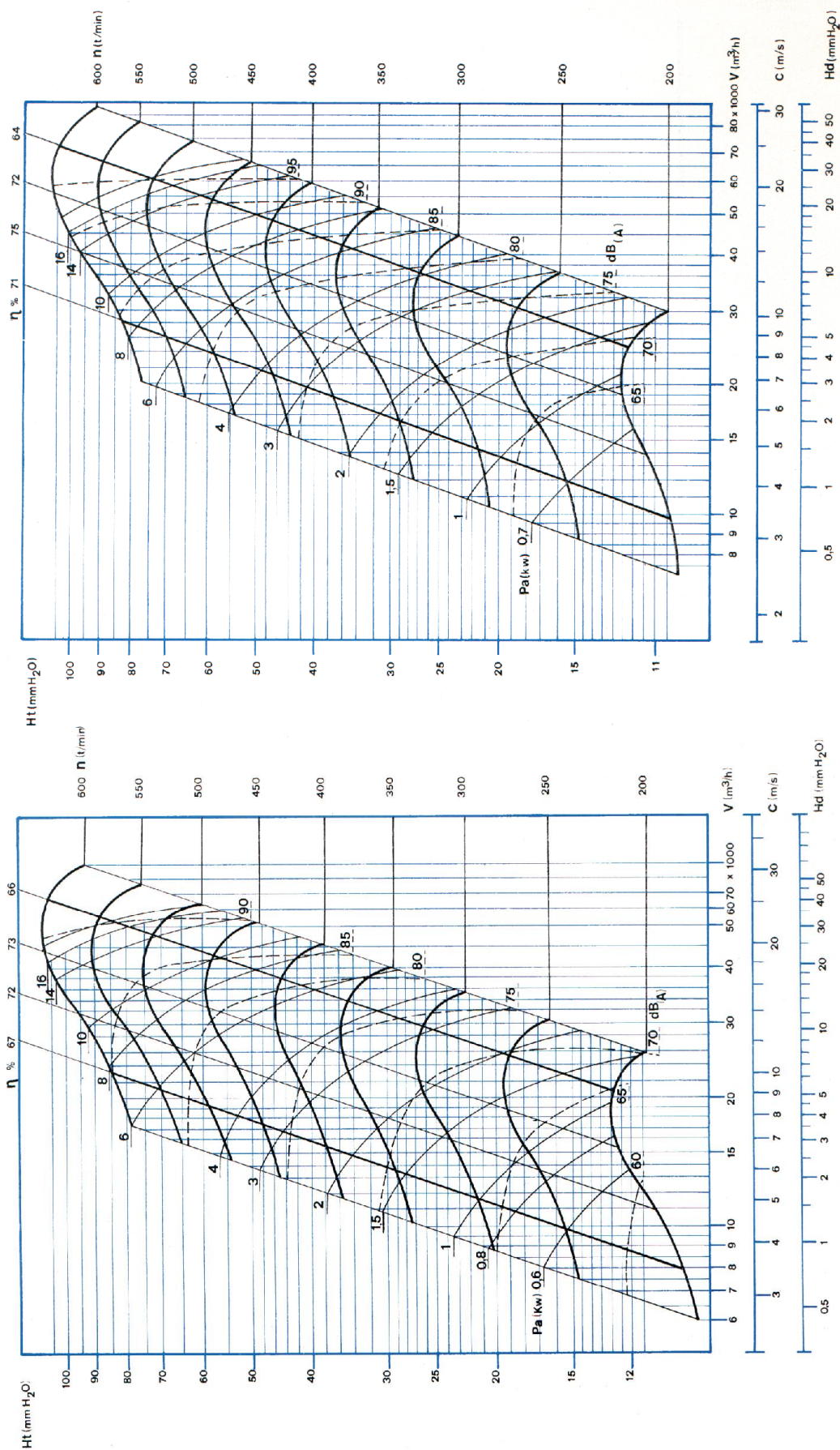
30 - 20
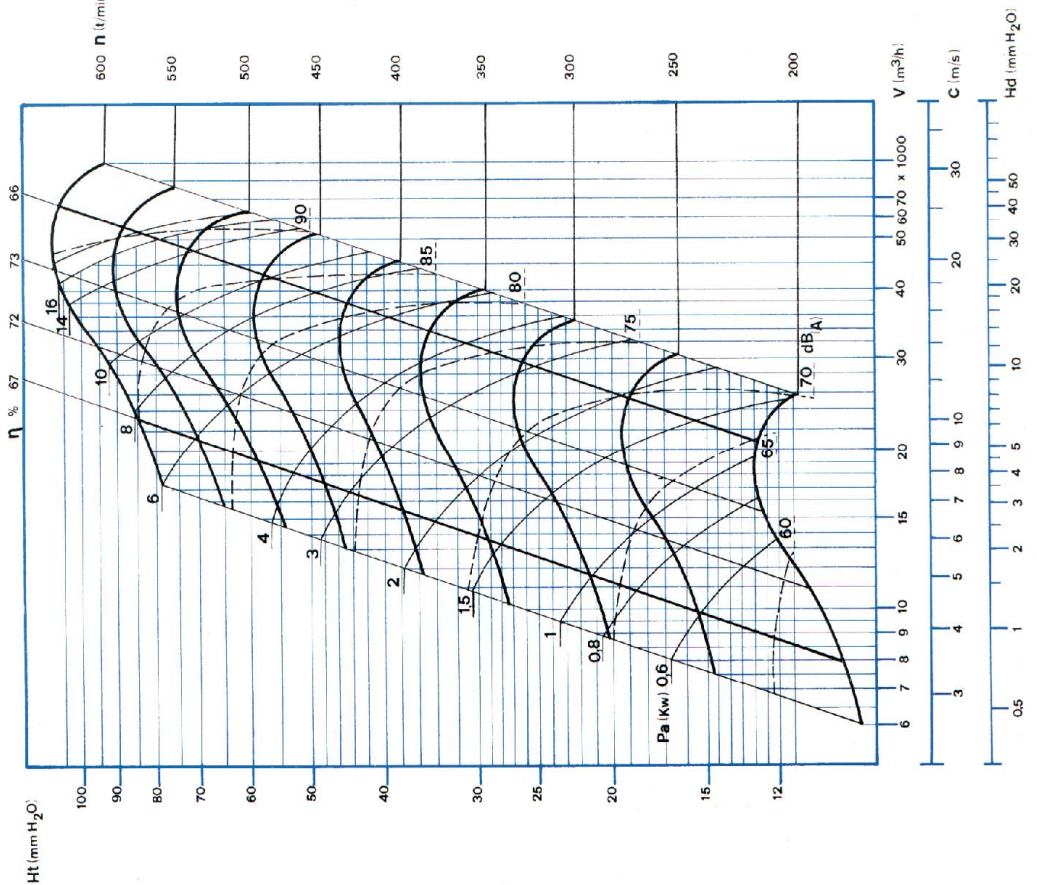
DIMENSIONS
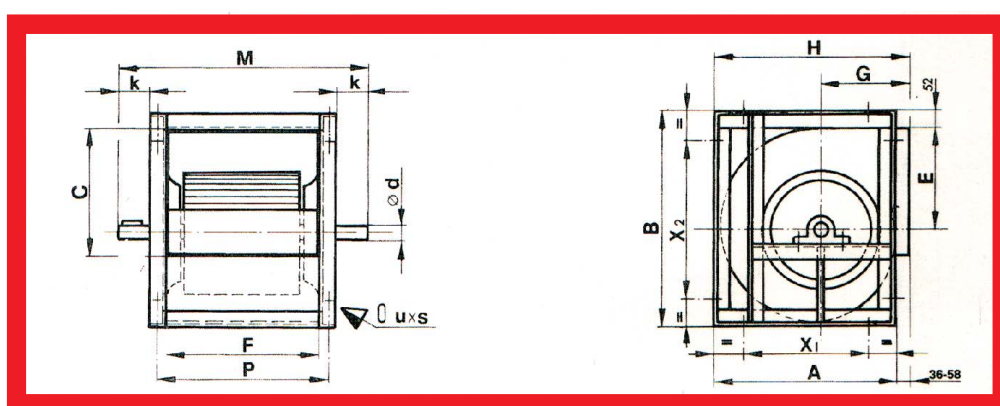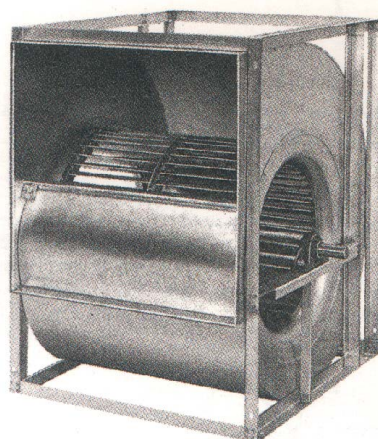
Type	A	B	C	E	F	G	H	M	X₁	X₂	P	K	ƒ d	u x s
9-7	349	399	262	215	232	185	385	390	274	324	254	59	20	9x12
9-9	349	399	262	215	298	185	385	460	274	324	320	61	20	9 x12
10-8	395	455	289	249	265	203	431	425	330	390	287	60	20	9 x12
10-10	395	455	289	249	331	203	431	490	330	390	353	59	20	9 x12
12-9	461	533	341	294	309	230	497	495	371	443	339	65	25	11 x16
12-12	461	533	341	294	395	230	497	585	371	443	425	67	25	11 x16
15-11	539	621	404	342	373	264	575	585	449	531	403	78	25	11 x16
15-15	539	621	404	342	471	264	575	685	449	531	501	79	25	11 x 16
18-13	654	751	478	415	430	314	690	666	544	641	470	80	25	11 x 16
18-18	654	751	478	415	557	314	690	790	544	641	597	78	25	11 x16
20-15	772	967	629	520	502	369	830	770	632	827	542	96	35	13 x18
20-20	772	967	629	520	630	369	830	900	632	827	670	97	35	13 x18
22-15	847	1058	695	573	514	398	905	782	707	918	554	96	35	13 x18
22-22	847	1058	695	573	692	398	905	960	707	918	732	96	35	13 x 18
25-20	952	1192	797	652	664	438	1010	930	812	1052	704	95	40	13 x18
25-25	952	1192	797	652	794	438	1010	1060	812	1052	834	95	40	13 x18
28-20	1060	1311	870	718	676	485	1118	1040	920	1171	726	134	40	17 x 22
28-28	1060	1311	870	718	870	485	1118	1238	920	1171	920	136	40	17 x 22
30-20	1138	1410	936	776	676	516	1196	1040	998	1270	726	134	40	17 x22
30-28	1138	1410	936	776	870	516	1196	1238	998	1270	920	136	40	17 x22

FAN PERFORMANCE DETERMINATION

The diagrams page 3 thru 12 show performances for one fan, when more than one fan are used in parallel, consider the follwing notes.

The performances of the two fans are mounted on a common shaft, relative to the single fans as shown in curves, for equivalent pressure, is approrimately as follows;
- Capacity = x2
- r.p.m. = x1.05
- absorbed power = x2.15

The performance of the three fans are mounted on a common shaft, relative to the single fans as shown in curves, for equivalent pressure, is approrimately as follows:
- Capacity = x3
  r.p.m. = x1.08
- absorbed power = x3.25

STATIC AND DYNAMIC BALANCING MACHINE

OMRAN TAHVIEH
Heating , Ventilation And Air Conditioning