

Aeroflow S Series Fan

Single-Impeller Axial Fan for Underground Mine Ventilation



Aeroflow S Series is an efficient and reliable mine fan with robust design that can be used in many types of mines, including metal, chemical, building material, nuclear, and other non-coal mines. It can be used as a main fan or a local one, with the flexibility of installing on surface or underground. It is very suitable for mines that require large volume airflow. Besides underground mines, it is also used in tunnels and other places.

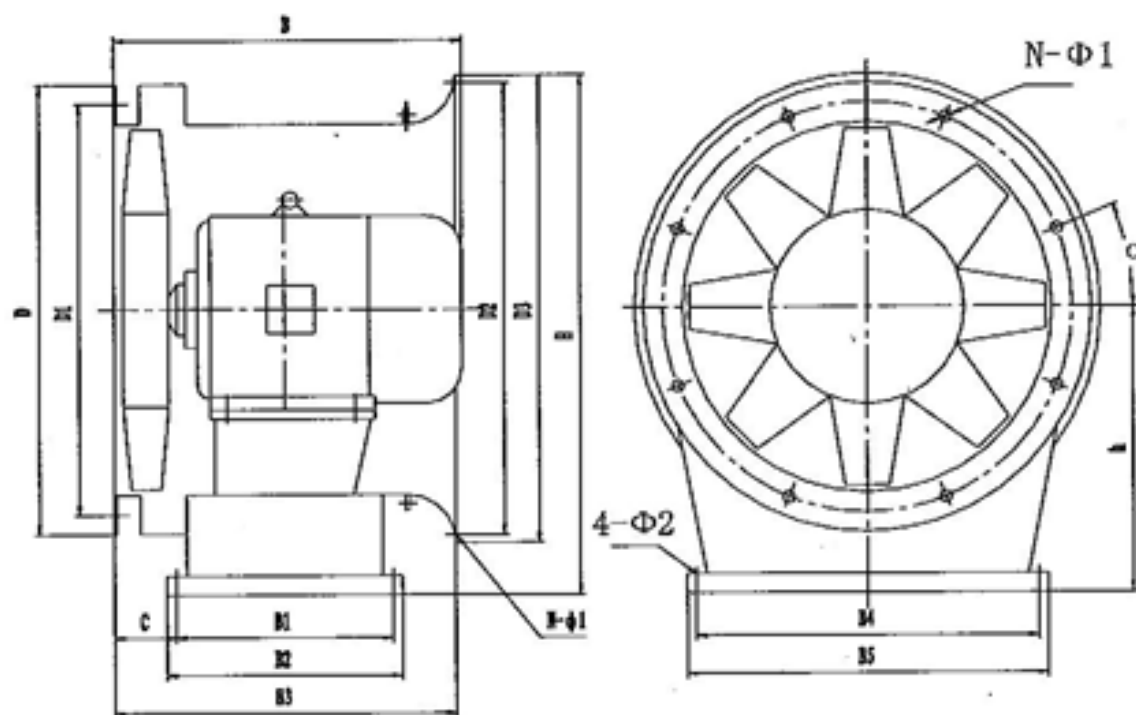


Features and Benefits

- Impeller is directly mounted on to motor to provide reliable transmission of high efficiency and low maintenance.
- It is a single impeller fan, between the impeller and the diffuser, there is static guide fins, in order to increase static pressure efficiency.
- This series has adopted skewed-and-swept three-dimensional orthogonally-twisted blade technology that used in aircraft turbine design. The aerodynamic shape optimization of axial gas turbine significantly improves the total efficiency and reduced noise.
- This fan is fully reversible. Reversal of ventilation is quick in response, its reversal airflow can be as much as 65%-85% of its normal airflow. Same airway can be used in reversal to save construction cost.
- The impeller angle can be adjusted according to requirement. The performance curves have no humps - at any network resistance conditions, fans run in high stability.
- This series has many models to meet different requirements of tunnel resistance. With wide high efficiency domains, fans are able to keep running at high efficiency continuously for a long time.

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Aeroflow S Series Fan Dimensions

Fan #	D	D1	D2	D3	B1	B2	H	h	N-Φ 1	4-Φ2	α
7	846	787	935	994	597	643	1035	538	16-Φ 15	15	11.25°
8	956	892	1063	1127	692	744	1171	608	16-Φ 15	15	11.25°
9	1066	997	1190	1259	773	825	1308	679	16-Φ 15	15	11.25°
10	1179	1105	1318	1392	850	902	1447	751	16-Φ 15	15	11.25°
11	1289	1210	1445	1524	953	1023	1583	821	16-Φ 15	19	11.25°
12	1399	1315	1573	1657	1034	1104	1725	897	16-Φ 15	19	11.25°
13	1510	1421	1701	1730	1115	1185	1863	968	24-Φ 15	19	7.5°
14	1620	1526	1828	1922	1216	1306	1999	1038	24-Φ 15	19	7.5°
15	1734	1635	1956	2055	1297	1387	2137	1110	24-Φ 15	23	7.5°
16	1845	1741	2085	2189	1374	1464	2280	1186	24-Φ 19	23	7.5°
17	1955	1846	2213	2322	1465	1565	2417	1256	24-Φ 19	23	7.5°
18	2066	1952	2341	2455	1546	1646	2554	1327	24-Φ 19	23	7.5°
19	2177	2058	2468	2587	1627	1727	2691	1398	30-Φ 19	23	6°
20	2291	2167	2596	2720	1718	1828	2835	1475	30-Φ 19	23	6°
21	2401	2272	2723	2852	1795	1905	2971	1545	30-Φ 23	27	6°
22	2511	2377	2851	2985	1876	1986	3108	1616	30-Φ 23	27	6°
23	2622	2483	2979	3118	1957	2067	3246	1687	30-Φ 23	27	6°
24	2732	2588	3108	3252	2058	2188	3388	1762	30-Φ 23	27	6°
25	2846	2697	3236	3385	2739	2269	3526	1834	36-Φ 23	27	5°
26	2956	2802	3363	3517	2216	2346	3663	1905	36-Φ 27	30	5°

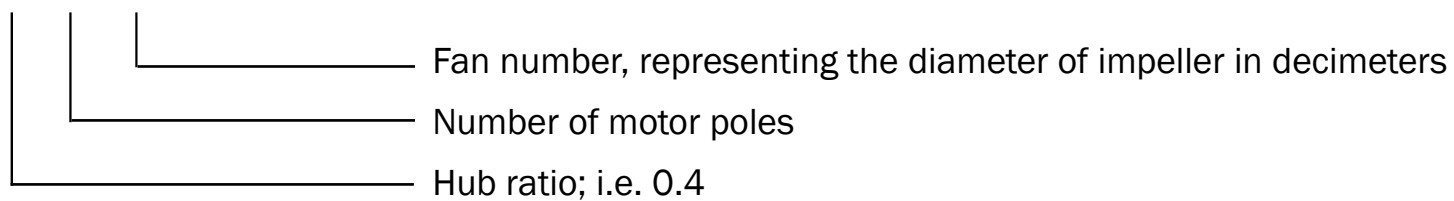
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Model Nomenclature

S - 40 - 4 - No15



Aeroflow S Series Fan Specifications

Below are the S series fan specifications. Please note these data are based on 50Hz motors, if the motor is 60 Hz, the motor speed will change. When a fan's rpm changes from n to n0, the fan parameters change as follows:

Airflow rate $Q = Q_0 \cdot n/n_0$; Pressure $P = P_0 (n/n_0)^2$

Motor power (kw) $W = W_0 (n/n_0)^2$; Motor efficiency no change: $\eta = \eta_0$

Model	Fan No.	Airflow (m3/s)	Total Pt (Pa)	Motor (kw)	Motor Model	Approx. Weight (kg)
S40-4 (n=1450r/min)	8	4.4-9.5	108-497	5.5	Y132S-4	508
	9	6.2-13.5	136-629	11	Y160M-4	682
	10	8.5-18.6	168-776	15	Y160L-4	1015
	11	11.3-24.7	203-939	30	Y200L-4	1308
	12	14.7-32.1	242-1118	37	Y225S-4	1563
	13	18.7-40.8	284-1312	55	Y250M-4	1890
	14	23.4-50.9	329-1521	90	Y280M-4	2365
	15	28.7-62.6	378-1746	110	Y315S-4	3528
S40-6 (n=980r/min)	7	2.0-4.3	38-174	1.1	Y90L1-6	350
	8	3.0-6.4	49-227	2.2	Y112M-6	468
	9	4.2-9.1	62-287	3	Y132S-6	603
	10	5.8-12.5	77-355	5.5	Y132M2-6	924
	11	7.7-16.7	93-429	7.5	Y160M-6	1137
	12	9.9-21.7	111-510	15	Y180L-6	1395
	13	12.6-27.5	130-599	18.5	Y200L1-6	1650
	14	15.8-34.4	150-695	30	Y225M-6	1952
	15	19.4-42.3	173-798	37	Y250M-6	2828
	16	23.6-51.4	197-908	55	Y280M-6	3364
	17	28.3-61.6	222-908	75	Y315S-6	4042
	18	33.6-73.1	249-1149	90	Y315M-6	4591
	19	39.5-86.0	277-1280	110	Y315L1-6	5061
	20	46.0-100.3	307-1418	160	Y355M-6	7009
S40-8 (n=730r/min)	11	5.7-12.4	52-238	4	Y160M1-8	1087
	12	7.4-16.1	61-283	5.5	Y160M2-8	1283
	13	9.4-20.5	72-332	7.5	Y160L-8	1510
	14	11.8-25.6	84-386	11	Y180L-8	1773
	15	14.5-31.5	96-443	15	Y200L-8	2578
	16	17.6-38.3	109-504	22	Y255M-8	2976

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MODEL	FAN No.	AIRFLOW (m3/s)	Total Pt (pa)	Motor (kw)	Motor model	Approx. weight (kg)
S40-4 (n=730r/min)	17	21.1-45.9	123-568	30	Y250M-8	3405
	18	25.0-54.5	138-637	37	Y280S-8	3905
	19	29.4-64.1	154-710	55	Y315S-8	4766
	20	34.3-74.7	170-787	75	Y315M-8	6216
	21	39.7-86.5	188-867	90	Y315L1-8	6800
	22	45.7-99.4	206-952	110	Y315L2-8	7420
	23	52.2-113.6	225-1041	132	Y355M-8	8616
	24	59.3-129.1	245-1133	160	Y355M-8	9317
	25	67.0-146	266-1229	200	Y355L-8	11666
	26	75.4-164.2	288-1330	250	Y450S3-8	13638
S45-4 (n=1450r/min)	8	6.6-12.5	357-658	7.5	Y132M-4	547
	9	9.5-17.8	452-867	15	Y160L-4	735
	10	13.0-24.0	558-1071	30	Y200L-4	1169
	11	17.3-32.6	675-1295	45	Y225M-4	1442
	12	22.5-42.3	804-1542	75	Y280S-4	1876
	13	28.6-53.8	943-1810	90	Y280M-4	2205
	14	35.7-67.2	1094-2099	132	Y315M-4	2891
	15	43.9-82.6	1256-2409	200	Y315L2-4	3887
S45-6 (n=980r/min)	7	3.0-5.7	125-240	1.5	Y100L-6	375
	8	4.5-8.4	163-313	3	Y132S-6	512
	9	6.4-12.0	207-396	5.5	Y132M2-6	649
	10	8.7-16.5	255-489	7.5	Y160M-6	998
	11	11.6-22.0	309-592	15	Y180L-6	1248
	12	15.1-28.5	367-704	18.5	Y200L1-6	1495
	13	19.2-36.3	431-827	30	Y255M-6	1789
	14	23.9-45.3	500-959	45	Y280S-6	2246
	15	29.4-55.7	574-1101	55	Y280M-6	3148
	16	35.7-67.6	653-1252	90	Y315M-6	3991
	17	42.8-81.1	737-1414	110	Y315L1-6	4436
	18	50.9-96.2	826-1585	160	Y355M-6	5384
	19	59.8-113.2	920-1766	200	Y355M-6	5955
	20	69.8-132.0	1019-1956	250	Y355L-6	6810

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S40-8 (n=730r/min)	17	21.1-45.9	123-568	30	Y250M-8	3405
	18	25.0-54.5	138-637	37	Y280S-8	3905
	19	29.4-64.1	154-710	55	Y315S-8	4766
	20	34.3-74.7	170-787	75	Y315M-8	6216
	21	39.7-86.5	188-867	90	Y315L1-8	6800
	22	45.7-99.4	206-952	110	Y315L2-8	7420
	23	52.2-113.6	225-1041	132	Y355M-8	8616
	24	59.3-129.1	245-1133	160	Y355M-8	9317
	25	67.0-146	266-1229	200	Y355L-8	11666
	26	75.4-164.2	288-1330	250	Y450S3-8	13638
S45-4 (n=1450r/min)	8	6.6-12.5	357-658	7.5	Y132M-4	547
	9	9.5-17.8	452-867	15	Y160L-4	735
	10	13.0-24.0	558-1071	30	Y200L-4	1169
	11	17.3-32.6	675-1295	45	Y225M-4	1442
	12	22.5-42.3	804-1542	75	Y280S-4	1876
	13	28.6-53.8	943-1810	90	Y280M-4	2205
	14	35.7-67.2	1094-2099	132	Y315M-4	2891
	15	43.9-82.6	1256-2409	200	Y315L2-4	3887
S45-6 (n=980r/min)	7	3.0-5.7	125-240	1.5	Y100L-6	375
	8	4.5-8.4	163-313	3	Y132S-6	512
	9	6.4-12.0	207-396	5.5	Y132M2-6	649
	10	8.7-16.5	255-489	7.5	Y160M-6	998
	11	11.6-22.0	309-592	15	Y180L-6	1248
	12	15.1-28.5	367-704	18.5	Y200L1-6	1495
	13	19.2-36.3	431-827	30	Y255M-6	1789
	14	23.9-45.3	500-959	45	Y280S-6	2246
	15	29.4-55.7	574-1101	55	Y280M-6	3148
	16	35.7-67.6	653-1252	90	Y315M-6	3991
	17	42.8-81.1	737-1414	110	Y315L1-6	4436
	18	50.9-96.2	826-1585	160	Y355M-6	5384
	19	59.8-113.2	920-1766	200	Y355M-6	5955
	20	69.8-132.0	1019-1956	250	Y355L-6	6810

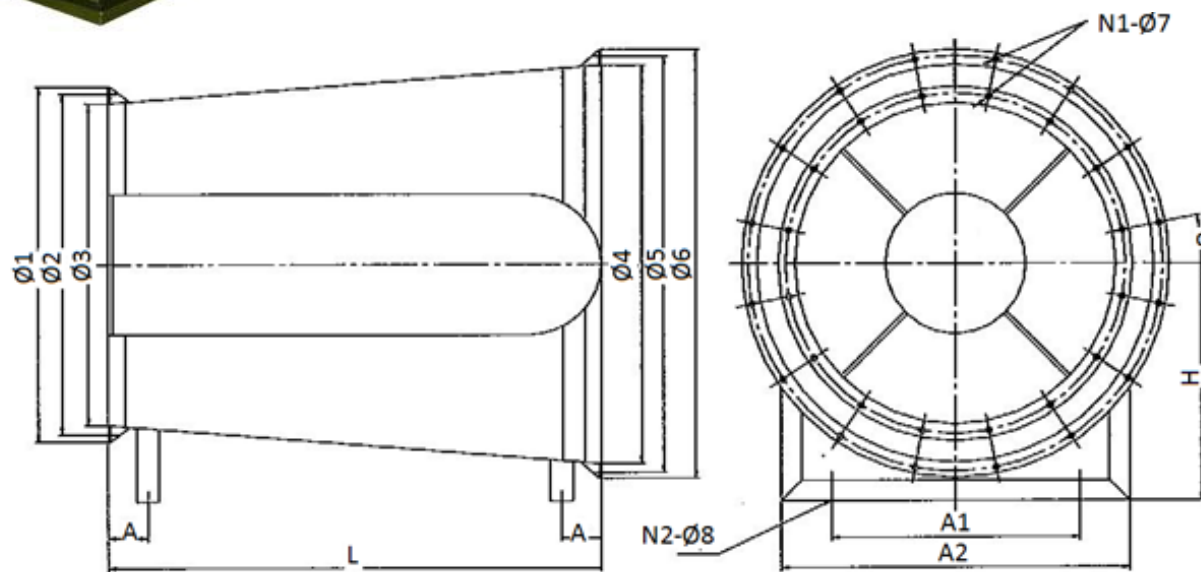
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Diffuser

When the Aeroflow S series fan is used as main fan, a diffuser should also be considered. A diffuser for surface mining main fans can convert some kinetic pressure to static pressure to reduce the loss of exhausted kinetic pressure, resulting in energy saving. It can also reduce the local resistance and lower kinetic pressure at the exhaust, therefore greatly reduce the local fan resistance which also results in energy saving.



Diffuser Dimensions

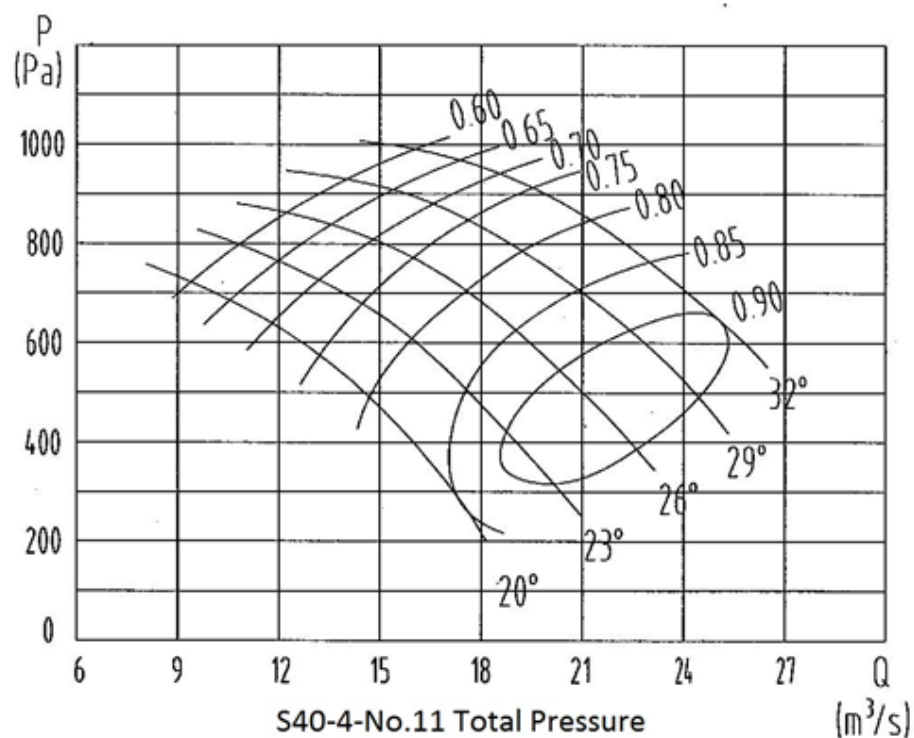
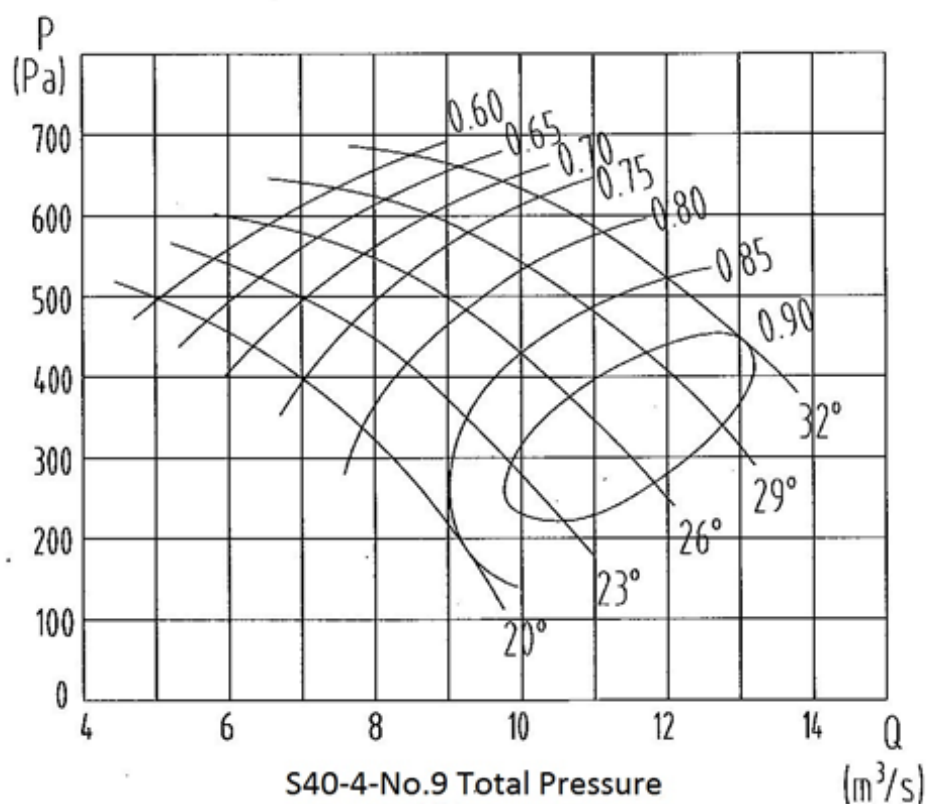
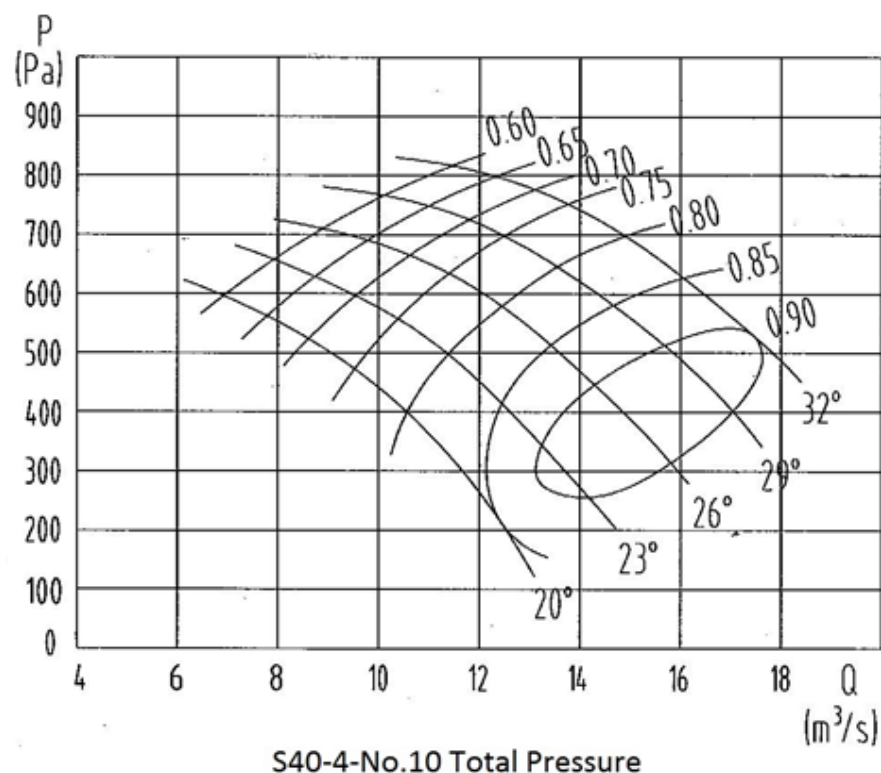
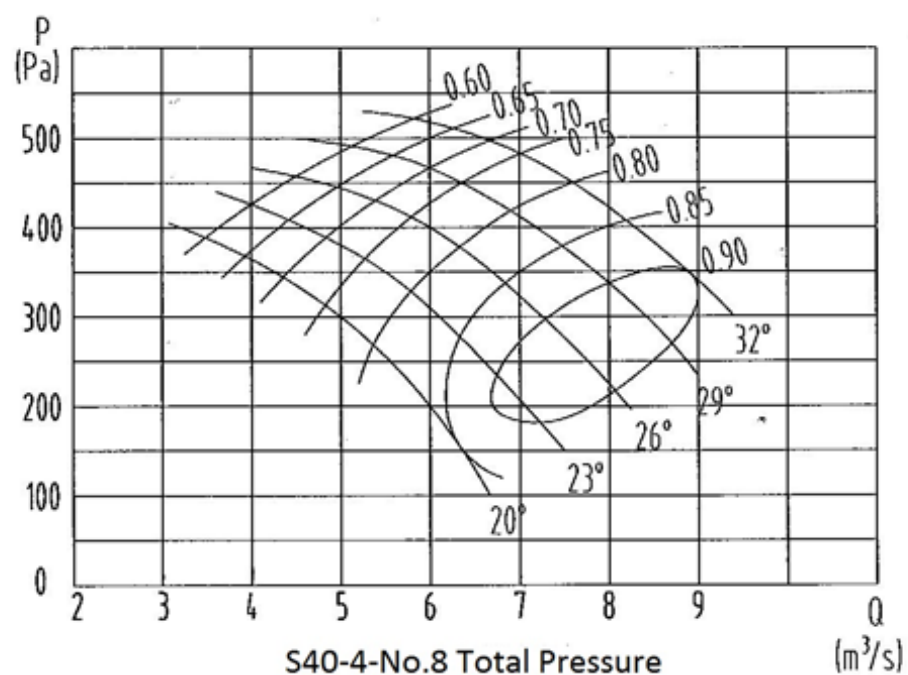
Fan #	Φ 1	Φ 2	Φ 3	Φ 4	Φ 5	Φ 6	N1-Φ7	N2-Φ8	L	△	A1	A2	H	θ
7	846	787	700	919	997	1056	16-15	4-19	1295	113	516	616	538	11.25°
8	956	892	800	1050	1133	1197	16-15	4-19	1480	113	604	704	608	11.25°
9	1066	997	900	1182	1270	1339	16-15	4-19	1665	113	692	792	679	11.25°
10	1179	1105	1000	1313	1408	1482	16-15	4-19	1850	113	780	880	751	11.25°
11	1289	1210	1100	1444	1544	1623	16-15	4-19	2035	113	868	968	821	11.25°
12	1399	1315	1200	1575	1680	1764	16-15	4-23	2220	133	936	1056	897	11.25°
13	1510	1421	1300	1707	1817	1906	24-15	4-23	2405	133	1024	1144	968	7.5°
14	1620	1526	1400	1838	1953	2047	24-15	4-23	2590	133	1112	1232	1038	7.5°
15	1734	1635	1500	1969	2091	2190	24-15	4-23	2775	135	1200	1320	1110	7.5°
16	1845	1741	1600	2101	2228	2332	24-19	4-23	2960	155	1258	1408	1186	7.5°
17	1955	1846	1700	2232	2364	2473	24-19	4-23	3145	155	1346	1496	1256	7.5°
18	2066	1952	1800	2363	2501	2615	24-19	4-23	3330	155	1434	1584	1327	7.5°
19	2177	2058	1900	2494	2637	2756	30-19	4-23	3515	155	1522	1672	1398	6°
20	2291	2167	2000	2626	2776	2900	30-19	4-27	3700	192	1580	1760	1475	6°
21	2401	2272	2100	2757	2912	3041	30-23	4-27	3885	192	1668	1848	1545	6°
22	2511	2377	2200	2888	3048	3182	30-23	4-27	4070	192	1756	1936	1616	6°
23	2622	2488	2300	3020	3185	3324	30-23	4-27	4055	192	1844	2024	1687	6°
24	2732	2588	2400	3151	3321	3465	30-23	4-33	4440	222	1902	2112	1762	6°
25	2846	2697	2500	3282	3459	3608	36-23	4-33	4625	224	1990	2200	1834	5°
26	2956	2802	2600	3414	3596	3750	36-23	4-33	4810	224	2078	2288	1905	5°

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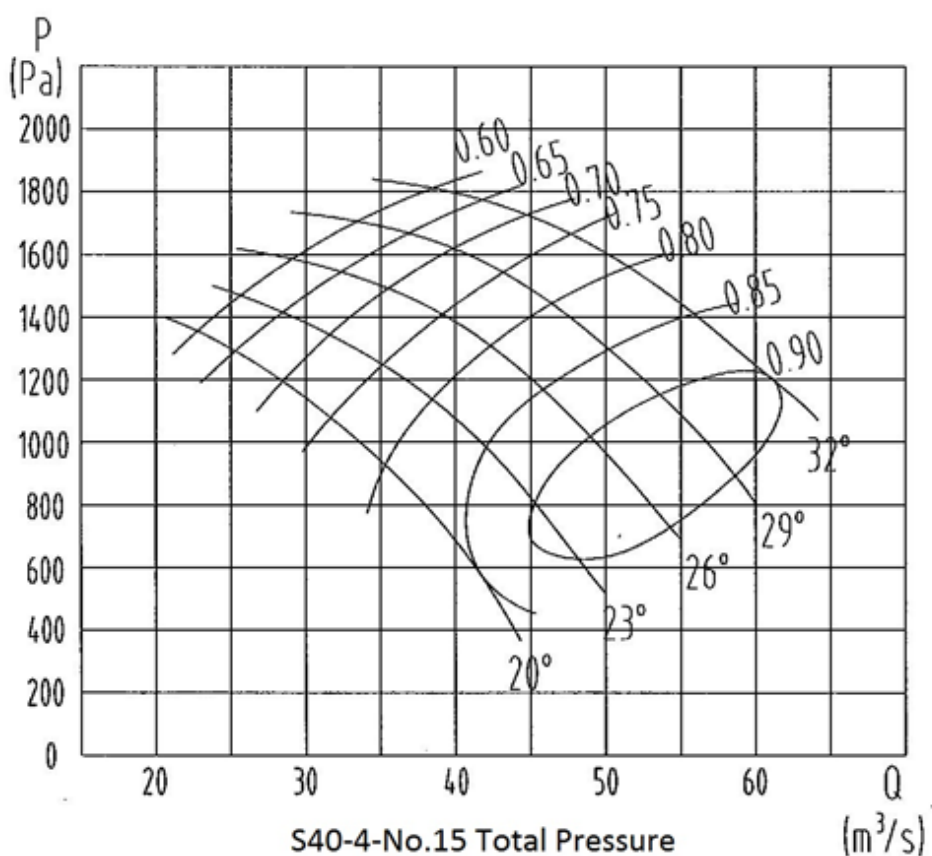
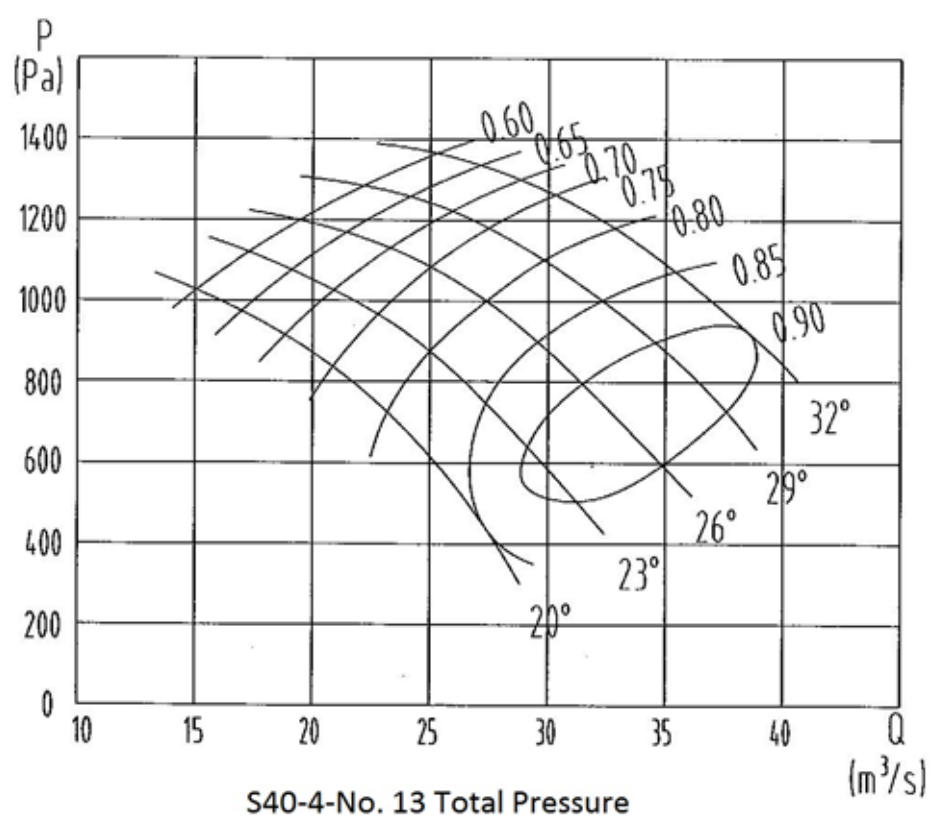
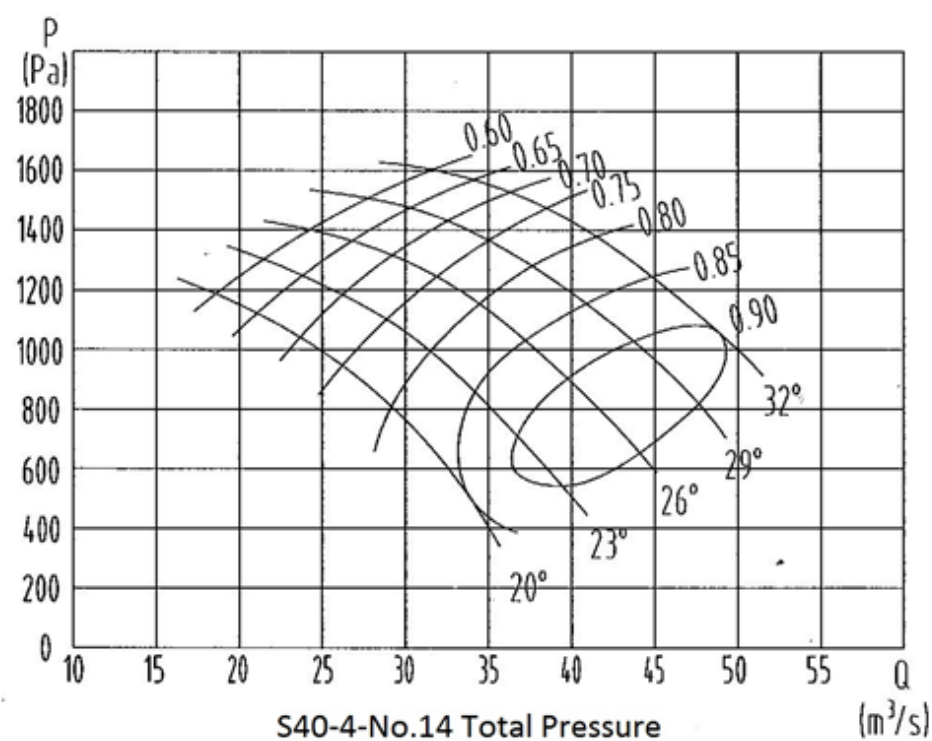
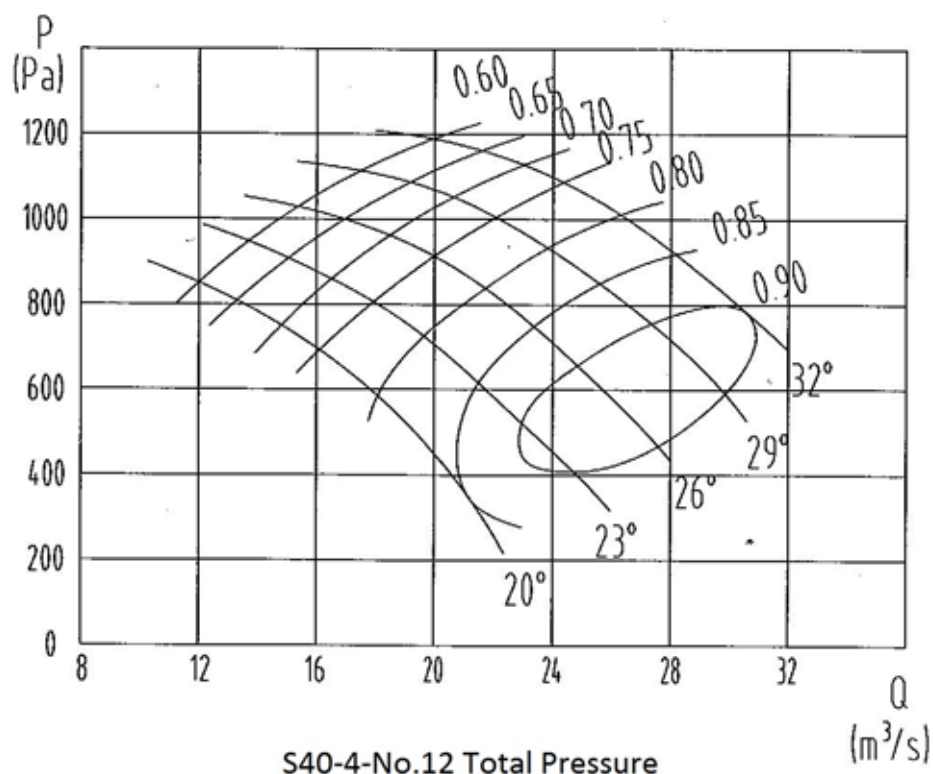


Appendix - Aeroflow S Series Fan Performance Charts



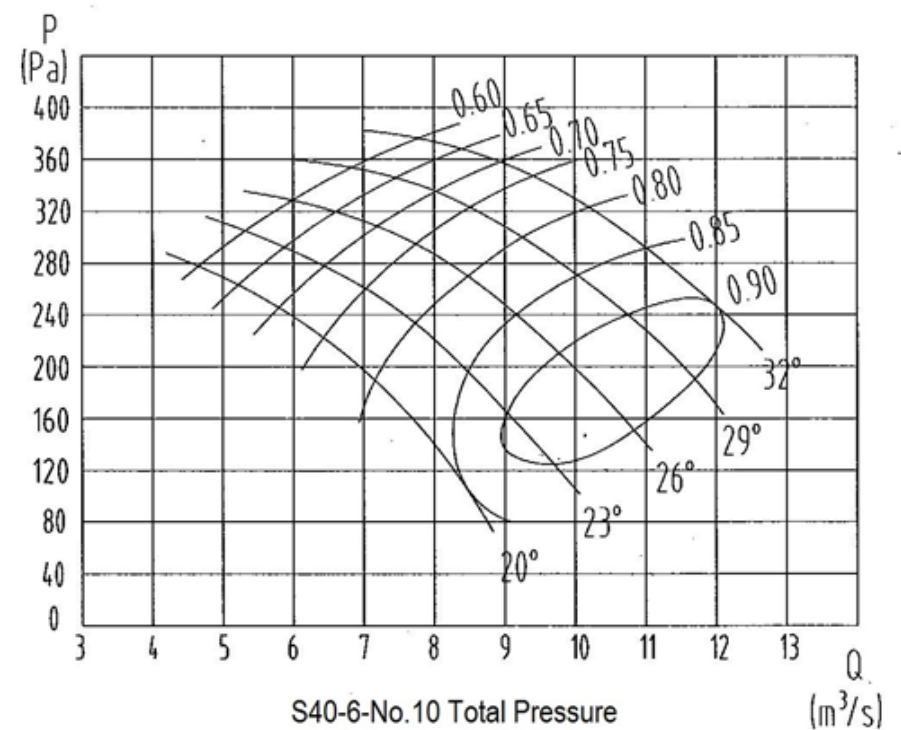
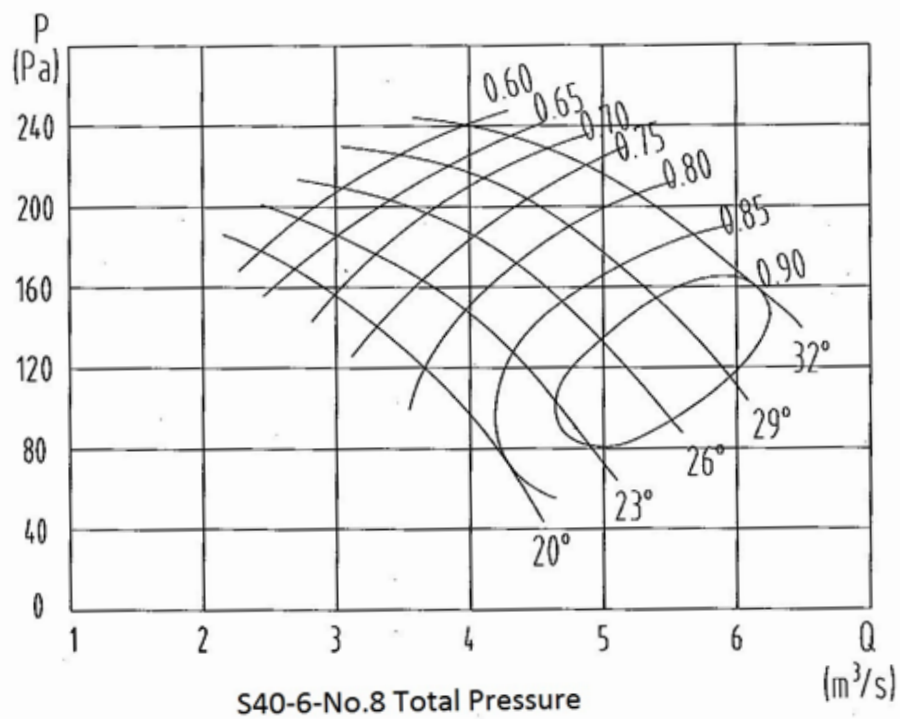
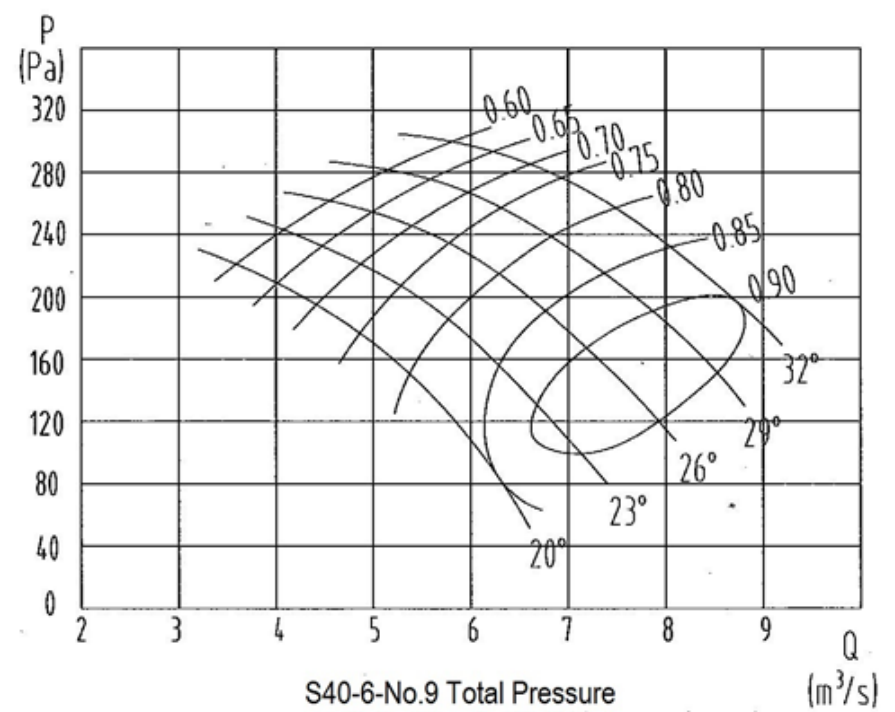
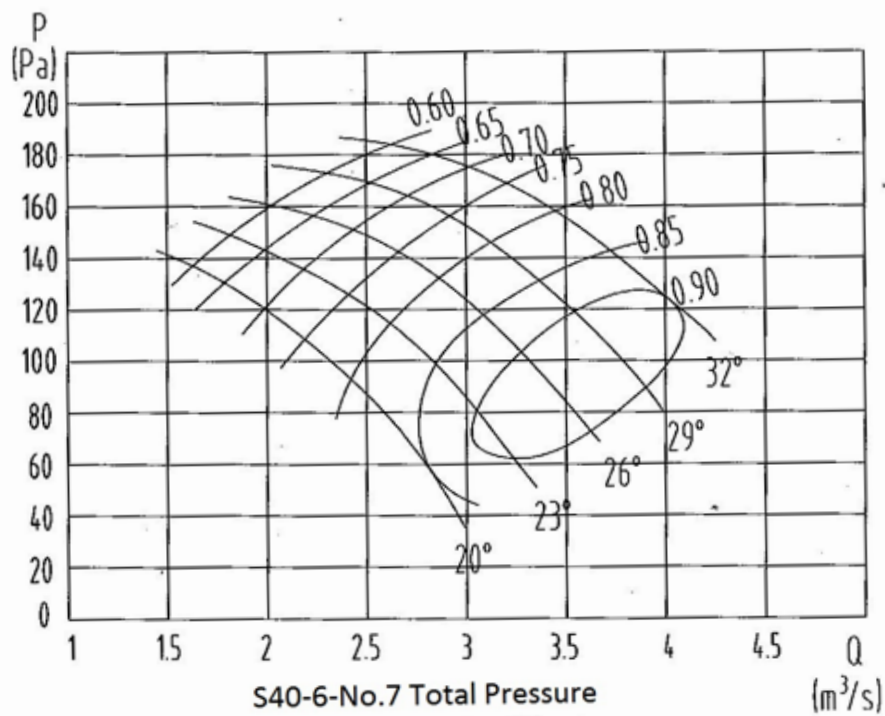
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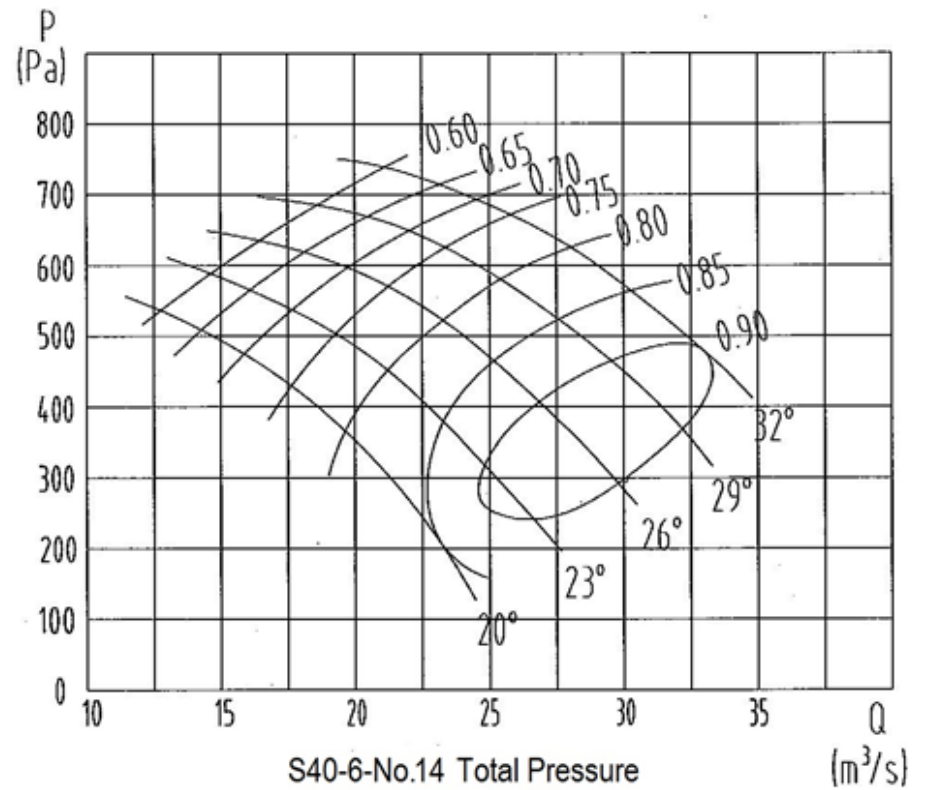
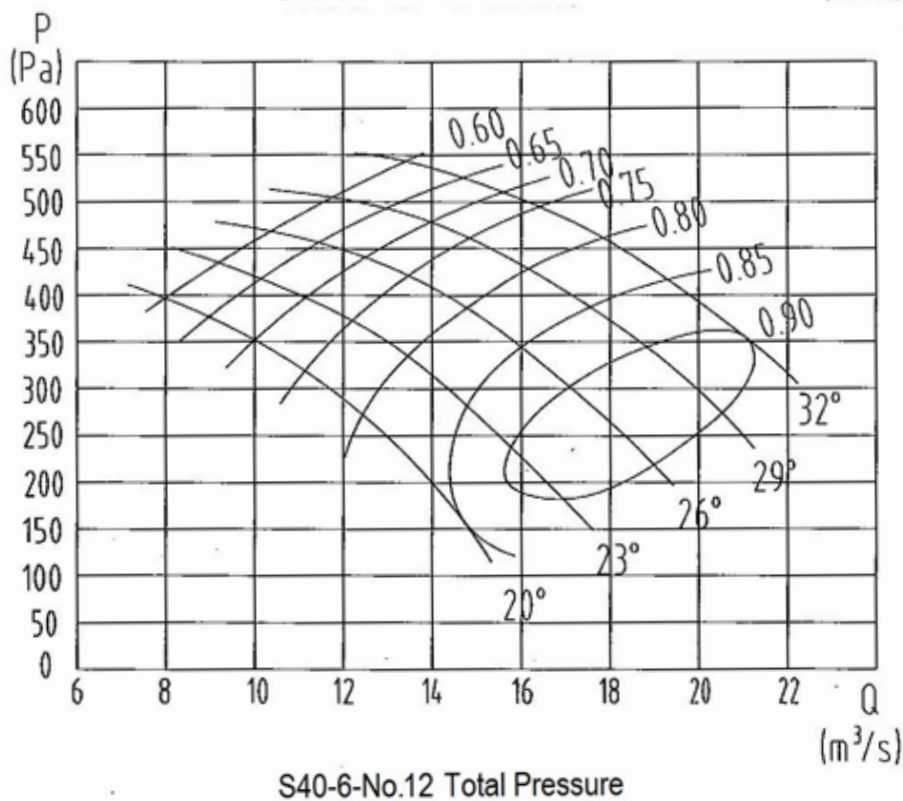
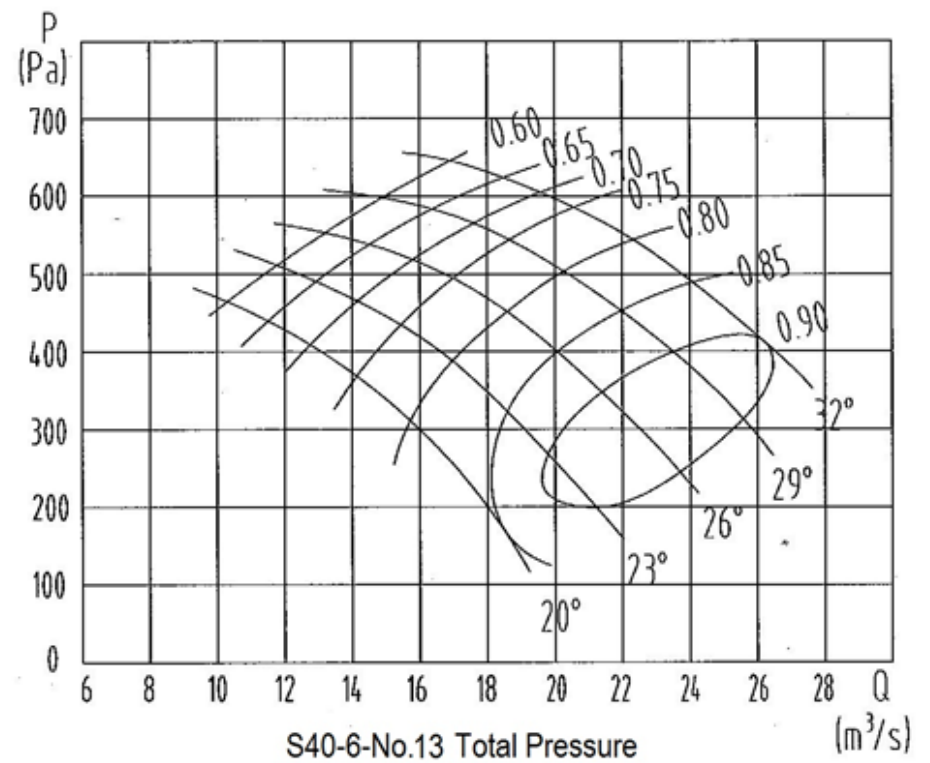
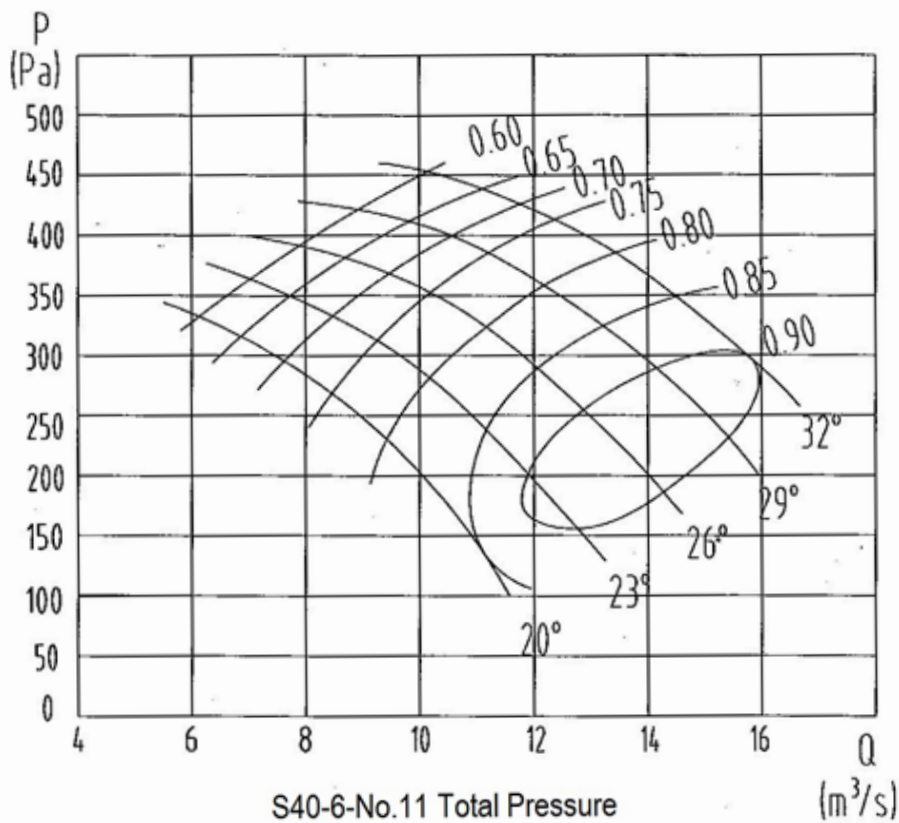
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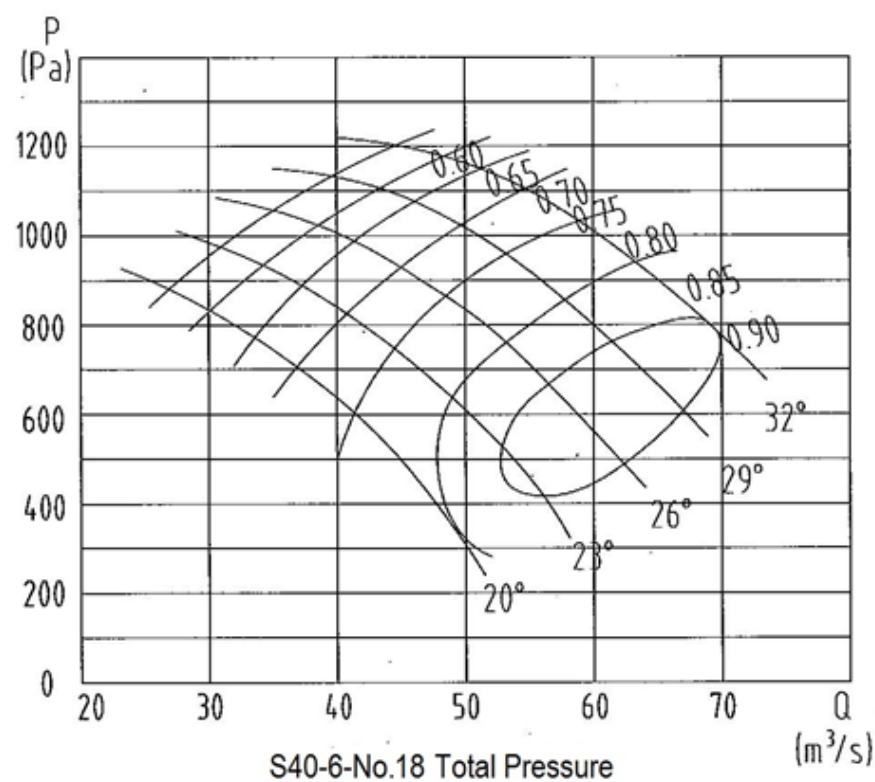
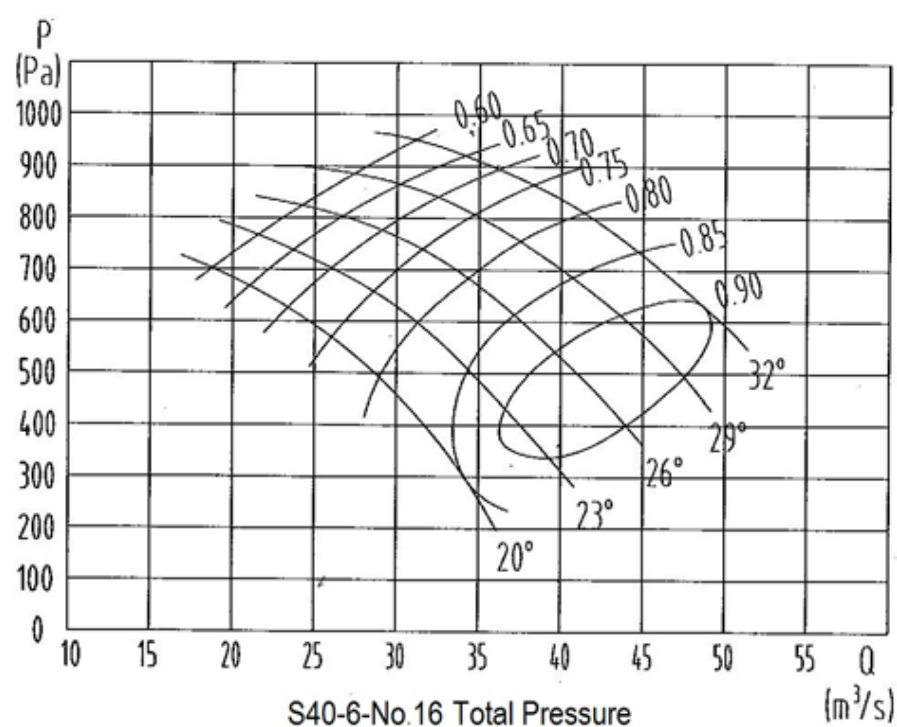
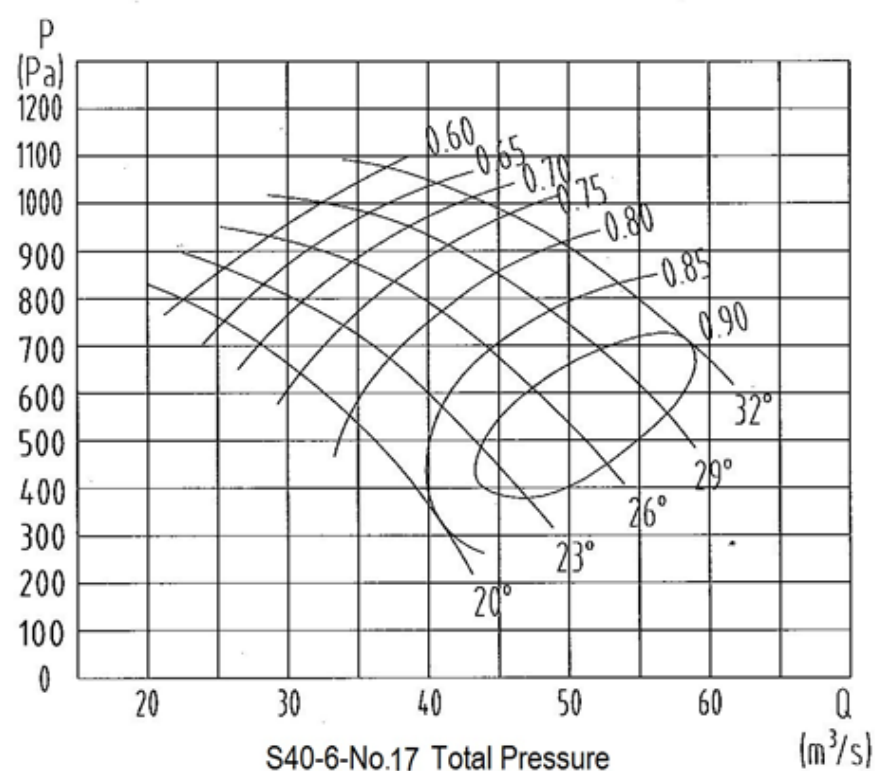
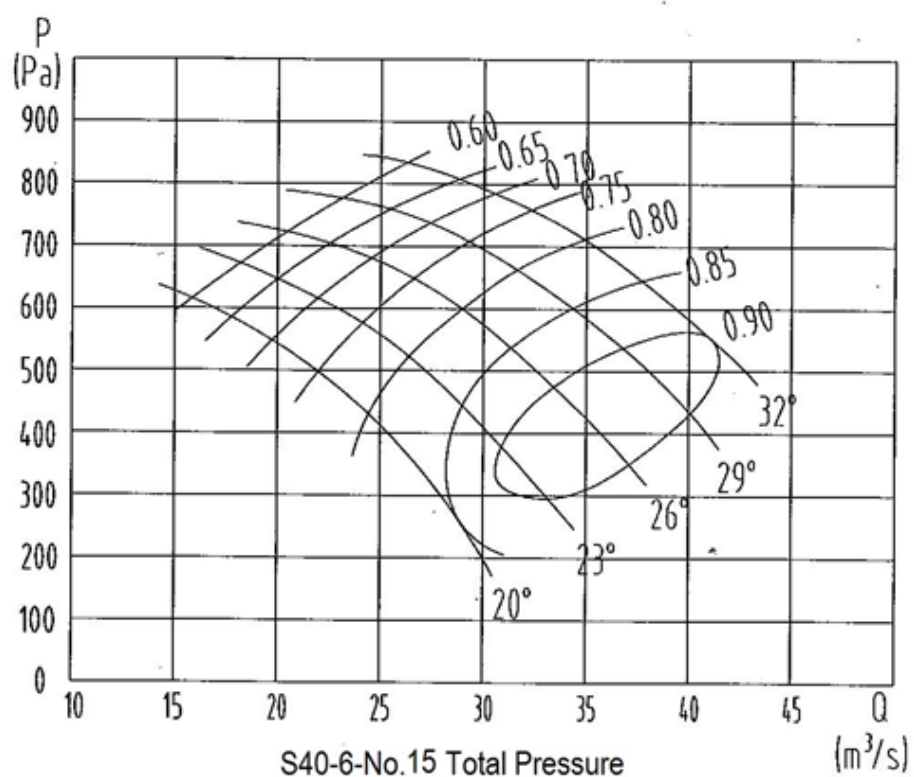
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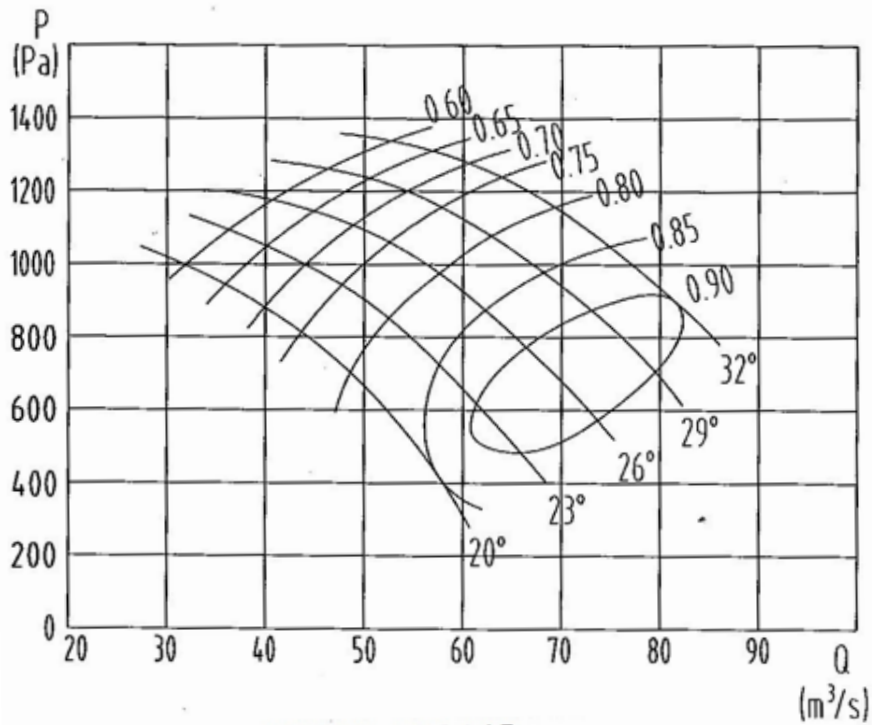
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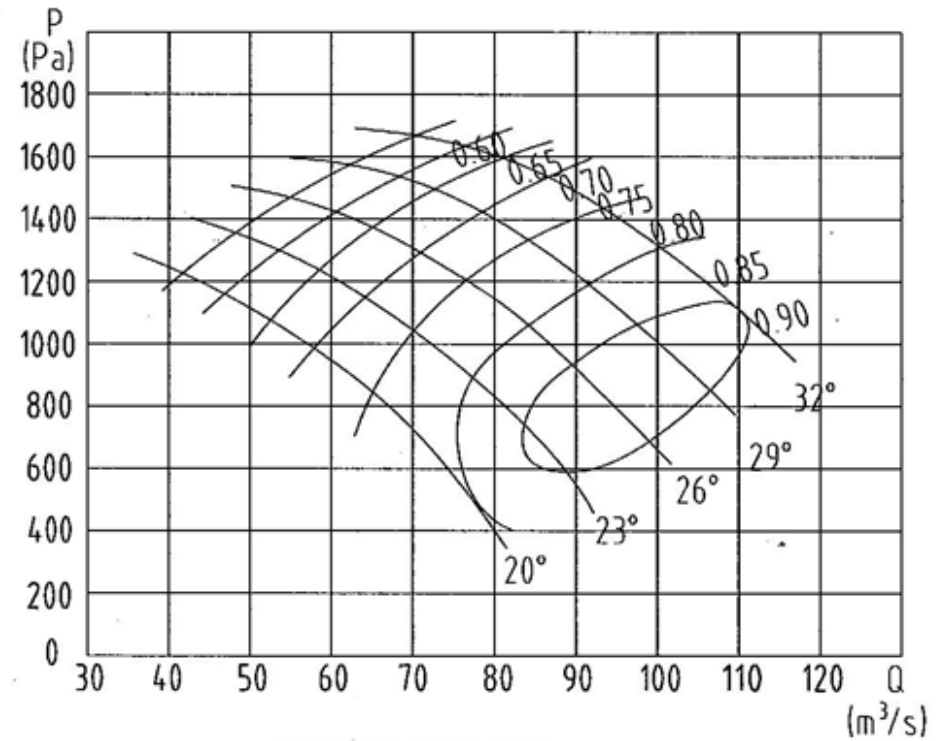


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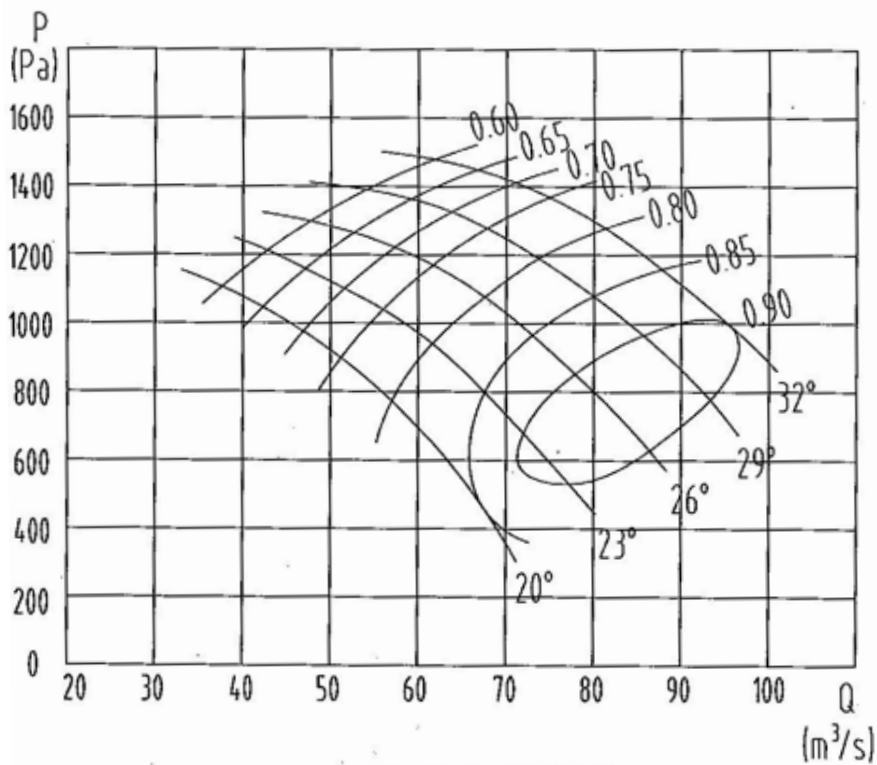
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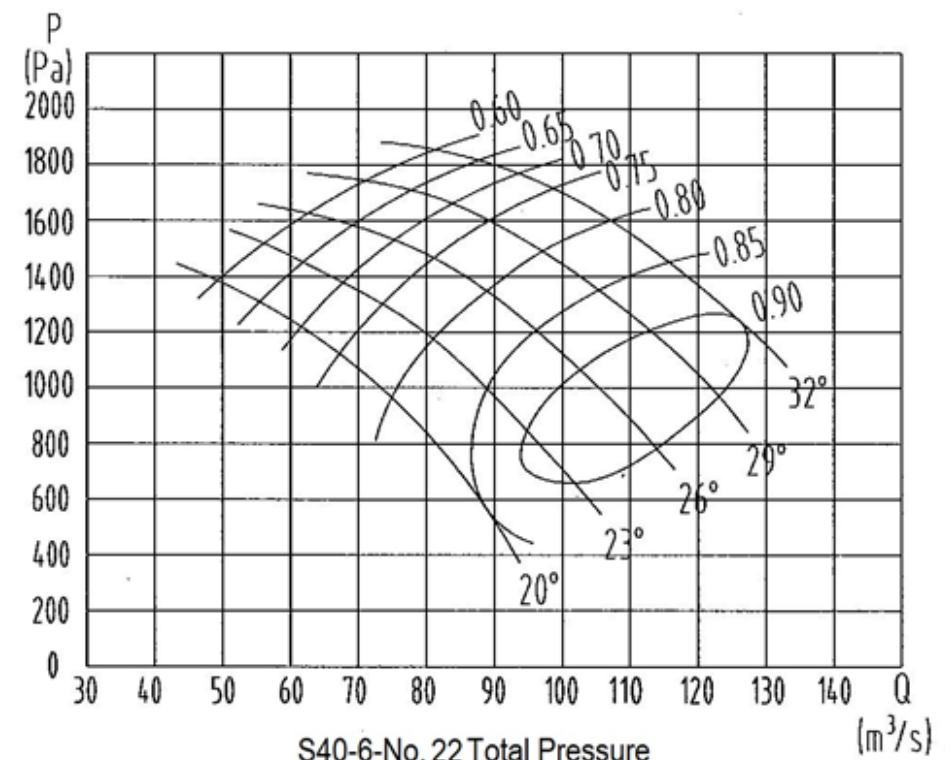
S40-6-No.19 Total Pressure



S40-6-No.21 Total Pressure



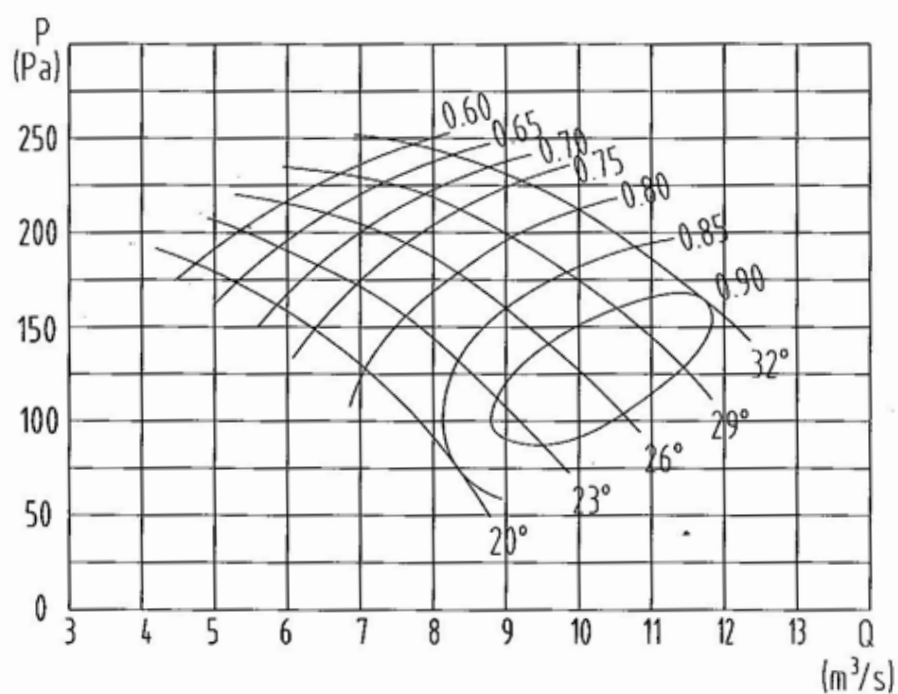
S40-6-No.20 Total Pressure



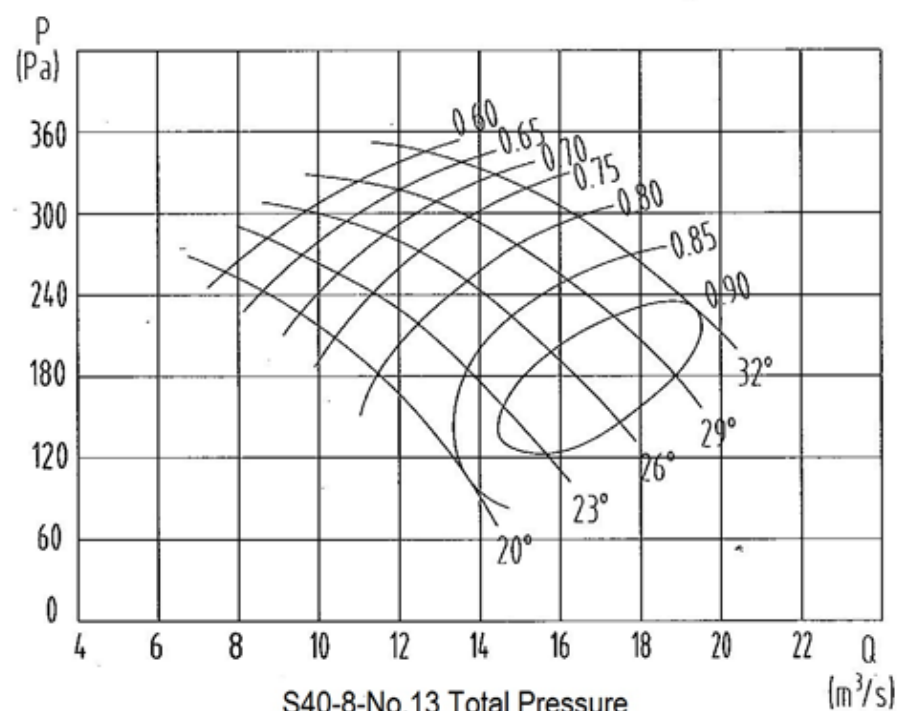
S40-6-No.22 Total Pressure

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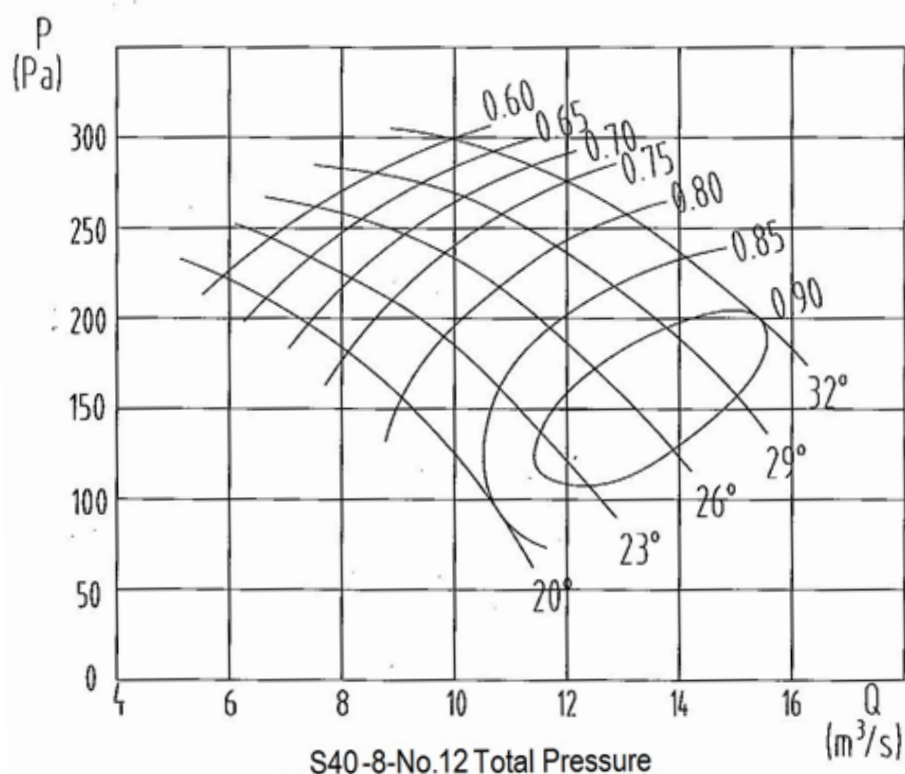
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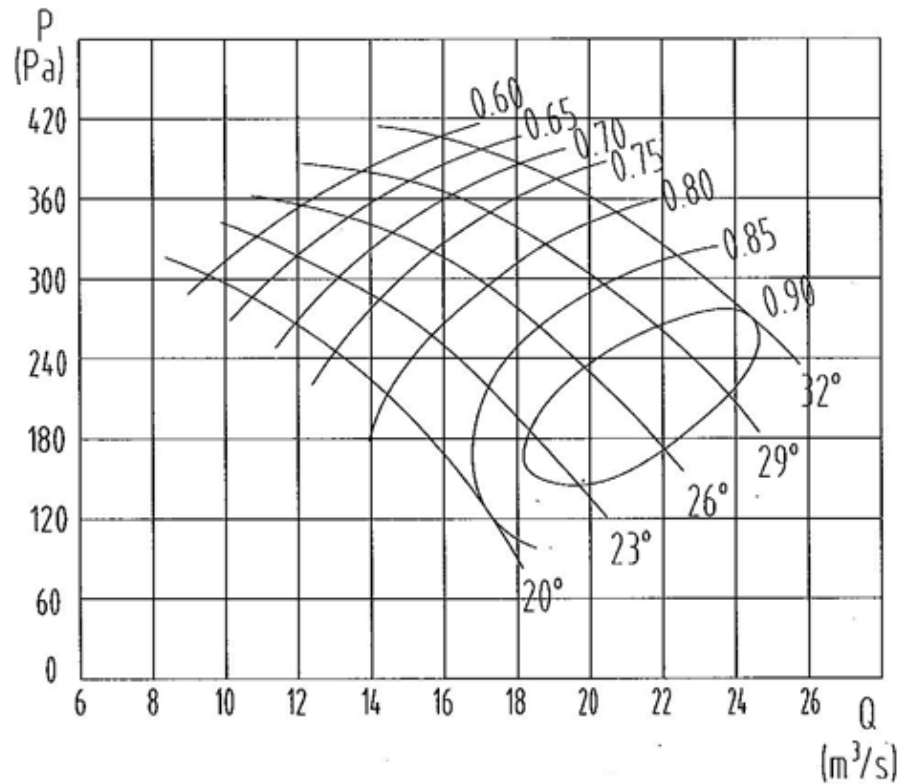
S40-8-No.11 Total Pressure



S40-8-No.13 Total Pressure



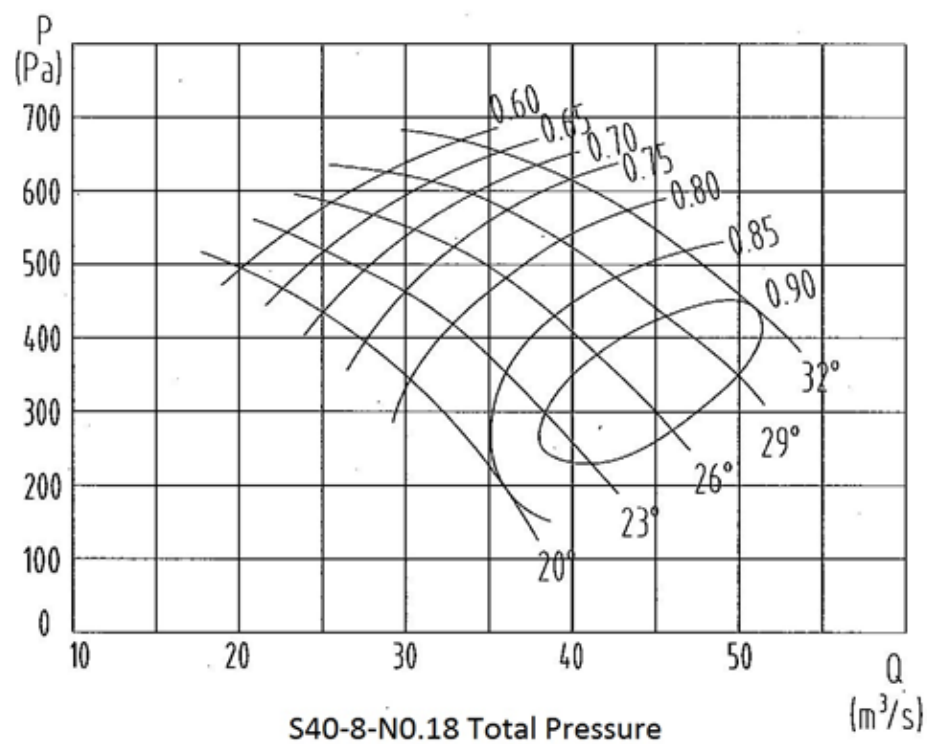
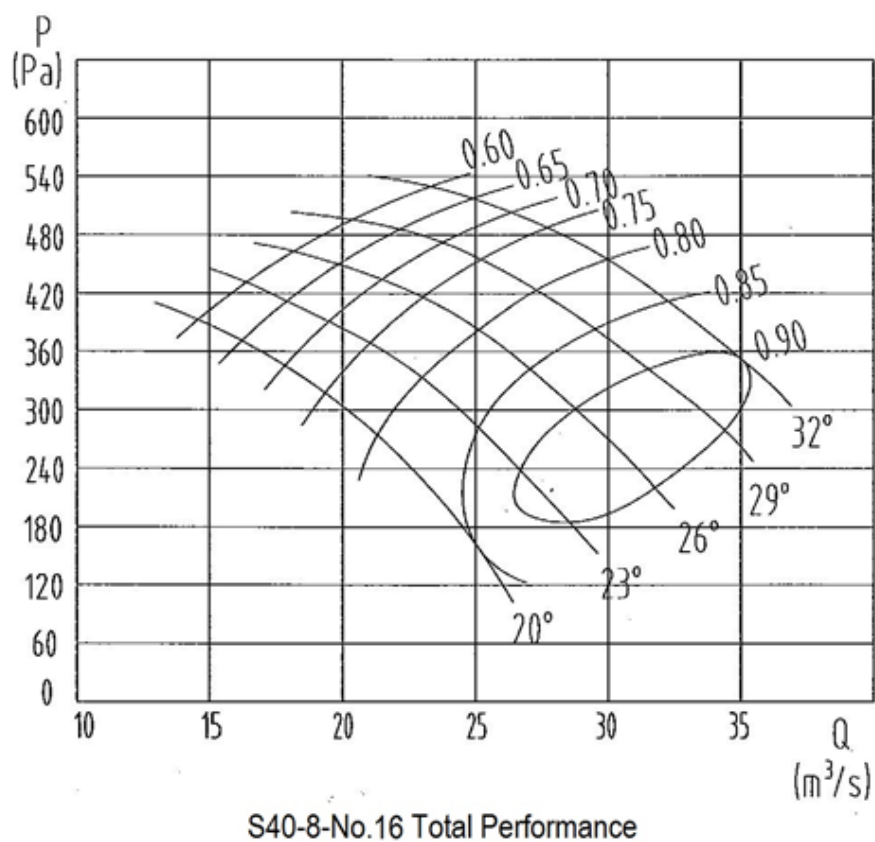
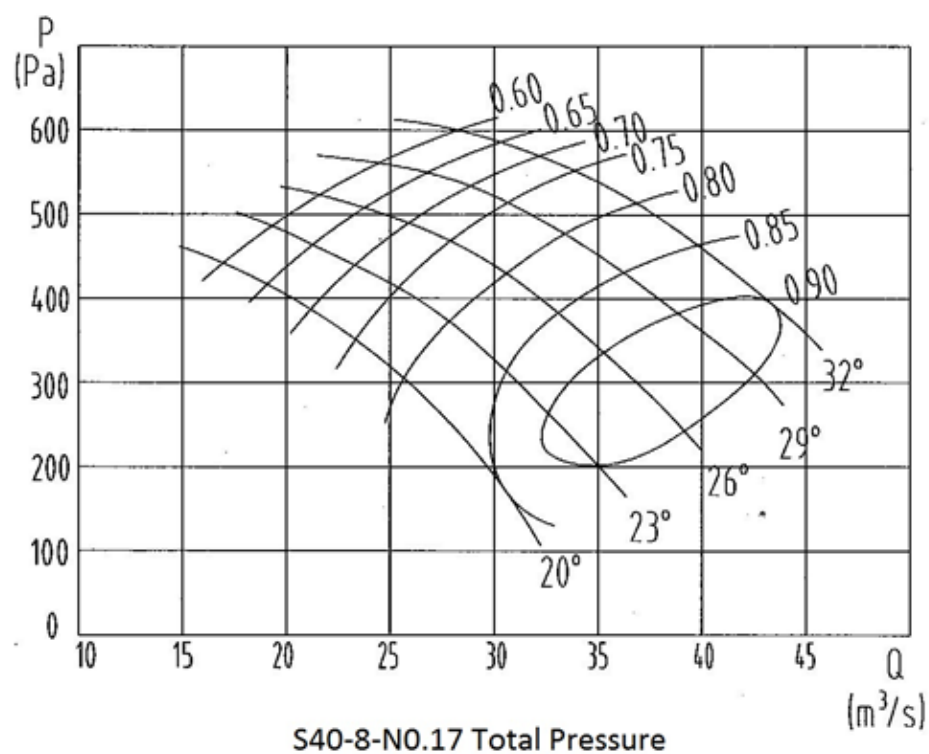
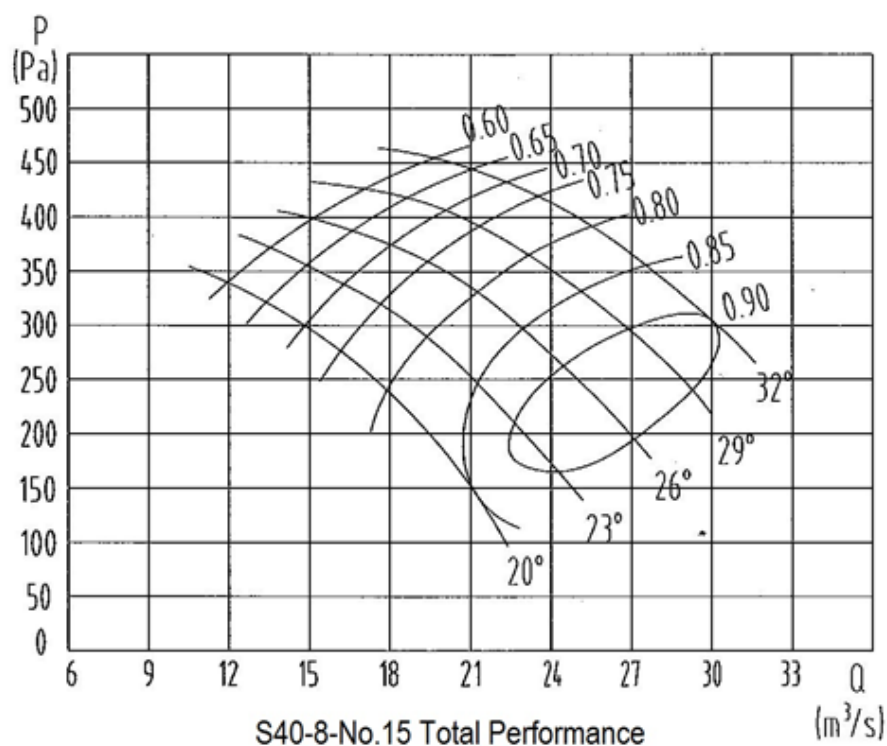
S40-8-No.12 Total Pressure



S40-8-No.14 Total Pressure

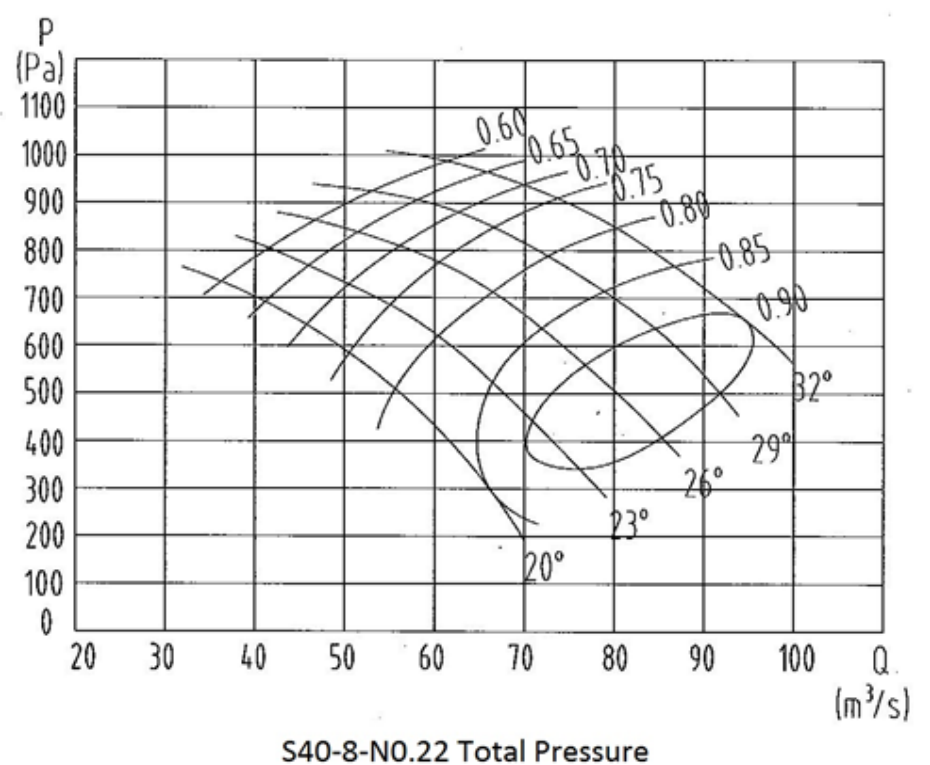
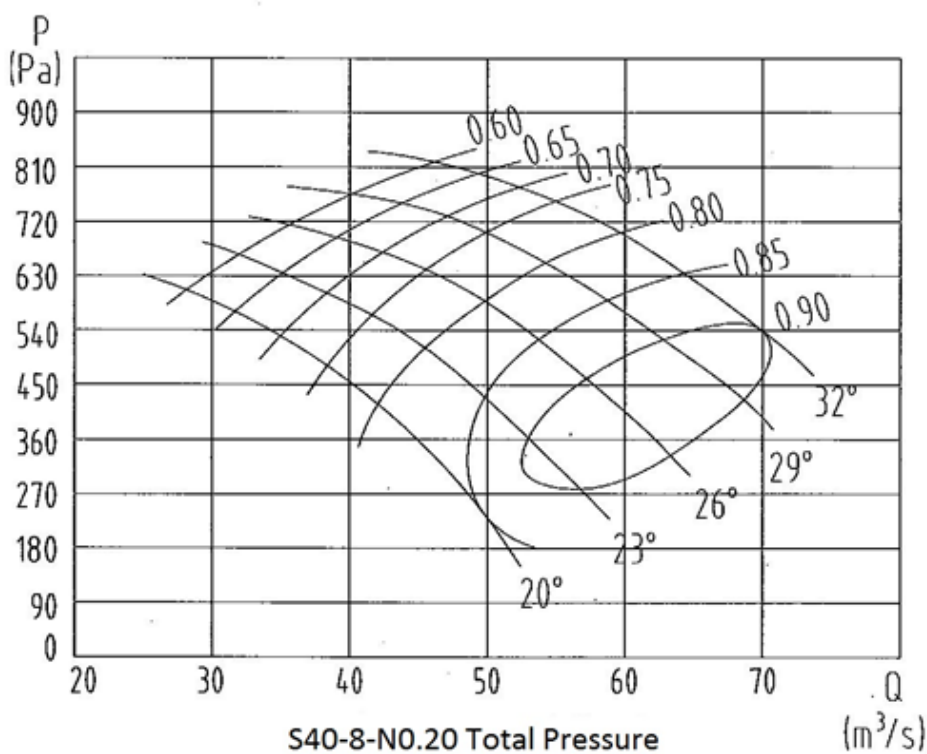
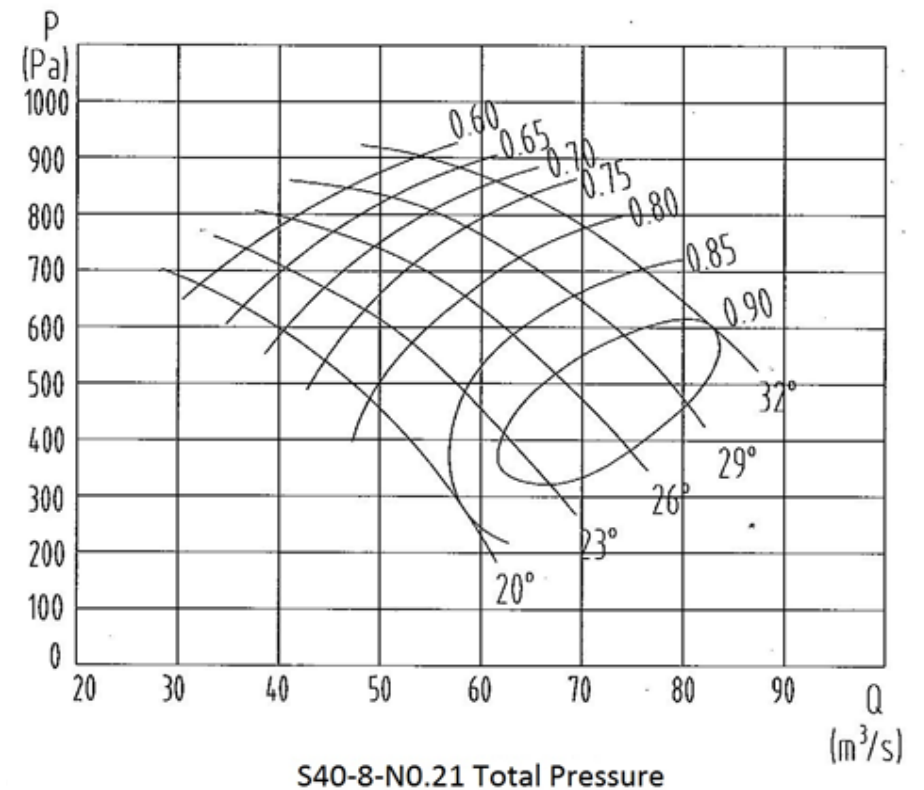
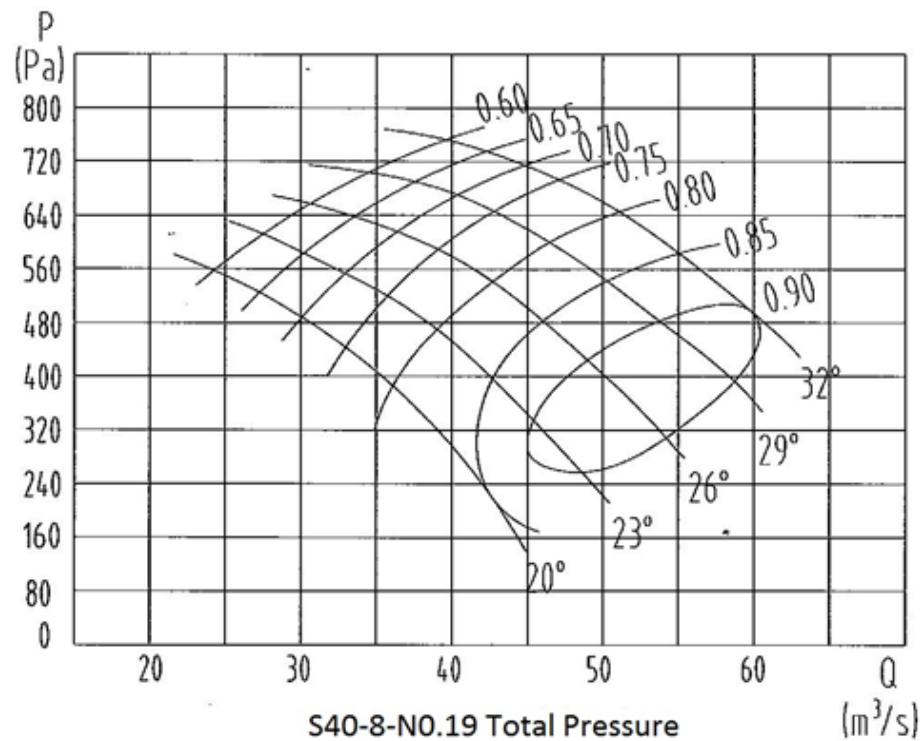
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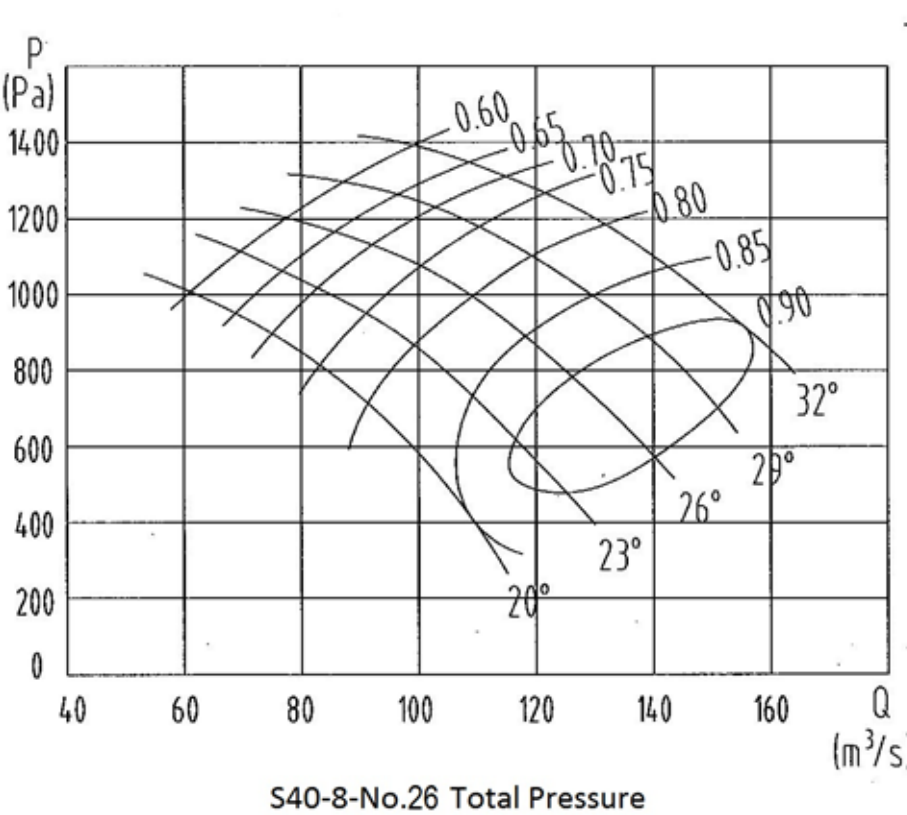
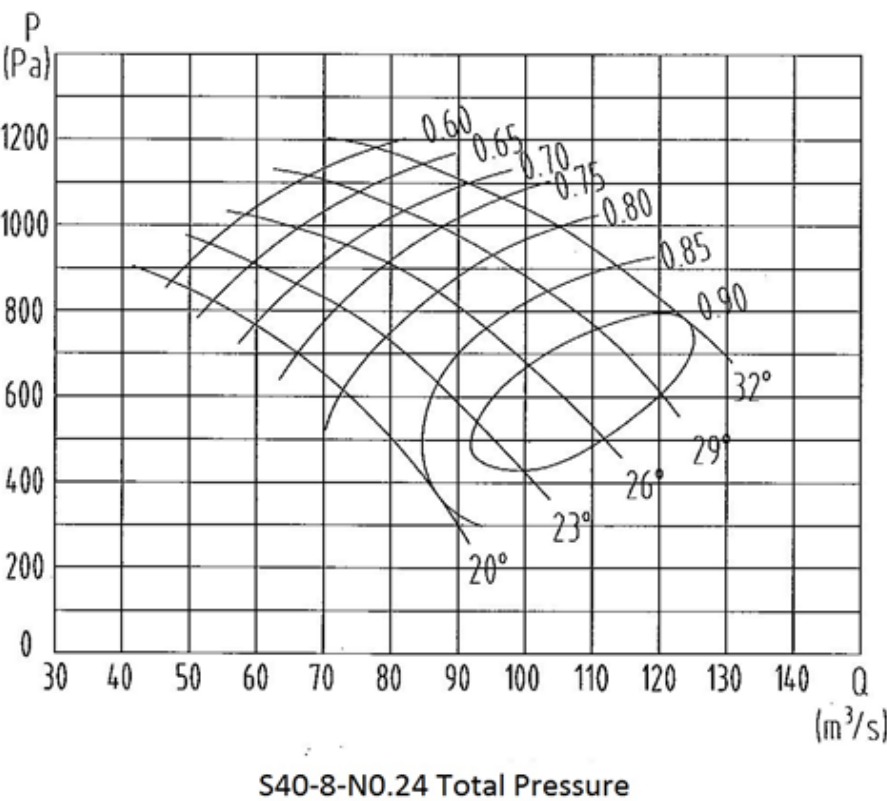
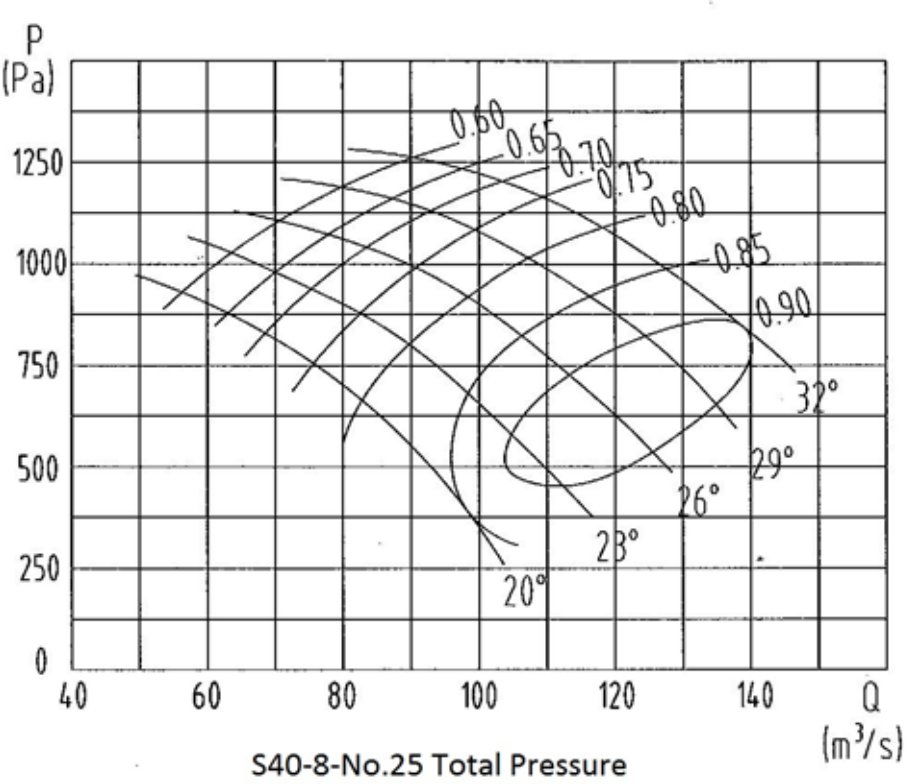
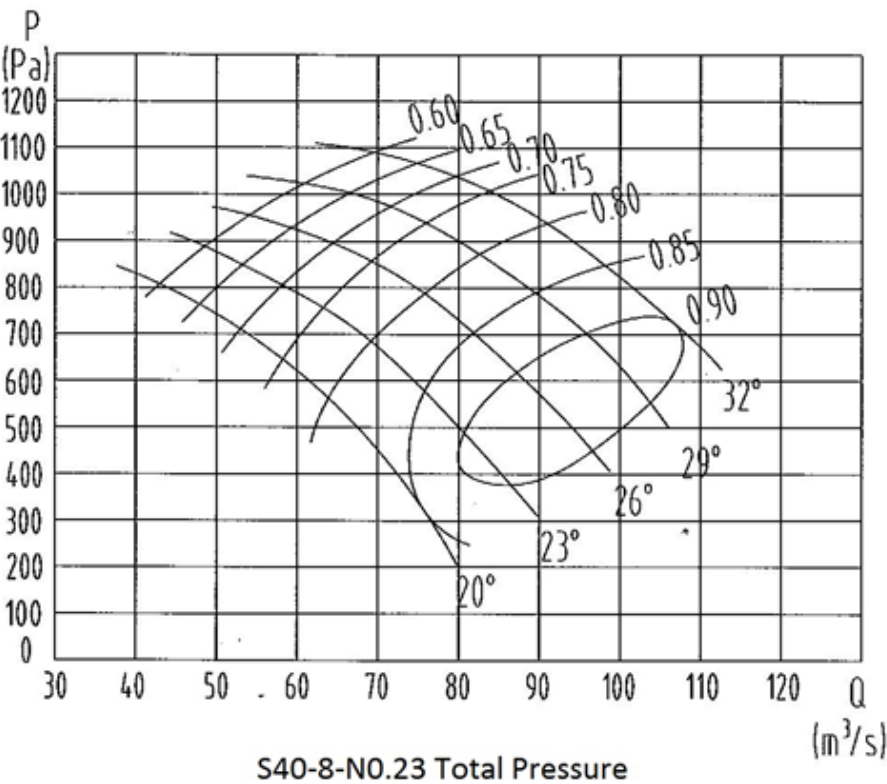


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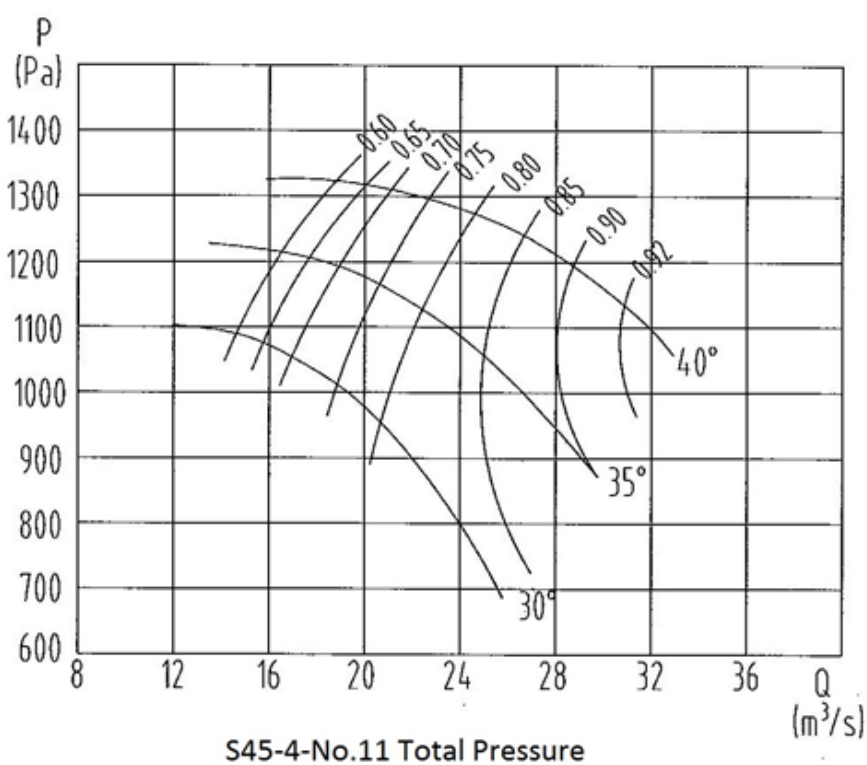
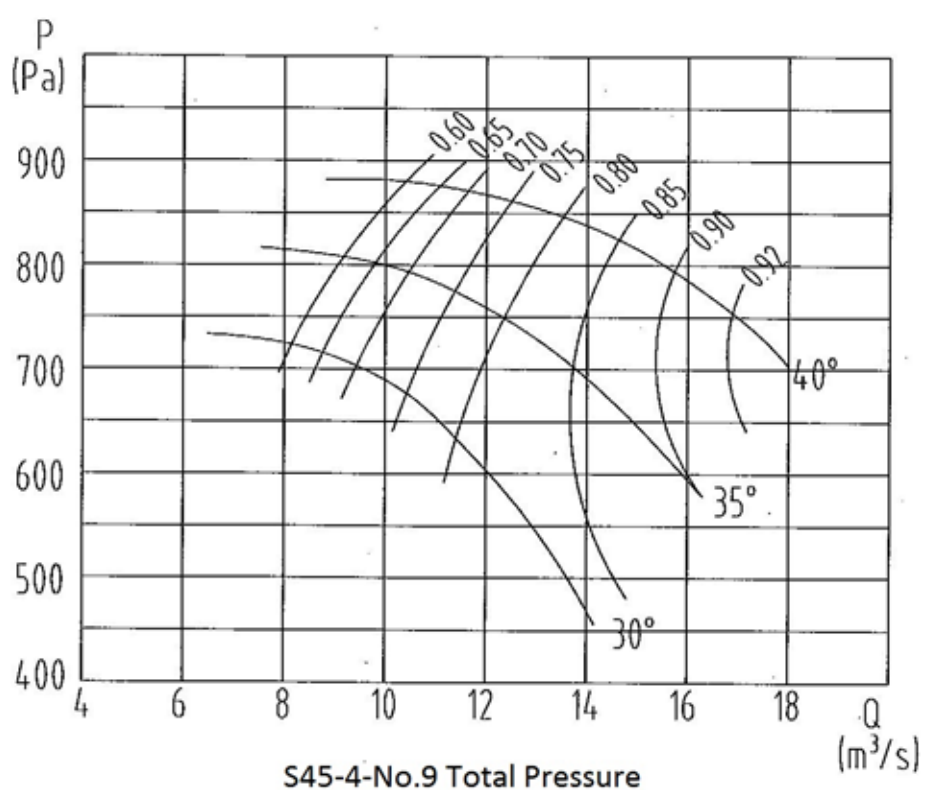
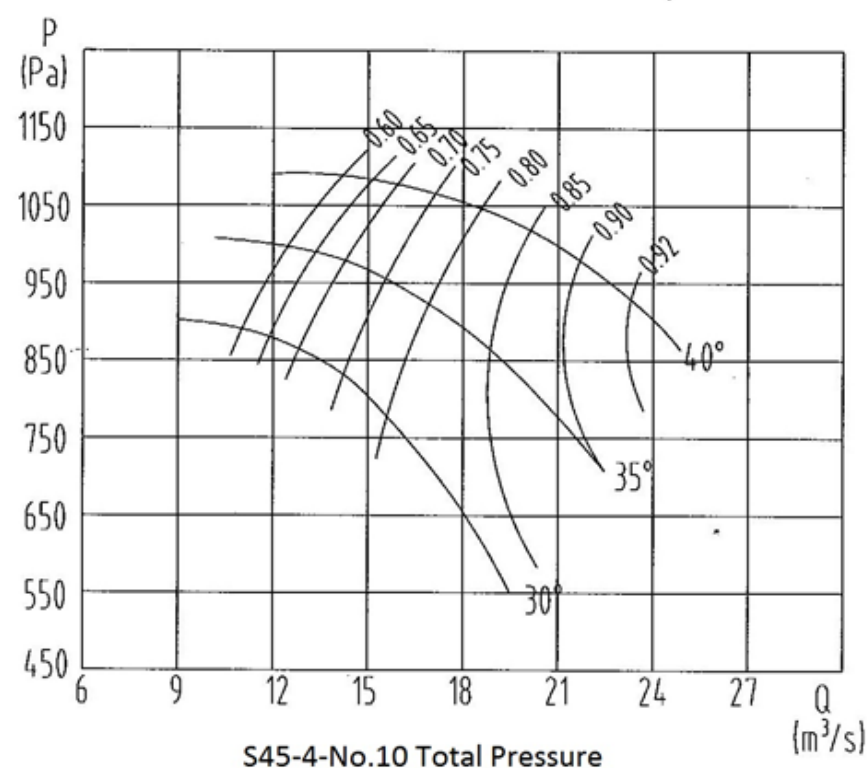
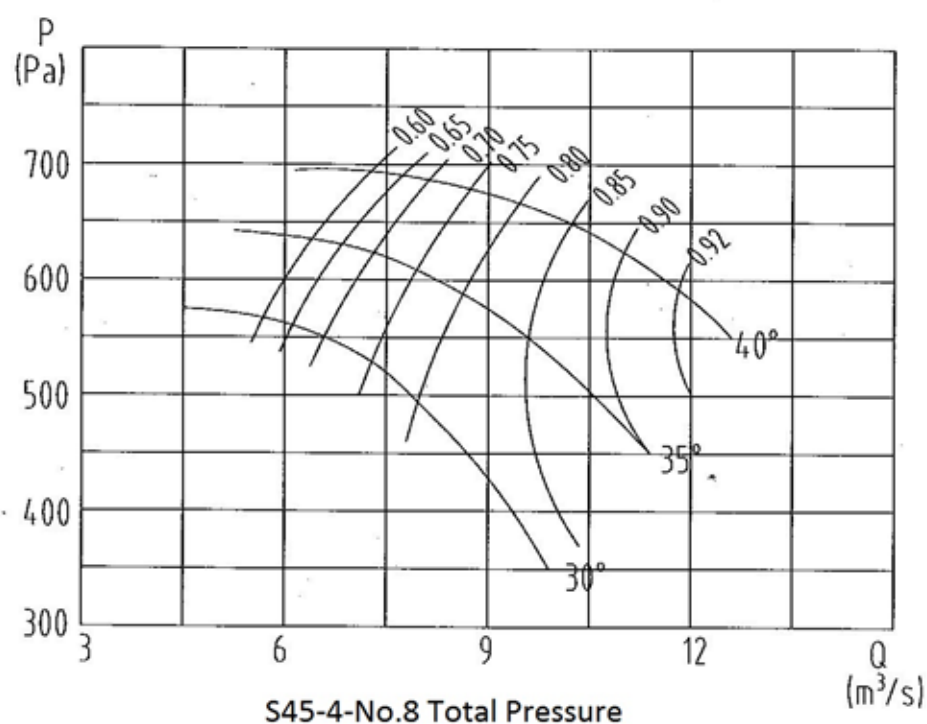


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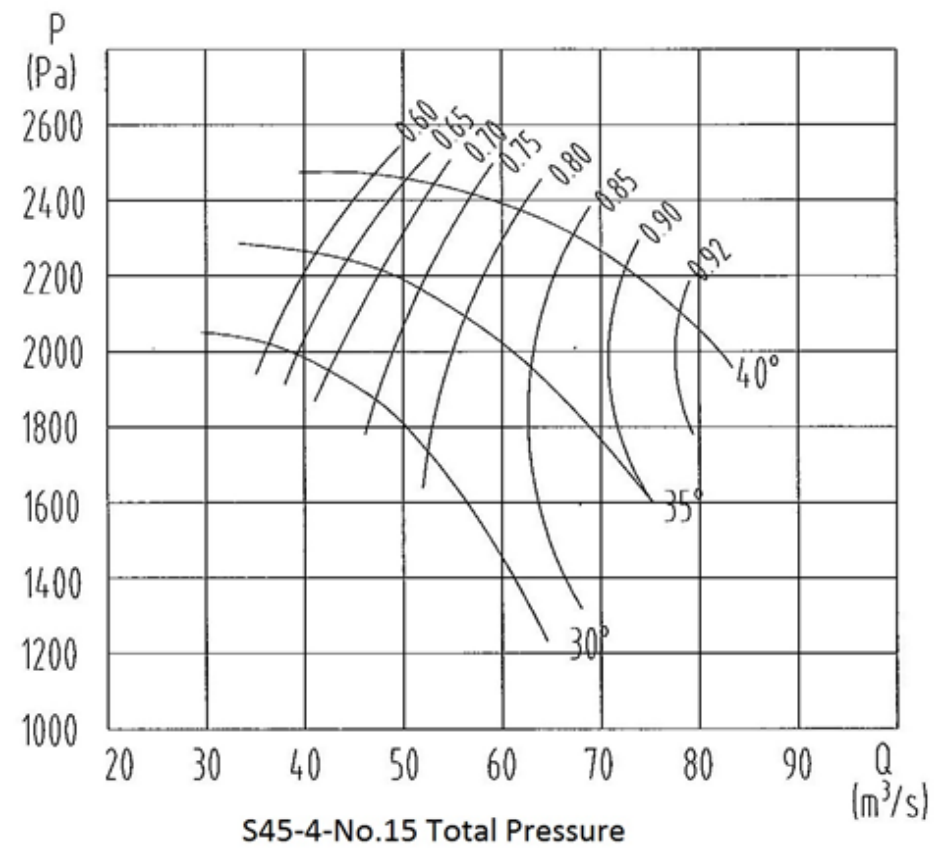
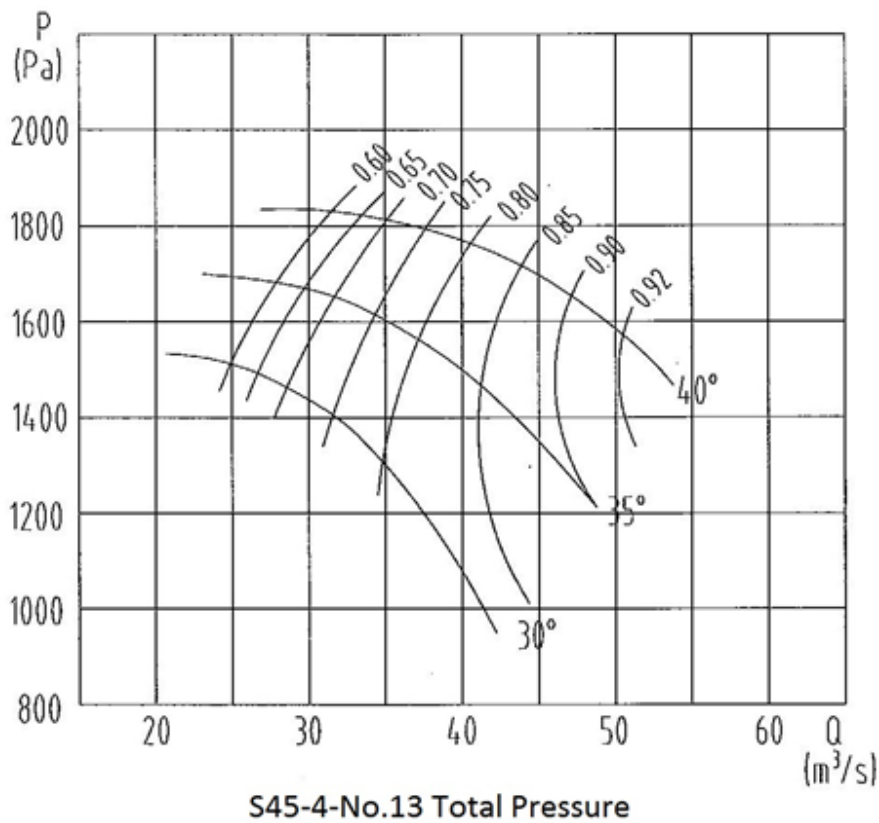
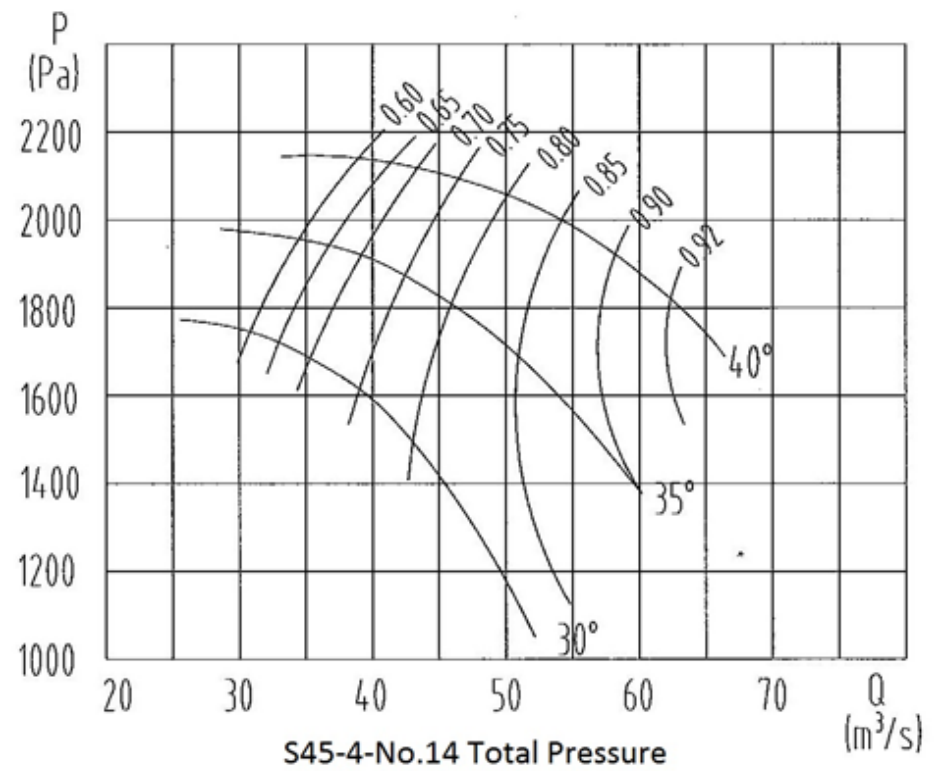
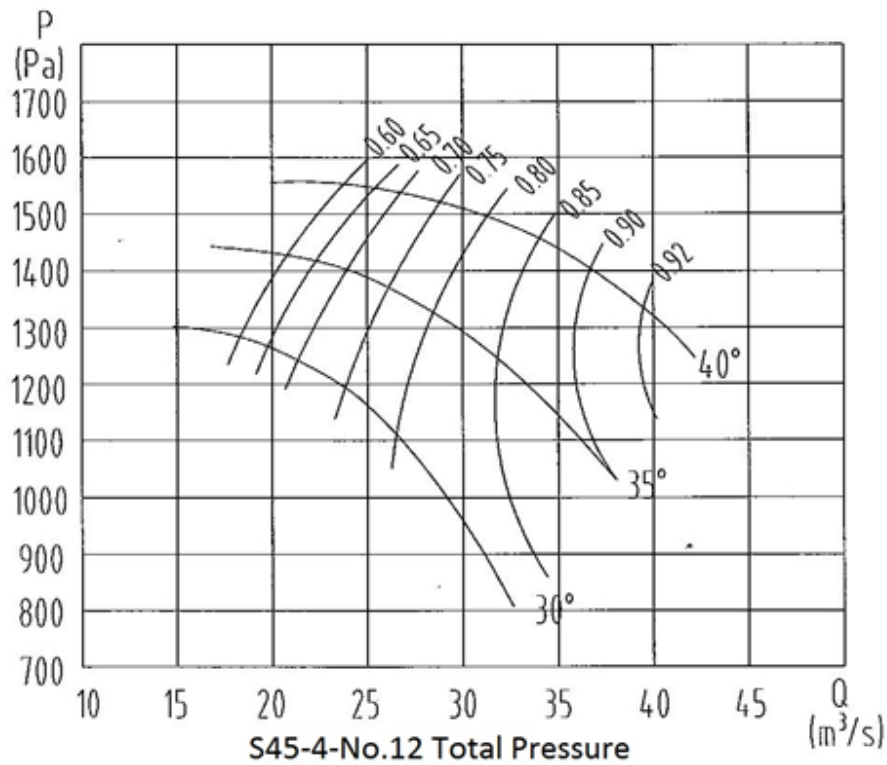
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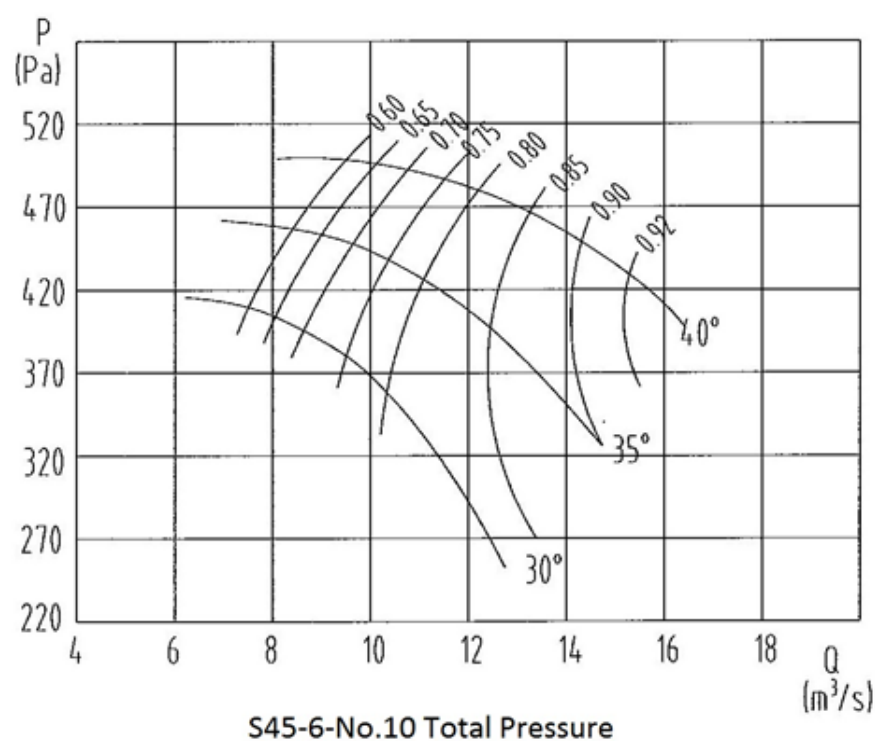
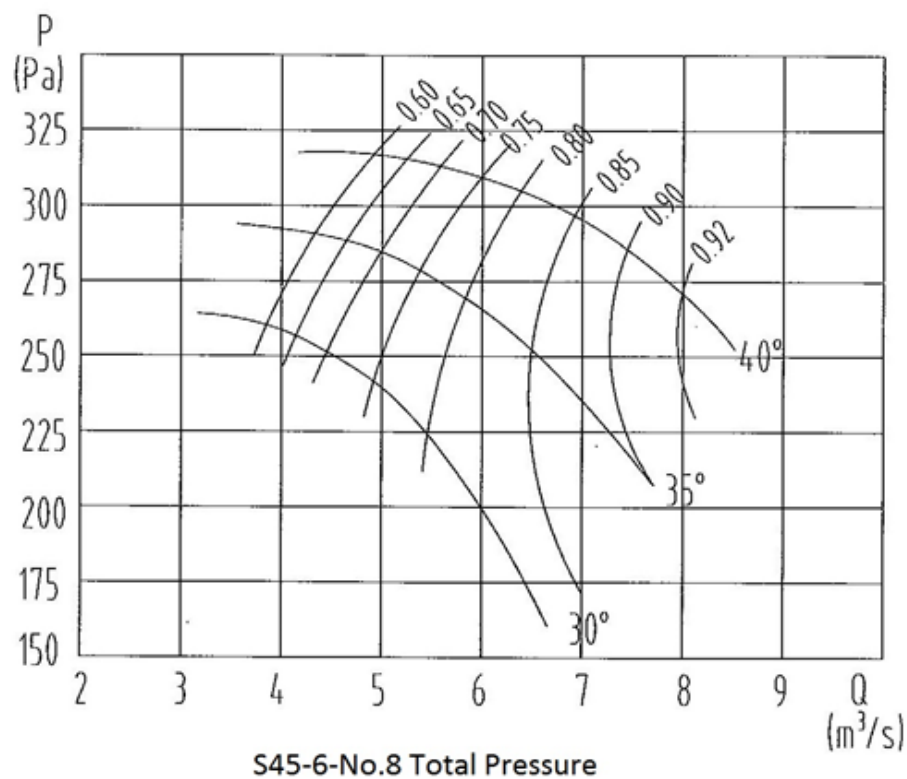
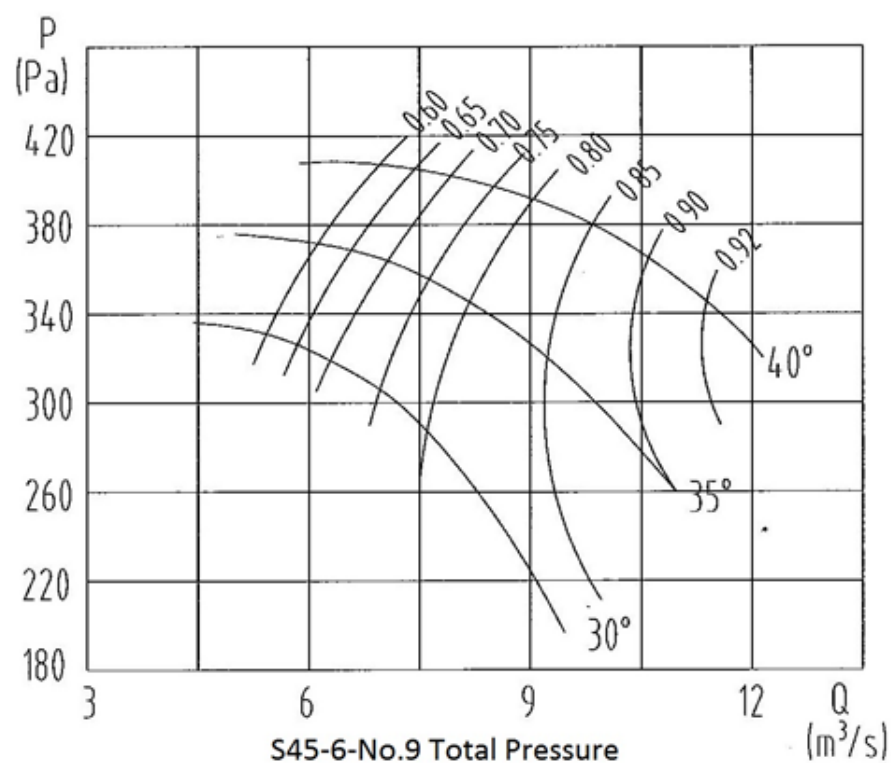
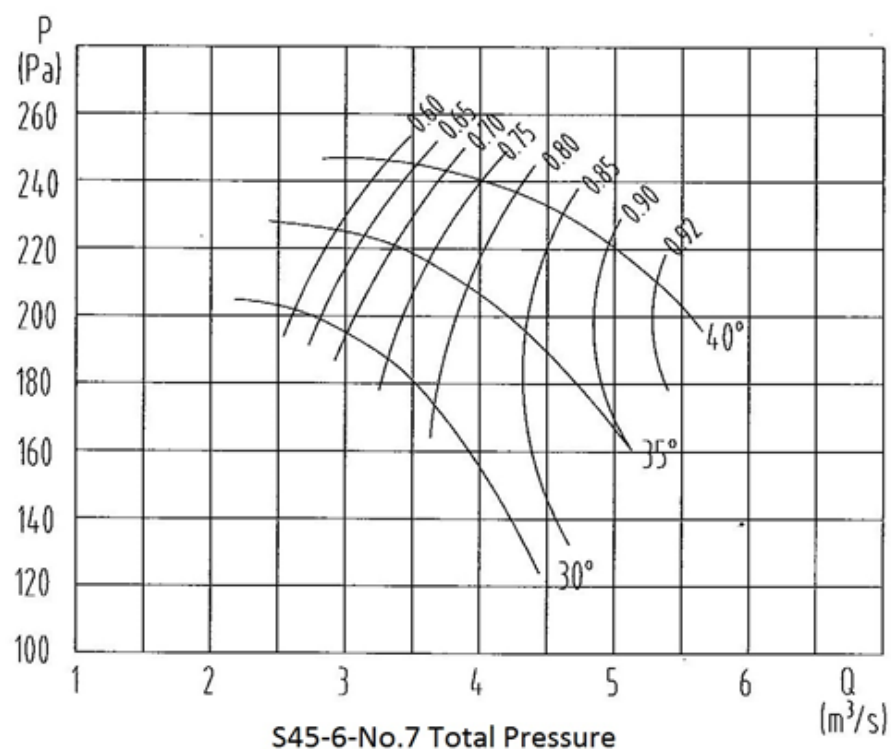
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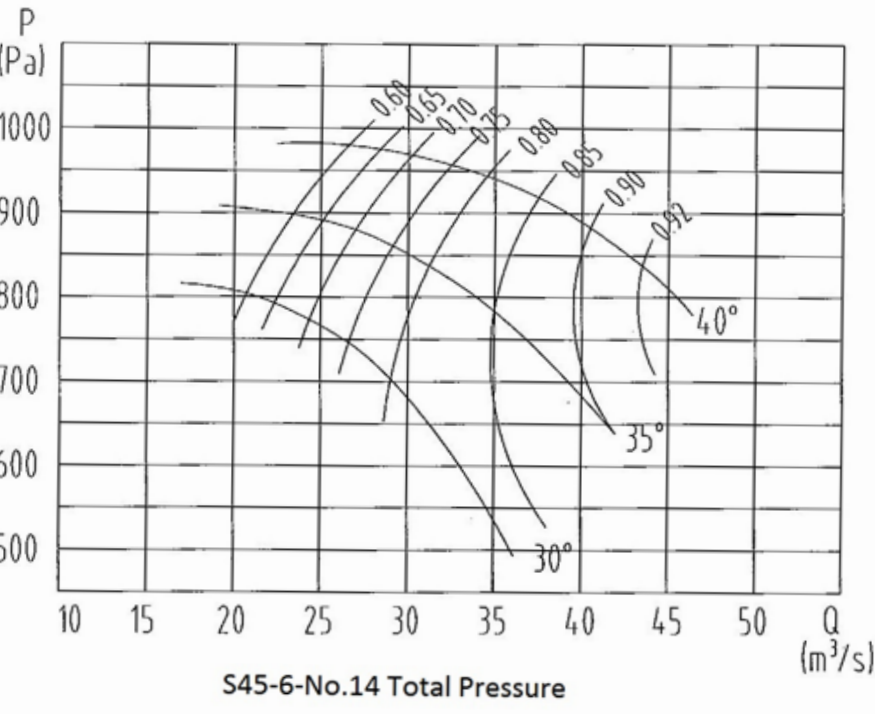
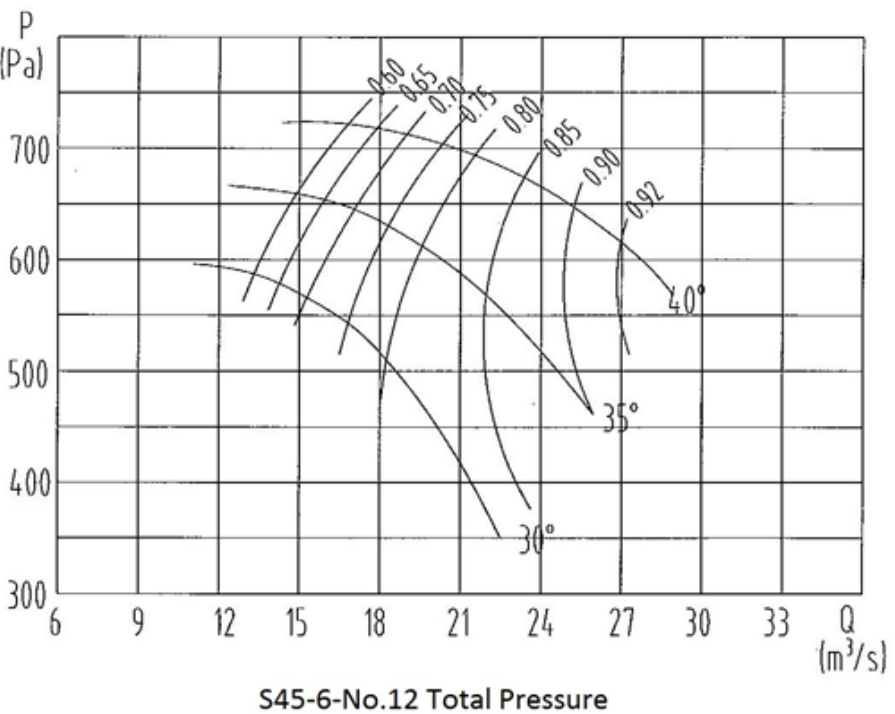
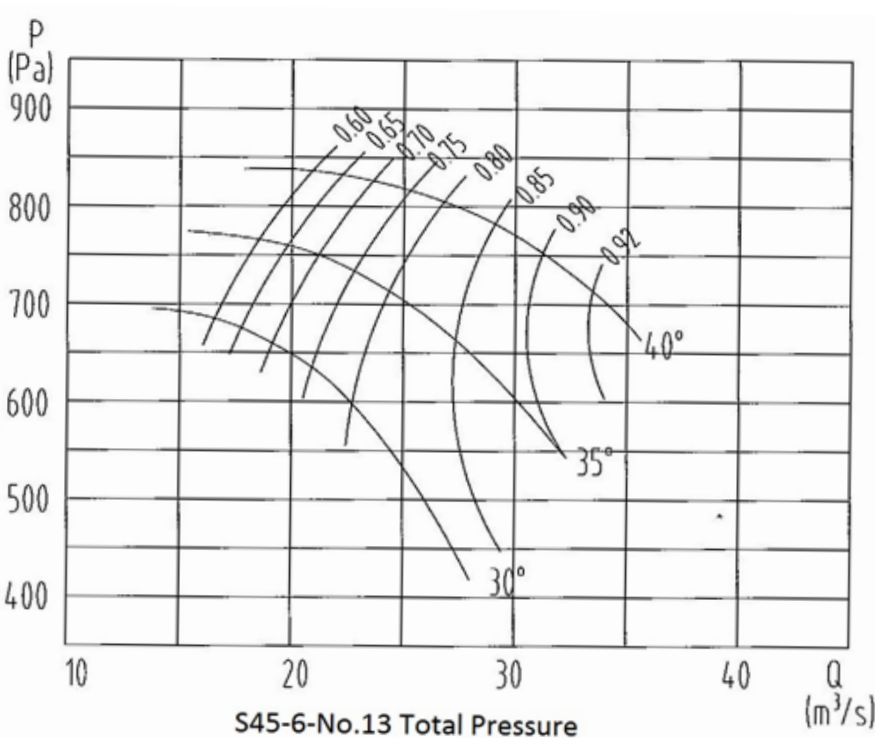
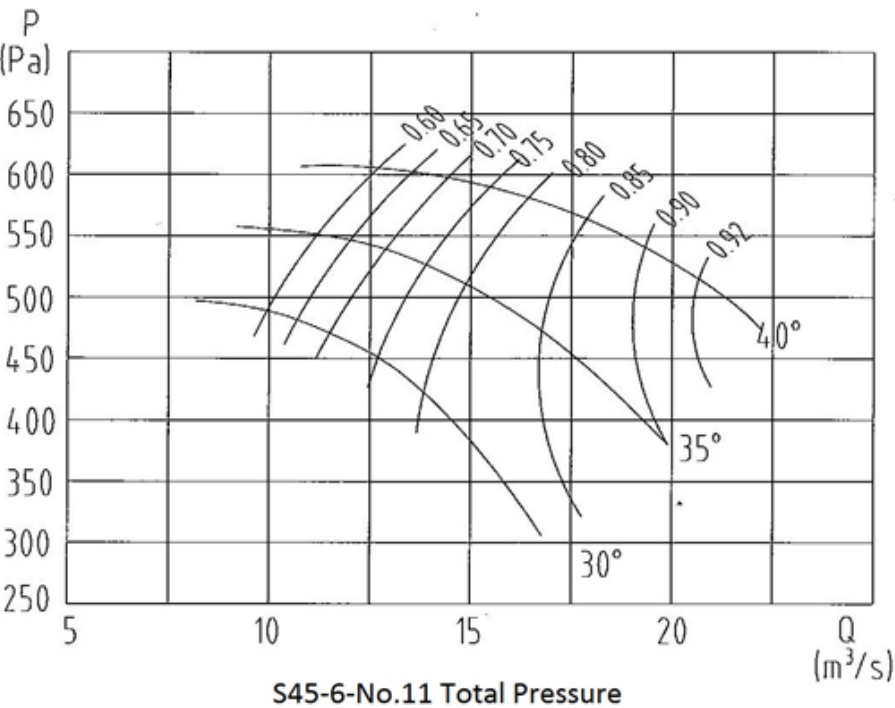
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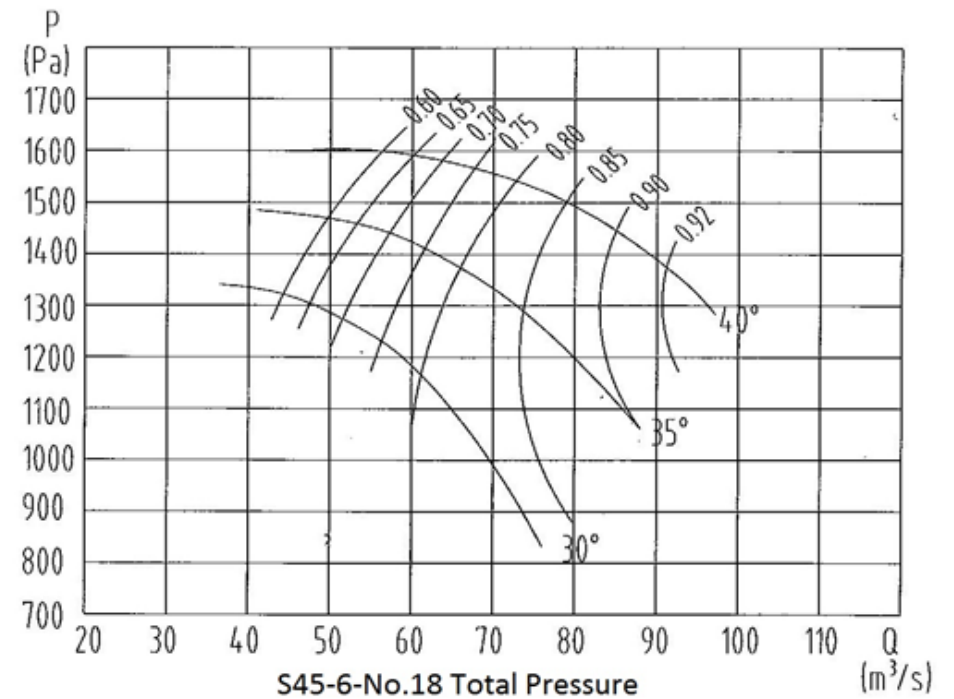
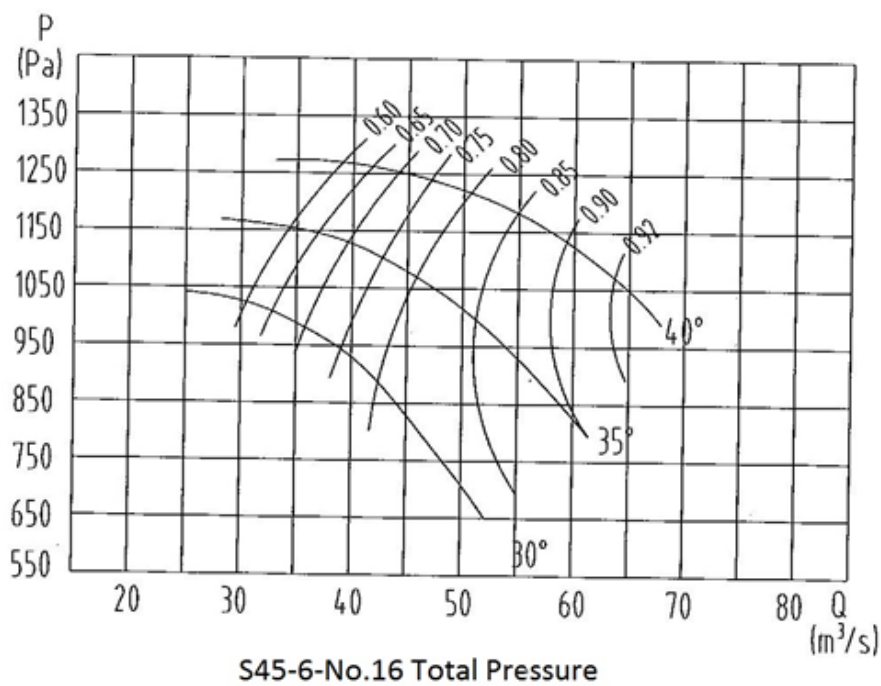
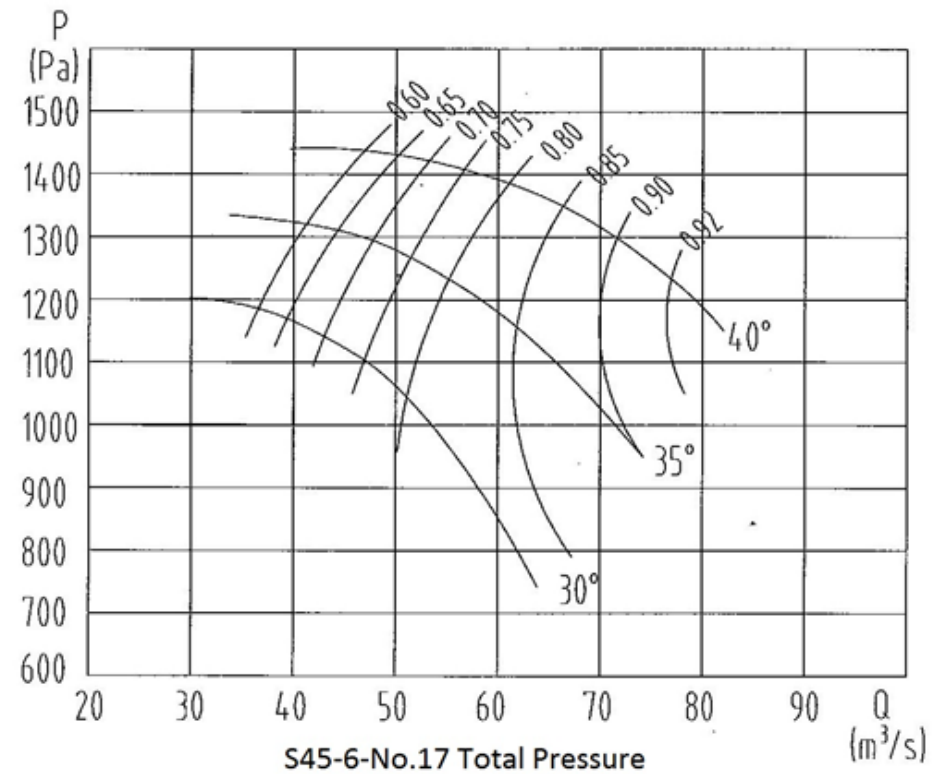
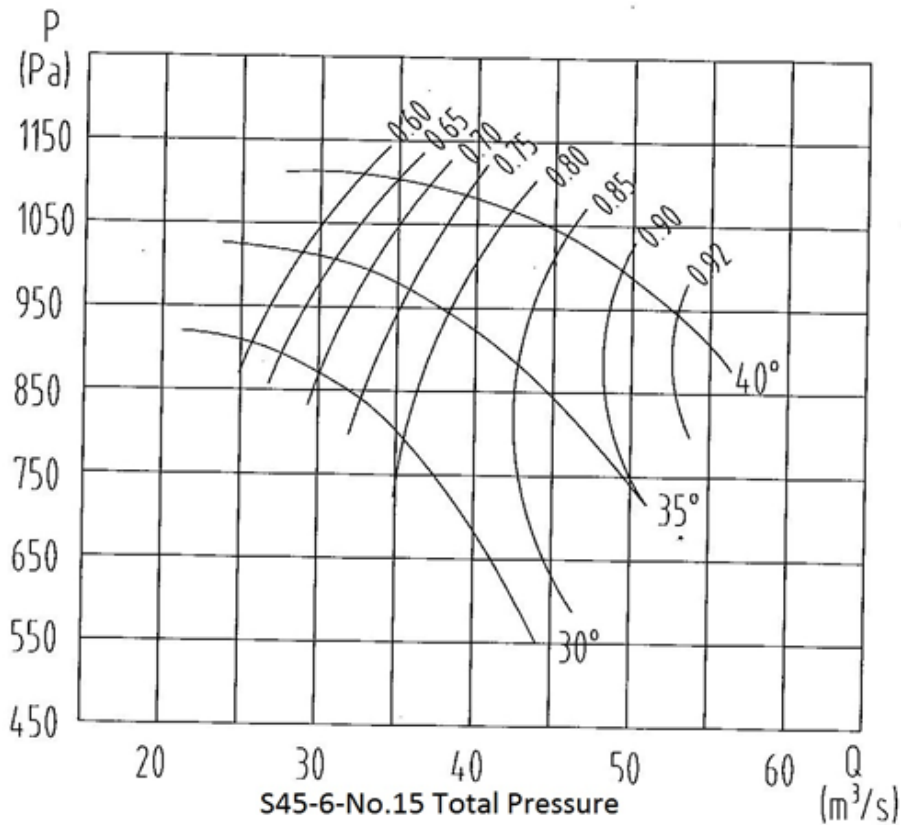
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