

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)								
شماره پیمان: 053 – 073 – 9184	Fan Data Sheets							شماره صفحه : 1 از 24	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	AA	120	ME	DS	0001	V01	

طرح نگهداشت و افزایش تولید 27 مخزن

Fan Data Sheets

نگهداشت و افزایش تولید میدان نفتی بینک

V01	March.2025	AFC	AAC	M.FAKHARIAN	S.Faramarzpour	
V00	Nov.2024	IFA	AAC	M.FAKHARIAN	M.SADEGHIAN	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Status:

IFA: Issued For Approval
IFI: Issued For Information
AFC: Approved For Construction

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)	 																
شماره پیمان: 053 – 073 – 9184	Fan Data Sheets <table><tr><td>نسخه</td><td>سریال</td><td>نوع مدرک</td><td>رشته</td><td>تسهیلات</td><td>صادرکننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>V01</td><td>0001</td><td>DS</td><td>ME</td><td>120</td><td>AA</td><td>GCS</td><td>BK</td></tr></table>	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	V01	0001	DS	ME	120	AA	GCS	BK	شماره صفحه : 2 از 24
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
V01	0001	DS	ME	120	AA	GCS	BK											

REVISION RECORD SHEET

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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)																									
شماره پیمان: 053 – 073 – 9184	<table><tr><th colspan="8">Fan Data Sheets</th></tr><tr><th>نسخه</th><th>سریال</th><th>نوع مدرک</th><th>رشته</th><th>تسهیلات</th><th>صادر کننده</th><th>بسته کاری</th><th>پروژه</th></tr><tr><td>V01</td><td>0001</td><td>DS</td><td>ME</td><td>120</td><td>AA</td><td>GCS</td><td>BK</td></tr></table>	Fan Data Sheets								نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	V01	0001	DS	ME	120	AA	GCS	BK	شماره صفحه : 3 از 24
Fan Data Sheets																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه																			
V01	0001	DS	ME	120	AA	GCS	BK																			

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Fan Data Sheets																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه																			
V01	0001	DS	ME	120	AA	GCS	BK																			

1. INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Manufacturing (w/Engineering & Material Supply) of Air Coolers
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
OWNER:	OWNER is collectively refer to National Iranian South Oil Company (NISOC) and Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	Aban Air Cooler (AAC)
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	Third Party Inspector
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

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14/03/2025 12:57

		Ref No.:17208		Item No.:AE-2101	
Class:	10000 10K	Hub Type:	HD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	MAN MAN	Rotation:	RH
Series:	24	Diameter:	1372 mm	Blades:	4
Temperature:	65.72 Deg. C	Elevation:	0 meters	Density Ratio:	0.867 0%
Volume:	12.22 m3/s	Air Vel.:	9.55 m/s	Speed:	625.0 RPM
Static Pressure:	138.77 Pa	Pv:	47.445 Pa	Pt:	200.449 Pa
Power Req'd.:	3.15 kW	Motor:	5.5 kW	Total Eff:	77.7%
Power @ 5 deg.	3.84 kW	Bld Natural Freq.:	32.0 Hz	Static Eff:	53.8%
Blades Required:	2.46	API Blades Req.:	3	Blade Load:	0.614
Tip Speed:	44.9 m/s	Deflection Angle:	41.7 deg.	Pitch Number:	1.50
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	10.6 deg
Exit Correction:	Not Applied	1.00 Draft:	Induced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	17 kg m	Torq/Bld:	4 kg m
Approx. weight.:66 lbs (30 kgs)		1	Inertia: 54 lb-ft2 (2.3 kg-m2)	Bore Size:	0.1 mm
Unbalance force (G6.3): 2.8 lbs (12.5 N)			Thrust load: 67 lbs (30 kg)	Bushing Type:	U
One blade missing load: 928 lbs (422 kg)			Hub Extension: Standard	Qty required:	3
Sound Levels Per Fan (Induced Draft) (Horizontal Orientation) See Note 2					
Sound Power Level					
dBA	HZ	63	125	250	500 1000 2000 4000 8000
87.8		93.8	92.8	89.8	84.8 82.8 76.8 70.8 64.8
Sound Pressure Level 1 meter below bundle					
76.0		82.0	81.0	78.0	73.0 71.0 65.0 59.0 53.0
Sound Pressure Level 1 meter radially from blade tip					
73.2		79.2	78.2	75.2	70.2 68.2 62.2 56.2 50.2
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
Class 10000, Series 24, 1372 mm Diameter, 4 Blades					
Manual Adjustment, Heavy Duty, Standard Chord, CW Rotation Aluminum Blade Material					
With VT Blade Tips,					
Fan Model No. 1024/073-U0-A/24R-VT-3-4.50-4					
Note 1: Maximum blade angle to prevent fan stall is 20.3 degrees.					
Available motor power may limit maximum angle to a lower value.					
Note 2: Sound levels are the best estimate of the fan sound with 0 dBA additional sound					
included due to drive components, flow obstructions or structure reflection and reverberation.					

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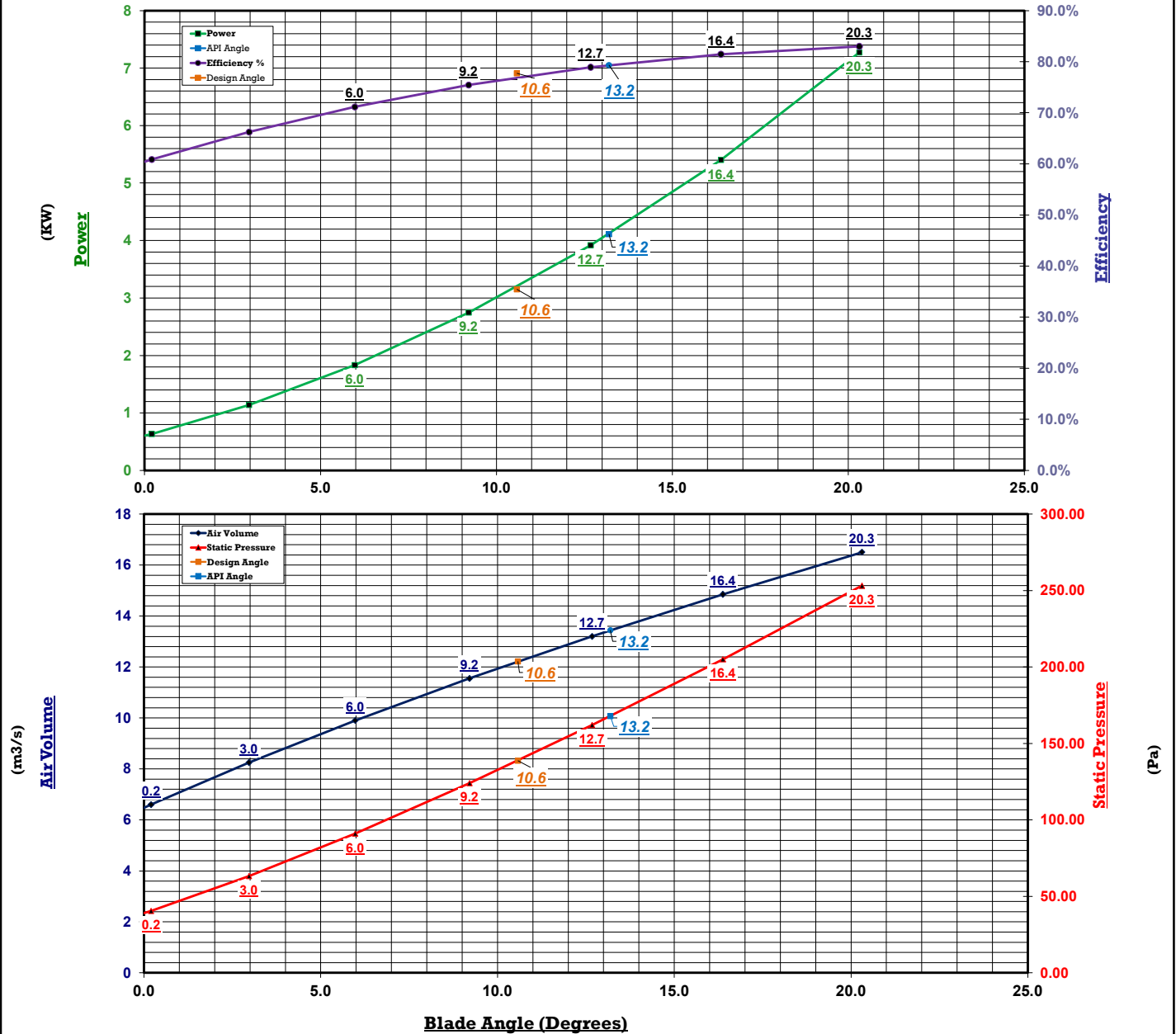
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Item No.:AE-2101

System Performance Curve



Design Angle= 10.6
Est. API Angle= 13.2
Maximum Angle= 20.3

79% Pressure Margin
34% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions	Temperature:	66 Deg. C	Static Pr.:	138.77 Pa
Series:	24	Blade Tip:	VT		Elevation:	0 meters	Power Req'd:	3.15 kW
Diameter:	1372.00 mm	Adjustment:	MAN		Density Ratio:	0.867	Design Angle:	10.6 deg
RPM:	625	Blades:	4		Air Volume:	12.22 m3/s	Approx. weight:	66 lbs (30 kgs)

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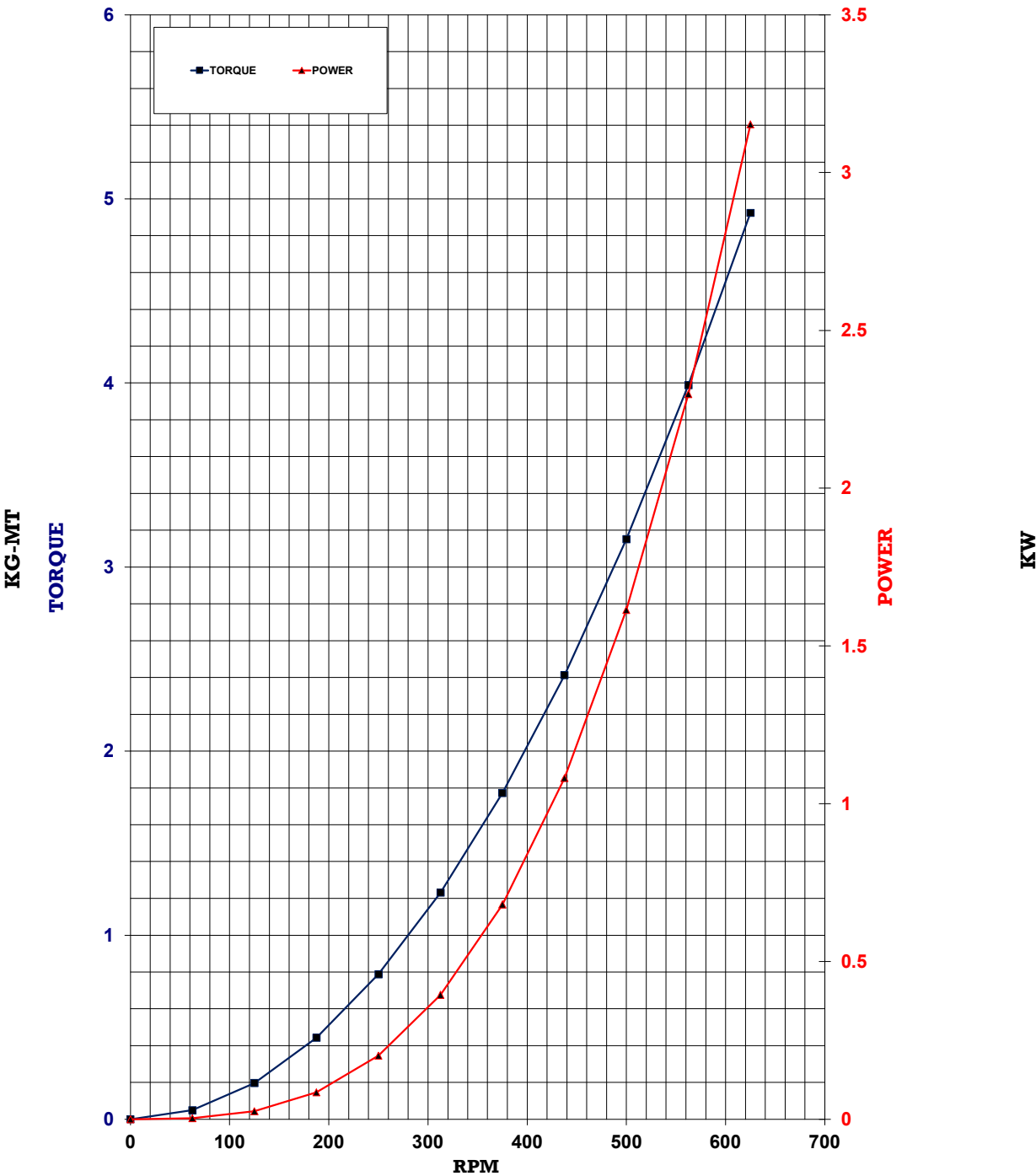
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Item No.:AE-2101

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	66 Deg. C	Static Pr.:	138.77 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.15 kW
Diameter:	1372.00 mm	No. Blades:	4	Density Ratio:	0.867	Design Angle:	10.6 deg
RPM:	625	Rotation:	RH	Air Volume:	12.22 m3/s	Approx. weight:	66 lbs (30 kgs)

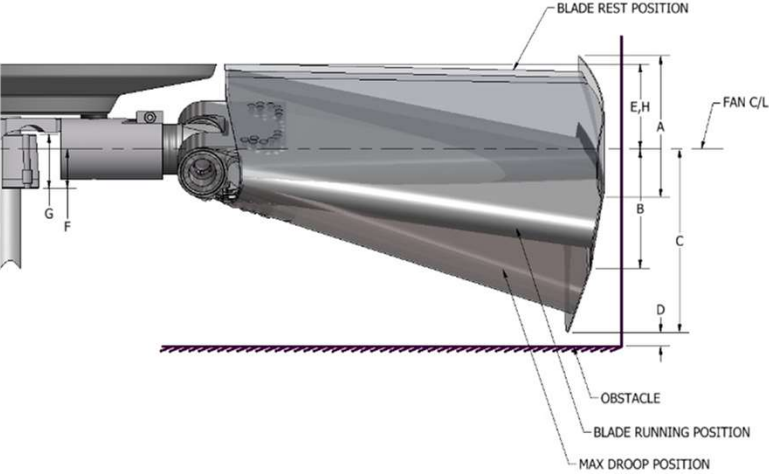
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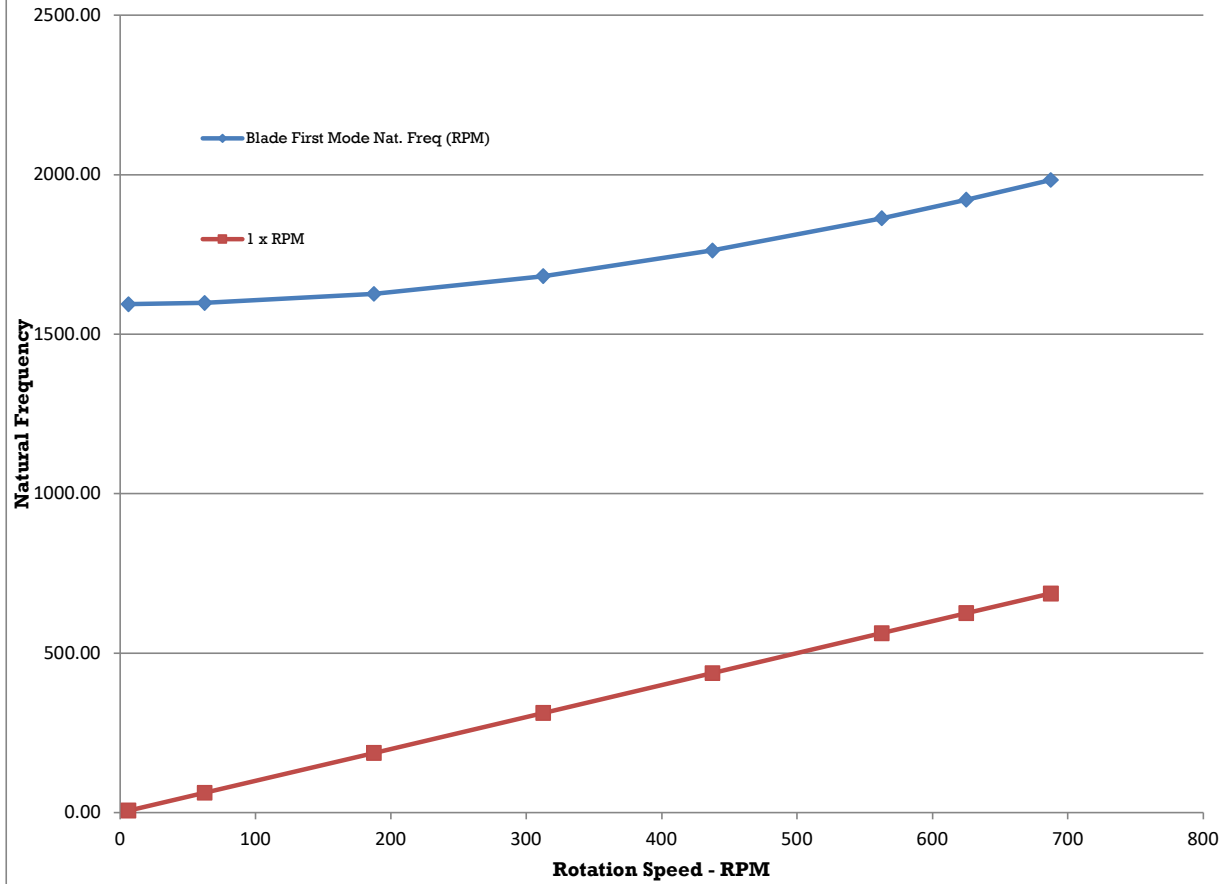
Fan Model No. 1024/073-U0-A/24R-VT-3-4.50-4

Class	10000
Series	24
Diameter (Ft)	4.50
Blade Chord	SC
Type	MAN
Rotation	RH
Bushing Type	U
RPM	625
Blade Load	61.4%
Design Angle	10.6
Blade Tip	VT

Inches	MM	
5.6	142	A= Tip profile height at specified design angle (Path Width)
2.8	71	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.0	75	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
3.7	93	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
5.0	127	H ₁ =Maximum height of blade at max. recommended angle (C/L to Air Outlet Side)
6.4	161	H ₂ =Maximum height of blade at 30 degrees (C/L to Air Outlet Side)
7.0	178	H ₃ =Minimum recommended obstacle clearance (C/L to Air Outlet Side)
2.0	51	F= Fan centerline to base of bushing
2.7	69	G= Overall bushing height
22.5	572	S= Air Seal Diameter



Campbell Diagram - First Mode Blade Natural Frequency Series 24 - 4.5013 Ft. SC 4-Blade Fan



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		Ref No.:17208		Item No.:AE-2101	
Class:	10000 10K	Hub Type:	SD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	AUTO AUTO	Rotation:	RH
Series:	24	Diameter:	1372 mm	Blades:	4
Temperature:	65.72 Deg. C	Elevation:	0 meters	Density Ratio:	0.867 0%
Volume:	12.22 m3/s	Air Vel.:	9.55 m/s	Speed:	625.0 RPM
Static Pressure:	138.77 Pa	Pv:	47.445 Pa	Pt:	200.449 Pa
Power Req'd.:	3.15 kW	Motor:	5.5 kW	Total Eff:	77.7%
Power @ 5 deg.	3.84 kW	Bld Natural Freq.:	32.0 Hz	Static Eff:	53.8%
Blades Required:	2.46	API Blades Req.:	3	Blade Load:	0.614
Tip Speed:	44.9 m/s	Deflection Angle:	41.7 deg.	Pitch Number:	1.50
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	10.6 deg
Exit Correction:	Not Applied	1.00 Draft:	Induced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	17 kg m	Torq/Bld:	4 kg m
Approx. weight.:178 lbs (81 kgs)		1	Inertia: 64 lb-ft2 (2.7 kg-m2)	Bore Size:	0.1 mm
Unbalance force (G6.3): 7.5 lbs (33.4 N)			Thrust load: 67 lbs (30 kg)	Bushing Type:	T
One blade missing load: 928 lbs (422 kg)			Hub Extension: Standard	Qty required:	3
Sound Levels Per Fan (Induced Draft) (Horizontal Orientation) See Note 2					
Sound Power Level					
dBA	HZ	63	125	250	500 1000 2000 4000 8000
87.8		93.8	92.8	89.8	84.8 82.8 76.8 70.8 64.8
Sound Pressure Level 1 meter below bundle					
76.0		82.0	81.0	78.0	73.0 71.0 65.0 59.0 53.0
Sound Pressure Level 1 meter radially from blade tip					
73.2		79.2	78.2	75.2	70.2 68.2 62.2 56.2 50.2
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
Class 10000, Series 24, 1372 mm Diameter, 4 Blades					
Automatic Adjustment, Standard Duty, Standard Chord, CW Rotation Aluminum Blade Material					
With VT Blade Tips,					
Fan Model No. 1024/CP24X-T0-A/24R-VT-3-4.50-4					
Note 1: Maximum blade angle to prevent fan stall is 20.3 degrees.					
Available motor power may limit maximum angle to a lower value.					
Note 2: Sound levels are the best estimate of the fan sound with 0 dBA additional sound					
included due to drive components, flow obstructions or structure reflection and reverberation.					

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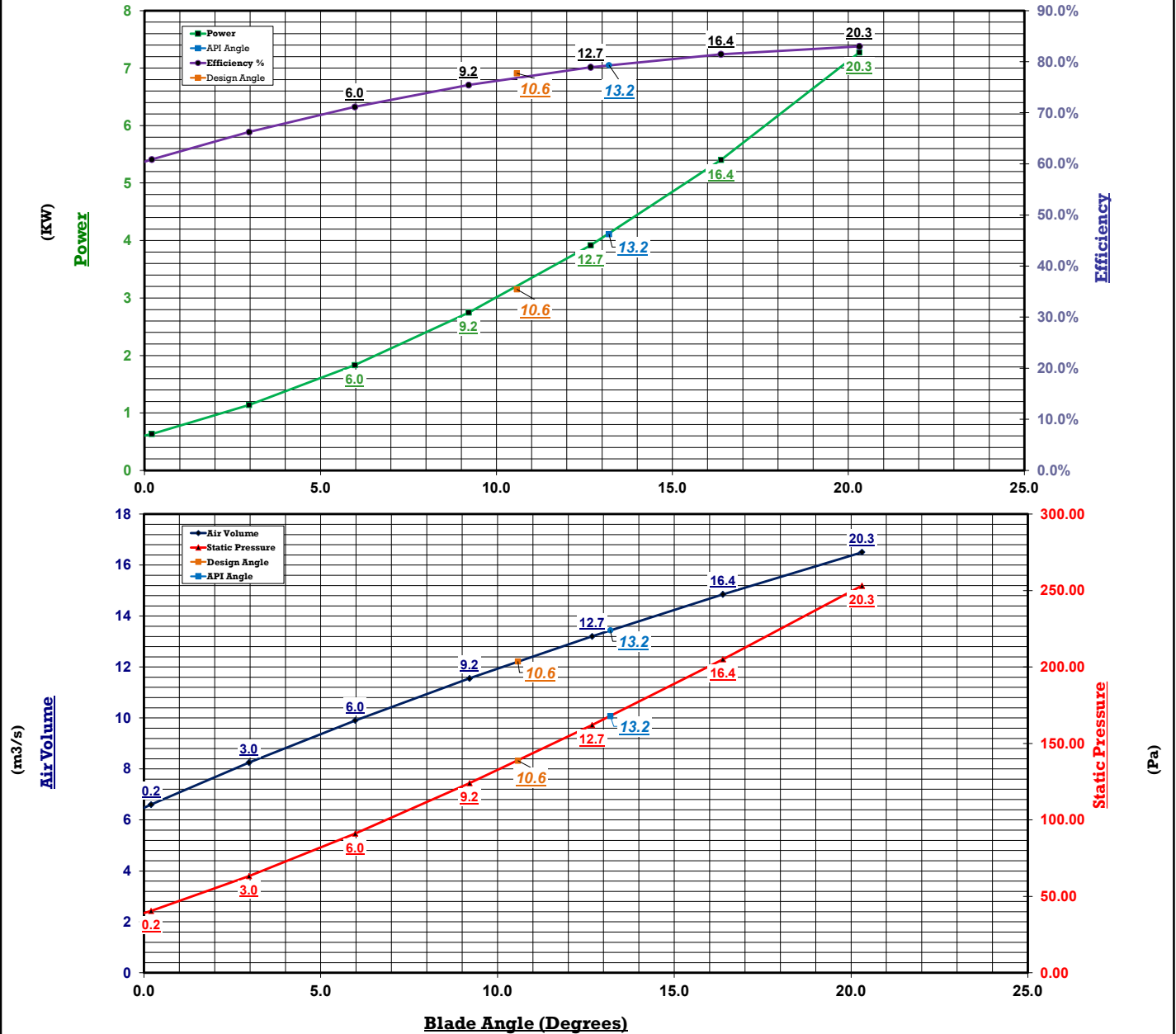
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Ref No.:17208

Item No.:AE-2101

System Performance Curve



Design Angle= 10.6
Est. API Angle= 13.2
Maximum Angle= 20.3

79% Pressure Margin
34% Volume Margin

Class: 10000
Series: 24
Diameter: 1372.00 mm
RPM: 625

Blade Type: SC
Blade Tip: VT
Adjustment: AUTO
Blades: 4

Design Conditions

Temperature: 66 Deg. C
Elevation: 0 meters
Density Ratio: 0.867
Air Volume: 12.22 m3/s

Static Pr.: 138.77 Pa
Power Req'd: 3.15 kW
Design Angle: 10.6 deg
Approx. weight.:178 lbs (81 kgs)

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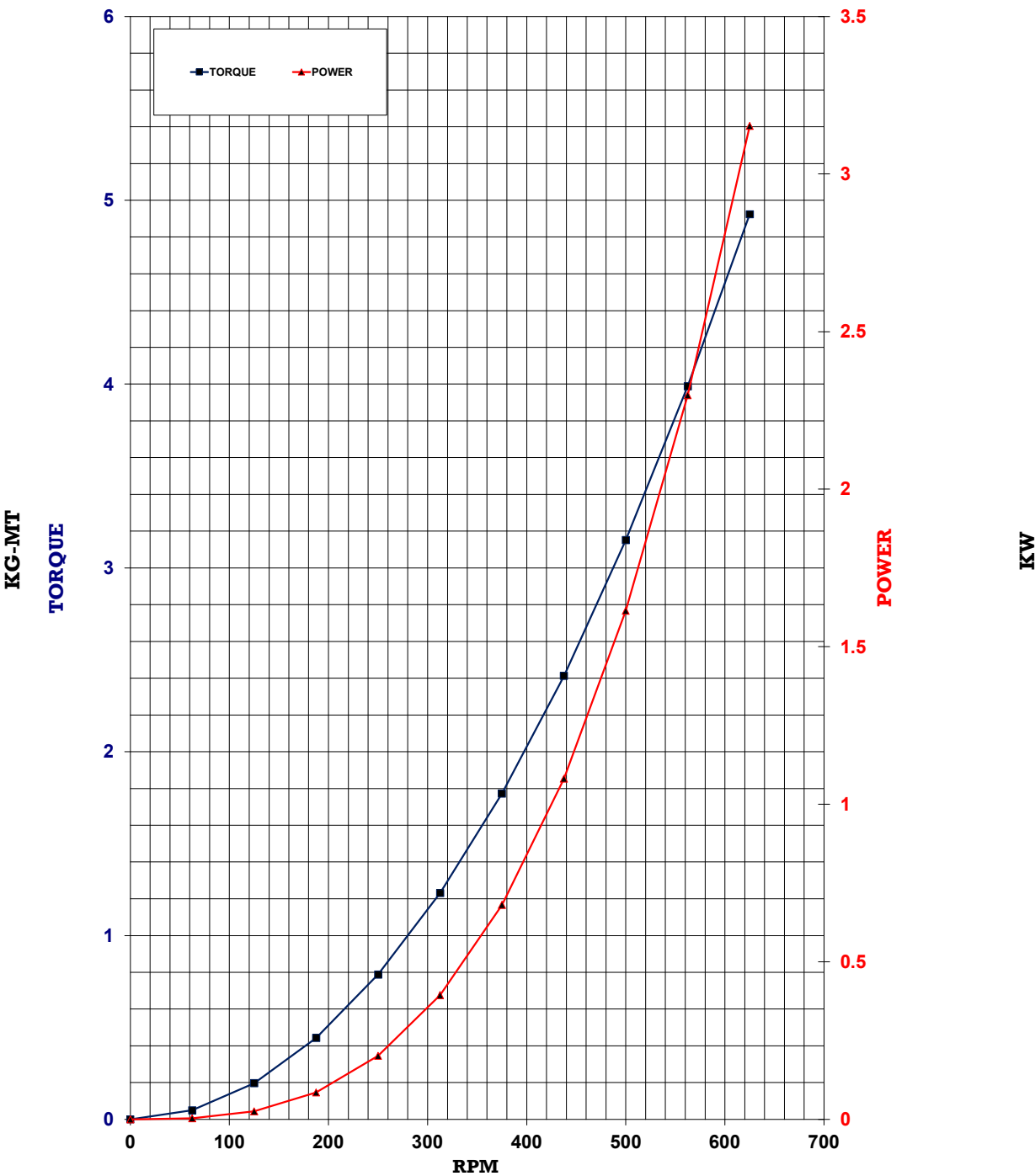
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Ref No.:17208

Item No.:AE-2101

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	66 Deg. C	Static Pr.:	138.77 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.15 kW
Diameter:	1372.00 mm	No. Blades:	4	Density Ratio:	0.867	Design Angle:	10.6 deg
RPM:	625	Rotation:	RH	Air Volume:	12.22 m3/s	Approx. weight:	178 lbs (81 kgs)

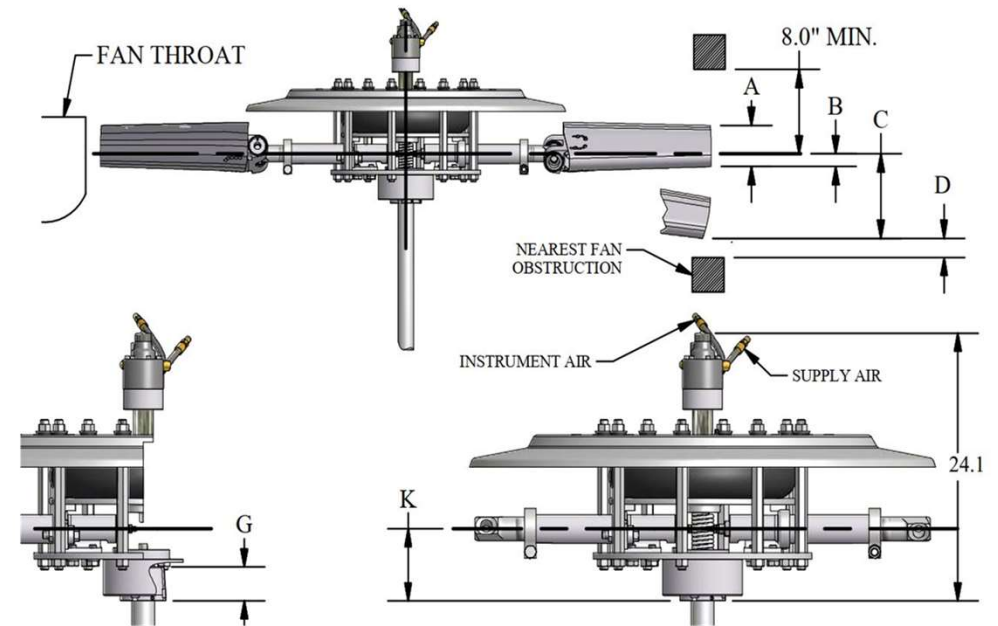
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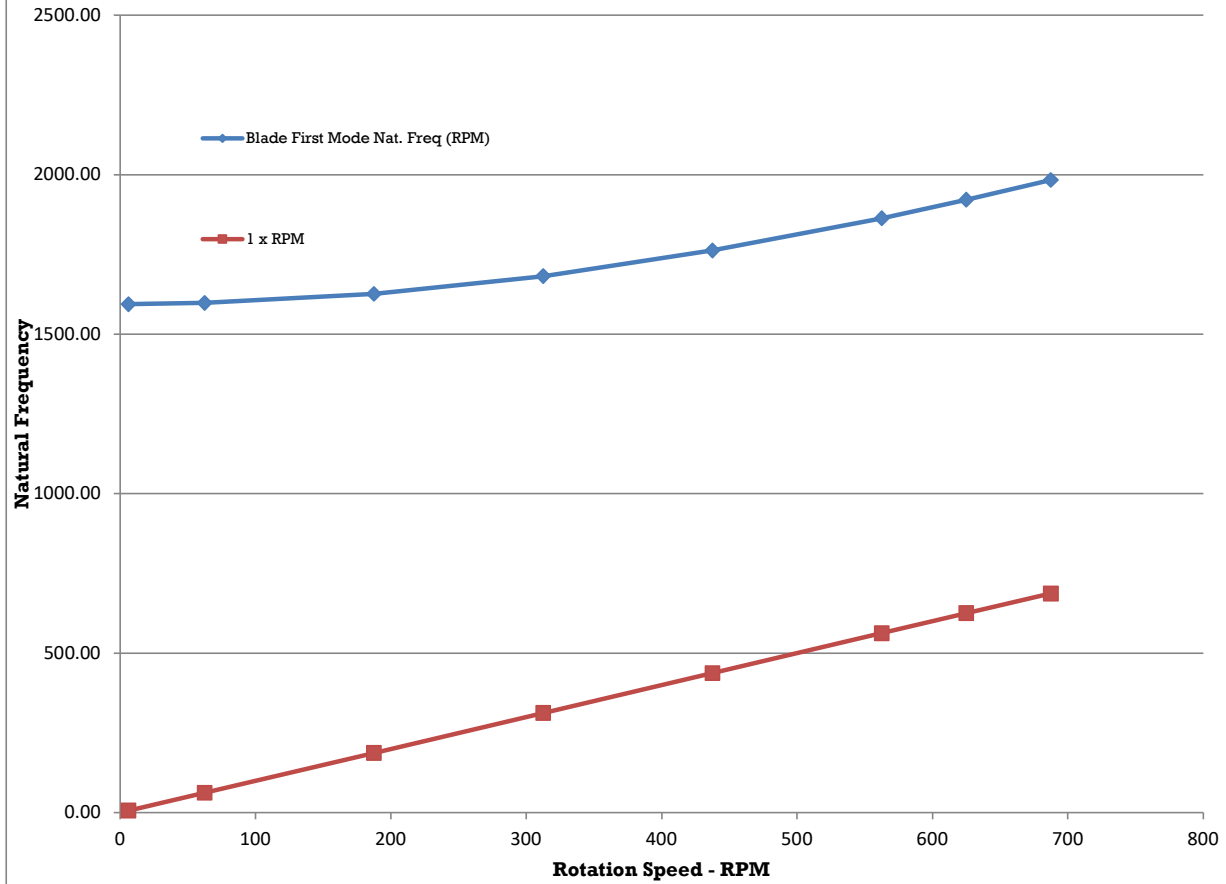
Fan Model No. 1024/CP24X-T0-A/24R-VT-3-4.50-4

Class 10000
Series 24
Diameter (Ft) 4.50
Blade Chord SC
Type AUTO
Rotation RH
Bushing Type T
RPM 625
Blade Load 61.4%
Design Angle 10.6
Blade Tip VT

Inches	MM	
5.6	142	A= Tip profile height at specified design angle (Path Width)
2.8	71	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.0	75	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
3.7	93	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
5.0	127	H ₁ =Maximum height of blade at max. recommended angle (C/L to Air Outlet Side)
6.4	161	H ₂ =Maximum height of blade at 30 degrees (C/L to Air Outlet Side)
7.0	178	H ₃ =Minimum recommended obstacle clearance (C/L to Air Outlet Side)
5.8	147	K= Fan centerline to base of bushing
1.9	48	G= Overall bushing height
22.5	572	S= Air Seal Diameter



Campbell Diagram - First Mode Blade Natural Frequency Series 24 - 4.5013 Ft. SC 4-Blade Fan



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		Ref No.:17208		Item No.:AE-2102	
Class:	10000 10K	Hub Type:	HD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	MAN MAN	Rotation:	RH
Series:	24	Diameter:	1450 mm	Blades:	4
Temperature:	69.32 Deg. C	Elevation:	0 meters	Density Ratio:	0.858 0%
Volume:	15.71 m3/s	Air Vel.:	10.80 m/s	Speed:	625.0 RPM
Static Pressure:	168.85 Pa	Pv:	60.085 Pa	Pt:	246.960 Pa
Power Req'd.:	4.83 kW	Motor:	7.5 kW	Total Eff:	80.4%
Power @ 5 deg.	5.95 kW	Bld Natural Freq.:	29.0 Hz	Static Eff:	54.9%
Blades Required:	3.04	API Blades Req.:	4	Blade Load:	0.760
Tip Speed:	47.4 m/s	Deflection Angle:	44.4 deg.	Pitch Number:	1.70
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	14.1 deg
Exit Correction:	Not Applied	1.00 Draft:	Induced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	23 kg m	Torq/Bld:	6 kg m
Approx. weight.:66 lbs (30 kgs)		1	Inertia: 54 lb-ft2 (2.3 kg-m2)	Bore Size:	0.1 mm
Unbalance force (G6.3): 2.8 lbs (12.5 N)			Thrust load: 92 lbs (42 kg)	Bushing Type:	U
One blade missing load: 1008 lbs (458 kg)			Hub Extension: Standard	Qty required:	3
Sound Levels Per Fan (Induced Draft) (Horizontal Orientation) See Note 2					
Sound Power Level					
dBA	HZ	63	125	250	500 1000 2000 4000 8000
90.4		96.4	95.4	92.4	87.4 85.4 79.4 73.4 67.4
Sound Pressure Level 1 meter below bundle					
78.3		84.3	83.3	80.3	75.3 73.3 67.3 61.3 55.3
Sound Pressure Level 1 meter radially from blade tip					
75.5		81.5	80.5	77.5	72.5 70.5 64.5 58.5 52.5
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
Class 10000, Series 24, 1450 mm Diameter, 4 Blades					
Manual Adjustment, Heavy Duty, Standard Chord, CW Rotation Aluminum Blade Material					
With VT Blade Tips,					
Fan Model No. 1024/073-U0-A/24R-VT-3-4.76-4					
Note 1: Maximum blade angle to prevent fan stall is 20.9 degrees.					
Available motor power may limit maximum angle to a lower value.					
Note 2: Sound levels are the best estimate of the fan sound with 0 dBA additional sound					
included due to drive components, flow obstructions or structure reflection and reverberation.					

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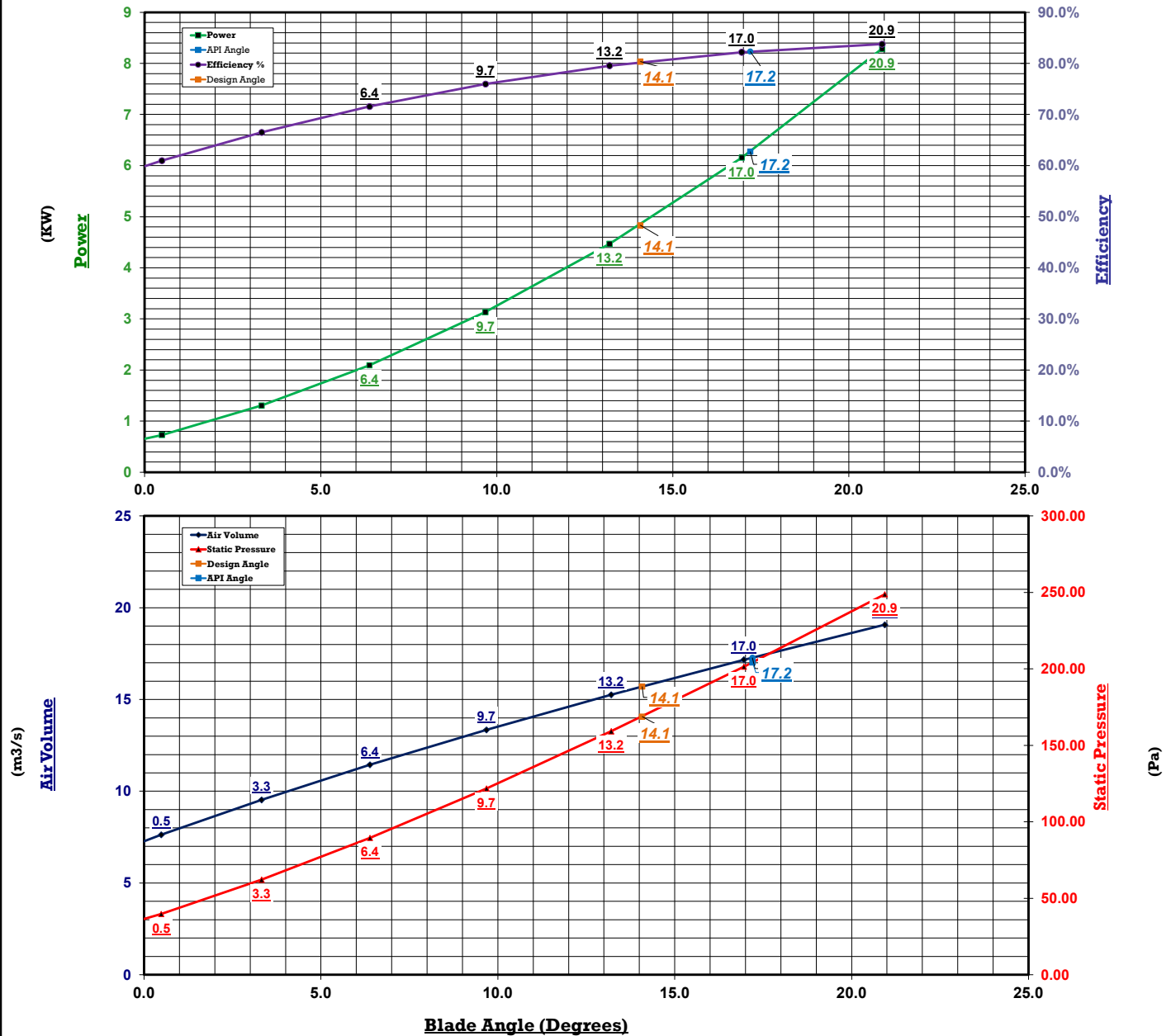
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Ref No.:17208

Item No.:AE-2102

System Performance Curve



Design Angle= 14.1
Est. API Angle= 17.2
Maximum Angle= 20.9

45% Pressure Margin
20% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions	Temperature:	69 Deg. C	Static Pr.:	168.85 Pa
Series:	24	Blade Tip:	VT		Elevation:	0 meters	Power Req'd:	4.83 kW
Diameter:	1450.00 mm	Adjustment:	MAN		Density Ratio:	0.858	Design Angle:	14.1 deg
RPM:	625	Blades:	4		Air Volume:	15.71 m3/s	Approx. weight:	66 lbs (30 kgs)

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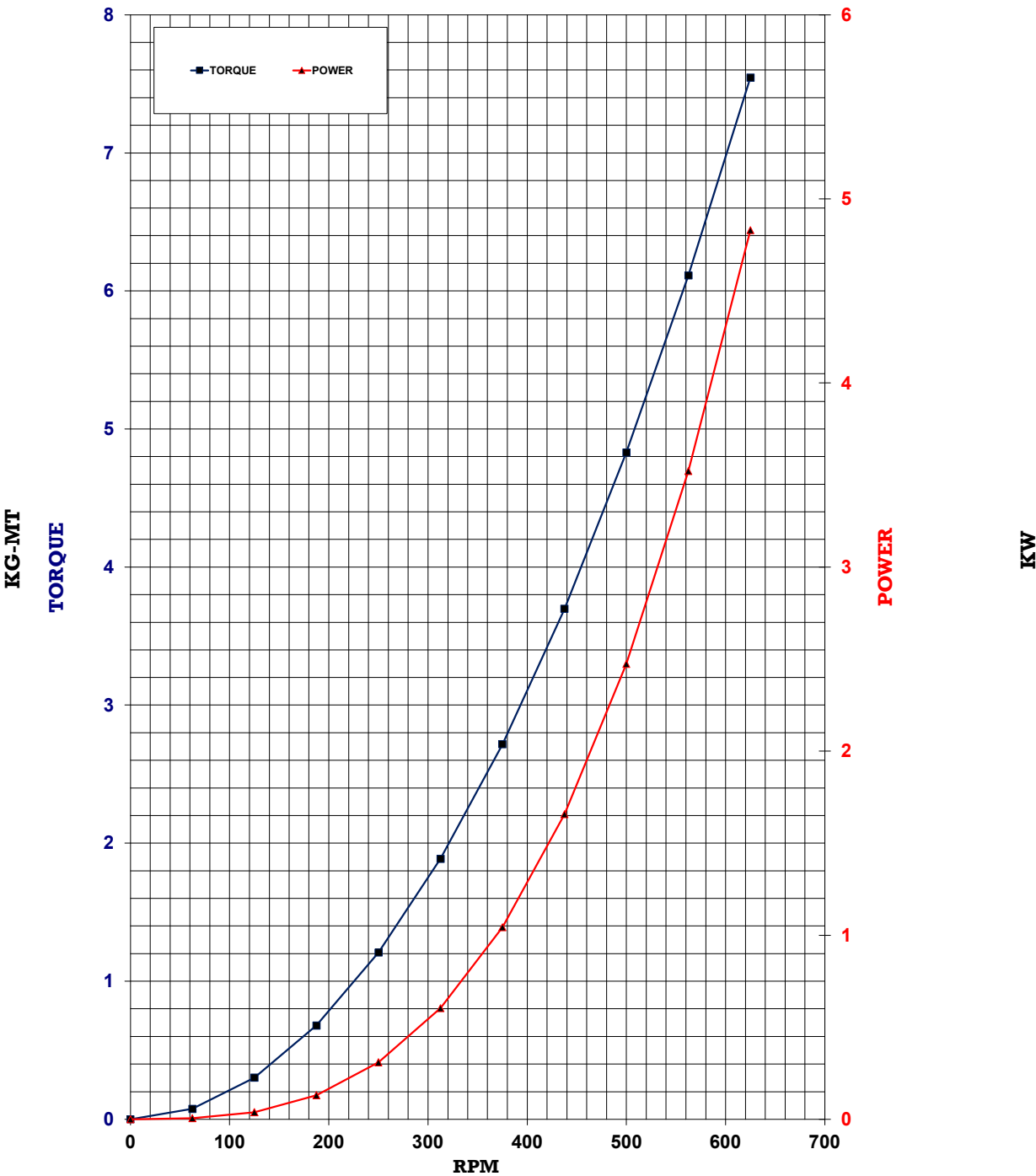
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Ref No.:17208

Item No.:AE-2102

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	69 Deg. C	Static Pr.:	168.85 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	4.83 kW
Diameter:	1450.00 mm	No. Blades:	4	Density Ratio:	0.858	Design Angle:	14.1 deg
RPM:	625	Rotation:	RH	Air Volume:	15.71 m3/s	Approx. weight:	66 lbs (30 kgs)

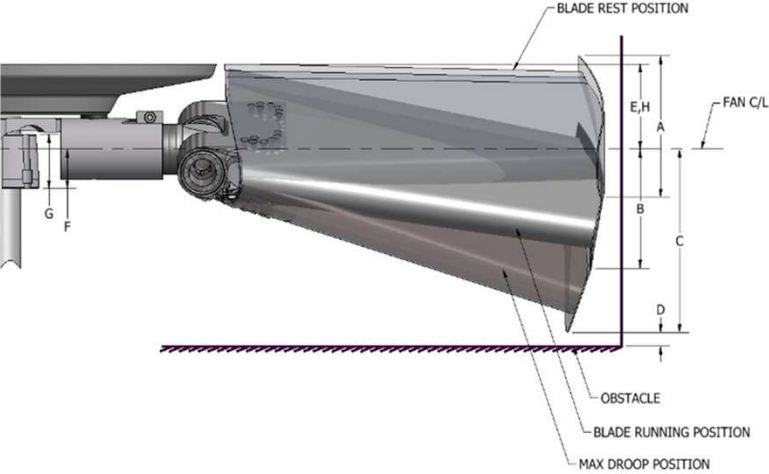
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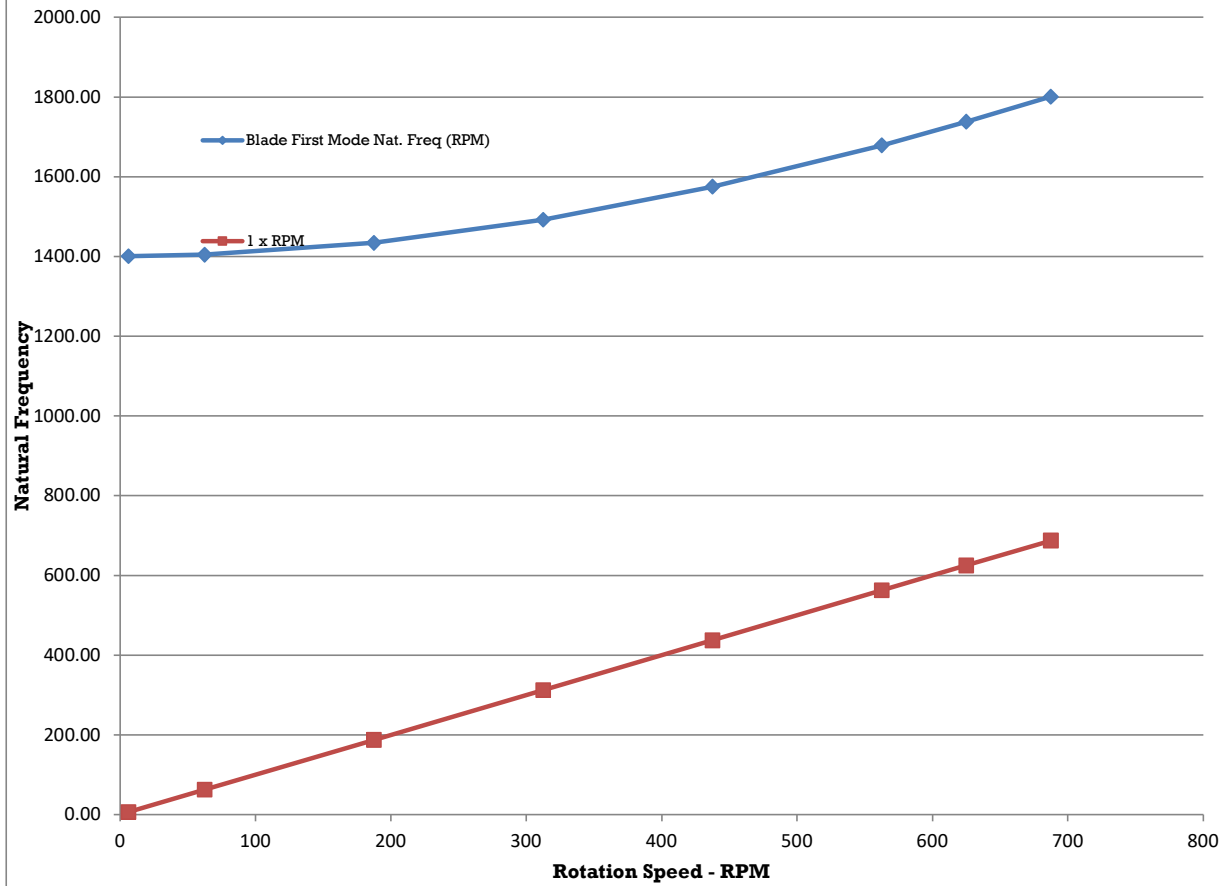
Fan Model No. 1024/073-U0-A/24R-VT-3-4.76-4

Class	10000
Series	24
Diameter (Ft)	4.76
Blade Chord	SC
Type	MAN
Rotation	RH
Bushing Type	U
RPM	625
Blade Load	76.0%
Design Angle	14.1
Blade Tip	VT

Inches	MM	
6.1	155	A= Tip profile height at specified design angle (Path Width)
3.0	77	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.2	81	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
4.1	105	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
5.1	129	H ₁ =Maximum height of blade at max. recommended angle (C/L to Air Outlet Side)
6.4	161	H ₂ =Maximum height of blade at 30 degrees (C/L to Air Outlet Side)
7.0	178	H ₃ =Minimum recommended obstacle clearance (C/L to Air Outlet Side)
2.0	51	F= Fan centerline to base of bushing
2.7	69	G= Overall bushing height
22.5	572	S= Air Seal Diameter



Campbell Diagram - First Mode Blade Natural Frequency Series 24 - 4.7572 Ft. SC 4-Blade Fan



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Version 2.46

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		Ref No.:17208		Item No.:AE-2102	
Class:	10000 10K	Hub Type:	SD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	AUTO AUTO	Rotation:	RH
Series:	24	Diameter:	1450 mm	Blades:	4
Temperature:	69.32 Deg. C	Elevation:	0 meters	Density Ratio:	0.858 0%
Volume:	15.71 m3/s	Air Vel.:	10.80 m/s	Speed:	625.0 RPM
Static Pressure:	168.85 Pa	Pv:	60.085 Pa	Pt:	246.960 Pa
Power Req'd.:	4.83 kW	Motor:	7.5 kW	Total Eff:	80.4%
Power @ 5 deg.	5.95 kW	Bld Natural Freq.:	29.0 Hz	Static Eff:	54.9%
Blades Required:	3.04	API Blades Req.:	4	Blade Load:	0.760
Tip Speed:	47.4 m/s	Deflection Angle:	44.4 deg.	Pitch Number:	1.70
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	14.1 deg
Exit Correction:	Not Applied	1.00 Draft:	Induced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	23 kg m	Torq/Bld:	6 kg m
Approx. weight.:178 lbs (81 kgs)		1	Inertia: 64 lb-ft2 (2.7 kg-m2)	Bore Size:	0.1 mm
Unbalance force (G6.3): 7.5 lbs (33.4 N)			Thrust load: 92 lbs (42 kg)	Bushing Type:	T
One blade missing load: 1008 lbs (458 kg)			Hub Extension: Standard	Qty required:	3
Sound Levels Per Fan (Induced Draft) (Horizontal Orientation) See Note 2					
Sound Power Level					
dBA	HZ	63	125	250	500 1000 2000 4000 8000
90.4		96.4	95.4	92.4	87.4 85.4 79.4 73.4 67.4
Sound Pressure Level 1 meter below bundle					
78.3		84.3	83.3	80.3	75.3 73.3 67.3 61.3 55.3
Sound Pressure Level 1 meter radially from blade tip					
75.5		81.5	80.5	77.5	72.5 70.5 64.5 58.5 52.5
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
0					
0.0		6.0	5.0	2.0	(3.0) (5.0) (11.0) (17.0) (23.0)
Class 10000, Series 24, 1450 mm Diameter, 4 Blades					
Automatic Adjustment, Standard Duty, Standard Chord, CW Rotation Aluminum Blade Material					
With VT Blade Tips,					
Fan Model No. 1024/CP24X-T0-A/24R-VT-3-4.76-4					
Note 1: Maximum blade angle to prevent fan stall is 20.9 degrees.					
Available motor power may limit maximum angle to a lower value.					
Note 2: Sound levels are the best estimate of the fan sound with 0 dBA additional sound					
included due to drive components, flow obstructions or structure reflection and reverberation.					

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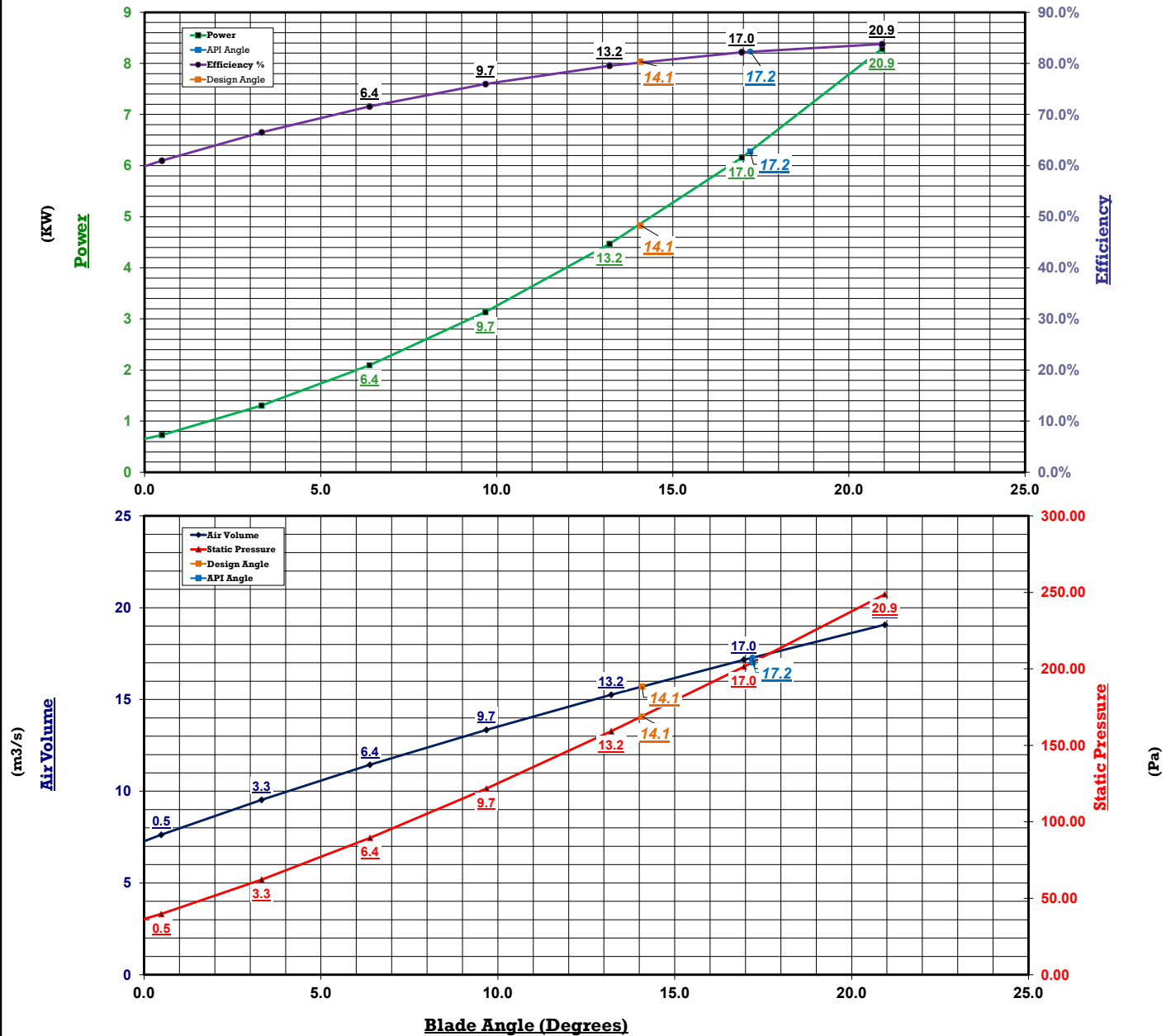
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Ref No.:17208

Item No.:AE-2102

System Performance Curve



Design Angle= 14.1
Est. API Angle= 17.2
Maximum Angle= 20.9

45% Pressure Margin
20% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions	Temperature:	69 Deg. C	Static Pr.:	168.85 Pa
Series:	24	Blade Tip:	VT		Elevation:	0 meters	Power Req'd:	4.83 kW
Diameter:	1450.00 mm	Adjustment:	AUTO		Density Ratio:	0.858	Design Angle:	14.1 deg
RPM:	625	Blades:	4		Air Volume:	15.71 m3/s	Approx. weight.:	178 lbs (81 kgs)

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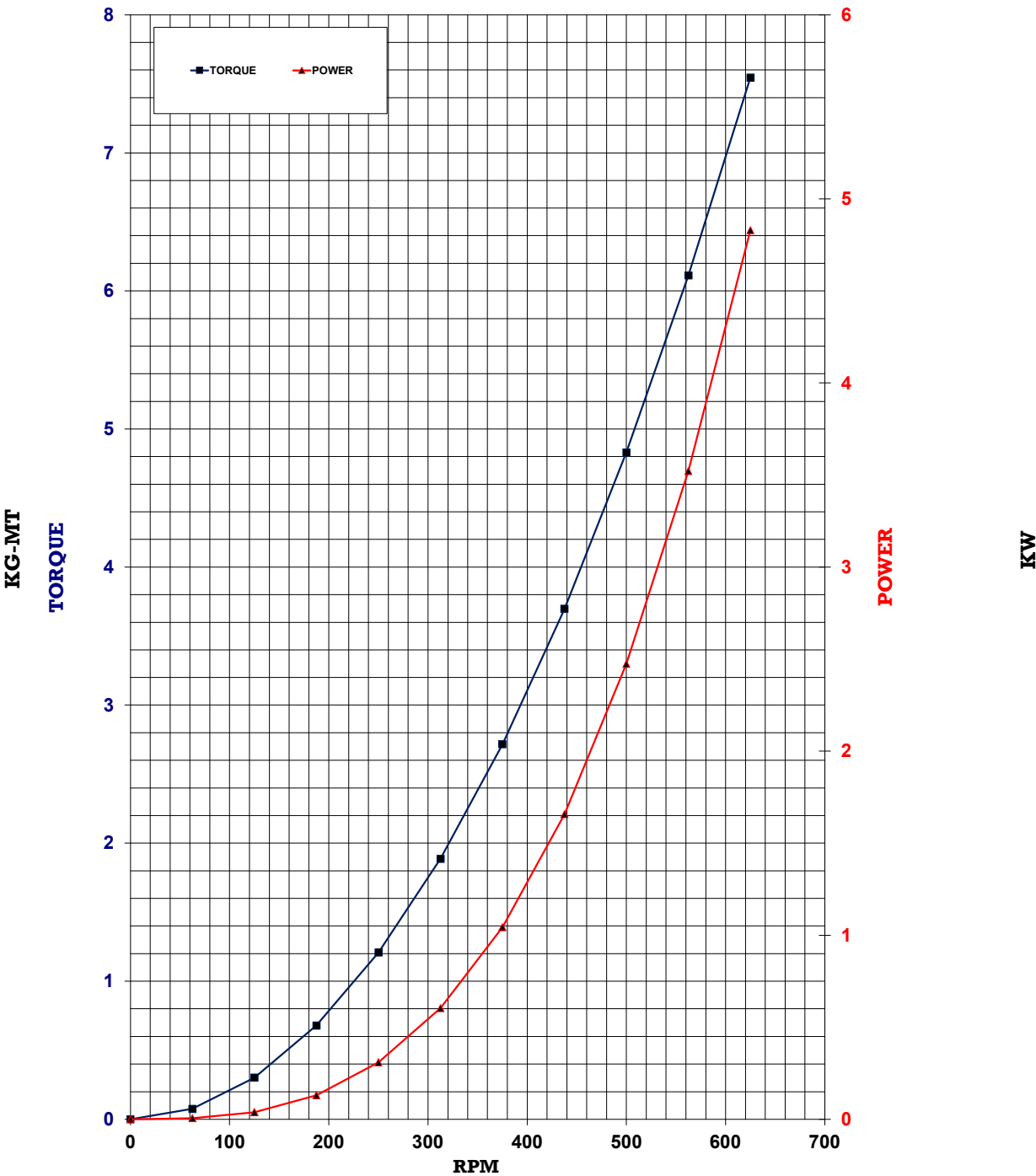
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Fax: (660) 376-2909

Ref No.:17208

Item No.:AE-2102

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	69 Deg. C	Static Pr.:	168.85 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	4.83 kW
Diameter:	1450.00 mm	No. Blades:	4	Density Ratio:	0.858	Design Angle:	14.1 deg
RPM:	625	Rotation:	RH	Air Volume:	15.71 m3/s	Approx. weight:	178 lbs (81 kgs)

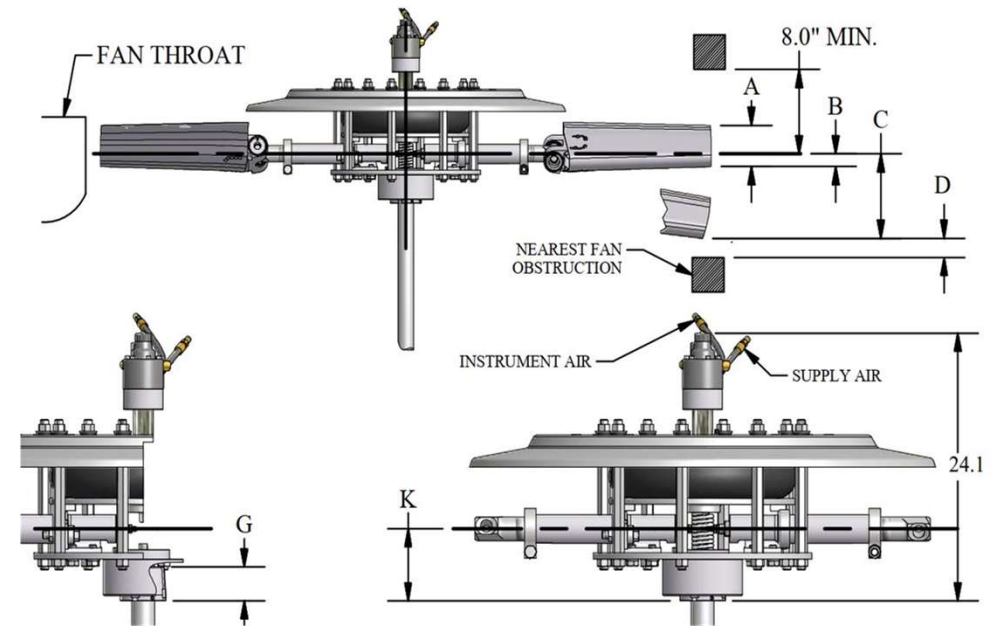
Ref No.:17208

Item No.:AE-2102

Fan Model No. 1024/CP24X-T0-A/24R-VT-3-4.76-4

Class 10000
 Series 24
 Diameter (Ft) 4.76
 Blade Chord SC
 Type AUTO
 Rotation RH
 Bushing Type T
 RPM 625
 Blade Load 76.0%
 Design Angle 14.1
 Blade Tip VT

Inches	MM	
6.1	155	A= Tip profile height at specified design angle (Path Width)
3.0	77	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.2	81	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
4.1	105	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
5.1	129	H ₁ =Maximum height of blade at max. recommended angle (C/L to Air Outlet Side)
6.4	161	H ₂ =Maximum height of blade at 30 degrees (C/L to Air Outlet Side)
7.0	178	H ₃ =Minimum recommended obstacle clearance (C/L to Air Outlet Side)
5.8	147	K= Fan centerline to base of bushing
1.9	48	G= Overall bushing height
22.5	572	S= Air Seal Diameter



Campbell Diagram - First Mode Blade Natural Frequency Series 24 - 4.7572 Ft. SC 4-Blade Fan

