

 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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	<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>V00</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	V00	0001	DS	ME	120	AA	GCS	BK	شماره صفحه ۱ : از ۲۴
Fan Data Sheets																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه																			
V00	0001	DS	ME	120	AA	GCS	BK																			

طرح نگهداشت و افزایش تولید ۲۷ مخزن

Fan Data Sheets

نگهداشت و افزایش تولید میدان نفتی بینک

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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	Fan Data Sheets <table border="1"> <tr> <th>نسخه</th> <th>سریال</th> <th>نوع مدرک</th> <th>رشته</th> <th>تسهیلات</th> <th>صادرکننده</th> <th>بسته کاری</th> <th>پروژه</th> </tr> <tr> <td>V00</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	V00	0001	DS	ME	120	AA	GCS	BK	شماره صفحه ۲ : از ۲۴
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
V00	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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	Fan Data Sheets							شماره صفحه : ۳ از ۲۴	
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	AA	120	ME	DS	0001		V00

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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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	Fan Data Sheets							شماره صفحه : ۴ از ۲۴	
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	AA	120	ME	DS	0001		V00

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-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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Version 2.45									
16/10/2024 09:04									
Ref No.:17208									
Item No.:AE-2101									
Class:	10000	Hub Type:	HD	Blade Type:	SC				
Blade Tip:	VT	Adjustment:	MAN	Rotation:	RH				
Series:	24	Diameter:	1372 mm	Blades:	3				
Temperature:	65.72 Deg. C	Elevation:	0 meters	Density Ratio:	0.867	0%			
Volume:	12.2 m3/s	Air Vel.:	9.53 m/s	Speed:	675.0 RPM				
Static Pressure:	145.05 Pa	Pv:	47.290 Pa	Pt:	206.527 Pa				
Power Req'd.:	3.31 kW	Motor:	3.7 kW	Total Eff:	76.1%				
		Bld Natural Freq.:	32.8 Hz	Static Eff:	53.4%				
Blades Required:	2.17	API Blades Req.:	3	Blade Load:	0.723				
Tip Speed:	48.5 m/s	Deflection Angle:	40.4 deg.	Pitch Number:	1.39				
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	11.5 deg				
Exit Correction:	Not Applied	Draft:	Forced	Orientation:	Horizontal				
Torque Factor:	2	Motor Torque:	11 kg m	Torq/Bld:	4 kg m				
Approx. weight.:57 lbs (26 kgs)		Inertia: 42 lb-ft2 (1.8 kg-m2)			Bore Size:	mm			
Unbalance force (G6.3): 2.6 lbs (11.6 N)		Thrust load: 69 lbs (31 kg)			Bushing Type:	U			
One blade missing load: 1082 lbs (492 kg)		Hub Extension: Standard			Qty required:	3			
Sound Levels Per Fan (Forced Draft) (Horizontal Orientation) See Note 2									
Sound Power Level									
dBA	HZ	63	125	250	500	1000	2000	4000	8000
89.1		95.1	94.1	91.1	86.1	84.1	78.1	72.1	66.1
Sound Pressure Level 1 meter below fan									
80.2		86.2	85.2	82.2	77.2	75.2	69.2	63.2	57.2
Sound Pressure Level 1 meter radially from blade tip									
74.4		80.4	79.4	76.4	71.4	69.4	63.4	57.4	51.4
Class 10000, Series 24, 1372 mm Diameter, 3 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-3-4.50-3									
Note 1: Maximum blade angle to prevent fan stall is 18.7 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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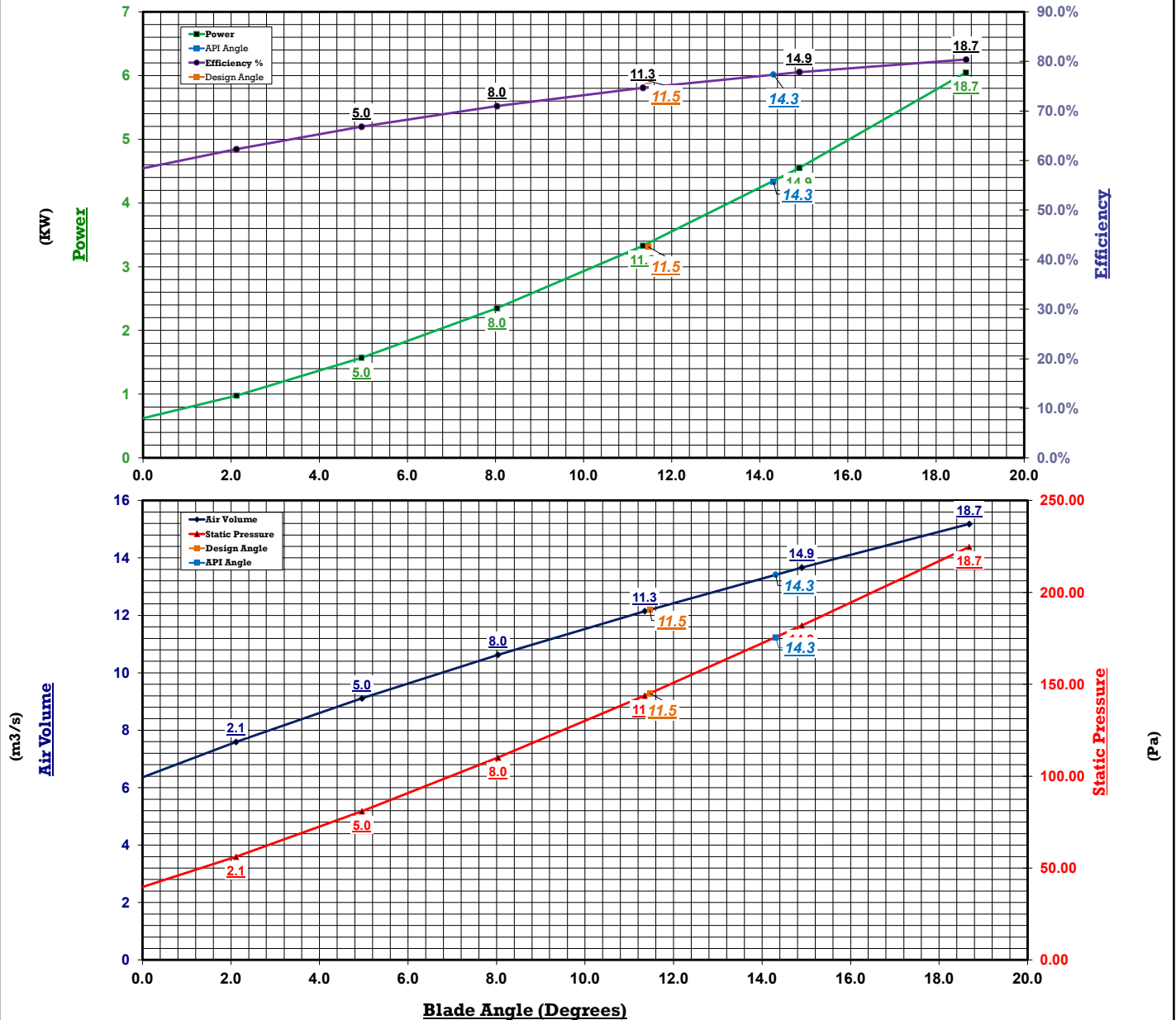
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Ref No.:17208

Item No.:AE-2101

System Performance Curve



Design Angle= 11.5
Est. API Angle= 14.3 52% Pressure Margin
Maximum Angle= 18.7 23% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions		
Series:	24	Blade Tip:	VT	Temperature:	66 Deg. C	Static Pr.: 145.05 Pa
Diameter:	1372.00 mm	Adjustment:	MAN	Elevation:	0 meters	Power Req'd: 3.31 kW
RPM:	675	Blades:	3	Density Ratio:	0.867	Design Angle: 11.5 deg
				Air Volume:	12.20 m3/s	Approx. weight.:57 lbs (26 kgs)

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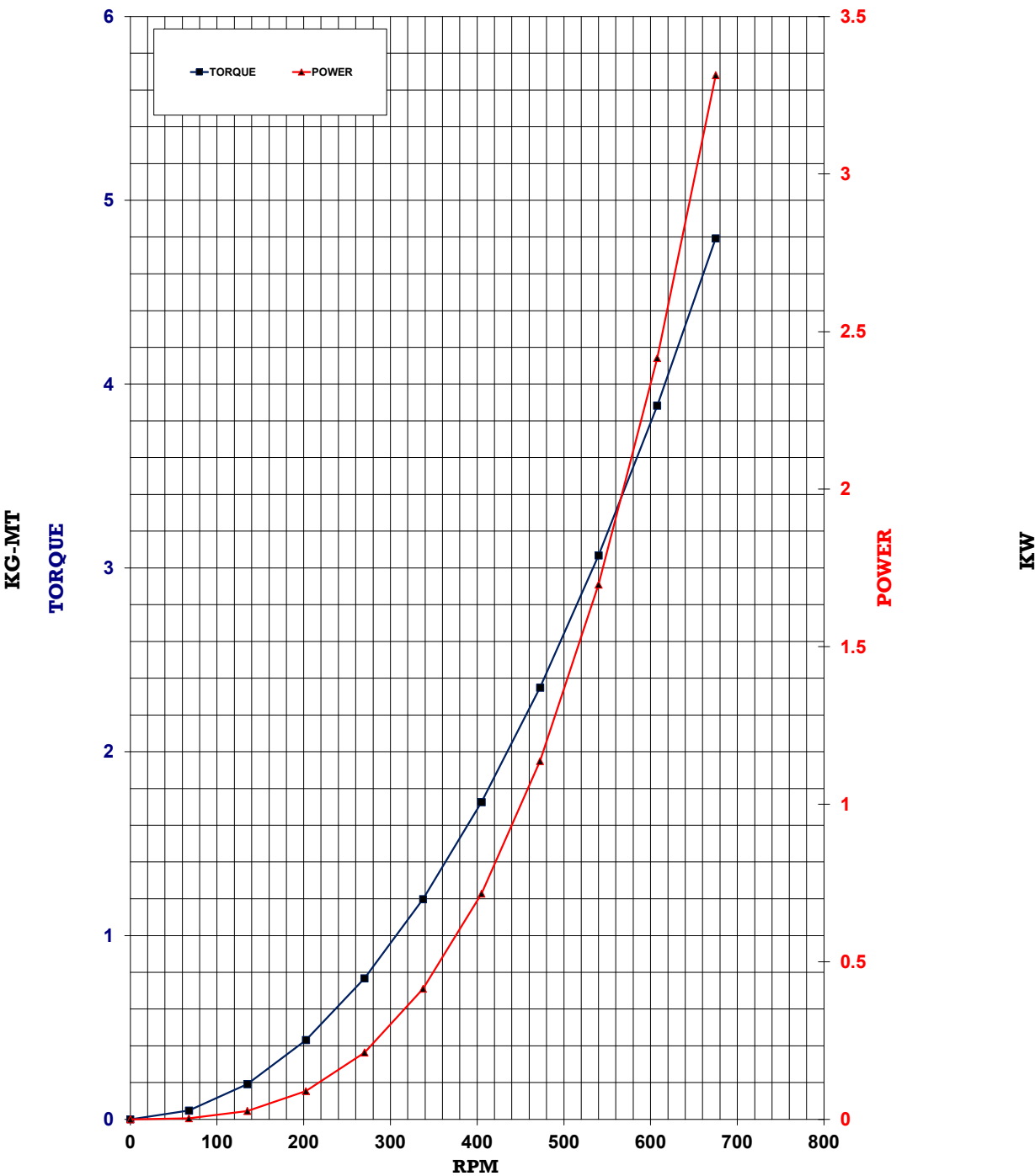
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Item No.:AE-2101

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	66 Deg. C	Static Pr.:	145.05 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.31 kW
Diameter:	1372.00 mm	No. Blades:	3	Density Ratio:	0.867	Design Angle:	11.5 deg
RPM:	675	Rotation:	RH	Air Volume:	12.20 m3/s	Approx. weight:	57 lbs (26 kgs)

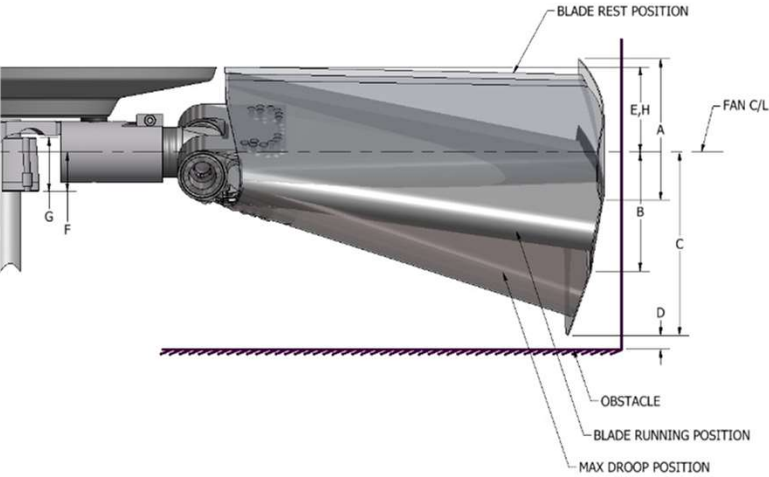
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Item No.:AE-2101

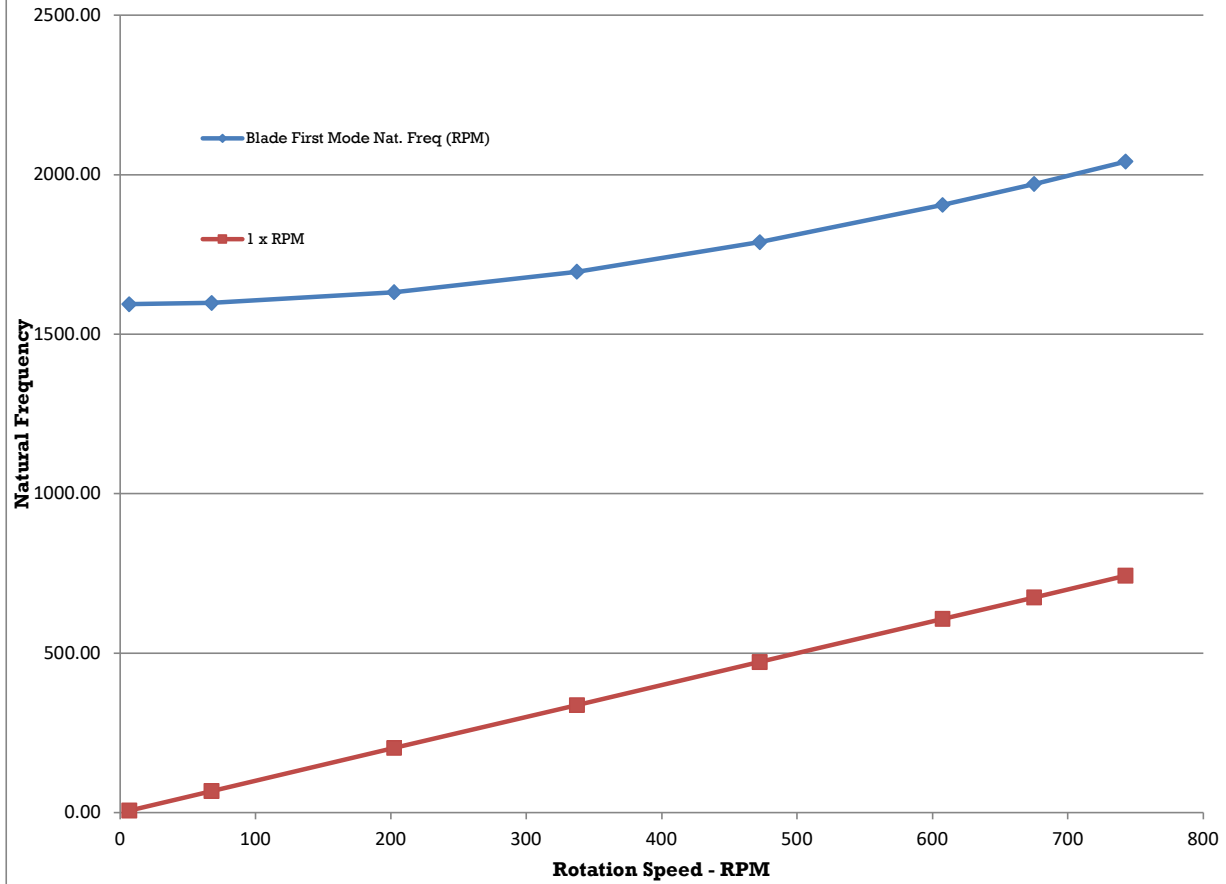
Fan Model No. 1024/073-U0-A/24R-VT-3-4.50-3

Class	10000
Series	24
Diameter (Ft)	4.50
Blade Chord	SC
Type	MAN
Rotation	RH
Bushing Type	U
RPM	675
Blade Load	72.3%
Design Angle	11.5
Blade Tip	VT

Inches	MM	
5.7	145	A= Tip profile height at specified design angle (Path Width)
2.9	73	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.0	77	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
3.8	96	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
4.8	122	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 3-Blade Fan



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Item No.:AE-2101

Class:	10000	Hub Type:	SD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	AUTO	Rotation:	RH
Series:	24	Diameter:	1372 mm	Blades:	3
Temperature:	65.72 Deg. C	Elevation:	0 meters	Density Ratio:	0.867 0%
Volume:	12.2 m3/s	Air Vel.:	9.53 m/s	Speed:	675.0 RPM
Static Pressure:	145.05 Pa	Pv:	47.290 Pa	Pt:	206.527 Pa
Power Req'd.:	3.31 kW	Motor:	3.7 kW	Total Eff:	76.1%
		Bld Natural Freq.:	32.8 Hz	Static Eff:	53.4%
Blades Required:	2.17	API Blades Req.:	3	Blade Load:	0.723
Tip Speed:	48.5 m/s	Deflection Angle:	40.4 deg.	Pitch Number:	1.39
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	11.5 deg
Exit Correction:	Not Applied	Draft:	Forced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	11 kg m	Torq/Bld:	4 kg m
Approx. weight.:168 lbs (76 kgs)		Inertia: 53 lb-ft2 (2.3 kg-m2)		Bore Size: mm	
Unbalance force (G6.3): 7.6 lbs (33.8 N)		Thrust load: 69 lbs (31 kg)		Bushing Type: T	
One blade missing load: 1082 lbs (492 kg)		Hub Extension: Standard		Qty required: 3	

Sound Levels Per Fan (Forced Draft) (Horizontal Orientation) See Note 2

Sound Power Level									
dBA	HZ	63	125	250	500	1000	2000	4000	8000
89.1		95.1	94.1	91.1	86.1	84.1	78.1	72.1	66.1
Sound Pressure Level 1 meter below fan									
80.2		86.2	85.2	82.2	77.2	75.2	69.2	63.2	57.2
Sound Pressure Level 1 meter radially from blade tip									
74.4		80.4	79.4	76.4	71.4	69.4	63.4	57.4	51.4

Class 10000, Series 24, 1372 mm Diameter, 3 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-3-4.50-3

Note 1: Maximum blade angle to prevent fan stall is 18.7 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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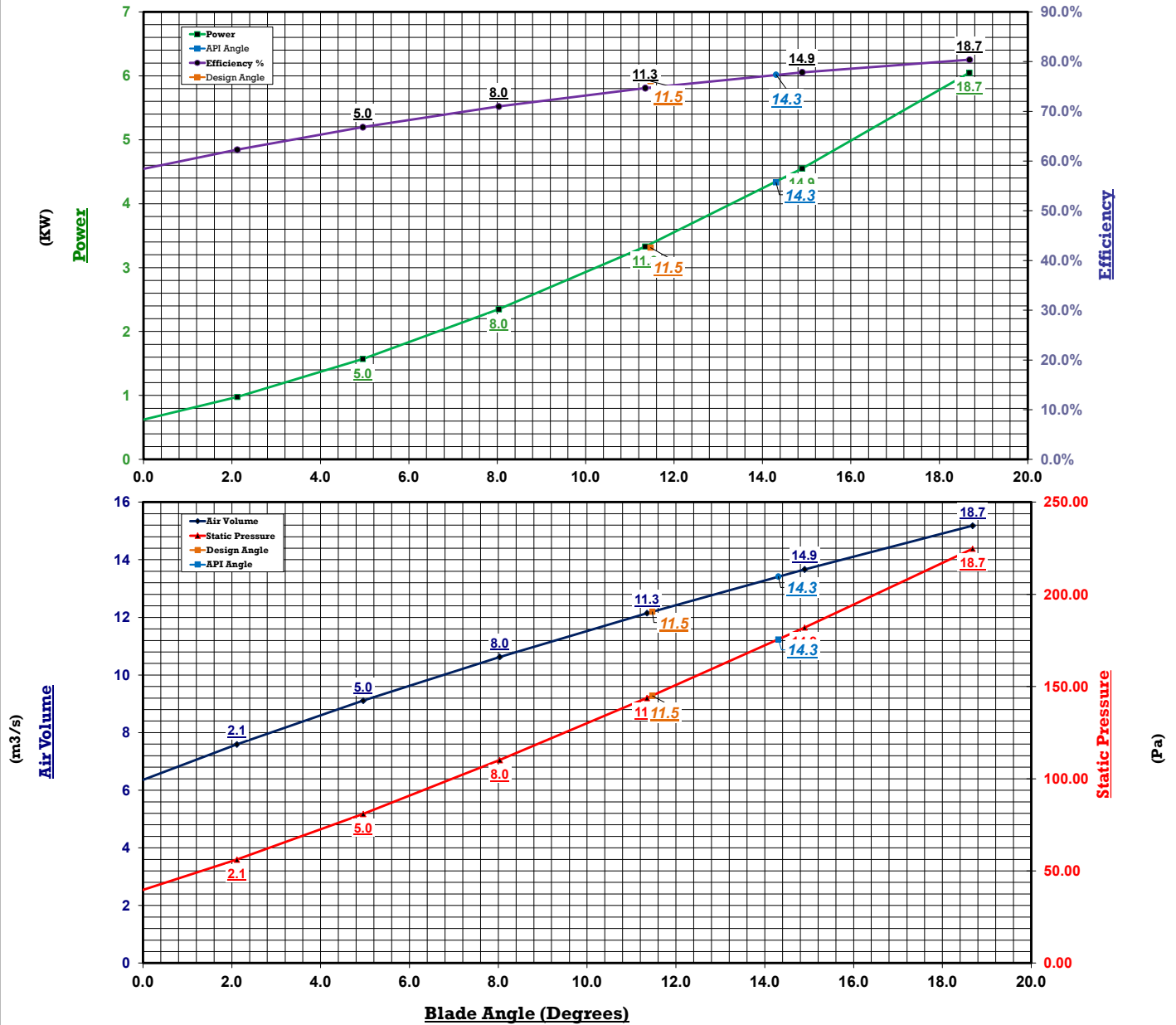
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Ref No.:17208

Item No.:AE-2101

System Performance Curve



Design Angle= 11.5
Est. API Angle= 14.3
Maximum Angle= 18.7

52% Pressure Margin
23% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions		
Series:	24	Blade Tip:	VT	Temperature:	66 Deg. C	Static Pr.: 145.05 Pa
Diameter:	1372.00 mm	Adjustment:	AUTO	Elevation:	0 meters	Power Req'd: 3.31 kW
RPM:	675	Blades:	3	Density Ratio:	0.867	Design Angle: 11.5 deg
				Air Volume:	12.20 m3/s	Approx. weight.:168 lbs (76 kgs)

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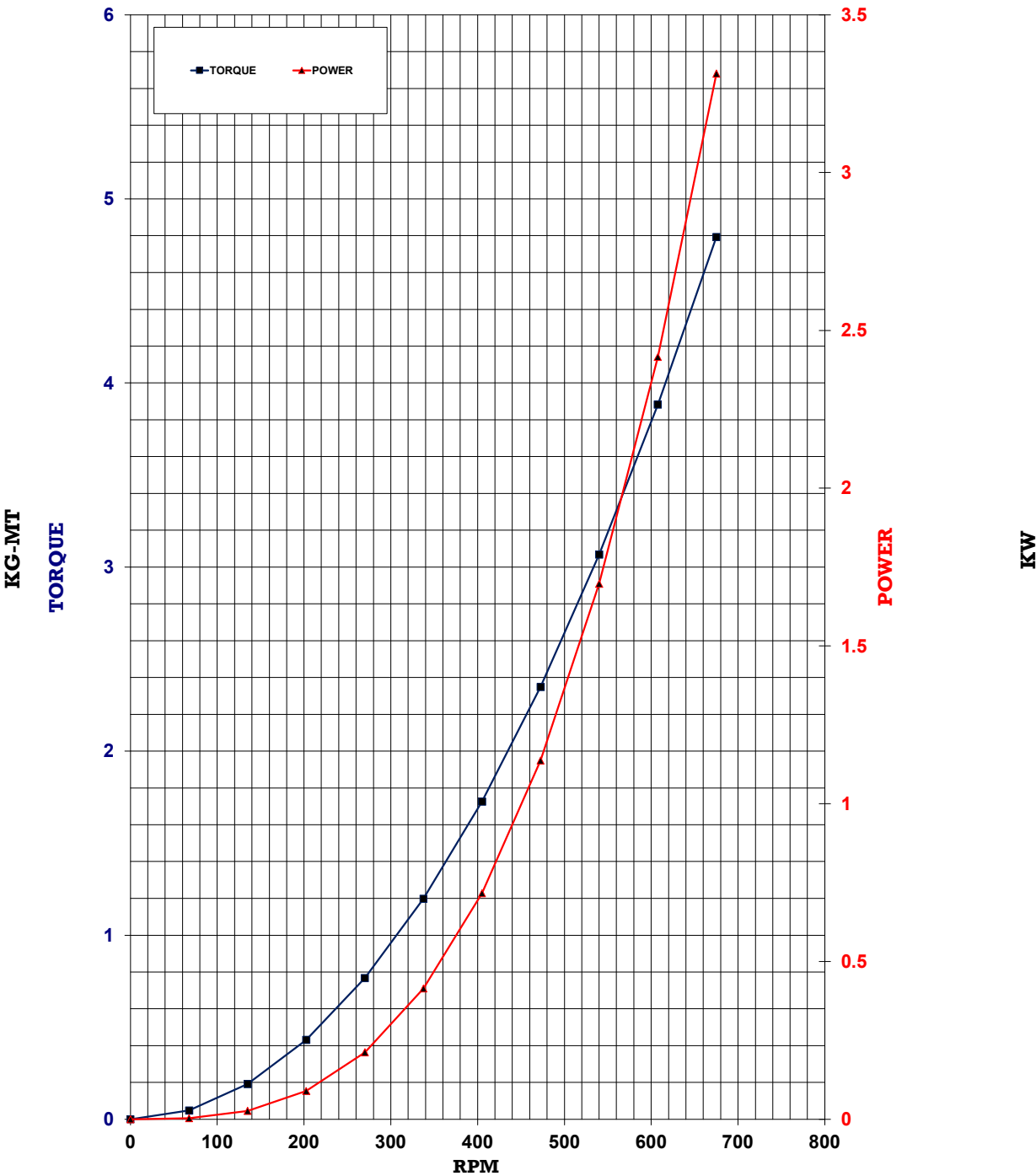
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Item No.:AE-2101

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	66 Deg. C	Static Pr.:	145.05 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.31 kW
Diameter:	1372.00 mm	No. Blades:	3	Density Ratio:	0.867	Design Angle:	11.5 deg
RPM:	675	Rotation:	RH	Air Volume:	12.20 m3/s	Approx. weight:	168 lbs (76 kgs)

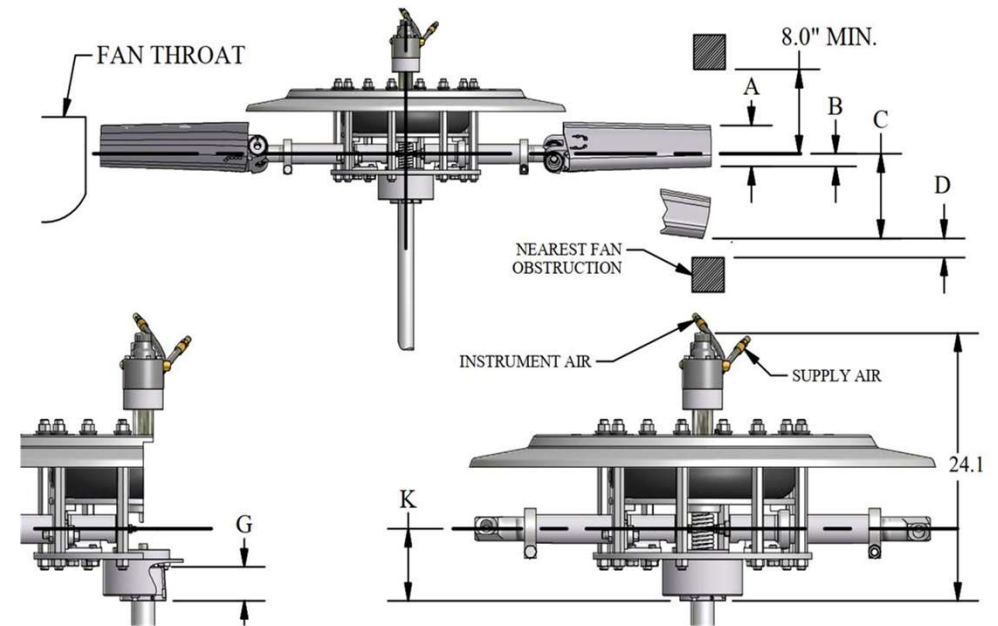
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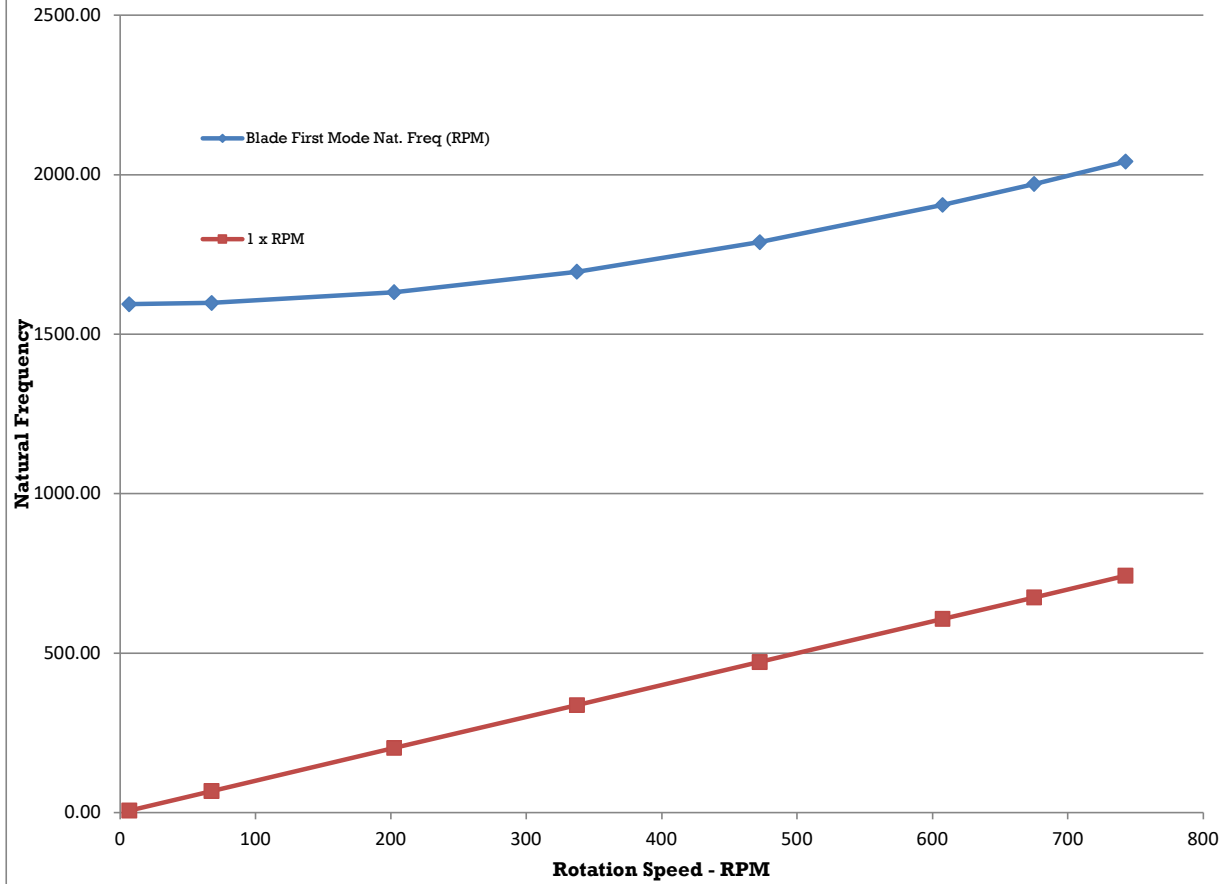
Fan Model No. 1024/CP24X-T0-A/24R-VT-3-4.50-3

Class 10000
Series 24
Diameter (Ft) 4.50
Blade Chord SC
Type AUTO
Rotation RH
Bushing Type T
RPM 675
Blade Load 72.3%
Design Angle 11.5
Blade Tip VT

Inches	MM	
5.7	145	A= Tip profile height at specified design angle (Path Width)
2.9	73	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.0	77	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
3.8	96	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
4.8	122	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 3-Blade Fan



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Version 2.45

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Ref No.:17208

Item No.:AE-2102

Class:	10000	Hub Type:	HD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	MAN	Rotation:	RH
Series:	24	Diameter:	1450 mm	Blades:	3
Temperature:	69.32 Deg. C	Elevation:	0 meters	Density Ratio:	0.858 0%
Volume:	13.55 m3/s	Air Vel.:	9.31 m/s	Speed:	675.0 RPM
Static Pressure:	142.13 Pa	Pv:	44.698 Pa	Pt:	200.238 Pa
Power Req'd.:	3.58 kW	Motor:	5.5 kW	Total Eff:	75.8%
		Bld Natural Freq.:	29.8 Hz	Static Eff:	53.8%
Blades Required:	2.11	API Blades Req.:	3	Blade Load:	0.705
Tip Speed:	51.2 m/s	Deflection Angle:	40.4 deg.	Pitch Number:	1.36
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	11.0 deg
Exit Correction:	Not Applied	Draft:	Forced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	16 kg m	Torq/Bld:	5 kg m
Approx. weight.:57 lbs (26 kgs)		Inertia: 42 lb-ft2 (1.8 kg-m2)		Bore Size:	mm
Unbalance force (G6.3): 2.6 lbs (11.6 N)		Thrust load: 74 lbs (34 kg)		Bushing Type:	U
One blade missing load: 1175 lbs (534 kg)		Hub Extension: Standard		Qty required:	3

Sound Levels Per Fan (Forced Draft) (Horizontal Orientation) See Note 2

Sound Power Level									
dBA	HZ	63	125	250	500	1000	2000	4000	8000
90.1		96.1	95.1	92.1	87.1	85.1	79.1	73.1	67.1
Sound Pressure Level 1 meter below fan									
81.0		87.0	86.0	83.0	78.0	76.0	70.0	64.0	58.0
Sound Pressure Level 1 meter radially from blade tip									
75.2		81.2	80.2	77.2	72.2	70.2	64.2	58.2	52.2

Class 10000, Series 24, 1450 mm Diameter, 3 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-3-4.76-3

Note 1: Maximum blade angle to prevent fan stall is 18.5 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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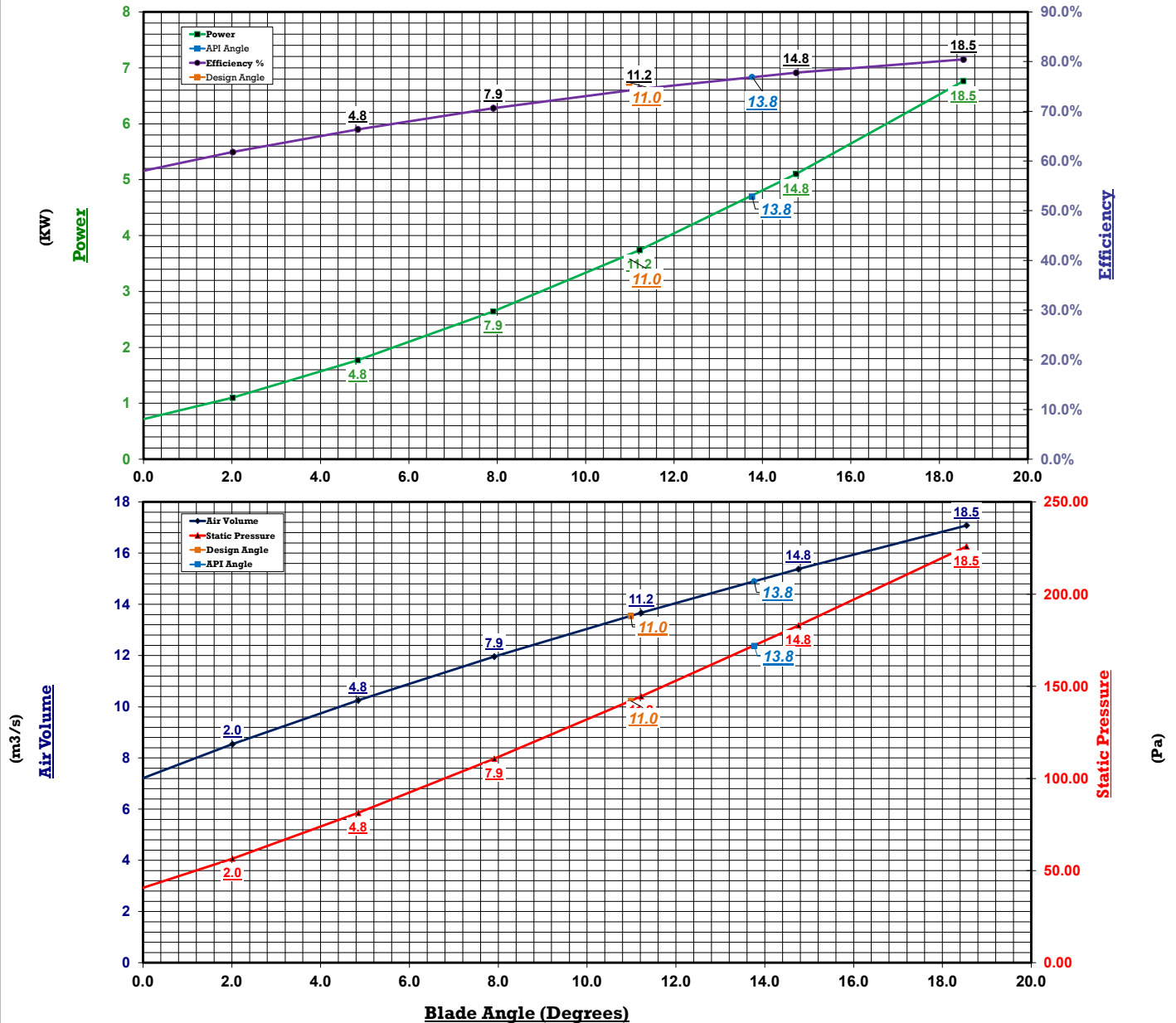
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Ref No.:17208

Item No.:AE-2102

System Performance Curve



Design Angle= 11.0
Est. API Angle= 13.8
Maximum Angle= 18.5

56% Pressure Margin
25% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions			
Series:	24	Blade Tip:	VT	Temperature:	69 Deg. C	Static Pr.:	142.13 Pa
Diameter:	1450.00 mm	Adjustment:	MAN	Elevation:	0 meters	Power Req'd:	3.58 kW
RPM:	675	Blades:	3	Density Ratio:	0.858	Design Angle:	11.0 deg
				Air Volume:	13.55 m3/s	Approx. weight.:	57 lbs (26 kgs)

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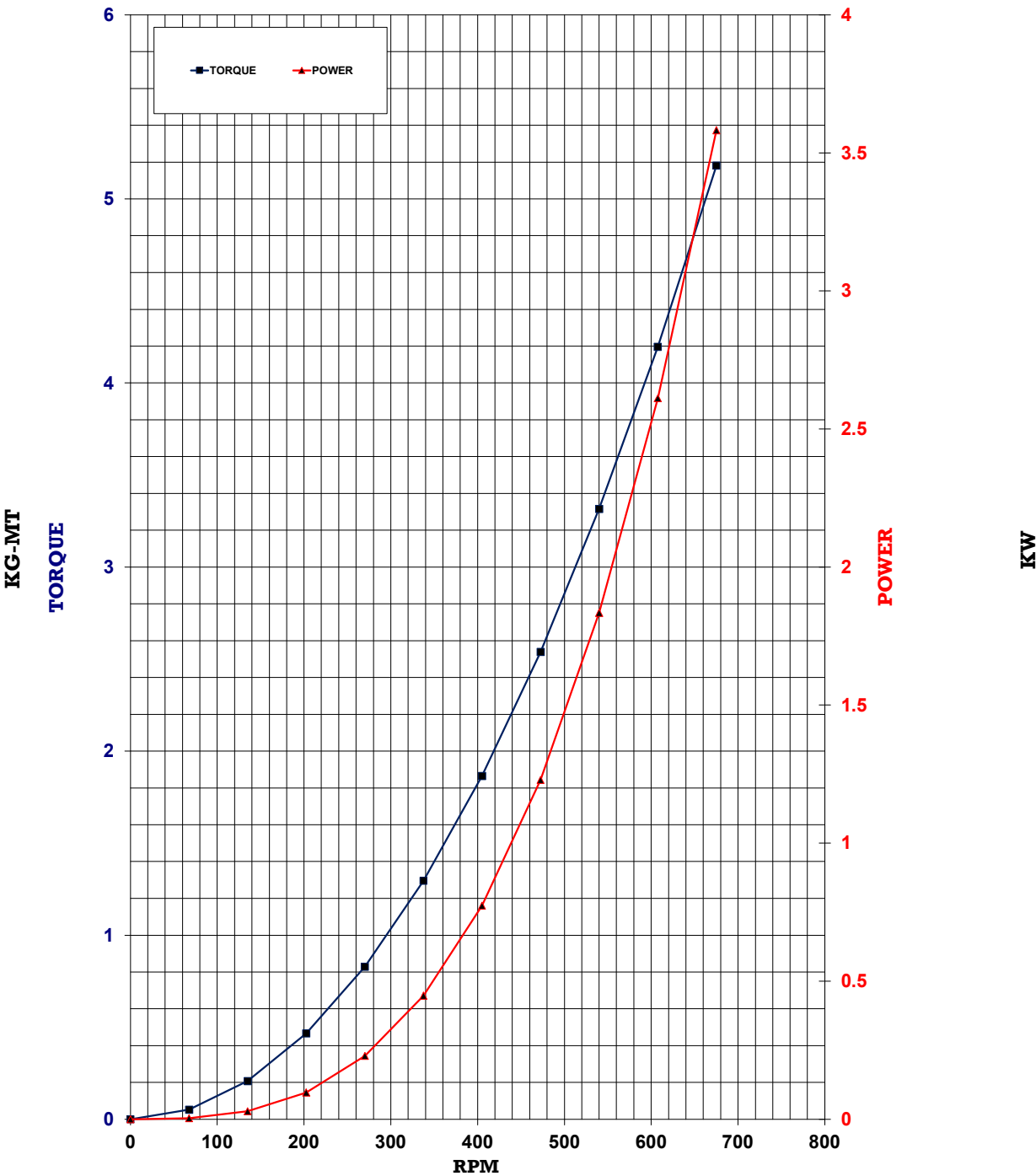
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Ref No.:17208

Item No.:AE-2102

Class 10000 Speed-Torque Curve



Design Conditions

Class:	10000	Blade Type:	SC	Temperature:	69 Deg. C	Static Pr.:	142.13 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.58 kW
Diameter:	1450.00 mm	No. Blades:	3	Density Ratio:	0.858	Design Angle:	11.0 deg
RPM:	675	Rotation:	RH	Air Volume:	13.55 m3/s	Approx. weight:	57 lbs (26 kgs)

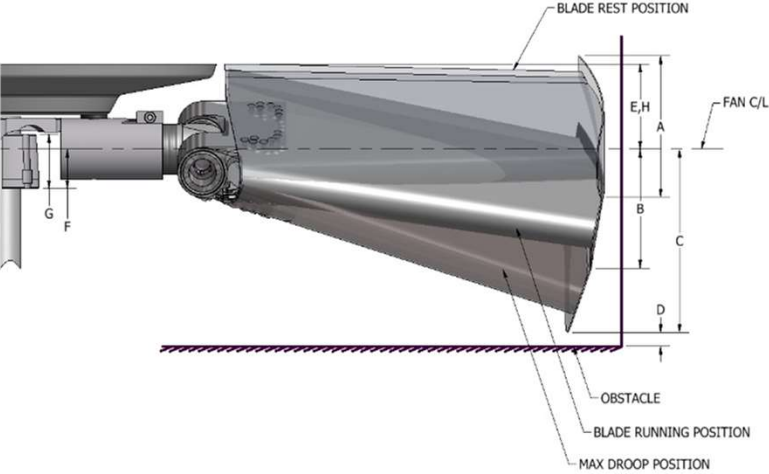
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Item No.:AE-2102

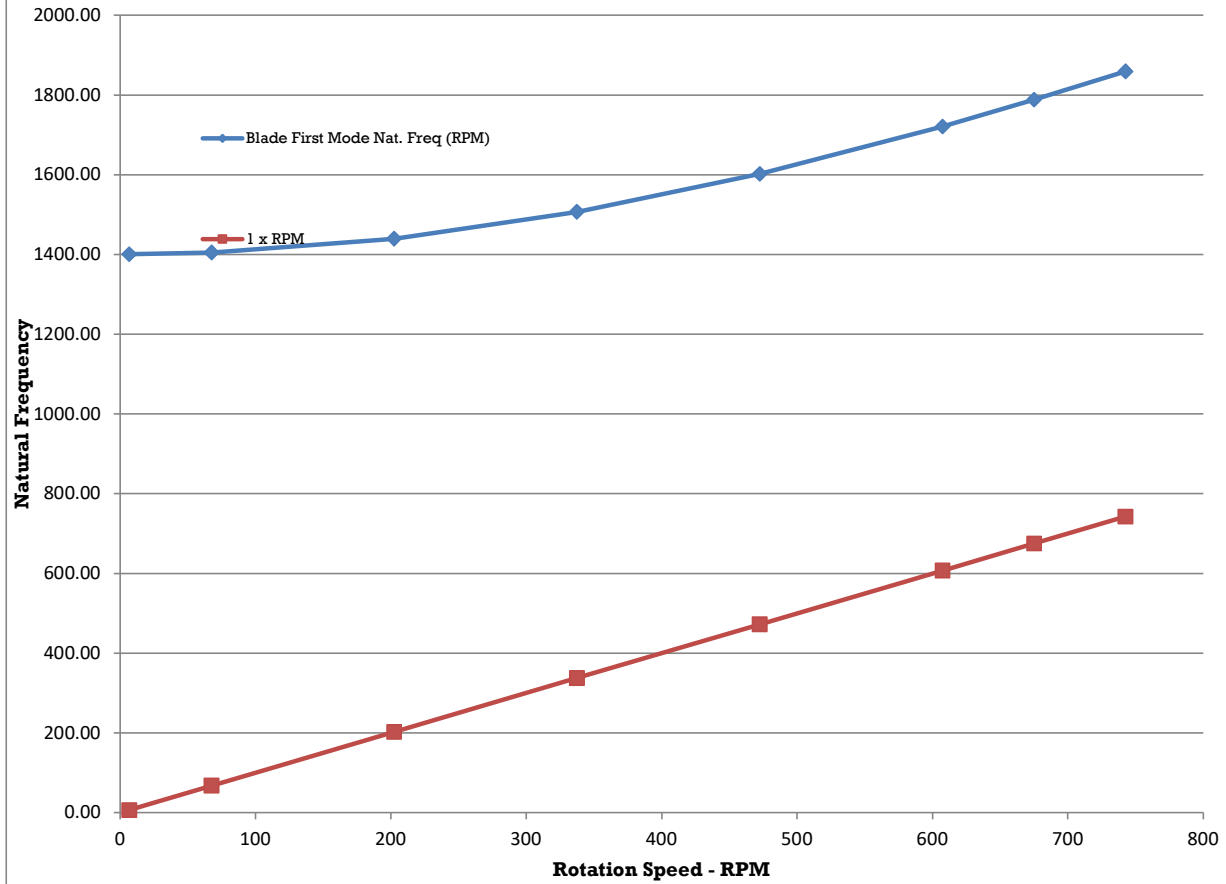
Fan Model No. 1024/073-U0-A/24R-VT-3-4.76-3

Class	10000
Series	24
Diameter (Ft)	4.76
Blade Chord	SC
Type	MAN
Rotation	RH
Bushing Type	U
RPM	675
Blade Load	70.5%
Design Angle	11.0
Blade Tip	VT

Inches	MM	
5.6	142	A= Tip profile height at specified design angle (Path Width)
2.9	73	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.1	79	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	94	E=Maximum height of blade at design angle. (C/L to Air Outlet Side)
4.8	121	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 3-Blade Fan



Moore Fans LLC Rating

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Version 2.45

16/10/2024 09:06

Ref No.:17208

Item No.:AE-2102

Class:	10000	Hub Type:	SD	Blade Type:	SC
Blade Tip:	VT	Adjustment:	AUTO	Rotation:	RH
Series:	24	Diameter:	1450 mm	Blades:	3
Temperature:	69.32 Deg. C	Elevation:	0 meters	Density Ratio:	0.858 0%
Volume:	13.55 m3/s	Air Vel.:	9.31 m/s	Speed:	675.0 RPM
Static Pressure:	142.13 Pa	Pv:	44.698 Pa	Pt:	200.238 Pa
Power Req'd.:	3.58 kW	Motor:	5.5 kW	Total Eff:	75.8%
		Bld Natural Freq.:	29.8 Hz	Static Eff:	53.8%
Blades Required:	2.11	API Blades Req.:	3	Blade Load:	0.705
Tip Speed:	51.2 m/s	Deflection Angle:	40.4 deg.	Pitch Number:	1.36
Entry Correction:	1.3	Tip Clearance:	6.35 mm	Angle at Root:	11.0 deg
Exit Correction:	Not Applied	Draft:	Forced	Orientation:	Horizontal
Torque Factor:	2	Motor Torque:	16 kg m	Torq/Bld:	5 kg m
Approx. weight.:168 lbs (76 kgs)		Inertia: 53 lb-ft2 (2.3 kg-m2)		Bore Size: mm	
Unbalance force (G6.3): 7.6 lbs (33.8 N)		Thrust load: 74 lbs (34 kg)		Bushing Type: T	
One blade missing load: 1175 lbs (534 kg)		Hub Extension: Standard		Qty required: 3	

Sound Levels Per Fan (Forced Draft) (Horizontal Orientation) See Note 2

Sound Power Level									
dBA	HZ	63	125	250	500	1000	2000	4000	8000
90.1		96.1	95.1	92.1	87.1	85.1	79.1	73.1	67.1
Sound Pressure Level 1 meter below fan									
81.0		87.0	86.0	83.0	78.0	76.0	70.0	64.0	58.0
Sound Pressure Level 1 meter radially from blade tip									
75.2		81.2	80.2	77.2	72.2	70.2	64.2	58.2	52.2

Class 10000, Series 24, 1450 mm Diameter, 3 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-3-4.76-3

Note 1: Maximum blade angle to prevent fan stall is 18.5 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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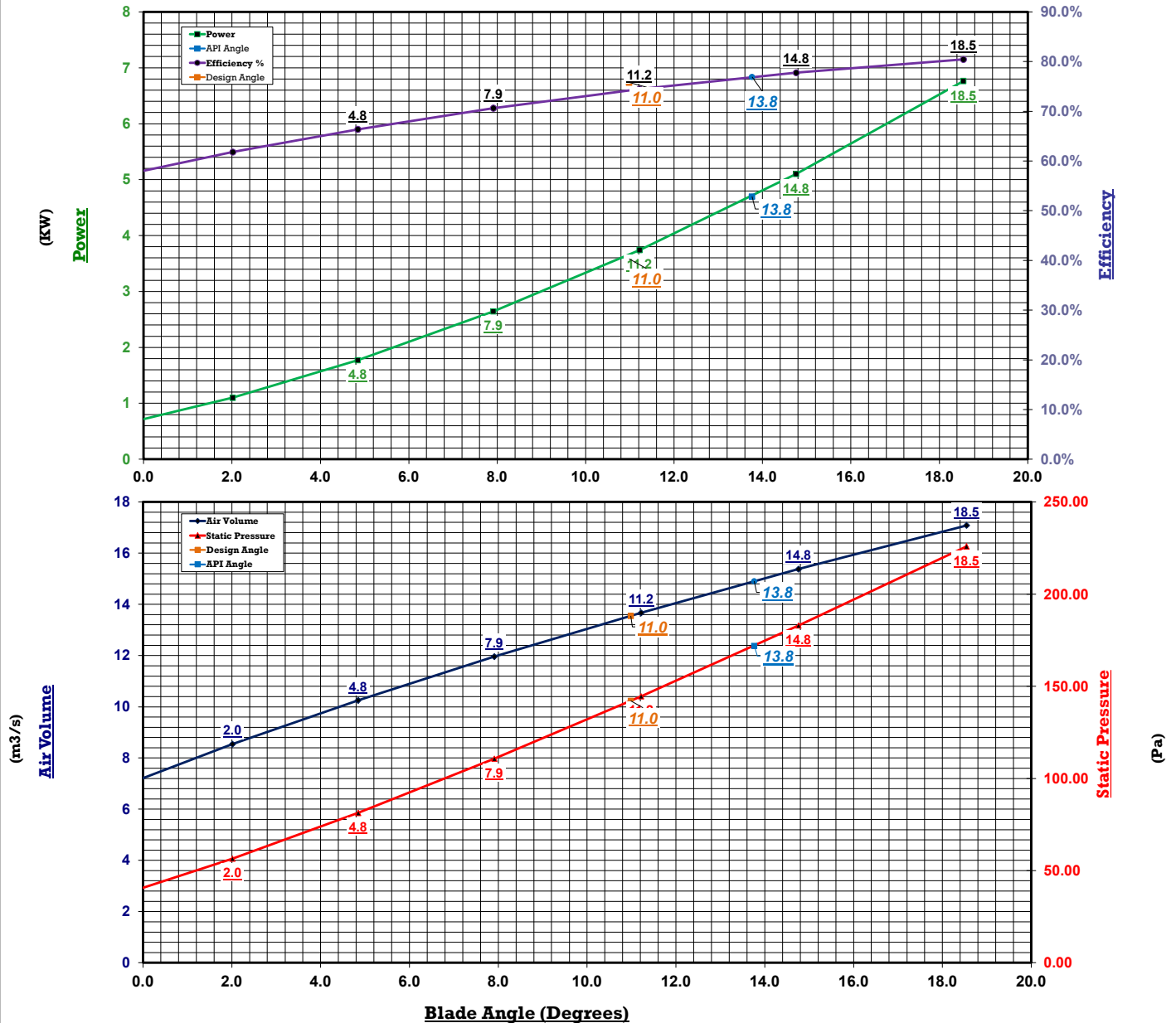
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Ref No.:17208

Item No.:AE-2102

System Performance Curve



Design Angle= 11.0
Est. API Angle= 13.8
Maximum Angle= 18.5

56% Pressure Margin
25% Volume Margin

Class:	10000	Blade Type:	SC	Design Conditions		
Series:	24	Blade Tip:	VT	Temperature:	69 Deg. C	Static Pr.: 142.13 Pa
Diameter:	1450.00 mm	Adjustment:	AUTO	Elevation:	0 meters	Power Req'd: 3.58 kW
RPM:	675	Blades:	3	Density Ratio:	0.858	Design Angle: 11.0 deg
				Air Volume:	13.55 m3/s	Approx. weight.:168 lbs (76 kgs)

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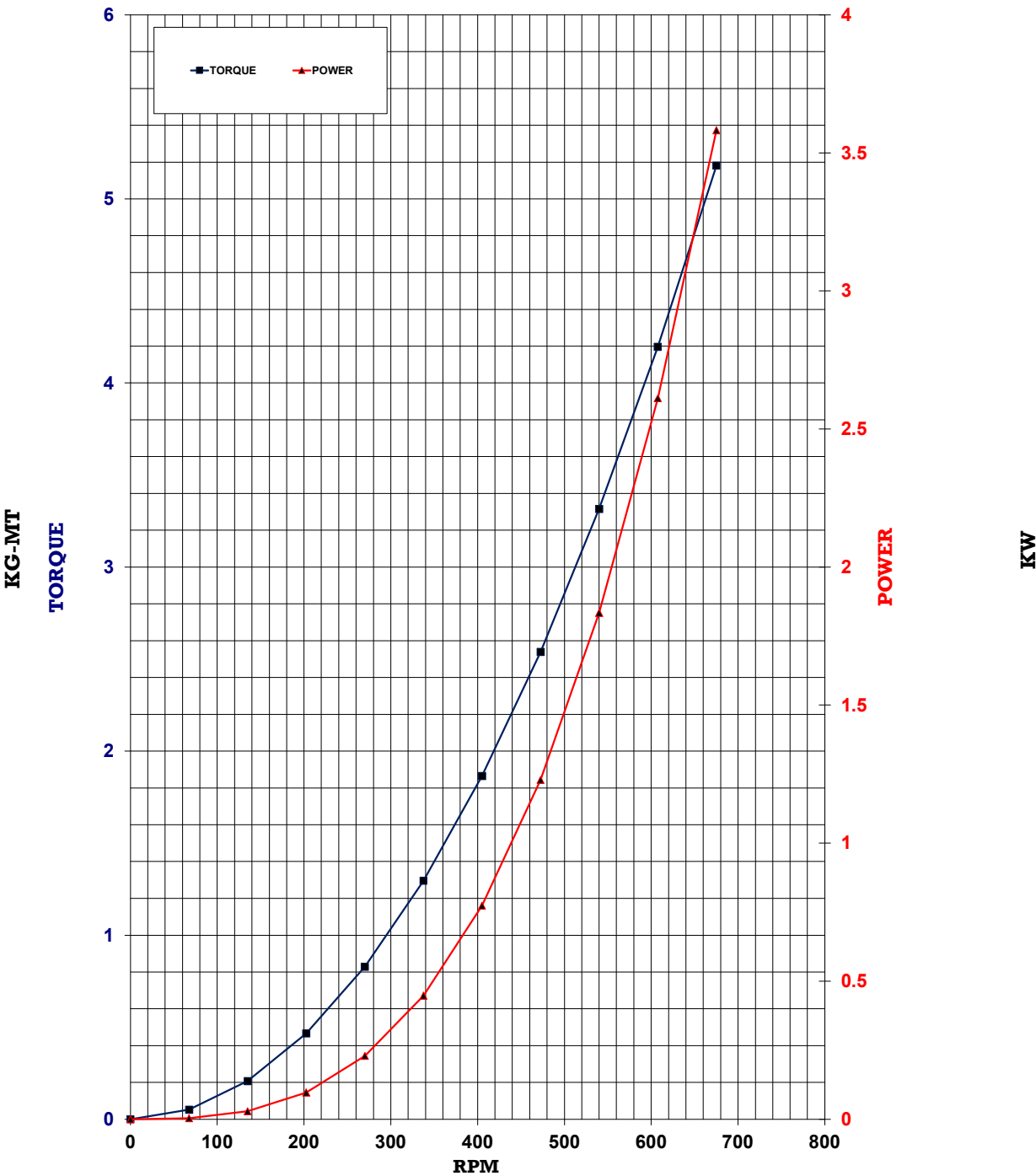
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Fax: (660) 376-2909

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.:	142.13 Pa
Series:	24	Blade Tip:	VT	Elevation:	0 meters	Power Req'd:	3.58 kW
Diameter:	1450.00 mm	No. Blades:	3	Density Ratio:	0.858	Design Angle:	11.0 deg
RPM:	675	Rotation:	RH	Air Volume:	13.55 m3/s	Approx. weight:	168 lbs (76 kgs)

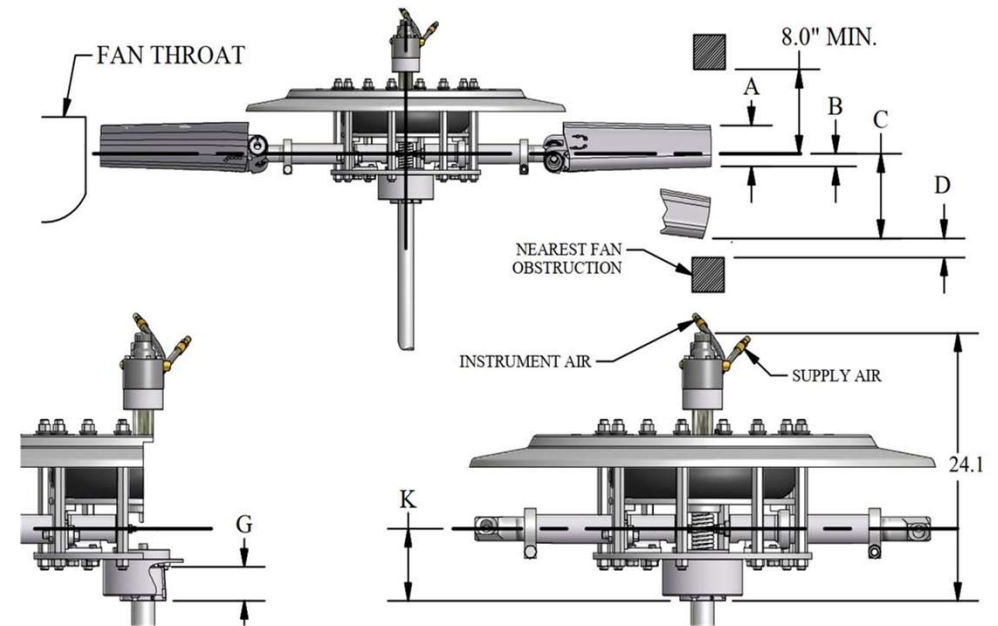
Ref No.:17208

Item No.:AE-2102

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

Class 10000
Series 24
Diameter (Ft) 4.76
Blade Chord SC
Type AUTO
Rotation RH
Bushing Type T
RPM 675
Blade Load 70.5%
Design Angle 11.0
Blade Tip VT

Inches	MM	
5.6	142	A= Tip profile height at specified design angle (Path Width)
2.9	73	B=Running droop at specifed RPM and Blade Load (C/L to bottom of blade)
3.1	79	C= Maximum droop position of blades (C/L to bottom of blade)
2.0	51	D= Minimum recommended obstacle clearance on air inlet side
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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 3-Blade Fan

