

PROPELLER DIMENSIONAL INSPECTION REPORT

TYPE OF INSPECTION: PREREPAIR [] FINAL - POST REPAIR [] FINAL - NEW MANUFACTURE []

IDENTIFICATION DATA (STAMPED ON HUB/PALM)

SERIAL NO.	SHIP CLASS	STOCK NO.
DRAWING NO.		DRAWING REVISION: ____ HUB/PALM ____ DWG
MFG BY	WEIGHT	
MATERIAL	NO. OF BLADES	
MONOBLOC [] CPP []		RH [] LH []
PORT [] STBD [] INBD [] OUTBD [] CENTER []		

STRESS RELIEF AND/OR MODIFICATION DATA AND DATE *(If any)*

INSPECTION DATA

BLADE GAGE SERIAL NO.	BLADE GAGE STOCK NO.
PLUG GAGE SERIAL NO.	PLUG GAGE STOCK NO.

INSPECTION

PRINTED NAME AND TITLE OF QUALIFIED INSPECTOR		TELEPHONE NUMBER
SIGNATURE OF QUALIFIED INSPECTOR	DATE	INSPECTING ACTIVITY
REVIEWED BY (SEE NOTE 3)		DATE

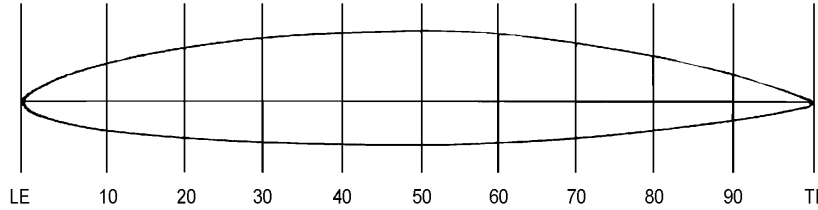
INSTRUCTIONS

1. Propellers are to be inspected and measured in accordance with the applicable propeller drawing and gage drawing. Refer to NAVSEA S9245-AR-TSM-010/PROP for additional information.
2. Fill out forms completely and identify (circle) all out of tolerance measurements.
3. Government verification in contractor facility. Independent reviewer in government facility. Signature must be on all distribution copies.

DISTRIBUTION:

One copy to NSWCCD-SSES 9323
 One copy to NAVICP 05824
 One copy to Contracting Officer
 One copy to file
 Other:

CYLINDRICAL SECTION CONTOUR MEASUREMENT



NOTES:

1. INDICATE LOCATION OF GAGE CONTACT POINTS AT EACH CYLINDRICAL SECTION WITH AN *.
2. INDICATE IF RATE OF CHANGE OF CLEARANCES AT EACH CYLINDRICAL SECTION IS SAT OR UNSAT.
3. INDICATE LOCATION OF UNSATISFACTORY RATE OF CHANGE WITH A ▲.
4. CLEARANCES SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
5. CLEARANCE TOLERANCE IS _____ INCHES.
6. RATE OF CHANGE OF CLEARANCE TOLERANCE IS _____ INCH/INCH.

PRESSURE FACE CYLINDRICAL GAGE CLEARANCE

SECTION RADIUS	OFFSET STATIONS (% WIDTH)									MAX	MAX LOC (% WIDTH)	RATE OF CHANGE	
	10	20	30	40	50	60	70	80	90			SAT	UNSAT

SUCTION FACE CYLINDRICAL GAGE CLEARANCE

SECTION RADIUS	OFFSET STATIONS (% WIDTH)									MAX	MAX LOC (% WIDTH)	RATE OF CHANGE	
	10	20	30	40	50	60	70	80	90			SAT	UNSAT

PREPARED BY: _____

DATE: _____

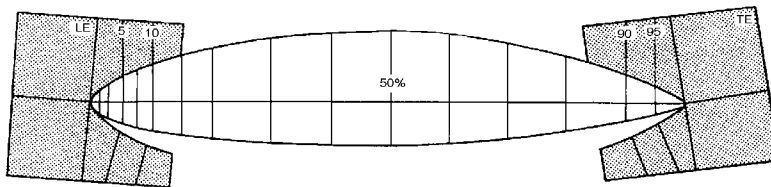
CHECKED BY: _____

BLADE NO.: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

EDGE CONTOUR MEASUREMENT



NOTES:

1. INDICATE LOCATION OF GAGE CONTACT POINTS AT EACH CYLINDRICAL SECTION WITH AN *.
2. CLEARANCES SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
3. CLEARANCE TOLERANCE IS _____ INCHES.

PRESSURE FACE EDGE GAGE CLEARANCE

SECTION RADIUS	LEADING EDGE GAGE						TRAILING EDGE GAGE					
	STAND OFF	0%	5%	10%	MAX	MAX LOC (% WIDTH)	90%	95%	100%	STAND OFF	MAX	MAX LOC (% WIDTH)

SUCTION FACE EDGE GAGE CLEARANCE

SECTION RADIUS	LEADING EDGE GAGE						TRAILING EDGE GAGE					
	STAND OFF	0%	5%	10%	MAX	MAX LOC (% WIDTH)	90%	95%	100%	STAND OFF	MAX	MAX LOC (% WIDTH)

PREPARED BY: _____
 CHECKED BY: _____
 PROPELLER SERIAL NO.: _____

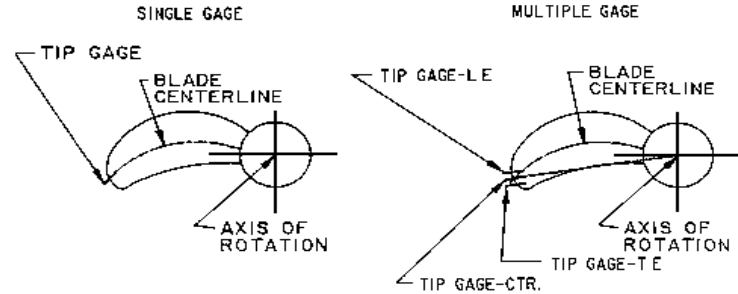
DATE: _____
 BLADE NO.: _____
 PAGE ____ OF ____

NAVSEA 924514 (8/99)

TIP CONTOUR MEASUREMENT

NOTES:

1. INDICATE LOCATION OF GAGE CONTACT POINTS WITH AN *.
2. CLEARANCE SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
3. CLEARANCE TOLERANCE IS _____ INCHES.



TIP GAGE CLEARANCE

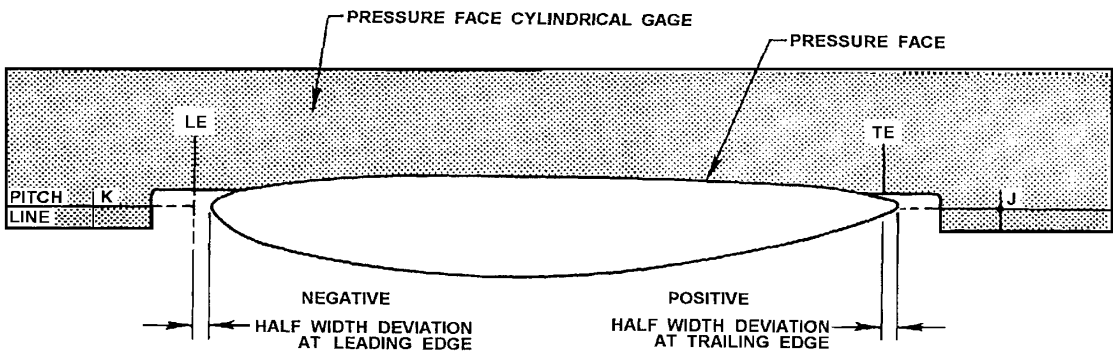
BLADE #	BLADE FACE	LEADING EDGE GAGE						CENTER GAGE						TRAILING EDGE GAGE					
		STAND OFF	TIP	MID GAGE	GAGE OPEN	MAX	MAX LOC (% RADIUS)	STAND OFF	TIP	MID GAGE	GAGE OPEN	MAX	MAX LOC (% RADIUS)	STAND OFF	TIP	MID GAGE	GAGE OPEN	MAX	MAX LOC (% RADIUS)
1	P																		
	S																		
2	P																		
	S																		
3	P																		
	S																		
4	P																		
	S																		
5	P																		
	S																		
6	P																		
	S																		
7	P																		
	S																		

PREPARED BY: _____
 CHECKED BY: _____
 PROPELLER SERIAL NO.: _____

DATE: _____
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(FORM 4 OF 37)

BLADE WIDTH DEVIATION MEASUREMENT



NOTES:

1. MEASURE AND RECORD BLADE HALF WIDTH DEVIATIONS TO 0.01 INCH RESOLUTION.
2. * INDICATES TOLERANCE FOR NEW MANUFACTURE ONLY.

SECTION RADIUS	LE HALF WIDTH DEVIATION		TE HALF WIDTH DEVIATION		TOTAL WIDTH DEV.	TOLERANCE		
	MEAS	DIFF BETWEEN SECTIONS	MEAS	DIFF BETWEEN SECTIONS	MEAS (LE + TE)	* HALF WIDTH	* BETWEEN SECTIONS	TOTAL

PREPARED BY: _____
 CHECKED BY: _____
 PROPELLER SERIAL NO.: _____

DATE: _____
 BLADE NO.: _____
 PAGE ____ OF ____

THICKNESS MEASUREMENT

RADIUS	OFFSET STATION (% WIDTH)									TOL.
	10	20	30	40	50	60	70	80	90	
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									
	MEAS.									
	DES.									
	DEV.									

NOTE:

1. THICKNESS SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.

PREPARED BY: _____

DATE: _____

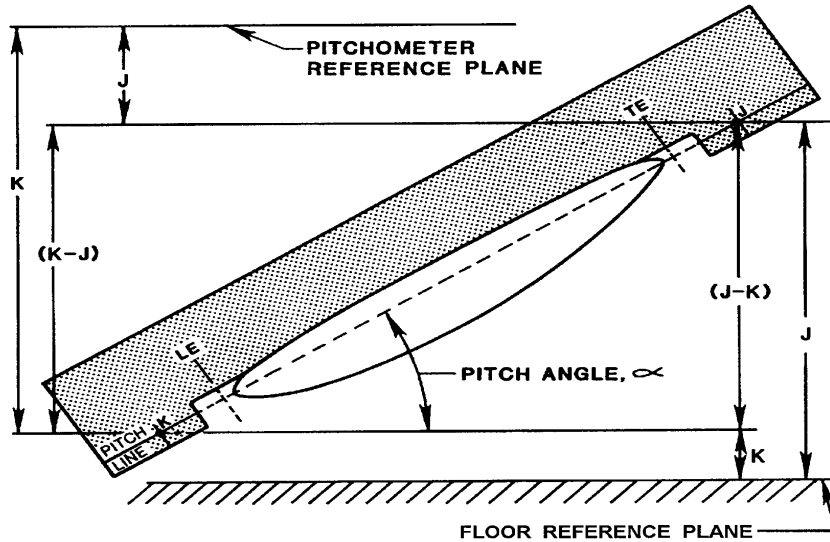
CHECKED BY: _____

BLADE NO.: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

PITCH MEASUREMENT



NOTES:

1. SECTION % PITCH DEVIATION TOLERANCE IS _____.
2. BLADE AVERAGE % PITCH DEVIATION TOLERANCE IS _____.
3. ADJACENT SECTION PITCH TOLERANCE IS _____.
4. THIS VALUE IS ALSO USED TO CALCULATE SKEW.
5. THESE VALUES CAN BE OBTAINED FROM THE GAGE DRAWING.
6. PITCH SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.

SECTION RADIUS	MEASURED			DESIGN S (SEE NOTE 5)	DESIGN ΔS (SEE NOTE 5)	% PITCH DEVIATION $\frac{S_{MEAS} - S_{DESIGN}}{\Delta S_{DESIGN}}$	VARIATION BETWEEN ADJACENT SECTIONS
	J	K	$S_{MEAS} = K - J $ (SEE NOTE 4)				
AVERAGE							

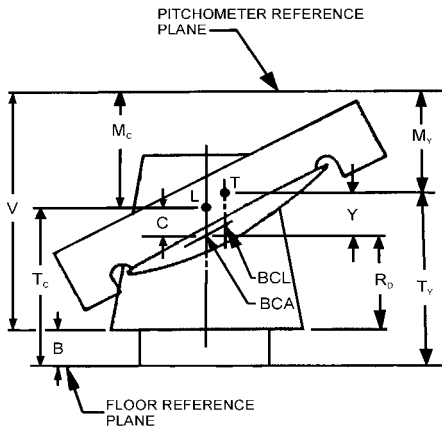
PREPARED BY: _____
 CHECKED BY: _____
 PROPELLER SERIAL NO.: _____

DATE: _____
 BLADE NO.: _____
 PAGE ____ OF ____

RAKE MEASUREMENT

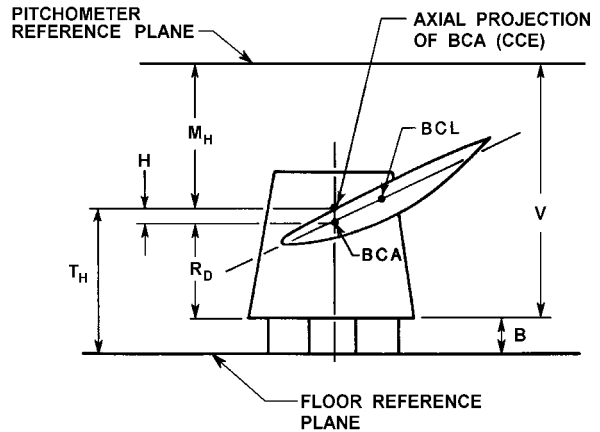
INSTRUCTIONS:

1. IDENTIFY REFERENCE PLANE USED; [] PITCHOMETER [] FLOOR REFERENCE PLANE.
2. DISTANCE FROM THE REFERENCE PLANE TO FORWARD FACE OF PROPELLER HUB (V or B) _____.
3. CHOOSE THE APPROPRIATE SKETCH AND RECORD RADII USED FOR THE SKETCH.
4. RECORD FORMULA USED FOR CALCULATING R_D FROM NAVSEA S9245-AR-TSM-010/PROP.
5. DISTANCE FROM FWD FACE OF HUB TO PCA _____.



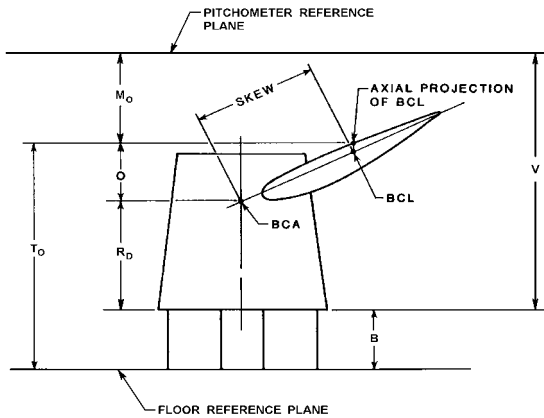
RADII FROM _____ R TO _____ R

FORMULA USED (SEE NOTE 4) _____



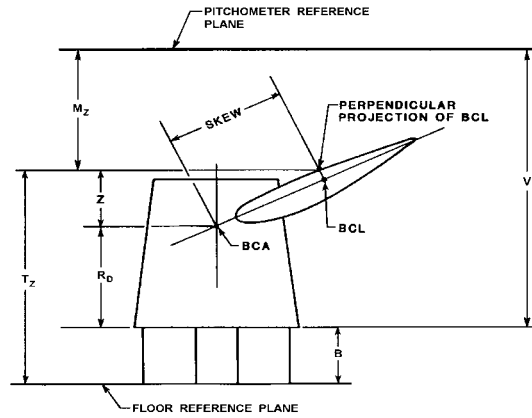
RADII FROM _____ R TO _____ R

FORMULA USED (SEE NOTE 4) _____



RADII FROM _____ R TO _____ R

FORMULA USED (SEE NOTE 4) _____



RADII FROM _____ R TO _____ R

FORMULA USED (SEE NOTE 4) _____

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

RAKE MEASUREMENT

INSTRUCTIONS:

1. FOR NEW MANUFACTURE PROPELLERS, COMPLETE ALL CALCULATIONS.
2. FOR REPAIR PROPELLERS, RECORD THE MEASURED VALUE FOR ALL RADII.
3. UTILIZE SKETCHES AND FORMULAS FROM NAVSEA S9245-AR-TSM-010/PROP.
4. THIS TABLE PROVIDES CALCULATED RAKE VALUES USED FOR NEW MANUFACTURE TRACK CALCULATIONS.
5. RAKE SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
6. $RAKE_{(ACT)} = R_D - (\text{FWD Face to PCA})$

RADIUS	RADIUS INCHES (x)	(RADIUS) ² (x ²)	MEASURED VALUE (T) (M)	DIST FROM MEAS POINT TO BCA (C) (H) (O) (Z)	R _D	RAKE _(ACT) (Note 6)	RAKE _(DESIGN)	RAKE _(ACT) - RAKE _(DESIGN) (y)	(xy)
Σx =		=Σx ²				Σy=		=Σxy	

$(\Sigma x)^2 =$

$$a = \frac{n \Sigma xy - (\Sigma x)(\Sigma y)}{n \Sigma x^2 - (\Sigma x)^2}$$

$$b = \frac{(\Sigma y)(\Sigma x^2) - (\Sigma xy)(\Sigma x)}{n \Sigma x^2 - (\Sigma x)^2}$$

WHERE n IS THE NUMBER OF RADII USED FOR CALCULATION (USUALLY 8).

a =

b =

RAKE						
SECTION RADIUS	MEAS. BCA DEVIATION (y)	CALC. BCA DEVIATION (ax+b)	BCA DEVIATION (y - (ax+b))	DIFFERENCE BETWEEN SECTIONS	TOLERANCE	
					BCA DEVIATION	BETWEEN SECTIONS

RAKE (SEE NOTE 4)		
SECTION RADIUS	CALC. BCA DEVIATION (ax + b)	TOLERANCE
0		
0.95		

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

BLADE NO.: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

TRACK MEASUREMENT

RAKE MEASUREMENT DATA		
BLADE NUMBER	CALCULATED DEVIATION AT PROPELLER CENTER LINE (AXIS OF ROTATION) (SEE NOTES 1 AND 2)	CALCULATED DEVIATION OR MEASURED VALUE AT 0.95 RADIUS (SEE NOTE 3)
1		
2		
3		
4		
5		
6		
7		

TRACK		
	PROPELLER CENTER LINE (SEE NOTE 1)	0.95 RADIUS
MAXIMUM VALUE (FROM TABLE ABOVE)		
MINIMUM VALUE (FROM TABLE ABOVE)		
TRACK (MAX - MIN)		
TOLERANCE		

NOTES:

1. FOR NEW MANUFACTURE ONLY.
2. ACQUIRE DATA FROM RAKE MEASUREMENT SHEET. USE CALCULATED DEVIATION VALUE.
3. ACQUIRE DATA FROM RAKE MEASUREMENT SHEET. FOR NEW MANUFACTURE, USE CALCULATED DEVIATION VALUE. FOR REPAIR, USE MEASURED VALUE.

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DATE: _____

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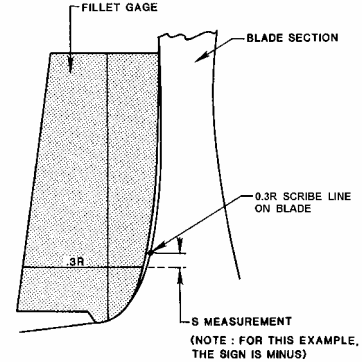
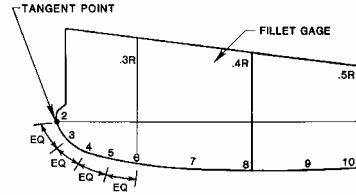
PROPELLER SERIAL NO.: _____

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HUB AND FILLET CONTOUR MEASUREMENT

NOTES:

1. FOR A NORMAL FILLET GAGE, THE INSPECTION STATIONS SHALL BE AS SHOWN ON THE ADJACENT SKETCH. STATION 1 (NOT SHOWN) IS ON THE HUB GAGE.
2. FOR A RADIAL FILLET GAGE, THE INSPECTION STATIONS SHALL BE TEN EQUALLY SPACED LOCATIONS. STATION 1 IS THE FIRST STATION AT THE HUB AND STATION 10 IS THE LAST STATION TOWARD .5R.
3. INDICATE LOCATION OF GAGE CONTACT WITH AN *.
4. INDICATE IF RATE OF CHANGE OF CLEARANCES AT EACH GAGE IS SAT/UNSAT.
5. INDICATE LOCATION OF UNSATISFACTORY RATE OF CHANGE WITH A ▲.
6. HUB GAGE CLEARANCE TOLERANCE IS _____ INCHES.
7. BLADE GAGE CLEARANCE TOLERANCE IS _____ INCHES.
8. RATE OF CHANGE CLEARANCE TOLERANCE IS _____ INCH/INCH.
9. GAGE RADIAL DISPLACEMENT ("S" MEASUREMENT) TOLERANCE IS _____ INCHES.
10. CLEARANCE SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
11. GAGE RADIAL DISPLACEMENT ("S" MEASUREMENT) SHALL BE MEASURED AND RECORDED TO 0.01 INCH RESOLUTION.



TYPE OF GAGE

NORMAL	RADIAL
--------	--------

PRESSURE FACE HUB AND FILLET GAGE CLEARANCE

GAGE	HUB GAGE STATIONS										BLADE		RATE OF CHANGE		RADIAL DISP. "S"
	1	2	3	4	5	6	7	8	9	10	MAX	LOC	SAT	UNSAT	
G (TE)															
F															
E															
D															
C															
B															
A (LE)															

SUCTION FACE HUB AND FILLET GAGE CLEARANCE

GAGE	HUB GAGE STATIONS										BLADE		RATE OF CHANGE		RADIAL DISP. "S"
	1	2	3	4	5	6	7	8	9	10	MAX	LOC	SAT	UNSAT	
A (LE)															
B															
C															
D															
E															
F															
G (TE)															

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DATE: _____

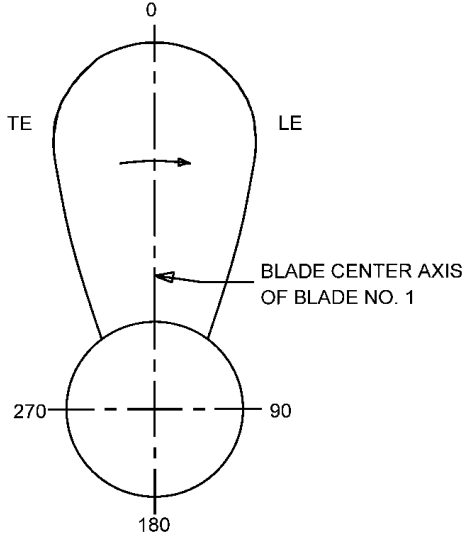
CHECKED BY: _____

BLADE NO.: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

PROPELLER UNBALANCE



NOTES:

1. ALL ANGLES SHALL BE MEASURED RELATIVE TO THE BCA OF BLADE NO. 1 AS SHOWN IN THE SKETCH. BLADE NUMBER 2 IS TOWARD 270 DEGREES.
2. THE MANDREL RUNOUT TOLERANCE SHALL BE CALCULATED USING THE FOLLOWING FORMULA OR 0.001" WHICHEVER IS GREATER.

$$\text{TOLERANCE} = U_T / ((73)(W))$$

DRAWING BALANCE TOLERANCE

$U_T =$ _____ (OZ-IN)

PROPELLER WEIGHT

$W =$ _____ (LBS)

CONCENTRIC RING ECCENTRICITY

FWD _____ (IN)

AFT _____ (IN)

CPP BLADE SET WEIGHT DATA (LBS.)

BLADE NO.	HEAT NO.	BLADE WT.	PALM WT.	TOTAL WT.

CONCENTRIC RING, MANDREL, OR DUMMY HUB INSPECTION

RUNOUT (TIR)		UNBALANCE (OZ-IN)	
TIR	TOLERANCE (SEE NOTE 2)	MEASURED UNBALANCE	TOLERANCE (0.005U _T)
FWD LAND =			
AFT LAND =			

MEASURED COMPONENT UNBALANCE

UNBALANCE OPERATIONS	MEASURED ANGLE OF UNBALANCE	MEASURED UNBALANCE (OZ - IN)	UNBALANCE TOLERANCE (0.75U _T)
OPERATION #1	$\gamma_1 =$ _____	$U_1 =$ _____	
OPERATION #2	$\gamma_2 =$ _____	$U_2 =$ _____	

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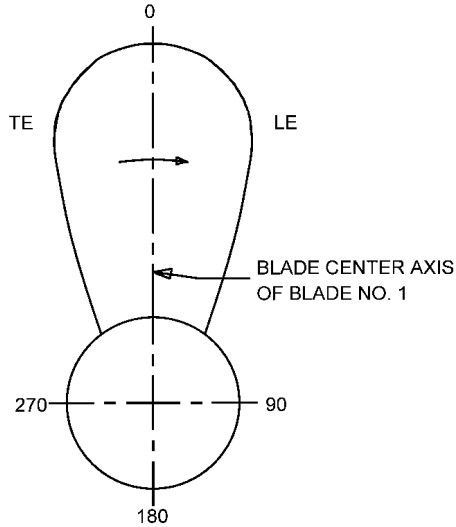
DATE: _____

CHECKED BY: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

PROPELLER UNBALANCE OPERATION SENSITIVITY INSPECTION



NOTES:

1. ALL ANGLES SHALL BE MEASURED RELATIVE TO THE BCA OF BLADE NO. 1 AS SHOWN IN THE SKETCH. BLADE NUMBER 2 IS TOWARD 270 DEGREES.
2. THE SENSITIVITY WEIGHT USED TO CHECK BALANCE MACHINE ACCURACY CAN BE CALCULATED USING THE FOLLOWING FORMULA.

$$\text{SENSITIVITY WEIGHT(OZ)} = 0.1(U_T) / r$$

r = RADIAL LOCATION (RADIUS) OF THE WEIGHT (INCHES)

3. THE DIFFERENCE BETWEEN THE ANGLE OF UNBALANCE FOR THE SENSITIVITY INSPECTION AND THE SECOND BALANCE OPERATION SHALL NOT EXCEED 20 DEGREES.

4. THE EXPECTED SENSITIVITY INSPECTION UNBALANCE CAN BE CALCULATED USING THE FOLLOWING FORMULA.

$$E = U_2 + 0.1(U_T)$$

5. THE DIFFERENCE BETWEEN THE UNBALANCE MAGNITUDE FOR THE SENSITIVITY INSPECTION AND THE EXPECTED UNBALANCE MAGNITUDE SHALL NOT EXCEED 0.05U_T.

SENSITIVITY WEIGHT(S)		
SENSITIVITY WEIGHT (OZ.)	LOCATION OF WEIGHT	
	RADIAL LOCATION (INCHES)	ANGULAR LOCATION (DEGREES)

SENSITIVITY INSPECTION UNBALANCE	
ANGLE OF UNBALANCE	UNBALANCE (OZ-IN)
θ =	S =

SENSITIVITY INSPECTION RESULTS		
EXPECTED ANGLE OF UNBALANCE	DIFFERENCE (SEE NOTE 3)	TOLERANCE
γ ₂ =	γ ₂ - θ =	20 DEGREES
EXPECTED UNBALANCE (SEE NOTE 4)	DIFFERENCE (SEE NOTE 5)	TOLERANCE (0.05U _T)
E =	E - S =	

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

NOTE:

1. PROPELLER RADIUS SHALL BE MEASURED AND RECORDED TO 0.01 INCH RESOLUTION.

PROPELLER RADIUS				
BLADE NO.	RADIUS			
	MEASURED	DESIGN	DEVIATION (MEAS - DES)	TOLERANCE
1				
2				
3				
4				
5				
6				
7				

NOTE:

1. ANGULAR SPACING OF BLADE CENTER AXIS SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.

ANGULAR SPACING OF BLADE CENTER AXIS				
BLADE NO.	ANGLE BETWEEN BLADES			
	MEASURED	DESIGN	DEVIATION (MEAS - DES)	TOLERANCE
1 & 2				
2 & 3				
3 & ____				
4 & ____				
5 & ____				
6 & ____				
7 & 1				

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DATE: _____

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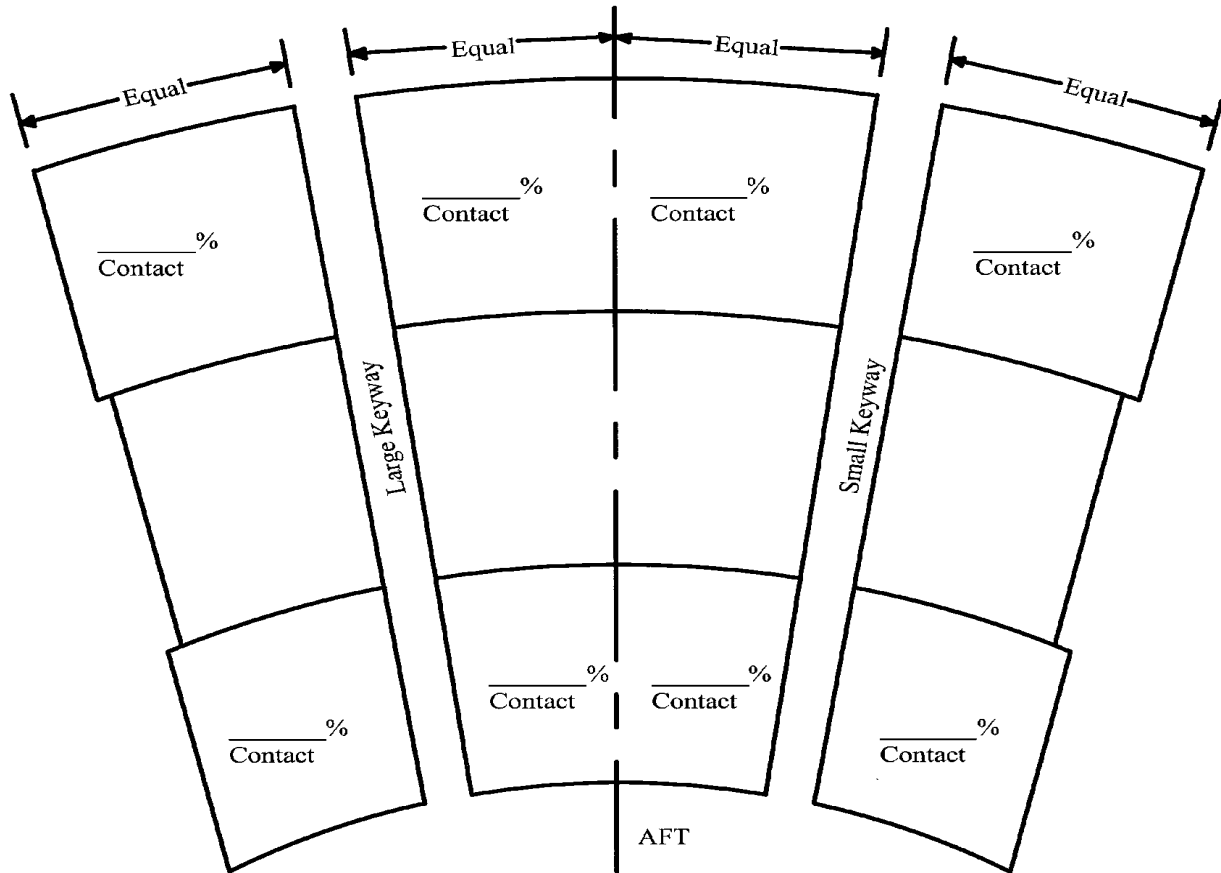
PROPELLER SERIAL NO.: _____

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HUB BORE CONTACT

NOTE:

1. RECORD THE CONTACT IMPRESSION (%) FOR EACH FORWARD AND AFT QUADRANT IN THE SKETCH ABOVE.



HUB BORE CONTACT		
PERCENT CONTACT	MEASURED	REQUIRED
TOTAL AVERAGE		
UNIFORM DISTRIBUTION		
PERCENT CONTACT	MEASURED	REQUIRED (MEAS. AVG - 15%)
LOWEST READING		

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

HUB BORE MEASUREMENT

NOTE:

1. PROPELLER ADVANCE COEFFICIENTS ARE FOR A ONE INCH PER FOOT NI-AL-BRZ TAPER. FOR OTHER NI-AL-BRZ TAPERS DIVIDE THE COEFFICIENT BY THE AMOUNT OF TAPER (IN INCHES) PER FOOT.

	MEASURED	DESIGN	DEVIATION (MEAS - DES)	TOLERANCE
LENGTH OF HUB				

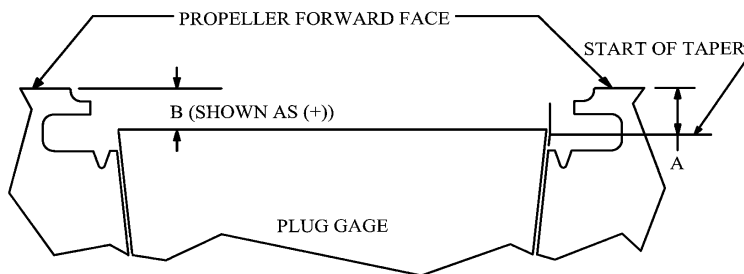
PROPELLER ADVANCE COEFFICIENTS (SEE NOTE 1)		
AMBIENT TEMPERATURE		K
(C)	(F)	
-6.7	20	0.00756
-1.1	30	0.00723
4.4	40	0.00691
10	50	0.00658
15.6	60	0.00625
21.1	70	0.00593
26.7	80	0.00561
32.2	90	0.00527

AMBIENT TEMP =	
----------------	--

SHAFT DIA =	
-------------	--

PROPELLER ADVANCE = $K * \text{DIA (in)}$	
---	--

RECORD PLUG GAGE LABEL PLATE DATA EXACTLY AS STAMPED	
--	--



DEPTH OF INSERTION CALCULATION

		WITHOUT KEYS	WITH KEYS
A	DISTANCE FROM THE FORWARD FACE OF HUB TO THE START OF THE SHAFT TAPER (TAKEN FROM PROPELLER DRAWING)		
B	MEASURED DEPTH OF INSERTION. DISTANCE FROM THE FORWARD FACE OF GAGE TO FORWARD FACE OF HUB. RECORD AS (-), IF GAGE EXTENDS BEYOND HUB.		
C	PROPELLER ADVANCE (CALCULATED ABOVE)		
D	ACTUAL DISTANCE BETWEEN THE FORWARD FACE OF THE GAGE AND THE START OF THE SHAFT TAPER (CALCULATED = $A - B - C$)		
E	DISTANCE FROM THE FORWARD FACE OF THE GAGE TO THE START OF THE SHAFT TAPER AS SHOWN ON THE LABEL PLATE. IF THE LABEL PLATE TOLERANCE IS (-), RECORD AS (-).		
F	DEVIATION (CALCULATED = $D - E$)		
TOLERANCE			

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DATE: _____

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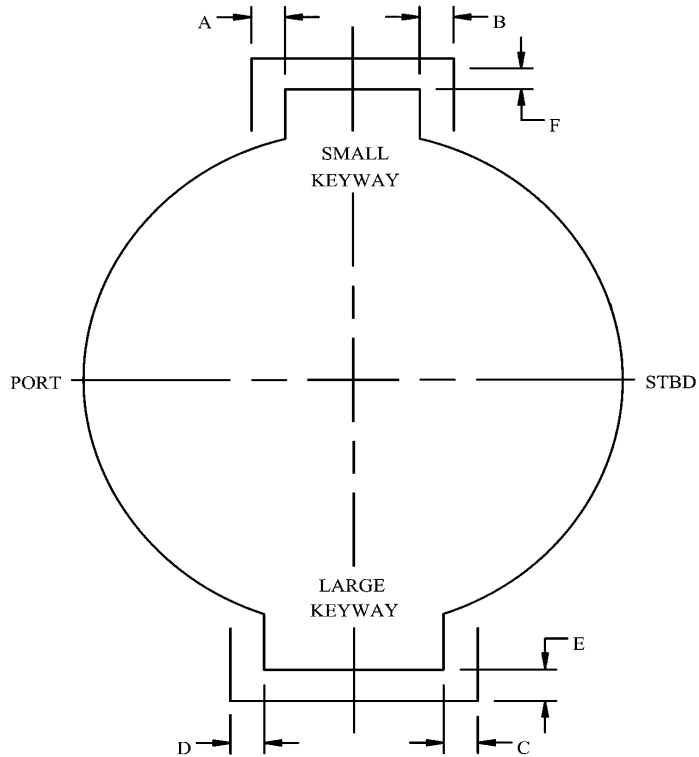
PROPELLER SERIAL NO.: _____

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KEYWAY CLEARANCES

NOTES:

1. MEASURE KEYWAY CLEARANCES AT LEAST 9 INCHES INTO THE PROPELLER BORE.
2. KEYWAY CLEARANCE SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.



	LOCATION	FORWARD END	AFT END	TOLERANCE
SIDE	A			
	B			
	SMALL KEYWAY TOTAL (A+B)			
	C			
	D			
	LARGE KEYWAY TOTAL (C+D)			
TOP	E			
	F			

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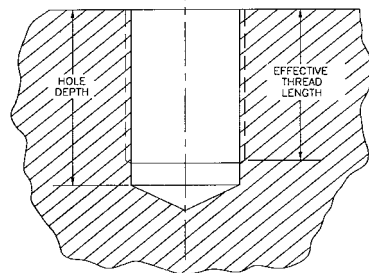
PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

THREADED HOLE INSPECTION

NOTES:

1. STUD HOLES SHALL BE NUMBERED CLOCKWISE FROM THE SMALL KEYWAY LOOKING AT THE FORWARD FACE.
2. HOLE DEPTHS SHALL BE MEASURED AND RECORDED TO 0.01 INCH RESOLUTION. DEGREES SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.
3. HOLE LOCATION INSPECTIONS ARE REQUIRED FOR NEW MANUFACTURE ONLY.



GLAND STUD HOLES

HOLE (SEE NOTE 1)	ATTRIBUTE								
	HOLE DEPTH	THREAD DEPTH	DEGREES FROM SMALL KEYWAY (SEE NOTE 3)		GO GAGE SIZE		NO-GO GAGE SIZE		
			MEASURED	DESIGN	SAT	UNSAT	SAT	UNSAT	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
DESIGN			TOLERANCE				MIN	MAX	
TOLERANCE			STUD HOLE CIRCLE DIAMETER (SEE NOTE 3)						
			DESIGN CIRCLE DIAMETER						
			CIRCLE DIAMETER TOLERANCE						

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

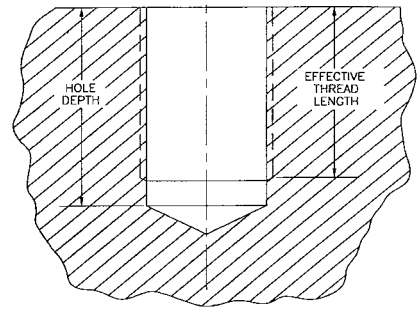
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THREADED HOLE INSPECTION

NOTES:

1. STUD HOLES SHALL BE NUMBERED CLOCKWISE FROM THE SMALL KEYWAY LOOKING AT THE AFT FACE.
2. HOLE DEPTHS SHALL BE MEASURED AND RECORDED TO 0.01 INCH RESOLUTION. DEGREES SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.
3. HOLE LOCATION INSPECTIONS ARE REQUIRED FOR NEW MANUFACTURE ONLY.



PROPELLER CAP STUD HOLES

HOLE <small>(SEE NOTE 1)</small>	ATTRIBUTE							
	HOLE DEPTH	THREAD DEPTH	DEGREES FROM SMALL KEYWAY <small>(SEE NOTE 3)</small>		GO GAGE SIZE		NO-GO GAGE SIZE	
			MEASURED	DESIGN	SAT	UNSAT	SAT	UNSAT
	1							
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
DESIGN			TOLERANCE				MIN	MAX
TOLERANCE			STUD HOLE CIRCLE DIAMETER (SEE NOTE 3)					
			DESIGN CIRCLE DIAMETER					
			CIRCLE DIAMETER TOLERANCE					

PREPARED BY: _____

DATE: _____

CHECKED BY: _____

PROPELLER SERIAL NO.: _____

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THREADED HOLE INSPECTION

NOTES:

1. FILL AND VENT HOLES SHALL BE NUMBERED WITH THE #1 HOLE OVER THE SMALL KEYWAY.
2. EYEBOLT HOLES SHALL BE NUMBERED CLOCKWISE FROM THE SMALL KEYWAY LOOKING AT THE APPLICABLE FACE. IF THERE IS MORE THAN ONE SIDE EYEBOLT HOLE, THE #1 HOLE SHALL BE THE FORWARD HOLE.
3. HOLE DEPTHS SHALL BE MEASURED AND RECORDED TO 0.01 INCH RESOLUTION. DEGREES SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.
4. HOLE LOCATION INSPECTIONS ARE REQUIRED FOR NEW MANUFACTURE ONLY.

FILL AND VENT HOLES

HOLE (SEE NOTE 1)	ATTRIBUTE						
	DEGREES TO KEYWAY CENTERLINE (SEE NOTE 4)	THRU HOLE DIAMETER (SEE NOTE 4)	DISTANCE FROM HUB FACE (SEE NOTE 4)			THREAD GAGE SIZE	
			MEASURED	DESIGN	TOLERANCE	SAT	UNSAT
AFT #1							
AFT #2							
FWD #1							
FWD #2							
DESIGN							
TOLERANCE							

HUB FACE EYEBOLT HOLES

HOLE (SEE NOTE 2)	ATTRIBUTE									
	HOLE DEPTH	THREAD DEPTH	DEGREES FROM SMALL KEYWAY (SEE NOTE 4)		HOLE CIRCLE DIAMETER (SEE NOTE 4)		GO GAGE SIZE		NO-GO GAGE SIZE	
			MEASURED	DESIGN	MEASURED	DESIGN	SAT	UNSAT	SAT	UNSAT
FWD #1										
FWD #2										
AFT #1										
AFT #2										
DESIGN			TOLERANCE		TOLERANCE					
TOLERANCE										

SIDE EYEBOLT HOLES

HOLE (SEE NOTE 2)	ATTRIBUTE									
	HOLE DEPTH	THREAD DEPTH	DEGREES FROM SMALL KEYWAY (SEE NOTE 4)		DISTANCE FROM HUB FACE (SEE NOTE 4)		GO GAGE SIZE		NO-GO GAGE SIZE	
			MEASURED	DESIGN	MEASURED	DESIGN	SAT	UNSAT	SAT	UNSAT
SIDE #1										
SIDE #2										
DESIGN			TOLERANCE		TOLERANCE					
TOLERANCE										

PREPARED BY: _____

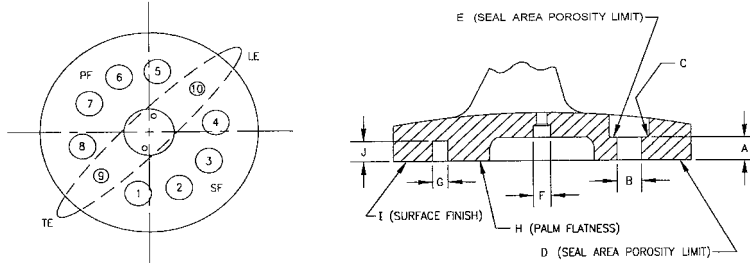
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CPP BLADE PALM ATTRIBUTE MEASUREMENT



NOTES:

1. CPP BLADE PALM ATTRIBUTES SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION, EXCEPT AS SPECIFIED IN NOTE 2.
2. DOWEL PIN HOLES SHALL BE INSPECTED TO 0.0001 INCH RESOLUTION AT TWO PLACES, 90 DEGREES APART, AT: a. 3/4" BELOW TOP OF HOLE; b. 1/4" ABOVE BOTTOM OF HOLE; AND c. MIDWAY BETWEEN a. & b.

HOLE #		ATTRIBUTE				
		A	B	C	E	
					SAT	UNSAT
1						
2						
3						
4						
5						
6						
7						
8						
DESIGN						
TOLERANCE						
HOLE	ATTRIBUTE	MEASURED	DESIGN	DEVIATION (MEAS-DES)	TOLERANCE	
9	G (SEE NOTE 2)	a				
		1				
	2					
	b					
	1					
	2					
	c					
1						
2						
	J					
10	G (SEE NOTE 2)	a				
		1				
	2					
	b					
	1					
	2					
	c					
1						
2						
	J					
ATTRIBUTE		MEASURED	DESIGN	TOLERANCE		
F						
H						
I						
ATTRIBUTE		SAT	UNSAT			
D						

PREPARED BY: _____

DATE: _____

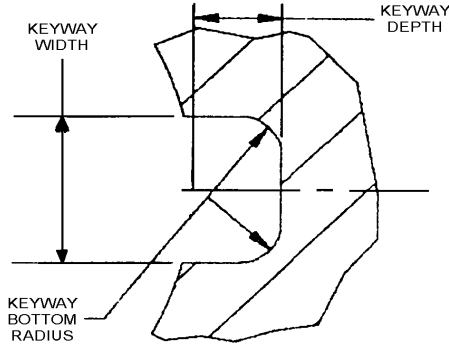
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KEYWAY DIMENSIONS AND LOCATION MEASUREMENT



NOTES:

1. KEYWAY WIDTH AND DEPTH SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION. KEYWAY LOCATION SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.
2. RECORD MEASUREMENTS AT EIGHT EQUALLY SPACED LOCATIONS STARTING AT THE FORWARD END OF THE PROPELLER TAPER AND FINISHING AT THE AFT END OF THE PROPELLER TAPER. IDENTIFY THE POSITION OF THE MEASUREMENT BY RECORDING THE DISTANCE FROM THE FORWARD END OF THE TAPER IN INCHES PARALLEL TO THE PCL.
3. WHEN MEASURING THE KEYWAY LOCATION, MEASURE THE ANGLE FROM THE BLADE CENTER LINE OF BLADE #1 TO THE KEYWAY CENTERLINE.

POSITION <small>(SEE NOTE 2)</small>	ATTRIBUTE							
	LARGE KEYWAY				SMALL KEYWAY			
	WIDTH	DEPTH	BOTTOM RADIUS	DEGREES TO BLADE 1 BCA	WIDTH	DEPTH	BOTTOM RADIUS	DEGREES TO BLADE 1 BCA
FWD END								
AFT END								
DESIGN								
TOLERANCE								

PREPARED BY: _____

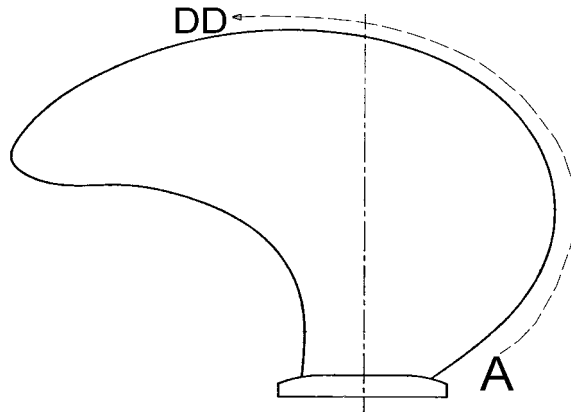
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PROPELLER SERIAL NO.: _____

PAGE ____ OF ____

PRAIRIE AIR COVER PLATE THICKNESS MEASUREMENT



NOTES:

1. PRAIRIE AIR CHANNEL COVER PLATE THICKNESS SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
2. STATIONS SHALL BE LAID OUT AT 6 INCH INTERVALS ALONG THE LENGTH OF THE COVER PLATE. START WITH THE "A" STATION AT THE BEGINNING OF THE COVER PLATE TOWARD THE PALM.

PRAIRIE AIR COVER PLATE THICKNESS

STATION <small>(SEE NOTE 2)</small>	MEASURED	DESIGN	DEVIATION <small>(MEAS - DES)</small>	TOLERANCE	STATION <small>(SEE NOTE 2)</small>	MEASURED	DESIGN	DEVIATION <small>(MEAS - DES)</small>	TOLERANCE
A					P				
B					Q				
C					R				
D					S				
E					T				
F					U				
G					V				
H					W				
I					X				
J					Y				
K					Z				
L					AA				
M					BB				
N					CC				
O					DD				

PREPARED BY: _____

DATE: _____

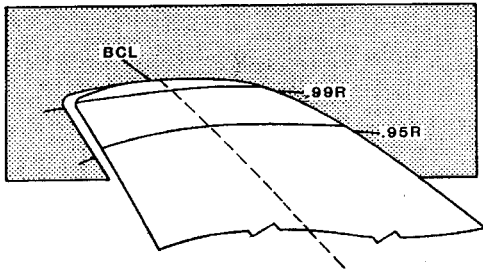
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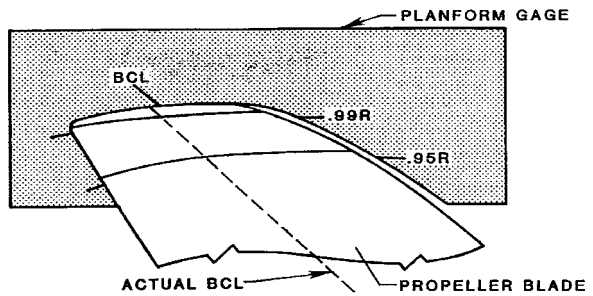
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TIP PROFILE CONTOUR MEASUREMENT



DETERMINATION OF LEADING EDGE CONTOUR AT THE "TIP"



DETERMINATION OF TRAILING EDGE CONTOUR AT THE "TIP"

NOTES:

1. INDICATE LOCATION OF GAGE CONTACT POINTS AT EACH CYLINDRICAL SECTION WITH AN *.
2. CLEARANCES SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
3. CLEARANCE TOLERANCE IS _____.

TIP PROFILE GAGE CLEARANCE

BLADE #	GAGE POSITION								
	LEADING EDGE				CENTERED	TRAILING EDGE			
	.95R	BCL	MAX	MAX LOC (% RADIUS)	BCL	.95R	BCL	MAX	MAX LOC (% RADIUS)
1									
2									
3									
4									
5									
6									
7									

PREPARED BY: _____

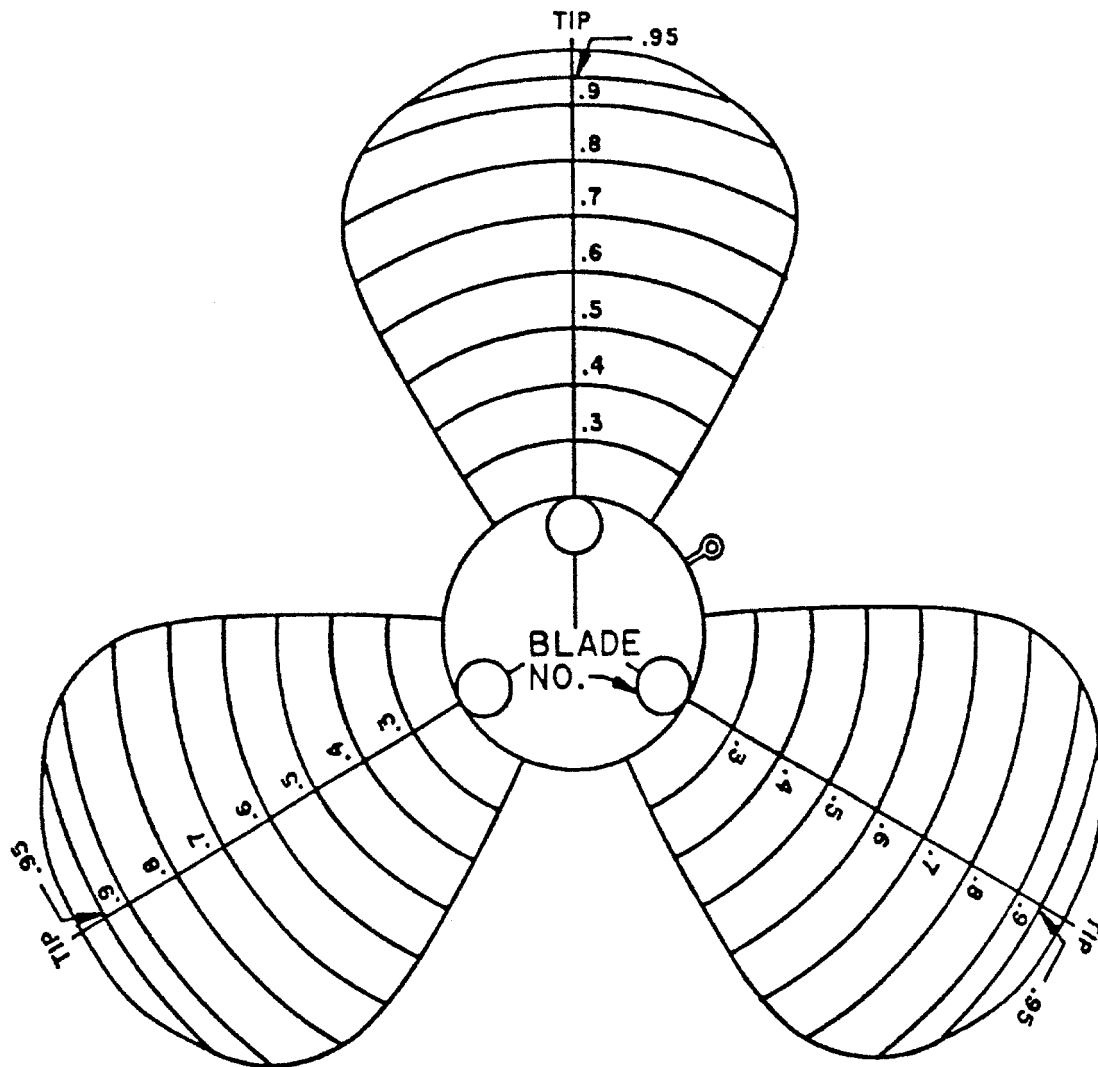
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PROPELLER SERIAL NO.: _____

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ITEM	YES	NO	NA	REMARKS
1. Is the pitchometer calibration current? Record the expiration date in the remarks.				
2. Have the blade gages been visually inspected and are the results documented?				
3. Has the plug gage been visually inspected and are the results documented?				
4. Has the visual technical inspection been accomplished and is the report attached?				
5. Are the size and location of all welds shown on the attached sketches?				
6. Has the fairness of the blade surfaces and blade outline been inspected with a fairing rod?				
7. Are out-of-tolerance fairing rod clearances shown on the attached sketches?				
8. Does the hub maintain 10 psi for 10 minutes with no drop in pneumatic pressure?				
9. Have the accessories been inspected to ensure conformance to the drawing?				
10. Have the accessories been installed on the propeller to ensure proper fit?				
11. Are the lifting eyebolts acceptable and are the eyebolt certification documents attached?				
12. Have the other propeller attributes (as applicable) been inspected and are the results attached?				
13. PRAIRIE Air System				
a. Did the flow test verify proper operation of the PRAIRIE air system?				
b. Is the location of blocked, restricted, or misaligned holes shown on the attached sketches?				
c. Have new or repaired cover plate welds been ultrasonically inspected (UT) and are the results attached?				
Comments:				
PREPARED BY: _____		DATE: _____		
CHECKED BY: _____				
PROPELLER SERIAL NO.: _____		PAGE ____ OF ____		

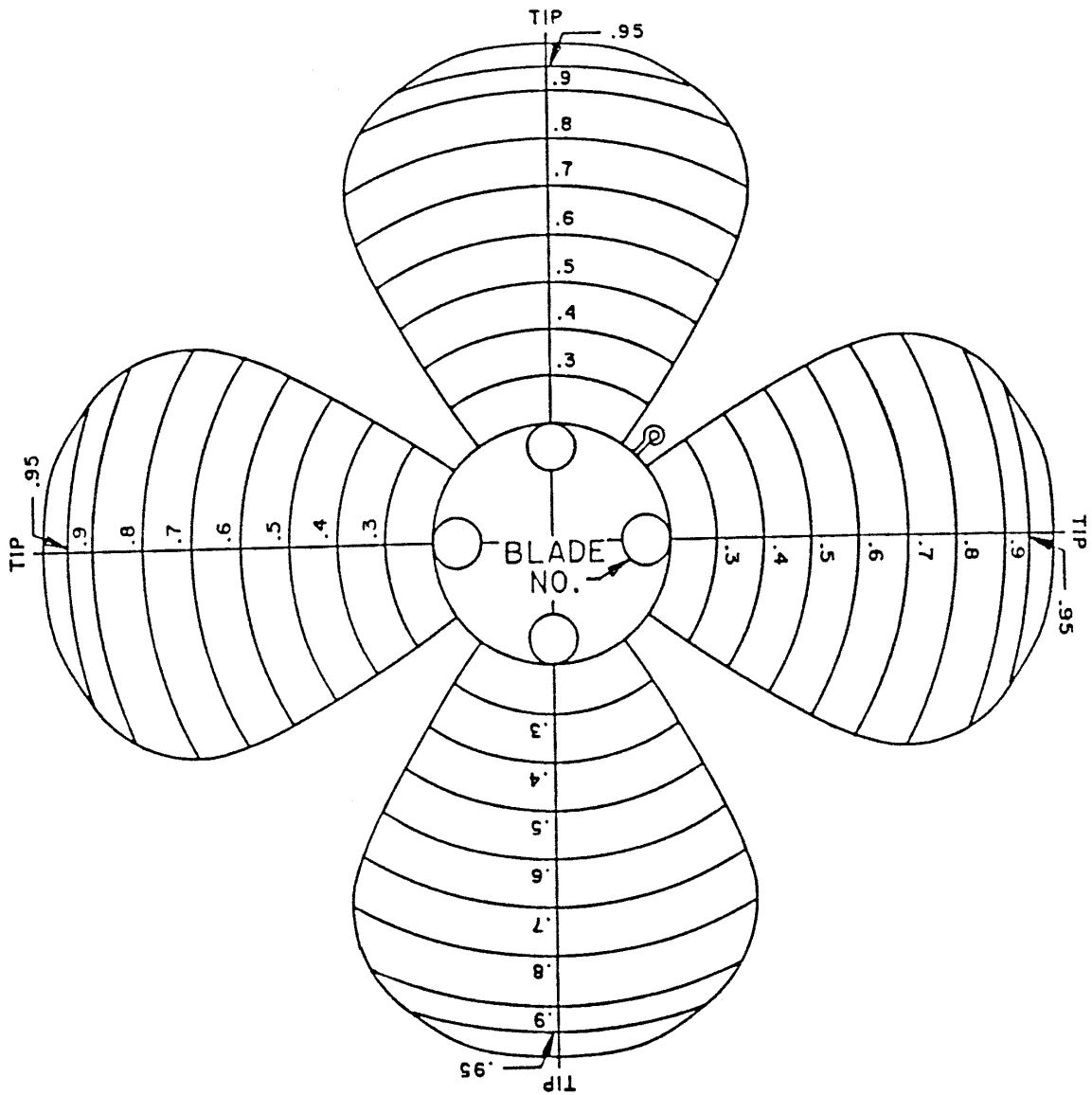


PRESSURE FACE

SUCTION FACE

PROPELLER SERIAL NO.: _____

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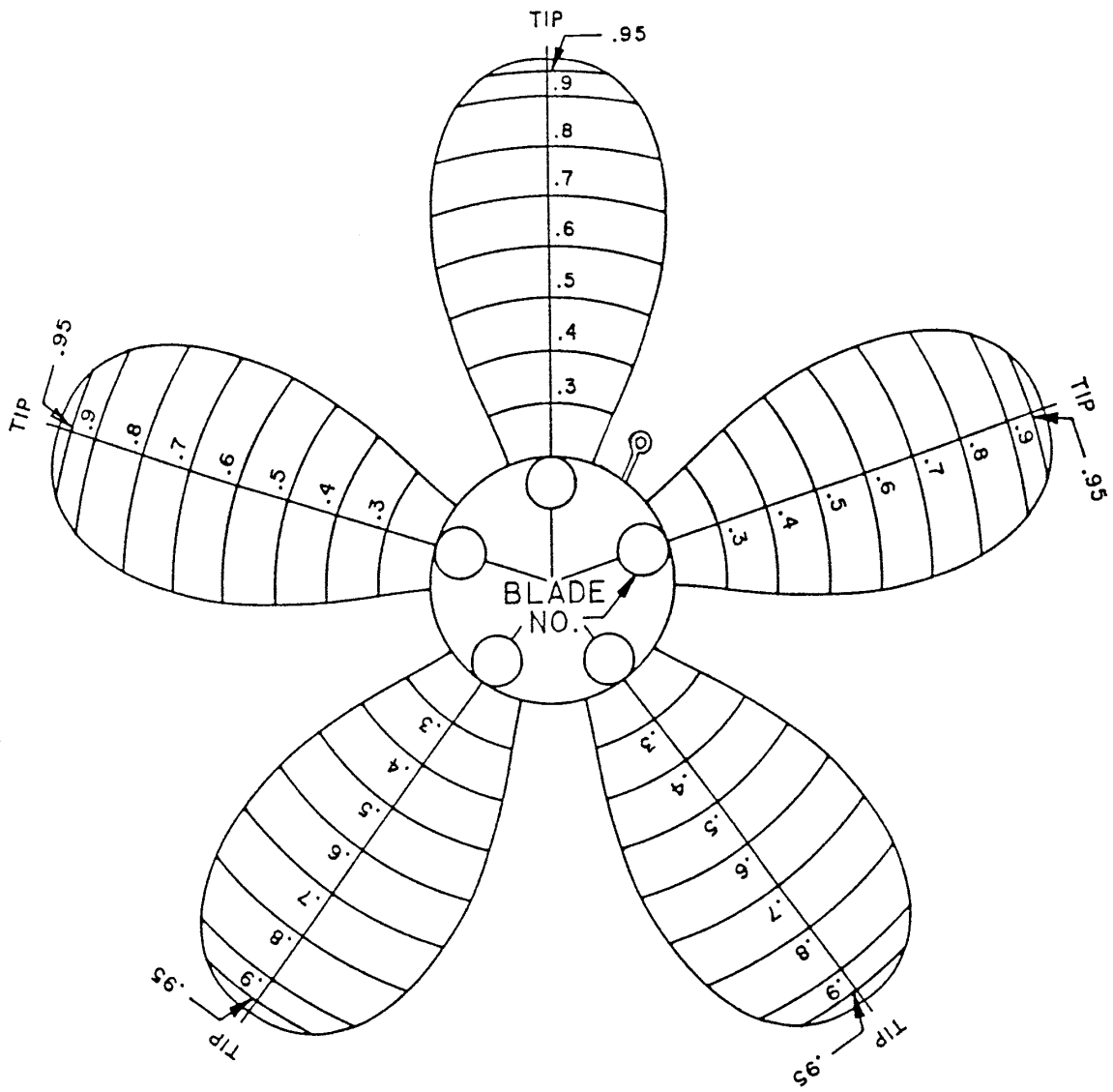


PRESSURE FACE

SUCTION FACE

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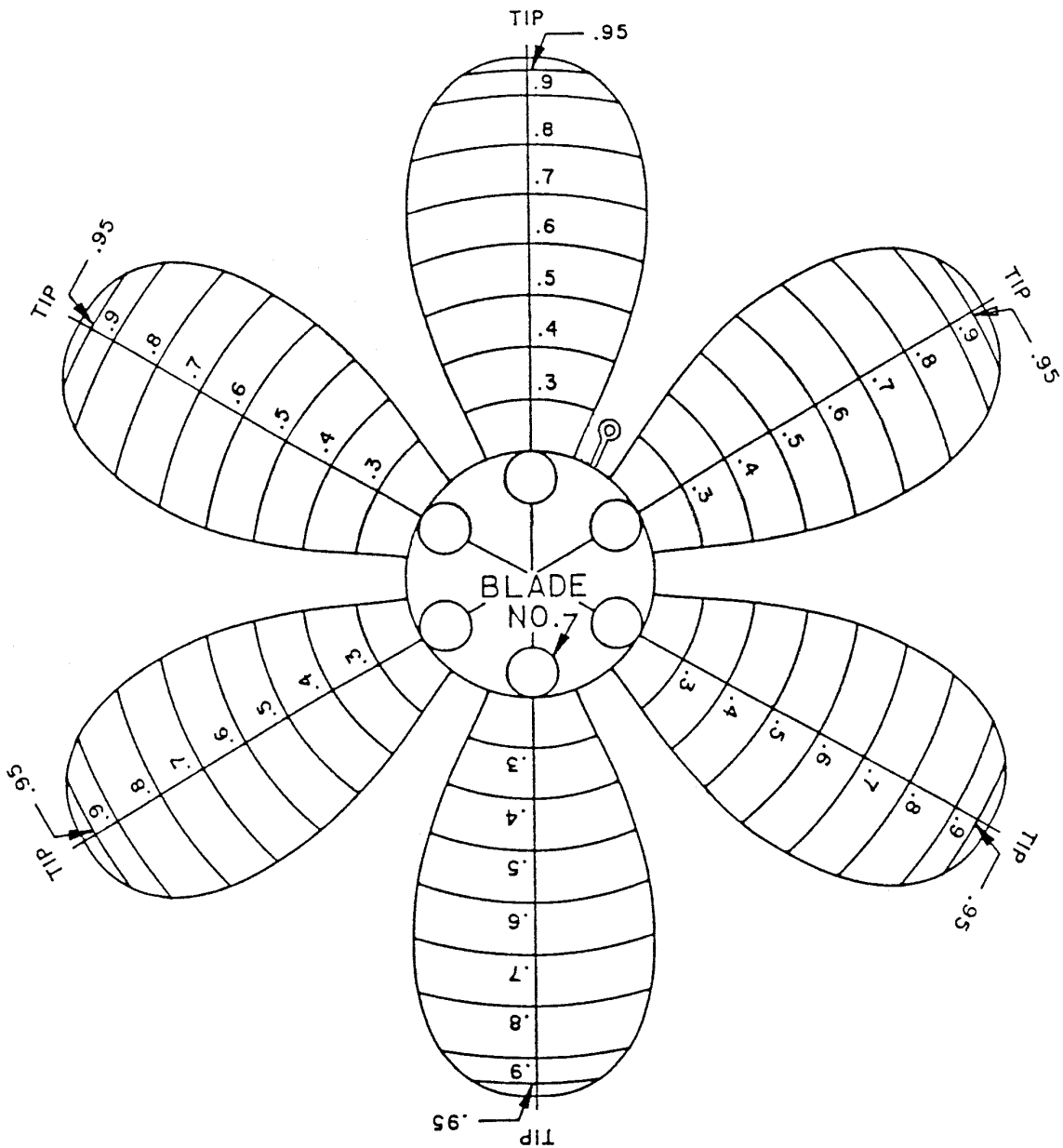


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SUCTION FACE

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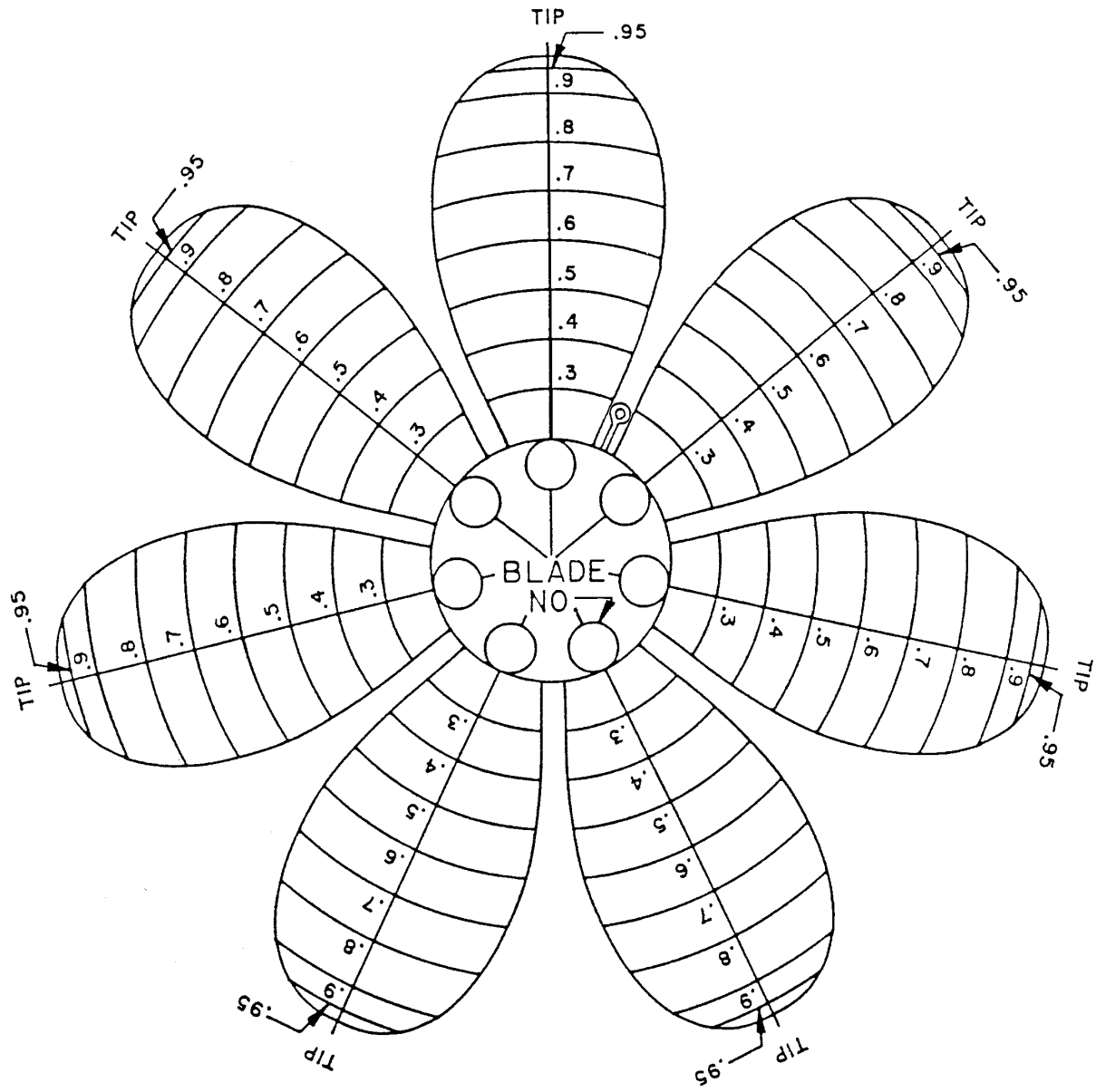


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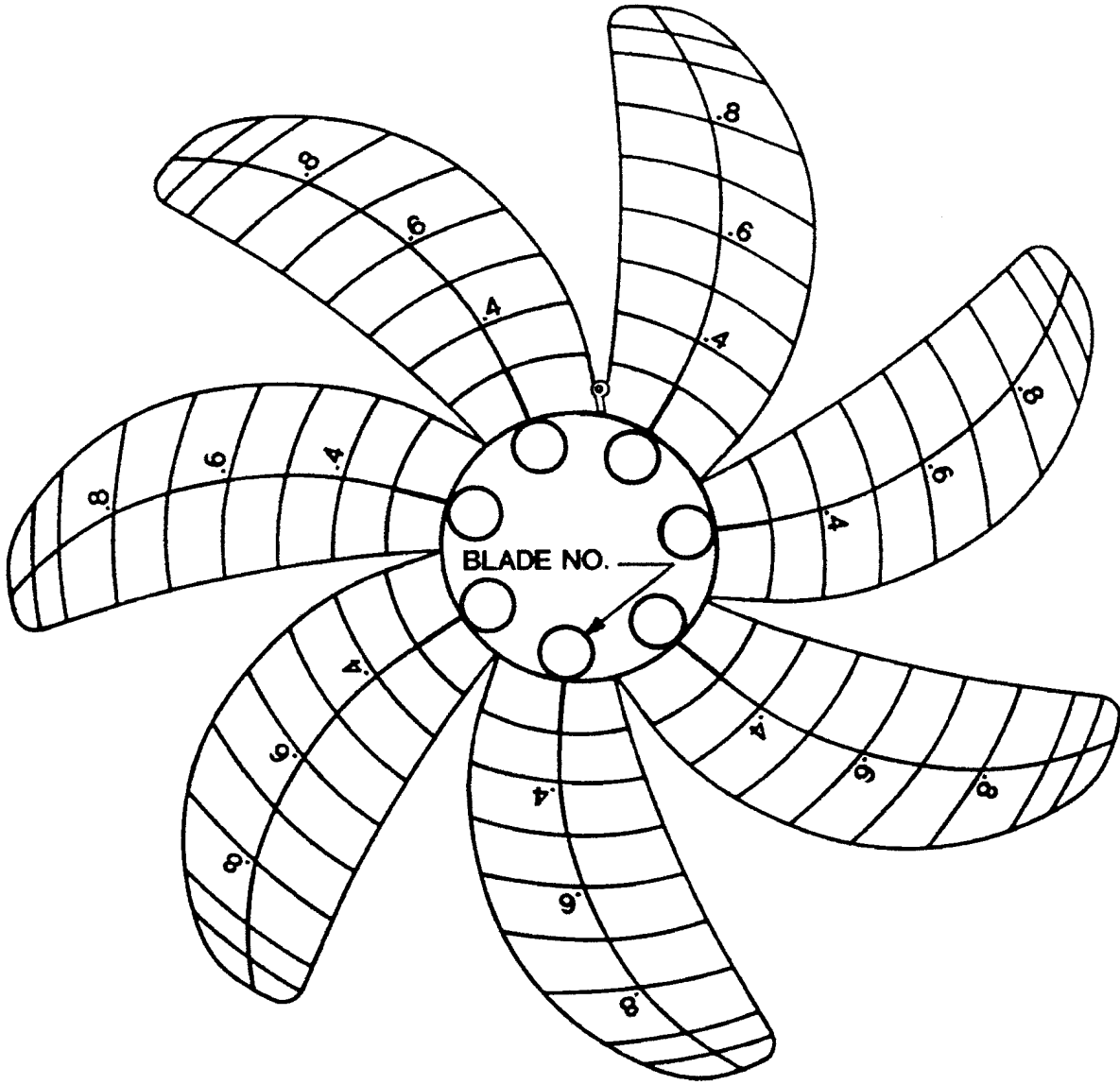


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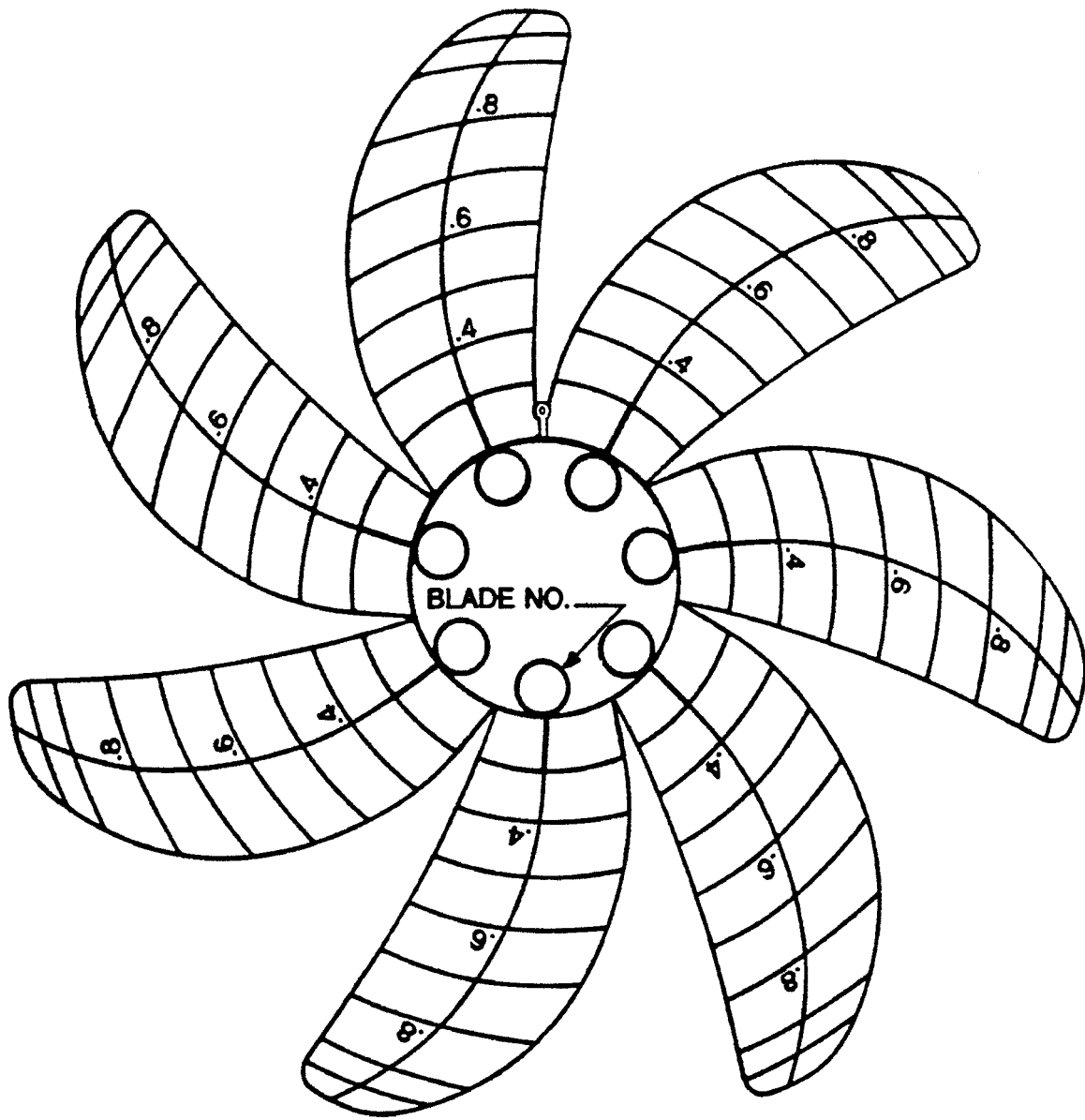


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SUCTION FACE

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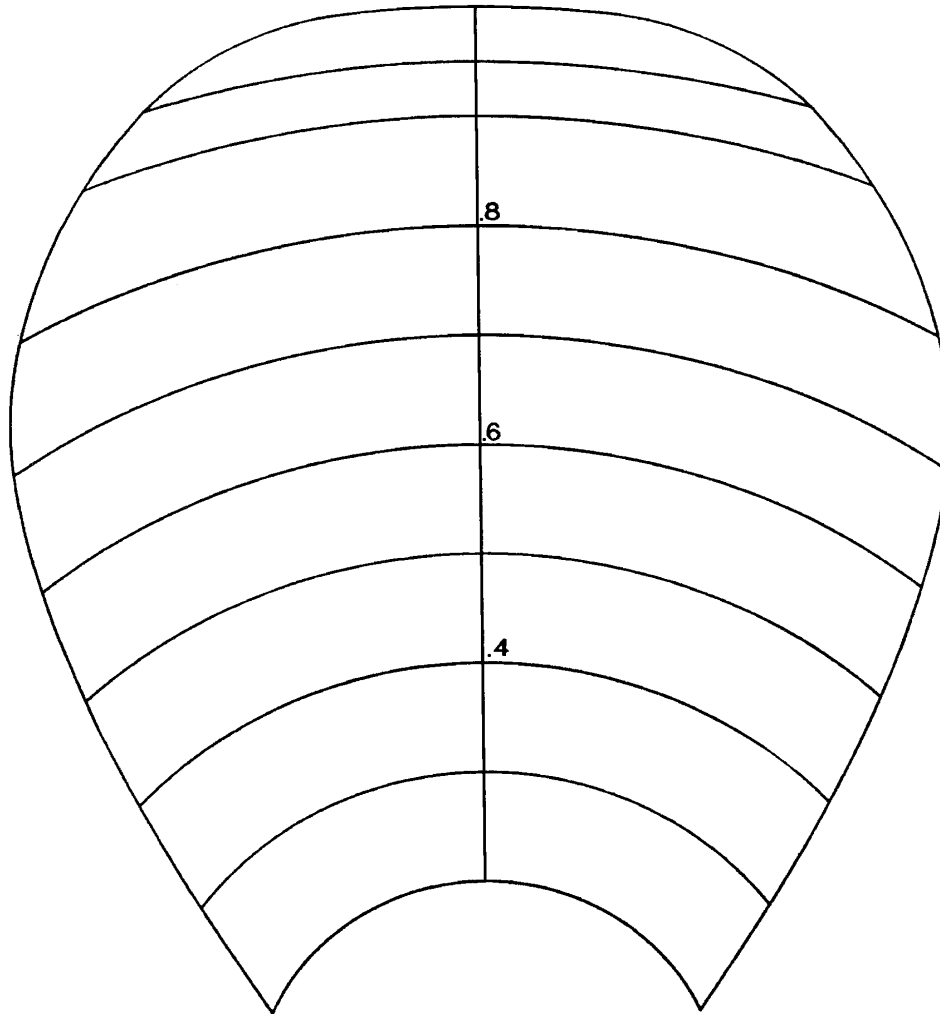


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____ E

____ E

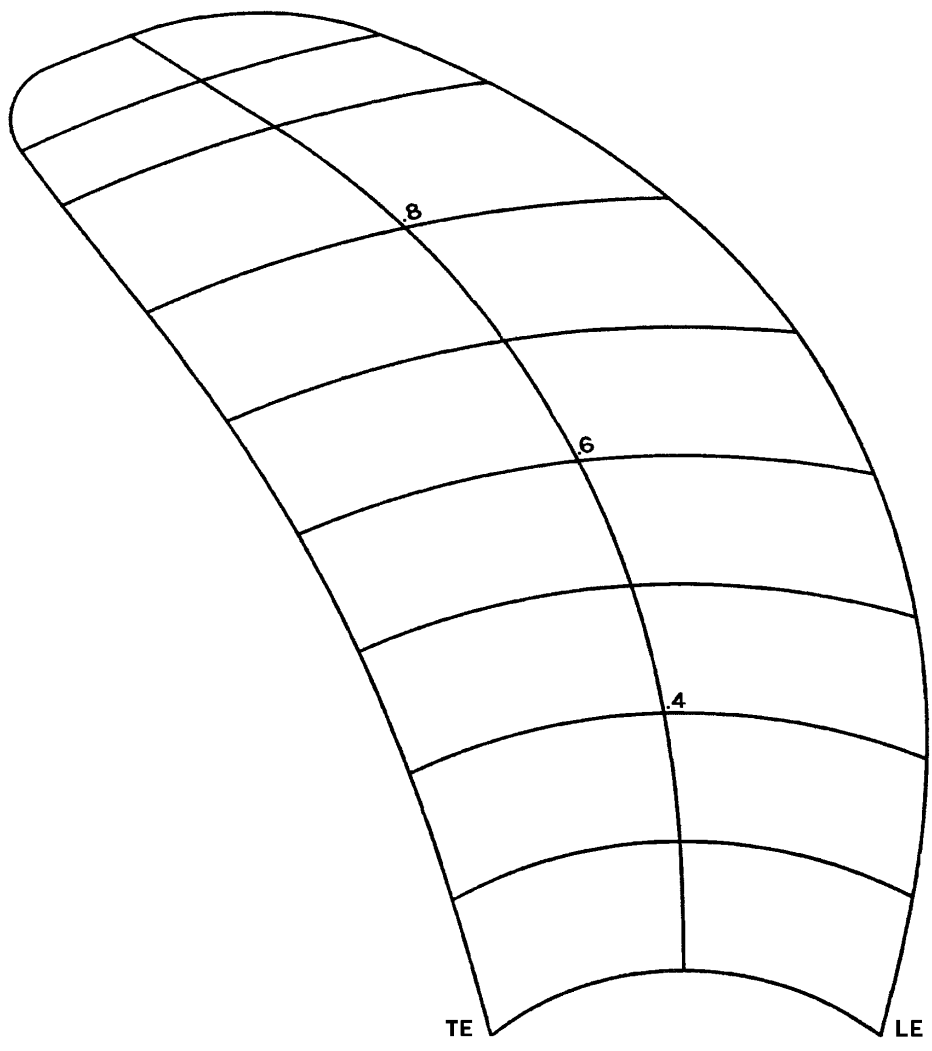
BLADE NO. _____

PRESSURE FACE

SUCTION FACE

PROPELLER SERIAL NO.: _____

PAGE ____ OF ____



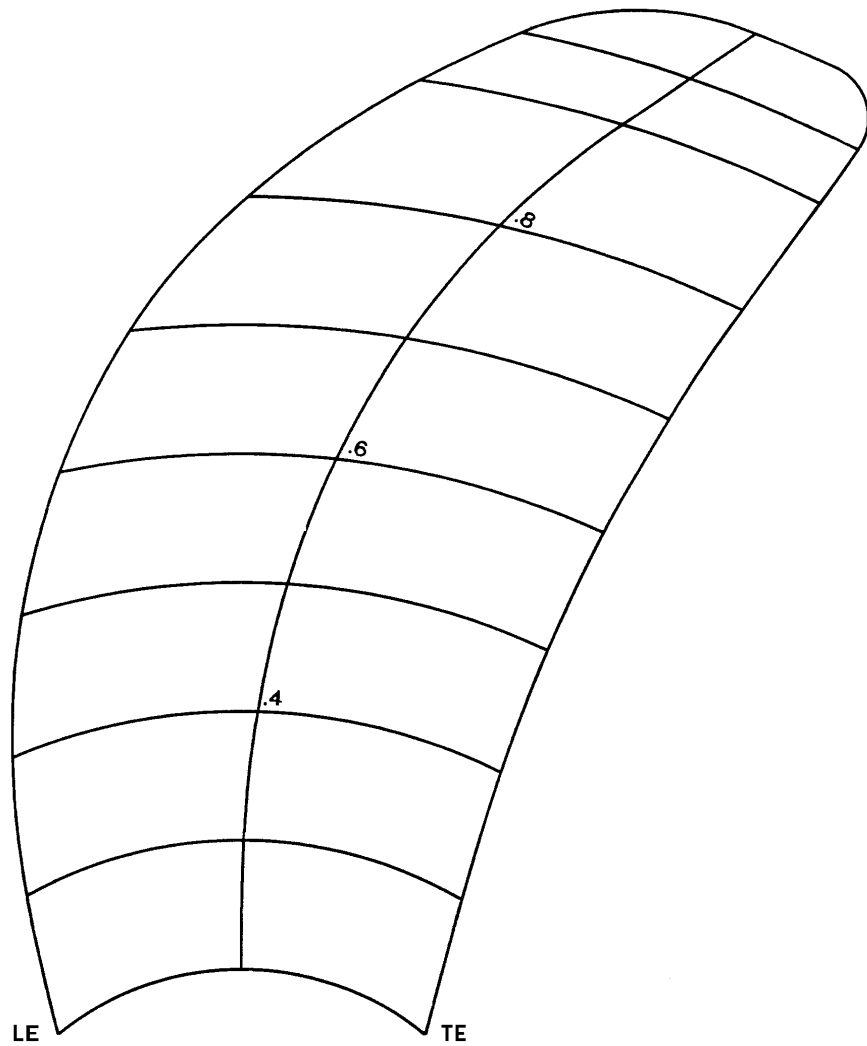
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PRESSURE FACE

SUCTION FACE

PROPELLER SERIAL NO.: _____

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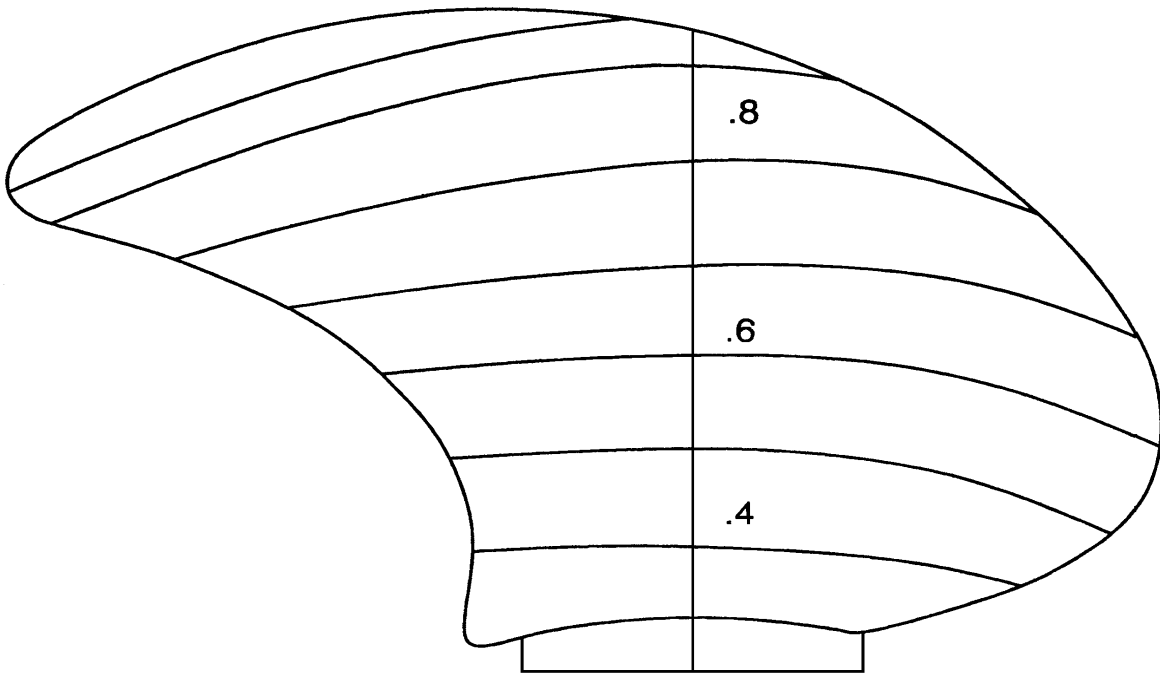
BLADE NO. _____

PRESSURE FACE

SUCTION FACE

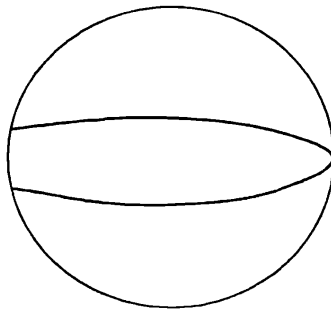
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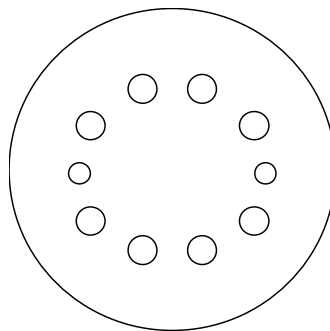


BLADE NO. _____

HEAT NO. _____

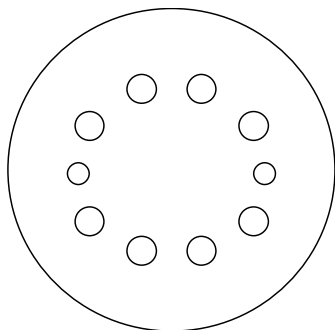
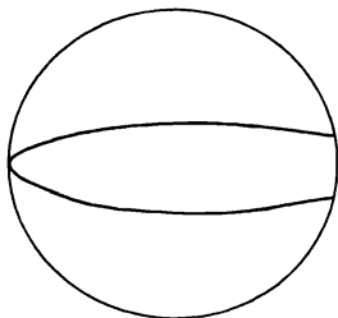
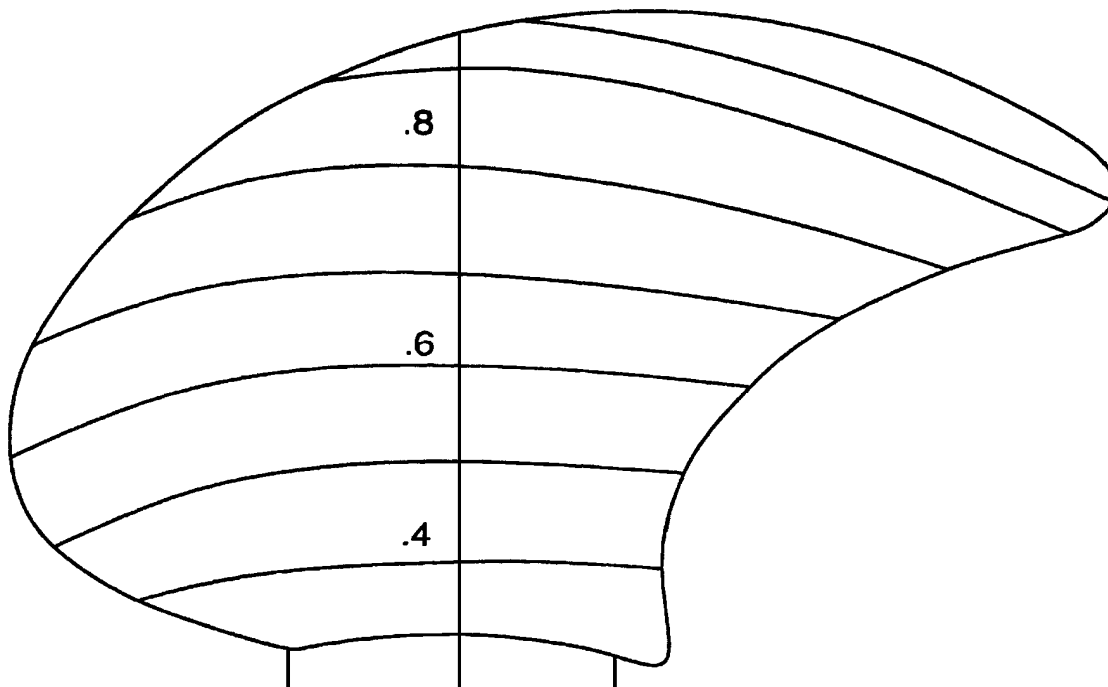


- LEFT HAND
- RIGHT HAND
- SUCTION FACE
- PRESSURE FACE



PROPELLER SERIAL NO.: _____

PAGE _____ OF _____



BLADE NO. _____

HEAT NO. _____

- LEFT HAND
- RIGHT HAND
- SUCTION FACE
- PRESSURE FACE

PROPELLER SERIAL NO.: _____

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PITCHOMETER METHOD OF PITCH MEASUREMENT

NOTES:

1. ALL PITCHOMETER DROP READINGS (Z) SHALL BE MEASURED FROM THE SAME REFERENCE PLANE. THE PITCHOMETER DROP READINGS SHALL BE MEASURED AND RECORDED TO 0.001 INCH RESOLUTION.
2. PITCHOMETER ANGULAR LOCATIONS SHALL BE MEASURED IN DEGREES FROM THE BLADE CENTER LINE (BCL). THE ANGULAR LOCATION READINGS SHALL BE MEASURED AND RECORDED TO 1 MINUTE RESOLUTION.

DIRECT PITCH MEASUREMENTS

PITCHOMETER DROP READINGS AND ANGULAR LOCATIONS

RADIUS	← TOWARD LE				BCL	TOWARD TE →			
	LE ₄	LE ₃	LE ₂	LE ₁	CL	TE ₁	TE ₂	TE ₃	TE ₄
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								
	ANGLE FROM BCL								
	PITCHOMETER DROP READING (Z)								

PREPARED BY: _____
 CHECKED BY: _____
 PROPELLER SERIAL NO.: _____

DATE: _____
 BLADE NO.: _____
 PAGE ____ OF ____

