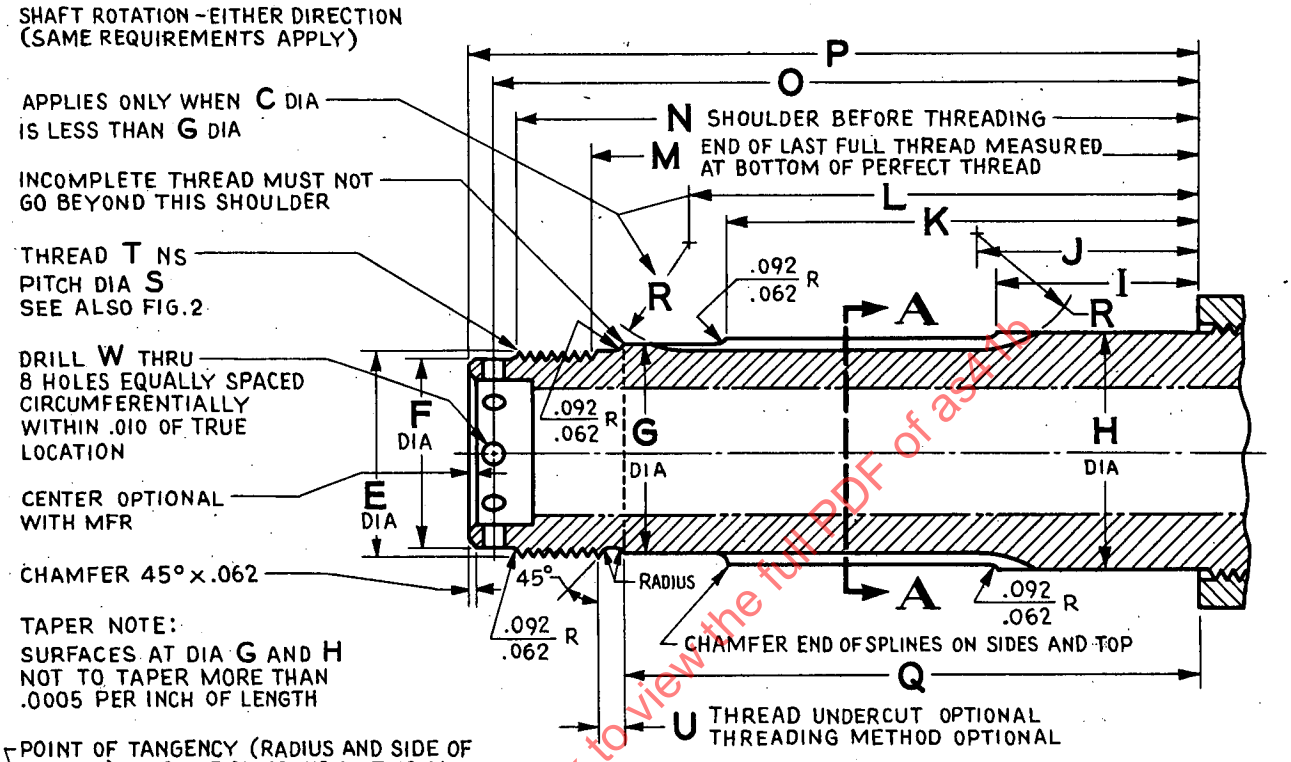
Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AERONAUTICAL STANDARD AS 41B

PROPELLER SHAFT ENDS — SINGLE ROTATION

Issued 11-1-41
Revised 3-1-48



SHAFT SPLINE DATA:
X TEETH INVOLUTE FORM
Y DIAMETRAL PITCH
Z PITCH DIA (THEO)
30° PRESSURE ANGLE

SEE FIG. 2, 3, 4, 5, 6, 7 AND 8 FOR OTHER APPLICABLE DIMENSIONS.
SEE TABLE 1 FOR FIG. 1

CONCENTRICITY NOTE:
WITH SHAFT MOUNTED ON DIA G AND REAR BEARING SURFACE, DIA H, OTHER BEARING SURFACES AND DIA A ON STRAIGHT SPLINES SHALL BE CONCENTRIC WITHIN .001 FIR., THREAD T - PITCH DIA S SHALL BE CONCENTRIC WITHIN .005 FIR., AND DIA Z ON INVOLUTE SPLINES SHALL BE CONCENTRIC WITHIN .002 FIR.

FOR SINGLE ROTATION PROPELLER SHAFT ENDS FOR NO. 41, 51, 51A, 90 AND 100 INVOLUTE SPLINES, AND 50A STRAIGHT SPLINES, SEE ARP 374

BREAK SHARP EDGES .016

FIG. 1

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON:-	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°

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LET	STRAIGHT SPLINES						
	TOL	NO.7½	NO.10	NO.20	NO.30	NO.40	NO.50
A	+.000 −.002	1.625	1.992	2.367	2.617	3.117	3.804
B	MAX	1.474	1.781	2.156	2.406	2.875	3.554
C	MIN	1.382	1.689	2.064	2.314	2.783	3.462
D	±.0008	.1590	.1940	.2310	.2570	.3040	.3750
E	+.000 −.004	1.370	1.682	2.057	2.307	2.807	3.432
F	+.000 −.005	1.250	1.562	1.938	2.188	2.688	3.312
G	+.000 −.002	1.375	1.687	2.062	2.312	2.812	3.500
H	+.000 −.002	1.636	2.000	2.375	2.625	3.125	3.812
I	±.030	1.375	1.375	2.094	2.087	2.125	2.062
J	±.040	1.875	1.875	2.625	2.618	2.656	2.562
K	±.020	4.375	4.688	5.500	5.868	5.469	5.875
L	±.025	—	—	—	—	5.781	6.188
M	+.010 − *	5.402	5.402	6.715	7.115	6.778	7.152
N	+.010 −.030	6.068	6.068	7.548	7.948	7.611	8.318
O	±.015	6.375	6.375	7.875	8.243	7.906	8.562
P	±.020	6.625	6.625	8.125	8.493	8.156	8.812
Q	±.020	5.312	5.312	6.625	7.025	6.688	7.062
R	MAX	1.530	1.530	1.530	1.530	1.530	1.530
	MIN	1.125	1.125	1.125	1.125	1.125	1.125
S	+.000 −.003	1.319	1.631	2.006	2.256	2.756	3.381
T	—	1.375-12	1.6875-12	2.0625-12	2.3125-12	2.8125-12	3.4375-12
U	±.030	.170	.170	.170	.170	.170	.170
V	—	—	—	—	—	—	—
W		.199	.2656	.2656	.2656	.2656	.2656
X	—	16	16	16	16	16	16
Y	—	—	—	—	—	—	—
Z	—	—	—	—	—	—	—

INVOLUTE SPLINES			
TOL	NO.60 NO.60A	NO.70	NO.80
+.000 −.005	4.680	5.539	6.411
MAX	4.436	5.294	6.151
+.010 −.020	4.321	5.179	6.036
+.0000 −.0030	.2233	.2233	.2233
+.000 −.004	4.245	5.120	5.995
+.000 −.005	4.062	4.938	5.812
+.000 −.002	4.296	5.156	6.011
+.000 −.002	4.687	5.562	6.426
±.030	3.312	3.312	3.312
±.040	3.812	3.812	3.812
±.020	7.359	8.188	8.938
—	—	—	—
+.010 − *	8.860	10.360	11.922
+.010 −.030	10.235	11.735	13.297
±.015	10.500	12.125	13.750
±.020	10.750	12.375	14.000
±.020	8.750	10.250	11.812
MAX	2.030	2.030	2.030
MIN	1.125	1.125	1.125
+.000 −.005	4.1668	5.0418	5.9168
—	4.250-8	5.125-8	6.000-8
±.030	.250	.250	.250
APPROX	.068	.068	.068
	.2656	.2656	.2656
—	32	38	44
—	7/16	7/16	7/16
THEO	4.5714	5.4286	6.2857

M DIMENSION MAX LIMIT GIVES MIN FULL THREAD

* MINUS VALUE DEPENDS ON METHOD OF THREADING AND THREAD RUNOUT RELATION TO SHOULDER **Q**

TO OBTAIN DIMENSION FOR FULL NUMBER OF PITCHES, WHEN DESIRED, DEDUCT BASIC **M** FROM BASIC **N**

M DIMENSION DOES NOT APPLY WHEN UNDERCUT IS USED

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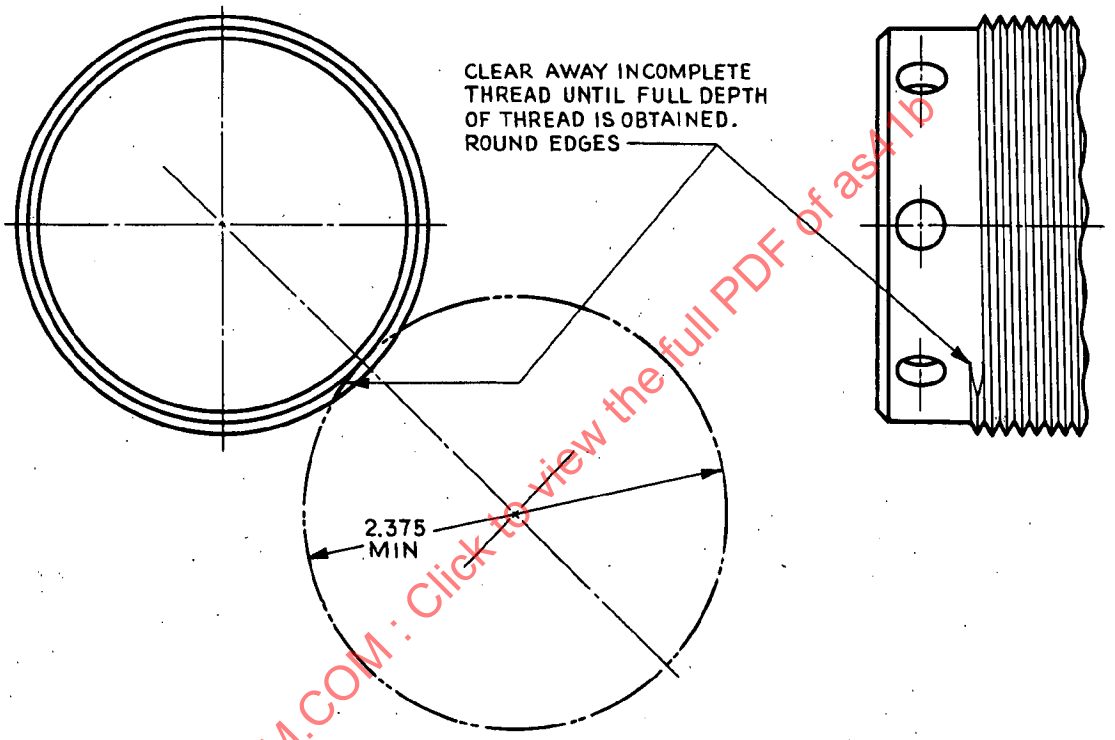
TABLE I FOR FIG. 1

UNLESS OTHERWISE SPECIFIED

ALLOWABLE TOLERANCE ON:-

LINEAR DIMENSIONS ±.01

ANGULAR DIMENSIONS ± 2°



REMOVAL OF INCOMPLETE THREAD
METHOD OF REMOVAL OPTIONAL

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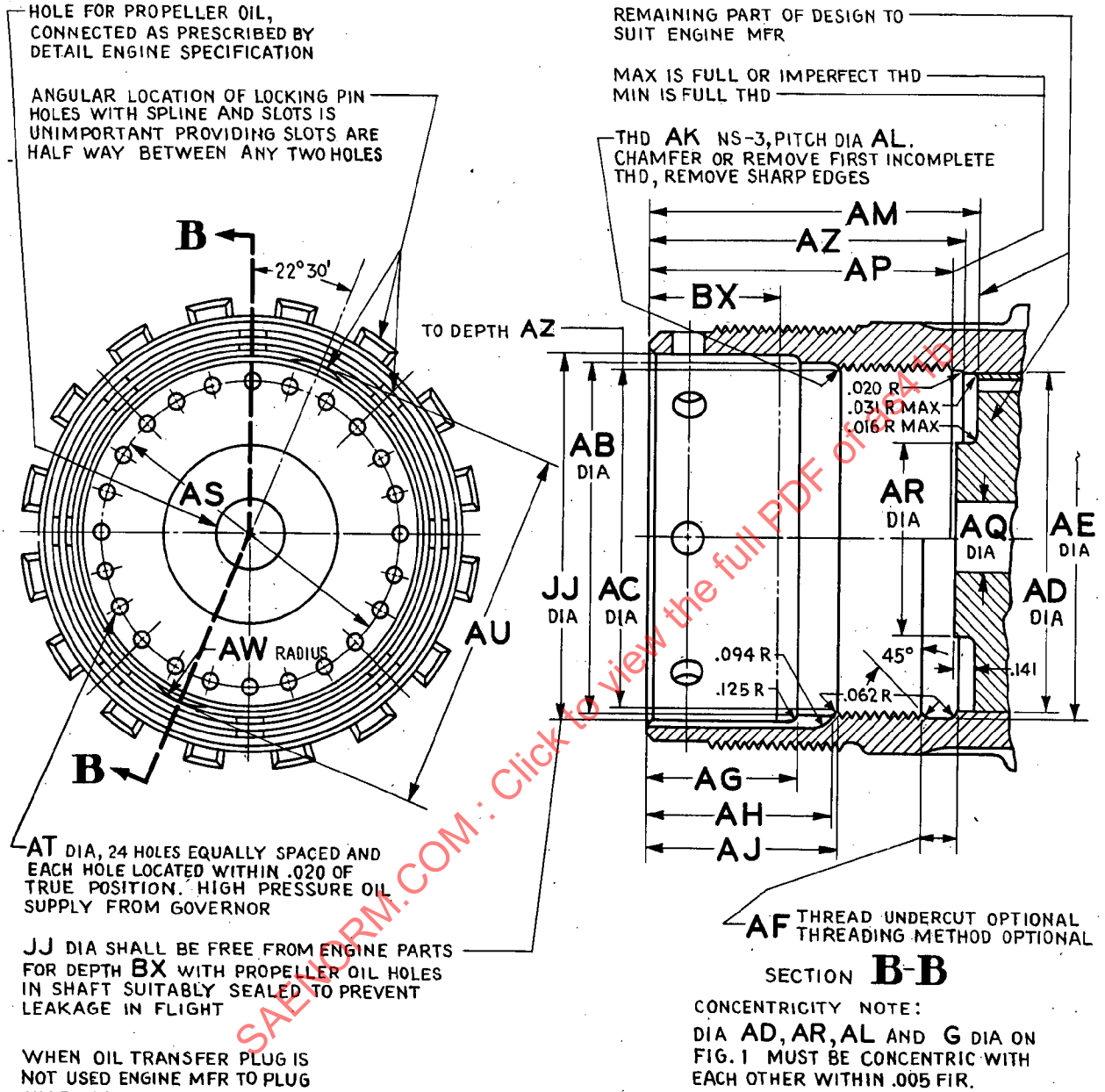
FIG. 2

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON:-	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°



SEE TABLE 2 FOR FIG. 3

FIG. 3

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON:-	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°

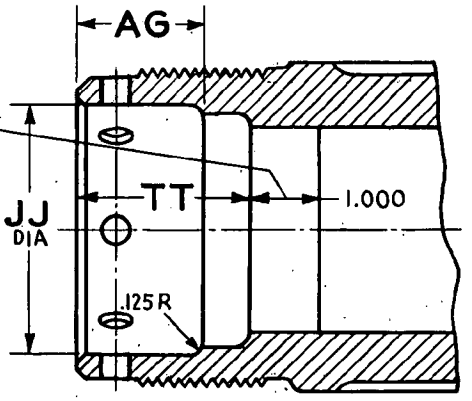


FIG. 4

LET	TOL	NO. 7½ NO.10	NO.20	NO.30	NO.40	NO.50	NO.60 NO.60A	NO.70	NO.80
AB	+.020 −.000	—	1.516	1.766	2.266	2.891	3.516	—	—
AC	+.005 −.000	—	1.435	1.685	2.185	2.810	3.413	—	—
AD	+.005 −.000	—	1.430	1.680	2.180	2.805	3.408	—	—
AE	+.020 −.000	—	1.516	1.766	2.266	2.891	3.516	—	—
AF	±.030	—	.125	.156	.156	.250	.250	—	—
AG		—	.500	.562	.562	1.219	1.219	1.219	1.219
AH		—	.656	.781	.781	1.531	1.344	—	—
AJ		—	.688	.812	.812	1.562	1.375	—	—
AK	—	—	1.500 −16	1.750 −16	2.250 −16	2.875 −16	3.500 −12	—	—
AL	—	—	1.4594 +.0040 −.0000	1.7094 +.0041 −.0000	2.2094 +.0044 −.0000	2.8344 +.0046 −.0000	3.4459 +.0033 −.0000	—	—
AM	±.015	—	1.500	1.656	1.656	2.719	2.500	—	—
AZ		—	1.375	1.531	1.531	2.594	2.375	—	—
AP	MAX	—	1.365	1.520	1.520	2.580	2.365	—	—
	MIN	—	1.265	1.420	1.420	2.480	2.240	—	—
AQ	MIN	—	.375	.438	.547	.594	.594	—	—
AR	+.000 −.002	—	.609	.734	1.047	1.483	1.859	—	—
AS	BASIC	—	1.100	1.350	1.800	2.400	2.920	—	—
AT		—	.082	.082	.125	.1405	.1405	—	—
AU		—	1.688	1.938	2.438	3.062	3.688	—	—
AW		—	.375	.375	.500	.500	.500	—	—
BX	MIN	—	.500	.562	.562	.810	.810	—	—
JJ	+.005 −.000	—	1.625	1.875	2.375	3.062	3.625	4.375	5.156
TT	±.030	—	2.000	2.000	2.000	3.000	3.000	3.000	3.000

AP DIMENSION MAX LIMIT GIVES MAX FULL OR IMPERFECT THREAD.
MIN LIMIT GIVES MIN FULL THREAD

AP DIMENSION DOES NOT APPLY WHEN UNDERCUT IS USED (ALL THREADS FULL)

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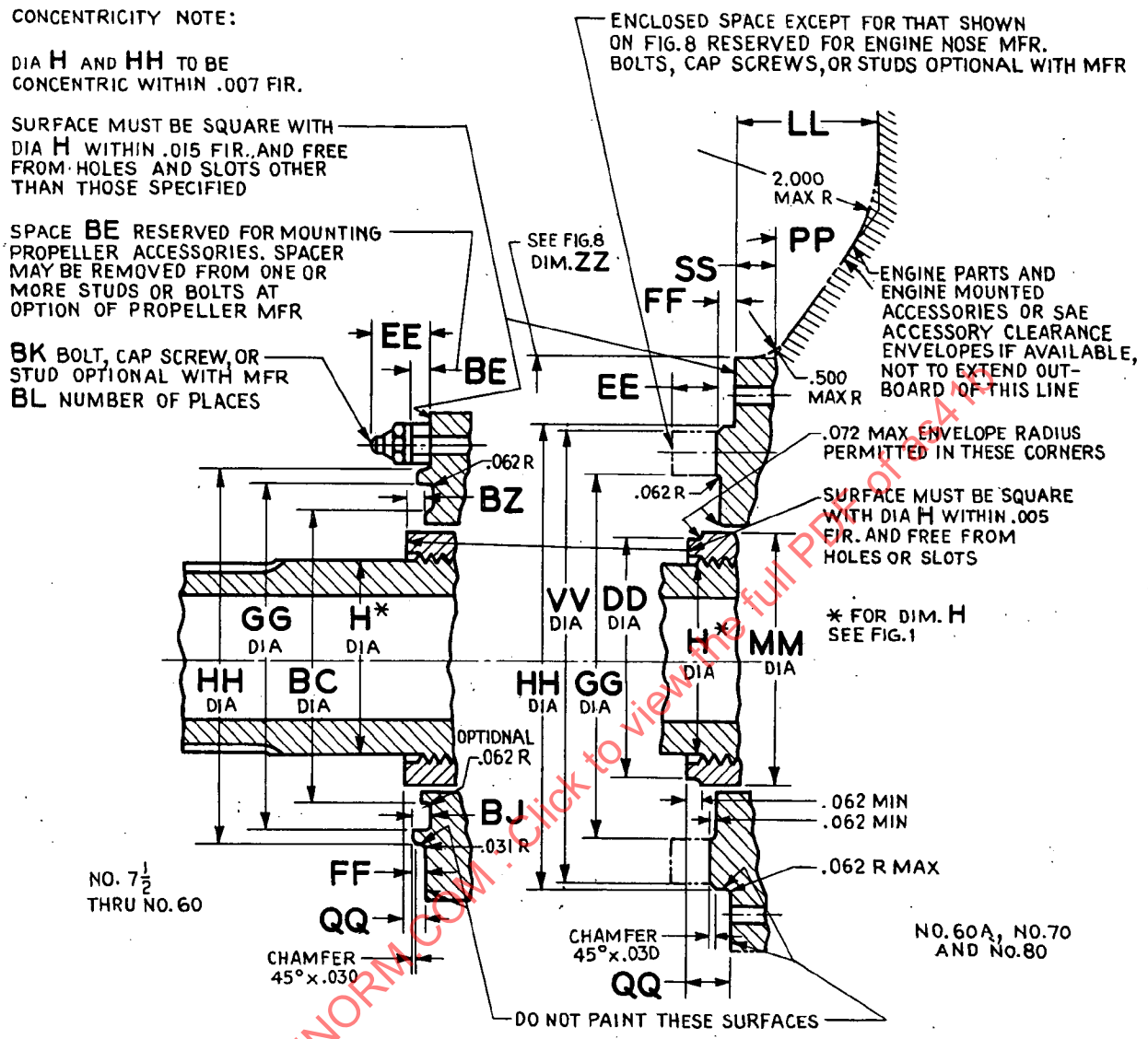
TABLE 2 FOR FIG. 3 AND FIG. 4

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON:-	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°



SEE FIG.6, 7 AND 8 FOR OTHER APPLICABLE DIMENSIONS. SEE TABLE 3 FOR FIG.5

REFER TO ARP 166 FOR RECOMMENDED PROPELLER CLEARANCE ENVELOPE FOR SIZES 7½ THROUGH 50

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FIG. 5

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON :–	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°

LET	TOL	NO. 7½ NO. 10	NO. 20	NO. 30	NO. 40	NO. 50	NO. 60 *	NO. 60A	NO. 70	NO. 80
BC	MAX	—	4.250	4.250	4.750	6.000	6.312	—	—	—
BE		.188	.312	.312	.375	.375	.375	—	—	—
BJ	MIN	.115	.250	.250	.125	.344	.219	—	—	—
BK	—	.3125	.375	.375	.375	.375	.4375	OPTIONAL	OPTIONAL	OPTIONAL
BL	—	4	6	7	6 OR 12	10	8 OR 16	OPTIONAL	OPTIONAL	OPTIONAL
BZ	MIN	.031	.031	.031	.031	.031	.320	—	—	—
DD		—	—	—	—	—	—	5.812	6.688	7.562
EE	MAX	.938	.938	.938	1.000	1.000	1.016	.750	.750	.750
FF		.188	.188	.188	.188	.250	.250	.312	.312	.312
GG	MIN	3.750	4.750	4.750	5.875	6.812	7.312	7.750	8.750	9.625
HH	±.001	3.998	4.998	4.998	6.248	7.248	7.748	10.123	11.123	12.625
LL	MIN	—	—	—	—	—	—	2.062 †	2.062 †	2.062 †
MM	MAX	—	—	—	—	—	—	6.188	7.062	7.938
PP	MIN	—	—	—	—	—	—	35° †	35° †	35° †
QQ	±.025	.312	.344	.025	.172	.406	.625	.938	.938	.938
SS	MIN	—	—	—	—	—	—	.500	.500	.500
VV	MAX	—	—	—	—	—	—	10.102	11.072	12.574

* INACTIVE FOR DESIGN PURPOSES

† LL TO BE 4.000 AND PP TO BE 45° WHEN PRACTICABLE

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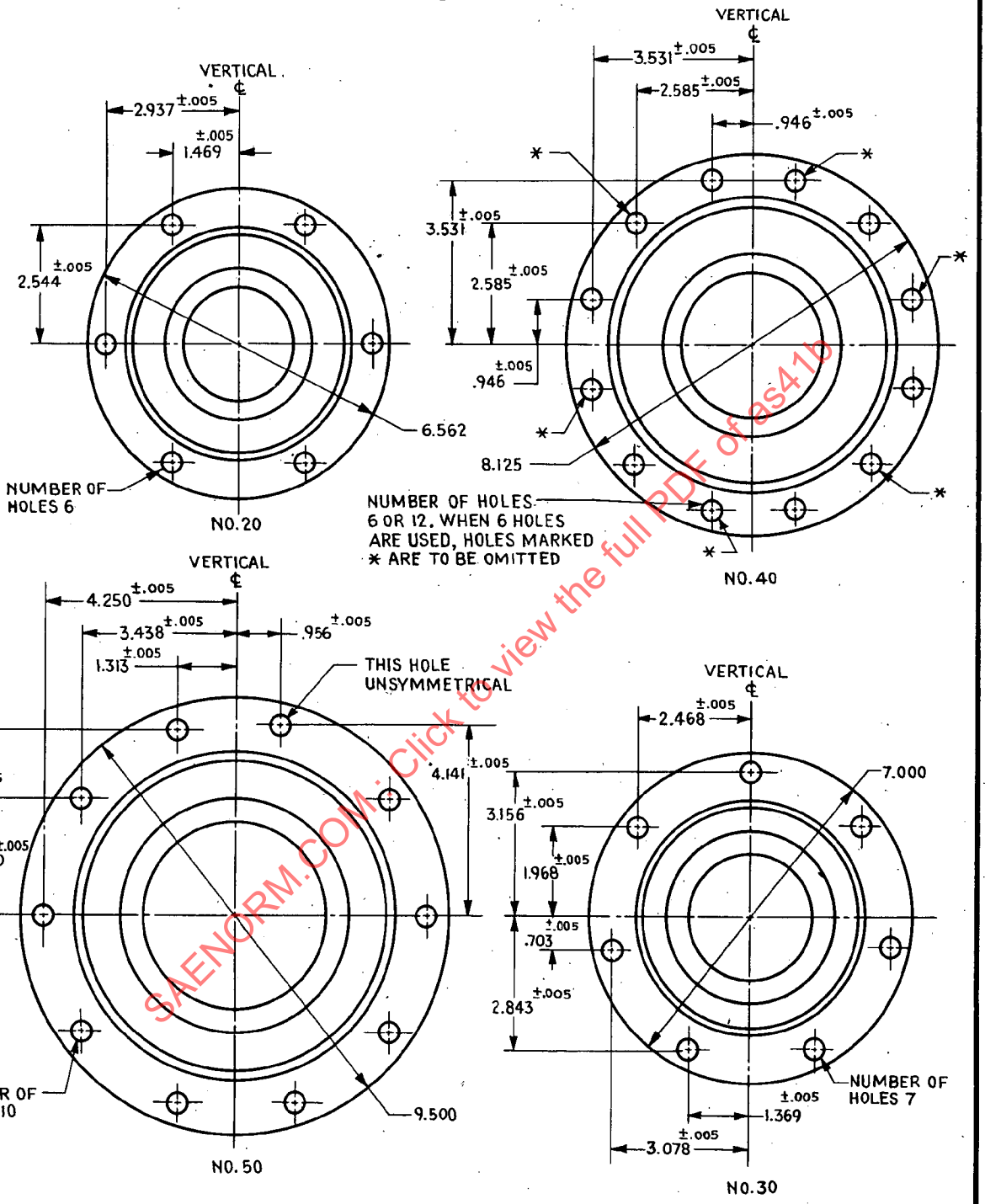
TABLE 3 FOR FIG. 5

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON :—	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	± 2°



SEE FIG. 5 AND TABLE 3 FOR OTHER APPLICABLE DIMENSIONS

HOLES ARE DIMENSIONED IN RELATION TO CENTER OF DIA **HH** (FIG. 5)

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FIG. 6

UNLESS OTHERWISE SPECIFIED	
ALLOWABLE TOLERANCE ON:-	
LINEAR DIMENSIONS	±.01
ANGULAR DIMENSIONS	±2°