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AERONAUTICAL STANDARD AS 41 A

PROPELLER SHAFT ENDS - SINGLE ROTATION

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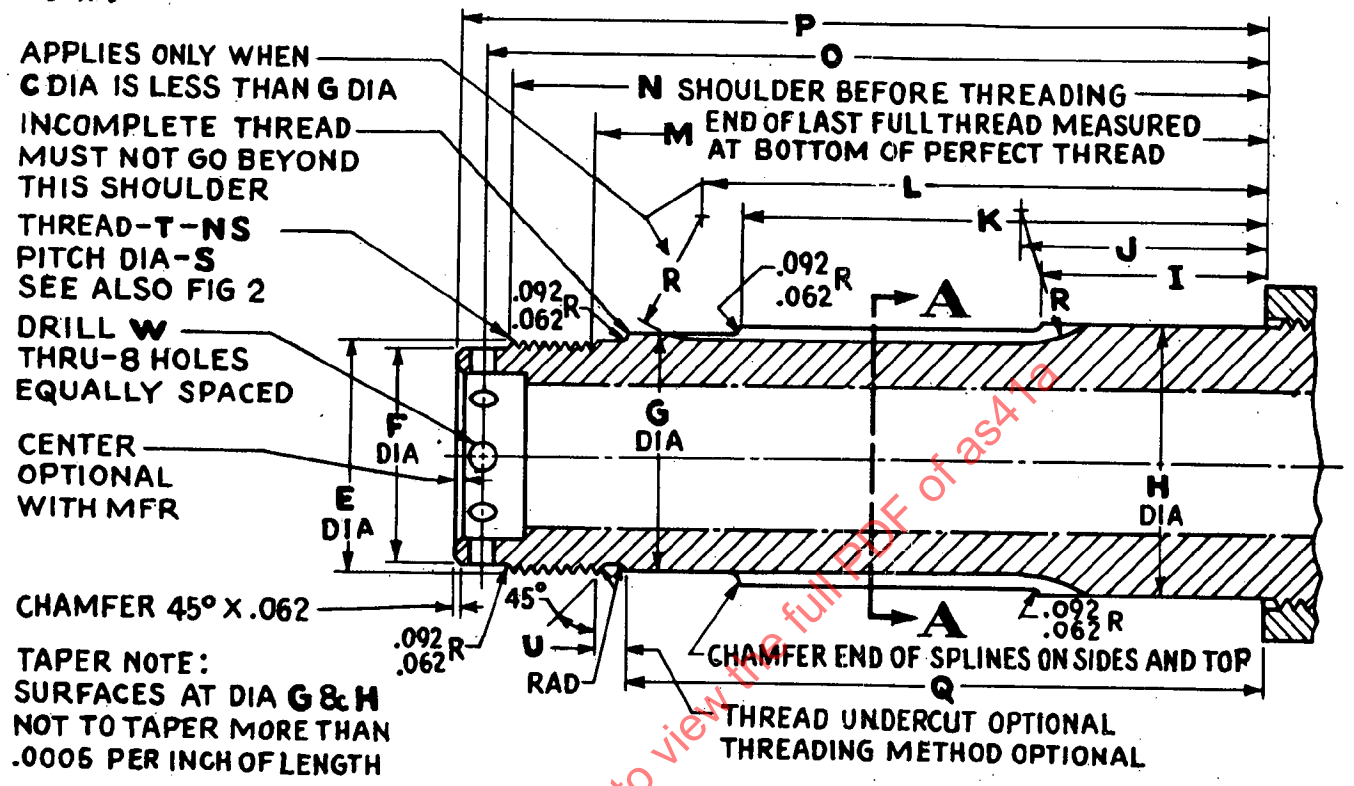
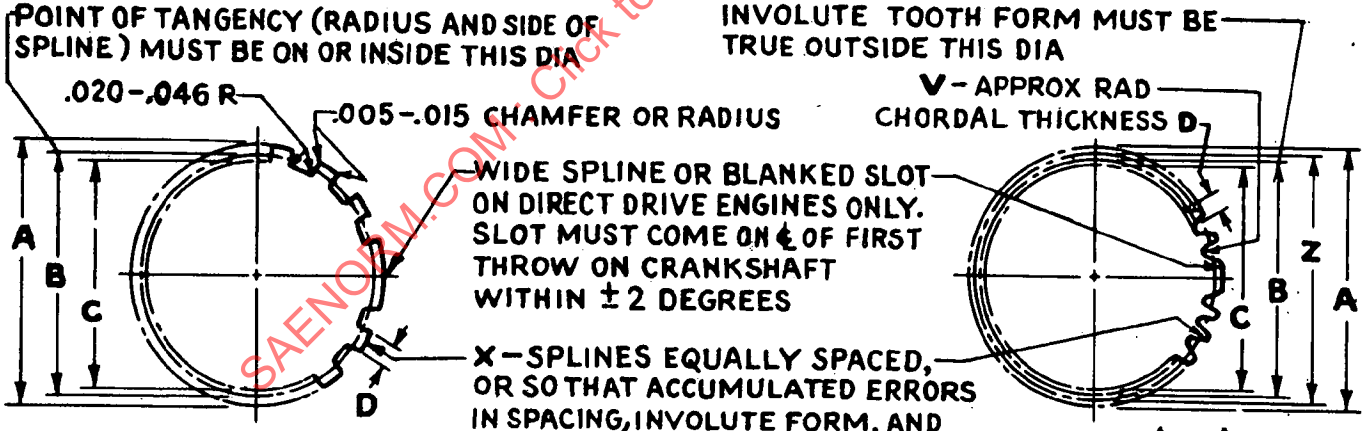




SECTION A A
STRAIGHT SPLINES

SECTION A A
INVOLUTE SPLINES

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 FULL INDICATOR READING AND DIAMETER Z ON INVOLUTE SPLINES SHALL BE CONCENTRIC WITHIN .002 FULL INDICATOR READING

SHAFT ROTATION - EITHER DIRECTION (SAME REQUIREMENTS APPLY)

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 & 8 FOR OTHER APPLICABLE DIMENSIONS. SEE TABLE 1 FOR FIG 1

FIG 1

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ± .010 AND ON ANGLES IS ± 2 DEGREES. BREAK EDGES .016

LET	STRAIGHT SPLINES						
	TOLER	NO.7½	NO.10	NO.20	NO.30	NO.40	NO.50
A	$\pm^{.000}_{.002}$	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	$\pm^{.000}_{.004}$	1.370	1.682	2.057	2.307	2.807	3.432
F	$\pm^{.000}_{.005}$	1.250	1.562	1.938	2.188	2.688	3.312
G	$\pm^{.000}_{.002}$	1.375	1.687	2.062	2.312	2.812	3.500
H	$\pm^{.000}_{.002}$	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	$\pm^{.010}_{*}$	5.402	5.402	6.715	7.115	6.778	7.152
N	$\pm^{.010}_{.030}$	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	$\pm^{.000}_{.003}$	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			
TOLER	NO.60 NO.60A	NO.70	NO.80
$\pm^{.000}_{.005}$	4.680	5.539	6.411
MAX	4.436	5.294	6.151
$\pm^{.010}_{.020}$	4.321	5.179	6.036
$\pm^{.0000}_{.0030}$	.2233	.2233	.2233
$\pm^{.000}_{.004}$	4.245	5.120	5.995
$\pm^{.000}_{.005}$	4.062	4.938	5.812
$\pm^{.000}_{.002}$	4.296	5.156	6.011
$\pm^{.000}_{.002}$	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
—	—	—	—
$\pm^{.010}_{*}$	8.860	10.360	11.922
$\pm^{.010}_{.030}$	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
$\pm^{.000}_{.005}$	4.1668	5.0418	5.9168
—	4.250-8	5.125-8	6.000-8
±.030	.250	.250	.250
—	.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

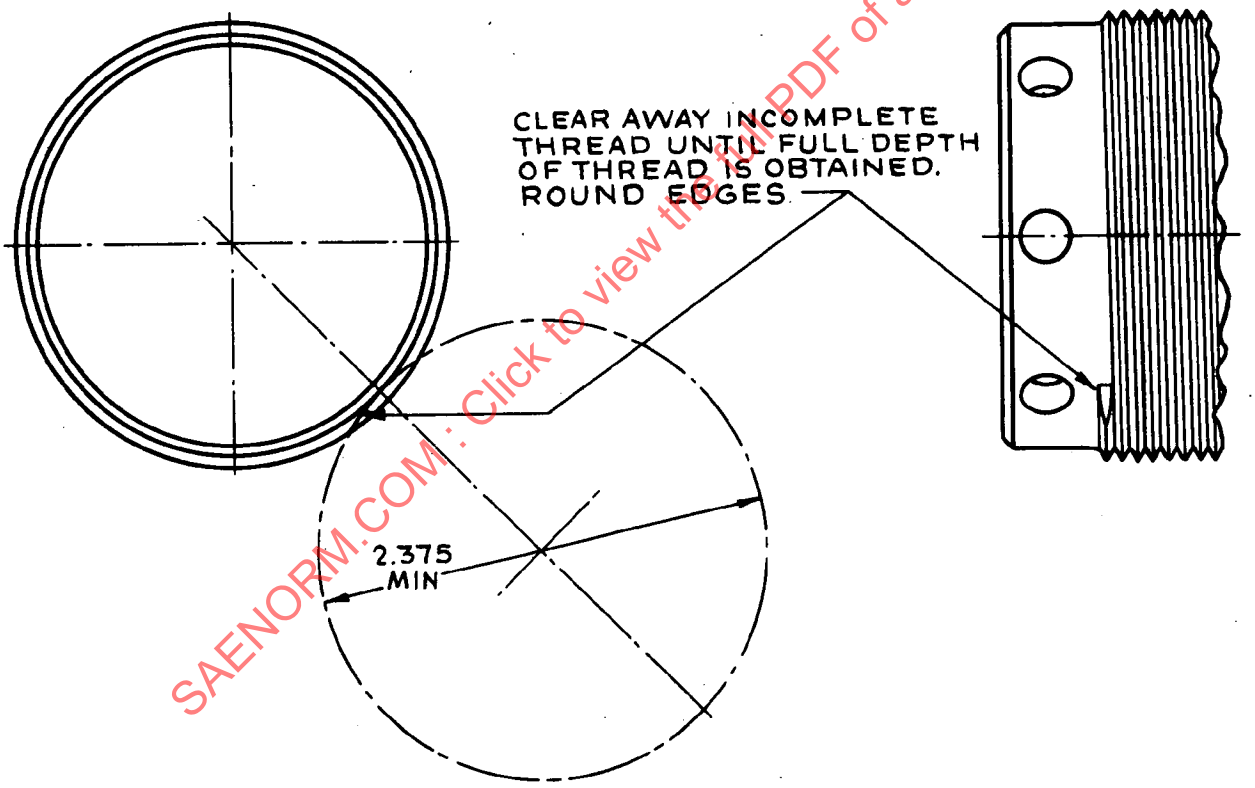
* MINUS VALUE DEPENDS ON METHOD OF THREADING AND THREAD RUNOUT RELATION TO SHOULDER Q

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

TABLE 1 FOR FIG 1

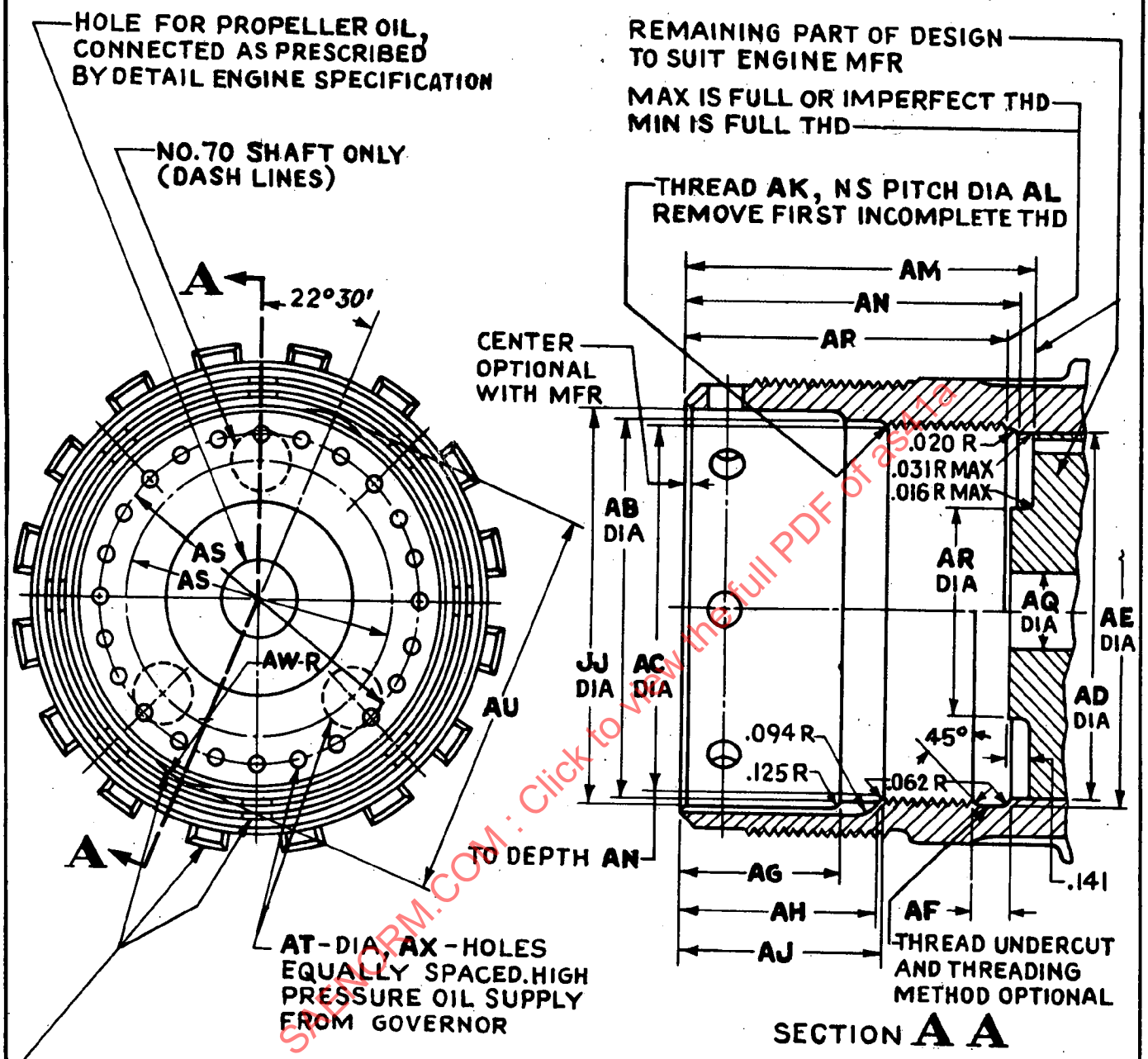
UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ± 2 DEGREES. BREAK EDGES .016



REMOVAL OF INCOMPLETE THREAD
METHOD OF REMOVAL OPTIONAL

FIG 2

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ± 2 DEGREES. BREAK EDGES .016



ANGULAR LOCATION OF LOCKING PIN HOLES WITH SPLINE AND SLOTS IS UNIMPORTANT PROVIDING SLOTS ARE HALF WAY BETWEEN ANY TWO HOLES

WHEN OIL TRANSFER PLUG IS NOT USED ENGINE MFR TO PLUG SHAFT AS SHOWN IN FIG 4

CONCENTRICITY NOTE:

DIA AD, AR, AL AND FIG 1 G DIA MUST BE CONCENTRIC WITH EACH OTHER WITHIN .005 FULL INDICATOR READING

SEE TABLE 2 FOR FIG 3

FIG 3

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ± 2 DEGREES. BREAK EDGES .016

WHEN OIL TRANSFER PLUG IS NOT USED ENGINE MFR TO PLUG SHAFT SO AS TO PREVENT LEAKAGE IN EITHER DIRECTION UNDER 12 INCH HEAD OF SAE NO. 10 OIL. FRONT SURFACES OF THIS PLUG TO BE WITHIN THIS LENGTH

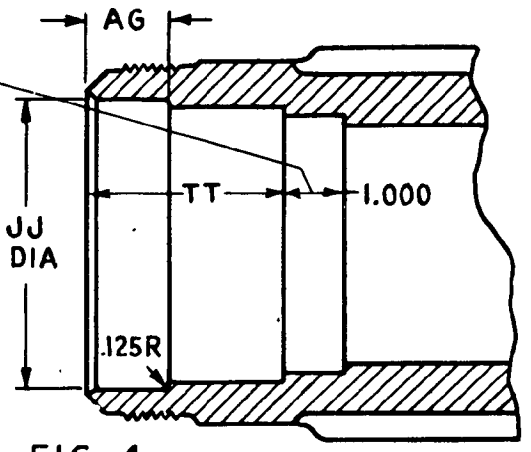


FIG 4

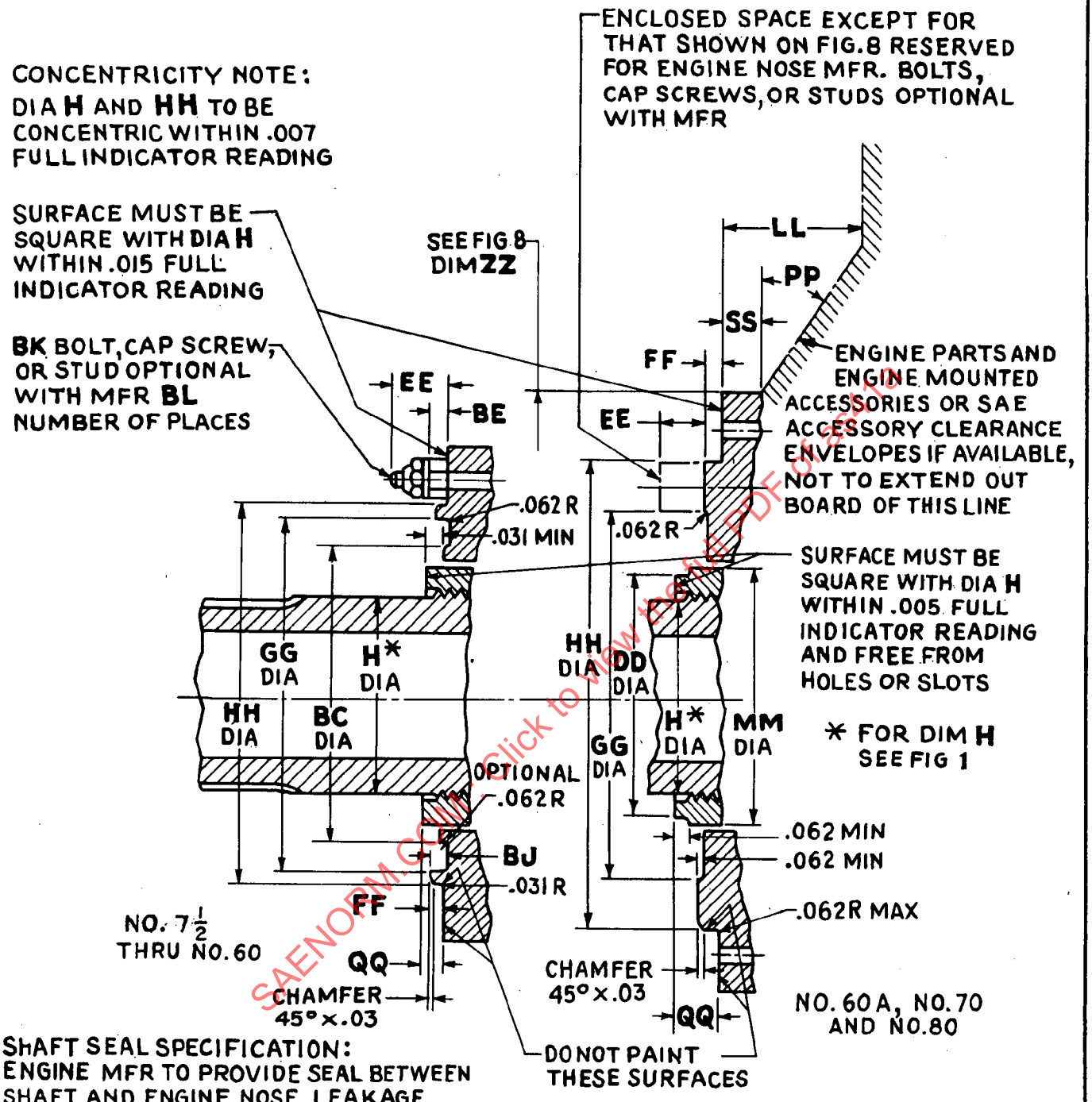
LET	TOLER	NO. 7½ NO. 10	NO. 20	NO. 30	NO. 40	NO. 50	NO. 60 NO. 60A	NO. 70	NO. 80
AB	+.020 −.000	—	1.516	1.766	2.266	2.891	3.516	4.266	—
AC	+.005 −.000	—	1.435	1.685	2.185	2.810	3.413	4.163	—
AD	+.005 −.000	—	1.430	1.680	2.180	2.805	3.408	4.158	—
AE	+.020 −.000	—	1.516	1.766	2.266	2.891	3.516	4.266	—
AF	±.030	—	.125	.156	.156	.250	.250	.250	—
AG		—	.500	.562	.562	1.219	1.219	1.219	—
AH		—	.656	.781	.781	1.531	1.344	1.406	—
AJ		—	.688	.812	.812	1.562	1.375	1.438	—
AK	—	—	1.500 −16	1.750 −16	2.250 −16	2.875 −16	3.500 −12	4.250 −12	—
AL	—	—	1.4594	1.7094	2.2094	2.8344	3.4459	4.1959	—
	TOLER	—	+.0040 −.0000	+.0041 −.0000	+.0044 −.0000	+.0046 −.0000	+.0053 −.0000	+.0056 −.0000	—
AM	±.015	—	1.500	1.656	1.656	2.719	2.500	2.562	—
AN		—	1.375	1.531	1.531	2.594	2.375	2.438	—
AP	MAX	—	1.365	1.520	1.520	2.580	2.365	2.425	—
	MIN	—	1.265	1.420	1.420	2.480	2.240	2.300	—
AQ	MIN	—	.375	.438	.547	.594	.594	.656	—
AR	+.000 −.002	—	.609	.734	1.047	1.483	1.859	2.280	—
AS		—	1.100	1.350	1.800	2.400	2.920	3.250	—
AT		—	.082	.082	.125	.1405	.1405	.375	—
AU		—	1.688	1.938	2.438	3.062	3.688	4.438	—
AW		—	.375	.375	.500	.500	.500	.500	—
AX	—	—	24	24	24	24	24	3	—
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)

TABLE 2 FOR FIG 3 AND FIG 4

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ±2 DEGREES. BREAK EDGES .016



SHAFT SEAL SPECIFICATION:
ENGINE MFR TO PROVIDE SEAL BETWEEN SHAFT AND ENGINE NOSE. LEAKAGE PAST SEAL TO BE ZERO FROM ENGINE INTO PROPELLER WITH SHAFT STATIONARY AND A MAXIMUM OF ONE OUNCE PER HOUR IN EITHER DIRECTION WITH SHAFT RUNNING AND WITH A MIST OF SAE NO. 10 OIL PRESENT ON PROPELLER SIDE OF SEAL

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

FIG 5

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ± 2 DEGREES. BREAK EDGES .016

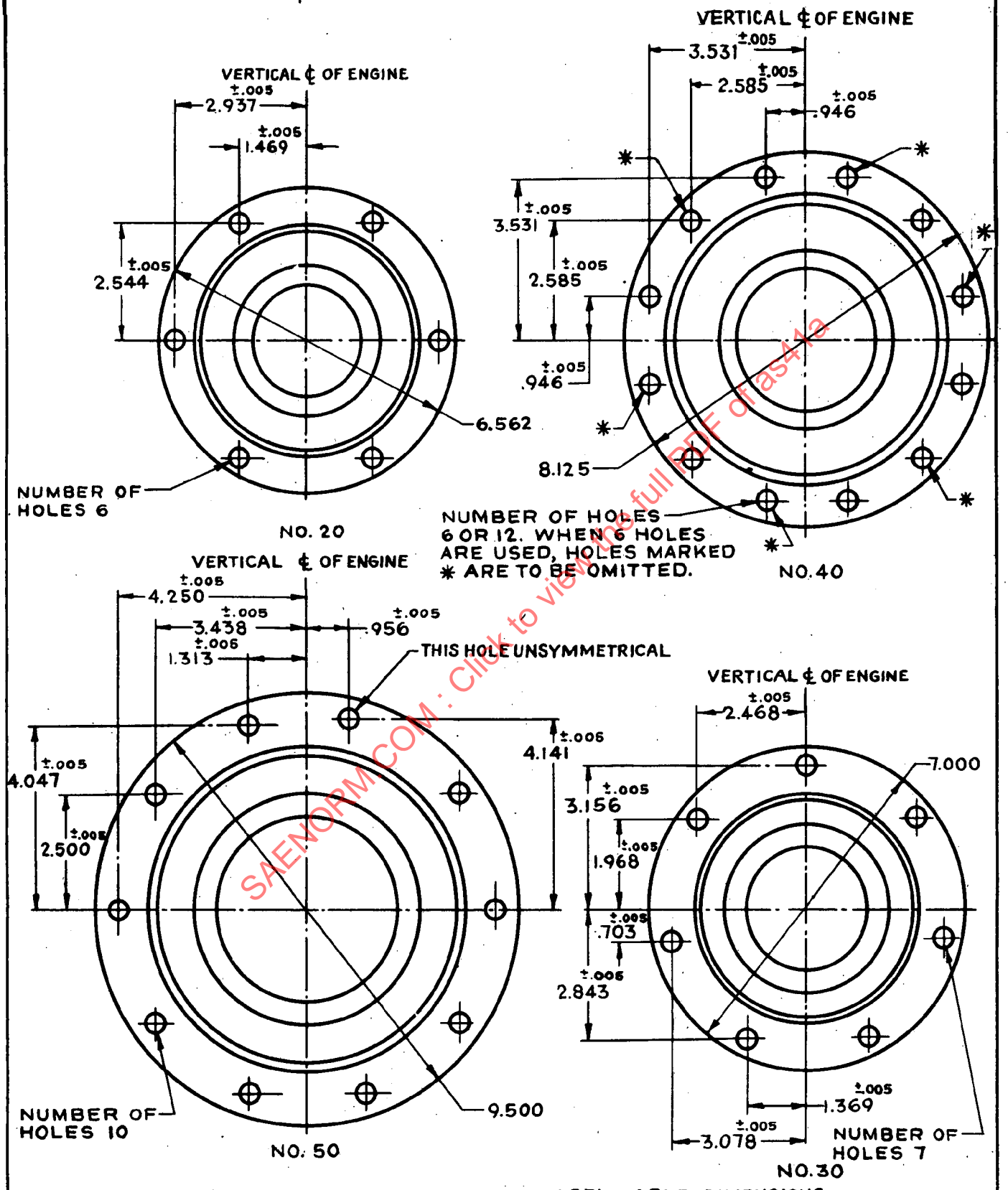
LET	TOLER	NO.7½ NO.10	NO.20	NO.30	NO.40	NO.50	NO.60 *	NO.60A	NO.70	NO.80
BC	MAX	—	4.250	4.250	4.750	6.000	6.312	—	—	—
BE		.188	.312	.312	.375	.375	.375	—	—	—
BJ	MIN.	.115	.250	.250	.125	.344	.219	—	—	—
BK	—	.3125	.375	.375	.375	.375	.4375	OPTIONAL	OPTIONAL	OPTIONAL
BL	—	4	6	7	6 OR 12	10	8 OR 16	OPTIONAL	OPTIONAL	OPTIONAL
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

* INACTIVE FOR DESIGN PURPOSES

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

TABLE 3 FOR FIG 5

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ± 2 DEGREES BREAK EDGES .016



SEE FIG 5 AND TABLE 3 FOR OTHER APPLICABLE DIMENSIONS

FIG 6

UNLESS OTHERWISE SPECIFIED, ALLOWABLE TOLER ON FINISHED DIM IS ±.010 AND ON ANGLES IS ±2 DEGREES. BREAK EDGES .016