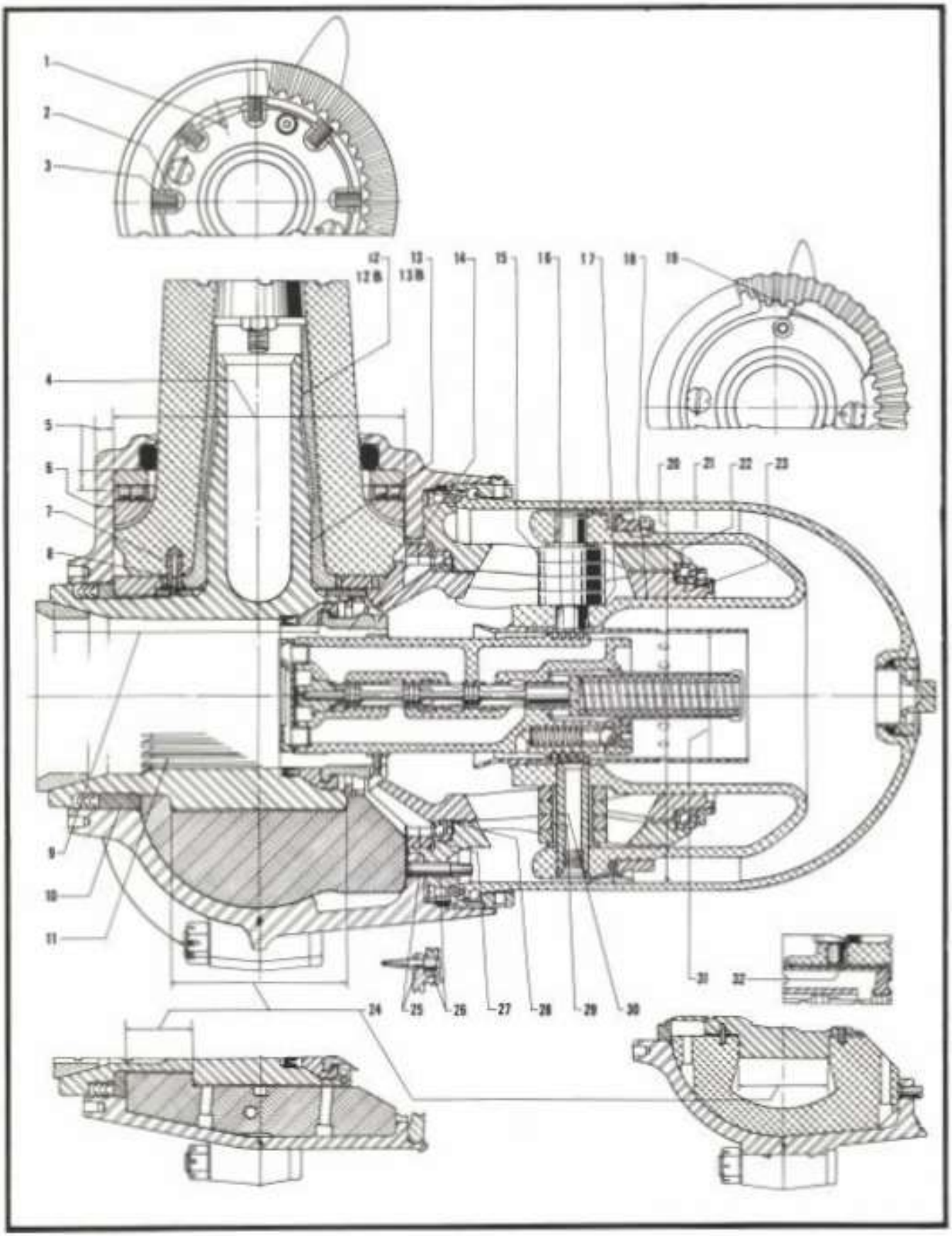

Figure 2–46. Propeller Clearance Chart

TABLE 2

ITEM	23040	33D50	34D50	23E50	33E60	REMARKS
1	T.0002 / T.0017 *	T.0002 / T.0017 *		T.0002 / T.0017 *	T.0002 / T.0017 *	Fit between OD of thrust plate pin and ID of blade bushing thrust pin hole.
2	.000 / L.002 L.005	.000 / L.002 L.005		.000 / L.002 L.005	.000 / L.002 L.005	Clearance between ID of blade bushing spring pack slot and OD of spring pack retainer.
3	T.001 / L.002 L.005	T.001 / L.002 L.005		T.001 / L.002 L.005	T.001 / L.002 L.005	Clearance between ID of blade gear segment spring pack slot and OD of spring pack retainer.
4	6.770 Maximum	6.770 Maximum	6.770 Maximum	7.270 Maximum	7.270 Maximum	Maximum ID of barrel blade bore.
5	.345 Minimum	.345 Minimum	.345 Minimum	.408 Minimum	.408 Minimum	Minimum wall thickness for barrel blade bore in critical area. (Critical area extends inward 1/8 inch from blade thrust shoulder.)
6	.274 Minimum	.274 Minimum	.274 Minimum	.400 Minimum	.400 Minimum	Minimum values may be reduced .030 inch in local area covering less than 20 percent of circumference.
7	T.0018 / T.0025 *	T.0018 / T.0025 *	T.0018 / T.0025 *	T.0018 / T.0025 *	T.0018 / T.0025 *	Fit between OD of blade bushing drive pin and ID of blade drive pin hole.
8	.000 / L.004 L.006	.000 / L.014 L.006	.000 / L.004 L.006	.000 / L.004 L.006	.000 / L.004 L.006	Clearance between blade butt face and bushing flange.
9	6.534	6.721	6.721	6.721	8.005	Minimum allowable distance between cone seat gage diameters.
10	T.004 / L.014 L.020	T.004 / L.014 L.020	T.004 / L.014 L.020	T.004 / L.014 L.020	T.005 / L.015 L.020	Clearance between OD of spider ring and ID of barrel at rear bore.
11	"A"–.308	"A"–.379	"A"–.379	"A"–.379	See Remark	Splines shall be checked with a single key NO-GO gage of "A" width. Spider shall be rejected if gage enters more than 20 percent of splines. Involute splines (SAE No. 60) shall be checked with a NO-GO plug gage HSP M-706 or equivalent. Gage may enter full length of splines and show no perceptible looseness.
12	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	Clearance between small ID of blade bushing and small OD of spider arm.
12B				L.0090 / L.0132 L.018	L.0090 / L.0132 L.018	Clearance between small ID of blade bushing and small OD of spider arm for propeller assemblies using bushing 58857.
13	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	L.0013 / L.0045 L.008	Clearance between large ID of blade bushing and large OD of spider arm.
13B				L.0090 / L.0132 L.018	L.0090 / L.0132 L.018	Clearance between large ID of blade bushing and large OD of spider arm for propeller assemblies using bushing 58857.

TABLE 2 (Continued)

ITEM	23D40	33D50	24D50	23E50	33E60	REMARKS
14	2.7653	3.3906	3.3906	3.3906	4.1825	Maximum pitch diameter of retaining nut threads.
15	L.0055 / L.0110 } L.020	L.0055 / L.0110 } L.020	L.0055 / L.0190 } L.025	L.0055 / L.0190 } L.025	L.0055 / L.0190 } L.025	Clearance between ID of cam slots and OD of cam rollers on least worn of four slots.
16	T.0001 / T.0019 } L.0005	T.0001 / T.0019 } L.0005	T.0001 / T.0019 } L.0005	T.0001 / T.0019 } L.0005	T.0001 / T.0019 } L.0005	Fit between ID of piston cam roller shaft hole and OD of cam roller shaft.
17	L.004 / L.036 } L.040	L.004 / L.036 } L.040	L.004 / L.036 } L.040	L.004 / L.036 } L.040	L.004 / L.036 } L.040	Clearance between inboard cam roller and piston flat.
18	L.006 / L.015 } L.020	L.006 / L.015 } L.020	L.006 / L.020 } L.025	L.006 / L.020 } L.025	L.006 / L.020 } L.025	Clearance between ID of rotating cam and OD of piston boss.
19	T.0017 / L.0053 } L.006	T.0017 / L.0053 } L.006	T.0017 / L.0053 } L.006			Clearance between gear segment serrations and blade bushing serrations measured on chordal thickness.
20	7.550	7.550	9.175	9.175	9.175	Maximum permissible ID of dome.
21	.131	.131	.158	.158	.158	Minimum dome wall thickness.
22	T.0001 / L.0015 } L.003	T.0001 / L.0015 } L.003	T.0005 / L.0015 } L.005	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	Clearance between ID of fixed cam and OD of inboard cam bearing.
23	T.0001 / L.0015 } L.003	T.0001 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	Clearance between OD of rotating cam and ID of outboard cam bearing.
24	T.004 / L.002 } L.003	T.004 / L.002 } L.003	T.003 / L.002 } L.003	T.004 / L.002 } L.003	T.004 / L.002 } L.003	Clearance between barrel support and spider support seat.
25	T.0050 / T.0025 } *	T.005 / T.0025 } *	.000 / T.002 } *	.000 / T.002 } *	.000 / T.002 } *	Fit between barrel cam locating dowel hole and cam locating dowel.
26	L.0003 / L.0018 } L.005	L.0003 / L.0018 } L.005	L.0005 / L.0030 } L.005	L.0005 / L.0030 } L.005	L.0005 / L.0030 } L.005	Clearance between ID of fixed cam locating dowel hole and OD of cam locating dowel.
27	T.0001 / L.0015 } L.003	T.0001 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	Clearance between ID of fixed cam and OD of outboard cam bearing.
28	T.0001 / L.0015 } L.003	T.0001 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	T.0005 / L.0015 } L.003	Clearance between OD of rotating cam and ID of inboard cam bearing.

TABLE 2 (Continued)

ITEM	22D40	33D50	34D50	33E50	33E60	REMARKS
29	L.0010 / L.0045 } L.008	L.0010 / L.0045 } L.008	L.0010 / L.0045 } L.008	L.0010 / L.0045 } L.008	L.0010 / L.0045 } L.008	Clearance between OD of cam roller shaft bushing and ID of cam roller.
30	L.0006 / L.0034 } L.007	L.0006 / L.0034 } L.007	L.0006 / L.0034 } L.007	L.0006 / L.0034 } L.007	L.0006 / L.0034 } L.007	Clearance between the ID of cam roller shaft bushing and OD of cam roller shaft.
31	2.513 Maximum	2.513 Maximum	3.138 Maximum	3.138 Maximum	3.138 Maximum	Maximum permissible ID of piston sleeve. For models 22D50 and 22D40, the clearance between the OD of the distributor valve and the ID of the piston sleeve is specified.
32		T.0015 / T.0030 } *	T.0015 / T.0030 } *	T.0015 / T.0030 } *	T.0015 / T.0030 } *	Fit between ID of distributor valve housing sleeve bore and OD of sleeve.

The dimensions to the left of the bracket are the manufacturing tolerances, and the dimension to the right of the bracket is the limiting fit allowable for service use. An interference fit is indicated by the letter "T," and a loose fit is indicated by the letter "L."

2–20. Worn parts which permit clearances in excess of those listed in the clearance chart shall, if possible, be repaired according to the instructions given in the repair section, or replaced with new parts.

2–21. MAGNETIC INSPECTION.

2–22. The parts listed below shall be magnetically tested and then carefully examined to determine whether any fatigue cracks have developed.

Barrel	Fixed Cam
Barrel Bolt	Gear Segment
Barrel Bolt Nut	Rotating Cam Assembly
Barrel Thrust Washers	Spider

2–23. Three methods of magnetization are used: one, direct magnetization in which the current flows directly through the part; two, bar type induced magnetization in which the part (usually circular in shape) is suspended from a bar carrying the current; and three, solenoid type induced magnetization in which the part is inserted into a coil carrying the current. For the first two methods a calibration procedure is required; this is described in the following paragraph. For solenoid type magnetization a definite amperage of current through the coil is needed.

2–24. CALIBRATION. The equipment and method employed will be calibrated by means of the calibration piece shown in figure 2–47, details 1, 2, 3, 4, and 5. The equipment is calibrated at one of three levels of current density depending upon the part to be inspected in a particular inspection unit. These pieces shall be made from AMS 6415 steel heat-treated to a Brinell hardness of 375-415.

2–25. PROCEDURE. The calibration pieces shall be contacted one at a time directly at both ends by the electrodes of the unit; a piece should never be fluxed on a bar or in a coil. Each piece shall be fluxed so that the resulting magnetic field is perpendicular to the slots, and the slots shall be placed uppermost. Each piece shall be demagnetized before each test fluxing and shall have a clean bright surface over the slot area. The indications should be affected as little as possible by washing or run-off of the bath. Only a single shot or flux of current of 1/2 to 1 second duration shall be used to magnetize a bar, and the continuous method of applying indicating solution shall be used. The concentration of indicating powder in the bath shall be between 1 and 1.5 ml per 100 ml of bath for tank or immersion units, or between 1.5 and 2 ml per 100 ml of bath for spray units as determined by a standard settling test.

2–26. CALIBRATION LEVELS.

2–27. Equipment used to inspect parts of large cross-sectional areas shall be adjusted and a technique employed such that piece No. 5 will show no accumulation of indicating powder, piece No. 4 will just faintly show an accumulation of indicating powder, and piece No. 3 will show a definite accumulation of indicating powder. If the unit is operating in a normal manner, these results should be obtained at approximately 2000 amperes. This is called the No. 4 calibration in table V.

2–28. Equipment used to inspect parts of small cross-sectional areas shall be adjusted and a technique employed such that piece No. 1 will show a faint accumulation of indicating powder, and piece No. 2 will show no