UNITED TECHNOLOGIES CARRIER — Commercial Division, Carrier Corporation	BULLETIN: CA-SB-19-C-72-64 DATE: 12/8/72 PAGE: 1 OF: 4
SERVICE BULLETIN	SUPERSEDE BULLETIN: DATE: PAGE: OF:
SUBJECT: **CLEARANCES AND FITS, 19C**	

PURPOSE: To transmit the attached list of clearances and fits.

MACHINES AFFECTED: All size 19C machines.

PROCEDURE: The clearances given are to be used as a guide when making repairs or determining the cause of trouble. The clearances denoted by an asterisk (*) have changed or have been added since the previous bulletin on this subject.

The various bearing designs referred to are identified in Service Bulletin CA-SB-19-C-60-9.

Some of these clearances and fits are listed in the operation & maintenance manuals. Should they differ from those in this bulletin use the information printed most recently.

Use good judgement and past performance when working with clearances. For example, if a part is working satisfactorily and has caused no trouble, it need not be replaced strictly on the basis of measurement. However, if trouble has occurred and a part or fit which could contribute to it shows excessive clearance, then the part should be changed.

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CLEARANCES AND FITS
19C CENTRIFUGALS

A. MAIN BEARING

DESCRIPTION	MACHINES	MEASUREMENT	CLEARANCE MIN.	CLEARANCE MAX.
Bearing Orifice	R-113 - Design #1 & Design #2	Dia. of Orifice	.210"	.219"
	R-11 - Design #1	Dia. of Orif.	.262"	.270"
	R-11 & R-114 - Design #2	Dia. of Orifice	.240"	.260" *
Journal Bearing	19C3 thru 19C5	Dia.	.006"	.008" *
	19C6 - 19C8	Dia.	.009"	.011" *
Thrust Bearing Clearance	All machines	Axial	.010"	.014" *
Bearing Oil Seal Ring to Shaft	R-113 Design #3 & R-11 Des.#2, R-114	Dia.	.004"	.007" *

B. MOTOR END BEARING

3 Shoe Bearing to Journal	Design #3	Dia.	.0025"	.004"
Service Replacement 3 Shoe Brg.	Design #2	Dia.	.002"	.004"
Split Bearing to Journal	Design #1	Dia.	.0025"	.004"
Sleeve Bearing - 19C8	Design #4	Dia.	.004"	.006" *
Carbon Ring to Shaft	Design #1 & #2	Dia.	.001"	.005"
Shaft Concentricity to 3 Shoe Bearing Housing	19C3 thru 19C7	T.I.R. **	—	.002"
Oil Retaining Ring to Shaft	Design #2	Dia.	.010"	.012"
	Design #3	Dia.	.005"	.008" *

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C. IMPELLER

Impeller Blades to Intake Walls	1903-1904 1905 thru 1908	Axial Axial	.045" .055"	.055" .065" *
Impeller Blades to Inlet Ring	All Machines	Radius	.035"	.050"
Back of Impellers	All Machines	Axial	.070"	—
Tip of Impeller to Diaphragm	All Machines	Radius	1/16"	1/8"
1st Stage Impeller Bore to Shaft (Shrink Fit)	All Machines	Dia.	.000"	-.002"
2nd Stage Impeller Bore to Shaft (Shrink Fit)	All Machines	Dia.	.000"	-.002"
1st Stage Labyrinth to Impeller Flange	All Machines	Radius	.012"	.020"

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C. IMPELLER (CONTINUED)

DESCRIPTION	MACHINES	MEASUREMENT	CLEARANCE MIN.	CLEARANCE MAX.
Shaft Labyrinth to Impeller Spacer	All Machines	Radius	.008"	.014"
2nd Stage Labyrinth to Impeller Flange	1903 thru 1905	Radius	.012"	.017"
	1906 thru 1908 R-11	Radius	.017"	.022"
	1908 R-114	Radius	.022"	.028" *

D. PRE-WHIRL VANE ASSEMBLY

Vane Shaft Bearing	All Machines	Dia.	.002"	.009"
Vane Shaft End Float	All Machines	Axial	.005"	.010" *
Idler Wheel Bearing	All Machines	Dia.	.003"	.007"
Idler Wheel End Play	All Machines	---	.012"	.050"
Gear Backlash	All Machines	---	.004"	.020"
Hydraulic Motor Cylinder to Piston	All Machines	Dia.	.004"	.020"
Inner Bushing to Drive Shaft	All Machines	Dia.	.0015"	.003"
Inner Bushing to Housing	All Machines	Dia.	.0005"	.004"
Outer Bushing to Drive Shaft	All Machines	Dia.	.001"	.003"
Outer Bushing to Housing	All Machines	Dia.	.0005"	.004"
Blade to Shaft Cap	1903 - 1904	Radius	.035"	.090"
	1905	Radius	.045"	.098"
	1906 thru 1908	Radius	.068"	.120"

E. GENERAL

Air Gap-Rotor to Stator	All Machines	Radius	Concentric within ± 10%	
Shaft Cap Runout	All Machines	T.I.R. **	---	.007"
Shaft End Runout	All Machines	T.I.R. **	---	.001"

** T.I.R. -- Total Indicator Reading

* Clearance Changed Since Previous Clearances & Fits Bulletin