



**UNITED
TECHNOLOGIES
CARRIER**

Commercial Division
Carrier Corporation

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DATE: 4/21/64
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SERVICE BULLETIN

SUBJECT:

19D CLEARANCES, FITS, DIMENSIONS

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

**MACHINES
AFFECTED:** All standard 19D machines in sizes 19D-102 through 19D-397.

PROCEDURE: The list of clearances and fits is to be used as a guide when trouble-shooting, making repairs or when conducting a machine inspection.

Use good judgment and past performance of the machine when working with clearances. Do not replace or refit a component based strictly on the attached measurements if the component has been working satisfactorily. However, bear in mind that the 19D machines operate at higher speeds than 19C machines and that the high speed parts and their dimensions are more critical.

Important: When removing the high speed assembly, mark the location of the impeller, impeller keys, impeller shaft and pinion gear to keep them in the same relative position with one another. This will minimize the possibility of upsetting the balance of the compressor.



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CLEARANCES - FITS - DIMENSIONS

19D CENTRIFUGAL

BEARINGS

Description	Compressor Size	Clearance		Measurement
		Min.	Max.	
Motor End Bearing	19D11, 21, 31	.0015	.003	Diameter
Gear Journal Bearing	19D11, 21 19D31	.0025 .004	.004 .0055	Diameter
Thrust Clearance on Gear Bearing	19D11, 21, 31	.010	.018	Axial
Pinion Gear Journal Bearing	19D11 19D21 19D31	.002 .0025 .003	.0035 .004 .0045	Diameter
Thrust Bearing	19D11, 21, 31	.008	.014	Axial
High Speed Journal Bearing	19D11 19D21, 31	.001 .002	.0025 .0035	Diameter

IMPELLER

Front of Impeller to Volute Wall	19D11 19D21 19D31	.035 .045 .055	.040 .050 .060	Axial
Impeller Eye to I.D. of Inlet Ring	19D11, 21 19D31	.025 .040	.030 .060	Radius

LABYRINTHS

Labyrinth Behind Impeller to Spacer Ring	19D11, 21, 31	.007	.011	Diameter
Labyrinth Behind Transmission and Motor Shell	19D11, 21, 31	.006	.010	Diameter
End Bell Bearing Labyrinth	19D11, 21, 31	.0045	.007	Diameter



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TORQUE REQUIREMENTS (All values in ft-lbs.)

Description	Compressor Size		
	19D11	19D21	19D31
Impeller Nut (Left Hand)	130	150	200
Thrust Disc Nut (Right Hand)	200	250	250
Gear & Shaft Locknut (Right Hand)	210	250	275
Compressor V-Band Clamps	10	10	10
Dresser Couplings	50	50	50
Vans Cable (tighten against drive pulley)	30	30	30

ORIFICES-SPRAY NOZZLES

Description	Compressor Size	Size	Measurement
Purge Orifice (Inlet from condenser)	19D11, 21, 31	1/16"	Diameter
Purge Orifice (Refrigerant Supply)	19D11, 21, 31	1/16"	Diameter
Motor Cooling Orifice	19D11 19D21 19D31	1/8" 3/16" 7/32"	Diameter
Motor Cooling Spray Orifice - End Bell	19D11, 21, 31	1/16"	Diameter
Motor Cooling Spray Nozzles - Transmission End	A1-A6 Motors C1-C9 Motors	.082" .094"	Diameter

FLOAT VALVE

Cooler Float Valve	Unishell Sizes 19U11 through 19U39	8-1/8" from float deck to top of float ball	Wide Open Position
		Maximum gap .015" over minimum blade contact of 50%	Closed Position