PERFORMANCE AND INSTALLATION CHARACTERISTICS OF CYCLONE 18 AND TURBO COMPOUND R-3350 ENGINES

WRIGHT AERONAUTICAL DIVISION — CURTISS-WRIGHT CORPORATION

GENERAL					PERFORMANCE										WEIGHTS AND DIMENSIONS			INSTALLATION												
					Take-Off			Military Rating at Critical Alt.				Normal Rating										Accessory Drive Ratios and Directions								
Engine Model	WAD Spec. No. TC No.	Instal-lation Drwg	Fuel Grade, Spec.	Oil Grade, Spec.	BHP	Engine RPM	BSFC	BHP	Engine RPM	Alt Ft	BSFC	BHP	Engine RPM	Alt Ft	BSFC	Dry Weight Lbs	Length In.	Dia-meter In.	Carb. Model or Master Control	Ignition Timing °BTC	Prop Shaft Spline Size	Prop Gov.	Fuel Pump	Tach. Gen.	Fluid Power Pump	Gen. or Power T.O.	Hyd. or Vac. Pump	Spare	AIRPLANE INSTALLATIONS	REMARKS
745C18BA3 745C18BA4	745-G TC 218	425133	Grade 100/130 WAD 5806	Grade 120 WAD 5815	2200 1900	2800 2600	.780 .780	(Low Ratio) (High Ratio)		6,300 16,200		2000 1800	2400 2400	4,800 15,600	.710 .765	BA3 2842 ± 1% BA4 2932 ± 1%	76.13	55.78	Bendix PR58P2	28° - 28°	60	1:1 C	1:1 CC	.5:1 (1) C (1) CC		2.8:1 (2) C	1.4:1 (2) CC	1:1 C	Lockheed 049	Cast cylinder heads; 6.50:1 comp. ratio; DF18LN-2 high tension magneto; generator gear box with 1.485:1 C drive. BA4 identical to BA3 except for forged cylinder heads.
R3350-57AM (C18BA)	787-C	423170	Grade 100/130 MIL-G-5572B	Grade 1120 MIL-L-6082B	2200	2800	.800	2200	2600		.760	2000	2400		.700	2758 Max	76.26	55.78	Bendix PR58M1	20° - 20°	60	1:1 C	1.1 CC	.5:1 (1) C (1) CC		2.8:1 (2) C	1.4:1 (2) CC	1:1 C	Boeing B-29	Cast cylinder heads; single speed 6.06:1 supercharger for use with an exhaust turbo supercharger; 6.85:1 comp. ratio; .35:1 reduction gear; DF18LN-2 high tension magneto; no torquemeter.
749C18BD1 R3350-75	749E TC 218	424989	Grade 100/130 WAD 5806	Grade 120 WAD 5815	2500 1900	2800 2600	.725 .735	(Low Ratio) (High Ratio)		3,100 15,700		2100 1800	2400 2400	4,400 16,000	.680 .690	2915 ± 1%	78.52	55.62	Bendix PR58P2	R20° - 20° A30° - 30°	60 - 60A	.879:1 CC	1:1 CC	.5:1 (1) C (1) CC		2.8:1 (2) C	1:4:1 (1) CC (1) C	1:1 C	Lockheed C-121A, -121B; WV-1 649 - 749	Two piece nose section; 6.50:1 comp. ratio; manual or automatic spark advance.
R3350-24WA (C18BD)	N-825	423865	Grade 100/130 MIL-G-5572B	Grade 1120 MIL-L-6082B	2500	2900	.830	2500 1900	2800 2600	3,500 14,800	.825 .880	2100 1800	2400 2400	5,500 15,000	.755 .857	2822 Max	80.58	54.13	Bendix PR58Q2	20° - 20°	60 - 60A	.879:1 CC	1:1 (2) C	.5:1 (1) C (1) CC		2.8:1 (2) C	1.4:1 (2) CC	1:1 C	Douglas AD-1 Lockheed P2V-2	Pressure carburetion; cast cylinder heads; 6.50:1 comp. ratio; two piece nose section; MAP regulator.
R3350-26WA -26WB -26WC -26WD (C18CA)	N-836E	-26WA 425280 -26WB 430770	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	2700	2900	.780	2700 2100	2900 2600	3,700 14,500	.780 .820	2300 1900	2600 2600	6,200 17,000	.720 .780	-26WA 2848 -26WB 2953	-26WA 80.81 -26WB 81.23	55.62	Bendix PR58U1	28° - 28°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC		2.8:1 (2) C	1.4:1 (2) CC	1:1 C	Douglas AD-2, AD-4, AD-5 AD-6 (-26WA, WC, WD) AD-7 (-26WB) Lockheed P2V-3 (-26WA, WC, WD)	Impeller injection; water injection. -26WB is similar to -26WA except basic power and nose section similar to TC-18. -26WC, WD are field conversions -26WA to -26WB. -26WA has DF18LN-2 high tension magneto.
975C18CB1	975-D TC 270	428500	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	2800	2900	.780	(Low Ratio)		4,500		2400 2400 2300	2600 2600 2600	SL 5,300 16,000	.717 .760	3065 ± 1%	78.47	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Lockheed M1049	Similar to compound engine except not compounded; manual or automatic spark advance.
R3350-30W (TC18DA)	N-856B	425855	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	3250	2900	.700	3250 3250 2550	2900 2900 2600	SL 3,400 15,400	.690 .686 .638	2600 2650 2450	2600 2600 2600	SL 6,500 16,600	.650 .630 .633	3445 Max	91.80	56.59	Bendix PR58T1, CECO 58CPB-11	R20° - 20° A30° - 30°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC		3.11:1 (2) C	1.4:1 (1) C (1) CC	1:1 C	Lockheed P2V-4, P2V-5, P2V-6	Impeller injection; MAP regulator, automatic spark advance.
R3350-30WA -30WB (1) -36W (1) -36WA (TC18DB)	N-856C	429190	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	*3500	2900	.545	3250 3250 2550	2900 2900 2600 -36WA	SL 4,100 17,000 4,100 16,800	.690 .684 .701 .720 .713	2600 2650 2450	2600 2600 2600 -36WA	SL 6,600 18,000 6,400 17,800	.655 .632 .694 .658 .703	3520 Max	91.80	56.59	CECO 58CPB-11	R20° - 20° A30° - 30° -36WA A27° - 27°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC		3.11:1 (2) C	1.4:1 (1) C (1) CC	1:1 C	Fairchild R4Q-2 (-30WA, -36W) Lockheed P2V-4, P2V-6 P2V-6B (-30WA,-36W,WA) P2V-5 (-30WB,-36W,WA) Martin P5M-1 (-30WA, -36W, WA)	Impeller injection; water injection. -30WB has Bendix PR58T1 carb. -36W is -30WA with drilled turbine wheels; U.S. Navy - AR/AL carb; foreign military - RICH/NORMAL carb. -36WA is -36W with manual spark advance, AR/AL carb., and increased cruise rating.
R3350-32W -32WA (TC18EA) (1)	N-878D	428670	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	*3700	2900	.550	3400 3420 2550	2900 2900 2600 -32WA	SL 2,400 17,000 2,200 16,800	.693 .690 .701 .724 .708	2800 2850 2450	2600 2600 2600 -32WA	SL 4,100 18,000 4,000 17,800	.660 .646 .694 .670 .698	3560 Max	91.80	56.59	CECO 58CPB-11	R20° - 20° A30° - 30° -32WA A27° - 27°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Lockheed P2V-5F, P2V-7 Martin P5M-2	Impeller injection; water injection; includes TC-18EA improvements which permit increased power ratings. U.S. Navy - AR/AL carb; foreign military - RICH/NORMAL carb. -32WA is -32W with manual spark advance, AR/AL carb., increased cruise rating.
R3350-34 (TC18DA) (1)	N-872B	428505	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	3250 2550	2900 2600	.663 .632	(Low Ratio) (High Ratio)		5,000 15,200		2600 2650 2450	2600 2600 2600	SL 6,500 16,400	.650 .638 .627	3641 Max	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) (C)	3.11:1 (2) C		1.4:1 C	Lockheed C-121C, RC-121C RC-121D, R7V-1 WV-2, WV-3	Commercial equivalent is 972TC18DA1. U.S. Air Force -34 has automatic spark advance; U.S. Navy -34 has manual spark advance, 20° - 20°R/25° - 25°A ignition timing.
R3350-42 (TC18EA) (1) (2)	N-946	432970	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	3400 2550	2900 2600	.674 .632	(Low Ratio) (High Ratio)		4,000 15,200		2600 2650 2450	2600 2600 2600	SL 6,500 16,400	.650 .638 .628	3730 Max	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Lockheed WV-2, WV-3	Commercial equivalent is 988TC18EA6; incorporates equal length steel fuel injection lines, 100° overlap front valve cam, three planetary supercharger drive and manual spark advance.
R3350-85 -89 -89A (TC18DB)	868-C	428315	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	*3500	2900	.545	3250 3250 2550	2900 2900 2900	SL 4,100 17,000	.690 .684 .701	2600 2650 2450	2600 2600 2600	SL 6,600 18,000	.655 .632 .694	3472 Max	90.80	56.59	Bendix PR58T1 or CECO 58CPB-11	R20° - 20° A30° - 30°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (1) C (1) CC	3.11:1 (2) C		1:1 C	Fairchild C-119F, C-119G	Impeller injection; water injection; automatic spark advance. -89 is -85 with drilled turbine wheels. -89A is Air Force field conversion of -89 to incorporate reverse low flow torquemeter, four-pinion cam drive, HC-250 exhaust valve guides and one-piece internal torquemeter line.
R3350-91 (TC18DA) (1)	923	428505	Grade 115/145 MIL-G-5572B	Grade 1120 MIL-L-6082B	3250 2550	2900 2600	.663 .632	(Low Ratio) (High Ratio)		5,000 15,200		2600 2650 2450	2600 2600 2600	SL 6,500 16,400	.650 .638 .627	3620 Max	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60A	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Lockheed C-121C RC-121C RC-121D	-91 is U.S. Air Force -34 with manual spark advance.
972TC18DA1 DA2 (1) (2)	972-G TC 272	DA1 428505 DA2 429510	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	3250 2550 **	2900 2600	.663 .632	(Low Ratio) (High Ratio)		5,000 15,200		2600 2650 2450	2600 2600 2600	SL 6,500 16,400	.650 .638 .627	DA1 3581 ± 1% DA2 3573 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	DA1 Lockheed 1049B, C, E, G DA2 Douglas DC-7, DC-7B	First commercial turbo compound; manual spark advance. DA1 and DA2 differ by installation provisions - baffles. DA1 has fireseal adapter.
972TC18DA3 DA4 (1) (2)	972-G TC 272	DA3 430290 DA4 430295	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	3250 2550 **	2900 2600	.662 .632	(Low Ratio) (High Ratio)		5,000 15,200		2700 2750 2450	2600 2600 2600	SL 5,800 16,400	.652 .641 .627	DA3 3604 ± 1% DA4 3596 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	DA3 Lockheed 1049C, E, G DA4 Douglas DC-7, DC-7B	DA3 is identical to DA1 and DA4 identical to DA2 except for incorporation of increased capacity main bearings, improved pistons, improved PRT cooling air impellers, and reverse low flow torquemeter.
988TC18EA1 EA3 (1) (2)	988-G TC 287	EA1 430735 EA3 430915	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	3400 2550 **	2900 2600	.674 .632	(Low Ratio) (High Ratio)		4,000 15,200		2860 2920 2450	2650 2650 2600	SL 4,800 16,400	.658 .650 .628	3645 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	EA1 Douglas DC-7C EA3 Lockheed 1049G, 1049H	EA1, EA3 incorporate 4000 HP reduction gear, strengthened crankcase, improved cylinders and pistons, improved PRT and rear section components for added durability. EA1 and EA3 differ by installation provisions - baffles.
988TC18EA2 (1) (2)	988-G TC 287	430910	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	3400 2550 **	2900 2600	.674 .632	(Low Ratio) (High Ratio)		4,000 15,200		2860 2920 2450	2600 2600 2600	SL 4,800 16,400	.658 .650 .628	3745 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Lockheed 1649A	Similar to EA3 except .355 reduction gear, steel rear cam and tappet housing which is integral part of crankcase.
981TC18EA1 (1)	981-C TC 287	430675	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	*3700 3400 2550	2900 2900 2600	.515 .674 .632	3400 3400 2550	2900 2900 2600	SL 4,000 15,200	.680 .674 .632	2860 2920 2450	2600 2600 2600	SL 4,800 16,400	.658 .650 .628	3651 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	Canadair CP-107	Identical to 988TC18EA1 except water injection added.
988TC18EA4 EA6 (1) (2)	988-G TC 287	EA4 430735 EA6 430915	Grade 115/145 AMS 3036B	Grade 100 WAD 5815 or Grade 120 WAD 5818	3400 2550 **	2900 2600	.674 .632	(Low Ratio) (High Ratio)		4,000 15,200		2860 2920 2450	2600 2600 2600	SL 4,800 16,400	.658 .650 .628	3675 ± 1%	89.53	56.59	Bendix PR58S2	R25° - 25° A30° - 30°	60	.857:1 C	1:1 (2) CC	.5:1 (1) C (1) CC	1.4:1 (2) C	3.11:1 (2) C		1.4:1 C	EA4 Douglas DC-7C EA6 Lockheed 1049G, 1049H	EA4 similar to EA1 and EA6 similar to EA3 except for improvements which permit increased cruise rating.

*Wet Rating
**With 100/130 Fuel, WAD Spec. No. 5806, Ratings are:

DA1, DA2
DA3, DA4
EA1, EA2, EA3
EA4, EA6

2950	2900	.655	(Low Ratio)	8,100	2450	2600	9,100	.633
2950	2900	.654		8,500	2450	2600	9,400	.632
2950	2900	.656		8,500	2450	2600	9,400	.633
2950	2900	.656		8,500	2450	2600	9,400	.633

(1) Indicates 100° overlap front cam has been approved and is released to service.

(2) Indicates equal length steel fuel injection lines have been approved and are released for service.

Unless otherwise specified in the Remarks, all engines incorporate direct fuel injection, a low tension DLN-9 magneto, .4375 propeller reduction gear, 6.46:1 and 8.67:1 impeller gear ratios, 6.70:1 compression ratio, 6.125 cylinder bore, 6.312 piston stroke, a torquemeter, and a starter drive which rotates clockwise at engine speed.

WAD Military Service Department
Revised: January 1961

MARKET CAPABILITY
FOR
WRIGHT RECIPROCATING ENGINES

R-1300
R-2600
R-1820
R-3350

18 MARCH 1957

		MILITARY APPLICATION	COMMERCIAL DESIGNATION
R-1300-1A	Engine	North American T28	853C7BA1

NOTE: Has high percentage of parts that can be installed in this commercial engine.

R-1300-3	Engine	Sikorsky H-19B H-19D	817C7BA1

NOTE: Has high percentage of parts that can be installed in this commercial engine.

R-1820-76	Engine	Grumman SA-16A	826C9HD3 & 5

NOTE: Same HP(1425) Engine as insalled in high powered executive type Douglas DC-3's and Lockheed Lodestar. Has high percentage of parts that can be installed in this commercial engine.

R-1820-76A	Engine	Grumman SA-16A	826C9HD3 & 5

NOTE: Same HP(1425) engine as installed in high powered executive type Douglas DC-3's and Lockheed Lodestar. Has high percentage of parts that can be installed in this commercial engine.

R-1820-76B	Engine	Grumman SA-16A	826C9HD3 & 5

NOTE: Same HP(1425) engine as installed in high powered executive type Douglas DC-3's and Lockheed Lodestar. Has high percentage of parts that can be installed in this commercial engine.

R-1820-84	Engine	Sikorsky H34A	863C9HD1

NOTE: Same HP(1425) engine as installed in high powered executive type Douglas DC-3's and Lockheed Lodestar. Has high percentage of parts that can be installed in this commercial engine.

R-1820-97	Engine	Boeing B-17's	R-1820-G666A

NOTE: Same HP(1200) engine as installed in Wright powered Douglas DC-3's - Lockheed Lodestar and Boeing stratoliner. Has high percentage of parts that can be installed in the above commercial engine and the R-1820-G202A - R-1820-G205A

R-1820-103	Engine	Piasecki H-21A H-21B H-21C	863C9HD1

NOTE: Same HP(1425) engine as installed in high powered executive type Douglas DC-3's and Lockheed Lodestar. Has high percentage of parts that can be installed in this commercial engine.

Incl #1

R-2600-29 Engine North American B25 R-2600-29

NOTE: These engines are the same as the ones on all B-25's in commercial use as these aircraft have been converted for executive use with these engines installed.

R-2600-29A Engine North American B25 R-2600-29A

NOTE: These engines are the same as the ones on all B-25's in commercial use as these aircraft have been converted for executive use with these engines installed.

R-2600-35 Engine North American B25 R-2600-35

NOTE: These engines are the same as the ones on all B-25's in commercial use as these aircraft have been converted for executive use with these engines installed.

R-3350-23 Engine Boeing B29 787C18BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed - 049 has many parts that can be installed in this com'l engine.

R-3350-30W Engine Fairchild C-119-F 856TC18DA1
C-119-G
C-119-H

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has high percentage of parts that can be installed on this com'l engine.

R-3350-34 Engine Lockheed C-121-C 972TCDA1 & 2
RC-121-C
RC-121-D

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Consellations. Has high percentage of parts that can be installed on these com'l engines.

R-3350-36W Engine Fairchild C-119-F 856TC18DA1
C-119-G
C-119-H

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has high percentage of parts that can be installed on this commercial engine.

R-3350-57 Engine Boeing B-29 787-C18-BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed-049. Has many parts that can be installed in this com'l engine.

R-3350-57A Engine Boeing B-29 787-C18-BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed-049. Has many parts that can be installed in this com'l engine.

PAGE IN BACK

R-3350-57M	Engine	Boeing B-29	787-C18-BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed-049. Has many parts that can be installed in this com'l engine.

R-3350-57AM	Engine	Boeing B-29	787-C18-BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed-049. Has many parts that can be installed in this com'l engine.

R-3350-75	Engine	Lockheed C-121-A C-121-B	749C18BD1

NOTE: This engine is very similar to the Wright engine that is installed in the Lockheed-749. Has high percentage of parts that can be installed in this com'l engine.

R-3350-83	Engine	Boeing B-29	787-C18-BA

NOTE: This engine very similar to the Wright engine that is installed in the Lockheed 049. Has many parts that can be installed in this com'l engine.

R-3350-85	Engine	Fairchild C-119-F C-119-G C-119-H	856TC18DA1

NOTE: This engine very similar to the Wright compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has High percentage of parts that can be installed on this com'l engine.

R-3350-89	Engine	Fairchild C-119-F C-119-G C-119-H	856TC18DA1

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has high percentage of parts that can be installed on this com'l engine.

R-3350-89A	Engine	Fairchile C-119-F C-119-G C-119-H	856TC18DA1

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has High percentage of parts that can be installed on this com'l engine.

R-3350-91	Engine	Lockheed C-121-C RC-121-C RC-121-D	972TC18DA1 & 2

NOTE: This engine very similar to the Wright Compound engines which are installed in the Douglas DC-7's and Lockheed Super C & G Constellations. Has high percentage of parts that can be installed on these com'l engines.