

**MODELS C75, C85,
C90 & O-200**

CONTINENTAL® AIRCRAFT ENGINE

OVERHAUL MANUAL

 **TELEDYNE CONTINENTAL MOTORS**
Aircraft Products Division

FORM X-30010

**FAA APPROVED
FEBRUARY 1980**

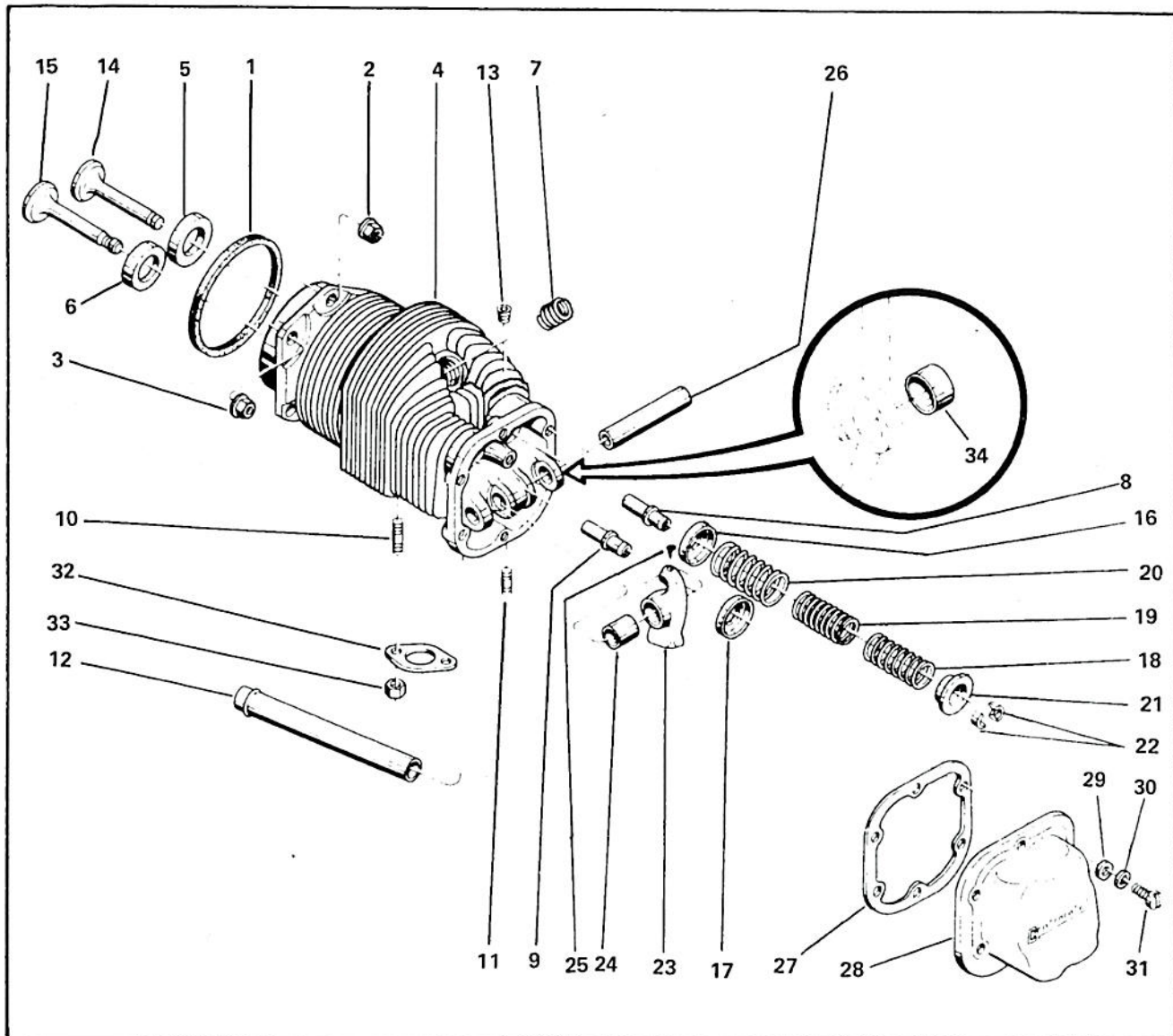


FIGURE 9. CYLINDER ASSEMBLY

FIG. & INDEX	PART NUMBER	DESCRIPTION	QTY.	USABLE ON CODE
9-1	21477	\$ Packing, Cylinder Base	4	ALL
	641917A2	Cylinder & Valve Assembly	4	ALL
	641916A1	② Cylinder & Valve Assembly	4	ALL
	641917CP-A2	① Cylinder & Valve Assembly	Opt.	ALL
ATTACHING PARTS				
-2	531003	Nut, Flanged Hex, 3/8 Inch	8	ALL
-3	531001	Nut, Flanged Hex, 7/16 Inch	16	ALL
.				
-4	641917	. Cylinder & Head Assembly	1	ALL
-4	641916	② . Cylinder & Head Assembly	1	ALL
-4	641917CP	① . Cylinder & Valve Assembly	Opt.	ALL

FIG. & INDEX	PART NUMBER	DESCRIPTION	QTY.	USABLE ON CODE
9 -5	641793	† ④ . . Insert, Intake Valve Seat	1	ALL
-6	3923	† . . Insert, Exhaust Valve Seat	1	ALL
-7	520112	. . Insert, 18mm Spark Plug Helical Coil	2	ALL
-8	24024	† . . Guide, Intake Valve	1	ALL
-9	24047	† ② . . Guide, Exhaust Valve	1	ALL
-9	628309	† . . Guide, Exhaust Valve	1	ALL
-10	402151	† . . Stud, Exhaust Flange	2	ALL
-11	401870	† . . Stud, Intake Elbow Pad	2	ALL
-12	21284	. . Housing, Push Rod	2	ALL
-13	629518-1H	\$. . Plug	1	ALL
-14	641792	④ . Valve, Intake	1	ALL
-15	629404	② . Valve, Exhaust	1	ALL
-15	631639	. Valve, Exhaust	1	ALL
-16	24026	. Retainer, Intake Valve Spring	1	ALL
-17	24044	. Retainer, Exhaust Valve Spring	1	ALL
-18	24031	. Spring, Inner Valve	2	ALL
-19	24029	. Spring, Intermediate Valve	2	ALL
20	625958	. Spring, Outer Valve	2	ALL
-21	24027	. Seat, Valve Spring	2	ALL
22	21361	. Lock, Valve Spring Seat	4	ALL
-23	639615	Rocker Arm Assembly, Exhaust	1	ALL
-23	639614	Rocker Arm Assembly, Intake	1	ALL
-24	24122	. Bushing, Valve Rocker Arm	1	ALL
-25	21007	. Screw, Drive, 1/8 Inch	1	ALL
-26	21153	† Shaft, Valve Rocker	1	ALL
-27	530162	\$ Gasket, Rocker Cover	1	ALL
-28	40762	Cover, Valve Rocker	1	ALL
ATTACHING PARTS				
-29	534471	Washer, Plain 17/64 Inch	6	ALL
-30	MS35338 44	Washer, Lock	6	ALL
-31	535091	Screw, Drilled Head	6	ALL
* * * *				
-32	21493	\$ Gasket, Exhaust Flange, Copper Asbestos	4	ALL
-32	627429	Gasket, Exhaust Flange	Opt.	ALL
-33	22022	Nut, Plain, 5/16 Inch	8	ALL
-34	22949	† ③ Bushing, Rocker Shaft Boss	AR	ALL

NOTE ① Chrome Plate

NOTE ② These parts are contained within the 641916A1 Cylinder Assembly, and are not compatible with the 641917A2. The 641916A1 Cylinder Assembly is no longer available.

NOTE ③ Bushing supplied for repair of worn bosses not installed in new engines and installed in this location if cylinder head is tapped with 1/8 inch NPT hole.

NOTE ④ Cylinder's A50222 and 639702 used a 45° intake valve and seat and will not accommodate the 30° 641792 valve. Modify per Service Bulletin M76-8.

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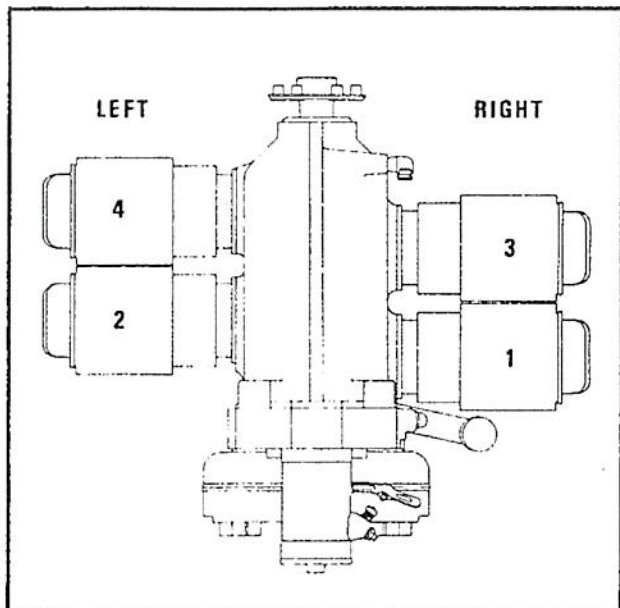


Figure 7. Cylinder Arrangement Diagram (Top View).

1-3. MEASUREMENT

Throughout this manual are instructions regarding measurement of parts dimensions and proper tightening of nuts and screws. The importance of accuracy in these operations cannot be over-emphasized. All necessary data will be found in the Table of Limits. A chart provides a visual reference to locations of the points where measurements are to be made.

1-4. CLEANLINESS

Every effort should be made to keep engines free from external accumulations of foreign matter and to prevent the entrance of abrasive particles.

TABLE IX GENERAL IGNITION SYSTEM SPECIFICATIONS

Model or Model Dash Number (C75, C85, C90)	-8	-12	-14	-16	O-200
*Unfinished Eisemann Magneto Model	AM-4				
*Radio Shielded Eisemann Magneto Model		LA-4			
Radio Shielded Bendix Magneto Model	S4RN-21	S4LN-21	S4LN-21	S4LN-21	S4LN-21
**Slick Magneto	447/4000	447/4000	447/4000	447/4000	447/4000
Number of Magnetos	2	2	2	2	2
Number of Spark Plugs	8	8	8	8	8
Firing Order C75, C85, C90, O-200	1,3,2,4	1,3,2,4	1,3,2,4	1,3,2,4	1,3,2,4
*Approved for C75 and C85 only					
**Approved for C90 and O-200 only					

TABLE X IGNITION TIMING

Model	C75	C85	C90	O-200
Right Magneto Fires Upper Plugs (° B.T.C.)	28	28	26	24
Left Magneto Fires Lower Plugs (° B.T.C.)	30	30	28	24

TABLE XI VALVE MECHANISM SPECIFICATIONS

Model	C75	C85	C90	O-200
Type of Valve Mechanism	Overhead	Overhead	Overhead	Overhead
Hydraulic Valve Lifters Installed	X	X	X	X
Valve To Rocker Clearance (Operating)	0	0	0	0
Valve To Rocker Clearance (Lifters Deflated) (inches)	.030-.110	.030-.110	.030-.110	.030-.110
Valve Lift (inches)	0.382	0.382	0.410	0.410
Intake Valve Opens (° B.T.C.)	8	8	9	21
Intake Valve Closes (° A.B.C.)	57	57	56	58
Exhaust Valve Opens (° B.B.C.)	49	49	50	65
Exhaust Valve Closes (° A.T.C.)	16	16	15	14

TABLE XII LUBRICATION SYSTEM SPECIFICATIONS

Model	C75	C85	C90	O-200
Pressure Oil Pump Installed	X	X	X	X
Oil Sump Capacity (U.S. Quarts)	4	4-1/2	4.8	6
Average Oil Consumption (Pints/Hour)	1/5	1/4	1/3	1/3

TROUBLE	PROBABLE CAUSE	REMEDY
Poor acceleration.	Engine not warm enough.	Continue warm-up.
	Defective throttle control.	Check for binding, kinks, slipping, worn parts.
	Plugged air filter.	Remove and clean filter.
	Idling mixture too lean.	Readjust.
	Idling jet plugged.	Clean carburetor.
	Water in fuel.	Drain sediment trap.
	Leak in air induction system.	Check all joints and throttle shaft bearings.
Low power.	Defective ignition cable.	Test for high voltage leaks. Replace parts.
	Scored valve stems.	Replace valves and guides.
	Warped valves.	Replace valves. Grind seats.
	Defective magneto.	Overhaul magneto.
	Throttle not fully open.	Readjust linkage.
	Carburetor air heat valve not closing fully.	Remove filter, inspect valve. Straighten plate.
	Incorrect propeller installed.	Check specification and propeller model. Replace.
	Propeller blades warped.	Inspect pitch. Replace.
	Ice forming on carburetor throttle valve.	Apply full carburetor air heat.
	Air filter plugged.	Remove and clean.
	Fuel flow restricted.	Inspect tank vents. Inspect shut-off valve. Clean strainer. Clean carburetor screen. Blow out fuel supply line.
	Worn cylinders, pistons and/or piston rings.	Overhaul engine.