

TDM, INC.

CESSNA 175, 175A, 175B & 175C TAILWHEEL CONVERSION KIT

MAIN LANDING GEAR INSTRUCTIONS NO. 120978-3

SEE DRAWING 83079 FOR REFERENCED VIEWS AND SECTIONS

- (1) Remove the following interior items:
 - Doors.
 - Front seats and belts.
 - Carpeting from rear seat forward.
- (2) Remove center tunnel. (Refer to drawing #2 of 5 Ref. H-H to cut.)
 - Remove inspection plates, fuel selector handle, index plate and selector mount.
 - Remove access cover in floor on right side of tunnel.
 - Disconnect flap and trim tab cables.
 - Drill six(6) rivets in forward section of trim tab wheel plate. Three(3) on each side.
 - Cut in accordance with drawing.
 - Drill rivets attaching rear portion of tunnel to floor and remove.
- (3) Disconnect elevator push-pull tube and elevator cables.
- (4) Drill and remove stiffeners attaching door posts to floor. (Cessna P/N's 713495-53 -54) Discard. Install 90L & 90R.
- (5) Drill and remove floorboards from rear of doors forward to the rudder peddles.
- (6) Remove elevator bellcrank.
- (7) Drill and discard Cessna bulkheads P/N's 0713054-2 -1. Also elevator bellcrank brackets, Cessna P/N's 0510112 -1.
- (8) Remove any wires or antenna leads passing through strut area.
- (9) Remove all brake hydraulic lines.
- (10) Drill all rivets in front and rear bulkheads from center tunnel area outboard.
 - Do not drill rivets in center tunnel area, except those in line with top row of bulkhead rivets.

- Do not drill rivets in Cessna P/N 713495-55 at strut attach point. (Rear bulkhead only.)
 - Remove two(2) 3/8" bolts on each side near strut attach point. (Rear bulkhead only.)
 - Top angles will be loose, but need not be removed-reinstall in same position.
- (11) Locate and clamp into position, aligning pre-drilled holes in front bulkheads. (#'s 2L, 82R, 3L & 83R) Drill all holes to 3/16".
- Clean and rivet in close accordance with blueprint.
- (12) Follow same procedure for installation for rear bulkheads, (#'s 81L & 81R) but also add bulkhead spacers (#'s 84L & 84R)
- (13) Install doubler.(#10)
- Draw center lines on doubler and on belly of aircraft.
 - Hold doubler to aircraft and align C L's.
 - Lightly pencil around edge.
 - Drill all rivets inside penciled area.
 - Re-align doubler and match drill (3/16") being sure to draw doubler flush.
 - Clean and rivet.
- (14) Locate forward top angles (#'s 58, 61, 57)(Sheet #2 of 5 Ref.H)
- Clamp and drill (3/16")
 - Clean and rivet all holes except:
 - 2 outboard holes, right and left sides.(Install bolts)
 - First hole on either side of center rivet.
- (15) Locate rear top angles(#'s 59, 62, spacer 63) and Cessna's original angle P/N 513006-24. (Sheet #2 of 5 Ref.H)
- Clamp and drill. (3/16")
 - Clean. (Install 3/8" bolt)
 - Rivet all except first hole each side of center rivet.
- (16) Bolt into position elevator bellcrank brackets(#'s 56L & 56R) Sheet #2 of 5 Ref. J-J)

- (17) Cut gear leg and brake line holes using templet.
- (18) Locate right outboard saddle. (#8R & angles #'s 44R, 43R, 15R & 19R.) Recommended procedure:
 - Install outboard angles. (#'s 15R & 44R)
 - Slide in saddle; if necessary shave to fit on rear side only.
 - Install inboard angles. (#'s 19R & 43R)
 - Drill saddles.
 - Clean and bolt.
- (19) Same procedure for left outboard saddle and angles. (#'s 8L, 15L, 19L, 43L and 44L)
 - * IMPORTANT: Match gear slot angle variance $\pm 1^{\circ}$ maximum.
- (20) Locate and drill brackets. (#'s 46L & 46R)
 - Clean and rivet.
- (21) Install, following same procedure for outboard saddles, the inboard saddles. (#'s 7L & 7R and 4 #20's)
 - * Maximum tolerance of all gear slots angles $\pm 1^{\circ}$.
- (22) Locate and drill angles. (#'s 18L & 18R) (Two(2) #'s 16)
 - Clean and rivet.
- (23) Install support blocks (#6) as shown in blueprint.
- (24) Locate and drill 4 top angles. (#17)
 - Clean and rivet.
- (25) Locate and trim to fit if necessary, the door post to floorboard stiffeners. (Removed in step #4.) Install #'s 90L & 90R.
 - Rivet door post side only.
- (26) Locate top stress plate (#60) by aligning rear holes with forward row of floorboard rivets. Match drill all holes with 13/64" drill.
- (27) Install nut plates in all holes.
- (28) Install gear legs, strut plate shims and saddle wedges.
- (29) Safety wire strut plate and saddle wedge bolts.
- (30) Reinstall floorboards in door area.

- (31) Temporarily install stress plate and align center tunnel.
(Removed during step #2) Oversize all attaching rivet holes, except those holes that are over the stress plate, with 13/64" drill.
- (32) Locate and install splice plates (#'s 86L & 86R, 87L & 87R) at center of tunnel cut areas. (Sheet # 2 of 5 Ref. H-H)
- (33) Match drill holes from top stress plates through tunnel.
- (34) Install nutplates in floor for tunnel attachment.
- (35) Reconnect hydraulic brake lines.
- (36) Reinstall floorboards between rudder peddles and gear saddle area.
- (37) Install elevator bellcrank.
- (38) Reroute, if necessary, any wires extending through saddle area.
- (39) Install top stress plate permanently.
- (40) Install push-pull tube and elevator cables.
- (41) Reinstall, permanently, the center tunnel.
- (42) Connect trim tap and flap cables.
- (43) Now do tail section. (Ref. to tailwheel instructions sheet.)

TAILWHEEL INSTALLATION INSTRUCTIONS

TDM, INC.

CESSNA 175, 175A, 175B & 175C TAILWHEEL CONVERSION KIT

TAILWHEEL INSTRUCTION NO. 120978-3

SEE DRAWING 83079 FOR REFERENCED VIEWS AND SECTIONS

- (1) Remove bottom rudder cap. .
- (2) Drill rivets out of rear fuselage casting station 228.68, starting with third rivet down from under side of horizontal stabilizer. Drill our five (5) rivets each side.
- (3) Drill rivets out of stringer from casting forward, including two (2) beyond, or in bulkhead. Remove stringer.
- (4) Bolt #30L on left side of fuselage in second drilled hole down, station 228.68. From bulkhead station 205.81 count toward rear, using 4th rivet. Don't count two (2) rivet close together in bulkhead. (Rivets just below stabilizer) From center of 4th rivet measure down 13/16" to edge of #30 tailwheel bracket secure. Drill through pilot hole #30 and cleco.
- (5) From inside of fuselage locate two(2) holes from stringer angle onto #30. Remove #30 from fuselage. Cleco stringer angle to #30. Drill rest of holes.
- (6) Repeat on right side. For a check before drilling pilot hole, put level on top of 30L and 30R after bulkhead station 228.68 with ship wings level. Tail bracket should be level. Check installation drawing for rivet pattern. 30L and 30R are now ready to be riveted in place. Before riveting, clamp #92 in place and check for level and alignment. If everything checks satisfactory, rivet #30L and #30R.
- (7) Put #92 into place. Clamp. Check to see if it lines up with fuselage. Tail end might have to be moved right or left, after it is in line. Drill bolt holes. See section G-G.
- (8) Put #29 and #95 in place. Mark for drilling. Clamp. Remove #92. Drill and bolt #29 and #95 into place. Now reinstall #92.
- (9) Put pad in place.. Install springs spacer #45 and angles#54. Put clamp #26 in place.
- (10) Install rudder arm #41. Before drilling insert spacer #93 into space, bottom, of rudder at rudder steering arm.
- (11) Install braces on steering arm bracket #91L and 91R as per drawing. Install tailwheel steering springs and chain. Install rudder bulkhead #94 as per drawing.
- (12) Install stringers #23A L&R, 24A L&R, 25A L&R.

INSTRUCTION SHEET FOR REASSEMBLING AIRCRAFT

- (1) Switch spindles and wheels from original to Bolen main gear.
- (2) Remove original gear.
- (3) Remove nose gear and steering arms.
- (4) Install covers (#67L & 67R) for control arm openings
- (5) Install step in original U-bolt holes.
- (6) Install covers for original gear openings.
- (7) Install original gear fairing around Bolen Main gear.
- (8) Connect and bleed brake lines.
- (9) Reinstall doors and interior.
- (10) Set toe-in.
- (11) Perform weight and balance.
- (12) Recalibrate oil dipstick.
- (13) Drill drain holes in belly of airplane; aft of bulkhead.

T D M, INC.
TAILWHEEL MODIFICATION KIT
CESSNA 175, A, B, C

DISTRIBUTED BY:
AVCON CONVERSIONS, INC.
P. O. BOX 654
UDALL, KS 67146
PHONE 316-782-3317

NO.	REQD.	PART NO.	DESCRIPTION
✓	1	175-2	LH BULKHEAD REAR
✓	1	175-3 ✓	LH BULKHEAD FRONT
✓	2	175-5 —	LH SUPPORT BLOCK
✓	2	175-5 ✓	RH SUPPORT BLOCK
✓	1	175-6 ✓	LH STRUT PLATE
✓	1	175-6 ✓	RH STRUT PLATE
✓	1	175-7 ✓	LH INBOARD SADDLE
✓	1	175-7 ✓	RH INBOARD SADDLE
✓	1	175-8 ✓	LH OUTBOARD SADDLE
✓	1	175-8 ✓	RH OUTBOARD SADDLE
✓	1	175-10 ✓	DOUBLER
✓	1	175-11 —	LH COVER LANDING GEAR STRUT
✓	2	175-11 —	RH COVER LANDING GEAR STRUT
✓	1	175-15 ✓	LH ANGLE
✓	1	175-15 ✓	RH ANGLE
✓	1	175-16 ✓	LH ANGLE
✓	1	175-16 —	RH ANGLE
✓	1	175-17 ✓	ANGLE
✓	1	175-18 ✓	LH ANGLE
✓	1	175-18 ✓	RH ANGLE
✓	1	175-19 ✓	LH ANGLE
✓	1	175-19 ✓	RH ANGLE
✓	1	175-20 ✓	LH ANGLE

NO.	REQD.	PART NO.	DESCRIPTION
☒	X	175-20 ✓	RH ANGLE
☒	X	175-23 ✓	LH STRINGER (CODE B)
☒	X	175-23	RH STRINGER (CODE A)
☒	X	175-24 ✓	LH STRINGER
☒	X	175-24 ✓	RH STRINGER
☒	X	175-25 ✓	LH STRINGER
☒	X	175-25 ✓	RH STRINGER
☒	X	175-26 ✓	SPRING-CLAMP
☒	X	175-29 ✓	LH ANGLE
☒	X	175-29 ✓	RH ANGLE
☒	X	175-30 ✓	LH TAILWHEEL BRACKET
☒	X	175-30 ✓	RH TAILWHEEL BRACKET
☒	X	175-31 ✓	LH ANGLE (on -92 assembly)
☒	X	175-31 ✓	RH ANGLE (on -92 assembly)
☒	X	175-32 ✓	PAD-SPRING
<u>80</u>	1	175-34	RH GEAR STRUT
<u>80</u>	1	175-35	LH GEAR STRUT
☒	X	175-36 ✓	LEAF SPRING
☒	X	175-37 ✓	LEAF SPRING
☒	X	175-38 ✓	LEAF SPRING
☒	X	175-39 ✓	LEAF SPRING
<u>na</u>	1	175-40	TAILWHEEL ASSEMBLY
☒	X	175-40A ✓	TAILWHEEL BUSHING (SMALL)
☒	X	175-41 ✓	RUDDER ARM
<u>80 4</u>	10	175-42	CLIP (6 on stringer assemblies)
☒	X	175-43 ✓	LH ANGLE

T D M, INC.
CESSNA 175
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NO.	REQD.	PART NO.	DESCRIPTION
✓	✓	175-43 ✓	RH ANGLE
✓	✓	175-44 ✓	LH ANGLE
✓	✓	175-44 ✓	RH ANGLE
✓	✓	175-45 ✓	SPACER
✓	✓	175-46 ✓	LH BRACKET-OUTBOARD LOWER
✓	✓	175-46 ✓	RH BRACKET-OUTBOARD LOWER
✓	2	175-48	SPRING & CONNECTOR
✓	✓	172-49 ✓	BUSHING (TAILWHEEL)
✓	✓	175-50 ✓	WASHER
✓	✓	175-52 ✓	PAD-SPRING
✓	✓	175-54 ✓	LH ANGLE
✓	✓	175-54 ✓	RH ANGLE
✓	✓	175-55 ✓	LANDING GEAR SHIM
✓	✓	175-56 ✓	LH ANGLE
✓	✓	175-56 ✓	RH ANGLE
✓	✓	175-57 ✓	REINFORCEMENT ANGLE
✓	✓	175-58 ✓	ANGLE
✓	✓	175-59 ✓	ANGLE
✓	✓	175-60 ✓	STRESS PLATE
✓	✓	175-61 ✓	ANGLE
✓	✓	175-62 ✓	ANGLE
✓	✓	175-63 ✓	SPACER
✓	✓	175-68 ✓	AXLE SHIM (2 PER SPINDLE)
✓	1	175-79	LH STEP ASSEMBLY
✓	1	175-79	RH STEP ASSEMBLY
✓	✓	175-81 ✓	LH BULKHEAD REAR
✓	✓	175-81 ✓	RH BULKHEAD REAR

NO.	REQD.	PART NO.	DESCRIPTION
✓	1	175-82 ✓	RH FORWARD BULKHEAD-AFT
✓	1	175-83 ✓	RH FORWARD BULKHEAD-FRONT
✓	1	175-84 ✓	LH SPACER BULKHEAD
✓	1	175-84 ✓	RH SPACER BULKHEAD
✓	1	175-86 ✓	LH UPPER SPLICE PLATE
✓	1	175-86 ✓	RH UPPER SPLICE PLATE
✓	1	175-87 ✓	LH LOWER SPLICE PLATE
✓	1	175-87 ✓	RH LOWER SPLICE PLATE
✓	2	175-88 ✓	STUD-WHEEL SPINDLE
✓	1	175-89 ✓	LH FORWARD STRINGER (CODE A)
✓	1	175-90 ✓	LH DOOR POST STIFFENER
✓	1	175-90 ✓	RH DOOR POST STIFFENER
✓	1	175-91 ✓	LH BRACKET-CONTROL
✓	1	175-91 ✓	RH BRACKET-CONTROL
✓	1	175-92 ✓	SPACER ASSEMBLY (includes -31L&R)
✓	1	175-93 ✓	SPACER
✓	1	175-94 ✓	RUDDER TIP BULKHEAD
✓	1	175-95 ✓	BLOCK
✓	1	175-104 ✓	LH INBOARD ANGLE
✓	1	175-104 ✓	RH INBOARD ANGLE
✓	1	175-105 ✓	LH ANGLE
✓	1	175-105 ✓	RH ANGLE
✓	1	175-106 ✓	LH ANGLE
✓	1	175-106 ✓	RH ANGLE

** CODE **

(A) REQUIRED ON MODELS WITH BATTERY BOX IN REAR

(B) NOT REQUIRED ON MODELS WITH BATTERY BOX IN REAR

T. D. M., INC.

TAILWHEEL MODIFICATION KIT

STANDARD HARDWARE SUMMARY

QTY.	PART NUMBER	DESCRIPTION
✓ 40	AN3-5A ✓	BOLT
✓ 37	130 AN3-6A ✓	BOLT
✓ 64	200 AN3-7A ✓ 130	BOLT
✓ 27	AN3-10A ✓	BOLT
✓ 18	AN3-11A ✓	BOLT
✓ 28	AN3-12A ✓	BOLT
✓ 2	AN3-27A ✓	BOLT
✓ 12	AN4-12A ✓	BOLT
✓ 2	AN4-15A ✓	BOLT
✓ 8	AN4-23A ✓	BOLT
✓ 4	AN5-21A ✓	BOLT
✓ 4	AN6-10A ✓	BOLT
✓ 172	AN470AD4-6 ✓	RIVET
✓ 28	AN470AD4-7 ✓	RIVET
✓ 150	AN470AD4-4 ✓	RIVET
✓ 18	AN470AD4-8 ✓	RIVET
✓ 4	AN470AD4-9 ✓	RIVET
✓ 20	AN470AD5-6 ✓	RIVET
✓ 10	AN470AD5-8 ✓	RIVET
✓ 100	AN470AD6-6 ✓	RIVET
✓ 30	AN470AD6-7 ✓	RIVET
✓ 30	AN470AD6-8 ✓	RIVET
✓ 45	AN470AD6-9 ✓	RIVET
✓ 30	AN470AD6-11 ✓	RIVET
✓ 30	AN470AD6-12 ✓	RIVET

HARDWARE LIST
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✓	25	AN470AD6-16 ✓	RIVET
✓	140	AN426AD3-6 ✓	RIVET
✓	8	AN426AD3-12 ✓	RIVET
✓	30	AN426AD4-6 ✓	RIVET
✓	4	NAG564-45 ✓	WEDGE BOLTS
✓	70	MS24693-S274 ✓	SCREWS
✓	70	RM52LHTA51M-02 ✓	STRESS PLATE ANCHOR NUTS
✓	12	10R X 1/2THB ✓	SHEET METAL SCREWS
✓	20	8R X 1/2THB ✓	SHEET METAL SCREWS
✓	8	A1348-SZ-1 ✓	TINNERMAN NUTS
✓	4	MS20074-04-10 ✓	BOLTS
✓	191	MS20365-1032 ✓	NUTS
✓	400	AN960-10 ✓	WASHERS
✓	20	AN960-516 ✓	WASHERS
✓	22	AN960-416 ✓	WASHERS
✓	4	AN6-27A ✓	BOLT
✓	4	AN5-26A ✓	BOLT
✓	1	AN7-20A ✓	BOLT
✓	3	AN960-716 ✓	WASHERS
✓	1	MS20365-720 ✓	NUT
✓	3	AN6-17A ✓	LANDING GEAR BOLTS
✓	2	MS20365-1216 ✓	NUTS, SPINDLE AXLE
✓	2	✓	AXLE WASHERS
✓	22	MS20365-428 ✓	NUT
✓	4	MS20365-624 ✓	NUT
✓	8	AN960-616 ✓	WASHER
✓	4	MS20365-524 ✓	NUT
***	4	0441023-2	SADDLE WEDGES
	1	3239	SPRING CONNECTOR KIT

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HARDWARE LIST
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ADDITIONAL HARDWARE FOR FOLLOWING MODELS:
CESSNA 172 A, B, C, D, E & ALL CESSNA 175 MODELS

✓	28	10R X 1/2THE ✓	SCREW
✓	28	A134B-10Z-1 ✓	TINNERMAN NUT
✓	30	AN3-6A ✓	BOLT
✓	35	AN3-7A ✓	BOLT
✓	67	MS20365-1032 ✓	NUT
	67	AN960-10	WASHER

*** CESSNA PARTS -MAY BE REQUIRED ON SOME MODELS NOT PART OF HARDWARE KIT