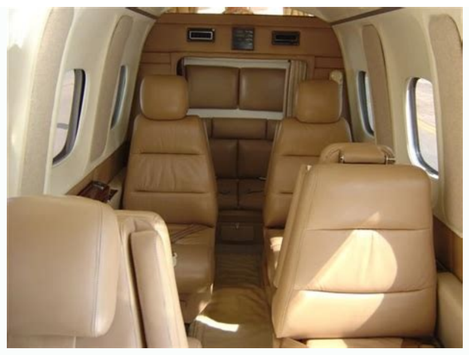
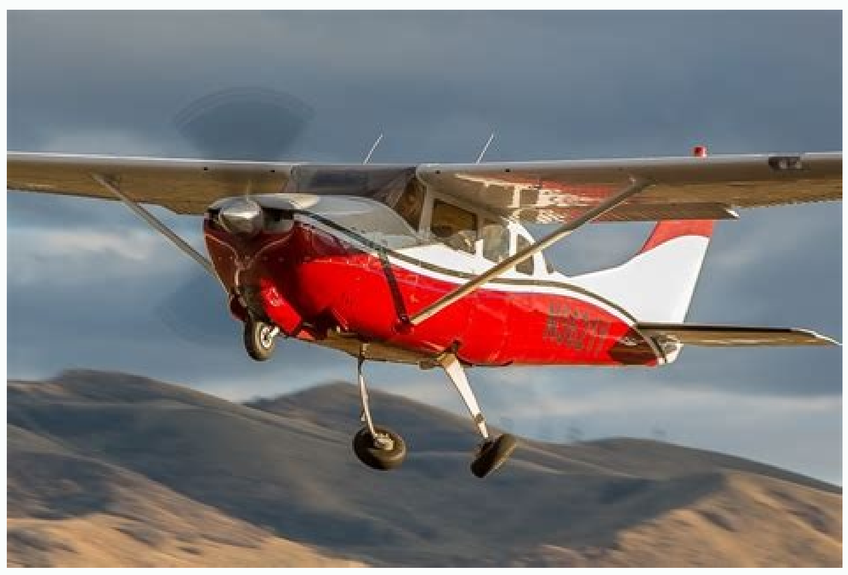
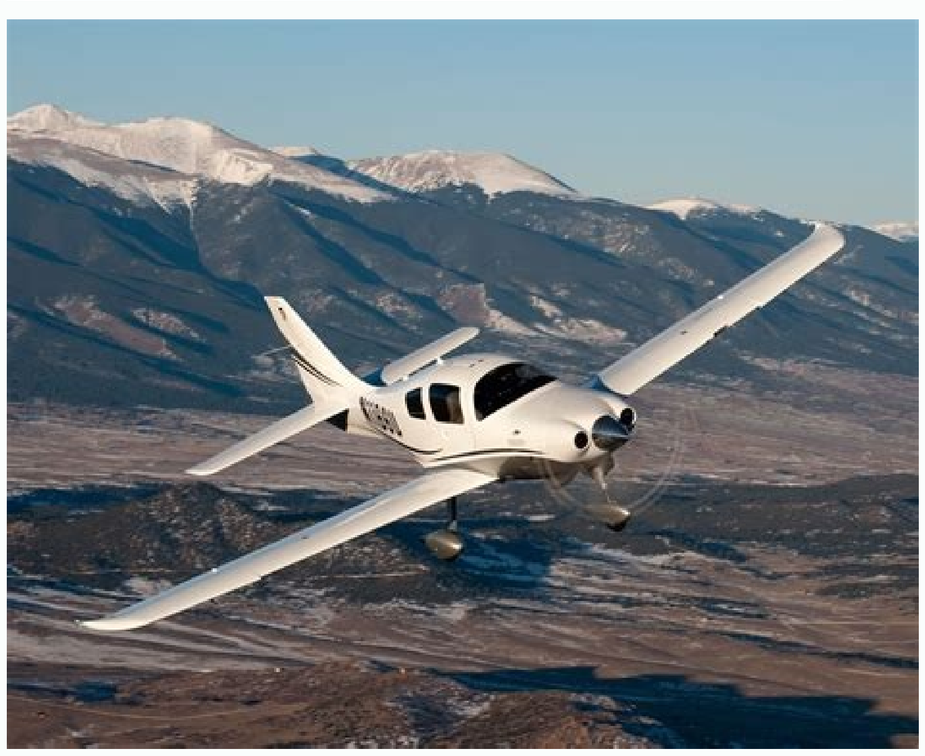
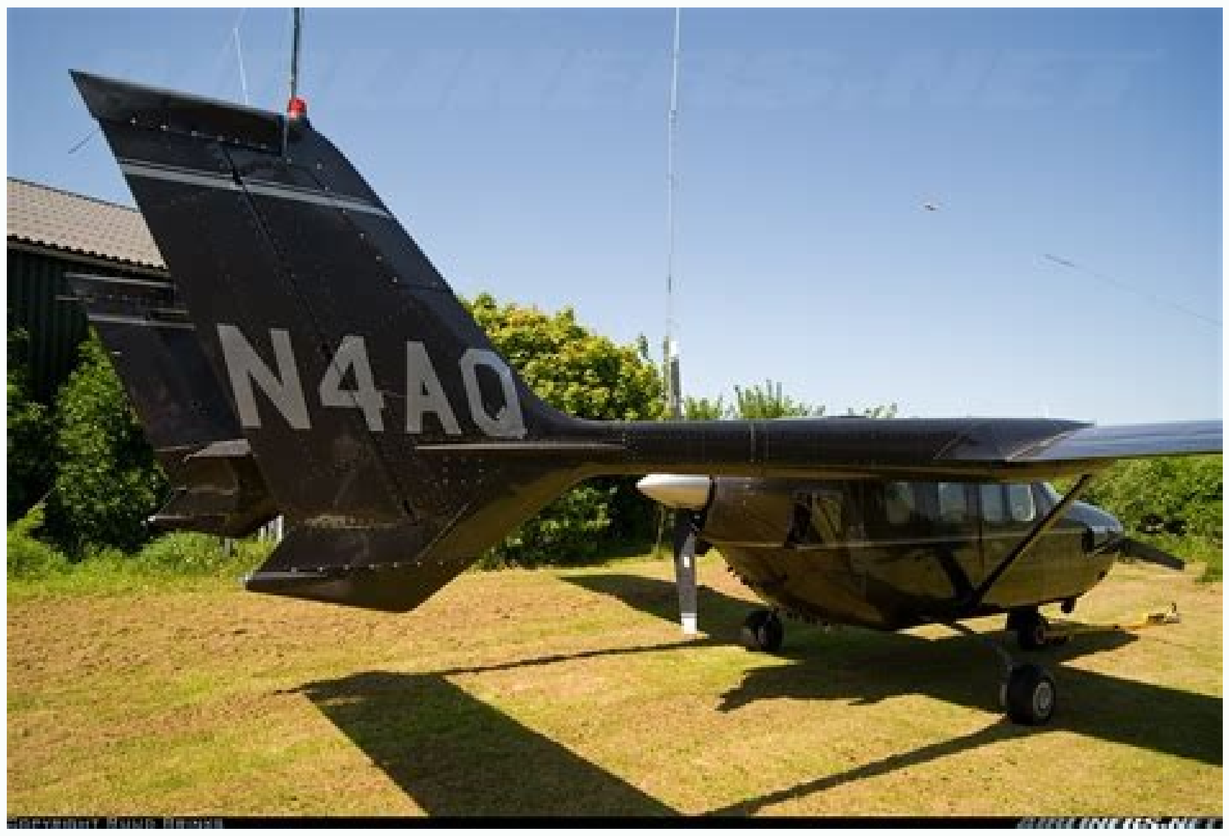
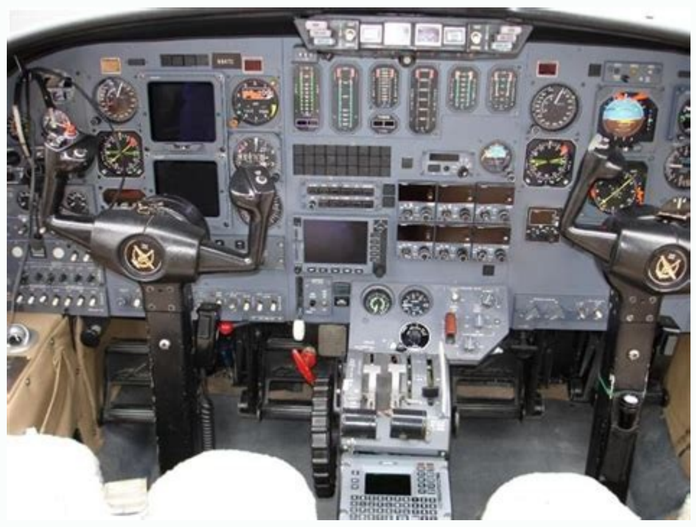
Cessna turbo 182rg performance specs











Cessna 310 performance specs. 182 rg turbo specs.

Handling differences between a Cessna 172 and 182 take many by surprise, particularly with dramatically increased control loads. The step to a 182 retractable from a fixed gear Skylane therefore, might seem sedate by comparison but is it? Cessna is proud of their long line of 182 variants. And so they should be, the model has found over 23,000 buyers since it was launched in 1956 - 54 years of almost continuous production. There's little argument that the 182 has been anything other than a complete success for Cessna. The type's vintage year was 1963, when Cessna widened the cabin floor by four inches and incorporated a wrap around 'omni-vision' rear window, which turned the interior from a cave to an amphitheater. 182s have never been bought for their speed or economy however. The model is popular because it carries a hefty weight into and out of almost any airstrip and it does this at challenging density altitudes, providing safe and predictable handling for relatively inexperienced pilots. To achieve this, Cessna chose a significant increase in power when they launched the taildragger 180, from which the 182 was developed. The type's 230hp six-cylinder Continental has been a key reason the aircraft has continued to find favour amongst mostly private owners wanting the utility of full tanks and full seats into almost any airport or unprepared runway. Despite their obvious utility, 182s are mostly operated into civilised hard-surfaced runways and they can hold their own within an IFR environment just as well as fast and complex singles. The only frustration is the model's 130-knot-plus speeds at typical cruise heights. Push the green rpm arc and a 182 will nudge up to 135 knots - perhaps more if it's a 'fast' airframe. Later 'Q' models with their higher compression O-470-U engines managed a further couple of knots but it wasn't until Cessna offered a retractable version, that the 182 finally busted through the 140-knot threshold and rewarded owners with speeds around 150 knots and, in turbocharged form, a heady 160-plus at altitude. 182 owners arguably bought for reasons other than point to point speed but Cessna identified a demand for similar load carrying qualities in a faster airframe amongst those unwilling to go for the considerably more expensive 210. Thus, in 1978, the company launched their Skylane RG. Whilst it may seem to have been a relatively simple task to embrace the Cardinal and 210's tubular steel retracting gear geometry into the 182, the truth is that Continental's O-470 hadn't been developed beyond providing 230hp in normally aspirated form and it simply didn't have enough grunt to provide any significant performance improvement with the heavier RG. The retractable 182's gross weight was upped to 3,100lbs to maintain a useful load as well as accommodate both a heavier engine and the extra retractable gear mechanism. Consequently, Cessna opted to use Lycoming's respected 235hp normally aspirated O-540-J3C5D engine. This meant a longer engine cowl as well as a 28-volt electrical system with the undercarriage held in the retracted position by positive hydraulic pressure rather than potentially troublesome uplocks. Few would disagree that by retracting the 182's undercarriage, there emerged a somewhat beguiling shape. Indeed, with its wheels tucked out of sight, project engineer Harry McCarter, in whose hands the new fuselage shape was entrusted, managed to turn the otherwise 'tubby' shape into something of surprising beauty. With the slightly flattened cowl and handsome spinner, the 182RG looks a lot sleeker than any 210 ever did, even with struts. On the subject of struts, Cessna investigated the benefits of producing a 182 without in 1967. The experiment went nowhere when it was discovered the cantilever wing was more expensive to make, weighed more and returned no performance benefits. Having built an impressive 580 RGs during 1978, Cessna switched from bladder to bonded wing tanks and offered a turbocharged version of their obviously popular retractable model. The wet wing further enabled Cessna to add capacity from 76 US-gallons to 88. In a break from tradition, the installation used a Cessna, rather than a Lycoming-developed compressor - in this case an AiResearch turbo unit with an unusual throttle/wastegate interconnect that many consider better to operate than Lycoming's own. With a 2000 hour TBO, the biggest criticism these hardy Lycomings attract is for their single-shaft dual Bendix magnetos, which some in the maintenance business consider risky to operate. Cessna continued to use the 235hp Lycomings until 1985, the year before all Cessna 182 production was terminated for ten years (Cessna also offered a fixed gear turbo'd model; the T-182R II Skylane, from 1981 to 1985, fitted with the RG's Lycoming engine). A 182RG is a handsome aeroplane on the ground. It squats tail low and requires a slight duck to get to the wide-opening door. In practice, the floor is about the same height off the ground as a normal post-1963 182 and it's an easy task to flick the master on temporarily and lower the flaps to begin the walk-around. For those used to 182s, there are no surprises and little extra to inspect other than getting on your knees to take a look into the open wheel bays. The extra engineering complexity and thus higher sticker price of the retract 182 is easy to see when peering at the gear support structure and delicate hinges that enable the nosewheel doors to close cleanly. There are no doors for the mainwheels and the toughened steel tubes lie along the fuselage in the stowed position with the tyres shrouded by a bay that takes up modest luggage area space. Indeed the gear retraction arrangement is very neat indeed, helped no doubt by Cessna's experience with both the 210, 337 twin and Model-177RG. Mercifully, the 182 installation manages on far fewer motor-industry derived microswitches, which are notorious for playing sequencing havoc for hapless owners faced with gear-up landings. Whilst the 182RG shares Cessna's newer electrically-driven hydraulic pump with late-model 210s, undercarriage mishaps seem almost unheard of amongst 182 owners. This is encouraging, especially when it's remembered Cessna wanted to introduce a 'nosewheel-only' retractable gear, which would have upset the otherwise pleasing lines as well as create a recipe for upset for those who remind themselves of the gear being out by a swift look at the mainwheel's position through the window. Flying the 182RG Getting into the front seats only requires mild contortions in the absence of a step. The foothold on the main undercarriage leg is a little too far back to be of any great help in this respect but is adequate to assist those climbing into the rear. Allowing a gap for your legs to fit between the front of the seat and the door-post means stretching in and pulling up the pin release to slide the seat all the way back to its stop. It's probably the preferred method to allow passenger access last and once the front seat has been slid forward again for the pilot to reach the rudder pedals. There are various combinations for occupants to climb aboard the 182, none of which require too many gymnastics. Thankfully the doors also close easily with a gentle but firm pull followed by snapping down the armrest lever to the 'locked' position. With four onboard, legroom is tremendous for rear seat occupants. 182s are class leaders in terms of interior space. The panel is deep and relatively uncluttered and follows a 'classic' generic Cessna layout with primary and nav instruments on the left-hand section and the engine gauges and associated dials on the right. These are divided by a tall avionics' stack, which in the 1978 model tested, is made up of a mixture of Cessna's ARC 300 transponder, 300A Navomatic two-axis autopilot and more modern additions in the form of GNS 430 GPS/VHF combo and now old technology King KX 155 nav/com, KN64 DME and KR97 ADF. Sitting at the top is a King audio panel with an avionics master placed on the sidewall by the left knee. Along the bottom of the left hand side are various circuit breakers surrounded by woodgrained plastic. This was perhaps the last era of plastic moulded instrument panel covers and certainly heralded the dying days of natty faux-wood veneer finishes so beloved of a seventies America still in love with Jaguar and Rolls Royce motor car interiors. On the right hand panel are obvious cut-outs for additional navigational instruments but not enough space for a duplicated set of primaries - this is an aeroplane designed for a single pilot owner. Later 182 owners were even offered a 'slipper-pod-mounted' radar installation. Having just completed a photo sortie, the RG's engine was started hot. This required toggling the fuel booster momentarily before moving the mixture to idle cutoff and cracking the throttle open a quarter inch as the starter was engaged. In the lean configuration, the engine caught immediately and shook itself into life as the mixture vernier was jockeyed forward. There's lots of debate about the relative merits between Continental and Lycoming in this power range - the Lycoming supporters invariably claiming the O-540 derivative's tough structure enables 2000 hour TBOs. This divide is usually from amongst those raised on Pipers. The O-470 Continental might be somewhat more delicate but it is a lot smoother, especially on start up where the 230hp engine rumbles into life and settles to a tick-over with a reassuring burble. A Lycoming, indeed any Lycoming, simply isn't like that and the O-540's clatter is obvious to anyone raised on an equivalent Conti. Having seen 172 pilots struggle with the far greater effort needed to steer a 182 on the ground, the 182RG does little to make things better other than perhaps prepare pilots for a 210. The RG is rather heavier to steer than a normal 182, no doubt because of the added weight of the Lycoming and linkages that need to allow the wheel to centre before retracting. It's

the first indication that the 182 does not share Cessna's lesser-sized airframes' relatively light handling. It also hints that setting the trim is an important chore prior to releasing the brakes on takeoff. The O-540 is run-up just the same as an O-470 Continental - even the magneto check is carried out at an identical 1700rpm. With everything checked and set including a largely unnecessary one notch of flap, the throttle is pushed all the way forward and the aeroplane accelerates energetically to its 60-knot rotation speed. The blare from the 235 horses under the cowling makes headsets a necessity. Even with the trim set correctly, there's an immediate sense that this aeroplane is not made to dance. The control forces required to lift the nosewheel of the ground if untrimmed would quickly focus attention on the considerable pitch forces required to get airborne. Trimmed and with a positive rate of climb, the gear lever can be snapped up as the far runway threshold disappears under the nose. For such a gangly undercarriage arrangement, the wheels stow quickly at around six seconds and with the amber light glowing, attention can be turned to retracting the flaps and allowing the speed to build up to a comfortable 100-knot climb. If the RG seems heavier in pitch than a standard fixed gear 182, it positively shines with aileron input, especially as the speed builds up. The 182RG shares the same crisp response to roll inputs as a 210. This is a mystery because the 182 doesn't have the same semi-laminar flow aerofoil as a Centurion nor it's deeper chord ailerons. The RG also has Cessna's 'Camber-Lift' wing, with the altered leading edge profile shared by all post 1972 182s. Whatever control run adjustments there are under the skin, the 182RG feels more like a 210 than a 182. 182s fly slightly differently when all the seats are filled. This takes the C of G towards the rear and does a lot to ease the pitch forces - mostly at lower speeds. A Standard 182 can run into forward C of G limits with two heavyish occupants up front, which is why it always makes sense to place luggage in the bay rather than on the rear seats when lightly loaded. The extra weight of the retracting mainwheels has obviously contributed somewhat to a minimal increase in pitch forces with the heavier Lycoming engine but explains the post 1995 fixed gear model's larger horizontal tail surfaces. Unless flying towards the outer regions of a 182's normal environment, the Skylane seems to fly the same and perform the same no matter what goes into the cabin. A 182RG is little different. There have been so many variants of the venerable Skylane over the years that comparing payload with earlier or current versions can be misleading. Moreover, fuel capacity has changed too. The very first 1956 model could haul a payload of 1,090lbs. Take away full tanks of 60 gallons and that leaves a not unreasonable 730lbs for occupants and their belongings. This might not have been enough for four people to enjoy a tanks-full endurance of just under four hours but those wanting cross country performance went for a Mooney or Beechcraft anyway. When the 'fat' fuselage was launched, it came with an additional 100lbs of payload and the option of 84-gallon tanks, the extra 19 gallons nicely taking up the slack from the extra payload allowance. The RG has a 1,291lb payload as well as even bigger 92-gallon tanks. It's thus interesting to see that over the years, whilst payload hasn't changed much, Cessna worked hard at adding value in the form of greater range and in RG form, substantially more speed. So what is the downside? Inevitably, it's been takeoff distance and whilst an extra 200 feet penalty over 54 years may be hardly worth a mention, those operating at high density altitudes on hot days in their late model 182s will notice it most. By any standards however, 182 pilots are rarely confronted with difficult weight and balance challenges - it's one of the reasons folk buy the type. with around six hours endurance plus an hour's reserve, the RG has long legs but even comfortably ensconced within its ample cabin, anything over four hours becomes tiresome - not least because of the noise and thus obligatory headsets. This range nevertheless puts Cape Town and Windhoek within easy reach from Johannesburg - passengers are advised to lay off the coffee before setting out. Pilots can expect to see around 12 knots of additional speed over a fixed-gear version - at least in normally aspirated form.Even with half an hour or so of 182RG stick time and a cursory look at the performers numbers, the retract Skylane seems closer in feel to a 210 than its fixed gear parent. We also tried a couple of stalls and noted the aeroplane's benign manners, even carrying power and flap. There was almost no inclination to roll off at the break and recovery was instant with a relaxation of back pressure and the addition of power. The only area of caution for 182 pilots is the flare and touch-down process. Those with a few Skylane hours will know to apply handfuls of nose-up trim on short final approach. This is because at forward C of G, ie, with a pair of, even medium sized occupants at the front, control forces are highish to keep the nosewheel off the runway whilst flaring. It's not uncommon for pilots to run out of elevator authority all together with full flap, allowing the aeroplane to arrive firmly, on all three tyres at the same time. Modest numbers of 182s have also been known to stall onto the runway causing firewall distress to the front end. The nose up 'riding-the-trim' trick should be a skill learned by all 182 pilots and provides an easy method of emulating a Cessna 172's famous and easy mainwheel-only touchdown. The 182RG, is much like a 210 at forward C of G - it requires a hefty, though delicate effort to land with any finesse, even with some nose-up trim. However, it doesn't seem to run out of pitch authority at slow speeds so wouldn't take long to master. The RG was built for eight years - the turbo version for seven. In its latter years, Cessna were reduced to making a mere 20 airframes, sadly not enough to justify a return to production in 1997. Indeed, even today, the 182RG has no direct competitor in the market place with the arguable exception of Rockwell's 114. Their four seat interiors meant almost all being bought by private owners with many having very low flying hours. This makes them somewhat of a bargain in today's economy and the aircraft flown for the test here, is an almost perfect example. N1844R is a low time-1978 model with the most beautiful exterior paintwork. The interior has been refurbished and finished in a neutral but tasteful beige. The only item that needed noticeable rectification was the right hand sun visor, which is on the very small list of things to do for its local C of A. I would be proud to own this aeroplane.