

2017 Challenger Light Sport Models

Features & Contents

	E SERIES	X SERIES
	Challenger Light Sport EL-65	Challenger Light Sport XL-65
Two-Seat Tandem Fuselage Length Overall	New Light Sport Design 20 ft	New Light Sport Design 20 ft
HL-100 Heavy Load Saddle Kit	Included	Included
Strengthened Attachment of Lift Struts to Main Longerons	Included	Included
Eliminate Flexing on Very Rough Surfaces	Included	Included
Heavy Duty Main Gear Load Carry Through Structure Fuselage Beefed Up Substantially	Special Order Upgrade Special Order Upgrade	Included Included
Main Landing Gear - E Series 2024-T3 1.50" x .120" Aluminum Tube, 6" Chromoly Steel Inserts External Support Cables for Load Distribution	Included Included	n/a n/a
Main Landing Gear - X Series Heavy Duty 7075-T651 1.25" Solid Aluminum Rod No Cables + Light Sport Fairings = Reduced Drag	Special Order Upgrade Special Order Upgrade	Included Included
Main Landing Gear Leg Fairings for Speed & Looks Light Sport Style Classic Style	Special Order Upgrade Included	Included n/a
Brakes - Stopping Power & Ground Control Hegar Hydraulic Discs Cable Actuated, Floating Drum	Special Order Option Included	Included n/a
Oversize 6" Nose Fork for Rough Ground	Included	Included
Oversized 13x5.00-6 Aluminum Nose & Main Wheels Upgraded Hegar Wheels Classic Azusa Wheels	Special Order Option Included	Included n/a
Oversize 13x5.00-6 Nose & Main Tires for Rough Ground	Included	Included
Oversize Fiberglass Wheel Pants to Reduce Drag	Special Order Option	Included
Low Pressure 18x8.00-6 Tires for Main Wheels	Special Order Option	No Charge Choice

**2017 Challenger Light Sport Models
Features & Contents**

Fairings for Speed & Looks

- Fiberglass Nose Cone
- Fiberglass Midwing Gap Cover
- Main Lift Strut Fairings
- Wing Jury Strut Fairings
- Tail Stab Strut Fairings

Light Sport Cabin Dimensions

- Cabin Width (Per Person) (Cessna 172 is 39.5 for Two!)
- Head Room (Std Seats) Front / Back
- Leg Room (Std Seats) Front / Back

Light Sport Easy Entry Cabin

- Wider Opening for Pilot Ingress/Egress
- Lower Rear Siderails for Passenger Entry
- Wraparound Windshield
- Fully Enclosed Cabin
- Removeable Doors
- Choice of Tinted or Clear Lexan
- Shoulder Harnesses - Front & Rear
- Hinged Windscreen for Ultimate Easy Entry

Light Sport Prefabricated Instrument Panel

- Precut & Predrilled via CNC
- Mounting Hardware with Vibration Dampeners
- Accommodates Wide Range of Instruments
- Choice of Analogue or EIS Versions
- Ergonomic Design to Increase Legroom

Instrument Package Contents

- Air Speed Indicator, Altimeter, Compass
- Tachometer, Hour Meter, Coolant Temperature
- Dual Exhaust Gas Temp, Dual Cylinder Head Temp
- Slip Indicator, Dual Fuel Gauge+Senders

Aircraft Style Ignition Switch (Off/Left/Right/Both/Start)

Instrument Panel Wiring Bundle

Engine Wiring Bundle

E SERIES

Challenger Light Sport EL-65

- Included
- New 2 pc 582 version Included
- Included
- Special Order Option
- Special Order Option

- Maximized
- 32 in
- 43 in / 40 in
- 46 in / 44 in

- Included
- Included
- Included
- Included
- Included
- Included
- Included
- Included
- Special Order Option

- Special Order Option
- Special Order Option
- Special Order Option
- Special Order Option
- Special Order Option
- Special Order Option

- Included
- Included
- Special Order Option
- Special Order Option

- Special Order Option

- Special Order Option
- Special Order Option

X SERIES

Challenger Light Sport XL-65

- Included
- New 2 pc 582 version Included
- Included
- Included
- Included

- Maximized
- 32 in
- 43 in / 40 in
- 46 in / 44 in

- Included
- Included
- Included
- Included
- Included
- Included
- Included
- Included
- Special Order Option

- Included
- Included
- Included
- Included
- Included
- Included

- Included
- Included
- Included
- Included

- Included

- Included
- Included

**2017 Challenger Light Sport Models
Features & Contents**

Large Wing = More Lift = Less Horsepower Required

- Wing Span
- Wing Chord
- Wing Area
- Wing Loading

X Series Wing Design for Increased Lift, Speed, Strength

- Airfoil Camber Increased & Straight Leading Edge
- Light Weight Leading Edge Channel Wrap
- Flush Gussets on Leading & Trailing Edges
- Bottom Ribs & Rib Channels
- Greatly Increased Stiffness
- Improved Roll Responsiveness

Fiberglass Hoerner Wingtips

- Boxed Wing Tip Structure
- Reduced Drag for Higher Speed
- Improved Roll Responsiveness

Flaperons - Combined Ailerons & Flaps

- Optimized for Maximum Lift & Minimum Stall
- Optimized for Maximum Maneuverability

In-Flight Adjustable Pitch Trim

- Minimize Workload - Maximize Controllability

Vertical Tail & Rudder

- Size Compared To Original Tail
- Tubing Size & Tailpost Weldments
- Rudder Cable Diameter
- Rudder Cable Turnbuckles
- Rudder Cable Routing
- Increased Directional Stability & Control
- Balanced Stability & Maneuverability

Light Sport Differential 1.5:1 Aileron Bellcranks

- Reduced Adverse Yaw

Dorsal Fin

Light Sport Improved Handling = Less Rudder Activity Required

E SERIES

Challenger Light Sport EL-65

Classic Design

- 31.5 ft (Std) / 29.5 ft (Opt)
- 5.625 ft
- 177 sq ft (Std) / 166 sq ft (Opt)
- 5.4 lbs sq ft (Std) / 5.8 lbs sq ft (Opt)

Special Order Upgrade

- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade

Optional

- Optional
- Optional
- Optional

7.5 in Chord x Full Span

- Included
- Included

Included

Included

New Larger X Series Tapered Tail
10" Higher; VStab 55% More Side Area

- Larger & Beefier
- 50% Thicker
- Aft = Easy Access
- Direct = Low Friction

Included

Included

Included

Included

New X Series Fillet & North American Dorsal

Included

X SERIES

Challenger Light Sport XL-65

New X Series Design

- 29.5 ft Long Wing
- 5.625 ft
- 166 sq ft
- 6.4 lbs sq ft

Included

Included

Included

Included

Included

Included

Included

Included

Included

Included

Included

7.5 in Chord x Full Span

Included

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Included

New Larger X Series Tapered Tail
10" Higher; VStab 55% More Side Area

- Larger & Beefier
- 50% Thicker
- Aft = Easy Access
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Included

Included

Included

Included

New X Series Fillet & North American Dorsal

Included

**2017 Challenger Light Sport Models
Features & Contents**

Wing Tanks: 2 x 10 USgal = Total 20 USgal (75.6 liters)
 Dual Fuel Gauge, Senders for Each Tank
 Vented Caps, Gascolator
 Located 4.5' Outboard of Root Tube
 Rib Webs Integrated for Support
 Redesigned Compression/Drag Struts for Strength
 Increased Positive G-Load Factor
 Increased Range & Endurance
 Allows Baggage Compartment in Fuselage

Fuselage Tank: 10 USgal (37.8 liters)
 Fuselage Tank: 17 USgal (64.3 liters)

Pilot Accessible Fuel Shut-Off

Internal Baggage Compartment - Fuselage
 External Baggage - Belly Bag and/or Cargo Pod

Control Stops

Built-in for Rudder (at Control Horns)
 Built-in for Ailerons (at Bellcranks)
 Built-in for Elevators (Internal Structure)

Assembly Easier & Quicker

Instrument Panel Completely Prefab
 Instrument & Engine Wiring Bundles
 Complete Fuel System Provided
 Assembly Manual Vastly Improved
 Head Scratching & Guesswork

**E SERIES
Challenger Light Sport EL-65**

Not Available
 Not Available
 Not Available
 Not Available
 Not Available
 Not Available
 Not Available
 Not Available
 Not Available
 Not Available

Standard
 Optional Alternative Capacity

Included

Not Available
 Aftermarket Suppliers

Included
 Included
 Included

Included
 Special Order Option
 Special Order Option
 Included
 Included
 Excluded

**X SERIES
Challenger Light Sport XL-65**

Included
 Included
 Included
 Included
 Included
 Included
 Included
 Included
 Included

Optional Extra Capacity
 Optional Extra Capacity

Included

100 lbs / 2.7 cu ft / 18"x15" base
 Aftermarket Suppliers

Included
 Included
 Included

Included
 Included
 Included
 Included
 Included
 Excluded

2017 Challenger Light Sport Models Features & Contents

Challenger Bespoke 582 Power Pack
10 Years Experience in Four Seasons Conditions

Purpose-Built Aviation Powerplant
Manufacturer
Model
Rotary Valve Technology
Factory New Engine Warranty

Designed for Upright & Inverted Mounting
Motor Mount with 8 Lord Mounts
Heavy Duty Crankshaft & Bearings
Hydro-Damper on Flywheel to Reduce Vibration

Dual Electronic Ignition
Two Spark Plugs Per Cylinder

Oil Injection System - Dual Tanks

Dual Bing 54 Carburetors
Dual K&N Carb Air Filter
Mikuni Fuel Pump
Fuel Pump Mount
Fuel Lines & Fittings
Fuel Filtration

Fuel Requirements
Ethanol Flexibility

Exhaust System - 3pc Side Mount - Dual Ball Joints
Exhaust Mounts - Purpose-Built for Challenger

Engine Cooling Technology
Dexcool Long Life Coolant for Aluminum Block Engines
Ceramic Water Pump Shaft Seal
Thermostatically Controlled Coolant Bypass Circuit
Cooling System - High Capacity Updraft Radiator
Coolant Expansion Tank with Mount

Cabin Heater for Liquid Cooled Power Pack
Radiator Louvres (Top & Bottom) for Four Season Ops
Winter Preheating = Inconvenient & Time Consuming

Challenger Light Sport EL-65 & XL-65 - Features & Contents

E SERIES Challenger Light Sport EL-65

Engine, Mounts, Cooling, Redrive, Prop
Proven Reliability

Certified ASTM Compliant
Bombardier-Rotax
65 hp 582 Mod 99 Blue Head
Increased Power, Lower Fuel Consumption
18 Months or 100 Hours

Included
Included
Included
Included

Included
Included

Capacity 10-12 Hours

Included
Included
Included
Included
Included
Filter

Auto (Reg or Prem), AvGas (100LL), Marina
Up To 10% Ethanol ("E10")

Included
Included

Liquid
Increased Longevity
Included
Included
Included
Included

Optional All Season Kit
Optional All Season Kit
Not Required

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X SERIES Challenger Light Sport XL-65

Engine, Mounts, Cooling, Redrive, Prop
Proven Reliability

Certified ASTM Compliant
Bombardier-Rotax
65 hp 582 Mod 99 Blue Head
Increased Power, Lower Fuel Consumption
18 Months or 100 Hours

Included
Included
Included
Included

Included
Included

Capacity 10-12 Hours

Included
Included
Included
Included
Included
Gascolator

Auto (Reg or Prem), AvGas (100LL), Marina
Up To 10% Ethanol ("E10")

Included
Included

Liquid
Increased Longevity
Included
Included
Included
Included

Optional All Season Kit
Optional All Season Kit
Not Required

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**2017 Challenger Light Sport Models
Features & Contents**

Purpose-Built 2.6-to-1 Reduction Drive
 Allows Inverted Engine Mount to Reduce Drag
 Allows Larger Optimum Diameter Prop for Max Thrust
 Lowers Prop RPM to Increase Efficiency & Reduce Noise
 Cog Belt = No Slippage, No Side Loads, No Drive Train Lash

Propellor Matched to Engine, Redrive, Airframe
 Blade Pitch Setting
 Blade Construction
 Blade Design
 Upgraded Blades with Nickel Leading Edge Protection
 Upgraded Machined Aluminum HP-L Hub

12V 170W DC Electrical System
 Regulator/Rectifier, 4ga Wiring, Solenoid

582 Electric Start System by GPL (MAG End)
 Backup Recoil (Pull) Starter Field Installable

582 Electric Start System by QCU (PTO End)
 Backup Recoil (Pull) Starter Mounted Full Time

Power Pack Efficacy
 Normal Operation Range
 Power Band Characteristics
 Time Limit at Full Throttle
 Horsepower & Torque
 Power vs 503 Power Pack
 Specific Fuel Consumption vs 503 Power Pack
 Propeller Tip Speeds
 Idle - Min (Engine @ 1690)
 Idle - Max (Engine @ 2600)
 Cruise - Mid (Engine @ 5400)
 Takeoff - Max (Engine @ 6175)

**E SERIES
Challenger Light Sport EL-65**

Included
 Included
 Included
 Included
 Included

Warp Drive 60" 3-Blade Carbon Fibre
 Ground Adjustable
 100% Carbon Fibre
 Wide Tip for Max Thrust
 Optional Prop Upgrade
 Optional Prop Upgrade

Included
 Included

Standard
 Standard

Special Order Option
 Special Order Option

Engine + Redrive + Prop
 Smooth from Low Idle to Takeoff Thrust
 Wide Not Peaky
 No Time Limit
 Curves Peak Concurrently At Takeoff Power
 Horsepower +30% / Torque + 34%
 -22.7%
 Very Low for Max Efficiency and Min Noise
 Prop @ 650 rpm 115 mph 0.15 mach
 Prop @ 1000 rpm 175 mph 0.23 mach
 Prop @ 2075 rpm 370 mph 0.48 mach
 Prop @ 2375 rpm 425 mph 0.55 mach

**X SERIES
Challenger Light Sport XL-65**

Included
 Included
 Included
 Included
 Included

Warp Drive 60" 3-Blade
 Ground Adjustable
 100% Carbon Fibre
 Wide Tip for Max Thrust
 Optional Prop Upgrade
 Optional Prop Upgrade

Included
 Included

Standard
 Standard

Special Order Option
 Special Order Option

Engine + Redrive + Prop
 Smooth from Low Idle to Takeoff Thrust
 Wide Not Peaky
 No Time Limit
 Curves Peak Concurrently At Takeoff Power
 Horsepower +30% / Torque + 34%
 -22.7%
 Very Low for Max Efficiency and Min Noise
 Prop @ 650 rpm 115 mph 0.15 mach
 Prop @ 1000 rpm 175 mph 0.23 mach
 Prop @ 2075 rpm 370 mph 0.48 mach
 Prop @ 2375 rpm 425 mph 0.55 mach