

# PRODUCT INFORMATION

# DF70A/90A



Way of Life!

# A New Standard in Four-Strokes From Suzuki

Twelve years after starting the four-stroke revolution with its award winning DF60 and DF70 outboards, Suzuki has re-invented the category with two efficient models, the DF70A and DF90A. As the first of Suzuki's new generation four-strokes, they are a showcase of advancements and achievements—such as digital sequential electronic fuel injection, a powerful 2.59:1 final drive ratio, and a zero-maintenance self-adjusting timing chain. They also feature Suzuki's proven offset drive shaft which, used in combination with a newly designed powerhead, contributes to making the DF90A the smallest and lightest four-stroke outboard in its class. This compact, lightweight design also makes any of these three outboards ideal for use on a wide range of boat types.

These outboards open up more options for boaters in search of the perfect combination of power and performance. Cowlings on both outboards feature bold graphics on their sides and Suzuki's "S" logo on front giving this new generation of four-stroke motors a sharp look.



## Features That Deliver Greater Efficiency, Better Economy, and More Boating Pleasure

- The DF90A is the lightest, most compact outboard in its class.
- The DF90A offers top level fuel efficiency in its class.
- A new streamlined gear case and highly efficient propeller contribute to increased top speed and economical operation.
- Smoother shifting through precision engineering.
- The DF70A/DF90A offer low emissions and clean operation that meet the 2010 EPA\* emission standard and the CARB\*\* 3-Star Ultra-Low Emissions standards.

\* Exhaust emission standards set by the U.S. Environmental Protection Agency.

\*\* Exhaust emission standards set by the California Air Resources Board.

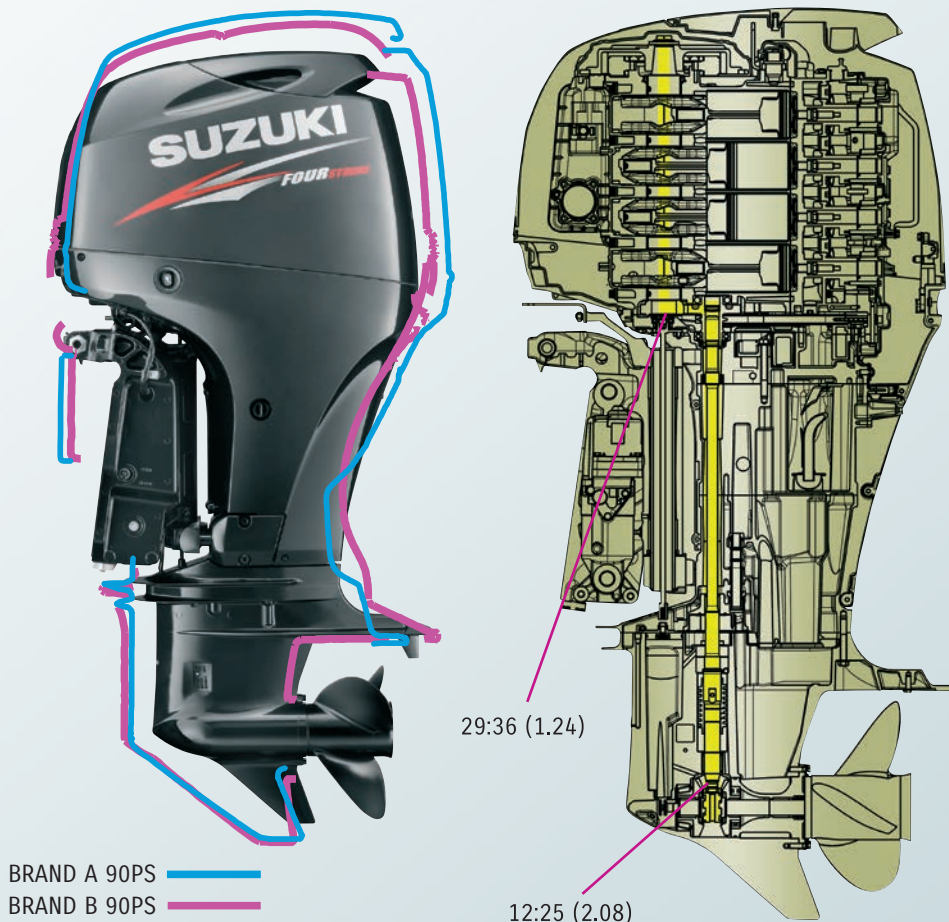
## The making of a compact outboard

Suzuki's engineers are well known for their ability at reducing the size of the outboard. Their skills have created some of the most compact four-stroke outboards in their respective classes. Taking a fresh approach to the DF70A/90A, every part and component has been designed from the ground up. Applying the knowledge and technical advancements gained over the last decade, Suzuki engineers succeeded again at reducing outboard size and weight.

### Offset Driveshaft

Pioneered with the first generation DF90, Suzuki's offset driveshaft has played an effective role in reducing the size of the outboard. The design uses intermediate reduction gearing to position the crankshaft in front of the driveshaft, moving the outboard's center of gravity forward for better weight distribution on the transom. It also provides improvements in power performance, balance, and vibration reduction.

Combining the offset driveshaft with a redesigned powerhead, Suzuki engineers have created an outboard that is about 7.5cm (3 inches) shorter than the original DF90 and up to 23cm (9 inches) shorter than competitive models making this DF90A the most compact outboard in its class. Its compact design facilitates installation on a wider range of boats, and offers more room around the transom for fishing and other activities.



# Creating a Fuel Efficient Outboard

## Suzuki Lean Burn Control System

The lean burn control system is designed to run on a thinner fuel mixture through the use of a lean air-fuel ratio. Suzuki engineers designed a system that predicts fuel needs according to operating conditions. It achieves added fuel economy through a reduction of pumping loss. In order to balance fuel efficiency with clean emissions, the system sets up air-fuel ratio taking advantage of the reaction characteristics of exhaust emissions. The system also has a wide lean burn range that extends up into the top speed range providing more efficient operation at cruising speed as well.

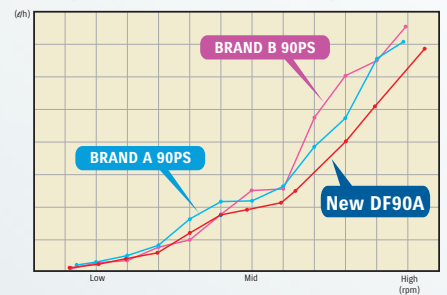
## Mechanically Efficient Design

Looking beyond fuel systems for solutions, Suzuki engineers explored ways they could improve efficiency by reducing mechanical loss. They designed a new oil pump that delivers greater mechanical efficiency, and improved hydrodynamics in the lubrication system, allowing oil to move through the system with less resistance. In reducing mechanical loss in these and other areas, Suzuki has created a more efficient engine that contributes to better fuel economy.

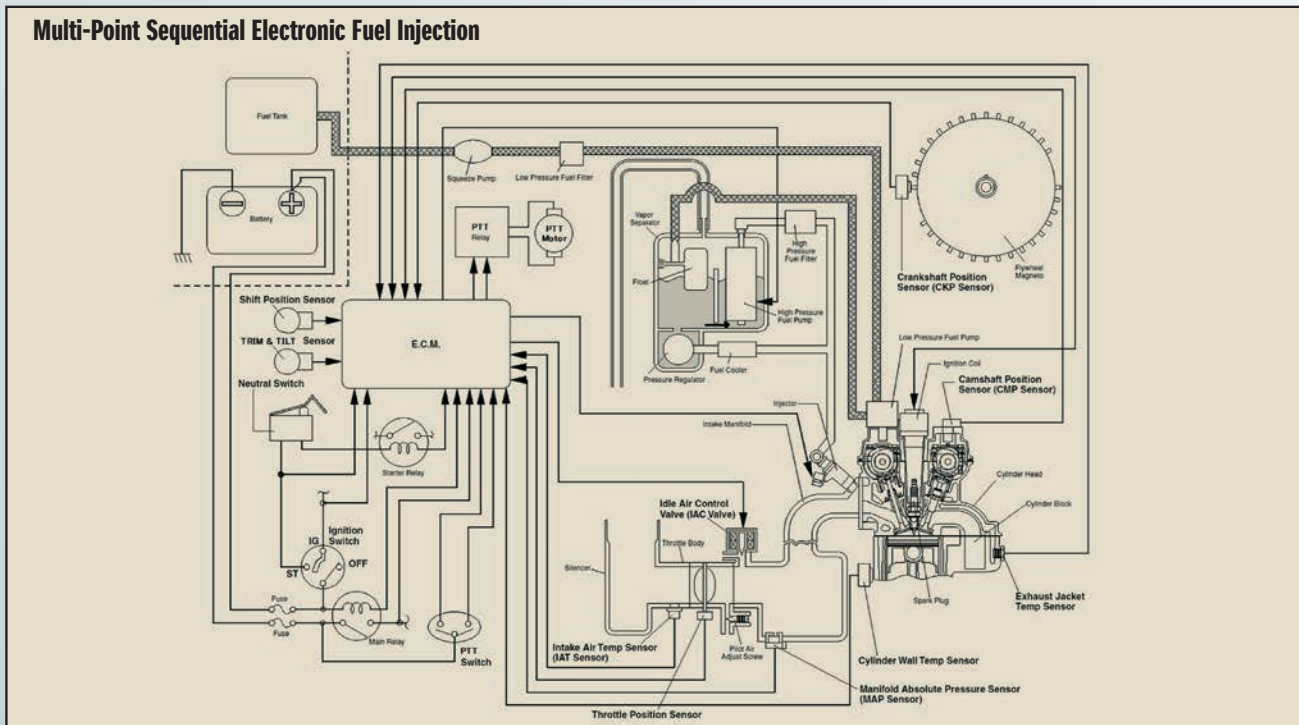
## Multi-Point Sequential Electronic Fuel Injection

The first generation DF70 was awarded the National Marine Manufacturers Association's Innovation Award for, among other firsts and advancements, its use of Suzuki's Multi-Point Sequential Electronic Fuel Injection system. The second generation DF70A/90A uses this sophisticated system once again to deliver instant throttle response, improved fuel economy, and low emissions. The system incorporates the ECM's 32-bit computer, which gathers and processes vital operating data in real time from a series of sensors located in critical areas on the engine, to calculate the optimum amount of fuel and air to be injected at high pressure into the cylinders. The system offers excellent fuel efficiency and reduces emissions enabling these outboards to meet CARB 3 Star Ultra Low Emission requirement. Other benefits include smooth starts, and maximum operating efficiency.

Comparison of Fuel Consumption



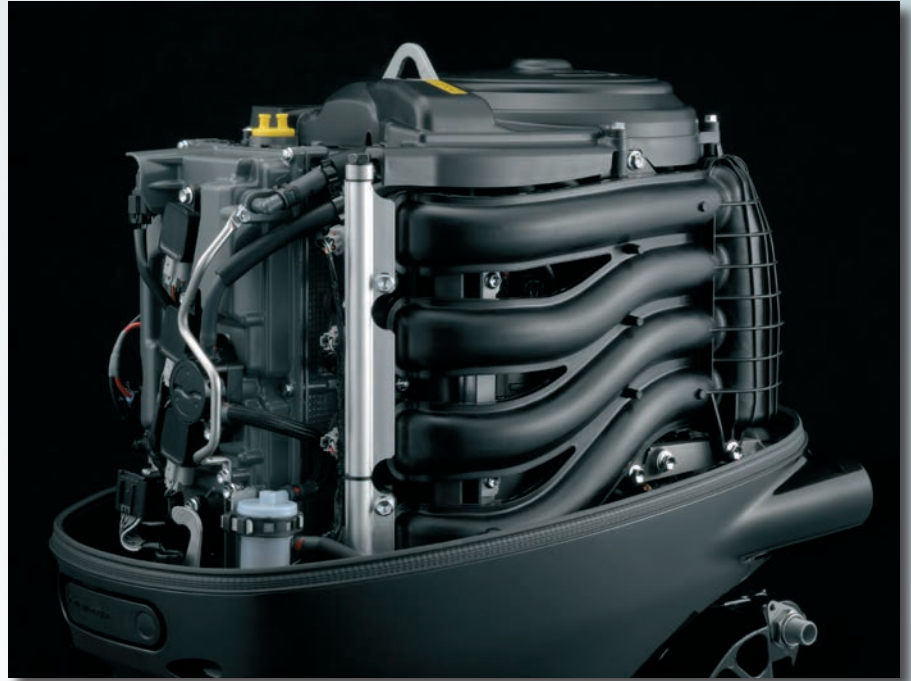
\* Results are from in house testing. Results will vary due to weather, etc.



## DOHC 4-Valve Engine

The DF70A/90A benefit from Suzuki's unrivaled experience in the design and manufacture of motorcycle, automotive, and marine engines. Drawing upon their past advancements and achievements, Suzuki engineers have provided these new outboards with advanced engineering that delivers high power output, performance, fuel economy, and efficient operation.

Starting with an in-line 4-cylinder block, Suzuki designed a more compact dual overhead cam (DOHC) powerhead with four valves per cylinder. This design has reduced the overall size of the outboard while providing high performance power. Power is delivered via a two-stage mixed cam drive system consisting of gears that transfer power between the crankshaft and the drive shaft, and a chain that delivers power from the drive shaft to the camshaft.

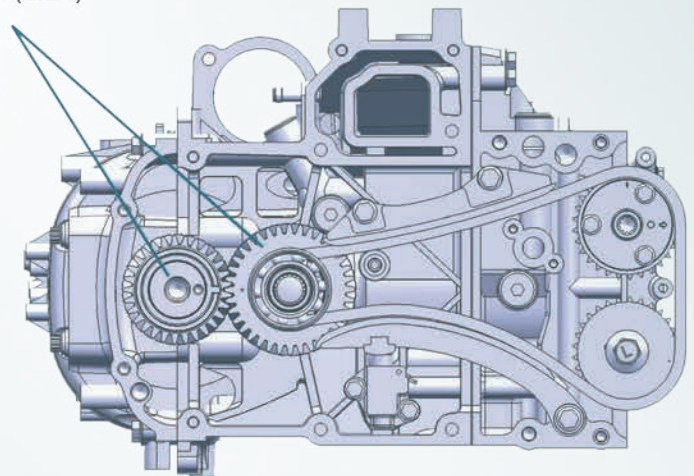


## Two-Stage Gear Reduction

To take maximum advantage of the power produced by these high performance engines, Suzuki engineers have utilized a two-stage gear reduction ever since the introduction of the original DF90. The second generation DF70A/90A follow in their predecessor's footsteps employing the same method to provide an efficient means of supplying maximum propulsion.

The key to gaining maximum propulsion is through the use of a large diameter propeller with a suitable pitch. But spinning a larger propeller requires more torque, which requires larger gears or a larger gearbox adding weight and resistance that do not always produce effective results. Suzuki engineers have long used a two-stage gear reduction system that provides the needed torque without adding unwanted bulk and weight. Through this method, the DF70A/90A with a powerful 2.59:1 final drive ratio, produces the needed torque for quick acceleration and great top-end speed.

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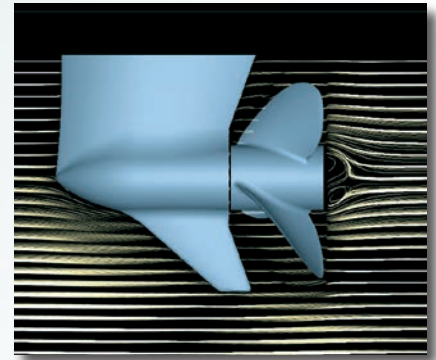


# High Performance Features

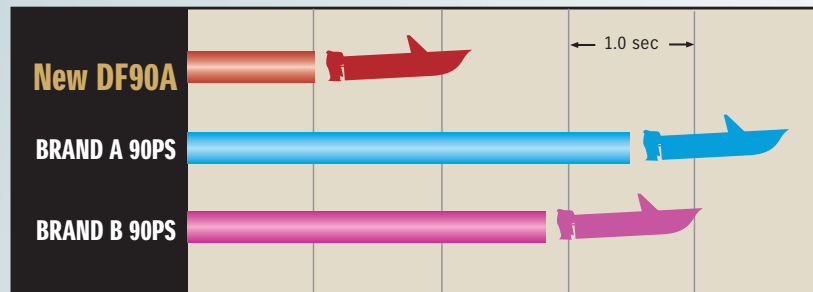
## Streamlined Gear Case and Highly Efficient Propeller

The gear case on both the DF70A/90A utilizes a hydrodynamic design that was first introduced on the flagship DF300. As the lower unit moves through the water its sleek form reduces drag by up to 36% compared to conventional designs, contributing to faster acceleration and increased speed.

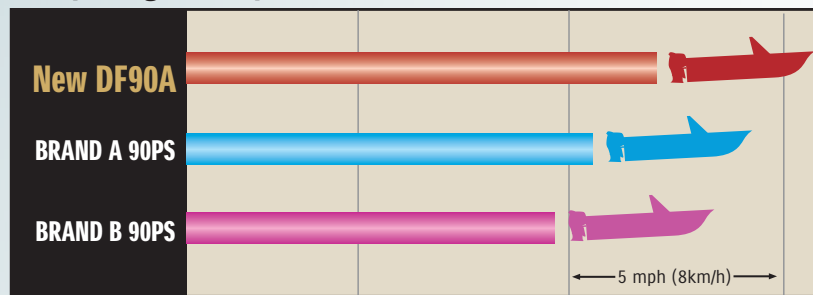
Thanks to the robust torque delivered with Suzuki's two-stage gear reduction, these outboards can turn a large diameter propeller. Suzuki engineered a new highly efficient propeller that takes advantage of this torque to provide faster acceleration and higher top speed.



## Comparing Acceleration [0~30mph (48km/h) Elapsed Time]



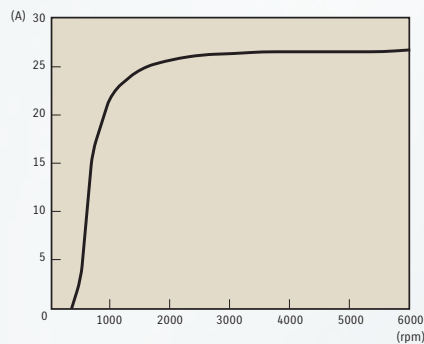
## Comparing Max Speed



\* Results are from in house testing. Results will vary due to weather, etc.

## High Output Alternator

Suzuki's DF70A/90A feature powerful 27A alternators that are designed to generate the bulk of their power at low rpm. These high-output alternators deliver 22A even at a low 1,000 rpm. In most situations, that's enough power to keep an assortment of marine electronics and other accessories operating all day long.



## Suzuki Troll Mode System

Suzuki has something new for the "Fishing Aficionados," the "Suzuki Troll Mode System". Fishermen know that precise control of trolling speed makes a tremendous difference



in the presentation of bait and lures – and the resulting catch. New DF40A, DF50, DF60A, DF70A, DF90A, DF115A, DF140A, DF250AP and DF300AP outboards will come equipped with this system. The operator can increase or decrease the engine speed in 50 rpm increments with the simple



touch of an optional function rocker switch located near the helm. The Suzuki Troll Mode System can be utilized with an "in gear" (forward or reverse) engine operating range from idle – 1200 rpm.

### Smoother Shifting

Taking a fresh look at the gear case, our engineers redesigned the transmission and shifting system, utilizing new dimensions optimized for strength and rigidity. Components were engineered with greater precision and tighter tolerances to reduce play and noise. Incorporating a shift sensor into the system, the ECM now monitors shift action and then controls the ignition for precise shifting. Overall, refinements to the system led to a 40% reduction in shifting effort as compared to the original DF90, resulting in improved performance, precision control and shifting.

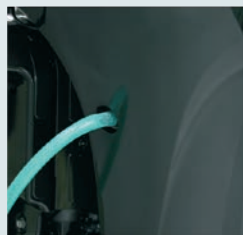
### Suzuki Easy Start System

The Suzuki easy start system no longer requires the operator to hold the key until the engine starts. Now simply turn the key and release. The starter will stay engaged until the engine starts.

The system also features more precise cylinder detection, fuel injection, and ignition control to deliver smoother and improved starts, more efficient combustion, and greater fuel economy making the outboard more environmentally friendly.

### Dual Engine Flush Ports

The buildup of salt, sand, and dirt in the engine's cooling system can lead to damage over time. The DF70A/90A are designed with dual freshwater flush ports to make flushing of the cooling system as convenient as possible. One inlet located on the port side and a second on the front panel provide easy access and facilitate flushing of the system whether the boat is in or out of the water.

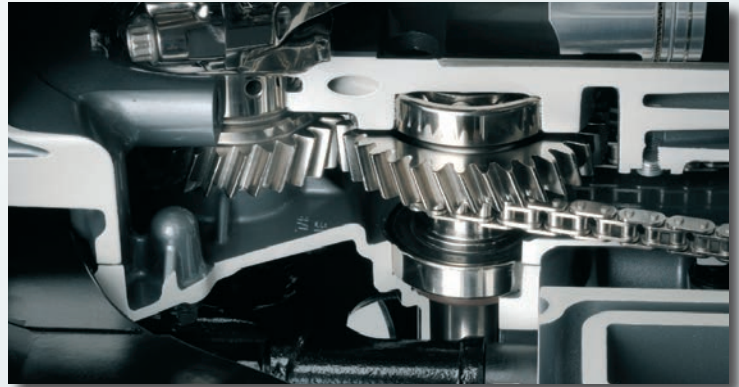


### CARB Three-Star Label

The DF70A, DF90A have received the CARB three-star rating which identifies engines that meet the California Air Resources Board's most stringent exhaust emission requirements for outboard motors.

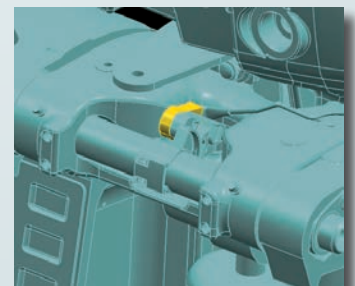
### Timing Chain

The DF70A/90A are equipped with a timing chain that uses an automatic hydraulic tensioner to keep tension in check. The system provides users with years of maintenance free operation



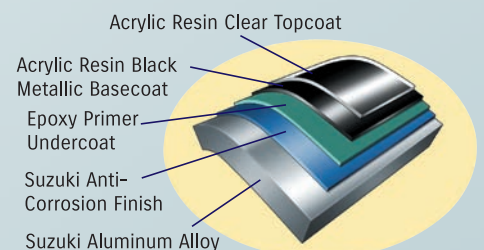
### New Trim and Tilt Limit System

The new trim and tilt limit system is designed to protect the boat from damage that can occur when tilting the outboard. The system is designed with a tilt angle sensor that incorporates both the functions of a tilt limit and trim sender. Using a step-free, continuous type tilt limiter makes installation of the outboard possible on nearly any type of boat.



### Suzuki Anti Corrosion Finish

Suzuki's specially formulated anti-corrosion finish increases the durability of the engine and helps to protect parts of the aluminum exterior that are constantly exposed to saltwater. Applied directly to the outboards exterior, this advanced finish allows maximum bonding of the finish to the outboard's aluminum surface, creating an effective treatment against corrosion.



# Suzuki Motor Corporation

## A tradition of Innovation

Suzuki history begins with the founding of Suzuki Loom Works by Michio Suzuki in October 1909. Realizing that weaver wanted to produce cloth both vertical and horizontal patterns, he developed an automated loom capable of weaving patterned cloth from space dyed yarn. His commitment to innovative engineering was the start of an uncompromising focus on creating products that meet people's needs and offer new life style possibilities.

While the company has evolved, diversified, and expanded since then, we have always honored our founder's commitment to innovative engineering. His philosophy lives on in the "Way of Life!" brand slogan and our dedication to provide our customers with value packed products that bring satisfaction and meet their needs.

## Suzuki Motorcycles, ATVs & Scooters

Suzuki's full lineup of motorcycles, ATVs and scooters lead the industry with cutting-edge technology, convenient features, unrivaled performance and superior quality.

With a broad lineup that includes sportbikes, cruisers, motocross, dual-sport, adventure, scooters, ATVs and more – Suzuki has built its reputation on performance and innovation. Suzuki's motorcycles, ATVs and scooters have revolutionized the industry and redefined their categories. The rugged KingQuad ATV line celebrates 30 years as the "First on 4-Wheels." The legendary GSX-R line, which practically invented the modern sportbike when introduced in 1986, celebrates the unprecedented milestone of over 1 million units produced worldwide. Suzuki's other product lines, including Burgman scooters, Boulevard cruisers

and V-Strom adventure motorcycles, continue to innovate and set the industry-standard for performance, features, quality and value.

## Suzuki Outboards

Ranging from the world's first 300 hp four-stroke outboard to the portable DF2.5, Suzuki offers a comprehensive lineup that represents state-of-the-art design and technology. These engines offer great fuel efficiency and environmentally responsible operation that meet many of the toughest emission standards – worldwide. In 2008 Suzuki introduced the first "New Generation" four-stroke outboard motors, the DF90A and DF70A, followed by the DF60A in 2009. 2010 was another big year with the introduction of the NMMA Innovation Award Winning (Sixth Time) DF50A /40A with Lean Burn and the redesigned

DF300A with Lean Burn. 2011 followed up with additional design changes for the DF300AP to include the NMMA Innovation Award Winning (Seventh Time) Select Rotation drive system. In 2012 Suzuki introduced the NMMA Innovation Award –Honorable Mention- DF20A/15A with Battery-less EFI/Lean Burn and the redesigned DF115A/DF140A with Lean Burn. In the same year, Suzuki also added the DF250AP with Lean Burn, Select Rotation and Suzuki Precision Control. These outboards deliver clean running economical operation with Suzuki's Lean Burn Technology. At Suzuki, our goal is to build outboards that

are highly efficient, deliver low fuel consumption and high power output while placing less stress on the environment.

## Suzuki Motorsports

On the track, Suzuki has captured major championships around the world. The experience, knowledge and expertise gained on the track produces race proven, leading edge technologies that are utilized in every vehicle we make. Suzuki supplies you with the best combination of performance, durability, reliability, efficiency, ease-of-use, and value. It's why Champions Choose Suzuki. So, what are you gonna ride?

To learn more about Suzuki, visit your local Suzuki dealer or go to

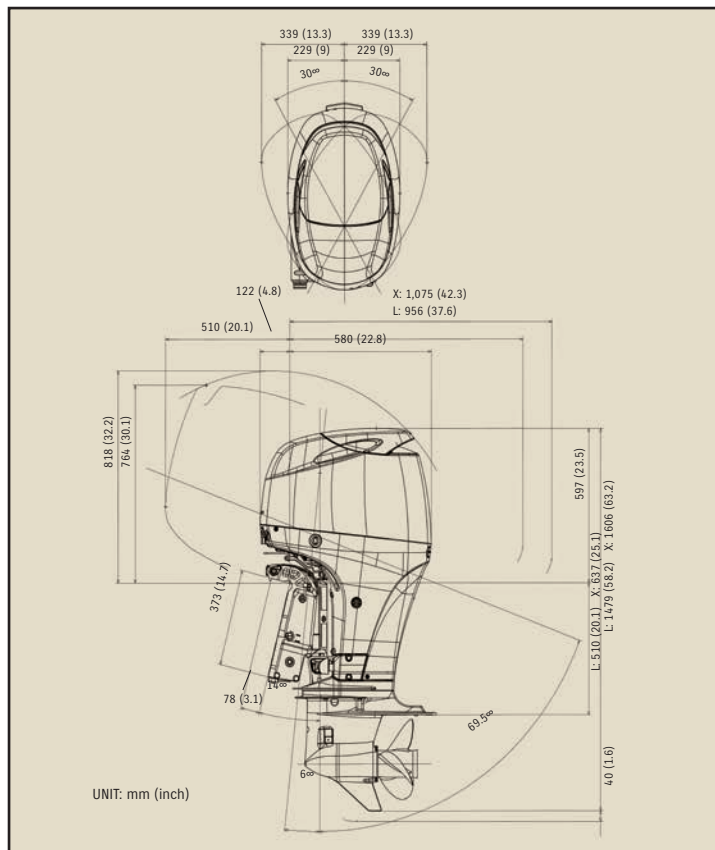
[www.suzuki.com](http://www.suzuki.com)



## DF70A/90A SPECIFICATIONS

MODELS	DF70A	DF90A
ENGINE TYPE	4-stroke DOHC 16 valves	
FUEL DELIVERY SYSTEM	Multi Point Sequential Electronic Fuel Injection	
SHAFT LENGTH in.	L: 20	L: 20, X: 25
STARTING SYSTEM	Electric	
WEIGHT lbs.	L: 341, X: 348	
NO. OF CYLINDERS	Inline 4	
DISPLACEMENT	91.7 cu. in. (1,502cc)	
BORE × STROKE	3.0 × 3.3 in. (75 × 85mm)	
MAXIMUM OUTPUT /rpm	70 hp/5500	90 hp/5800
FULL THROTTLE OPERATING RANGE rpm	5000-6000	5300-6300
STEERING	Remote	
OIL PAN CAPACITY	4.2 qt (4.0 ltr)	
IGNITION SYSTEM	Fully-transistorized	
ALTERNATOR	12V 27A	
ENGINE MOUNTING	Shear Mount	
TRIM METHOD	Power Trim and Tilt	
GEAR RATIO	2.59 : 1	
GEAR SHIFT	F-N-R	
EXHAUST	Through Prop Hub Exhaust	
DRIVE PROTECTION	Rubber Hub	
PROPELLER SIZE (in.)**	3 × 14 × 13	3 × 13-3/4 × 19
OPTIONAL	3 × 13-7/8 × 15	3 × 13-3/4 × 21
3-BLADE ALUMINUM	3 × 13-3/4 × 17	3 × 13-3/4 × 23
3-BLADE STAINLESS STEEL	3 × 14 × 16 3 × 14 × 18	3 × 14 × 20 3 × 14 × 22

## DIMENSIONS



\* With battery cable, without propeller & engine oil.

\* Boats and motors come in a large variety of combinations. See your authorized dealer for correct propeller selection to meet recommended RPM range at W.O.T.

Please read your owner's manual carefully. Remember, boating and alcohol or other drugs don't mix. Always wear a USCG approved life jacket and read your owners manual. Please operate your outboard safely and responsibly. Suzuki encourages you to operate your boat safely and with respect for the marine environment.

SUZUKI MOTOR CORPORATION reserves the right to change, without notice or obligation, equipment, specifications, colors, materials and other items to apply to local conditions. Each model may be discontinued without notice. Please inquire at your local dealer for details of any such changes.

Actual body colors may differ slightly from the colors in this brochure.



### CARB THREE-STAR LABEL

The three-star label identifies engines that meet the California Air Resources Board's most stringent exhaust emission requirements for outboard motors.



### EPA 2010

Suzuki's four-stroke technology is compliant with EPA's stringent 2010 exhaust emission standards and 2010-later evaporative emission standards set by the U.S. Environmental Protection Agency.



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