

Chantey

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CONTENTS Chantey No.135

- P1:** Chantey Special: The long-selling 2-stroke outboard motor "85A"
P3: One-point Service Advice: Measuring the Crankshaft
P4: Customer Management: The core of Customer Management is gathering and sending out information
P5: News Round Up: 1st South Brazil PWC Meeting, and more

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30 years of delivering high performance and reliability *Chantey Special* The long-selling 2-stroke outboard motor "85A"



From the catalog in the year of the 85A release, 1978

For over 50 years since the launch of the first Yamaha outboard motors, the company's dedication to technological advancement and innovation has produced a series of models that set new standards of excellence for each new era. Of the many products of this proud tradition of Yamaha technological innovation over the past five decades, there are a number of models that have maintained devoted followings of satisfied customers without changing in look or reliable basic design for many years. One of these models is the "85A" 2-stroke outboard.

The 85A is the oldest model in the Yamaha outboard lineup to continue to sell in its original form without being replaced by a new-generation model. When it was first released in 1978, it had the largest horsepower in the Yamaha lineup and was soon selling throughout the world. Customers loved and trusted this model so much that it is still selling today in about 100 countries and regions worldwide, primarily in the commercial-use market. In today's world, this is truly an amazing record that perhaps no other model will ever match.

It is also worth noting that the outstanding durability, reliability and performance of the 85A made its design and engineering the working base for a number of variations that appeared one after another. Of these, the 55D, 75A, 75C and 90A as well as the Enduro models E60J, E65A and E75B are still in production today. In this feature article we focus on the 85A and how it became a long-proven "masterpiece" of the Yamaha lineup.



The current 85A. Although changes have been made to the exterior and component spec details, the basic design remains the same and continues to be used and loved by owners worldwide

The long-seller's secret: an amazingly tough power unit

*Chantey
Special*

Yamaha has been manufacturing the 85A to the same quality specification for more than 30 years. To this day it has a solid place in the Yamaha lineup and in the hearts of countless users around the world. That fact alone makes it a model that is unmatched in the industry. Since its release in 1978, the 85A has been used and loved by customers in both the pleasure and utility markets, with demand focused primarily in the commercial-use sector. It soon won acclaim for its tough, durable power unit, and that unit was subsequently used as the base engine for the sister model 75A. This was followed by the E75B variation specifically designed for commercial use with a recoil starter. The success of these models sparked calls from the market for more variations, eventually leading to the introduction of the E65A and E60A models.

For the pleasure-use markets, two more variations were added to the 85A-based lineup, namely the 55D and 75C. Further development of the line was seen with the release of the 80A and 90A featuring microcomputer control for the ignition system. The prime reason for the growth of this family of models was the incredible toughness of the original 85A's power unit and its reputation for reliability.



Its 3-cylinder block was designed as a single unit with the crankshaft that increased rigidity. This combined with the well-balanced 120-degree crank to produce an extremely smooth-revving engine character with minimum torque fluctuation and vibration. This smoothness also reduced lower unit trouble by minimizing shocks to the gearbox, thus making the 85A and its family of variation models highly reliable outboards overall.

Each of the three cylinders in the power unit is fitted with a separate carburetor that functions with the Capacitor Discharged Ignition (CDI) system to deliver more stable power development. The power unit was also designed for easy servicing and maintenance, which won the praise of mechanics everywhere. Furthermore, the lower unit was designed to accommodate propellers of up to 14 inches in diameter, thus allowing users to outfit their models for a wider range of uses, from light, high-speed boats to heavier boats. This unmatched versatility and the inherent high power output and reliability of the 85A are the reasons why this "masterpiece of engineering" is still being manufactured and sold to customers that know and love it worldwide.

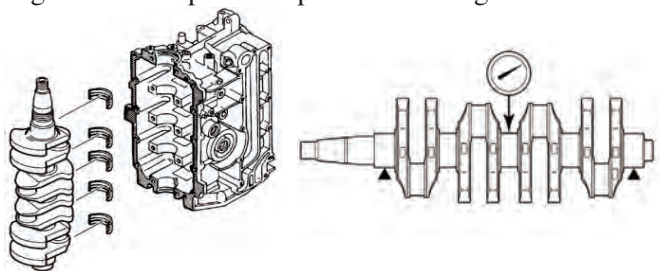
*From the catalog in
the year of the 85A
release, 1978*

Measuring the Crankshaft

This time our subject is crankshaft measurements. As in the previous edition, we look at areas of the “Tests and Measurements” section in the Service Manual worth knowing more about.

Crankshaft distortion (runout)

The crankshaft of a 4-stroke engine is forged as a single unit to be as strong as possible. The crankshaft is also held solidly by main bearings for each cylinder to protect it against forces that might otherwise cause bending or twisting of the shaft. As a result, it is rare for a crankshaft to become bent out of shape. However, it is still necessary to check for crankshaft distortion (runout) whenever the engine is taken apart for repairs or servicing.



Measuring distortion (runout)

The section on “Checking the crankshaft” in the Service Manual says that “crankshaft runout” should be measured. A crankshaft aligner and a dial gauge are used to measure runout.



The crankshaft is mounted on the crankshaft aligner with the aligner’s roller positions adjusted so that the crankshaft’s two main bearings at the two ends of the shaft rest on the rollers. Then the dial gauge is set to align with the center main bearing. Next, the crankshaft is turned slowly to measure runout with the dial gauge.

Points for correct measuring

The first important point for proper measurement is the initial setting.

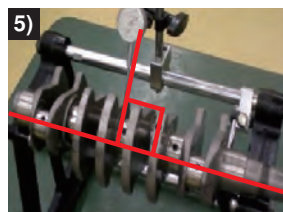
When setting the crankshaft on the crankshaft aligner

Adjust the crankshaft aligner so that the rollers do not touch the main bearing’s oil hole. 1)

When setting the dial gauge against the crankshaft

Make sure the end of the spindle does not touch the main bearing’s oil hole or its curved edges. 2)

Set the spindle stroke so that it lies within the measuring range. 3)



Align the spindle with the center of the crankshaft. 4)
Make sure the spindle stands at right angles with the crankshaft axis. 5)

Understand the principles

We have just listed five points for proper measuring, and I think there are also some other points to understand. However, the reason I have chosen these five is because they are directly related to the two basic principles of measuring listed below.

●What is being measured?

The amount of distortion (runout) in the axis of the crankshaft Points 4), 5)

●Is the measuring equipment set properly? (Does it operate properly?)

The stroke of the spindle for the dial gauge
Points 1), 2), 3)

Just performing the steps of the measuring operation is meaningless if you don’t understand the principles behind them. Not understanding the principles of the operation leads to mistakes. The important thing is to make sure that you understand these two basic principles involved in the measurements you are making.

Dr. Sugimoto Chantey Editorial Room

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Build meaningful communication with your customers

In our past editions of this series we have discussed the importance of Customer Management. The important core asset in Customer Management is the “Customer Information” you keep. In the past, this customer information might have been kept on hand-written cards in a file, but now it is common practice to keep it compiled on your computer. Although the information has to be typed in by hand, once it is input it becomes part of a very useful database that can easily be searched and accessed for output. In this edition of the series we introduce an example of effective customer data use at a boat dealership.

This is a boat dealership that has a database of information for approximately 2,300 customers. Besides data about all customers that have made purchases, this dealership has also worked proactively to gather data on prospective customers by approaching people who come to their showroom to look at or buy parts, accessories and apparel and, when possible, asking them to fill out questionnaires. The dealership’s president claims that this prospective customer information is probably the most important asset his dealership has.

He says that this data is used most effectively for sending out information to prospective customers. The dealership changes its product displays twice a year, in the spring and autumn and each time they send out direct mailings to all 2,300 people in their customer database.

It would be inefficient, however, to send out new product notices and ads to all 2,300. So, in the case of new product notices, mailings are sent only to target customers selected on the basis of database information about customer age and status, currently owned products and the dates of their purchases.

In the case of the biannual showroom product displays, in addition to its direct



mailings, the dealership runs advertisements in the local newspaper and magazines. These ads are effective for bringing in new prospective customers who are not on the customer list. These new visitors are always given a questionnaire to fill out so that the dealership can add their data to its database as prospective customers. The important thing is to make this kind of effort to establish a point of contact with as many people as possible.

In the case of this dealership, there was a specific reason that lead it to create a large customer database to help increase the quality of customers communication. In the past, most of its business came from customers who boated on a nearby lake. When that lake was effectively close to boaters for environmental reasons, the dealership’s customer based spread out to harbors and marinas over a much broader area and communication with the customers became much less frequent. This created the need to strengthen communication in an efficient way by making

use of a customer database. In addition to informing customers about products, the dealership makes concerted efforts to increase points of contact with the customers by means such as publishing its own newsletter and planning various events (cruises, fishing tournaments, etc.). With these efforts as well, the customer database plays an important role.

News Round Up

Activities from distributors around the world, and more

1st South Brazil PWC Meeting

On the 19th of February, Riograndense Jet Ski Association and the Yamaha dealer MOTORYAMA organized the 1st South Brazil Meeting for personal watercraft at the Pinguela Yacht Club in the city of Osório, Rio Grande do Sul with great success.

The weather on event day was fine and some 220 people with 120 personal watercraft gathered to participate. About 90% of the PWCs were Yamahas, making it a big image-booster for the Yamaha brand and a good opportunity for owner follow-up.

The schedule included a 2-hour PWC touring event and 400-meter dash races. For participant family members there was an on-site beauty parlor set up and a children's playground to make it a fun day for everyone.

From Fumihiko Kitano, Yamaha Motor do Brasil Ltda.



The touring event on lakes Palmital, Malvas and Quadros



In great weather many people turned out for the event

Kuwait 3S Campaign

From March 20 to 24, 2011, Yamaha distributor Kuwait Development & Trading Co. (KDT) held a 3S Campaign at five major commercial- and pleasure-use market sites around Kuwait. In this 3S campaign KDT offered engine inspections (Service), market survey and new product information (Sales) and special discounts on parts and accessories (Spare Parts). Managers and staff from all three divisions (Service, Sales and Spare Parts) were present all day long throughout the campaign to help boost Yamaha user satisfaction. Besides giving the free inspections, the campaign was also able to attract users who will be trading in on a new model soon to boost sales in the near future.

From Mitsuhiko Nakamura, Dubai office, Marine Engine Business Unit, Marine Business Operations, YMC



The mobile service van with eye-catching new graphics



At the Sharq Central Fish Market 125 Yamaha outboards were inspected

YAMAHA OUTBOARDS WEB SITE ➔ <http://www.yamaha-motor.co.jp/global/consumer/outboards/index.html>

WAVERUNNER FAN SITE ➔ <http://www.waverunner-fan.com/>

Yamaha Outboards Channel is online on Youtube

View waterside scenes and scenes of Yamaha outboards in use around the world

Yamaha Outboards Channel ➔ <http://www.youtube.com/user/Yamahaoutboardmotors>