STEALTH SERIES™
SHAFT ALIGNMENT SYSTEMS
S-670T WIRELESS 3-AXIS

• Highest Accuracy in its Class
• Win 7/8 IP65 Rugged Tablets
• 9" or 10" Touchscreen Displays
• Patented Dual-Beam™ Technology
• Live Move Screen
• Embedded Bluetooth Class II
• IP67 Laser/Target Housings
What sets the S-670T apart from the competition?

The world’s most advanced laser alignment technology
For over 45 years, we have been providing highly accurate alignment systems to many different industries and applications. We started in the machine tool industry where tolerances are high and applications are difficult, and then 20 years ago we developed the world’s first 4-axis shaft alignment system. All of that experience and knowledge has gone into the design of the S-670 Wireless 5-Axis Shaft alignment system, resulting in the most accurate and yet easy-to-use tool in its class. You will find no better or faster system on the market to quickly and accurately align your rotating equipment.

Patented Dual-Beam™ technology reduces errors by 50%
This breakthrough technology allows you to simultaneously measure offset and angle with only one PSD sensor, which increases PSD accuracy by 50%. It also utilizes uni-directional laser beams (2 lasers, 1 direction) that make aligning machines amazingly easy, especially on long-distance applications. Dual-Beam™ technology also provides an amazing +/- 5 degrees of angular range plus an angular resolution that is 10 times higher than the highest angular tolerance. The result? More jobs done in less time. (And happier managers!)

Waterproof Bluetooth® wireless with the industry's longest battery life
With no cables to trip on or wrap around shafts, the S-670T makes for a safer work area, while giving you the freedom to go wherever you need to be – for 14 hours before recharging the battery. Our standard, Class 2 Bluetooth wireless technology offers up to 33 feet of communication range, and for wet work sites, the IP67-rated T-1285 Target can be dunked in water up to 3 feet and still transmit data!

Super linear 30x10 mm PSD detector - 1.0 Micron resolution
Laser industry’s highest-resolution 1-axis, super-linear PSD sensor, providing 1.0 micron resolution and a measuring area of 30 mm (V) x 10 mm (H). Another industry best.

Duo-Plane™ live move screen for faster, easier alignments
The Duo-Plane™ live move screen and T-1285 3-Axis target allow you to view a live alignment screen for both the vertical and horizontal planes (4 axes) on the same screen. To switch between the vertical and horizontal axes, just rotate the shafts to a clock position and Couple6 automatically switches the H or V live axis without any buttons to push or screens to change, and the non-live axis is grayed out so there is no confusion!

10x higher accuracy for critical machinery means fewer do-overs
Why would you trust a million-dollar piece of equipment to an entry-level, inexpensive laser? Critical machinery demands the best the industry has to offer and the S-670T up to the task. Super-linear PSD technology, 500-point linearization and the latest electronic design reduce the error rate to <0.3%, which is up to 10x higher than our competitors. Higher accuracy means more accurate shim calculations, and the confidence that when you see the green displays, the motor is aligned as accurately as possible. Higher accuracy also means fewer do-overs and faster alignments, especially on those tough alignment jobs.

Off-the-shelf software display, so replacement is never a problem
The S-670T uses familiar Windows 7 or 8 IP65 rugged tablets that are available from most computer stores. So there are no expensive, proprietary display devices to replace if broken.

Easy-Guide™ software navigation makes everyone a genius
Our Couple6 software is every bit as brilliant as our hardware, featuring our Easy-Guide™ navigation with its easy-to-follow, high-quality color screens - leading even the novice user through each stage of the alignment. And if you forget how to do something, the manual is built right into the software - compare that to our competitors’ multi-page cheat sheet! With software this easy to use, training is only required for the the more complicated applications.

Why you need Stealth™ technology for long distance applications
Alignments over long distances are particularly challenging when working with a 2-laser/2-detector shaft system because it’s very sensitive to small angular moves in the motor. For example, a tiny angular movement of just 0.005”/in at 10 feet will cause the laser beam to move in offset by 0.060”! This makes aligning the motor’s offset value very difficult to do, especially for the horizontal axis. With our Dual-Beam™ uni-directional laser technology, however, angular moves to motor do not move the laser beam at all and therefore do not affect the offset values! This means aligning the motor is amazingly easy, especially over long distances.
S-670T Couple6 software for tablets and PCs

In any alignment system, the hardware is only part the story. The other, more important part is the software. So when we designed the Stealth™ Couple6 software, we had the novice user in mind and created our Easy Guide™ approach to navigation that is so simple to use, it requires little to no training. Easy-to-follow, high quality, color screens lead you through each stage of the alignment, so you don't need to constantly refer to “cheat sheets” just to remember how to use it!

**Included Software Features**
- Auto Clock™
- Auto Sweep™
- Coupled & Uncoupled Alignments
- Duo-Plane™ Live Move Screen
- E-mail Reports
- Flip-It™ Machine Graphics
- Horizontal/Vertical Machines
- PDF Report Generator
- Recommended Tolerances
- Report Software for PC
- Soft Foot Shim Calculator
- 7 Spacer Shaft Formats
- Thermal Growth at Coupling
- Thermal Growth Foot Calculator
- 2,000+ Saved Files

**Optional Software Features**
- Arc Mode™
- Bolt Bound™
- Machine Train Analysis Software
- Point Mode
- Repeatability/History
- Runout Data Analyzer
- Templates
- Uncoupled Swipe™ Mode
- User-Defined Tolerances
- Vertical Machines - Live Move

**Project Menu**
Start new projects, manage old alignment projects, review saved files and create project templates. Creates a unique machine folder that stores all the alignments in one place for easy historical analysis.

**Step 1 - Machine Type, Dimensions & Tolerances**
Select machine and coupling type, enter dimensions and select tolerances. Can also enter user-defined tolerances.

**Step 1 - Thermal Growth Modeling**
Enter thermal growth values at the coupling or the feet to offset the alignment, and the motor graphics will update to show the effects. Or enter temperature changes at the feet, select the material and Couple6 will calculate the alignment effect at the coupling. Can also be used for alignment modeling before the job starts.

**Step 2 - Laser Setup Screen**
Provides live, 4-axis, raw alignment data to initialize the system and maximize measurement range. On-screen graphics show you which direction to move the laser and target during the setup. Can also be used for Rough Alignment.

**Step 3 - Soft Foot Check**
On-screen, easy-to-follow procedure for checking Soft Foot, a common problem that can cause many alignment problems. Automatically selects the “problem” foot and calculates the shim to fix it.

**Step 4 - Measure Misalignment**
Up to five data-taking modes record data for even the most difficult applications. Save multiple sets of data to check repeatability. Data can be archived and data categories assigned to track alignments.

**Step 4 - Measurement Results**
Click on a set of alignment data to display color-code alignment results. Red means out of tolerance, yellow means “good” and green indicates “excellent”. Foot values are also displayed.

**Step 5 - Any Point Live Move Screen: Motor View**
Featuring our Duo-Plane™display that shows both the vertical and horizontal alignment planes (4 axes) on the same screen. Rotate the shafts to any point within +/- 30 degrees of 3, 6, 9, 12 and Couple6 will automatically switch views to show only the axis that matters.

**Step 5 - Coupling View**
For those users accustomed to gap/offset indicator methods, the Step 5 Live Move Screen can be switched to Coupling View to show the alignment directly at the coupling.

**Alignment Report**
( print or email)
Did you know that nearly 50% of the price of our competitor’s lasers comes from the display box? To print, simply plug your tablet into a printer. To e-mail, print report to a PDF and attach to your e-mail. It’s that easy.

**Free Updates**
We constantly improve our software and provide free updates. Just click on “Check for Updates” and Couple6 does the work for you.

**Couple6 Interactive Tour**
Scan here to take an interactive tour of Couple6 on our website. Here is the link: http://www.hamarlaser.com/app/shaft-alignment/219

**On-demand help text**
Our software manual is built right into our software, so you don't have to thumb through many pages to answer a question. Simply click “Help” from the menu, and the software will display the correct page of the manual for that screen.

**Did you know that nearly 50% of the price of our competitor’s lasers comes from the display box?”**

Start rotating the shafts and the built-in accelerometer detects the movement, automatically collecting hundreds of data points. Stop rotating the shafts and Couple6 starts calculating the misalignment. More data means more accurate alignment data and less rework.

5 data-taking modes

Included in the Couple6 Basic License is Auto-Clock™ and AutoSweep™ data-taking modes. Optional data-taking features include: Arc Mode™, Point Mode, and Uncoupled Swipe™ Mode for those hard-to-measure applications.

Flip-it™ screen graphics. (Why didn't anyone think of that before?)

You shouldn't have to turn your screen upside down just because you are on the wrong side of the machine. This very popular feature allows you to flip the graphics with a double-tap of the screen. No more upside-down screens and mixed-up shims.

Measurement Noise Filter

Variable data averaging allows the user to choose the amount of data filtering to reduce the effects of poor measuring environments.

Database management

When you create a new machine in Couple6 software, it automatically creates a folder on your tablet and then saves each new alignment file for that machine in the folder. This allows you to keep a history of alignment for each machine so you can go back and easily collect historical data for trending purposes. Each file is time and date stamped so you can save multiple copies on the same date if needed.

Geometry Add-Ons

T-1285 Target can be converted to Scanning Mode to be used with our L-730 Leveling Laser, an auto-rotating laser that is the industry’s best flatness & straightness laser. Bore alignment accessories are also available along with software for most bore application. The tablet can also be used with any of our renowned geometry lasers.

“We have used the system and it really is good. It got us through the massive soft foot issues reasonably quickly, and the alignment was a breeze. The controls were simple and intuitive, and the touch screen made data entry very quick. I was able to pick it up, and align a motor accurately the first time, with very little training and no previous alignment experience. Thank you for making such an easy-to-use and accurate system.”

Jeff F.
Engineer Roanoke Cement Company

Options

Bracket & Chain Sets
A-982 Magnetic Brackets (set of 2)
A-980C Extra Chain Sets
1”-12” Shaft Diameter
A-980NR Non-Rotating Shaft Brackets
A-980NRB Non-Rotating Large Shaft Bracket
A-980OF Offset Brackets
A-986 Magnetic Coupling-Flange Slider Bracket
T-1285B Outdoor Light Filter

Geo software and accessories.
L-730 Auto-Rotating Laser with P-R base
A-987 Flatness Measuring Fixture for T-1285/T-1290 Targets
S-1388 Plane5 Software

R-1342T Rugged Tablet
Standard features Windows® 8, high-resolution, sunlight-readable 10” touchscreen and an environmental rating of IP65. Runs Couple6 PC software and other HLI programs.

R-1342T Rugged Tablet
Standard features Windows® 7, high-resolution 9” touchscreen and an environmental rating of IP65. Runs Couple6 PC software and other HLI programs.
Specifications

**Laser/Target Unit Size**
4.2” x 3.3” x 2.2” (107 mm x 84 mm x 55 mm)

**Housing Material**
Impact resistant plastic

**Detector Type & Size**
1-axis super-linear PSD 30 mm (v) x 10 mm (h) provides 2 continuously updating alignment axes (1 alignment plane).

**Ambient Light Protection**
Yes via blinking-laser algorithm embedded in all Stealth targets

**Target Measurement Resolution**
Offset: 10 micron (.00004”)
Angular: 0.014 mm/ft (.00016 in/ft)

**Target Measurement Accuracy**
Angular: <1.0%

**Angular Sensor Range**
+/- 5’/6” (8.5 mm/100 mm)

**Laser Type**
650 nm dual-beam laser with horizontal adjustment <0.9mW

**Communication between Target & Data Analyzer**
Wireless Bluetooth Class 2

**Wireless Range**
Up to 33 feet (10 M)

**Ruggedized Display**
IP65 tablet with 9” or 10” display

**Platform**

**Rotation Sensor (3rd axis)**
Accelerometer Resolution: 0.1°
Accuracy: +/- 1°. Measurement accuracy not affected by rotation sensor accuracy.

**Environmental**
IP67 (laser & target) | IP65 tablet

**Data Storage Capacity**
2,000 files

**Upgraded Bracket Set**
Covers 1” (25.4 mm) to 12” (304.8 mm) diameter shafts. Comes with 4” (101.6 mm), 6” (152.4 mm), 8” (203.2 mm), 12” (304.8 mm) posts, two 1725” (438 mm) chains and two 60” (1,524 mm) chains

**Application Range**
33’ (10 M) between laser and target

**Operating/Storage Temperature**
5°F to 140°F (-15°C to 60°C) for Laser, Target. 32°F to 104°F (0°C to 40°C) for R-1342ST or 4°F to 20°F to 122°F (-20°C to 50°C) for R-1342T

**Battery Life Target**
14 hours continuous use with Bluetooth — 15 hours with backup cable. Target can be plugged into power sources during use. Battery status indicator for both T-1285 Target and PC.

**Battery Life Laser**
80+ hours continuous use. Blinking LED indicates low battery status.

**Battery Life Tablet/PC**
Up to 8 hours normal use

**AC Battery Charger**
110V to 220V with U.S. and European adapters

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