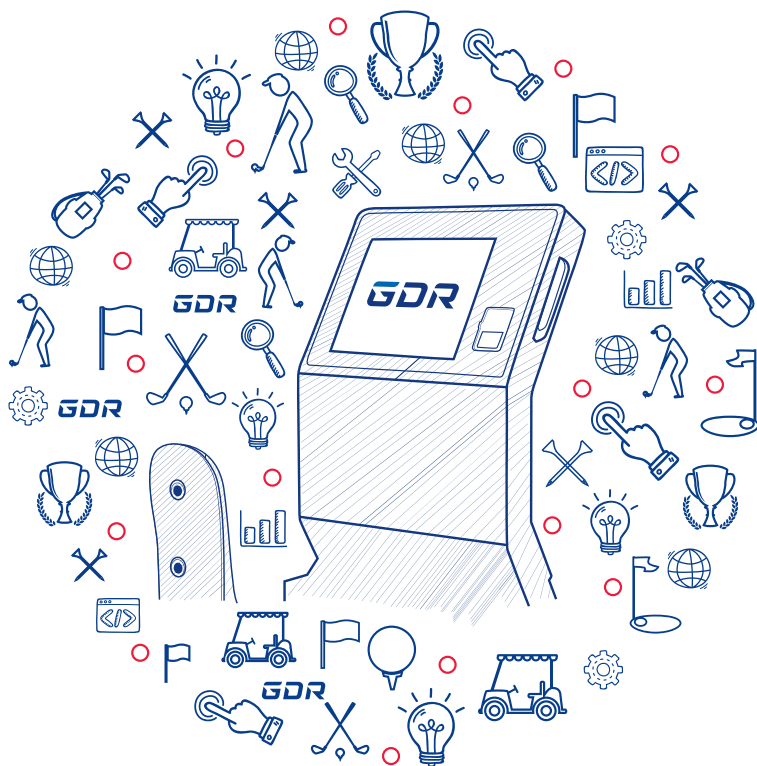


GDR

GUIDE BOOK

- † Bringing science and technology to golf practice
- † Smart practice management system
- † Creates an enjoyable way to elevate your game



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01

GDR

Introduction

The world's first innovative way to practice golf

GDR

Golfzon has re-imagined a golf training culture that is enjoyable and yet reinforced by smart technology and accurate shot data analysis



Bringing science and technology to your golf training



- The two high-res imaging sensors can read any golf balls
- Ability to distinguish individual ball surface characteristics translates to a more accurate and complete shot analysis
- Two-way front/side cameras allow video swing analysis for an optimized golf lesson

Creating an enjoyable way to practice



- 'Practice Modes' tailored to your practice goals and improving skill levels
- Systematic and focused practice regimen for each club including shot making, approach shots, and putting
- GDR practice functions such as the Pendulum and Swing Tempo perfects your swing path and tempo
- Provides a real 9-hole golf course environment to practice specific shots to real targets

A more systematic approach to golf practice



- Real-time storage and systematic analysis of streaming practice data
- Practice anywhere and anytime where there is a GDR



02

GDR

**Product
Composition**

02 GDR Product Composition

1 · Specifications



Recommended Bay Dimensions

Width 2.5m (8.2ft) x Depth 5.0m (16.5ft) x Height 3.2m (10.5ft)
(waiting area and aisle are not included/dimensions can be adjusted depending on site conditions)

Standard Model

GDR Sensor, Side Camera, and a Kiosk with card reader, touch monitor, key-pad, and front camera

Options

Screen, Projector, Mats, Auto Tee-up, Moving Swingplate

※ GDR can be installed on any existing bays for indoor/outdoor practice range.

2 · Product Composition



GDR Sensors

- Two high-speed, high resolution camera sensors capture all necessary golf ball data for accurate reading and analysis
- Measures spin direction and rate by reading ball surface characteristics of any golf ball
- Accurate ball flight characteristics by sensing speed, trajectory and direction



GDR Kiosk

- All-in-one, user-friendly GDR Kiosk with built-in devices
- Easy login membership card reader for Golfzon members
- Touch screen monitor, key-pad and high definition NASMO Swing Motion Camera



Side Camera

- In addition to the NASMO camera, adding a Side Camera will enhance swing plane and posture analysis
- Adjustable height stand



03

GDR
User Guide

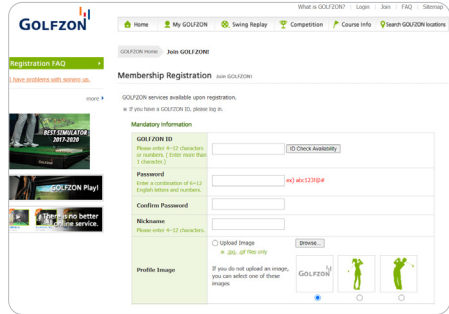
03 GDR User Guide

1 · Membership Registration and App Installation Guide

- How to register for Golfzon membership

First time using GOLFZON and GDR?

Sign up and register your membership on GOLFZON website www.global.golfzon.com and follow the steps for creating your profile



- GDR Mobile App Installation

- Go to App Store or Android Market and search for "GDR-Global".
- Click the icon to download and install.
- Log in with your password and start enjoying your app.



2 · Starting the GDR

• Running the Program

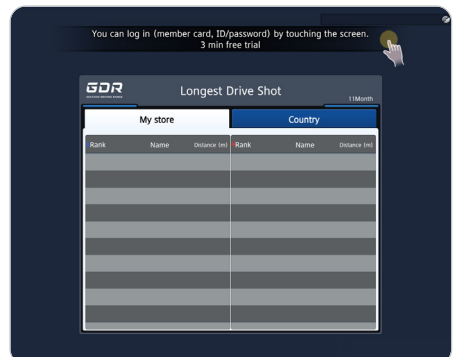
- Double click on 'GDR Launcher' icon on Windows desktop to run the program
- When launching, it will automatically update with the latest data patch. "START" button will pop up when the update is complete.



Starting the GDR

• Starting the GDR

- At the start of the GDR program, an intro video will launch and play
- If you touch the screen while the video is playing, you can see the Highest Practice Ball Count Ranking of your location and of the combined GDR locations.
- Touch anywhere on the screen on the ranking page to go to the login page.



Highest Practice Ball Count Ranking

03 GDR User Guide

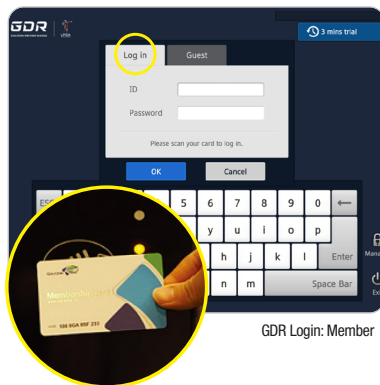
2 · Starting the GDR

•• Login: Member

- Once registered as a Golfzon member, go to the 'Log in' tab, enter your ID and password and press 'OK' to log in.
- You can also log in conveniently with a Golfzon membership card.
- If you forgot your password, go to www.global.golfzon.com and reset your password by going to 'Forgot your password' menu.

* As a Golfzon member, did you know?

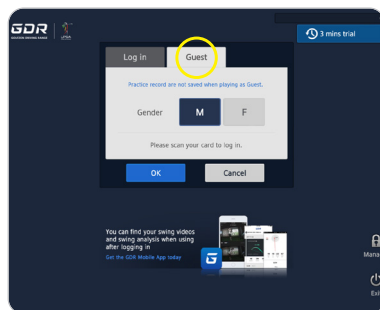
All shot data from each session, along with your saved notes, are stored in our server for your future analysis.



GDR Login: Member

•• Login: Guest

- If you are not a Golfzon member and/or wish to log in as "Guest," go to the 'Guest' tab and enter short basic information such as gender and enter the driving range



GDR Login: Guest

2 · Starting the GDR

• Precautions and Setting Options

- It is important to read the precautions before starting each practice! The precautions screen will appear before each start. You will have 3 minutes to go through the precautions and warm up.



Precautions

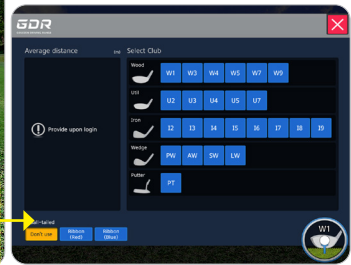
03 GDR User Guide

3 · GDR User Guide

•• Precautions and Setting Options



Driving Center - ZOIMARU



Club Selection

- 1 Member Image / NickName / Cumulative number of Practice Balls Hit / Remaining Practice Time
- 2 NASMO Swing Motion Replay
- 3 Off-target distance / Ball Speed / Head Speed / Launch angle / Left&Right launch angle / Backspin / Sidespin
- 4 Options
- 5 Club Information / Change Tee Height
 - Select a club by clicking the club icon on bottom right.
 - Choose the club you want to use and start practice
- 6 Swing Tempo Practice / Current Mode Guide

3 · GDR User Guide

- Reviewing your GDR Shot Data

- Practice your shots with each club and review your shot data displayed on the left.
- 'Distance' is calculated by adding Carry distance and Roll-out distance.
- Review your ball flight dynamics on off-target shots (distance, ball flight, ball speed, launch angle, left & right launch angle, backspin and side spin).
- Compare your shot data with the average shot data of the PGA and LPGA professionals and see where your skill stacks up.

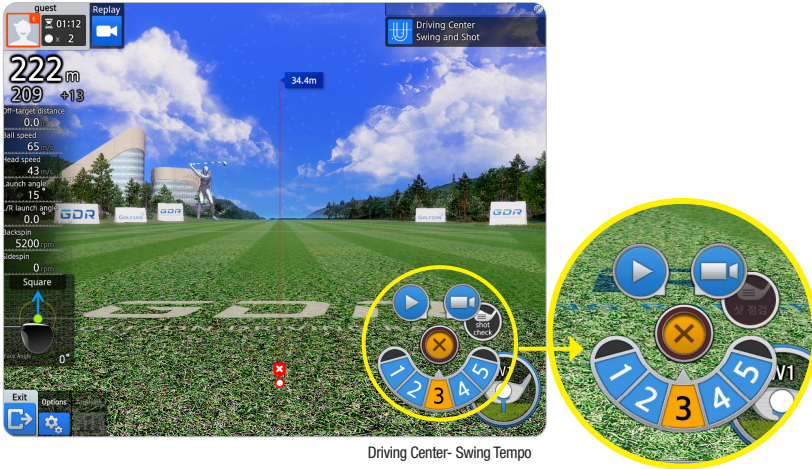


Driving Center

03 GDR User Guide

3 · GDR User Guide

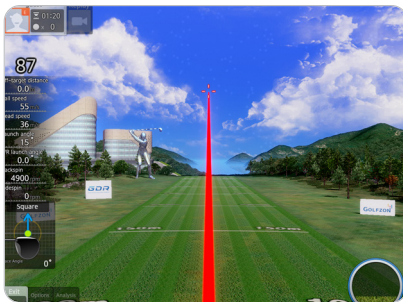
- Swing Tempo



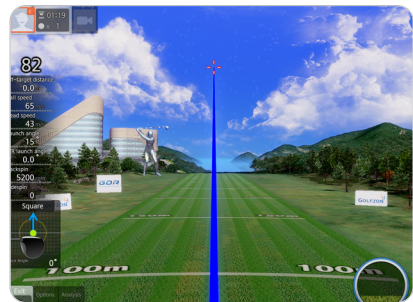
Driving Center- Swing Tempo

- Set the swing tempo speed from 1 to 5 according to user's desired swing speed by clicking the Swing Tempo icon on bottom right. Level 1 is set to the average speed of professionals.
- Swing Tempo functions as a swing rhythm stabilizer and helps player set their swing rhythm from address to impact at a constant tempo.

- Golf ball flight path trail is shown for each shot.



Ball flight trailer - Red



Ball flight trailer - Blue

- Choose from 2 styles of ball flight trailer

3 · GDR User Guide

- How to Use NASMO Swing Motion



- Click on the "Replay" button in the top left tab for reviewing your swing plane motion video and for an in-depth study of your swing.
 - Replay your swing video from NASMO and Side Cameras at any speed from slow-mo to real speed. Take notes on your analysis and save.
 - Compare your swing and posture with the professionals with your most recently saved 5 swing videos.
- 'NASMO' menu lets you watch your swing in detail with 'My Swing Motion Replay'. Enter the 'NASMO' menu during your practice to automatically load the video of your latest swing. The video saved in the past can be selected and replayed by period and club used by clicking the 'Open' button at the bottom left corner. You can compare and analyze two different videos by playing them side by side at the same time. The play speed can be adjusted to 1/4x and 1/8x, and your swing posture can be further examined by functional tools, such as drawing lines and angled lines on the snap shot video image after pausing the video.

03 GDR User Guide

3 · GDR User Guide

•• How to Use NASMO Swing Motion



Compare Posture

View Mirror

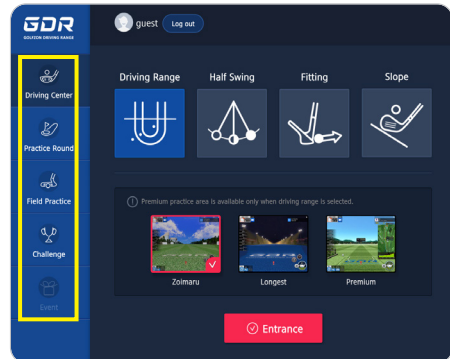
Load My Videos

- In “Compare Posture,” you can compare your swing motion with that of a male or female professional each step of the swing motion. In the top menu, you can switch the video from front to side and select the video of male or female professionals. You can choose the swing steps you desire from the 8 menus below.
- “View Mirror” is a feature that allows you to observe your swing motion as if you were looking at your swing in a mirror, which is useful for self-practice and lessons. Clicking on the video icon in the center automatically records your swing for 4 seconds after a 5 second warm-up. You can also save the recorded video.
- The “Load My Videos” is a function that allows you to analyze and compare your past Nasmovideos when you log in as a member.

4 · GDR Mode Guide

1) Main functions by mode

GDR consists of four modes: Driving Center, Practice Round, Field Practice, and Challenge Mode. Select the appropriate practice mode for your intended use. You can select the mode by clicking the icon on the left side of the screen. The key features of each mode are as follows.



Mode Selection



Driving Center

Basic practice mode providing key shot data such as distance and direction for each club.



Practice Round

Long game practice without putting, where you can practice your fairway woods or iron shots on a virtual golf course.



Field Practice

Practice repeatedly for each shot on a golf course on all four types of shots : Tee-Shot, Second Shot, Approach Shot and Putting. It elevates your practices on the type of shots you would make on an actual course terrain on a 9-hole practice round.



Challenge

You can earn points if the mission given in each mode is completed in 5 shots. It's a good way to motivate yourselves to be better.

03 GDR User Guide

4 · GDR Mode Guide



Driving Center



Driving Range



Pendulum



Fitting



GDR Driving Center

You can practice both intuitively and efficiently as if you are practicing on a real golf course.

For beginners with a novice golf swing, try practicing in basic practice mode on the Driving Range which gives you key shot data such as distance and direction for each club used. Detailed functions for each Mode are shown below.



Driving Range

For practicing your woods, long-irons, middle-irons, and short-irons



Pendulum

Excellent mode for entry-level or beginners, but also to getting back to basics



Fitting

Helps you find the right club for the distance by providing accurate shot data



Slope

Practice on various slopes such as uphill and downhill by adjusting the Moving Swingplate up, down, left, and right. You can turn on/off 'Slope' in the manager mode.

4 · GDR Mode Guide



GDR Driving Center - Approach

Driving Range consist of ZOIMARU, Longest, and Premium modes.

- ZOIMARU: This mode allows you to practice your Driver, Fairway Woods, and Iron shots in a fairway course-like setting for distance and accuracy to the target. The target size and distance are set at your average shot per club.
- Once you select your club to a Wedge in ZOIMARU mode, it will automatically move you to a course location to a practice green for approach and pitch shots. Hone in on your approach and pitch accuracy from as near as the first cut around the green to a distance of up to 130m (140 yards) from the green.
- Longest: This mode is the night scene of ZOIMARU, as if you are practicing at the range after dark, with lights of course. Practice hitting your clubs including approach and putting in the night setting.
- Premium: Play a short round of golf with your distance clubs on a course setting but without putting. A mini map of the hole is provided to know your distances to the target and your expected total score is calculated using Greens In Regulation scoring method when your ball lands on the green.

03 GDR User Guide

4 · GDR Mode Guide



Driving Center



Driving Range



Pendulum



Fitting

- Selecting your putter in the Driving Range in either ZOIMARU or Longest mode, it will automatically take you to the green for putting practice. This feature allows you to set the slope, speed and hole distance to train all aspects of reading the green and putting intuition.

- You can also set for a self-diagnostic “head movement” when you putt. The “HEAD UP” text will appear and disappear half a second after the putt is made.



Driving Center - Putting



Driving Center - Putting / Head Up

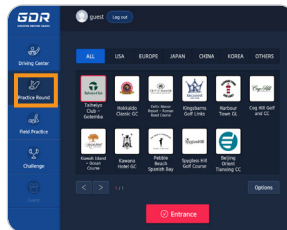
- You can confirm your expected score on the course in the “Practice Round”.

Practice Round Guide

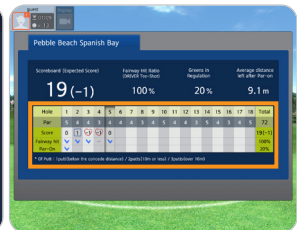
See your expected score on the course practice round and enjoy your round of golf without putting. Expected scores per hole is based on the distance remaining when the ball lands on the green.

Example:

- * 0 < Concede distance: 1 stroke
- * Concede distance < 10m (30 feet) : 2 strokes
- * More than 10m (30 feet): 3 strokes



Selecting the course



Expected scores per hole

4 · GDR Mode Guide



Driving Center



Driving Range



Pendulum



Fitting



- This practice mode is helpful not just for entry-level or beginner level, but also for advanced players to review the basic swing motion. You can master the basic swing motion in the Pendulum Mode.
- Mission is completed when the ball lands in the yellow area with the correct swing motion by the Pendulum. The graphic effects is the motivator for a fun practice session and creates incentives to set and achieve those goals.

03 GDR User Guide

4 · GDR Mode Guide



Driving Center



Driving Range



Pendulum



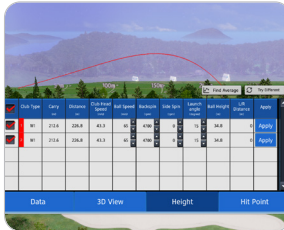
Fitting

Club Type	Carry	Distance	Club Head Speed	Ball Speed	Backspin	Side Spin	Launch Angle	Ball Height
W	212.6	228.9	43.3	45	4780	0	13	34.8
W	212.6	228.9	43.3	45	4780	0	13	34.8

Fitting - View Results

Club Type	Carry	Distance	Club Head Speed	Ball Speed	Backspin	Side Spin	Launch Angle	Ball Height	Apply
W	212.6	228.9	43.3	45	4780	0	13	34.8	Apply
W	212.6	228.9	43.3	45	4780	0	13	34.8	Apply

Fitting - 3D View



Fitting - Height



Fitting - Hit Point

- Driving Center > Fitting menu. This mode helps you choose the right club. Try out each club and view your shot data by clicking "View Results."
- In the "View Results", review your overall data such as carry, distance, head speed, ball speed, backspin, side spin, launch angle, and ball height for each club during the practice. If you want to view other shot data, click the "Try Different" button on the top right corner to select the club you wish to review. If you want to delete a record, click "Delete Data" button.
- In "3D View" menu, see the trajectory of the ball in 3D for each club. If you want to see the average data, you can see it by clicking the "Find Average" button in the top right corner. If you want to view the results of another club, click the "Try Different" button in the top right corner to view other clubs.
- In the "Height" menu, it will show you the trajectory and height results of the ball for each club in a graph form. If you want to see the average value, click the "Find Average" button on the upper right, and if you want to see the results of other clubs, click the "Try Different" button on the upper right to view the club you want.
- In "Hit Point" menu, you can view the data on where the ball landed for each club.

4 · GDR Mode Guide



Driving Center



Driving Range



Pendulum



Fitting



Driving Center - Shot Analysis 1



Driving Center - Shot Analysis 2

See Results

- You must hit more than 5 shots for each club to get your overall results in each mode. It will show as "No Record" for anything less than 5 shots on each club.
- The practice results for your driver, fairway woods and Irons include data on distance and direction, change in distance, and the landing rate on target for each club.
- The results on your 'Wedge' practice show the ball's total distance (carry and roll out), shot data, and your percentage of probability to the target by distance for each approach shot.
- The results on your putting practice are shown based on analyzing the number of putts/balls practiced by distance and the probability of your putting conversion.

03 GDR User Guide

4 · GDR Mode Guide



Field Practice



Tee Shot



Nearest to the Pin



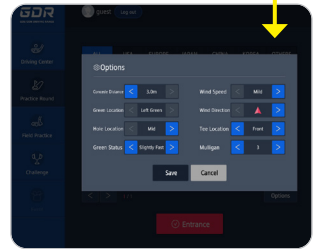
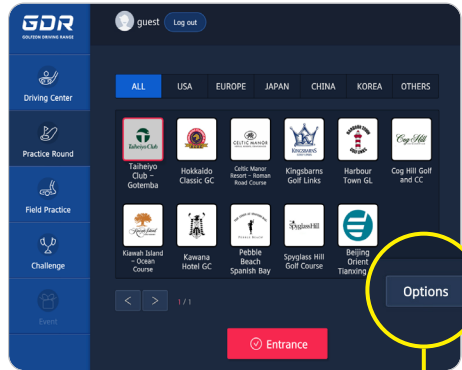
Putting



Level Test



9 Hole Practice Round



Options

This Mode enables you to practice on a golf course environment for driver and short game before going to the actual course.

Practice repeatedly for each of four types of shot: Tee-Shot, Second Shot, Approach Shot and Putting. And it allows you to experience and enhance your sense of actual game play through 9-holes of practice. It builds an accurate sense of distance by practicing in different terrains and slopes!

- Practice the 5 major areas in Tee Shots, Nearest to the Pin, Putting, Level Test, and 9 Hole Practice Round on the course.
- Practice in various conditions by setting up concede distance, wind speed and direction, pin location on the green, green location, tee location, and green speed in the 'Options' button on the right.

4 · GDR Mode Guide



Field Practice



Tee Shot



Nearest to the Pin



Putting



Level Test

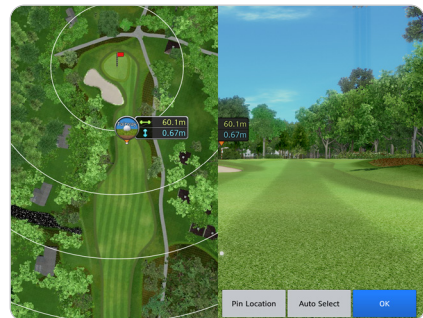


9 Hole Practice Round

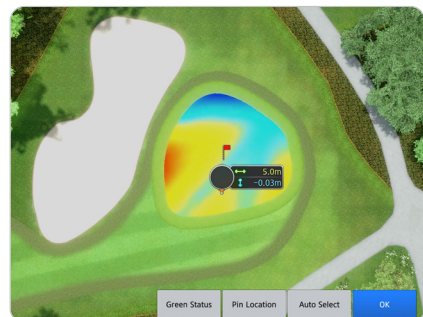
- Tee Shot, Nearest to the Pin, and Putting are good practice modes to elevate your game.
- In the Tee Shot, you can repeatedly practice Tee-Shots in Par4s and Par5s.
- Set the practice environment that you desire through the 'Options' in the bottom left corner.
- Nearest to the Pin is a mode that allow users to practice repeatedly by selecting the distance you want within the 20~200m (21 yard ~ 220 yard) range based on the hole cup. It is an effective way to practice your short game and approach shots.
- Putting is a mode to practice putting on the green. If you press the Change Location button during putting practice, you will move to the Green Map and you can choose the location you want to practice. You can judge the slope by the color display in red (high slope) blue (low slope).



Field Practice - Tee Shot



Field Practice - Nearest to the Pin



Field Practice - Putting

03 GDR User Guide

4 · GDR Mode Guide



Field Practice



Tee Shot



Nearest to the Pin



Putting



Level Test



9 Hole Practice Round



- Level Test will test each of the 3 types of shots and putting. Test and analyze your strengths and weaknesses of your shot making.
- Analyzed results are shown after practicing 3 holes, 3 times for each of your tee-shot, second shot, approach shot and putting on the given course.
- In the Level Test, the goal of tee-shot is to land your ball on the fairway; the goal of your second shot, or the approach shot, is to land the ball on the green. But for the approach shot, as well as landing on the green, the goal is to land the ball on the target around the flag stick. And the goal for putting is to make the putt in the hole.

4 · GDR Mode Guide



Field Practice



Tee Shot



Nearest to the Pin



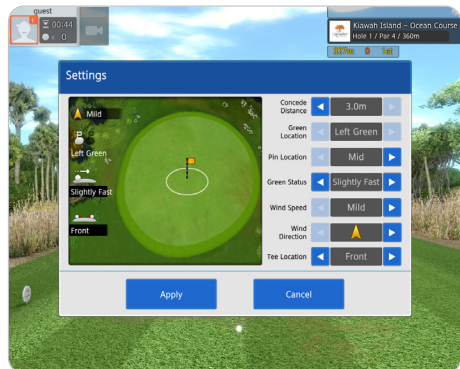
Putting



Level Test



9 Hole Practice Round



- The "9 Hole Practice Round" allows you to play in a course setting with course conditions. This will increase your sense of the game and gain experience by trying different types of shots on different types of terrain you will encounter on a course. You can learn to strategize on how you want to attack a particular type of hole.
- Within this practice round, there are functional features and tools you can use, such as Penalty Drop, View/Hide Grid, View Target, Browse, View Score, and Lower View (ground view useful in putting). When you're done practicing with the current hole, press the "Move to Next Hole" button to move onto the next hole.

4 · GDR Mode Guide

Challenge



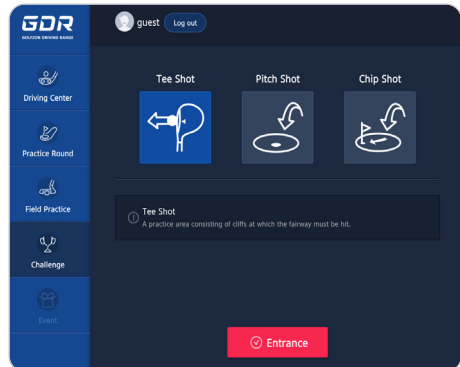
Tee Shot



Pitch Shot



Chip Shot



The Challenge mode is challenging to those who are looking to train more intensively. A more focused session can be found in "situational practice mode" and "systematic data analysis" with elements of fun that is motivational.

- Gives you a highly-focused practice session and challenges you to carry out mission while maintaining the element of fun.
- You have five shots in each phase to complete a given mission to earn points. The level gradually goes up with accumulated points.
- View your scores, rankings, and your best record, along with the national ranking in real time within each mode, giving you the transparency of where you stand among your peers.

03 GDR User Guide

4 · GDR Mode Guide



Challenge



Tee Shot



Pitch Shot



Chip Shot



Challenge - Tee Shot



Challenge - Pitch Shot



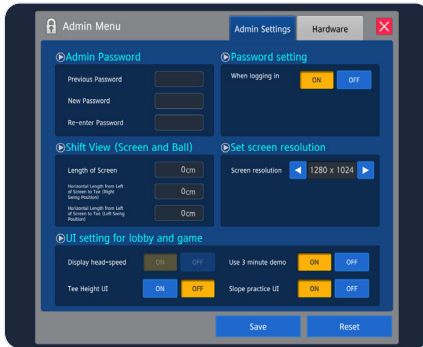
Challenge - Chip Shot

- The goal of Tee-Shot practice is to land the ball in a narrow fairway. The practice starts at a width of 50 meters (55 yards) and becomes narrower as the level goes up. A ball landing outside of the fairway will fall into a water hazard. If you want to see your swing path and club face angle, you can view them through the Tee-shot mode.

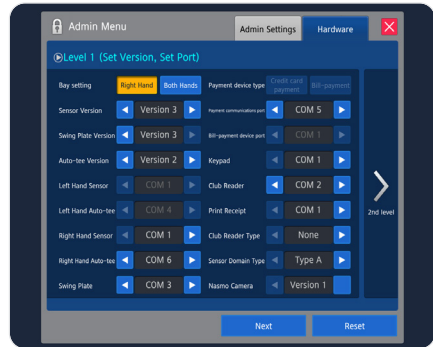
- Pitch Shot practice is to get the ball into a funnel-shaped hole in 3 separate distances of 30m (32 yards), 50m (55 yards) and 80m (88 yards). As you level up, the diameter of the funnel becomes smaller. It's fun for all ages to hit an accurate shot that finds its way into the funnel.

- Chip-Shot practice is to land the ball on the target at various distances within 30m (32 yards). The size of the target becomes smaller and smaller as the level goes up.

5 · Manager Menu Guide



Manager - Admin Setting



Manager - Hardware

- The Manager Menu allows you to manage the Admin Setting(Admin Password/Shift View) and Hardware.
- To change the password, go to Manager > Admin Password > Enter your previous password > Enter new password > Re-enter password (same as the new password) and then click the 'Save' button.
- In the Hardware Menu, you can set the functions for Level 1(Set Version/Set Port) and Level 2(Test and Complete).
- Level 1(Set Version/Set Port) allows you to change the settings for the hardware connection. When setting, it must be changed according to the specification of each hardware.
- When Test Shot is run in Level 2, it gives information such as ball speed and launch angle, so that you can check if the Level 1 settings have been applied properly.
- If the given values are abnormal, press the 'Reset' button and modify the information such as Set Port and try again.



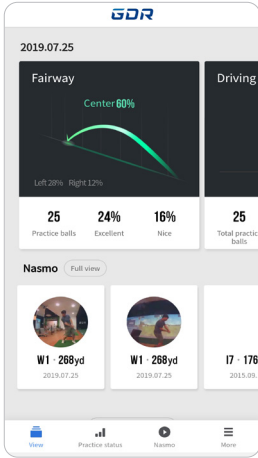
04

GDR

Mobile App

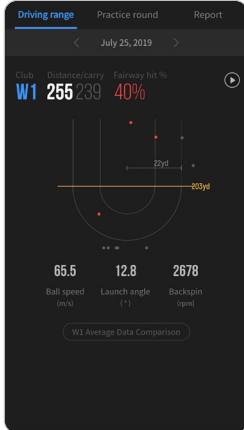
04 The GDR Mobile App

1 · How to Use the GDR Mobile App



View your skill level by checking your record on driving distance, direction and NASMO for each of your club.

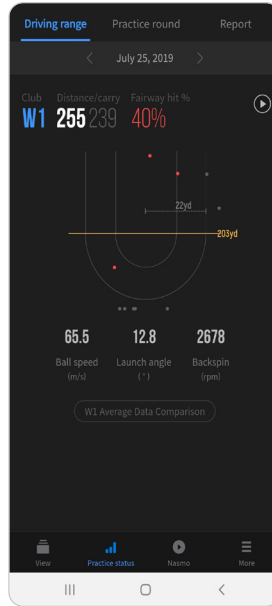
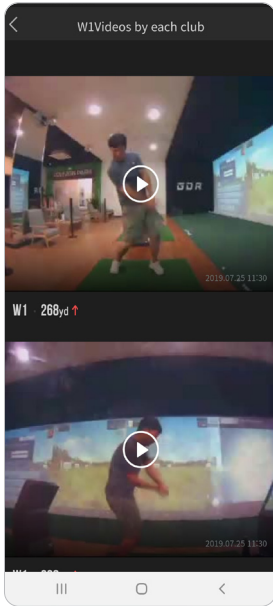
- In "View All", you can see your landing rate and Nasmo categorized by clubs and dates.
- At the top, the number of practice balls hit for each club (Driver, Wood/Utility, Irons, and Putter), the left and right direction and accuracy based on the shot group created for each club are shown.
- Check the 5 latest Nasmo videos, and at the top, you can view recent notices.
- In the "Practice Status" menu, you can view the average distance by clubs, as well as carry distance, percentage of fairway hits, head speed, launch angle, and backspin by dates of practice session.
- Also, when you press the Average Data Comparison button at the bottom for each club, you can compare your average data with higher level players.



Division	Skill Level Section	Score by strokes
Beginner	1~3	Over 110
The100 Club	4~6	100~below 110
Double Bogey	7~9	90~below 100
Bogey	10~12	80~below 90
Single/ Scratch	13~15	70~below 80
Pro	16~18	Under Player
PGA	-	PGA Average

- Analyze the Nasmo videos in detail by pressing the arrow button on the right.

1 · How to Use the GDR Mobile App

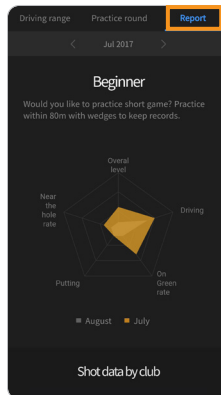


- View the accumulated Nasmio videos for each club, your swing, distance and direction.

- Also, when you press Shot Analysis, you can view your distances, including carry, left and right distances, and the maximum height of your shots. Detailed analysis such as ball launch angle, left and right angle, back spin, and side spin is also there to see.

•• You can receive monthly reports to further analyze your games.

- Statistics, expected scores and detailed analysis by club on your shots practiced shots are provided monthly.



Driving range Practice round Report

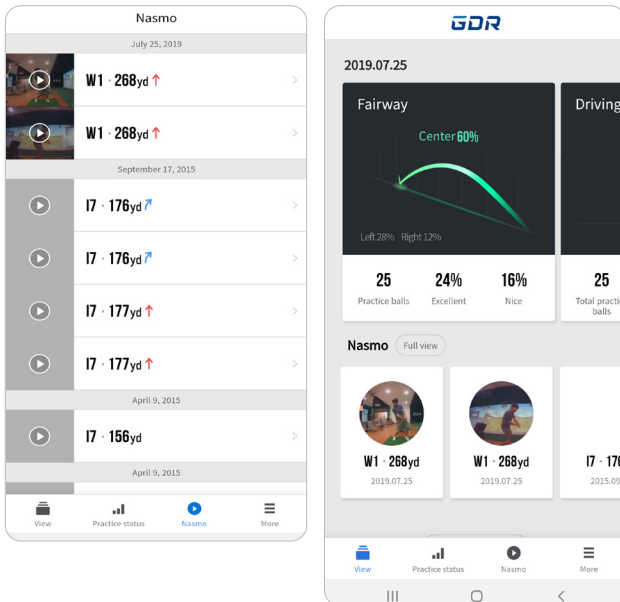
July 25, 2019

W1

Category	My average	Beginner/Nov
Distance Carry (yd)	255 239	136 120
Ball speed (m/s)	65.5	43.1
Launch angle (°)	12.8	16.4
Backspin (rpm)	2678	3067

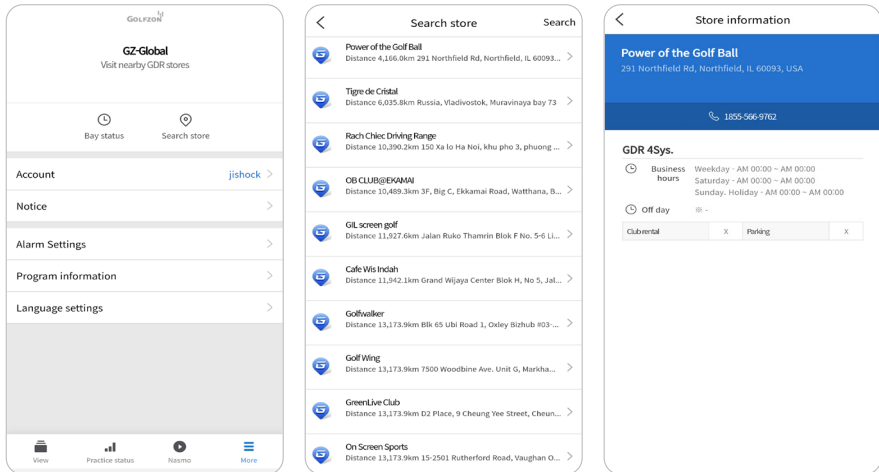
04 The GDR Mobile App

1 · How to Use the GDR Mobile App



- In the 'Nasmo' menu, you can check the accumulated Nasmo by dates, detailed shot and ball information.

1 · How to Use the GDR Mobile App



- In the 'View More' menu, you can check the store information and notices.
- In the 'Find GDR Stores', you can search the store where GDR is installed and check the information and location of the store.
- Also, in Bay Status, you can check the available bay status by selecting the store you want to visit. (However, it is only available when the store is using this function.)

GDR