FREE SAMPLE

Garage Door Service Technician Course

A free preview of the 12-week trade course for anyone getting into the garage door trade

14	308	12	Free
units	suggested hours	weeks, standard pace	with a DoorNet account

0 Getting Started in the Trade
1 Safety First
2 Door Types and Parts ID
3 Measuring and Specs
4 Springs: Torsion and Extension
5 Cables, Drums, Rollers and Off-Track Doors
6 Openers and Entrapment Protection
7 Commercial Doors, Rolling Steel and Fire Door Awareness
8 Installations
9 Troubleshooting Method
10 Preventive Maintenance
11 Customer Service on the Job
12 The Van and Inventory
13 Final Assessment

What's in the full course

The complete course has 14 units, 158 quiz questions, 13 check-off sheets, a 100-question final exam, practical stations and a capstone service call recorded in DoorNet. This sample includes the safety notice, the DoorNet introduction, Unit 0 in full and the first four lessons of Unit 1. Everything marked 🔒 IN THE FULL COURSE comes with the full course, free with a DoorNet account.

BEFORE YOU START		
·	**Read This First: Safety**	IN THIS SAMPLE · P. 3
·	How to Use This Course	🔒 IN THE FULL COURSE
·	**Using DoorNet with This Course**	IN THIS SAMPLE · P. 4
·	The Course at a Glance: hours, schedule, grading	🔒 IN THE FULL COURSE
THE COURSE: 14 UNITS		
0	**Getting Started in the Trade**	IN THIS SAMPLE · P. 5
1	**Safety First**	LESSONS 1.1–1.4 · P. 13
2	Door Types and Parts ID	🔒 IN THE FULL COURSE
3	Measuring and Specs	🔒 IN THE FULL COURSE
4	Springs: Torsion and Extension	🔒 IN THE FULL COURSE
5	Cables, Drums, Rollers and Off-Track Doors	🔒 IN THE FULL COURSE
6	Openers and Entrapment Protection	🔒 IN THE FULL COURSE
7	Commercial Doors, Rolling Steel and Fire Door Awareness	🔒 IN THE FULL COURSE
8	Installations	🔒 IN THE FULL COURSE
9	Troubleshooting Method	🔒 IN THE FULL COURSE
10	Preventive Maintenance	🔒 IN THE FULL COURSE
11	Customer Service on the Job	🔒 IN THE FULL COURSE
12	The Van and Inventory	🔒 IN THE FULL COURSE
13	Final Assessment	🔒 IN THE FULL COURSE
APPENDICES		
·	A. Glossary of 100+ trade and DoorNet terms	🔒 IN THE FULL COURSE
·	B. 13 printable check-off sheets	🔒 IN THE FULL COURSE
·	C. Final written exam, 100 questions	🔒 IN THE FULL COURSE
·	D. Practical stations and capstone sheets	🔒 IN THE FULL COURSE
·	E. Answer keys for every quiz and the exam	🔒 IN THE FULL COURSE
·	F. Using DoorNet in each unit, and sources	🔒 IN THE FULL COURSE

Also in this sample: Check-off sheet B-1, Safety First (page 18).

Read This First: Safety

Garage doors look simple. They are not. A typical residential door is held up by springs that store enough energy to break bones, cut through skin and kill. Every year people are badly hurt by springs, cables, bottom brackets and doors that fall. Most of those injuries happen to people who did not know what was under tension, or who used the wrong tool, or who were in a hurry.

⚠ Spring work can cause serious injury or death

Torsion springs, extension springs, lift cables, drums and bottom brackets are under high tension whenever the door is closed, and some stay loaded even when a spring has broken. If a winding bar slips, a cone lets go or a bracket is loosened while loaded, that energy is released in a fraction of a second.

- **Never** use a screwdriver, rod, bolt or anything else in place of a properly sized winding bar.
- **Never** loosen a bottom bracket, remove a cable or work on a drum while the spring is wound.
- **Never** stand in the path of a winding bar, or under a door that is partly open and not secured.
- **Never** adjust an opener to make up for a door that is heavy, binding or out of balance.
- **Never** bypass, disconnect or move a photo eye or other safety device to "fix" a problem.

This course supports hands-on training. It does not replace it.

This course teaches you what to look for, the order to do things in, and why. Reading it does not make you qualified to work on springs. Spring, cable, drum and bottom bracket work is learned with your hands, on training doors and real jobs, under the eye of an experienced technician who can stop you before you get hurt.

- **Do not work alone** on springs, cables, drums or bottom brackets until a senior technician has signed off your check-off sheet for that task at level 3 or higher.
- **Follow the manufacturer.** The door, spring and opener manufacturer's instructions and charts always come first. Where this course and the manufacturer differ, the manufacturer wins. Specifications vary between brands and models, so this course tells you where to find the number rather than giving you one number for every door.
- **Follow the rules where you work.** Permits, licensing, electrical rules and building codes vary by state, county and city. Your employer's safety program also applies.
- **Stop when unsure.** If you do not know what is holding a door up, or you have never seen a setup before, stop. Secure the door, step back and call a senior technician. Nobody worth working for will be upset with you for asking.

⛔ The stop-work promise

Before you start Unit 1, read this out loud with your instructor: *"If I cannot name everything on this door that is under tension, or if anything looks damaged, rusted, cracked or unfamiliar, I will not touch it. I will secure the area, tell the customer not to use the door, and call a senior technician."* You will sign this promise on check-off sheet B-1.

Using DoorNet with This Course

DoorNet is a free web app built for garage door techs. It runs in your phone's browser at **doornet.app**, installs to your home screen like an app, and keeps working with weak or no signal. Throughout this course, **Try it in DoorNet** boxes and **DoorNet labs** show where the app fits into the real work.

You do not need DoorNet to learn the trade. Every lesson stands on its own, and every DoorNet lab has a paper alternative. Practicing on a tool you can keep using on the job means your training records become your first real door records.

What a free account gives you as a student

Tickets
Build the record of a service call: customer, problem and urgency, access notes, photos, location and work done.

Check-In
Every ticket you save builds your own job sites and door history. Turn on Sample sites to explore finished records from day one.

Materials Manager
Record door specs, sections, springs and the opener, step by step, the same way every time.

Hardware photo ID
Find parts by photo, by category, name or part number, and send them straight to the job's parts list.

The List
Build, save and share the parts list for each job, including parts that are not in the catalog.

Share PDF and Print for customer
A tech copy of the job, and a clean Service report for the customer.

Map
Geotag doors you work on and get directions back to them. Your map stays private unless you join a map group.

Community
Notices, job posts from shops that are hiring, and used parts.

Documents
This course, the DoorNet app manual and hardware manuals.

English and Spanish
Switch languages from the app header.

Getting started

1. Go to **doornet.app** and tap **Create account**. Pick a username, a password and your email, then enter the 6-digit code that is emailed to you.
2. Add it to your home screen (iPhone: Share → Add to Home Screen; Android: menu → Install app), then do the DoorNet lab in Unit 0.

Good habits: fill in the **Job IDs** row (Job, Mark, Site, PO, Hours) first so lists, tickets and printouts match; keep your own copy with **Account → Data & Export**; and verify any part match or measurement against the door and the manufacturer's instructions.

UNIT 0 · 8 HOURS · WEEK 1

Getting Started in the Trade

By the end of this unit you will be able to:

- Describe what garage door techs do day to day and the main kinds of work in the trade.
- Name the basic hand and power tools used on the job and handle them safely.
- Read a tape measure to 1/16 in and write measurements down correctly.
- Do the basic math the job uses: fractions, inches and feet, decimals and simple weight math.
- Map out a career path within the trade: helper, service tech, lead or senior tech, then trainer or specialist.

In this unit

Lesson 0.1: What garage door techs do p. 5
Lesson 0.2: The physical side of the job p. 6
Lesson 0.3: Your career path p. 7
Lesson 0.4: Tool basics p. 7
Lesson 0.5: Reading a tape measure p. 8
Lesson 0.6: Shop math p. 10

Lab: Tool ID table, tape measure drills on marked boards, and a math worksheet built from real door measurements.

Check: Short quiz on job basics, tools and math, plus a tape measure check read to 1/16 in. Sheet B-0 is in the full course.

Ties to: The Glossary (Appendix A), and DoorNet Community Jobs and Map

Welcome to the trade. Before you touch a door, you need to know what the job really looks like, what tools you will carry, how to measure accurately and how to do the simple math that comes up on every call. None of this is hard, but all of it matters. A wrong measurement or a mistake with fractions is one of the most common reasons a new tech orders the wrong spring or the wrong door.

Lesson 0.1 What garage door techs do

A garage door technician installs, repairs and maintains overhead doors, the openers that drive them, and the safety systems that protect people. The work falls into a few main types.

Service versus install

- **Service work** means repair calls, often several a day. A customer calls because the door will not open, is making a loud noise, is crooked, or came off its tracks. You find the cause, explain it, fix it and test it. Common service jobs include broken springs, frayed cables, worn rollers, openers that stopped working and photo eyes that are out of line.
- **Install work** means removing an old door and putting in a new one, or installing a new opener. An install usually takes a two-person crew most of a day. It needs careful measuring before the job and a lot of lifting during it.

Many techs start as installers or helpers and move into service, because service needs a wider range of diagnostic skills. Others prefer installs because the work is planned and physical.

Residential versus commercial

- **Residential** work is on homes: one-, two- and three-car garages, usually sectional doors with torsion or extension springs and a ceiling-mounted opener.
- **Commercial** work is on warehouses, shops, loading docks, storefronts and parking garages. Doors are larger and heavier, cycle many more times a day, and may be rolling steel doors, high-cycle sectional doors or fire doors. Commercial work brings extra rules, such as lockout and tagout, fire door inspection rules and site safety requirements. Unit 7 introduces it.

A day in the life

A typical service day looks something like this:

1. **Morning.** Check your schedule and messages from dispatch. Check the van: is the stock you need for today's calls on board?
2. **Drive.** Most techs spend a real part of the day driving between calls. Being on time, and texting the customer when you are on your way, is part of the job.
3. **On site.** Introduce yourself, listen to the customer, inspect the door, explain what you found and the options, get approval, do the work, test it with the customer watching and fill out the paperwork.
4. **Paperwork.** Every job gets a ticket or work order with what you found, what you did, the parts used, photos and the safety test results.
5. **End of day.** Restock the van from the shop or supplier so you are ready for tomorrow.

Lesson 0.2 The physical side of the job

Be honest with yourself about the physical demands. The work is rewarding, but it is hard on the body if you are careless.

- **Lifting.** Door sections, openers, spring boxes and ladders are heavy and awkward. Lift with your legs, keep the load close and get a partner for long or heavy sections.
- **Ladders.** You will be on a ladder many times a day. Unit 1 covers ladder safety in detail.
- **Kneeling and reaching.** Bottom brackets and photo eyes are at floor level. Springs and openers are overhead. Knee pads and good boots help.
- **Heat and cold.** Garages are not climate controlled. In summer an attic-style garage can be extremely hot; in winter you may work with the door open in freezing weather. Drink water, dress in layers and take breaks.
- **Tight spaces.** Many garages are full of cars, shelves and storage. Part of the job is making a safe work area before you start.

Lesson 0.3 Your career path

The garage door trade has a clear ladder. How fast you climb depends on your skill, your safety record and how well you treat customers.

Stage	What you do	What to learn there
Helper	Carry, hold, hand tools, clean up, ride along	Tool names, parts, safety habits, how a call runs
Installer or service tech	Run your own installs or service calls	Springs, openers, diagnosis, customer service
Lead or senior tech	Handle the hard calls, train helpers, sign off check-offs	Commercial work, teaching, quality control
Trainer or specialist	Train new techs, or focus on commercial doors, rolling steel, fire doors, gates or operators	Teaching, advanced door types, manufacturer training and optional industry certification such as IDEA

ON THE JOB **Track your progress from day one**

Keep a written record of every skill you learn, with the date and the initials of the technician who watched you do it. The check-off sheets in Appendix B are built for this. Ask your instructor or employer to sign them as you go, and keep them with your training records.

TRY IT IN DOORNET

Find shops that are hiring

Open **Community → Jobs** in DoorNet. Shops post openings with the door type, city or area, pay (or Call) and a contact. Filter by city, by door type, or tap **Near me**. Read a few posts before you apply: they tell you what local shops expect a new helper to know, which is a good check on where this course is taking you.

Open in DoorNet: **doornet.app**

Lesson 0.4 Tool basics

You will build your own tool kit over time. Start with the basics and learn to name, use and care for each one.

Hand tools

- **Socket set and ratchet.** For the nuts and bolts that hold track brackets, hinges, bearing plates and opener rails. The sizes you use most are common fractional sizes, such as 7/16 in, 1/2 in and 9/16 in, but carry a full set.
- **Combination wrenches.** For holding the other side of a bolt, or where a socket will not fit.

- **Nut drivers.** Quick for the small hex-head screws used on hinges and opener parts.
- **Level.** For checking that tracks are plumb (straight up and down) and the door hangs level.
- **Locking pliers.** Used as a clamp on the track to stop a door from moving. Unit 1 explains how.
- **Pry bar and rubber mallet.** For persuading parts gently into place without bending them.
- **Cable cutters.** For cutting lift cable cleanly. Never use a grinder near a loaded cable.
- **Tape measure.** The most-used tool you own. Lesson 0.5 covers it.

Power tools

- **Drill and impact driver.** For lag screws into wood framing and self-drilling screws into steel. An impact driver makes installs faster, but it can strip or snap fasteners if you over-drive them.
- **Reciprocating saw.** For cutting up old doors and track during tear-outs. Always check what is behind the cut.

Spring tools

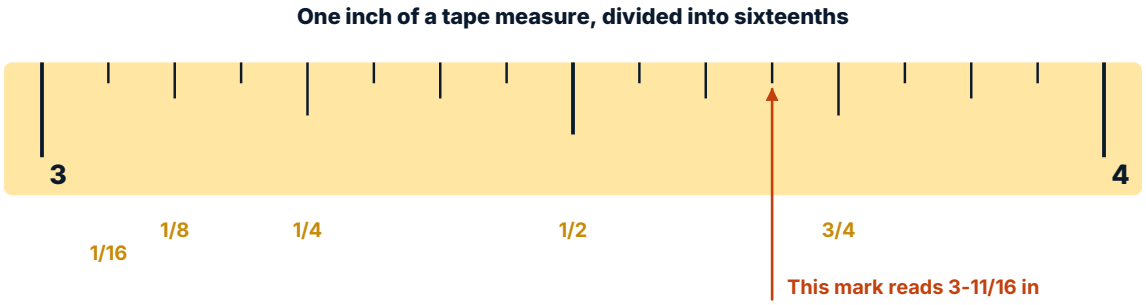
- **Winding bars.** Solid steel bars made for winding and unwinding torsion springs. Most residential winding cones take a 1/2 in bar, commonly about 18 in long, but some cones take a different size, so the bar must fit the cone hole snugly. You always use them as a matched pair. Winding bars are covered in depth in Units 1 and 4.
- **Calipers or a spring wire gauge.** For measuring wire size. Unit 4 teaches a simple tape measure method too.

Tool care and storage

- Keep tools clean and dry. Rust ruins sockets and bars.
- Inspect tools before you use them. A cracked socket, a bent winding bar or a frayed power cord goes out of service.
- Store winding bars where they cannot roll off a ladder or be grabbed for the wrong job. A winding bar is not a pry bar.
- Return every tool to the same place in the van. When you can find tools without looking, you work faster and safer.

Lesson 0.5 Reading a tape measure

Almost every mistake in ordering a door, a spring or a cable starts with a bad measurement. Learn to read a tape to 1/16 in, and to write down what you read correctly.



One inch of a tape measure. The longest mark in the middle is 1/2 in. The next longest are the quarters, then the eighths, and the shortest are the sixteenths. Count the sixteenths from the last whole inch.

How to read it

1. Find the last whole inch before the end of what you are measuring. That is your whole number.
2. Count the small marks past that inch. Each small mark is 1/16 in.
3. Reduce the fraction if you can. For example, 8/16 is 1/2, 4/16 is 1/4, 12/16 is 3/4, and 6/16 is 3/8.
4. Write the answer as a whole number and a fraction: **3-11/16 in**, not "3 and a bit".

Hooking the tape correctly

The metal hook on the end of the tape slides a little on purpose. It moves out the width of the hook when you pull it against an edge, and moves in when you push it against a surface. This keeps both kinds of measurement accurate. Do not bend the hook, and do not "fix" it if it feels loose.

- **Outside measurements** (hooking over an edge): hook the end over the edge and pull the tape snug.
- **Inside measurements** (between two walls or jambs): push the back of the tape case against one side, read the blade where it enters the case, then add the length of the case (many tapes print it on the case). Or have a partner hold the tape from the 1 in mark and subtract 1 in.

Feet and inches

Doors are sold by size in feet and inches, such as a 16 by 7 door (16 ft wide, 7 ft tall). There are 12 inches in a foot.

- Feet to inches: multiply by 12. A 7 ft door is 7 × 12 = **84 in** tall. A 16 ft door is 16 × 12 = **192 in** wide.
- Inches to feet and inches: divide by 12. 100 in ÷ 12 = 8 with 4 left over, so **8 ft 4 in**.

Common measuring mistakes

- Reading the wrong side of a mark and being off by 1/16 in. Put your eye straight over the mark.
- Letting the tape sag over a long distance. Have a partner hold the end or support the middle.
- Measuring once. Measure twice, and on a door opening, measure in more than one spot, because openings are often out of square.
- Writing "84" without units. Always write in or ft.

Lesson 0.6 Shop math

The math on the job is simple, but you must get it right. Spring sizes, cable lengths and opening sizes are all numbers.

Adding and reducing fractions

To add fractions, give them the same bottom number (denominator), add the tops, then reduce.

- 3/8 + 1/4: change 1/4 to 2/8. 3/8 + 2/8 = **5/8**.
- 1/2 + 3/16: change 1/2 to 8/16. 8/16 + 3/16 = **11/16**.
- 2-3/4 + 1-1/2: add the whole numbers (3), change 1/2 to 2/4, add 3/4 + 2/4 = 5/4 = 1-1/4. Total **4-1/4**.

Fractions and decimals

Spring wire sizes are written as decimals of an inch, like 0.207 or 0.250. Tape measures read in fractions. You need to move between the two.

Fraction	Decimal	Fraction	Decimal
1/16	0.0625	9/16	0.5625
1/8	0.125	5/8	0.625
3/16	0.1875	11/16	0.6875
1/4	0.25	3/4	0.75
5/16	0.3125	13/16	0.8125
3/8	0.375	7/8	0.875
7/16	0.4375	15/16	0.9375
1/2	0.5	1	1.0

To change a fraction to a decimal, divide the top by the bottom: 5/16 = 5 ÷ 16 = 0.3125.

Dividing to find a size

In Unit 4 you will find a spring's wire size by measuring a group of coils and dividing. For example, if 20 coils measure 5 in, the wire is 5 ÷ 20 = **0.250 in**. If 10 coils measure 2-1/4 in, convert to 2.25 and divide by 10: **0.225 in**.

Simple weight math

Most residential torsion doors use two springs that share the door's load. If a door needs a total spring strength of 40 units, two equal springs each provide about half: 40 ÷ 2 = **20 each**. You will meet the real unit (inch-pounds per turn) in Unit 4. For now, remember that **two springs share the load**, so one spring alone is never sized the same as one of a pair.

Recap

- Service work is repair calls; install work is new doors and openers. Residential is homes; commercial is businesses and bigger, heavier doors.
- The job is physical: lifting, ladders, kneeling, heat and cold. Work carefully to last in the trade.
- Know your basic tools, keep them in good shape and never use a winding bar for anything else.
- Read a tape to 1/16 in, write the units, measure twice.
- Fractions, decimals and simple division come up on every call.

CHECK-OFF Unit 0 check-off

Your instructor scores the tool ID, tape measure and math tasks on sheet B-0 in Appendix B. The tape measure check must be read to 1/16 in.

LAB Lab 0: Tools, tape and math

Setup: a tool table with 20 common tools, three boards marked at random points, and a worksheet of real door measurements.

1. **Tool ID.** Name each tool on the table and say what it is used for on a garage door. Point out which tools you would inspect before use and what you would look for.
2. **Tape drills.** Read 10 marked points on the boards to the nearest 1/16 in, writing each answer as a whole number and reduced fraction. Then measure the boards' total lengths and convert to feet and inches.
3. **Math worksheet.** Convert door sizes from feet to inches, add fractions from a list of jamb measurements, convert five fractions to decimals, and find wire sizes from coil-length examples.
4. **Check.** Your instructor checks your tape readings. All 10 must be within 1/16 in.

DOORNET LAB

Set up DoorNet for the course

1. Go to **doornet.app** and tap **Create account**. It is free. Pick a username, a password and your email, then enter the 6-digit code from your email.
2. Add DoorNet to your phone's home screen (iPhone: Share → Add to Home Screen; Android: menu → Install app) so it opens like an app.
3. In **Check-In**, turn on **Sample sites** and open a sample door. Look at the door's specs and visit history to see what a finished service record looks like.
4. Open **Map** and see how geotagged doors show as pins. Your own map stays empty until you geotag your first ticket, and it stays private unless you join a map group.
5. Open **Documents** and find this course, the app manual and the hardware manuals you will use later in the course.

Sample sites are demo data, kept separate from your own jobs. Hide them later in Account once you have real sites.

Free account: **doornet.app**

UNIT 1 · 24 HOURS · WEEKS 1 TO 2

Safety First

By the end of this unit you will be able to:

- Explain how torsion and extension springs store energy and how that energy injures people.
- Identify every component that is under tension on a door before touching it.
- Select, inspect and wear the correct PPE for residential and commercial work.
- Set up and use ladders to OSHA rules, and apply lockout before work on powered equipment.
- Recognize stop-work conditions and know when to walk away and call a senior tech.

In this unit

Lesson 1.1: Stored energy, and how it hurts people p. 13
Lesson 1.2: Find everything under tension p. 14
Lesson 1.3: Personal protective equipment (PPE) p. 15
Lesson 1.4: Winding bars and body position p. 16

Lab: Tool and PPE inspection, ladder setup drill, and a hands-off "find everything under tension" walk-around on a shop door.

Check: Safety quiz (must pass at 100%) plus an instructor check-off on ladder setup, door securing and winding bar handling with an unloaded trainer. Sheet B-1, p. 18.

Safety is not a chapter you read once. It is the way you do every task, on every door, every day. This unit comes before you learn to fix anything, because the habits you form now are the ones that will protect you when you are tired, rushed or working alone. The Unit 1 quiz must be passed at **100%**.

Lesson 1.1 Stored energy, and how it hurts people

A garage door can weigh well over 100 lb, and heavy wood or insulated double doors weigh far more. Nobody could lift that by hand all day. The door feels light because springs carry almost all of its weight. That means the springs hold a large amount of energy whenever the door is closed. A spring that is doing its job is always loaded.

Where the energy is

- **Wound torsion springs.** On a torsion system, springs on a steel shaft above the door are twisted (wound) when the door is closed. The twist pulls on the lift cables through drums at each end of the shaft. A wound torsion spring is the most dangerous part on a residential door.
- **Stretched extension springs.** On an extension system, a spring along each horizontal track stretches as the door closes. When the door is closed, the springs are at their longest and most loaded.
- **Lift cables.** The cables run from the drums (or pulleys) down to the bottom corners of the door. They carry the spring's pull. A frayed cable can snap and whip.

- **Bottom brackets.** The bottom brackets hold the cable to the bottom corners of the door. A bottom bracket on a closed torsion door is under the full pull of the spring. Loosening its fasteners while the spring is wound can let the bracket, the cable and the door fly.
- **Drums and cones.** The drum set screws hold the cable drums to the shaft, and the winding cone set screws hold the spring's wind. Both hold back the stored energy.

How people get hurt

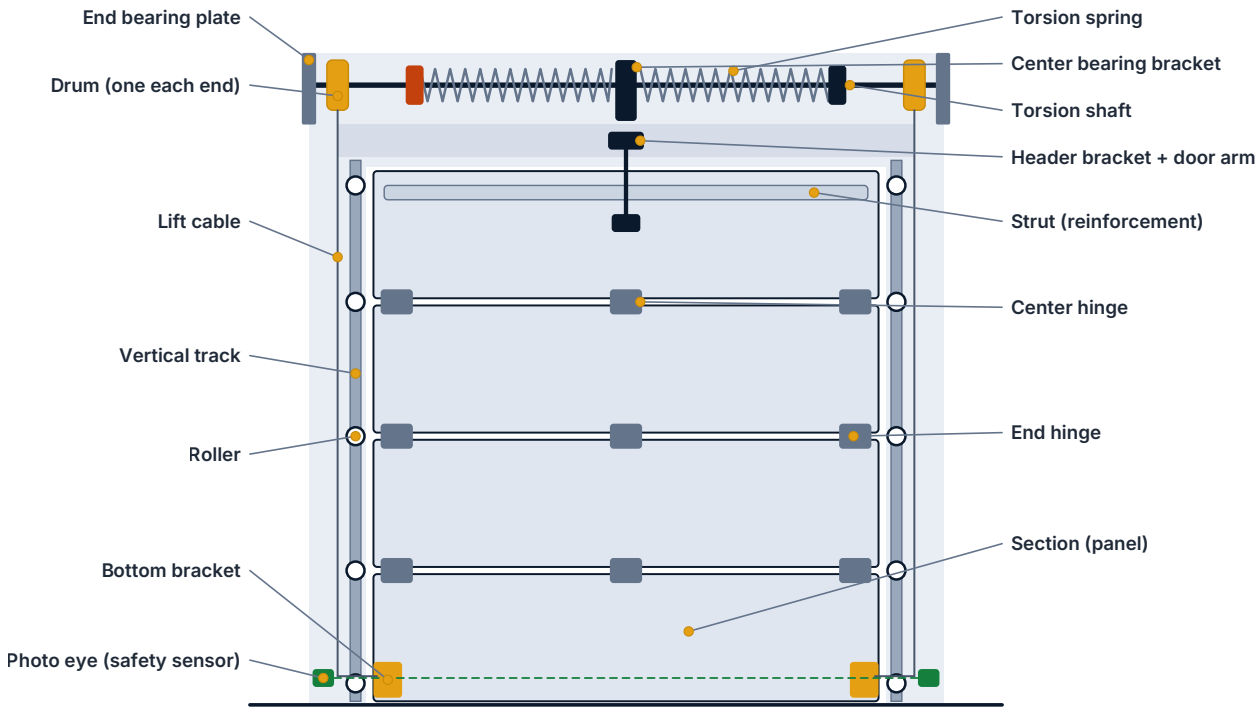
- **A winding bar slips or is pulled out of the cone** while the spring is loaded. The bar can be thrown with great force, or the cone can spin and strike your hand.
- **Someone uses the wrong tool**, like a screwdriver, which bends or slips out of the cone.
- **Someone loosens a set screw without a bar in the cone** to hold the load.
- **Someone loosens a bottom bracket** on a closed door with wound springs.
- **A door falls**, because a spring broke, a cable snapped or someone released the opener on an unbalanced door.
- **An extension spring breaks without a containment cable**, and pieces fly across the garage.

> **⚠ The rule behind every rule**
>
> Before you put a tool on any part of a door, ask: **"Is this part holding back spring energy right now?"** If the answer is yes or "I don't know", do not loosen it. Unload the spring first, using the right procedure, or call a senior technician.

Lesson 1.2 Find everything under tension

Before any work, you will do a **tension walk-around**. Do it on every door, even a door you have worked on before. It takes two minutes.

1. **Keep the door closed and do not operate it.** Do not use the opener or lift the door by hand until you know what you are looking at. A door with a broken spring can drop suddenly.
2. **Unplug the opener** if there is one, so nobody can run it while you are inspecting.
3. **Look up at the springs.** Is it torsion (above the door) or extension (along the tracks)? How many springs? Is any spring broken? A broken torsion spring usually shows a visible gap between coils.
4. **Follow each cable** from the drum or pulley down to the bottom bracket. Look for fraying, kinks, rust, or a cable that has jumped off its drum.
5. **Look at the bottom brackets.** Are they rusted, bent, cracked or pulling away from the door? Rotten wood or rusted steel at the bottom corner is a stop-work condition on a loaded door.
6. **Look at the cones and drums.** Are the set screws in place? Is a cone cracked?
7. **Check extension springs for containment cables.** Each extension spring should have a safety cable through its center.
8. **Name it out loud.** Say every part that is under tension. On a training door your instructor will ask you to point and name each one.



Inside view, door closed. The horizontal tracks run back toward you and are not shown.

The parts of a residential sectional door with a torsion system. The torsion springs, shaft, drums, lift cables and bottom brackets are under tension whenever the door is closed. Learn the name of each part; you will use these names in every unit.

Lesson 1.3 Personal protective equipment (PPE)

PPE is your last line of defense. It does not make an unsafe job safe, but it can turn a serious injury into a minor one.

PPE	When	What to check before use
Safety glasses	Every job, all day	No cracks; side protection; marked as meeting ANSI Z87.1
Work gloves	Handling sections, track and hardware	No holes; cut-resistant gloves for sheet steel and cable
Safety-toe boots	Every job	Good tread; no exposed steel or split soles
Hearing protection	Saws, impact drivers, tear-outs	Clean, fits properly
Hard hat	Commercial sites, overhead work by others	No cracks; suspension intact
High-visibility vest	Commercial sites, loading docks, near traffic	Clean and visible

Federal rules require eye protection that meets the ANSI Z87.1 standard when there is a hazard from flying particles, with side protection where objects can fly. Your employer may have additional rules.

> **⚠ Gloves and winding bars**
>
> Some techs remove gloves to get a better grip on a winding bar; others keep them on. Follow your employer's and instructor's rule. Whatever you wear, your grip must be firm and dry, and loose cuffs or jewelry must never be near a spinning cone or a moving door.

Lesson 1.4 Winding bars and body position

Unit 4 teaches the full spring procedure. You learn the safety part now, on an **unloaded trainer** (a spring setup with no tension), until the habits are automatic.

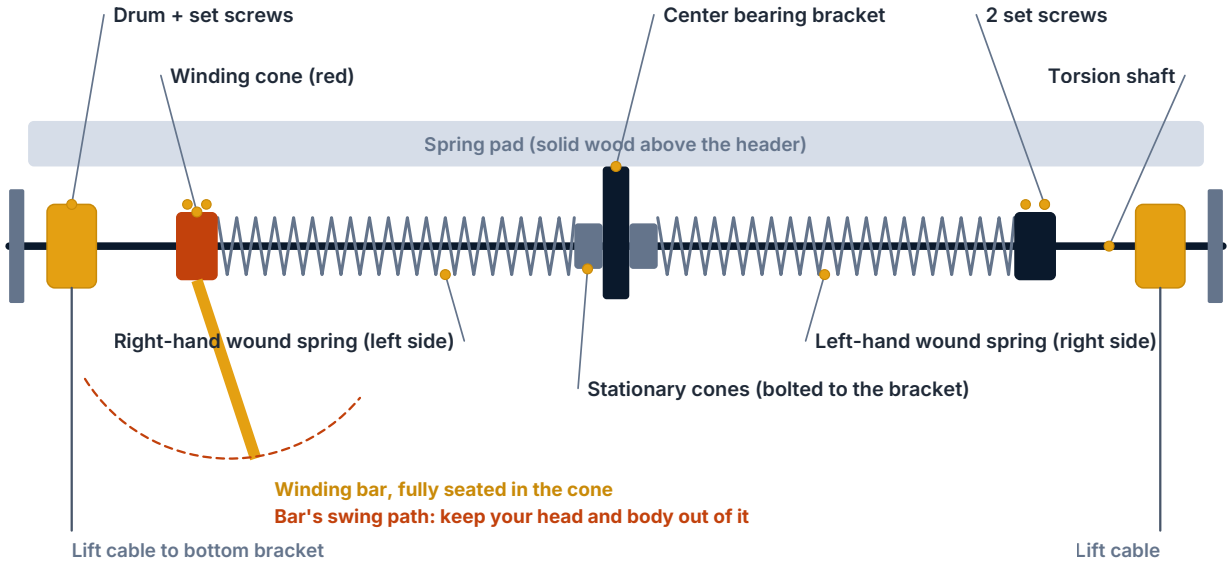
The right bars

- Use **a matched pair of solid steel winding bars** made for torsion springs. Most residential winding cones take a 1/2 in bar, but some take other sizes; the bar must fit the cone hole snugly.
- Insert each bar **fully** into the cone, all the way to the bottom of the hole. A bar that is only partly in can slip out under load.
- **Never** use a screwdriver, a rod, rebar, a bolt, a socket extension or anything else. They bend, slip and break.
- Inspect bars before use. A bent or mushroomed bar goes out of service.

Body position

- **Stand to the side** of the spring, never directly in line with the bar's swing. If a bar slips, the unwinding spring throws it back against your push.

- **Keep your head clear.** Do not look down the bar or put your face near the cone.
- **Two hands on the bar**, gripping near its end for control.
- **Stable footing.** On a ladder, set it so you can reach the cone without leaning. The ladder should not be in the swing path.
- **Always keep one bar in the cone, holding the load**, while you move the other bar. You never let go of the load.



Viewed from inside the garage. Red and black cones are a common supplier convention, not a rule: confirm the wind by looking at the coils.

Torsion spring assembly from inside the garage. The winding bar is fully seated in the cone. The dashed line shows the bar's swing path: your head and body stay out of it.

Securing the door

Before spring work on a closed door, secure the door so it cannot move:

- **Unplug the opener** and, where possible, disconnect the opener arm from the door.
- **Clamp the track.** Put locking pliers or a track clamp on the vertical track just above a roller, so the door cannot rise when the springs are wound. Many techs clamp both sides.
- **Keep people out.** Ask the customer to keep children, pets and cars out of the garage and to not use the door or any remote.

The rest of Unit 1 is in the full course

Lessons 1.5 Ladders, 1.6 Lockout and tagout, and 1.7 Stop-work conditions, the Unit 1 lab, and the 15-question safety quiz (pass mark 100%) continue in the full course, free with a DoorNet account at **doornet.app**.

CHECK-OFF SHEET B-1

Unit 1: Safety First

STUDENT	EVALUATOR
DATE	TRAINING DOOR / JOB SITE

Scale: 1 observed · 2 assisted · 3 independent with supervision · 4 independent. ★ = safety-critical: must reach level 3 or higher to pass. Any safety violation is an automatic retake, regardless of score. Unit 1 is pass/fail: every item is safety-critical and must reach level 3 or higher.

#	Task	1	2	3	4	Initials
1	Inspects safety glasses, gloves and boots and states when each is required ★	☐	☐	☐	☐	
2	Inspects a ladder for damage before use and tags a damaged ladder out of service ★	☐	☐	☐	☐	
3	Sets up a straight ladder at the 4-to-1 angle, extended 3 ft above the landing, with 3 points of contact ★	☐	☐	☐	☐	
4	Sets up a step ladder fully opened and locked, and does not stand on the top cap ★	☐	☐	☐	☐	
5	Checks for overhead power lines and hazards before raising a ladder ★	☐	☐	☐	☐	
6	Unplugs the opener and applies a lock and tag where hard-wired, then verifies it is de-energized ★	☐	☐	☐	☐	
7	Clamps the track above a roller before tension work on a closed door ★	☐	☐	☐	☐	
8	Points out every part under tension on a shop door, hands off ★	☐	☐	☐	☐	
9	Names the stop-work conditions without prompting ★	☐	☐	☐	☐	
10	Inspects a pair of winding bars and checks they fit the cone snugly ★	☐	☐	☐	☐	
11	Inserts a winding bar fully and keeps body and head out of the bar's path (dry run, no tension) ★	☐	☐	☐	☐	
12	Explains why the emergency release is used only with the door closed where possible ★	☐	☐	☐	☐	
13	Sets up a safe work zone: cones or tape, customers, kids and pets kept clear ★	☐	☐	☐	☐	
14	Reads and signs the stop-work promise ★	☐	☐	☐	☐	

RESULT: PASS / RETAKE	EVALUATOR SIGNATURE	STUDENT SIGNATURE

NOTES AND RETAKE PLAN

THE FULL COURSE

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3 Measuring and specs
4 Torsion and extension springs
5 Cables, drums and off-track doors
6 Openers and entrapment protection
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10 Preventive maintenance
11 Customer service on the job
12 The van and inventory
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This course supports, but does not replace, hands-on training under an experienced technician.