

Chang Diving Center

Cross-Agency Sidemount Diver Teaching Manual

SDI Sidemount Diver | TDI Sidemount Diver | PADI Sidemount Diver Specialty
Instructor reference and classroom-water training framework

Prepared as an original teaching aid for internal use. It summarizes agency standards and teaching requirements from the uploaded standards/guides. It is not a replacement for the current official instructor manuals, standards updates, forms, eLearning, student manuals, or agency quality management requirements. Always teach to the newest version in your instructor portal.

1. Purpose and Use

This manual helps instructors run a structured sidemount course while protecting the specific requirements of SDI, TDI, and PADI. The safest operational approach is to teach one strong core program and then apply the stricter agency rule whenever courses are mixed or when the instructor wants one unified Chang Diving standard.

- Use the cross-agency matrix before accepting the booking and again during final paperwork.
- Use the “Universal Chang Diving teaching baseline” when students from different agencies train together.
- Use the agency-specific checklists before certification. Certification may only be issued when the selected agency standards are fully met.
- This course is open-water, non-overhead unless taught under separate technical/overhead standards. Do not imply cavern, cave, wreck penetration, decompression, or technical diving rights unless a separate course covers them.

2. Quick Decision Matrix

Situation	Recommendation	Instructor note
Target student	Best certification route	Why
Recreational diver, wants comfort, travel, boat diving, flexibility	SDI Sidemount Diver or PADI Sidemount Diver	Both are recreational sidemount courses. Keep dives no-decompression and within current certification depth.
Technical pathway student, will continue to Advanced Nitrox/Deco/Extended Range/Trimix/Wreck	TDI Sidemount Diver	TDI is designed to support technical progression and can be combined with TDI technical courses when all standards are met.
PADI customer wanting PADI specialty credit / MSD path	PADI Sidemount Diver Specialty	PADI has a specific confined-water and three-open-water structure and specialty credit path.
Mixed agency group	Teach to the strictest common baseline: age 18 unless PADI-only 15, max 4 students if TDI included, 1 confined + 3 open water, 90 min minimum OW bottom time, 3 days/24 h if PADI included	This prevents accidental under-training and keeps all agency requirements protected.

3. Cross-Agency Standards Matrix

Standard item	SDI	TDI	PADI
Course intent	Certified divers learn to safely use side-mounted primary cylinders as an alternative to backmount. Strict no-decompression, max 40 m/130 ft or current certification, whichever is shallower.	Certified divers learn to safely use side-mounted primary cylinders. Can combine with TDI technical courses; if combined, both course standards must be met.	Recreational specialty for sidemount configuration, benefits, set-up, planning and safe open-water use.
Graduate limits	May sidemount dive without direct supervision; safety stops as appropriate; do not exceed current certification level.	May sidemount dive without direct supervision; safety/decompression stops as appropriate; do not exceed current certification level.	May use sidemount within recreational limits and within existing certification/experience. PADI Sidemount itself does not qualify a diver for technical, overhead, or decompression diving.
Who may teach	Active SDI Sidemount Specialty Instructor.	Active TDI Sidemount Diving Instructor.	Active PADI Sidemount Diver Specialty Instructor.
Student prerequisites	SDI Open Water Scuba Diver or equivalent. Minimum age 18, or 15 with parental consent.	Minimum age 18. SDI Open Water Scuba Diver or equivalent.	PADI Open Water Diver or qualifying certification. Minimum age 15.
Ratios	Academic unlimited with adequate facilities/time. Confined: max 8:1. Open water: max 8:1. Instructor may reduce.	Academic unlimited with adequate facilities/time. Open water: max 4:1. Confined water listed as N/A in the standard.	Confined: 10:1, plus up to four additional students per certified assistant. Open water: 8:1.
Water requirements	2 open-water dives with complete brief/debrief. Non-overhead environment.	3 open-water dives. Minimum accumulated bottom time 90 minutes. Course minimum 2 days.	At least 1 confined-water dive and 3 open-water dives. Course minimum 24 hours over 3 days.
Depth	Max 40 m/130 ft or current certification, whichever is shallower.	Within the diver's current certification level; if combined with technical courses, combined standards control.	Open Water Diver: max 18 m/60 ft. Advanced Open Water or higher: max 30 m/100 ft.
Required materials	SDI/TDI Sidemount Student Manual or eLearning; SDI/TDI Sidemount Instructor Guide.	SDI/TDI Sidemount Manual and Knowledge Quest or eLearning; SDI/TDI Sidemount Instructor Guide.	PADI Sidemount Diver Specialty Course Instructor Guide and student knowledge development materials.
Required equipment	Cylinder(s); appropriate regulators with pressure gauge on each first stage and total two second stages; sidemount BCD; exposure suit; mask/fins; dive computer; compass; rescue signal.	Dual cylinders; two independent first and second stages each with SPG; sidemount BCD; exposure suit; mask/fins; dive computer plus additional depth/time device; backup computer recommended. Instructor must wear full sidemount equipment.	Sidemount BCD/harness; one or two cylinders depending on session option; each cylinder with regulator and SPG; optional extra weights/repair kit/SMB as needed. Instructor guide notes one-cylinder option for first confined/open-water sessions but final certification requires full skill completion.
Gas-management focus	Independent-cylinder gas management; planning and logging NDL, surface interval, depth/time/air on slate.	Gas matching including dissimilar volumes; independent-cylinder management; START pre-dive process.	Air management, regulator switching, cylinder balance/trim, planning within recreational no-stop limits.
Problem-solving minimum	Gas sharing; gas hemorrhages; S-drills; shore/boat water entries.	Gas sharing; gas hemorrhages; light failure; loss of visibility; entanglement; self-rescue; tight spaces; difficult entries; S-drills.	Air sharing, equipment/cylinder handling, one/two-cylinder procedures, confined-to-OW progression, emergency considerations.

Certification requirements	Perform land/open-water requirements safely and efficiently; mature judgment; log all dives.	Perform all land/drill/dive requirements safely and efficiently; mature planning/execution judgment; environmental awareness; log all dives.	Complete knowledge review, confined-water requirements and open-water dives 1-3; meet performance requirements.
----------------------------	--	--	---

4. Key Agency Differences to Highlight to Instructors

- TDI is the strictest on student ratio and technical readiness: max 4:1 in open water, dual cylinders required, 3 OW dives, 90 minutes minimum accumulated bottom time, and broader problem-solving topics such as light failure, lost visibility, entanglement, tight spaces and self-rescue.
- SDI is the most flexible recreational pathway: 2 OW dives, up to 8:1, one or more cylinders, no-overhead, no-decompression and max 40 m/130 ft or current certification, whichever is shallower.
- PADI has the most prescriptive course structure: at least one confined-water dive, three open-water dives, minimum 24 hours over three days, and specific recreational depth limits of 18 m for OW divers and 30 m for AOW or higher.
- Age differs: TDI requires 18; SDI allows 15 with parental consent; PADI minimum is 15.
- When teaching a combined or mixed group, the strictest rule must win: for example, a mixed SDI/TDI group should use TDI max 4:1 and 3 OW dives, not SDI 8:1 and 2 OW dives.

5. Universal Chang Diving Teaching Baseline

Recommended internal baseline when schedule and logistics allow. This exceeds minimums for SDI, satisfies TDI structure when TDI certification is issued, and protects PADI structure when the confined session and 3-day/24-hour requirement are met.

Item	Internal baseline
Minimum entry	Certified Open Water Diver/equivalent; 18 for TDI or mixed courses. For PADI-only/SDI-only minors, follow agency minor rules and parental consent.
Classroom	4 hours minimum target: theory, equipment workshop, gas management, emergency procedures, dive planning, local boat procedures.
Confined / pool-like session	1 confined-water or very sheltered shallow-water training dive before open-water training whenever feasible. Mandatory for PADI.
Open-water dives	3 training dives; minimum 90 minutes accumulated bottom time if TDI or mixed with TDI. SDI-only may certify after 2 OW dives only if all SDI performance requirements are met.
Student ratio	Max 4:1 for TDI or mixed courses. Max 6:1 recommended for recreational SDI/PADI even when agency allows more; reduce for current, low visibility, weak students or boat constraints.
Depth	Dive 1 shallow; subsequent dives within current certification. Do not exceed 18 m for OW-level divers; do not exceed 30 m for PADI AOW+; do not exceed 40 m for SDI and only if current certification allows it. TDI follows current certification and combined-course limits.
Environment	No overhead, no required decompression unless a separate TDI technical/overhead course is formally combined and all related standards are met.

Certification rule	No certification for students who cannot hold neutral trim, manage two independent cylinders, perform gas switches correctly, respond to gas loss/out-of-gas, and complete ascents/safety stops without losing control.
--------------------	---

6. Course Flow: Three-Day Model

Training block	Content
Day 1 - Knowledge and equipment workshop	Paperwork, medical review, certification check, theory, benefits/limitations, equipment options, cylinder rigging, regulator routing, weighting, dry land don/doff, gas-management workshop, S-drill rehearsal. Confined-water session if available.
Day 2 - Open Water Dives 1-2	Dive 1: shallow set-up, trim, buoyancy, propulsion, regulator switching, cylinder attachment/removal, basic gas management. Dive 2: refine trim, gas switches, gas sharing, simulated gas loss, safety stop, ascent discipline.
Day 3 - Open Water Dive 3 and assessment	Complexity increase within limits: boat/shore entry, route awareness, emergency scenarios, optional SMB/lift bag depending agency, final evaluation, logbook, debrief, certification processing.

7. Knowledge Development Outline

7.1 Sidemount concept, benefits and limits

- Why sidemount exists: access, comfort, redundancy, transport, cylinder flexibility, trim and streamlining.
- Limits: more task loading, two independent gas supplies, additional clips/hoses, possible imbalance, no automatic overhead/deco qualification.

7.2 Equipment configuration

- Harness/BCD styles: dedicated recreational/technical sidemount BCD, lift position, wing location, dump valves, inflator routing.
- Cylinder options: aluminium vs steel, positive/negative buoyancy behavior, left/right marking, stage-style rigging, bungees, lower clips, neck bungees.
- Regulators: independent first stages, SPGs, hose routing, long hose/short hose decisions, necklace/bungeed backup, left/right second stages.
- Weighting: trim weight vs ditchable weight, suit compression, freshwater/saltwater difference, balanced rig principle.

7.3 Gas management

- Independent cylinders: breathe down alternately to keep pressure and buoyancy balanced.
- Gas matching: team planning must consider cylinder size, starting pressures, consumption and dissimilar volumes, especially for TDI.
- Turn pressure, reserve, ascent gas, contingency gas and surface pressure must be agreed before the dive.
- Students must be able to explain and apply the chosen switch schedule, not only copy the instructor.

7.4 Skills and emergencies

- S-drill and bubble check before descent.
- Gas sharing from the correct donor regulator, stable team positioning, controlled ascent.
- Gas hemorrhage: identify, isolate/close cylinder, switch regulator, communicate, abort.
- Lost mask/no-mask gas switch practice where required by TDI baseline.
- Entanglement and self-rescue awareness; avoid dragging hoses/clips.

7.5 Environment and conservation

- Maintain trim and propulsion to avoid bottom contact.
- Use modified kicks, frog kick, modified flutter, back kick, helicopter turns as appropriate.
- Keep cylinders, gauges and accessories secured. No dangling equipment.

8. Practical Skill Progression

Phase	Required/Recommended skills
Land drills	Assemble rig; analyze and mark cylinders; route hoses; clip/unclip cylinders; dry S-drill; valve/regulator identification by touch; START/TDI or equivalent pre-dive check.
Confined/shallow water	Weight check; descent control; hover; trim; propulsion; regulator switch cycle; SPG check; cylinder attach/remove at surface and underwater; simulated gas loss; gas sharing; ascent and safety stop.
Open Water 1	Conservative depth; confirm weighting and trim; alternate breathing from cylinders; basic gas switches; buoyancy and propulsion; controlled ascent.
Open Water 2	Cylinder handling under task load; out-of-gas drill; gas leak response; mask-off or no-mask gas switch if following TDI baseline; SMB/lift bag if agency/course requires or instructor includes.
Open Water 3	Scenario-based dive planning and execution; student-led pre-dive; route and time management; emergency response; final performance evaluation.

9. Agency-Specific Certification Checklists

9.1 SDI Sidemount Diver checklist

- Prerequisites: OW diver/equivalent; age 18 or 15 with parental consent.
- Admin: course fees, required equipment, schedule, SDI liability/release and medical statement completed.
- Materials: SDI/TDI Sidemount Student Manual or eLearning; SDI/TDI Sidemount Instructor Guide.
- Water: 2 OW dives minimum with full briefs/debriefs; non-overhead; no-decompression; dive plan includes SI, max NDL and logging.

- Equipment: cylinder(s), regulators suitable for configuration with SPG on each first stage and total two second stages, sidemount BCD, exposure suit, mask/fins, computer, compass, rescue signal.
- Skills: plan dive, check equipment, familiarize area, descend within limits, manage gas, monitor depth/time/air and slate times, buoyancy, attach cylinders out of water/on shallow surface/deep surface/at depth, regulator switches, safety stops.
- Graduation: safe/efficient skill performance, mature judgment, logged dives.

9.2 TDI Sidemount Diver checklist

- Prerequisites: age 18; OW diver/equivalent.
- Admin: course fees, equipment, schedule, TDI liability/release and medical statement completed.
- Materials: SDI/TDI Sidemount Manual and Knowledge Quest or eLearning; Instructor Guide.
- Water: 3 OW dives minimum; 90 minutes accumulated bottom time; minimum 2 days; max 4 students per instructor.
- Equipment: dual cylinders, two independent first/second stage regulators each with SPG, sidemount BCD, exposure suit, mask/fins, dive computer plus additional depth/time device; backup computer recommended. Instructor in full sidemount equipment.
- Topics: gas matching including dissimilar volumes, independent gas management, psychology, equipment options, hand/light signals, gas sharing, gas hemorrhage, light failure, lost visibility, entanglement, self-rescue, tight spaces, conservation, difficult entries, S-drills.
- Pre-dive: START - S-drill/bubble check, Team, Air/gas matching, Route, Tables/time-depth-waypoints-schedule; stress analysis and mitigation.
- Skills: propulsion variants, hover without hands/feet movement, trim throughout descent/bottom/ascent, unclip/attach cylinders, gas switches with and without mask, gas management, awareness/back referencing, deploy lift bag, optional additional cylinders.
- Graduation: safe/efficient drills and dives, mature judgment, environmental respect, logged dives.

9.3 PADI Sidemount Diver Specialty checklist

- Prerequisites: PADI Open Water Diver or qualifying certification; minimum age 15.
- Instructor: PADI Sidemount Diver Specialty Instructor. Follow current PADI Specialty Course Instructor Guide and General Standards.
- Ratios: confined 10:1 plus additional students per certified assistant as allowed; open water 8:1.
- Water/time: at least 1 confined-water dive and 3 OW dives; minimum 24 hours over 3 days.
- Depth: OW-level divers max 18 m/60 ft; AOW or higher max 30 m/100 ft.
- Configuration: first confined/OW sessions may use one or two cylinders depending on option, but certification requires all confined and OW requirements to be met. If first OW is completed with one cylinder, the second and third OW dives must be completed in sidemount configuration.
- Completion: knowledge review, required confined-water performance and OW dives 1-3 completed.

10. Chang Diving Instructor Notes

- For Koh Chang boat logistics, complete equipment fitting and cylinder rigging before boarding when possible. Boat time should be for final checks and diving, not first-time rig assembly.

- Do not start a sidemount course with rushed students. Poor equipment fit and overweighting are the most common reasons the course becomes unsafe or frustrating.
- Use smaller groups than the maximum when current, low visibility, inexperienced divers, heavy cameras, or language barriers are present.
- For recreational students, avoid selling sidemount as “technical diving”. Sell it as comfort, redundancy, balance, and a platform for future training.
- For TDI students, raise the standard: trim, propulsion, gas discipline and awareness must look technical from the beginning.

11. Pre-Course Student Information Template

Use this message when confirming a sidemount course:

Please send: full name, date of birth, certification level and card photo, total dives, last dive date, height/weight, shoe size, wetsuit size, any medical concerns, vegetarian/allergies, phone/WhatsApp, hotel, and whether you want SDI, TDI or PADI certification. For sidemount we also need time for equipment fitting and theory before the boat dives. Certification depends on meeting all course performance requirements, not only completing the dives.

12. Final Quality-Control Rule

Before certification, the instructor must be able to answer YES to all of the following:

- The student plans the dive and gas reserves correctly for the chosen agency standard.
- The student can assemble, check and explain the sidemount configuration.
- The student maintains neutral buoyancy and horizontal trim without hand sculling.
- The student switches regulators/cylinders without confusion and monitors both pressures.
- The student handles gas sharing and simulated gas loss calmly.
- The student completes ascents and safety stops under control.
- The correct agency paperwork, materials, dives, time, ratios and depth limits were followed.

Source Notes

Source documents reviewed: SDI Sidemount Diver Standards and Procedures, Version 0626; TDI Sidemount Diver Standards and Procedures, Version 0126; PADI Sidemount Diver Specialty Course Instructor Guide, Spanish, 2012. This manual paraphrases and organizes standards for teaching use. It does not reproduce the official manuals.