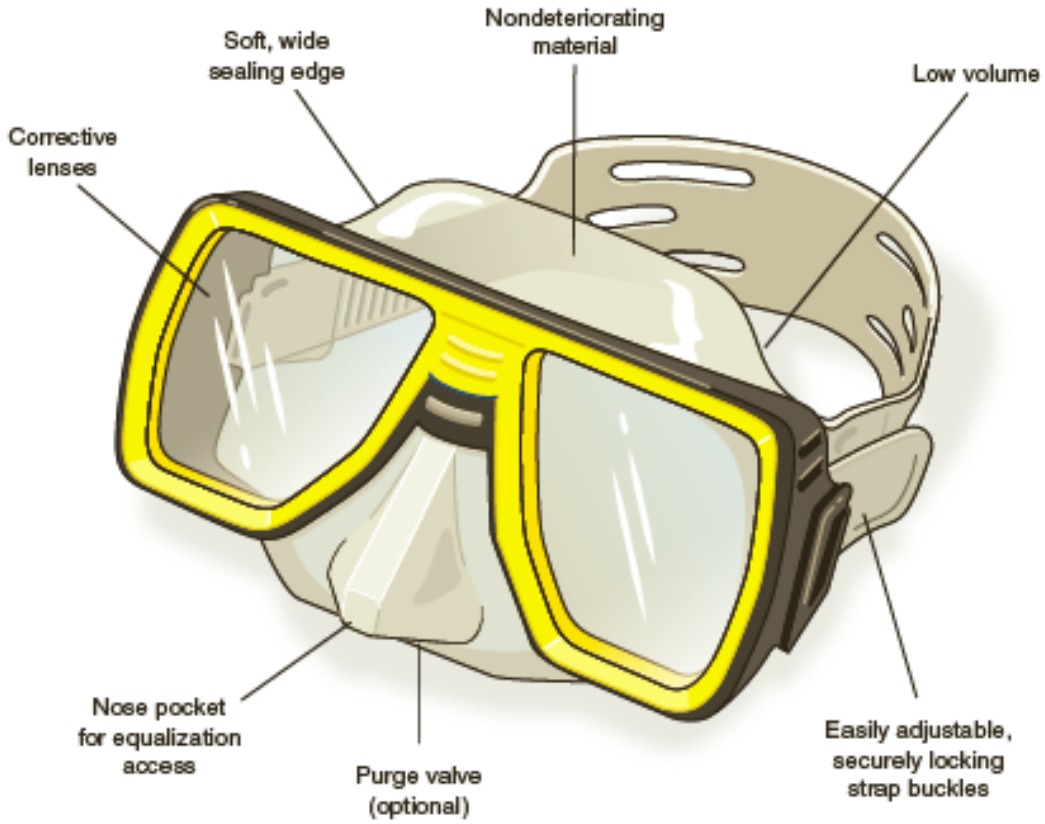
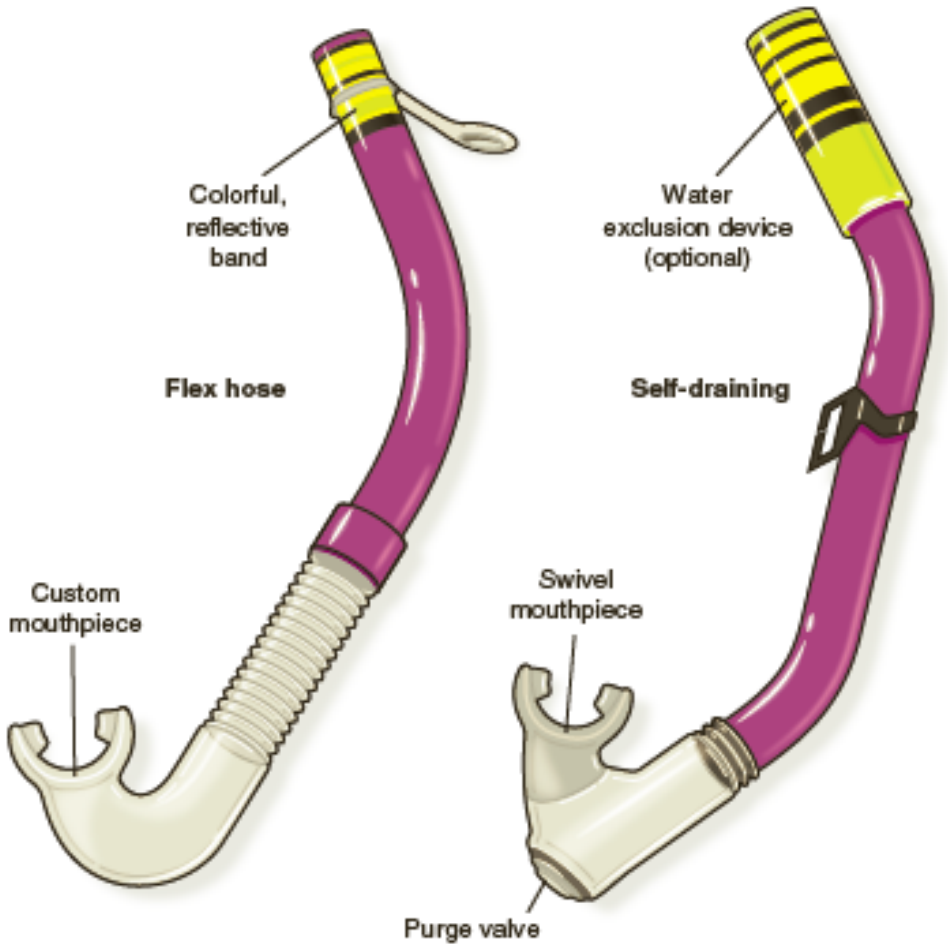
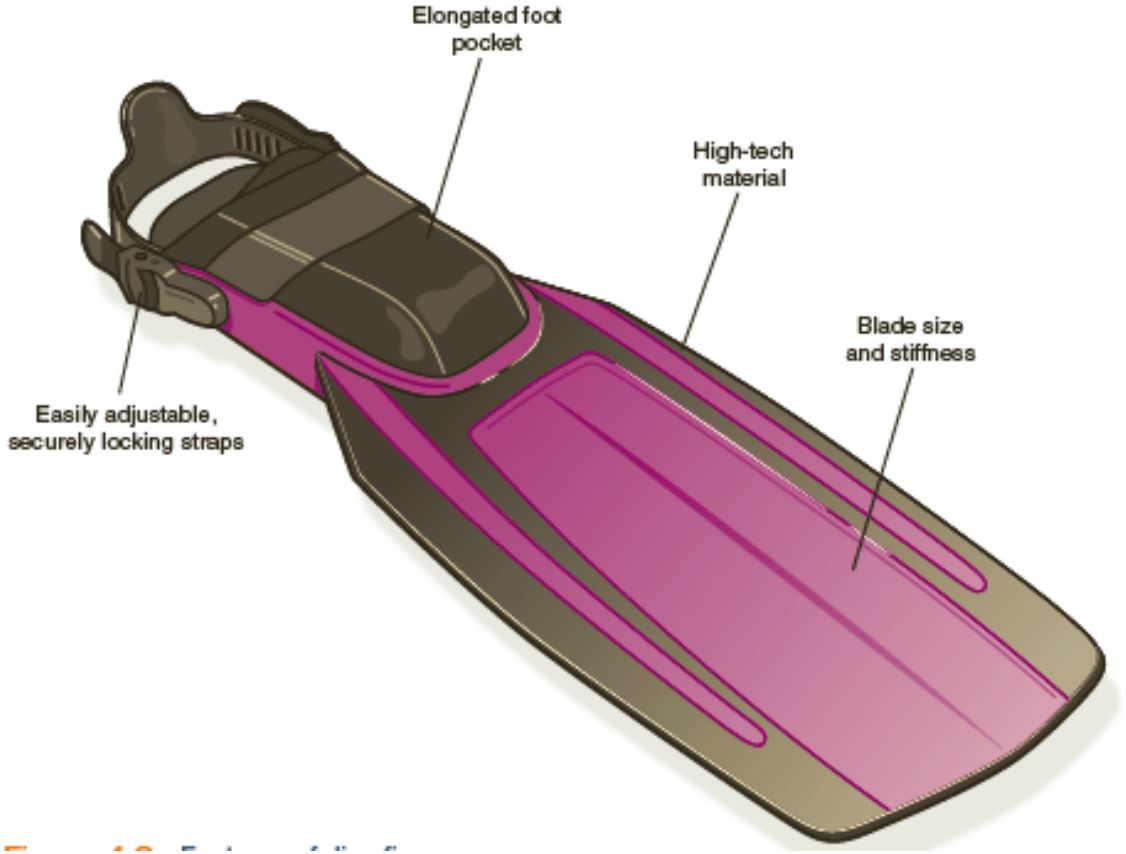
4. Diving Adjustments



Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.



Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.



Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

Type	Warmth	Features	Temperature range
Spandex	45% more than bare skin	Light, compact; useful as undergarments for thicker suits	78 °F (25.6 °C) +
Thermoplastic	30% warmer than spandex	Neutrally buoyant; no weights required; wicks perspiration; windproof	75 °F (23.9 °C) +
Plush-lined thermoplastic	10% warmer than unlined	Same as thermoplastic	72 °F (22.2 °C) +
Foam neoprene 1/8 in. (2–3 mm) 3/16 in. (4 mm) 1/4 in. (5–6.5 mm)	20-100% warmer than plush-lined thermoplastic	Buoyant; weights required; long drying time; evaporation chills wearer; minor repairs easy to do	Down to 60 °F (15.6 °C)
Hoods, vests, boots, and gloves or mitts	16-66% more warmth	Reduces water circulation; layering allows flexibility for various temperatures	Down to 60 °F (15.6 °C)

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

Figure 4.13 Gloves and mitts protect divers' hands from cold temperatures and injuries.

Figure 4.14 Hoods conserve warmth in cold waters.

Figure 4.15 The addition of a vest can increase the warmth of your wet suit by as much as 16 percent.

Table 4.2 Dry Suits

Type	Advantages	Disadvantages
Foam neoprene	Form fitting and streamlined	Long drying time; hard to locate and repair leaks; buoyancy control difficult
Crushed neoprene	Durable; easy to repair; long lasting; less buoyant than foam neoprene	Less insulation than foam neoprene; expensive; somewhat bulky
Shell (two kinds) • Coated nylon • Rubberized fabric	Fast drying; easy to repair; nylon suits inexpensive; rubberized suits long lasting	Easily punctured; bulky; nylon suits do not last long; rubberized suits expensive

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

Type	Location of buoyancy chamber	Advantages	Disadvantages
Jacket style	Front and rear	Even lift; diver can remain upright	Not suitable for skin diving
Back mounted	Rear	Does not interfere with valve operation for dry suits	Pushes diver forward; difficult for diver to remain upright
Front mounted	Front	Suitable for skin diving; allows diver to remain upright	Need separate backpack for cylinders; requires disconnection of inflator hose before removal; does not provide as much lift as jacket

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

Diving Equipment Checklist

- ✓ Mask, snorkel, and snorkel keeper
- ✓ Fins and boots
- ✓ Scuba tank (filled)
- ✓ Buoyancy compensator
- ✓ Exposure suit, hood, and gloves
- ✓ Weight system
- ✓ Regulator with pressure gauge
- ✓ Alternate air source
- ✓ Instruments to monitor depth, time, and direction (separate or integrated)
- ✓ Signaling devices (whistle, mirror, safety tube)
- ✓ Dive knife
- ✓ Float, dive flag, and anchor
- ✓ Dive tables
- ✓ Dive light
- ✓ Slate and pencil
- ✓ Marker buoy
- ✓ Collecting bag
- ✓ Gear bag

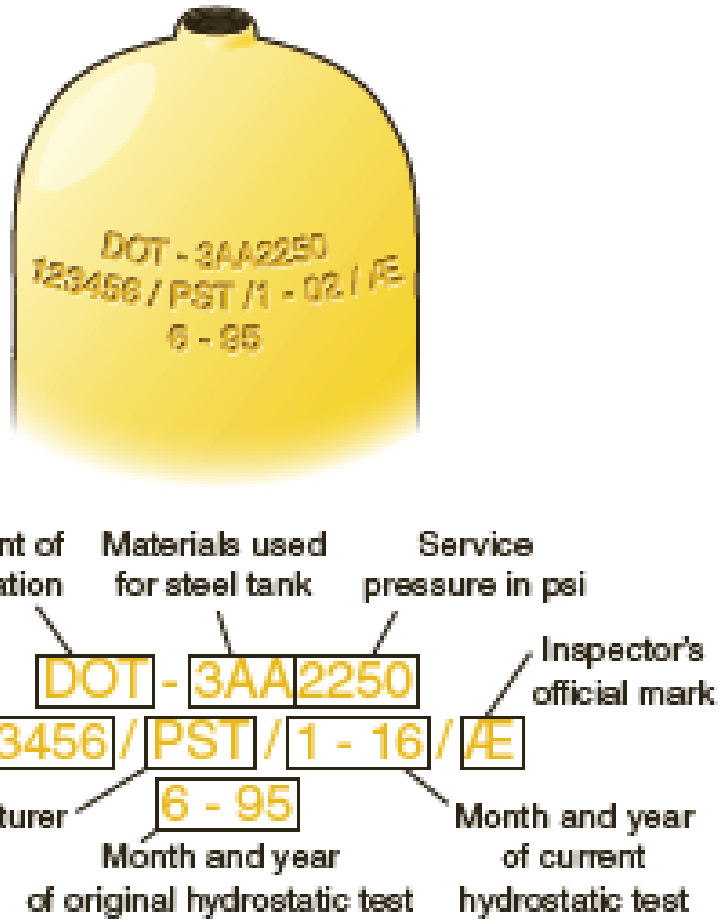
Spare equipment

- ✓ Scuba tank(s)
- ✓ Weights
- ✓ Straps
- ✓ O-rings
- ✓ Snorkel keeper

Secondary equipment

- ✓ First aid kit
- ✓ Emergency phone numbers and radio frequencies
- ✓ Logbook
- ✓ Swimsuit
- ✓ Towel
- ✓ Jacket
- ✓ Hat or visor
- ✓ Sunglasses
- ✓ Dive kit
- ✓ Save-a-dive kit
- ✓ Drinking water

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.



Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

Capacity (ft³/L)	Working pressure (psi)	Buoyancy (lb) from full to empty
Aluminum 50/1,416	3,000	–2.7 to +1.3
Aluminum 63/1,784	3,000	–2.3 to +2.7
Steel 71.2/2,016	2,250	–2.0 to +3.6
Aluminum 80/2,265	3,000	–2.0 to +4.4
Steel 76/2,152	2,400	–6.5 to –0.1
Steel 80/2,265	3,500	–7.4 to –1.0
Steel 102/2,888	3,500	–7.6 to +0.5

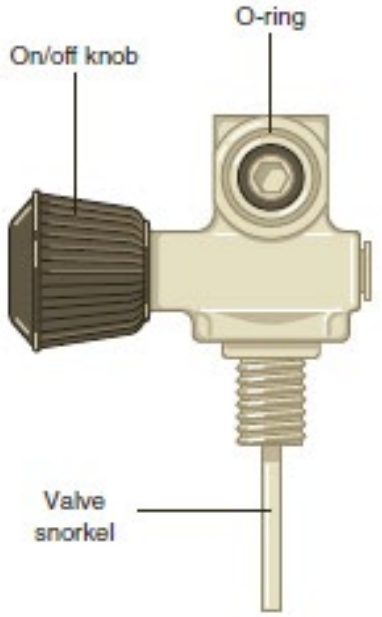


Figure 4.24 K-valve.

Figure 4.25 Close-up of a DIN valve.

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.

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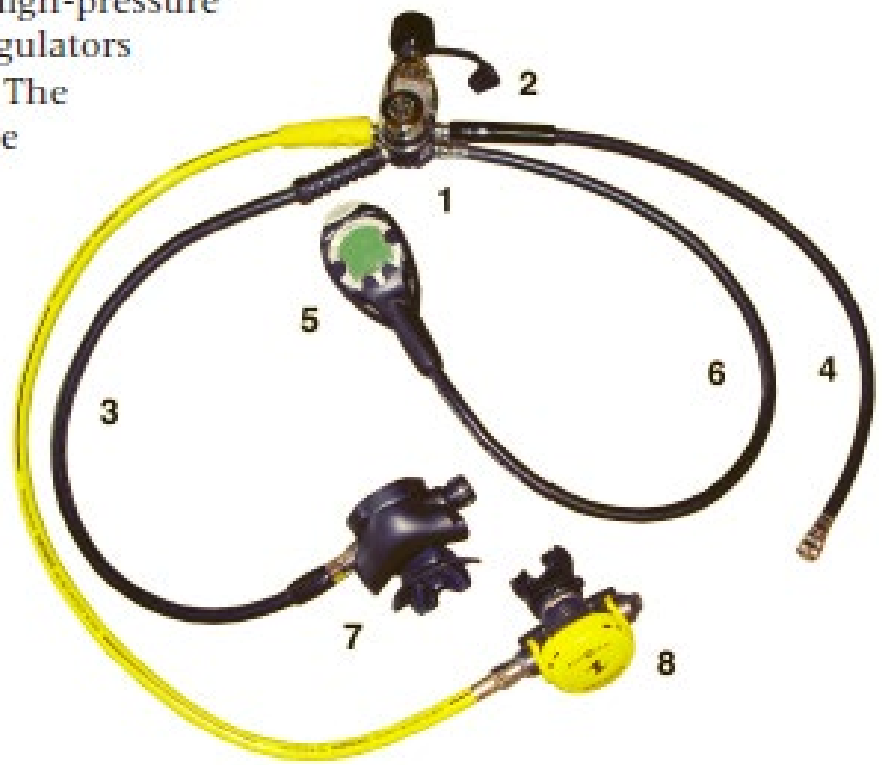

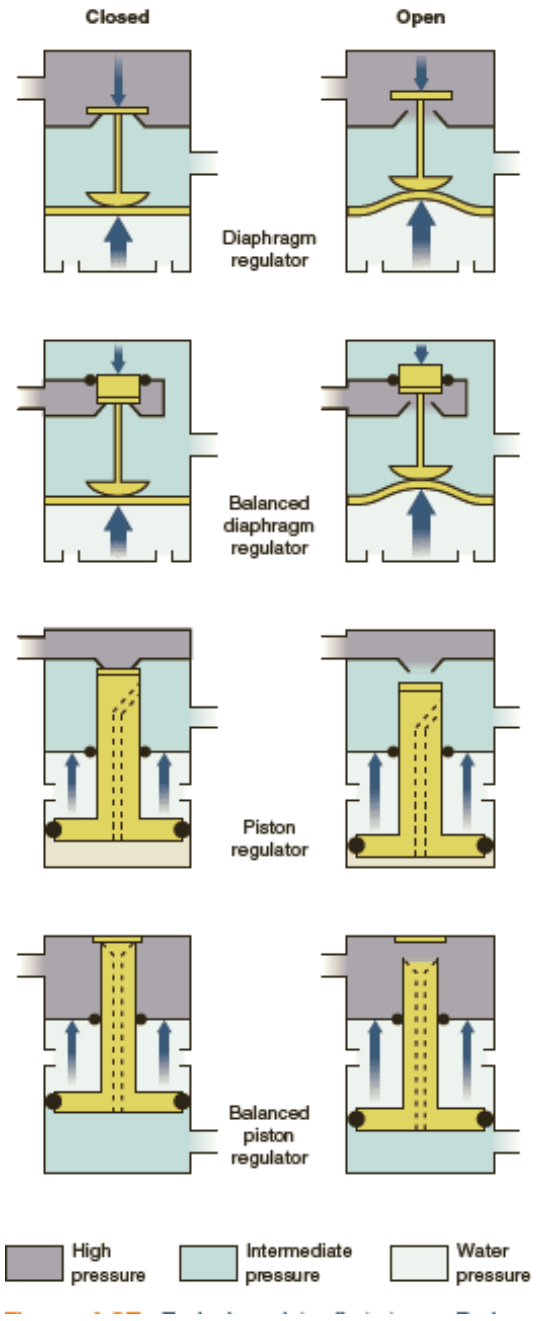

Reference: Graver, D. K. (2016). Scuba Diving 5th Edition. Human Kinetics.