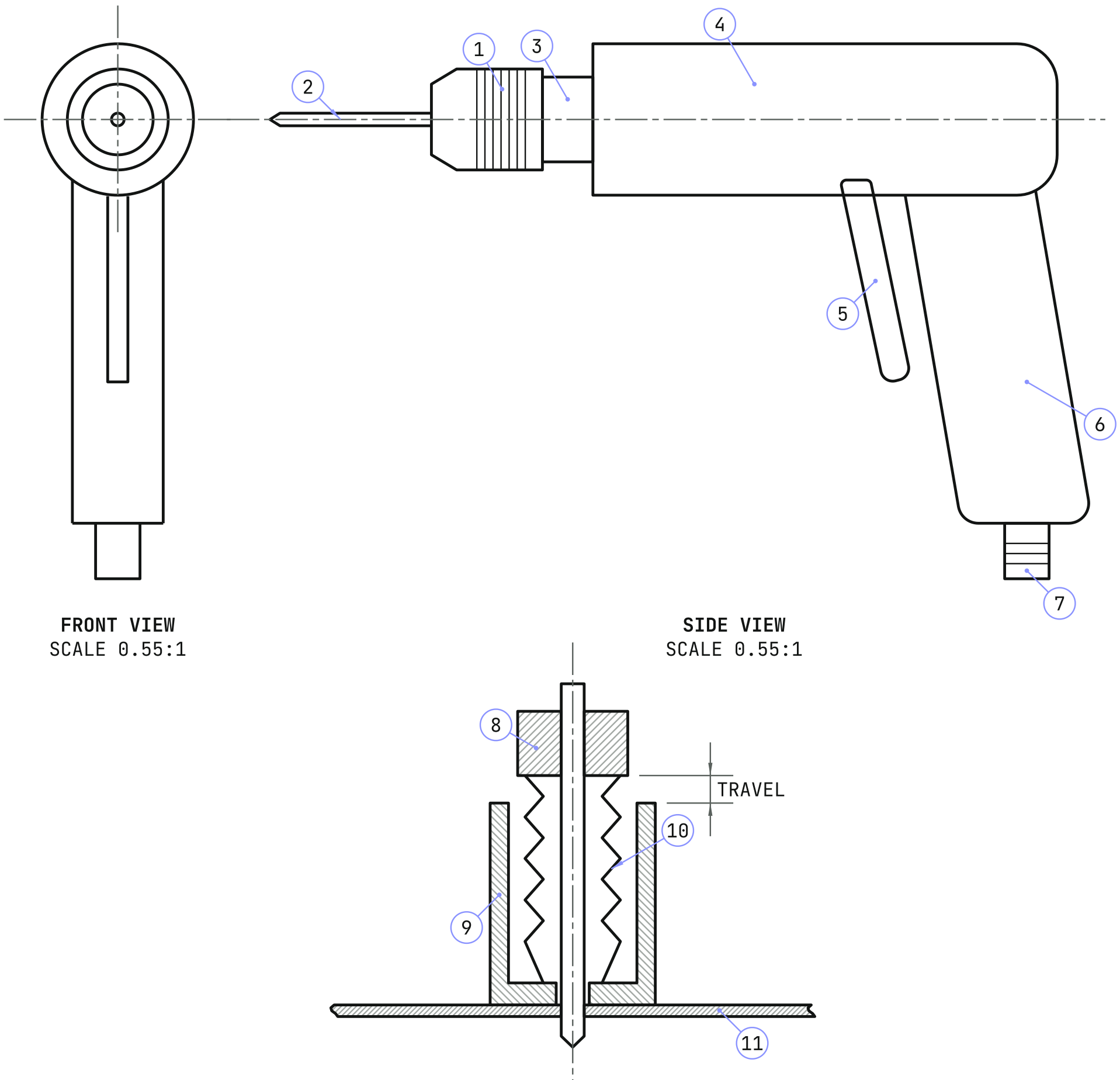
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The Aviation Point

Drill Motors: Pistol-Grip and Angle Drills

The drill motor that does most aircraft sheet metal work is the pneumatic pistol grip: light, with good speed control and no sparks near fuel.



FRONT VIEW
SCALE 0.55:1

SIDE VIEW
SCALE 0.55:1

SPRING DRILL STOP, IN SECTION
SCALE 1:1

CUTTING SPEED	
METAL	SFM
ALUMINUM	200-300
MILD STEEL	30-50

NOTES
1. INCHES (MM).
2. RPM = CS X 4 / D.
3. HOLD AT 90 DEG TO THE WORK.
4. DISCONNECT AIR WHEN NOT IN USE.
5. REPAIR DATA GOVERNS.

ITEM	DESCRIPTION
11	SHEET
10	SPRING
9	STOP CAGE
8	STOP COLLAR
7	AIR INLET
6	HANDLE
5	THROTTLE LEVER
4	MOTOR HOUSING
3	NOSE
2	DRILL BIT
1	CHUCK

MOTOR, DRILL, PNEUMATIC
SHEET 1 OF 1
DWG TAP-TG-058 | REV A
SCALE 1:1.82

Types

Type	Where it fits	Notes
Pneumatic pistol grip	Most sheet metal and repair drilling	Light, good speed control, no sparks
Right-angle drill	Inside structure where a pistol grip does not fit	Takes threaded drill bits in several lengths
45 degree drill	Between frames and stringers, close to a flange	Never start it without a firm hold on the angle head
Lower speed, higher torque motor	Deep holes, corrosion-resistant steel, titanium	Slower spindle for hard metals
Electric drill	Bench work away from the aircraft	Spark hazard near fuel and flammables
Drill press	Accurate holes in loose parts	Clamp the part: an unclamped part can bind and spin

What to check when buying

Check	What to look for
Speed	Free speed that suits the metal and bit sizes you drill; a lower speed motor for steel and titanium
Throttle	A lever that feathers the speed smoothly from a crawl to full
Chuck	Keyed or keyless, runs true, holds the bit sizes you use; threaded heads on angle drills
Weight and balance	Light enough to hold square with both hands for a full rivet row
Exhaust	Air blown away from the hand and the work
Air inlet	A thread that matches the shop couplers
Noise	The rated sound level, for hearing protection

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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Accessories

Item	What it is for
Spring drill stop	Stops the bit at a set depth and keeps the chuck off the skin
Drill bits	Number and fraction sizes, 135 degree split point for aluminum
Angle heads	Right-angle and 45 degree heads with threaded bits
Air coupler and filter	Clean, dry air at the motor
Tool oil	Drops of oil in the inlet, as the maker says
Bit guard	Supports a long extension bit

SCAN · OPEN THIS GUIDE
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