Dayton Drill Press

Model 6W281A

Machine Purpose: Drilling holes in metal and plastic

Safety: **Must wear safety glasses while operating machine.** Beware of objects that dangle and could get caught in cutting tool. Beware of flying metal chips **This machine has no built-in safety system. NEVER USE YOUR HANDS TO HOLD MATERIAL, Always use a vice or fixture to hold work piece.**

Materials: Metals, Plastics, Synthetic

Material Limitations: NO WOOD

Machine Specs: Swing 20”, Spindle Taper MT3, 1HP motor, Table Slot Size 5/8” 9 Speed: 150-2200, 25.5” draw, 5” spindle travel 13”x 15” work surface

Tooling: Located on table to the left, please return all bits to their proper drawer!!!

Accessories: T-slot bed, XY table vice,

Instruction Required: Cold Metals Basic Training

Material type	SFM	Drilling RPM for bit diameter							
		1/16"	3/32"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
Steel (heat treated)	15	240	115	120	80	60	48	40	30
Mild steel	100	1600	767	800	533	400	320	267	200
Tool Steel	40	640	307	320	213	160	128	107	80
Cast iron (medium)	80	1280	613	640	427	320	256	213	160
Carbon steels (C1008-C1095)	60	960	460	480	320	240	192	160	120
Free cutting steels (B1111 & C1108)	100	1600	767	800	533	400	320	267	200
Stainless steels (300 & 400 series)	40	640	307	320	213	160	128	107	80
Stainless steel, work hardened	20	320	153	160	107	80	64	53	40
Bronzes	120	1920	920	960	640	480	384	320	240
Leaded steel (Leadloy 12L14)	90	1440	690	720	480	360	288	240	180
Aluminium	250	4000	1917	2000	1333	1000	800	667	500
Titanium Alloys	20	320	153	160	107	80	64	53	40
Brass	160	2560	1227	1280	853	640	512	427	320

Notes

- Always hold material in a vice
- Step up drill sizes
- Always use lube/coolant
- Set appropriate speed for bit size
- When possible center punch or center drill so bits don't walk
- Never drill with a dull bit
- If bit slips during operation step size down/adjust speed/use more lube/tighten chuck

Speed change – Always cut at appropriate speeds for bit size, the large the bit the slow you should cut.

1. Open top cover
2. Loose motor mount using handle, move motor forward
3. Move center pully into neutral position
4. Adjust belts to location for necessary speed
5. Tighten motor using handle
6. Close cover

Work Holding

1. Always use a vice or clamp to hold material, **never use hands to hold work piece**.

Table Adjustment

1. If clearance is needed for bit to fit between chuck and work piece move table down
2. Release handle on main shaft of the drill
3. Turn handle to raise or lower bed until desired height is reached
4. Lock handle to secure position

Bit Changing – Always step up drills from small to large

1. Using chuck key loose chuck
2. Turn chuck to desired diameter
3. Insert starting drill bit into chuck, tighten by hand, finish tighten with chuck key

Operation

1. Center punch to start hole so bit doesn't walk, else prepare to drill a starting hole first.
2. After work holding, setting speed, adjusting table height turn on drill flipping switch on top front of machine.
3. Apply cutting fluid/lube/coolant/oil to bit and starting hole
4. Slowly apply pressure to bit, letting the bit do the work
5. Clear chips as they are cut using a chip brush
6. Pull bit out of hole occasionally during drilling to clear chips from the hole, add lube as necessary
7. Once your hole has reached depth clear chip, change bit to next step towards your finished diameter
8. Remember to put tool away in proper drawer