

PART NAME: VALVE BTM			PART NO: 05			DRAWING NO: 05	
REVISION NO: 1			DATE: 19/10/2019			PLANNER: DAN NGUYEN (Z5206032)	
MATL: ALUMINIUM			STOCK SIZE: 10x50MM ROD			QTY: 2	
Op #	Process Description	Machine	Tooling	Speed (rpm)	Feed (mm/rev)	Time (min)	Risk Assessment
501	INSPECT the part	Vernier Calliper 150mm Metal Rule	-	-	-	1	
502	FACE top surface for SURFACE FINISH of 1.6	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	4500 – 9000 [1]	-	5	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
503	INSPECT surface dimensions	Vernier Calliper 150mm Metal Rule	-	-	-	1	
504	CENTREDRILL centre of top surface	Centre Lathe	Centre Drill	9000 [1]	-	5	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
505	DRILL 4mm through hole in centre of top surface	Centre Lathe	4mm Drill	9000 [1]	0.1	10	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin.

							Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
506	INSPECT hole position and depth	Vernier Calliper 150mm Metal Rule	-	-	-	1	
507	BORE 7mm hole with 25mm depth in centre of top surface	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	6000 [1]	0.1	20	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
508	INSPECT hole position and depth	Vernier Calliper 150mm Metal Rule	-	-	-	1	
509	SAW rod at 31mm from top surface	Hacksaw	-	-	-	5	Hacksaw is sharp and may cause cut injuries. Hacksaw and workpiece may get hot and cause burn injuries. Wear safety glasses and steel capped boots. Do not wear loose clothing.
510	FACE bottom surface to 30mm from top surface for SURFACE FINISH of 1.6	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	4500 – 9000 [1]	0.1	10	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
511	INSPECT surface dimensions	Vernier Calliper 150mm Metal Rule	-	-	-	1	

512	THREAD M10x1.0 on external surface for depth of 10mm from bottom surface	Die Holder	M10 x 1.0 Die [2]	-	-	10	Die and die holder may pinch skin.
513	THREAD M8x1.0 in 7mm hole from top surface for depth of 10mm	Tap Handle	M8 x 1.0 Tap [2]	-	-	10	Tap and tap handle may pinch skin.
514	DEBURR edges	Files	-	-	-	5	Burr may have sharp edges and cause splinters.
515	INSPECT the part	Vernier Calliper 150mm Metal Rule	-	-	-	1	
					Total	86	

PART NAME: VALVE TOP			PART NO: 06			DRAWING NO: 06	
REVISION NO: 1			DATE: 19/10/2019			PLANNER: DAN NGUYEN (Z5206032)	
MATL: ALUMINIUM			STOCK SIZE: 10x25MM ROD			QTY: 2	
Op #	Process Description	Machine	Tooling	Speed (rpm)	Feed (mm/rev)	Time (min)	Risk Assessment
601	INSPECT the part	Vernier Calliper 150mm Metal Rule	-	-	-	1	
602	FACE top surface for SURFACE FINISH of 1.6	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	4500 – 9000 [1]	-	5	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
603	TURN curved surface of rod for 8mm external diameter for depth of 15mm from top surface for SURFACE FINISH of 1.6	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	4500 – 5625 [1]	0.1	20	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
604	INSPECT surface dimensions	Vernier Calliper 150mm Metal Rule	-	-	-	1	
605	CENTREDRILL centre of top surface	Centre Lathe	Centre Drill	9000 [1]	-	5	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin.

							Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
606	DRILL 4mm through hole in centre of top surface	Centre Lathe	4mm Drill	8000 [1]	0.1	10	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
607	INSPECT hole position and depth	Vernier Calliper 150mm Metal Rule	-	-	-	1	
608	SAW rod at 16mm from top surface	Hacksaw	-	-	-	5	Hacksaw is sharp and may cause cut injuries. Hacksaw and workpiece may get hot and cause burn injuries. Wear safety glasses and steel capped boots. Do not wear loose clothing.
609	FACE bottom surface to 15mm from top surface for SURFACE FINISH of 1.6	Centre Lathe	High Speed Steel Single Point Right Hand Cutting Tool [3]	5625 – 9000 [1]	0.1	10	Rotating chuck may cause lacerations and crush injuries. Cutting tool and workpiece may cause burn injuries. Swarf may be sharp and puncture skin. Keep clear of rotating chuck. Only inspect workpiece when chuck has completely stopped. Wear safety glasses and steel capped boots. Do not wear loose clothing. Use coolant on cutting tool and workpiece. Clean swarf using a brush.
610	INSPECT surface dimensions	Vernier Calliper 150mm Metal Rule	-	-	-	1	
611	THREAD M8x1.0 on external surface for	Die Holder	M8 x 1.0 Die [2]	-	-	10	Die and die holder may pinch skin.

	depth of 10mm from bottom surface						
612	DEBURR edges	File	-	-	-	5	Burr may have sharp edges and cause splinters.
613	INSPECT the part	Vernier Calliper 150mm Metal Rule	-	-	-	1	
					Total	75	

References:

[1] TAFE NSW Engineering Skills Centre. Student Background Notes for Basic Machining Operations. Available at: Ultimo TAFE NSW. [Accessed 19/10/2019]

[2] TAFE NSW Engineering Skills Centre (2010). Student Background Notes for the Use of Hand and Power Tools. Available at: Ultimo TAFE NSW. [Accessed 19/10/2019]

[3] Soni, V. (2017). Introduction and Nomenclature of Single Point Cutting Tool and Tool Signature. Available at: <http://www.mechanicalclasses.com/2017/01/single-point-cutting-tool.html> [Accessed 19/10/2019]