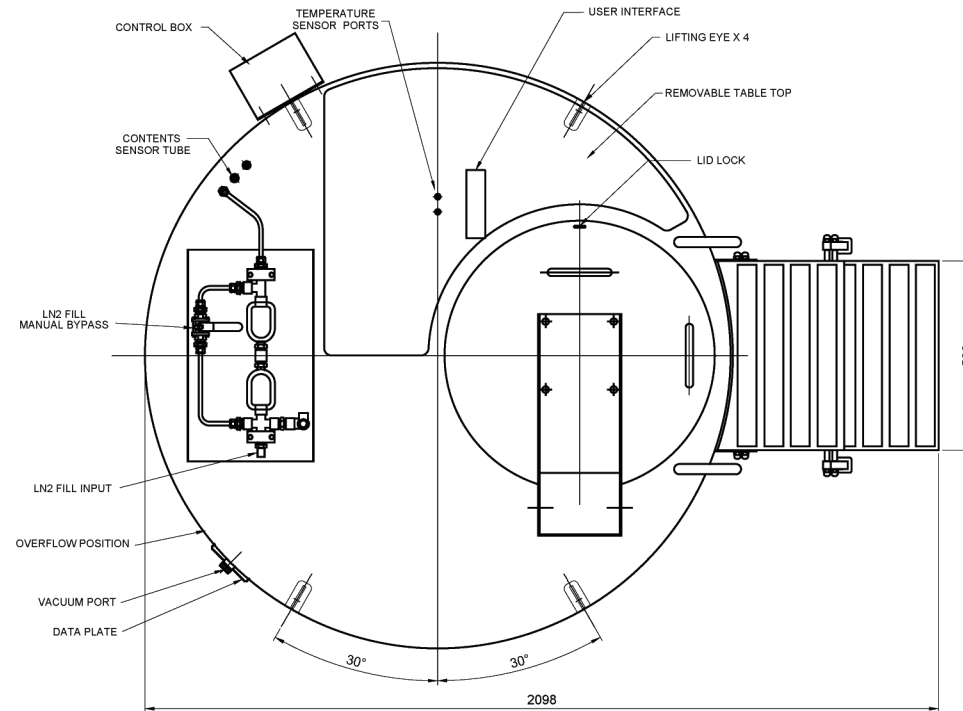
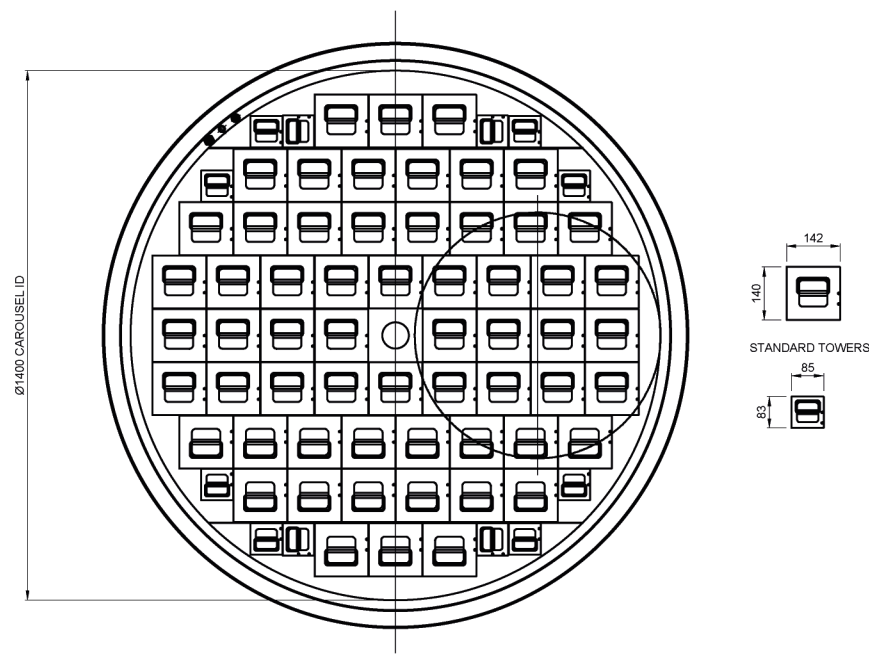
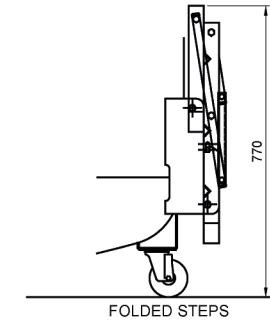
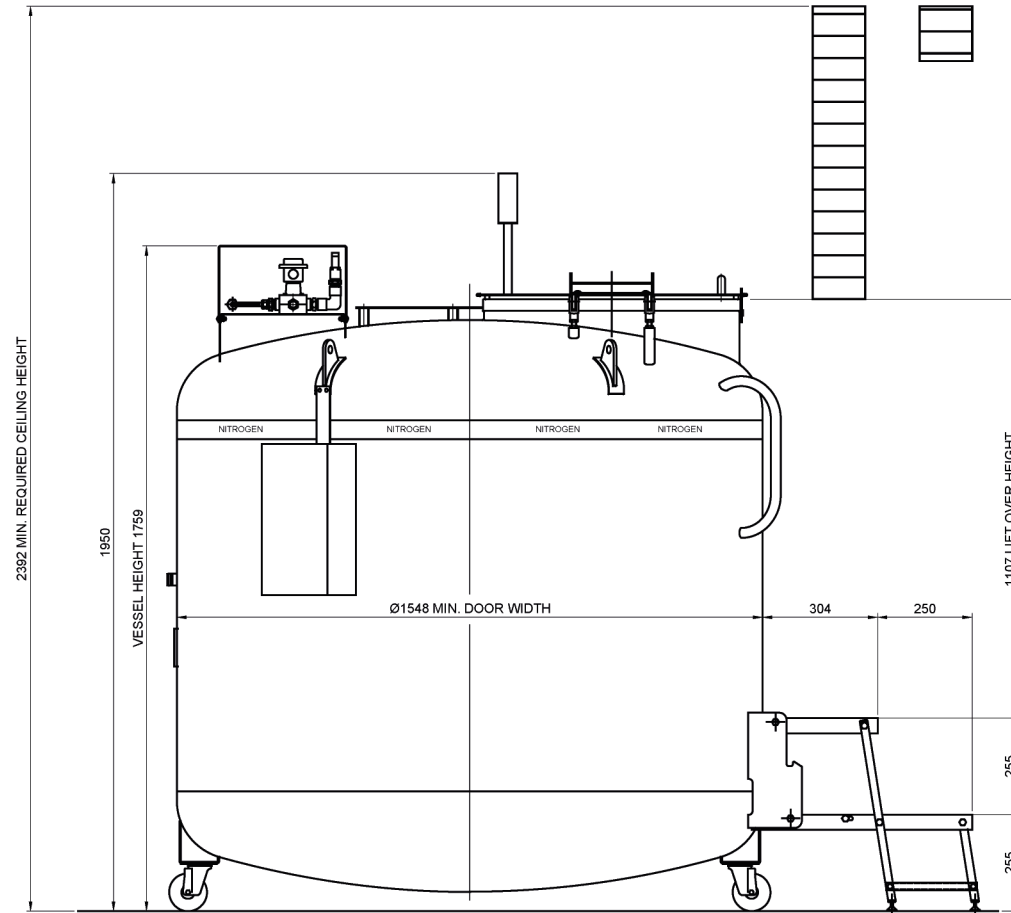
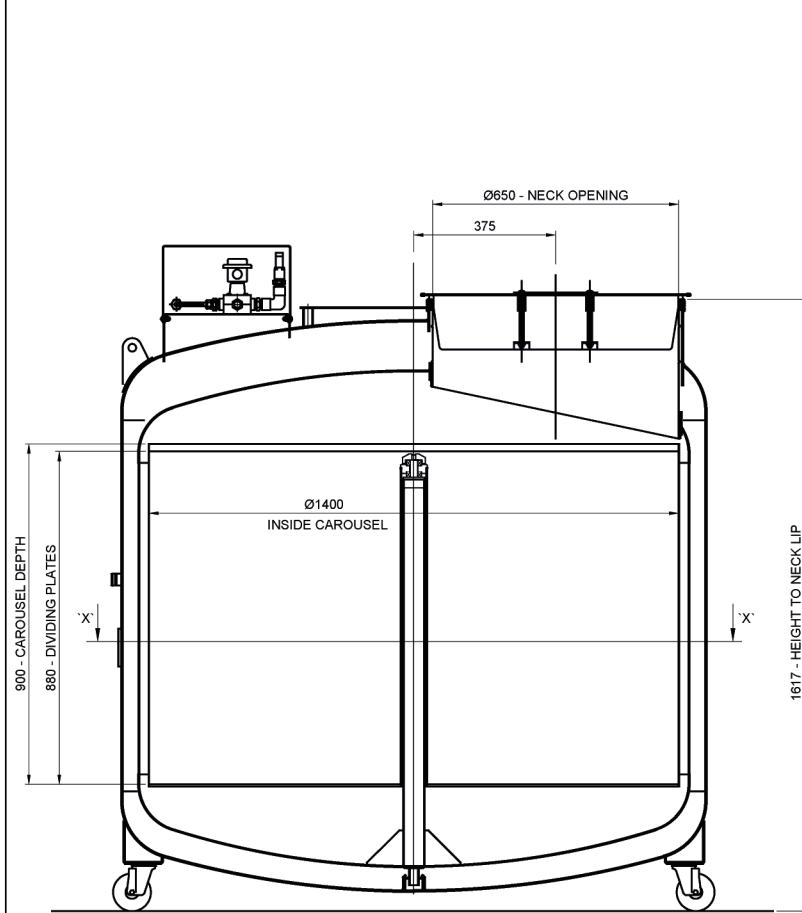


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1. QUOTED LN2 CAPACITY REFERS TO MAXIMUM RECOMMENDED (HIGH) LN2 LEVEL
2. TO MAINTAIN TEMPERATURE STABILITY RECOMMEND UNIT IS REFILLED BEFORE REACHING LOW LEVEL
3. NER IS QUOTED UNDER IDEAL CONDITIONS. IN PRACTICE NER MAY BE MUCH HIGHER DEPENDING ON USE
4. IDEAL CONDITIONS
15-25°C
-80% RH
MAXIMUM SAMPLE LOAD
5. QUOTED HOLD TIME IS BASED ON QUOTED NER AND LN2 CAPACITY. REDUCED LN2 CAPACITY AND HIGHER THAN QUOTED NER WILL RESULT IN REDUCED HOLD TIME.
6. MONITOR / RECORD NORMAL USAGE TO ESTABLISH REFILL VOLUME, WORKING NER AND WORKING HOLD TIME.
7. FOR DETAILS OF ALTERNATIVE ICS PLEASE CONTACT QUANTUM CRYOGENICS.
8. ENSURE 140µm INLINE FILTER IS USED ON LN2 SUPPLY TO PROTECT SOLENOID VALVES
9. WHEN CONNECTED TO A PIPED SUPPLY ENSURE SUPPLY PRESSURE IS REGULATED TO <2 BAR (30 PSI)
10. GAS VENT / PRE-COOL / HOT GAS BYPASS SYSTEM MAY BE REQUIRED. CONTACT QUANTUM CRYOGENICS FOR MORE INFORMATION
11. STANDARD SUPPLY HOSE DN12 STAINLESS STEEL 1.5M LONG 1/2" BSP T MALE TO 15MM BALLNOSE 69GHD BOTH ENDS. NITRILE RUBBER FOAM INSULATION WITH PVC WRAP. ALTERNATIVE LENGTH / CONNECTIONS AVAILABLE UPON REQUEST
12. FOR DETAILS OF DATA LOGGING / REMOTE MONITORING / CONTROL OPTIONS PLEASE CONTACT QUANTUM CRYOGENICS
13. ENSURE APPROPRIATE VENTILATION AND OXYGEN DEPLETION MONITORING ARE IN PLACE
14. CONTROLLER SYSTEM POSITION INDICATIVE ONLY

-60°C TO -190°C TEMPERATURE SET-POINT CONTROL - OPTION

POLARIS VESSELS CAN OPERATE WITH A CONTROLLED TEMPERATURE SET-POINT. THE VESSEL CONTROL SYSTEM WILL REGULATE THE FLOW OF LN2 TO MAINTAIN VESSEL TEMPERATURE ABOUT A SET-POINT BETWEEN -60°C AND -190°C.

- REQUIRES COMPRESSED AIR SUPPLY 6-8 BAR
- REQUIRES A "WET" LN2 SUPPLY. CANNOT BE USED WITH "DRY" PIPELINES USING GAS VENTING / PRE-COOL SYSTEMS
- LN2 CONSUMPTION WILL VARY DEPENDING ON VESSEL LOAD AND TEMPERATURE SET-POINT

TECHNICAL SPECIFICATIONS

Ø1548 MM	EXTERNAL WIDTH (MIN DOOR WIDTH)
2098 MM	EXTERNAL DEPTH (INC STEPS)
1597 MM	EXTERNAL HEIGHT (TO TABLE TOP)
2392 MM	*MIN RQD CEILING HEIGHT (TO CLEAR TOWER)
Ø650 MM	NECK INTERNAL DIAMETER
Ø1400 MM	USABLE INTERNAL DIAMETER
900 MM	USABLE INTERNAL HEIGHT
855 KG	WEIGHT (SHIPPING / EMPTY)
<1900 KG	WEIGHT (FULL - MAX) - INCLUDING ICS & SAMPLES
314 LITRES	LN2 CAPACITY
15 LITRES / DAY	NER (IDEAL CONDITIONS)
21 DAYS	MAX HOLD TIME
1/2" BSPT	LN2 INLET CONNECTION ON VESSEL
1.5±0.5 BAR (22±7 PSI)	LN2 SUPPLY PRESSURE
4.5 BAR / 66 PSI	DEFAULT PRESSURE RELIEF VALVE SETTING
94500	SAMPLES (2ML CRYOVIALS)
15 (13 + 2)	ROWS PER TOWER
60	NUMBER OF 10 X10 TOWERS
12	NUMBER OF 5 X 5 TOWERS
24V DC 1 AMP	POWER REQUIREMENT
<3 DAYS	BATTERY BACK UP CAPACITY
1/2" BSP 24V DC	SOLENOID VALVE 1 (FAIL CLOSED)
1/2" BSP 24V DC	SOLENOID VALVE 2 (FAIL CLOSED)
3/8" BSP BALL VALVE	MANUAL FILL BYPASS
3 DISCRETE SENSOR	LEVEL PROBE
PT1000	TEMPERATURE SENSOR

10	08.05.19	PM	XXX
09	19.02.16	PM	XXX
08	20.07.15	PM	XXX
07	14.04.15	PM	XXX
06	27.02.15	PM	XXX
05	27.08.14	PM	XXX
04	06.03.13	PM	XXX
03	08.11.13	PM	XXX
REV	DATE	DRAWN	CHECKED



QUANTUM

UNIT 13 LANGLEY BUSINESS COURT
WORLD'S END, BERKSHIRE RG20 8RY
+44 (0) 1844 339993

SCALE
1:20 @ A3

FINISH
CLEAN

TOLERANCE
±1

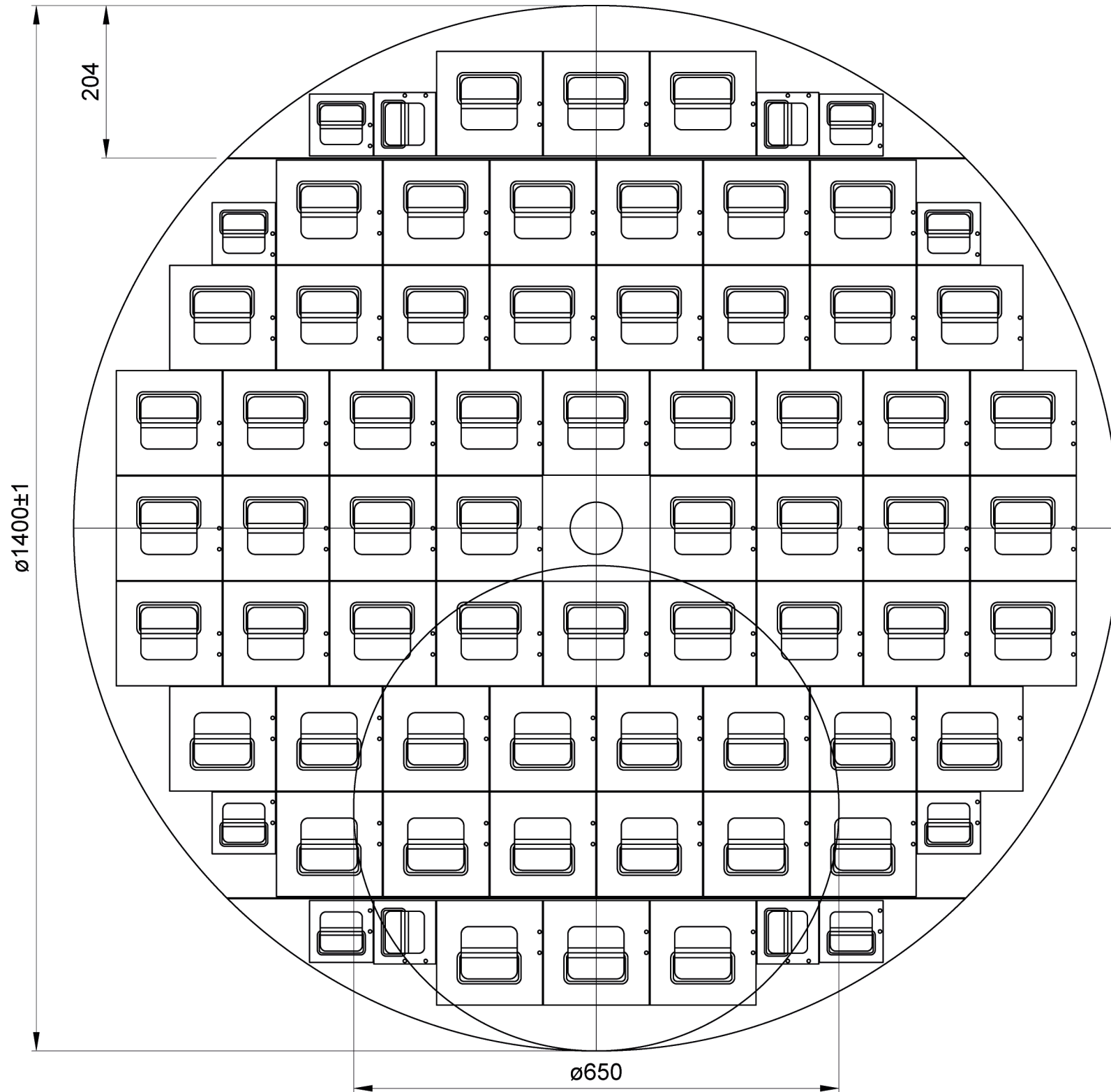
DIMS
MM

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POLARIS 94 VESSEL SPECIFICATION

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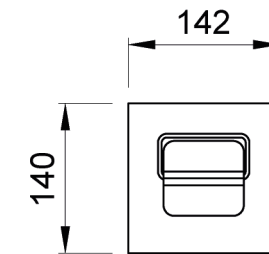
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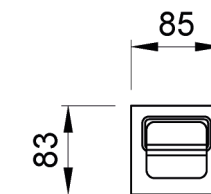
CAROUSEL ID = 1400±1MM
 NECK ID = 650MM
 DIVIDER THICKNESS = 1MM
 MIN. 1MM GAP BETWEEN TOWERS / WALLS
 10x10 TOWER = 140x142MM
 TO SUIT 10x10 BOX = 133x133x56MM
 5X5 TOWER = 83x85MM
 TO SUIT 5x5 BOX = 76x76x56MM
 USABLE INTERNAL HEIGHT = 900MM

60 OF 10x10 TOWERS	13 ROW	15 (13+2) ROW
12 OF 5x5 TOWERS	78000	90000
TOTAL 2ML VIAL CAPACITY	3900	4500
	81900	94500
TOWER HEIGHT (INC HANDLE)	775MM	900MM

STANDARD TOWERS



10 x 10 TOWER



5 x 5 TOWER

REV	DATE	DRAWN	CHECKED
03	13.01.16	PM	XXX
02	21.04.15	PM	XXX
01	15.04.15	PM	XXX



QUANTUM

UNIT 13 LANGLEY BUSINESS COURT
 WORLDS END, BERKSHIRE RG20 8RY
 +44 (0) 1844 339993

SCALE
 1:10 @ A4

FINISH
 CLEAN

TOLERANCE
 ±1

DIMS
 MM

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**POLARIS 94 ICS
 10x10 TOWER LAYOUT**

A4-00268