

Customer The QC Group Date **January 12, 2015** Inspector Bob Johnson WO# **2015xxxx-W02**

Part Name Drum Casting Part # Rev. A2 Lot #



(952) 895-1150

| **** | JPCC01011 | | | | | (952) 895-1150 | | | |
|--------------------------------|-----------|------|------|----------------|----------|----------------|----------|-----------------------|--|
| Results are reported in INCHES | | | | | PART 1 | PART 2 | PART 3 | INSPECTION | |
| DIM# | NOMINAL | +TOL | -TOL | DESCRIPTION | Actual | Actual | Actual | EQUIPMENT USED | |
| 1 | 8.622 | .005 | .005 | Diameter | 8.6235 | 8.6211 | 8.6228 | Touch Probe CMM 2185 | |
| 2 | .000 | .008 | .000 | Cylindricity | .0060 | .0051 | .0073 | Touch Probe CMM 2185 | |
| 3 | 4.325 | .005 | .005 | Diameter | 4.3259 | 4.3216 | 4.3232 | Touch Probe CMM 2185 | |
| 4 | .454 | .005 | .005 | Depth | .4551 | .4574 | .4566 | Touch Probe CMM 2185 | |
| 5 | .610 | .005 | .005 | Depth | .6065 | .6057 | .6051 | Touch Probe CMM 2185 | |
| 6 | .945 | .005 | .005 | Depth | .9385 | .9384 | .9386 | Touch Probe CMM 2185 | |
| 7 | 1.695 | .005 | .005 | Depth | 1.6991 | 1.6996 | 1.6989 | Touch Probe CMM 2185 | |
| 8 | 1.870 | .005 | .005 | Depth | 1.8704 | 1.8723 | 1.8722 | Touch Probe CMM 2185 | |
| 9 | .875 | .005 | .005 | Diameter | .8788 | .8766 | .8787 | Vision CMM 1293 | |
| 10A | .438 | .005 | .005 | Diameter | .4365 | .4357 | .4374 | Vision CMM 1293 | |
| 10B | .438 | .005 | .005 | Diameter | .4381 | .4383 | .4385 | Vision CMM 1293 | |
| 10C | .438 | .005 | .005 | Diameter | .4321 | .4324 | .4330 | Vision CMM 1293 | |
| 10D | .438 | .005 | .005 | Diameter | .4401 | .4418 | .4424 | Vision CMM 1293 | |
| 11A | .50 | .01 | .01 | Diameter | .4968 | .4984 | .4981 | Vision CMM 1293 | |
| 11B | .50 | .01 | .01 | Diameter | .5041 | .5040 | .5057 | Vision CMM 1293 | |
| 11C | .50 | .01 | .01 | Diameter | .4934 | .4929 | .4944 | Vision CMM 1293 | |
| 11D | .50 | .01 | .01 | Diameter | .5021 | .5037 | .5022 | Vision CMM 1293 | |
| 12 | 5.350 | .005 | .005 | Diameter | 5.3510 | 5.3489 | 5.3522 | Calculated | |
| 13A | .000 | .010 | .000 | Position | .0035 | .0038 | .0042 | Calculated | |
| 13A | 2.675 | | | Radial Basic | 2.6733 | 2.6749 | 2.6739 | Touch Probe CMM 2185 | |
| 13A | 0.00 | | | Angle Basic | .0100 | .0410 | .0380 | Touch Probe CMM 2185 | |
| 13B | .000 | .010 | .000 | Position | .0185 | .0108 | .0119 | Calculated | |
| 13B | 2.675 | | | Radial Basic | 2.6749 | 2.6747 | 2.6753 | Touch Probe CMM 2185 | |
| 13B | 90.0 | | | Angle Basic | 90.1980 | 90.1150 | 90.1270 | Touch Probe CMM 2185 | |
| 13C | .000 | .010 | .000 | Position | .0017 | .0063 | .0055 | Calculated | |
| 13C | 2.675 | | | Radial Basic | 2.6751 | 2.6781 | 2.6741 | Touch Probe CMM 2185 | |
| 13C | 180.0 | | | Angle Basic | 180.0180 | 180.0114 | 180.0560 | Touch Probe CMM 2185 | |
| 13D | .000 | .010 | .000 | Position | .0079 | .0071 | .0062 | Calculated | |
| 13D | 2.675 | | | Radial Basic | 2.6748 | 2.6743 | 2.6753 | Touch Probe CMM 2185 | |
| 13D | 90.0 | | | Angle Basic | 90.0840 | 90.0745 | 90.0659 | Touch Probe CMM 2185 | |
| 14A | 90 | .5 | .5 | Angle | 90.0100 | 89.9590 | 89.9620 | Touch Probe CMM 2185 | |
| 14B | 90 | .5 | .5 | Angle | 90.1980 | 90.1150 | 90.1270 | Touch Probe CMM 2185 | |
| 14C | 90 | .5 | .5 | Angle | 89.9340 | 89.9369 | 89.9901 | Touch Probe CMM 2185 | |
| 14D | 90 | .5 | .5 | Angle | 90.0840 | 90.0745 | 90.0659 | Touch Probe CMM 2185 | |
| 15 | 0 | 32 | 0 | Surface Finish | 12.15 | 13.85 | 13.55 | Profilometer 1234* | |
| 16 | 2.970 | .005 | .005 | Height | 2.9749 | 2.9748 | 2.9750 | Touch Probe CMM 2185 | |
| 17 | 0 | .005 | 0 | Parallelism | .0045 | .0038 | .0041 | Touch Probe CMM 2185 | |
| 18 | 2.720 | .005 | .005 | Height | 2.7216 | 2.7198 | 2.7231 | Touch Probe CMM 2185 | |
| 19 | 0 | .005 | 0 | Parallelism | .0034 | .0023 | .0018 | Touch Probe CMM 2185 | |
| 20 | 3.158 | .005 | .005 | Height | 3.1561 | 3.1595 | 3.1602 | Touch Probe CMM 2185 | |
| 21 | .180 | .005 | .005 | Height | .1689 | .1687 | .1678 | Touch Probe CMM 2185 | |
| 22 | 6.500 | .005 | .005 | Diameter | 6.4968 | 6.5032 | 6.4981 | Touch Probe CMM 2185 | |
| 23 | .969 | .005 | .005 | Diameter | .9702 | .9724 | .9717 | Touch Probe CMM 2185 | |
| 24 | 8.433 | .005 | .005 | Diameter | 8.4377 | 8.4358 | 8.4344 | Touch Probe CMM 2185 | |
| 25 | 7.563 | .005 | .005 | Diameter | 7.5631 | 7.5656 | 7.5648 | Touch Probe CMM 2185 | |

Notes: 1. Equipment marked with an asterisk * fall outside The QC Group's A2LA accreditation for measurement.

- 2. Results highlighted yellow are near the high or low limit (>80% of the tolerance). Results in red text are out of tolerance.
- 3. Dim 6 measured surface does not appear very flat as drawn. Almost domed or radius feature present.
- 4. Dim 10C is very rough and appears to have burrs. Tried to clean out but did not improve the numbers much.