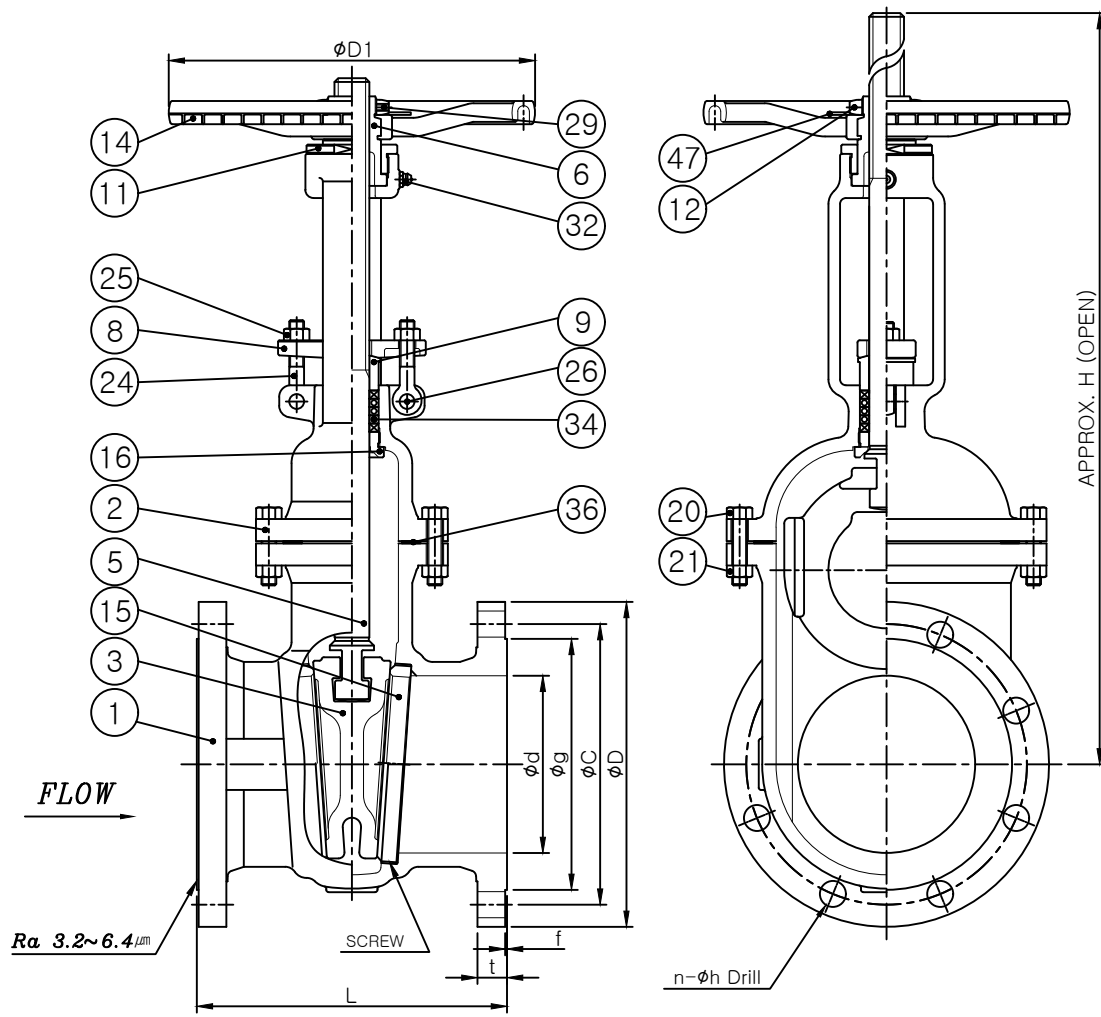




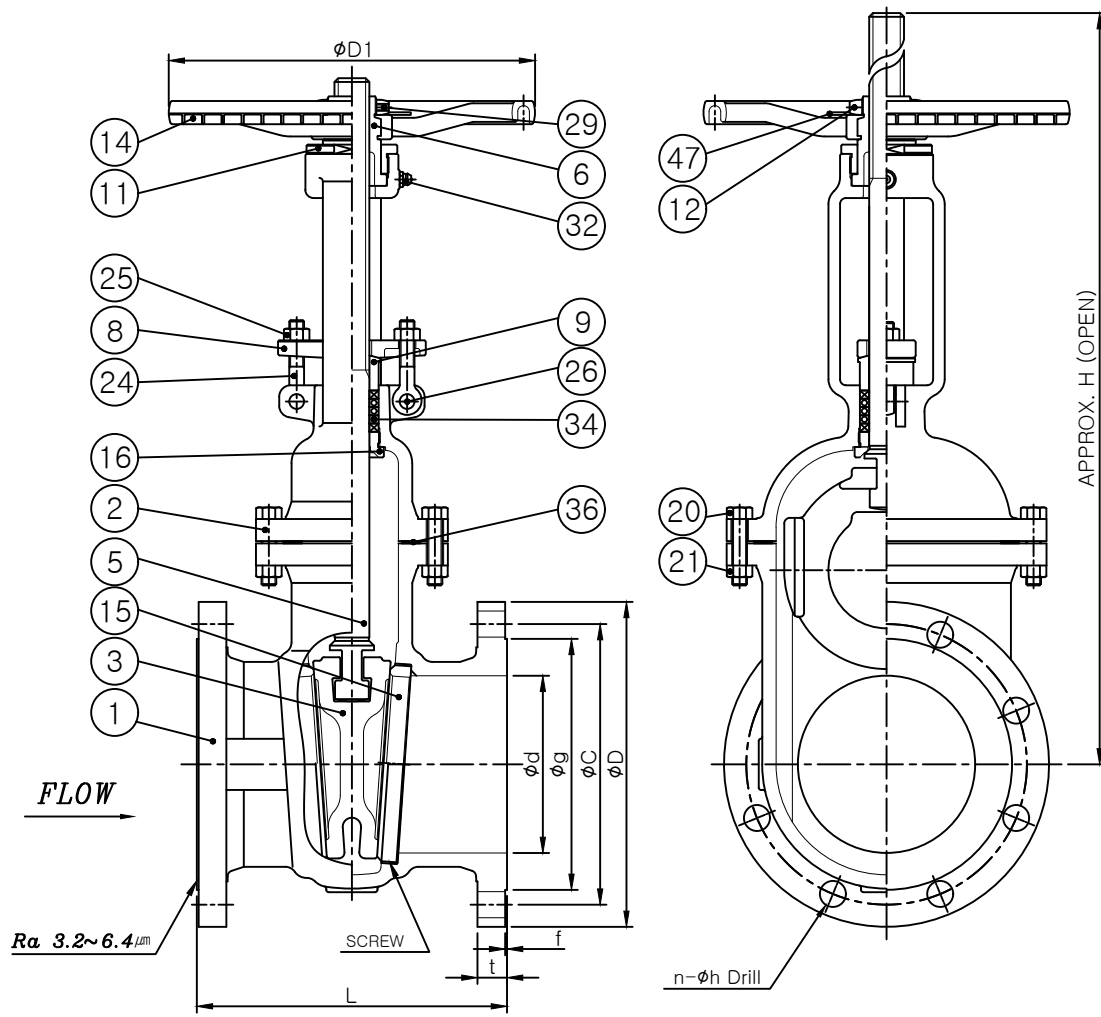
| SIZE<br>(A) | L     | H     | D1    | FLANGED ENDS DIMENSIONS |       |       |        |      |     |             | Q'TY |
|-------------|-------|-------|-------|-------------------------|-------|-------|--------|------|-----|-------------|------|
|             |       |       |       | d                       | D     | C     | g      | t    | f   | n- $\phi$ h |      |
| 65          | 190.0 | 470.0 | 200.0 | 65.0                    | 175.0 | 140.0 | 96.0   | 16.0 | 2.0 | 4-19.0      |      |
| 100         | 229.0 | 630.0 | 260.0 | 100.0                   | 210.0 | 175.0 | 151.0  | 18.0 | 2.0 | 8-19.0      |      |
| 150         | 267.0 | 770.0 | 300.0 | 150.0                   | 280.0 | 240.0 | 2112.0 | 22.0 | 2.0 | 8-23.0      |      |

|                    |                |           |                         |        |
|--------------------|----------------|-----------|-------------------------|--------|
| BODY SEAT SURFACE  |                | STELLITED |                         |        |
| WEDGE SEAT SURFACE |                | STELLITED |                         |        |
| BILL OF MATERIALS  |                |           |                         |        |
| NO                 | PART NAME      | Q'TY      | MATERIAL                | REMARK |
| 1                  | BODY           | 1         | SCPH2                   |        |
| 2                  | BONNET         | 1         | SCPH2                   |        |
| 3                  | DISC           | 1         | SSC13 + STL.            |        |
| 5                  | STEM           | 1         | STS304                  |        |
| 6                  | YOKE SLEEVE    | 1         | BRONZE                  |        |
| 8                  | GLAND FLANGE   | 1         | SS400                   |        |
| 9                  | PACKING GLAND  | 1         | STS410                  |        |
| 11                 | SLEEVE NUT     | 1         | SS400                   |        |
| 12                 | WHEEL NUT      | 1         | SS400                   |        |
| 14                 | HAND WHEEL     | 1         | GCD450                  |        |
| 15                 | BODY SEAT RING | 2         | (SSC13 / STS304) + STL. |        |
| 16                 | BACK SEAT RING | 1         | STS304                  |        |
| 20                 | BONNET BOLT    | 1SET      | SS400                   |        |
| 21                 | BONNET NUT     | 1SET      | SS400                   |        |
| 24                 | HINGE BOLT     | 2         | SM25C                   |        |
| 25                 | HINGE NUT      | 2         | SS400                   |        |
| 26                 | HINGE PIN      | 2         | SS400                   |        |
| 29                 | SET SCREW      | 1         | STEEL                   |        |
| 32                 | NIPPLE         | 1         | BRASS                   |        |
| 34                 | PACKING        | 1SET      | GRAPHITE                |        |
| 36                 | GASKET         | 1         | GRAPHITE                |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        |           | KS B 2361 |                        |
| FACE-TO-FACE DIMENSION |           | KS B 2306 |                        |
| END FLANGE DIMENSION   |           | KS B 1511 |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15kg/cm <sup>2</sup> g |
|                        |           | BACK SEAT | 11kg/cm <sup>2</sup> g |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6kg/cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                                                                                                                                                       |      |           |             |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|-------------|------|
|  <b>WONKWANG VALVE CO.,LTD.</b><br>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA |      |           |             |      |
| TITLE<br>Cast Carbon Steel GATE Valve<br>KS 10K, OS&Y, B.B, RF, Handwheel Type                                                                                        |      |           |             |      |
| SCALE                                                                                                                                                                 | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                                                                                                                 | mm   | 1 / 17    | WK-GT-01    | 0    |



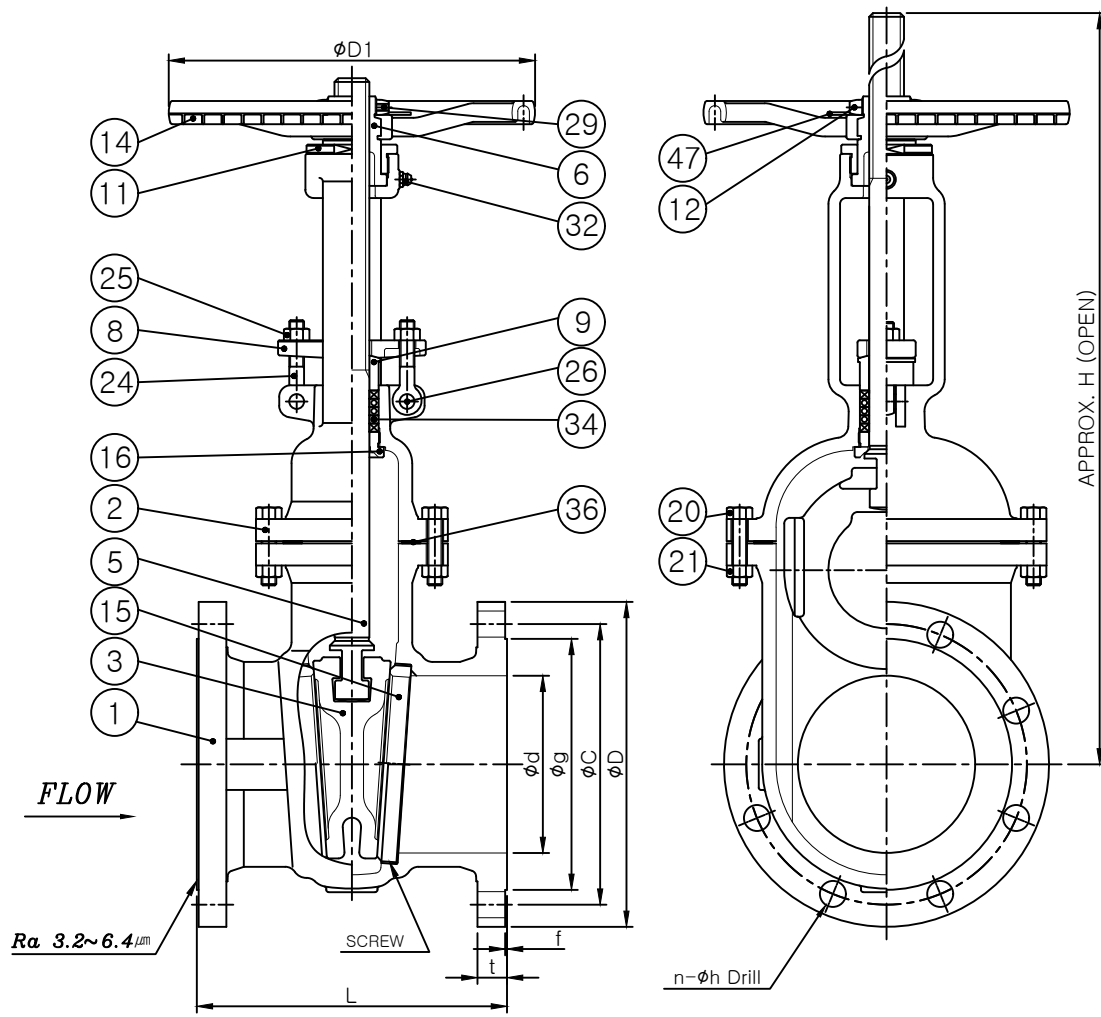
|                    |                |      |               |        |
|--------------------|----------------|------|---------------|--------|
| BODY SEAT SURFACE  |                |      |               | 13Cr.  |
| WEDGE SEAT SURFACE |                |      |               | 13Cr.  |
| BILL OF MATERIALS  |                |      |               |        |
| NO                 | PART NAME      | Q'TY | MATERIAL      | REMARK |
| 1                  | BODY           | 1    | SCPH2         |        |
| 2                  | BONNET         | 1    | SCPH2         |        |
| 3                  | DISC           | 1    | SCPH2 + 13Cr. |        |
| 5                  | STEM           | 1    | STS410        |        |
| 6                  | YOKE SLEEVE    | 1    | BRONZE        |        |
| 8                  | GLAND FLANGE   | 1    | SS400         |        |
| 9                  | PACKING GLAND  | 1    | STS410        |        |
| 11                 | SLEEVE NUT     | 1    | SS400         |        |
| 12                 | WHEEL NUT      | 1    | SS400         |        |
| 14                 | HAND WHEEL     | 1    | GCD450        |        |
| 15                 | BODY SEAT RING | 2    | SF440A + CR13 |        |
| 16                 | BACK SEAT RING | 1    | STS410        |        |
| 20                 | BONNET BOLT    | 1SET | SS400         |        |
| 21                 | BONNET NUT     | 1SET | SS400         |        |
| 24                 | HINGE BOLT     | 2    | SM25C         |        |
| 25                 | HINGE NUT      | 2    | SS400         |        |
| 26                 | HINGE PIN      | 2    | SS400         |        |
| 29                 | SET SCREW      | 1    | STEEL         |        |
| 32                 | NIPPLE         | 1    | BRASS         |        |
| 34                 | PACKING        | 1SET | GRAPHITE      |        |
| 36                 | GASKET         | 1    | GRAPHITE      |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15kg/cm <sup>2</sup> g |
|                        |           | BACK SEAT | 11kg/cm <sup>2</sup> g |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6kg/cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                               |      |           |             |      |  |
|-----------------------------------------------|------|-----------|-------------|------|--|
| WONKWANG VALVE CO.,LTD.                       |      |           |             |      |  |
| 395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA |      |           |             |      |  |
| TITLE                                         |      |           |             |      |  |
| Cast Carbon Steel GATE Valve                  |      |           |             |      |  |
| KS 10K, OS&Y, B.B, RF, Handwheel Type         |      |           |             |      |  |
| SCALE                                         | UNIT | SHEET No. | DRAWING No. | REV. |  |
| N / S                                         | mm   | 2 / 17    | WK-GT-02    | 0    |  |

| SIZE<br>(A) | L     | H     | D1    | FLANGED ENDS DIMENSIONS |       |       |       |      |     |        | Q'TY |
|-------------|-------|-------|-------|-------------------------|-------|-------|-------|------|-----|--------|------|
|             |       |       |       | d                       | D     | C     | g     | t    | f   | n-Øh   |      |
| 125         | 254.0 | 680.0 | 300.0 | 125.0                   | 250.0 | 210.0 | 182.0 | 20.0 | 2.0 | 8-23.0 |      |



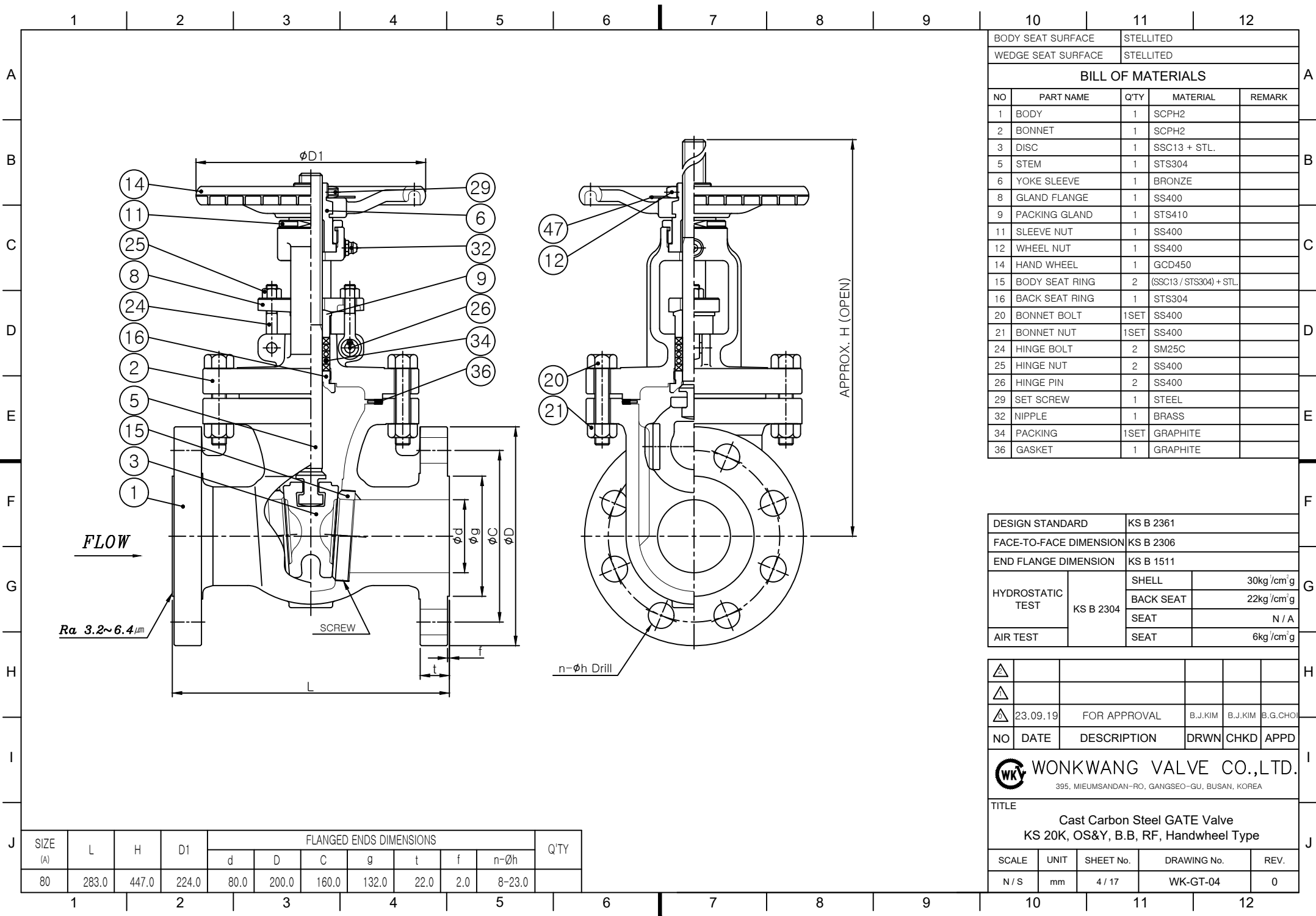
|                    |                |           |                |        |
|--------------------|----------------|-----------|----------------|--------|
| BODY SEAT SURFACE  |                | STELLITED |                |        |
| WEDGE SEAT SURFACE |                | 304       |                |        |
| BILL OF MATERIALS  |                |           |                |        |
| NO                 | PART NAME      | Q'TY      | MATERIAL       | REMARK |
| 1                  | BODY           | 1         | SCS13          |        |
| 2                  | BONNET         | 1         | SCS13          |        |
| 3                  | DISC           | 1         | SSC13 + STL.   |        |
| 5                  | STEM           | 1         | STS304         |        |
| 6                  | YOKE SLEEVE    | 1         | BRONZE         |        |
| 8                  | GLAND FLANGE   | 1         | STS304         |        |
| 9                  | PACKING GLAND  | 1         | STS304         |        |
| 11                 | SLEEVE NUT     | 1         | STS304         |        |
| 12                 | WHEEL NUT      | 1         | STS304         |        |
| 14                 | HAND WHEEL     | 1         | GCD450         |        |
| 15                 | BODY SEAT RING | 2         | SSC13 / STS304 |        |
| 16                 | BACK SEAT RING | 1         | STS304         |        |
| 20                 | BONNET BOLT    | 1SET      | STS304         |        |
| 21                 | BONNET NUT     | 1SET      | STS304         |        |
| 24                 | HINGE BOLT     | 2         | STS304         |        |
| 25                 | HINGE NUT      | 2         | STS304         |        |
| 26                 | HINGE PIN      | 2         | STS304         |        |
| 29                 | SET SCREW      | 1         | SS304          |        |
| 32                 | NIPPLE         | 1         | STEEL+Cr.      |        |
| 34                 | PACKING        | 1SET      | GRAPHITE       |        |
| 36                 | GASKET         | 1         | GRAPHITE       |        |

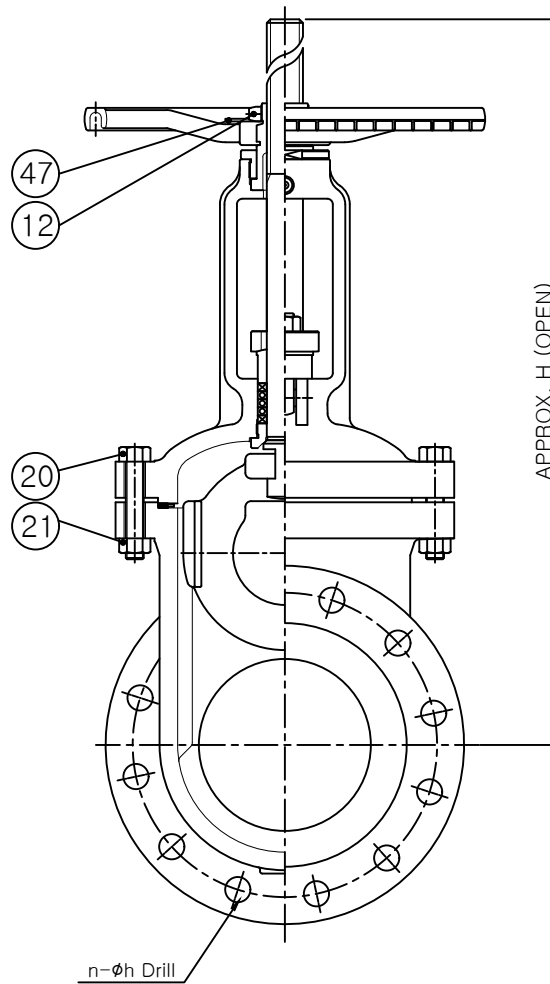
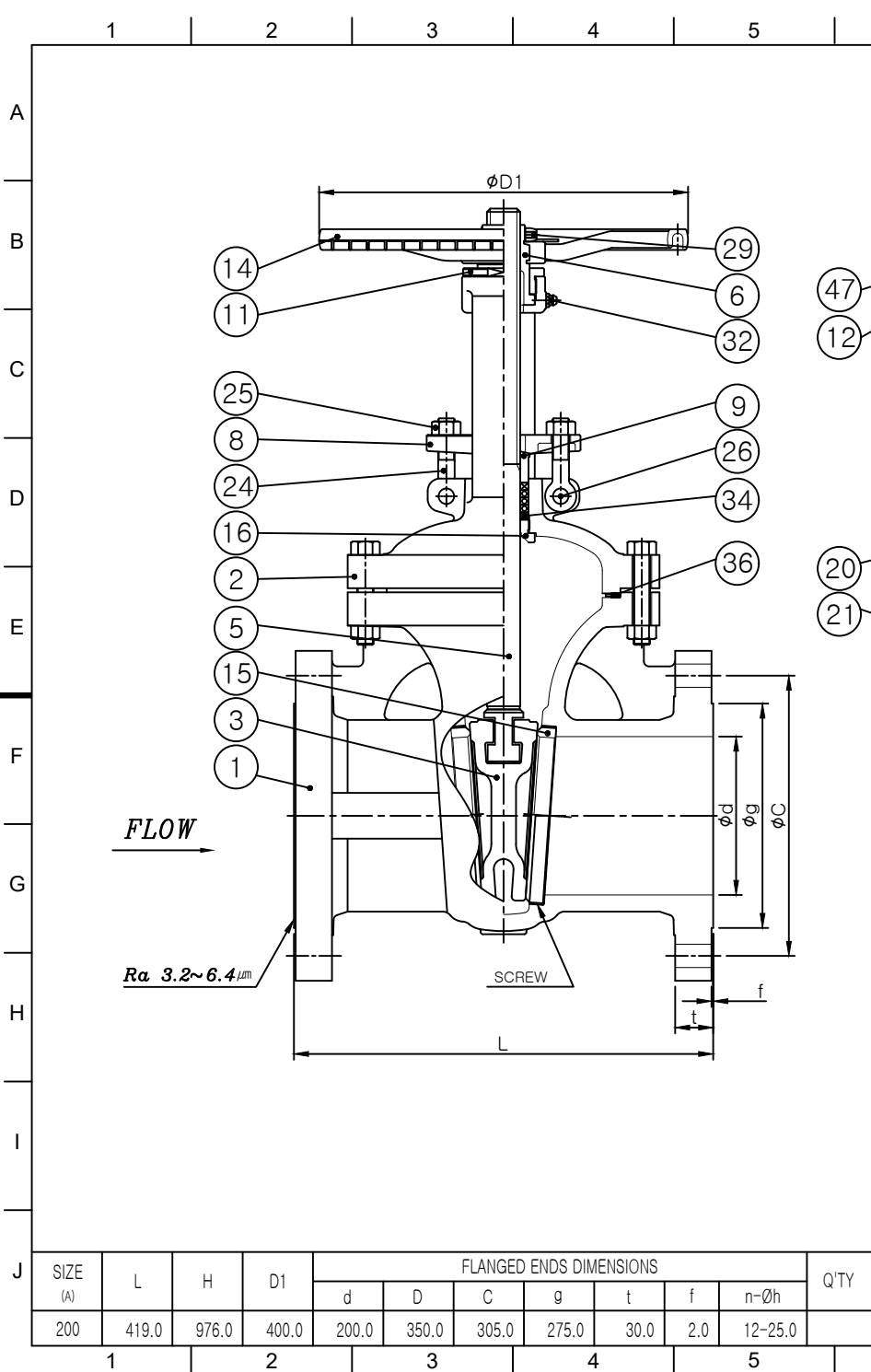
|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        |           | KS B 2361 |                        |
| FACE-TO-FACE DIMENSION |           | KS B 2306 |                        |
| END FLANGE DIMENSION   |           | KS B 1511 |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15kg/cm <sup>2</sup> g |
|                        |           | BACK SEAT | 11kg/cm <sup>2</sup> g |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6kg/cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                                                                                                                           |      |           |             |      |
|-------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|-------------|------|
| <div><div><div></div><div>WKY</div></div><div>WONKWANG VALVE CO.,LTD.</div><div>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA</div></div> |      |           |             |      |
| TITLE                                                                                                                                     |      |           |             |      |
| Cast Stainless Steel GATE Valve<br>KS 10K, OS&Y, B.B, RF, Handwheel Type                                                                  |      |           |             |      |
| SCALE                                                                                                                                     | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                                                                                     | mm   | 3 / 17    | WK-GT-03    | 0    |

| SIZE<br>(A) | L     | H      | D1    | FLANGED ENDS DIMENSIONS |       |       |       |      |     |         | Q'TY |
|-------------|-------|--------|-------|-------------------------|-------|-------|-------|------|-----|---------|------|
|             |       |        |       | d                       | D     | C     | g     | t    | f   | n-Øh    |      |
| 250         | 330.0 | 1131.0 | 400.0 | 250.0                   | 400.0 | 355.0 | 324.0 | 24.0 | 2.0 | 12-25.0 |      |

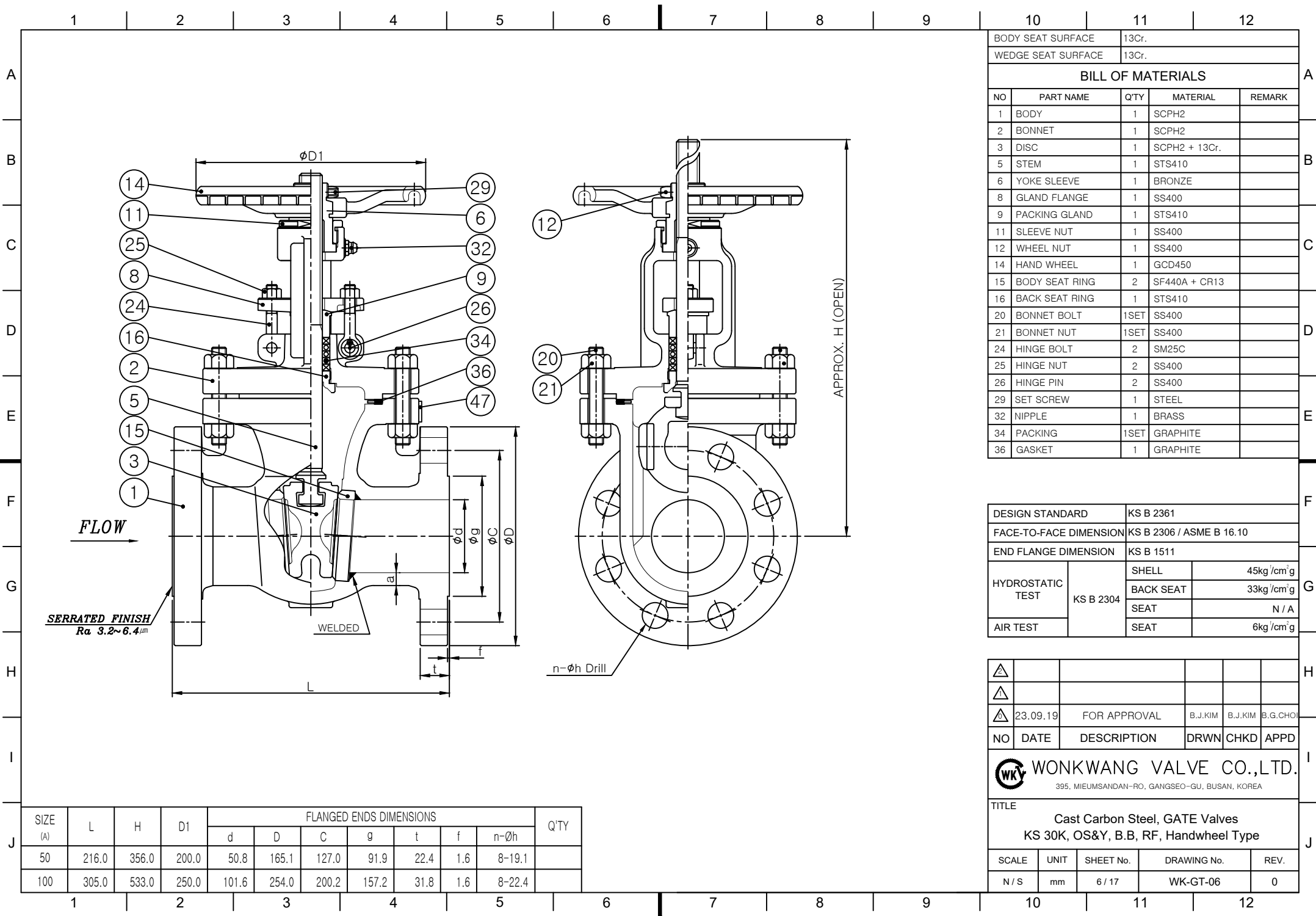


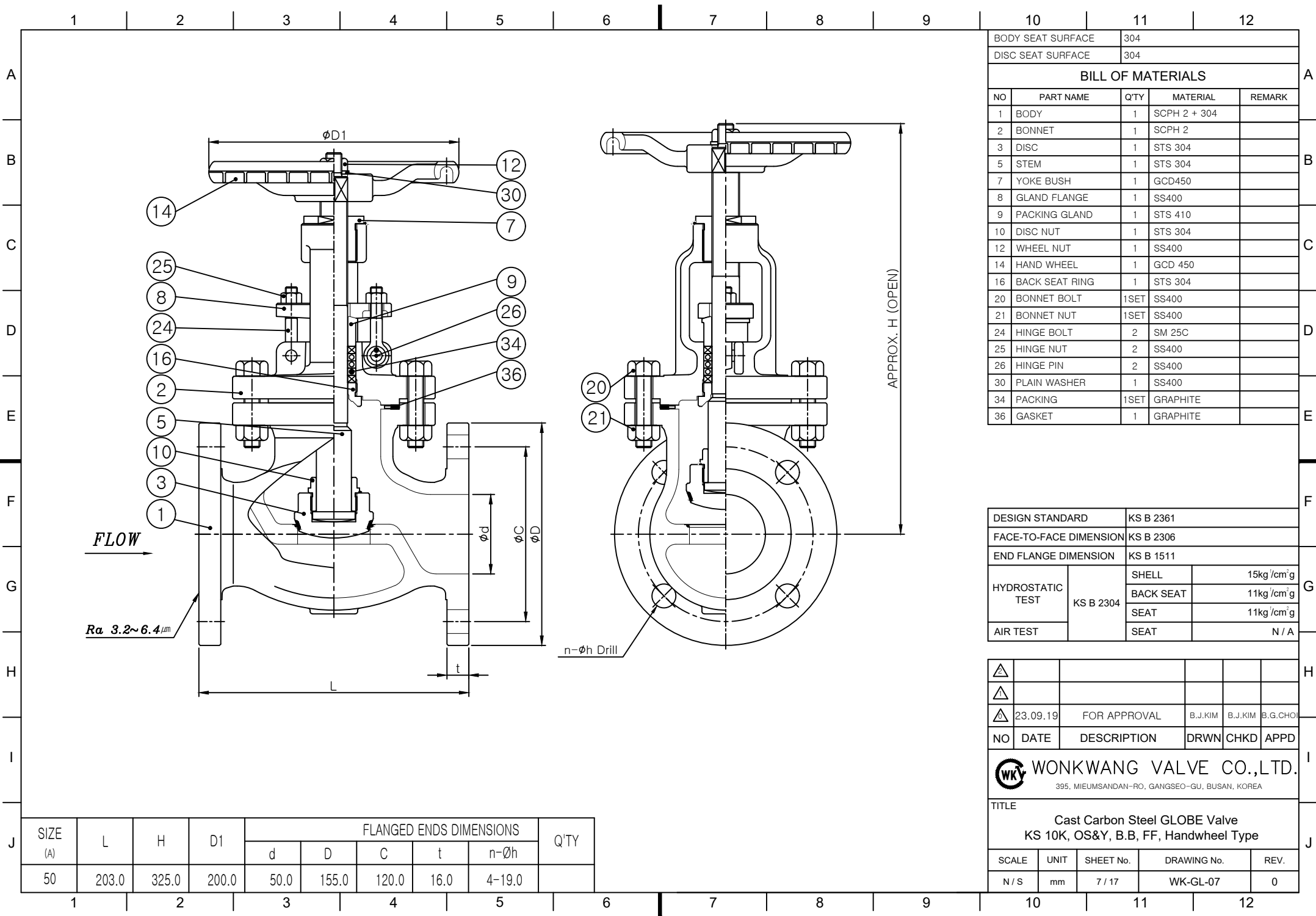


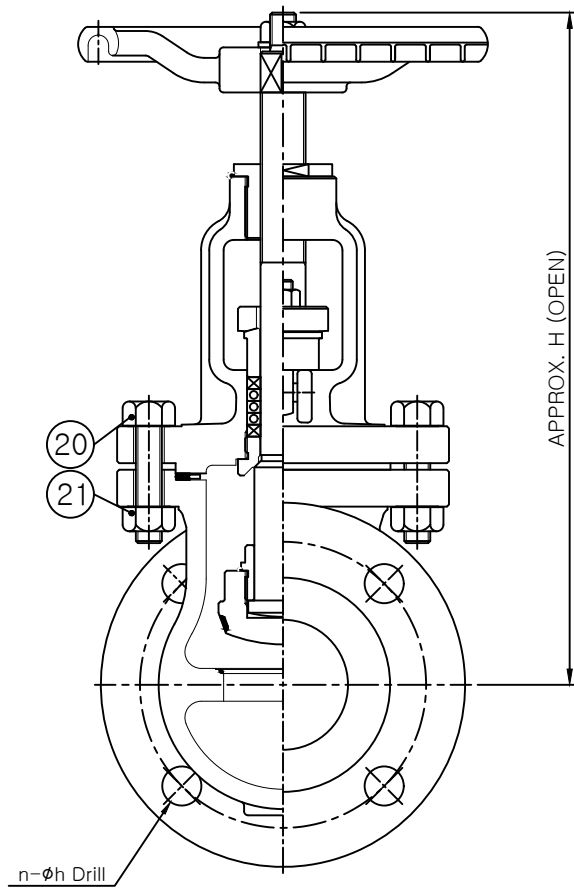
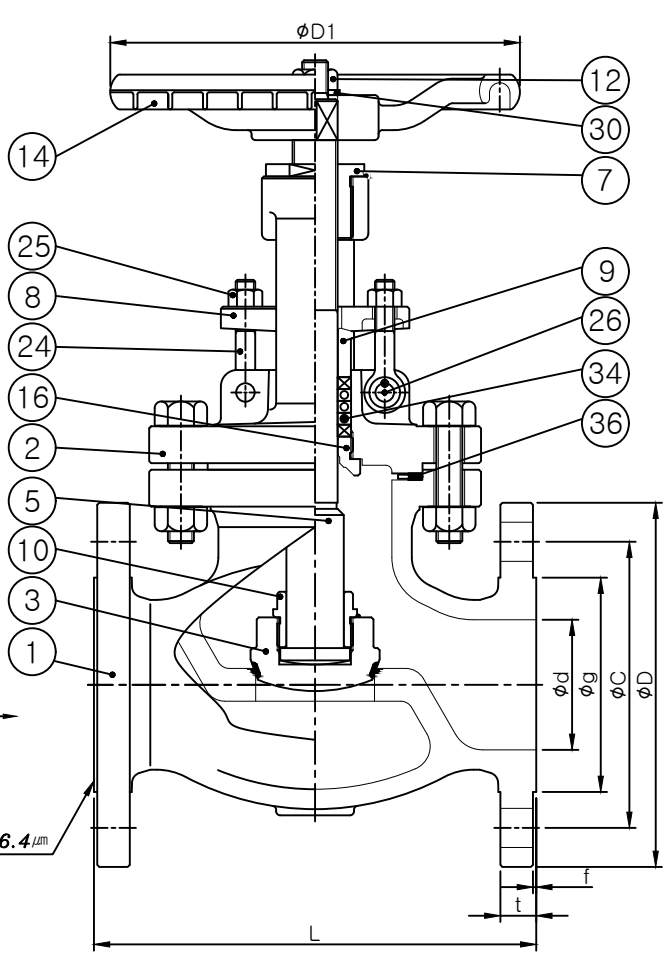
|                    |                |           |                         |        |   |
|--------------------|----------------|-----------|-------------------------|--------|---|
| BODY SEAT SURFACE  |                | STELLITED |                         |        | A |
| WEDGE SEAT SURFACE |                | STELLITED |                         |        |   |
| BILL OF MATERIALS  |                |           |                         |        | B |
| NO                 | PART NAME      | Q'TY      | MATERIAL                | REMARK |   |
| 1                  | BODY           | 1         | SCPH2                   |        |   |
| 2                  | BONNET         | 1         | SCPH2                   |        |   |
| 3                  | DISC           | 1         | SSC13 + STL.            |        |   |
| 5                  | STEM           | 1         | STS304                  |        |   |
| 6                  | YOKE SLEEVE    | 1         | BRONZE                  |        | C |
| 8                  | GLAND FLANGE   | 1         | SS400                   |        |   |
| 9                  | PACKING GLAND  | 1         | STS410                  |        |   |
| 11                 | SLEEVE NUT     | 1         | SS400                   |        |   |
| 12                 | WHEEL NUT      | 1         | SS400                   |        |   |
| 14                 | HAND WHEEL     | 1         | GCD450                  |        | D |
| 15                 | BODY SEAT RING | 2         | (SSC13 / STS304) + STL. |        |   |
| 16                 | BACK SEAT RING | 1         | STS304                  |        |   |
| 20                 | BONNET BOLT    | 1SET      | SS400                   |        |   |
| 21                 | BONNET NUT     | 1SET      | SS400                   |        |   |
| 24                 | HINGE BOLT     | 2         | SM25C                   |        | E |
| 25                 | HINGE NUT      | 2         | SS400                   |        |   |
| 26                 | HINGE PIN      | 2         | SS400                   |        |   |
| 29                 | SET SCREW      | 1         | STEEL                   |        |   |
| 32                 | GREASE NIPPLE  | 1         | BRASS                   |        |   |
| 34                 | PACKING        | 1SET      | GRAPHITE                |        |   |
| 36                 | GASKET         | 1         | GRAPHITE                |        |   |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        |           | KS B 2361 |                        |
| FACE-TO-FACE DIMENSION |           | KS B 2306 |                        |
| END FLANGE DIMENSION   |           | KS B 1511 |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 30kg/cm <sup>2</sup> g |
|                        |           | BACK SEAT | 22kg/cm <sup>2</sup> g |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6kg/cm <sup>2</sup> g  |

| △                                                                                       |          |              |             |         |         |
|-----------------------------------------------------------------------------------------|----------|--------------|-------------|---------|---------|
| △                                                                                       |          |              |             |         |         |
| △                                                                                       | 23.09.19 | FOR APPROVAL | B.J.KIM     | B.J.KIM | B.G.CHO |
| NO                                                                                      | DATE     | DESCRIPTION  | DRWN        | CHKD    | APPD    |
| <b>WONKWANG VALVE CO., LTD.</b><br>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA        |          |              |             |         |         |
| <b>Cast Carbon Steel GATE Valve</b><br><b>KS 20K, OS&amp;Y, B.B, RF, Handwheel Type</b> |          |              |             |         |         |
| SCALE                                                                                   | UNIT     | SHEET No.    | DRAWING No. | REV.    |         |
| N / S                                                                                   | mm       | 5 / 17       | WK-GT-05    | 0       |         |







|                   |       |
|-------------------|-------|
| BODY SEAT SURFACE | 13Cr. |
| DISC SEAT SURFACE | 13Cr. |

| BILL OF MATERIALS |                |      |                |        |
|-------------------|----------------|------|----------------|--------|
| NO                | PART NAME      | Q'TY | MATERIAL       | REMARK |
| 1                 | BODY           | 1    | SCPH 2 + 13Cr. |        |
| 2                 | BONNET         | 1    | SCPH 2         |        |
| 3                 | DISC           | 1    | SCPH2 + 13Cr.  |        |
| 5                 | STEM           | 1    | STS 410        |        |
| 7                 | YOKE BUSH      | 1    | GCD450         |        |
| 8                 | GLAND FLANGE   | 1    | SS400          |        |
| 9                 | PACKING GLAND  | 1    | STS 410        |        |
| 10                | DISC NUT       | 1    | STS 410        |        |
| 12                | WHEEL NUT      | 1    | SS400          |        |
| 14                | HAND WHEEL     | 1    | GCD 450        |        |
| 16                | BACK SEAT RING | 1    | STS 410        |        |
| 20                | BONNET BOLT    | 1SET | SS400          |        |
| 21                | BONNET NUT     | 1SET | SS400          |        |
| 24                | HINGE BOLT     | 2    | SM 25C         |        |
| 25                | HINGE NUT      | 2    | SS400          |        |
| 26                | HINGE PIN      | 2    | SS400          |        |
| 30                | PLAIN WASHER   | 1    | SS400          |        |
| 34                | PACKING        | 1SET | GRAPHITE       |        |
| 36                | GASKET         | 1    | GRAPHITE       |        |

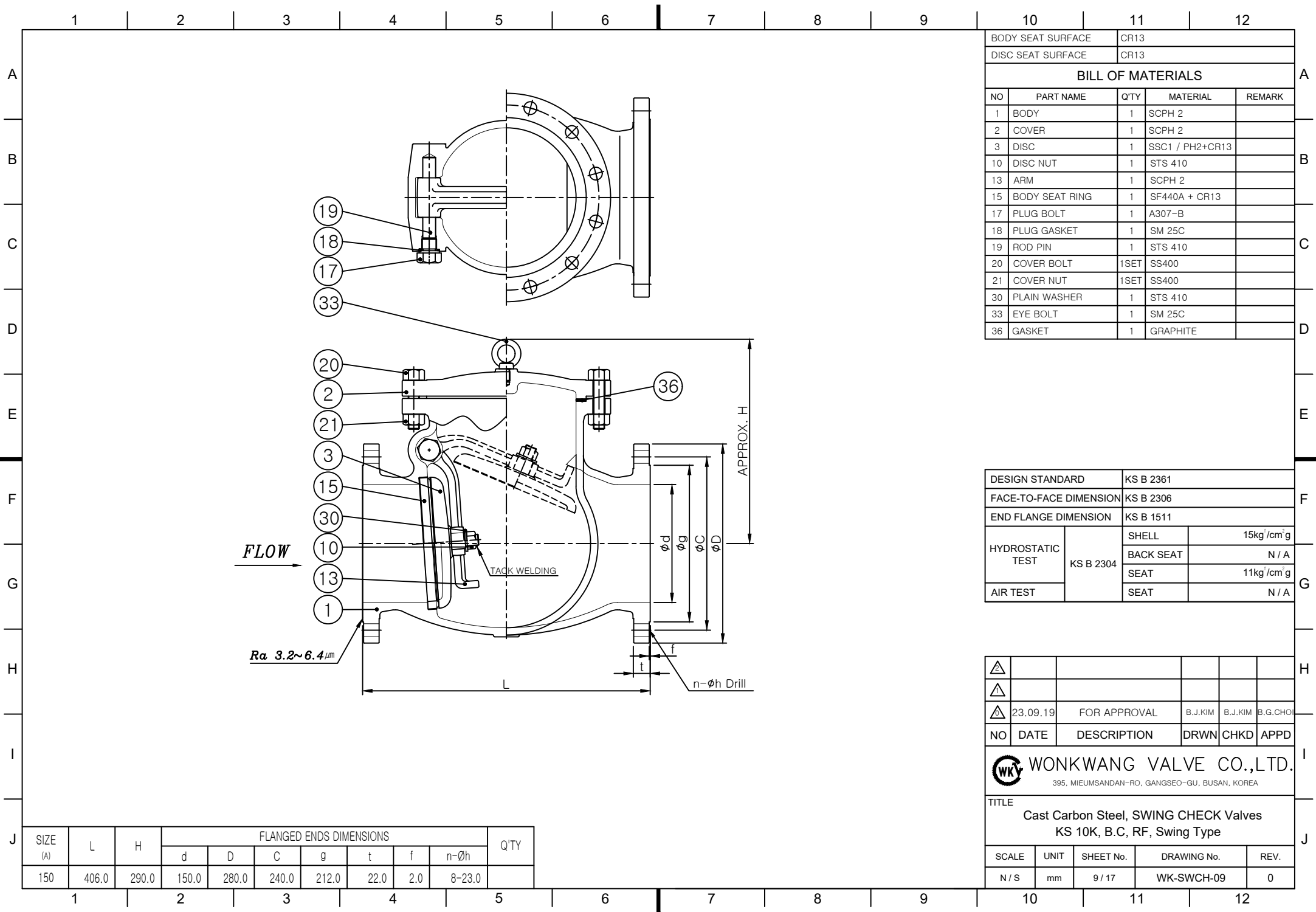
|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15kg/cm <sup>2</sup> g |
|                        |           | BACK SEAT | 11kg/cm <sup>2</sup> g |
|                        |           | SEAT      | 11kg/cm <sup>2</sup> g |
| AIR TEST               |           | SEAT      | N / A                  |

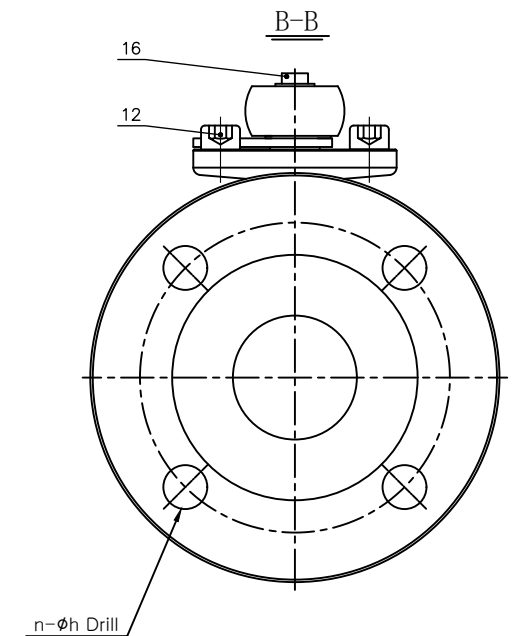
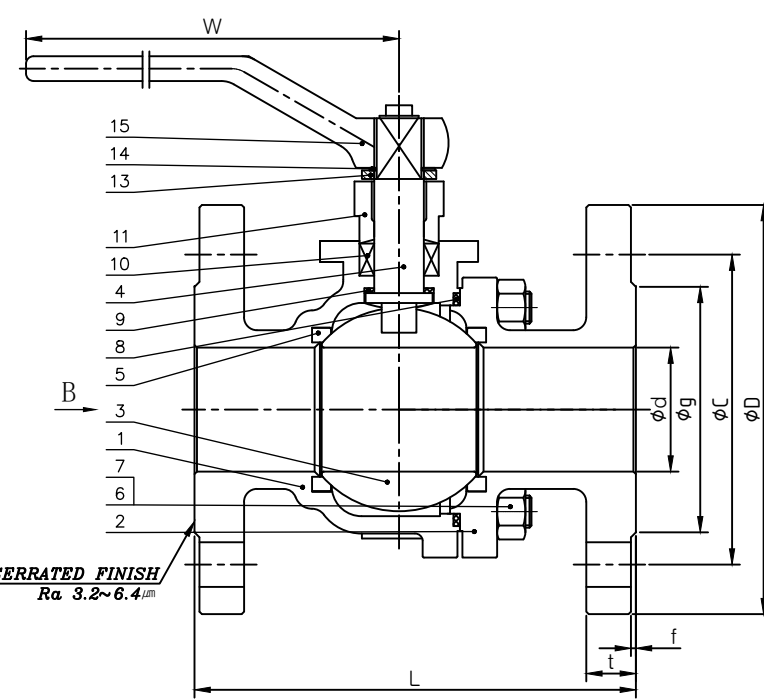
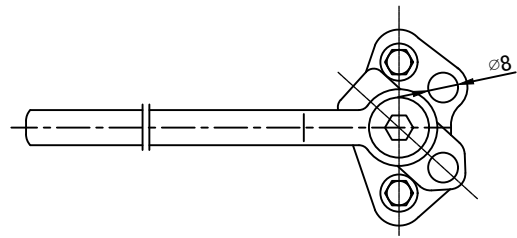
|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                                                                                                                |      |           |             |      |
|--------------------------------------------------------------------------------------------------------------------------------|------|-----------|-------------|------|
| <div><div><div>WKY</div></div><div>WONKWANG VALVE CO.,LTD.</div><div>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA</div></div> |      |           |             |      |
| TITLE                                                                                                                          |      |           |             |      |
| Cast Stainless Steel GLOBE Valve<br>KS 10K, OS&Y, B.B, RF, Handwheel Type                                                      |      |           |             |      |
| SCALE                                                                                                                          | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                                                                          | mm   | 8 / 17    | WK-GL-08    | 0    |

| SIZE<br>(A) | L     | H     | D1    | FLANGED ENDS DIMENSIONS |       |       |       |      |     |         | Q'TY |
|-------------|-------|-------|-------|-------------------------|-------|-------|-------|------|-----|---------|------|
|             |       |       |       | d                       | D     | C     | g     | t    | f   | n-Øh    |      |
| 250         | 622.0 | 708.0 | 450.0 | 250.0                   | 400.0 | 355.0 | 324.0 | 24.0 | 2.0 | 12-25.0 |      |







# BILL OF MATERIALS

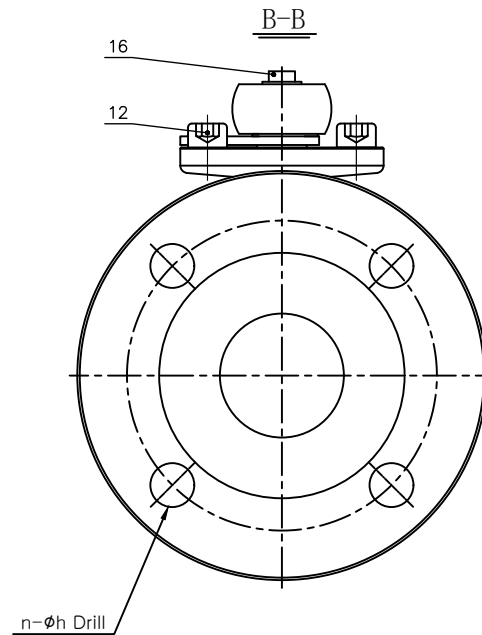
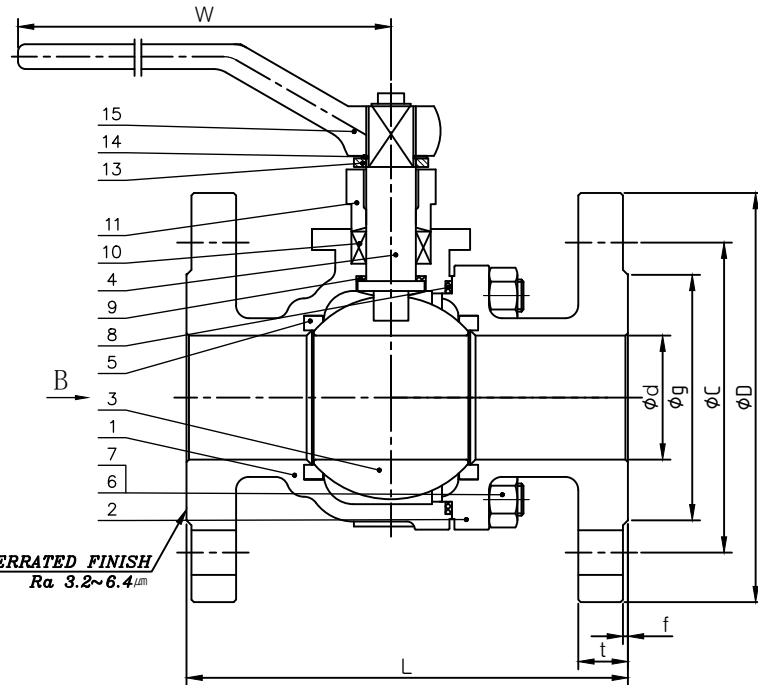
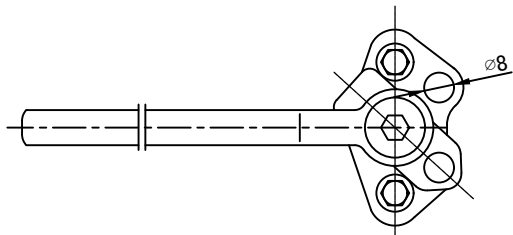
| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SCPH2    |        |
| 2  | CAP            | 1    | SCPH2    |        |
| 3  | BALL           | 1    | STS 304  |        |
| 4  | STEM           | 1    | STS 304  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B7  |        |
| 7  | NUT            | 1    | A194-2H  |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SCPH2    |        |
| 12 | BOLT           | 1    | A193-B7  |        |
| 13 | STOP PLATE     | 1    | STS 304  |        |
| 14 | WASHER         | 1    | STS 304  |        |
| 15 | LEVER          | 1    | STS 400  |        |
| 16 | BOLT           | 1    | STS 304  |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                                                                                                |      |           |             |      |
|----------------------------------------------------------------------------------------------------------------|------|-----------|-------------|------|
| <div> <div>WKY</div> <div> WONKWANG VALVE CO.,LTD. 395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA </div> </div> |      |           |             |      |
| TITLE<br>Cast Carbon Steel, BALL Valves<br>KS 10K, B.C, RF, LEVER Type                                         |      |           |             |      |
| SCALE                                                                                                          | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                                                          | mm   | 10 / 17   | WK-BA-10    | 0    |

| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |       |      |     |        | Q'TY |
|-------------|-------|-------|-------------------------|-------|-------|-------|------|-----|--------|------|
|             |       |       | d                       | D     | C     | g     | t    | f   | n-øh   |      |
| 50          | 178.0 | 235.0 | 50.0                    | 155.0 | 120.0 | 96.0  | 16.0 | 2.0 | 4-19.0 |      |
| 65          | 190.0 | 250.0 | 65.0                    | 175.0 | 140.0 | 116.0 | 18.0 | 2.0 | 4-19.0 |      |
| 80          | 203.0 | 350.0 | 80.0                    | 185.0 | 150.0 | 126.0 | 18.0 | 2.0 | 8-19.0 |      |



# BILL OF MATERIALS

| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SCPH2    |        |
| 2  | CAP            | 1    | SCPH2    |        |
| 3  | BALL           | 1    | SUS 304  |        |
| 4  | STEM           | 1    | SUS 304  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B7  |        |
| 7  | NUT            | 1    | A194-2H  |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SCPH2    |        |
| 12 | BOLT           | 1    | A193-B7  |        |
| 13 | STOP PLATE     | 1    | SUS 304  |        |
| 14 | WASHER         | 1    | SUS 304  |        |
| 15 | LEVER          | 1    | SUS 400  |        |
| 16 | BOLT           | 1    | SUS 304  |        |

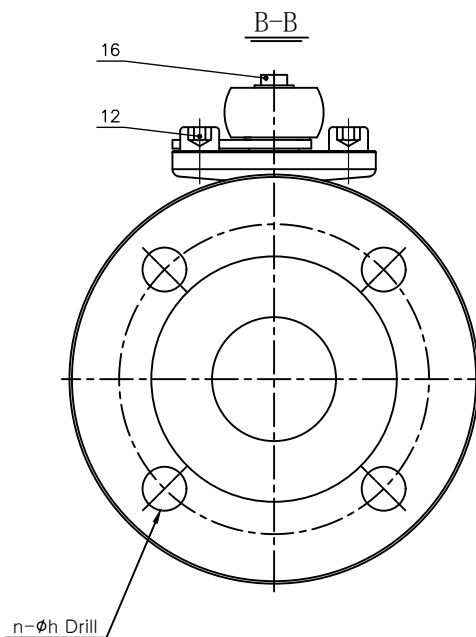
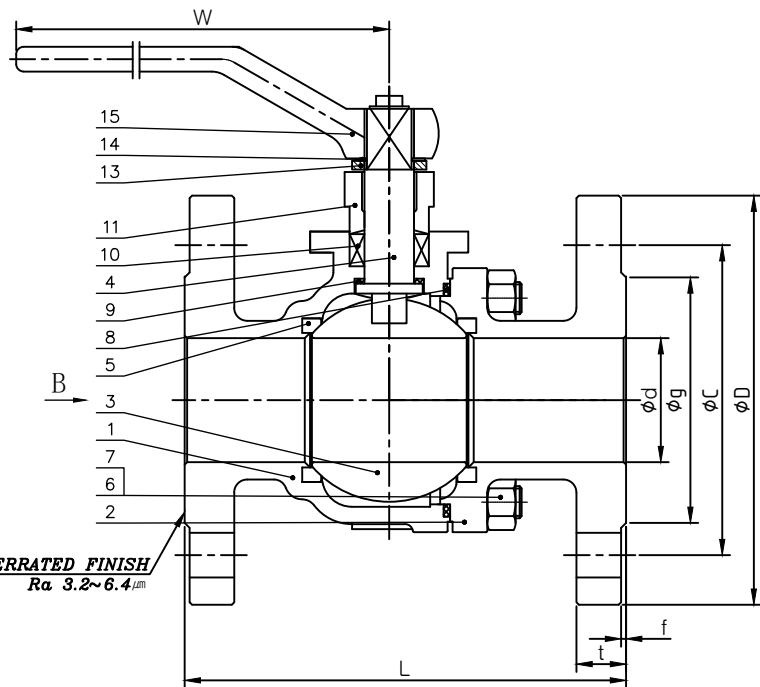
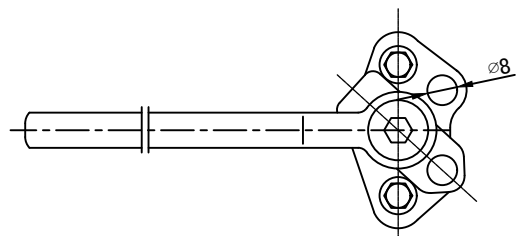
|                        |            |            |                         |
|------------------------|------------|------------|-------------------------|
| DESIGN STANDARD        |            | JIS B 2071 |                         |
| FACE-TO-FACE DIMENSION |            | JIS B 2002 |                         |
| END FLANGE DIMENSION   |            | JIS B 2220 |                         |
| HYDROSTATIC TEST       | JIS B 2003 | SHELL      | 15Kg'/Cm <sup>2</sup> g |
|                        |            | BACK SEAT  | N / A                   |
|                        |            | SEAT       | N / A                   |
| AIR TEST               |            | SEAT       | 6Kg'/Cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

**WONKWANG VALVE CO.,LTD.**  
395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA

|                                                                         |      |           |             |      |
|-------------------------------------------------------------------------|------|-----------|-------------|------|
| TITLE<br>Cast Carbon Steel, BALL Valves<br>JIS 10K, B.C, RF, LEVER Type |      |           |             |      |
| SCALE                                                                   | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                   | mm   | 11 / 17   | WK-BA-11    | 0    |

| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |       |      |     |        | Q'TY |
|-------------|-------|-------|-------------------------|-------|-------|-------|------|-----|--------|------|
|             |       |       | d                       | D     | C     | g     | t    | f   | n-øh   |      |
| 150         | 394.0 | 525.0 | 150.0                   | 280.0 | 240.0 | 212.0 | 22.0 | 2.0 | 8-23.0 |      |



| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |       |      |     |        | Q'TY |
|-------------|-------|-------|-------------------------|-------|-------|-------|------|-----|--------|------|
|             |       |       | d                       | D     | C     | g     | t    | f   | n-Øh   |      |
| 25          | 127.0 | 160.0 | 25.0                    | 125.0 | 90.0  | 67.0  | 14.0 | 1.0 | 4-19.0 |      |
| 40          | 165.0 | 235.0 | 40.0                    | 140.0 | 105.0 | 81.0  | 16.0 | 2.0 | 4-19.0 |      |
| 50          | 178.0 | 235.0 | 50.0                    | 155.0 | 120.0 | 96.0  | 16.0 | 2.0 | 4-19.0 |      |
| 65          | 190.0 | 250.0 | 65.0                    | 175.0 | 140.0 | 116.0 | 18.0 | 2.0 | 4-19.0 |      |
| 80          | 203.0 | 350.0 | 80.0                    | 185.0 | 150.0 | 126.0 | 18.0 | 2.0 | 8-19.0 |      |
| 100         | 229.0 | 350.0 | 100.0                   | 210.0 | 175.0 | 151.0 | 18.0 | 2.0 | 8-19.0 |      |

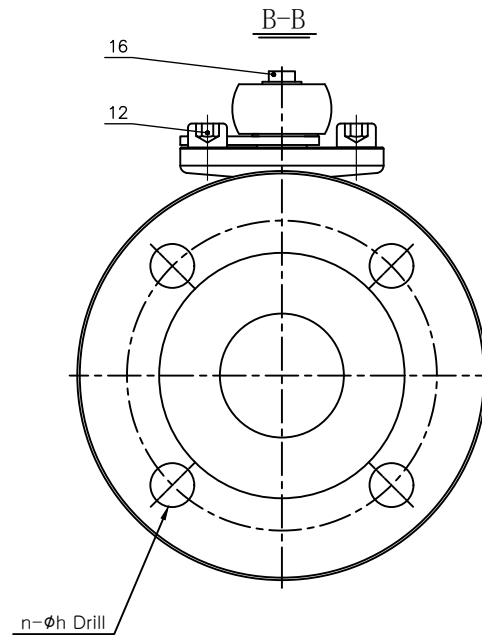
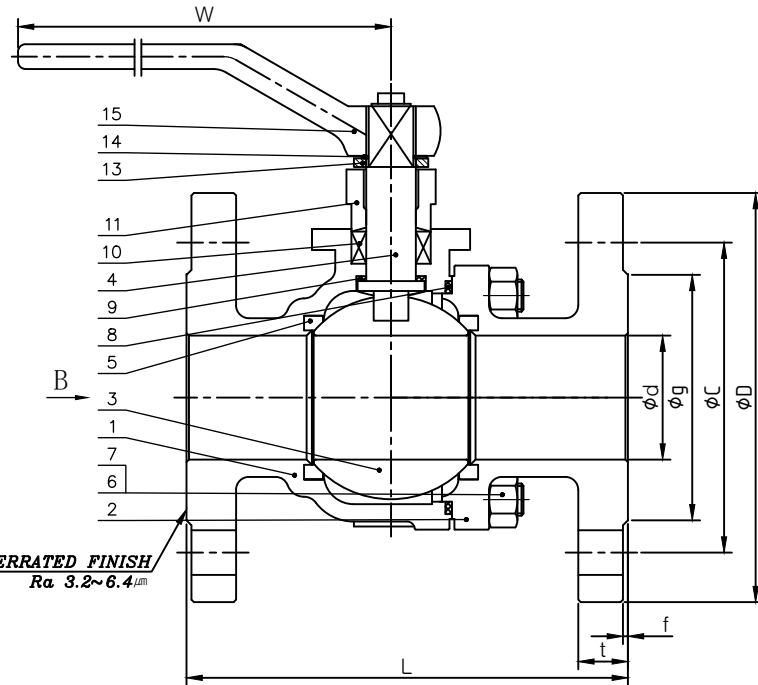
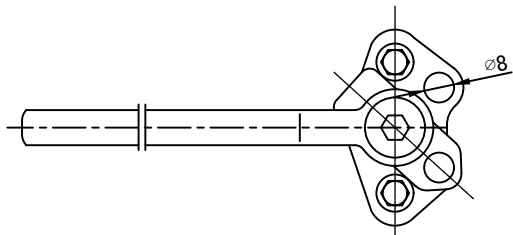
# BILL OF MATERIALS

| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SSC13    |        |
| 2  | CAP            | 1    | SSC13    |        |
| 3  | BALL           | 1    | STS 304  |        |
| 4  | STEM           | 1    | STS 304  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B8  |        |
| 7  | NUT            | 1    | A194-8   |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SSC13    |        |
| 12 | BOLT           | 1    | A193-B8  |        |
| 13 | STOP PLATE     | 1    | STS 304  |        |
| 14 | WASHER         | 1    | STS 304  |        |
| 15 | LEVER          | 1    | STS 400  |        |
| 16 | BOLT           | 1    | STS 304  |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        |           | KS B 2361 |                        |
| FACE-TO-FACE DIMENSION |           | KS B 2306 |                        |
| END FLANGE DIMENSION   |           | KS B 1511 |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

|                                                                                                                                                                        |      |           |             |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|-------------|------|
|  <b>WONKWANG VALVE CO., LTD.</b><br>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA |      |           |             |      |
| <b>TITLE</b><br>Cast Stainless Steel, BALL Valves<br>KS 10K, B.C, RF, LEVER Type                                                                                       |      |           |             |      |
| SCALE                                                                                                                                                                  | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                                                                                                                  | mm   | 12 / 17   | WK-BA-12    | 0    |



# BILL OF MATERIALS

| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SSC14    |        |
| 2  | CAP            | 1    | SSC14    |        |
| 3  | BALL           | 1    | STS 316  |        |
| 4  | STEM           | 1    | STS 316  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B8  |        |
| 7  | NUT            | 1    | A194-8   |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SSC13    |        |
| 12 | BOLT           | 1    | A193-B8  |        |
| 13 | STOP PLATE     | 1    | STS 304  |        |
| 14 | WASHER         | 1    | STS 304  |        |
| 15 | LEVER          | 1    | STS 400  |        |
| 16 | BOLT           | 1    | STS 304  |        |

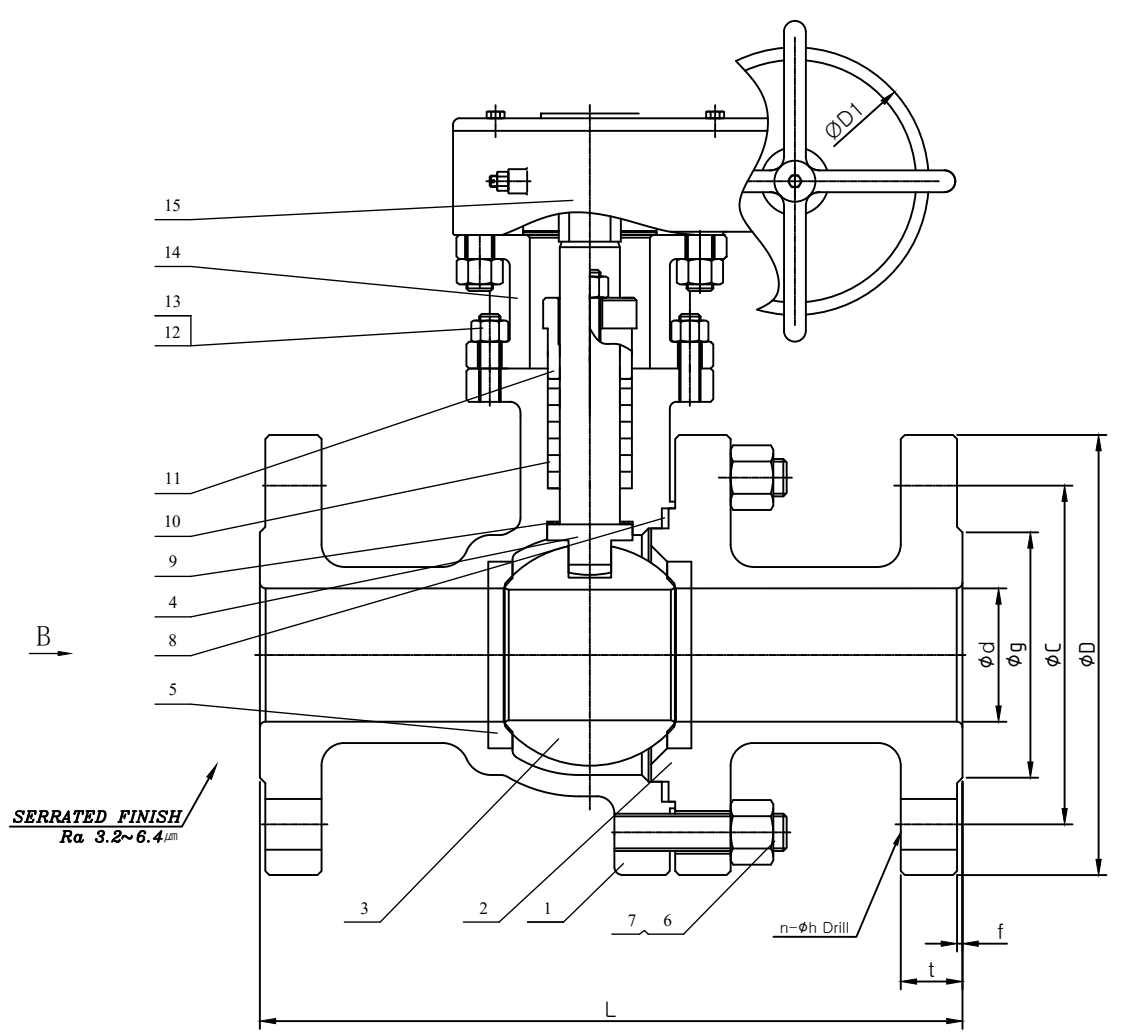
|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |

**WONKWANG VALVE CO.,LTD.**  
395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA

|                                                                         |      |           |             |      |
|-------------------------------------------------------------------------|------|-----------|-------------|------|
| TITLE<br>Cast Carbon Steel, BALL Valves<br>JIS 10K, B.C, RF, LEVER Type |      |           |             |      |
| SCALE                                                                   | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                                   | mm   | 13 / 17   | WK-BA-13    | 0    |

| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |      |      |     |        | Q'TY |
|-------------|-------|-------|-------------------------|-------|-------|------|------|-----|--------|------|
|             |       |       | d                       | D     | C     | g    | t    | f   | n-øh   |      |
| 50          | 178.0 | 235.0 | 50.0                    | 155.0 | 120.0 | 96.0 | 16.0 | 2.0 | 4-19.0 |      |



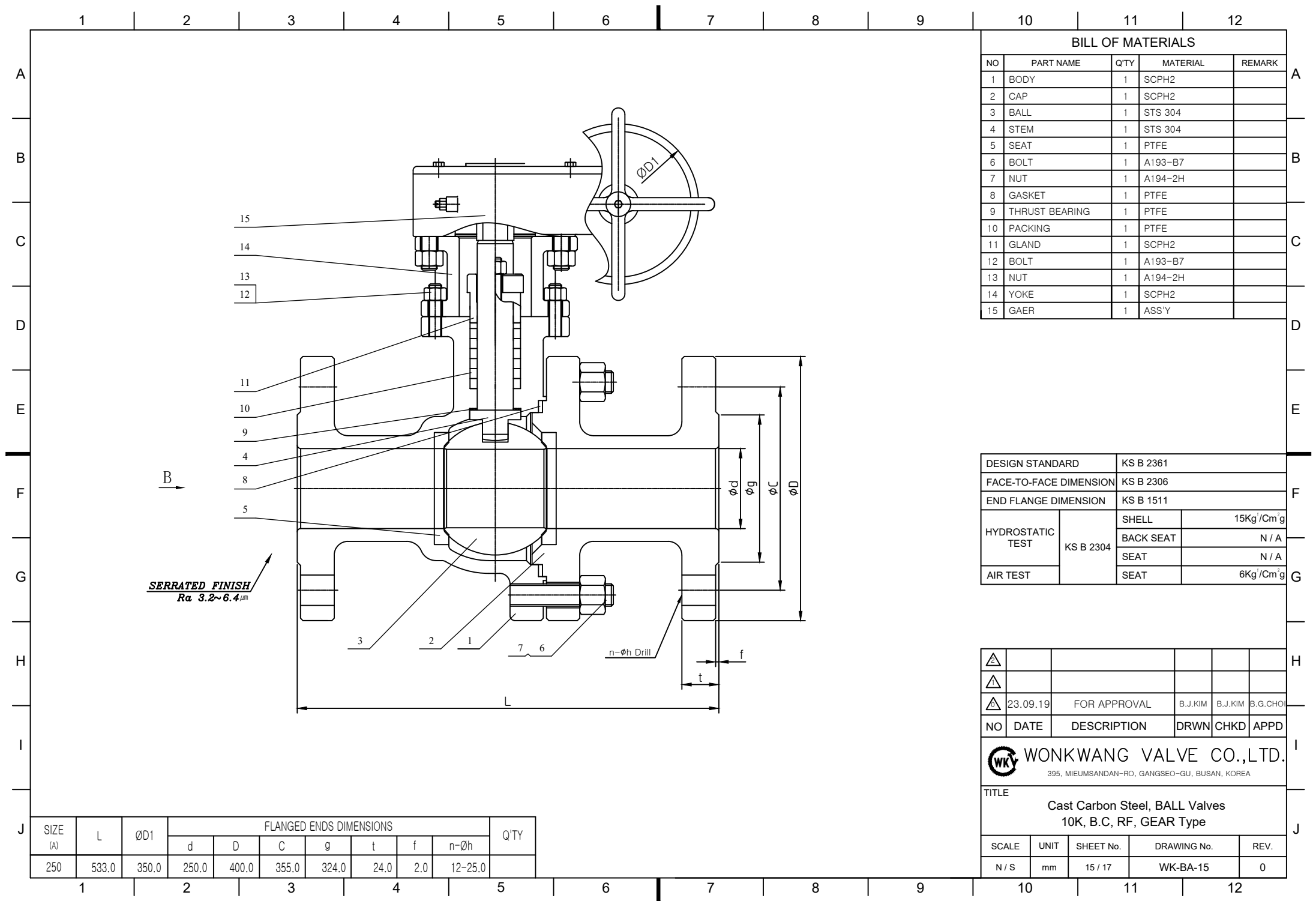
SERRATED FINISH  
Ra 3.2~6.4µm

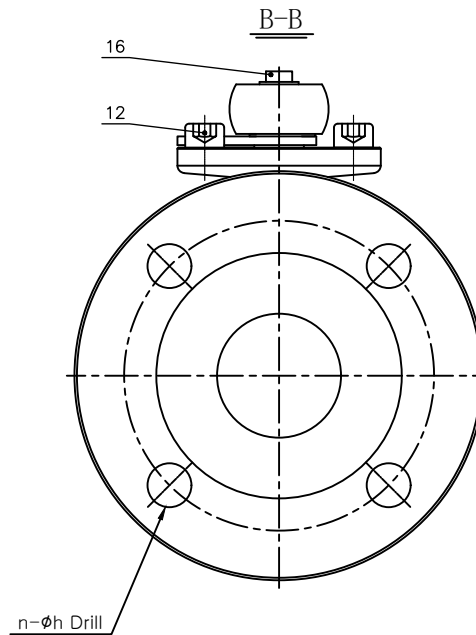
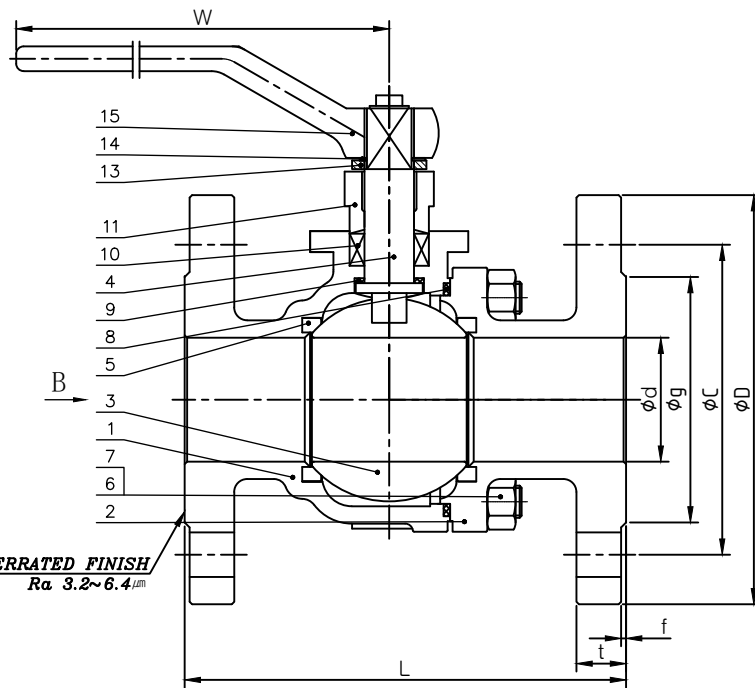
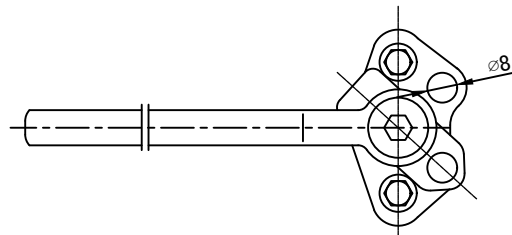
| SIZE<br>(A) | L     | ØD1   | FLANGED ENDS DIMENSIONS |       |       |       |      |     |         | Q'TY |
|-------------|-------|-------|-------------------------|-------|-------|-------|------|-----|---------|------|
|             |       |       | d                       | D     | C     | g     | t    | f   | n-Øh    |      |
| 200         | 457.0 | 300.0 | 200.0                   | 330.0 | 290.0 | 262.0 | 22.0 | 2.0 | 12-23.0 |      |

| BILL OF MATERIALS |                |      |          |        |
|-------------------|----------------|------|----------|--------|
| NO                | PART NAME      | Q'TY | MATERIAL | REMARK |
| 1                 | BODY           | 1    | SSC13    |        |
| 2                 | CAP            | 1    | SSC13    |        |
| 3                 | BALL           | 1    | STS 304  |        |
| 4                 | STEM           | 1    | STS 304  |        |
| 5                 | SEAT           | 1    | PTFE     |        |
| 6                 | BOLT           | 1    | A193-B8  |        |
| 7                 | NUT            | 1    | A194-8   |        |
| 8                 | GASKET         | 1    | PTFE     |        |
| 9                 | THRUST BEARING | 1    | PTFE     |        |
| 10                | PACKING        | 1    | PTFE     |        |
| 11                | GLAND          | 1    | SSC13    |        |
| 12                | BOLT           | 1    | A193-B8  |        |
| 13                | NUT            | 1    | A194-8   |        |
| 14                | YOKE           | 1    | SSC13    |        |
| 15                | GEAR           | 1    | ASS'Y    |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        |           | KS B 2361 |                        |
| FACE-TO-FACE DIMENSION |           | KS B 2306 |                        |
| END FLANGE DIMENSION   |           | KS B 1511 |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 15Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

|                                                                                                                     |          |              |             |         |         |
|---------------------------------------------------------------------------------------------------------------------|----------|--------------|-------------|---------|---------|
| △                                                                                                                   |          |              |             |         |         |
| △                                                                                                                   |          |              |             |         |         |
| △                                                                                                                   | 23.09.19 | FOR APPROVAL | B.J.KIM     | B.J.KIM | B.G.CHO |
| NO                                                                                                                  | DATE     | DESCRIPTION  | DRWN        | CHKD    | APPD    |
| <div><div>WKY</div><div>WONKWANG VALVE CO.,LTD.</div><div>395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA</div></div> |          |              |             |         |         |
| TITLE                                                                                                               |          |              |             |         |         |
| Cast Carbon Steel, BALL Valves<br>10K, B.C, RF, GEAR Type                                                           |          |              |             |         |         |
| SCALE                                                                                                               | UNIT     | SHEET No.    | DRAWING No. | REV.    |         |
| N / S                                                                                                               | mm       | 14 / 17      | WK-BA-14    | 0       |         |





# BILL OF MATERIALS

| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SSC13    |        |
| 2  | CAP            | 1    | SSC13    |        |
| 3  | BALL           | 1    | STS 304  |        |
| 4  | STEM           | 1    | STS 304  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B8  |        |
| 7  | NUT            | 1    | A194-8   |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SSC13    |        |
| 12 | BOLT           | 1    | A193-B8  |        |
| 13 | STOP PLATE     | 1    | STS 304  |        |
| 14 | WASHER         | 1    | STS 304  |        |
| 15 | LEVER          | 1    | STS 400  |        |
| 16 | BOLT           | 1    | STS 304  |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 30Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

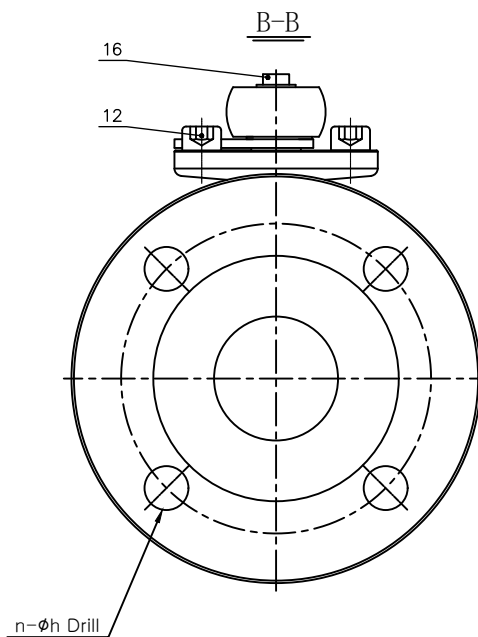
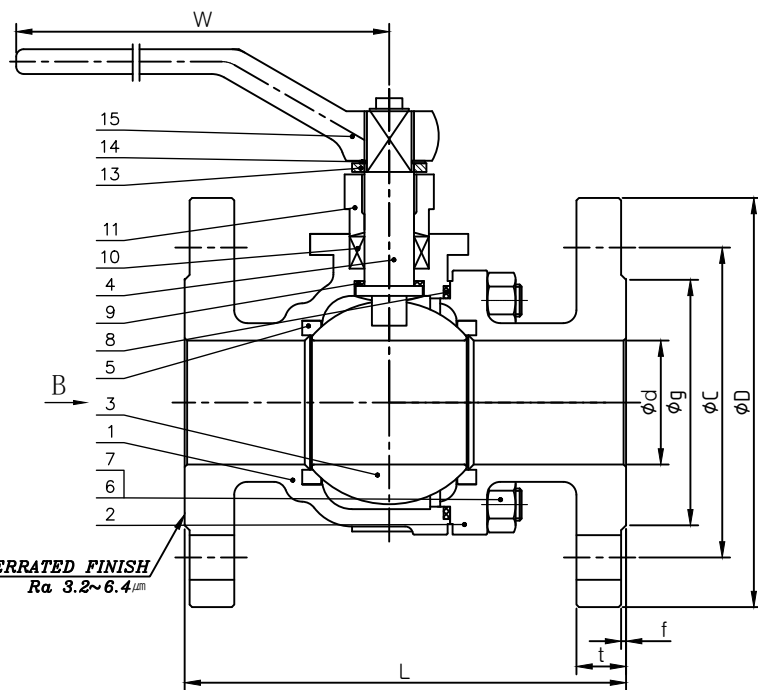
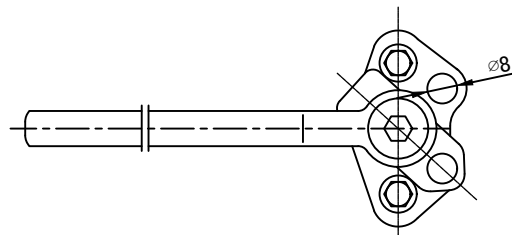
|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |



|                                                                  |      |           |             |      |
|------------------------------------------------------------------|------|-----------|-------------|------|
| TITLE                                                            |      |           |             |      |
| Cast Stainless Steel, BALL Valves<br>KS 20K, B.C, RF, LEVER Type |      |           |             |      |
| SCALE                                                            | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S                                                            | mm   | 16 / 17   | WK-BA-16    | 0    |

| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |       |      |     | Q'TY   |
|-------------|-------|-------|-------------------------|-------|-------|-------|------|-----|--------|
|             |       |       | d                       | D     | C     | g     | t    | f   |        |
| 50          | 216.0 | 250.0 | 50.0                    | 155.0 | 120.0 | 96.0  | 18.0 | 2.0 | 8-19.0 |
| 80          | 283.0 | 350.0 | 80.0                    | 200.0 | 160.0 | 132.0 | 22.0 | 2.0 | 8-23.0 |





## BILL OF MATERIALS

| NO | PART NAME      | Q'TY | MATERIAL | REMARK |
|----|----------------|------|----------|--------|
| 1  | BODY           | 1    | SSC13    |        |
| 2  | CAP            | 1    | SSC13    |        |
| 3  | BALL           | 1    | STS 304  |        |
| 4  | STEM           | 1    | STS 304  |        |
| 5  | SEAT           | 1    | PTFE     |        |
| 6  | BOLT           | 1    | A193-B8  |        |
| 7  | NUT            | 1    | A194-8   |        |
| 8  | GASKET         | 1    | PTFE     |        |
| 9  | THRUST BEARING | 1    | PTFE     |        |
| 10 | PACKING        | 1    | PTFE     |        |
| 11 | GLAND          | 1    | SSC13    |        |
| 12 | BOLT           | 1    | A193-B8  |        |
| 13 | STOP PLATE     | 1    | STS 304  |        |
| 14 | WASHER         | 1    | STS 304  |        |
| 15 | LEVER          | 1    | STS 400  |        |
| 16 | BOLT           | 1    | STS 304  |        |

|                        |           |           |                        |
|------------------------|-----------|-----------|------------------------|
| DESIGN STANDARD        | KS B 2361 |           |                        |
| FACE-TO-FACE DIMENSION | KS B 2306 |           |                        |
| END FLANGE DIMENSION   | KS B 1511 |           |                        |
| HYDROSTATIC TEST       | KS B 2304 | SHELL     | 30Kg/Cm <sup>2</sup> g |
|                        |           | BACK SEAT | N / A                  |
|                        |           | SEAT      | N / A                  |
| AIR TEST               |           | SEAT      | 6Kg/Cm <sup>2</sup> g  |

|    |          |              |         |         |         |
|----|----------|--------------|---------|---------|---------|
| △  |          |              |         |         |         |
| △  |          |              |         |         |         |
| △  | 23.09.19 | FOR APPROVAL | B.J.KIM | B.J.KIM | B.G.CHO |
| NO | DATE     | DESCRIPTION  | DRWN    | CHKD    | APPD    |



WONKWANG VALVE CO., LTD.

395, MIEUMSANDAN-RO, GANGSEO-GU, BUSAN, KOREA

TITLE

Cast Stainless Steel, BALL Valves  
KS 20K, B.C, RF, LEVER Type

|       |      |           |             |      |
|-------|------|-----------|-------------|------|
| SCALE | UNIT | SHEET No. | DRAWING No. | REV. |
| N / S | mm   | 17 / 17   | WK-BA-17    | 0    |

| SIZE<br>(A) | L     | W     | FLANGED ENDS DIMENSIONS |       |       |      |      |     |        | Q'TY | REMARK   |
|-------------|-------|-------|-------------------------|-------|-------|------|------|-----|--------|------|----------|
|             |       |       | d                       | D     | C     | g    | t    | f   | n-øh   |      |          |
| 50          | 216.0 | 250.0 | 50.0                    | 155.0 | 120.0 | 96.0 | 18.0 | 2.0 | 8-19.0 |      | OIL FREE |