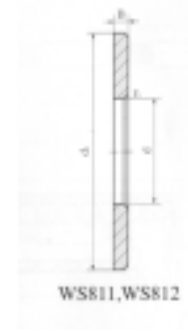
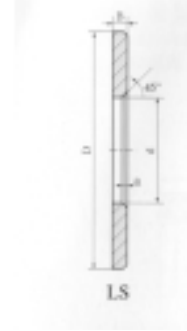
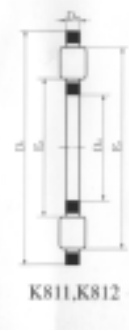
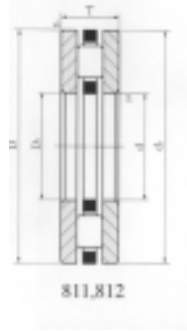


Thrust Cylindrical Roller Bearings  
811,812 Series

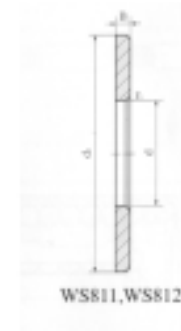
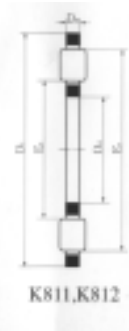
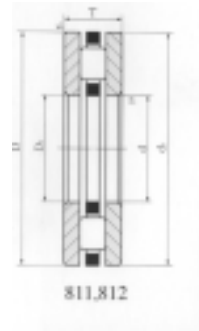
Thrust Bearing Washers  
LS,GS,WS Series



| Shaft Diameter | Whole Set Bearings | Mass | Trust cylindrical roller and cage assemblies | Mass | Bearing washers | Housing washer | Shaft washer | Mass | Dimensions    |       |            |       |    |     |      | Basic Load Rating |                  | Limiting Speed |     |
|----------------|--------------------|------|--|------|-----------------|----------------|--------------|------|---------------|-------|------------|-------|----|-----|------|-------------------|------------------|----------------|-----|
|                |                    |      |  |      |                 |                |              |      | $D_{C1}$<br>d | $D_1$ | $D_C$<br>D | $d_1$ | T  | Dw  | B    | Dynamic<br>Cr(N)  | Static<br>Cor(N) |                |     |
|                | 811,812            | (g)  | K811,K812                                    | (g)  | LS              | GS             | WS           | (g)  |               |       |            |       |    |     |      |                   |                  |                | Oil |
| 15             | 81102TN            | 24   | K81102TN                                     | 6    | LS1528          | GS81102        | WS81102      | 8    | 15            | 16    | 28         | 28    | 9  | 3.5 | 2.75 | 12500             | 26000            | 10000          |     |
| 17             | 81103TN            | 27   | K81103TN                                     | 9    | LS1730          | GS81103        | WS81103      | 9    | 17            | 18    | 30         | 30    | 9  | 3.5 | 2.75 | 13500             | 31000            | 9200           |     |
| 20             | 81104TN            | 37   | K81104TN                                     | 13   | LS2035          | GS81104        | WS81104      | 12   | 20            | 21    | 35         | 35    | 10 | 4.5 | 2.75 | 23000             | 51000            | 7800           |     |
| 25             | 81105TN            | 53   | K81105TN                                     | 15   | LS2542          | GS81105        | WS81105      | 19   | 25            | 26    | 42         | 42    | 11 | 5   | 3    | 32000             | 75000            | 6500           |     |
| 30             | 81106TN            | 57   | K81106TN                                     | 17   | LS3047          | GS81106        | WS81106      | 20   | 30            | 32    | 47         | 47    | 11 | 5   | 3    | 35000             | 85000            | 5400           |     |
|                | 81206TN            | 123  | K81206TN                                     | 33   | --              | GS81206        | WS81206      | 45   | 30            | 32    | 52         | 52    | 16 | 7.5 | 4.25 | 62000             | 140000           | 5400           |     |
| 35             | 81107TN            | 73   | K81107TN                                     | 19   | LS3552          | GS81107        | WS81107      | 27   | 35            | 37    | 52         | 52    | 12 | 5   | 3.5  | 35000             | 100000           | 5000           |     |
|                | 81207TN            | 195  | K81207TN                                     | 43   | --              | GS81207        | WS81207      | 76   | 35            | 37    | 62         | 62    | 18 | 7.5 | 5.25 | 75000             | 175000           | 4600           |     |
| 40             | 81108TN            | 105  | K81108TN                                     | 31   | LS4060          | GS81108        | WS81108      | 37   | 40            | 42    | 60         | 60    | 13 | 6   | 3.5  | 54000             | 140000           | 4500           |     |
|                | 81208TN            | 249  | K81208TN                                     | 81   | --              | GS81208        | WS81208      | 84   | 40            | 42    | 68         | 68    | 19 | 9   | 5    | 105000            | 250000           | 4200           |     |
| 45             | 81109TN            | 130  | K81109TN                                     | 35   | LS4565          | GS81109        | WS81109      | 47   | 45            | 47    | 65         | 65    | 14 | 6   | 4    | 55000             | 150000           | 4200           |     |
|                | 81209TN            | 287  | K81209TN                                     | 85   | --              | GS81209        | WS81209      | 101  | 45            | 47    | 73         | 73    | 20 | 9   | 5.5  | 100000            | 250000           | 3800           |     |
| 50             | 81110TN            | 140  | K81110TN                                     | 38   | LS5070          | GS81110        | WS81110      | 51   | 50            | 52    | 70         | 70    | 14 | 6   | 4    | 58000             | 165000           | 3800           |     |
|                | 81210TN            | 356  | K81210TN                                     | 98   | --              | GS81210        | WS81210      | 129  | 50            | 52    | 78         | 78    | 22 | 9   | 6.5  | 110000            | 310000           | 3500           |     |
| 55             | 81111TN            | 218  | K81111TN                                     | 45   | LS5578          | GS81111        | WS81111      | 82   | 55            | 57    | 78         | 78    | 16 | 6   | 5    | 85000             | 280000           | 3500           |     |
|                | 81211TN            | 568  | K81211TN                                     | 166  | --              | GS81211        | WS81211      | 201  | 55            | 57    | 90         | 90    | 25 | 11  | 7    | 145000            | 380000           | 3100           |     |
| 60             | 81112TN            | 266  | K81112TN                                     | 82   | LS6085          | GS81112        | WS81112      | 92   | 60            | 62    | 85         | 85    | 17 | 7.5 | 4.75 | 100000            | 310000           | 3100           |     |
|                | 81212TN            | 642  | K81212TN                                     | 176  | --              | GS81212        | WS81212      | 233  | 60            | 62    | 95         | 95    | 26 | 11  | 7.5  | 165000            | 450000           | 3000           |     |

Thrust Cylindrical Roller Bearings  
811,812 Series

Thrust Bearing Washers  
LS,GS,WS Series



| Shaft Diameter | Whole Set Bearings | Mass | Trust cylindrical roller and cage assemblies | Mass | Bearing washers | Housing washer | Shaft washer | Mass | Dimensions    |       |            |       |    |       |      | Basic Load Rating |        | Limiting Speed |  |
|----------------|--------------------|------|--|------|-----------------|----------------|--------------|------|---------------|-------|------------|-------|----|-------|------|-------------------|--------|----------------|--|
|                |                    |      |  |      |                 |                |              |      | $D_{C1}$<br>d | $D_1$ | $D_C$<br>D | $d_1$ | T  | $D_w$ | B    | Dynamic           | Static |                |  |
|                | 811,812            | (g)  | K811,K812                                    | (g)  | LS              | GS             | WS           | (g)  |               |       |            |       |    |       |      |                   |        |                |  |
| 65             | 81113TN            | 310  | K81113TN                                     | 90   | LS6590          | GS81113        | WS81113      | 110  | 65            | 67    | 90         | 90    | 18 | 7.5   | 5.25 | 105000            | 320000 | 3000           |  |
|                | 81213TN            | 721  | K81213TN                                     | 185  | --              | GS81213        | WS81213      | 268  | 65            | 67    | 100        | 100   | 27 | 11    | 8    | 150000            | 480000 | 2600           |  |
| 70             | 81114TN            | 332  | K81114TN                                     | 92   | LS7095          | GS81114        | WS81114      | 120  | 70            | 72    | 95         | 95    | 18 | 7.5   | 5.25 | 110000            | 355000 | 2600           |  |
|                | 81214TN            | 768  | K81214TN                                     | 212  | --              | GS81214        | WS81214      | 278  | 70            | 72    | 105        | 105   | 27 | 11    | 8    | 165000            | 540000 | 2500           |  |
| 75             | 81115TN            | 393  | K81115TN                                     | 96   | LS75100         | GS81115        | WS81115      | 136  | 75            | 77    | 100        | 100   | 19 | 7.5   | 5.75 | 10000             | 320000 | 2500           |  |
|                | 81215TN            | 800  | K81215TN                                     | 195  | --              | GS81215        | WS81215      | 293  | 75            | 77    | 110        | 110   | 27 | 11    | 8    | 155000            | 480000 | 2300           |  |
| 80             | 81116TN            | 400  | K81116TN                                     | 95   | LS80105         | GS81116        | WS81116      | 144  | 80            | 82    | 105        | 105   | 19 | 7.5   | 5.75 | 104000            | 345000 | 2300           |  |
|                | 81216TN            | 900  | K81216TN                                     | 234  | --              | GS81216        | WS81216      | 333  | 80            | 82    | 115        | 115   | 28 | 11    | 8.5  | 200000            | 620000 | 2100           |  |
| 85             | 81117TN            | 420  | K81117TN                                     | 118  | LS85110         | GS81117        | WS81117      | 151  | 85            | 87    | 110        | 110   | 19 | 7.5   | 5.75 | 110000            | 375000 | 2200           |  |
|                | 81217TN            | 1260 | K81217TN                                     | 280  | --              | GS81217        | WS81217      | 490  | 85            | 88    | 125        | 125   | 31 | 12    | 9.5  | 215000            | 650000 | 2100           |  |
| 90             | 81118TN            | 620  | K81118TN                                     | 150  | LS90120         | GS81118        | WS81118      | 225  | 90            | 92    | 120        | 120   | 22 | 9     | 6.5  | 140000            | 450000 | 2100           |  |
|                | 81218TN            | 1770 | K81218TN                                     | 542  | --              | GS81218        | WS81218      | 614  | 90            | 93    | 135        | 135   | 35 | 14    | 10.5 | 280000            | 870000 | 1900           |  |
| 100            | 81120TN            | 950  | K81120TN                                     | 250  | LS100135        | GS81120        | WS81120      | 350  | 100           | 102   | 135        | 135   | 25 | 11    | 7    | 195000            | 640000 | 1800           |  |
|                | 81220TN            | 2200 | K81220TN                                     | 600  | --              | GS81220        | WS81220      | 800  | 100           | 103   | 150        | 150   | 38 | 15    | 11.5 | 280000            | 830000 | 1700           |  |

Note: TN=The allowable working temperature for plastic cage: 120 (continuously); 150 (temporarily); 180 (for a shorttime).

1)You may be supplied with bigger sizes of bearings if needed.

2)Bearings lubricated by oil running under limited should be cooled,if lubricated by the allowable sped will be 25% of the value listed,if will get a higher value when the heat-sinking co