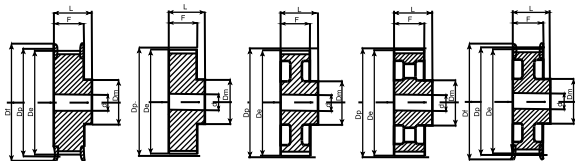


### TYPE OF BASIC STRUCTURE OF TIMING PULLEY



P = Pitch is the distance between the axes of two adjacent teeth in spite of whether these teeth are on the pulley or the belt provided and measurement is taken on the circumference of pitch line

Z = teeth Number

$D_p = \frac{P \cdot Z}{\pi}$  The pitch diameter is obtained from formula

De = External diameter of pulley  $De = D_p - H_f$

Dm = Hub diameter

d = Bore diameter

F = Tooth width

L = Total length including hubs

### TEETH SIZE OF TIMING BELT AND ORIGINAL TEETH OUTLINE OF PULLEY

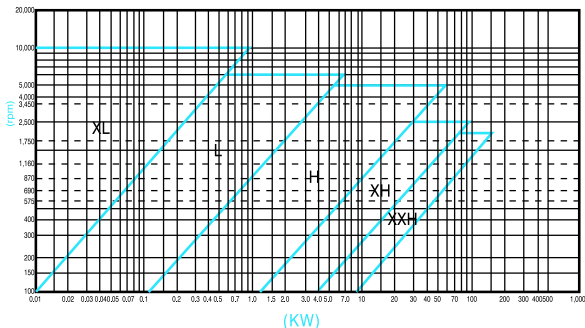
| Detail OF BELT AND PULLEY | TEETH SIZE OF BELT | ORIGINAL TEETH OUTLINE OF PULLEY |
|---------------------------|--------------------|----------------------------------|
| L                         |                    |                                  |
| H                         |                    |                                  |
| XL                        |                    |                                  |
| XH                        |                    |                                  |
| XXH                       |                    |                                  |

#### MATERIALS USED FOR PULLEYS

Aluminium UN13571TA16  
 suitable for anodic treatment  
 SteelUNI C45  
 Cast iron GG25 UNI 5007

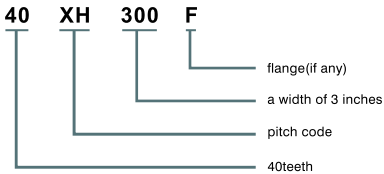
The surface treatment of timing belt pulleys is black phosphated (except aluminium material)  
 The timing belt pulleys that made of GG25 cast iron should be dynamically balanced.(Grade 6.3)

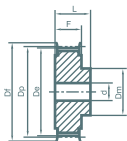
## DESIGN HORSEPOWER (HORSEPOWER SERVICE FACTOR)



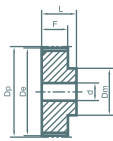
## DETAIL AND TYPE FOR TIMING BELT PULLEY

Example:

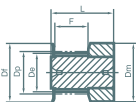




Type 0F



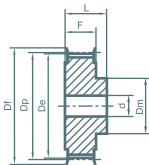
Type 1F



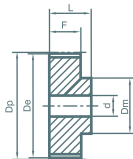
Type 2

### MXL025 PITCH 0.080" (2.032mm)

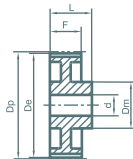
| INFO      | Size           | Type       | Z  | Dp    | De    | Df    | Dm | F  | L   | d  | Flange No. |     |
|-----------|----------------|------------|----|-------|-------|-------|----|----|-----|----|------------|-----|
|           |                |            |    |       |       |       |    |    |     |    |            |     |
| ALUMINIUM | WITH FLANGE    | 16 MXL 025 | 0F | 16    | 10.35 | 9.84  | 15 | 15 | 8.5 | 16 | -          | 502 |
|           |                | 18 MXL 025 | 0F | 18    | 11.64 | 11.12 | 16 | 16 | 8.5 | 16 | -          | 503 |
|           |                | 20 MXL 025 | 0F | 20    | 12.94 | 12.43 | 16 | 16 | 8.5 | 16 | -          | 503 |
|           |                | 22 MXL 025 | 1F | 22    | 14.23 | 13.72 | 17 | 10 | 11  | 16 | 3          | 504 |
|           |                | 24 MXL 025 | 1F | 24    | 15.52 | 15.01 | 20 | 10 | 11  | 16 | 3          | 505 |
|           |                | 28 MXL 025 | 1F | 28    | 18.11 | 17.60 | 25 | 11 | 11  | 16 | 3          | 506 |
|           |                | 30 MXL 025 | 1F | 30    | 19.40 | 18.90 | 25 | 12 | 11  | 16 | 4          | 506 |
|           |                | 32 MXL 025 | 1F | 32    | 20.70 | 20.19 | 26 | 14 | 11  | 16 | 4          | 507 |
|           |                | 36 MXL 025 | 1F | 36    | 23.29 | 22.78 | 28 | 16 | 11  | 16 | 4          | 508 |
|           | 40 MXL 025     | 1F         | 40 | 25.87 | 25.37 | 32    | 18 | 11 | 16  | 4  | 509        |     |
|           | 42 MXL 025     | 1F         | 42 | 27.17 | 26.67 | 32    | 18 | 11 | 16  | 5  | 509        |     |
|           | 44 MXL 025     | 1F         | 44 | 28.46 | 27.95 | 36    | 18 | 11 | 16  | 5  | 510        |     |
|           | WITHOUT FLANGE | 48 MXL 025 | 2  | 48    | 31.05 | 30.54 | -  | 20 | 11  | 16 | 5          | -   |
|           |                | 60 MXL 025 | 2  | 60    | 38.81 | 38.30 | -  | 24 | 11  | 16 | 5          | -   |
|           |                | 72 MXL 025 | 2  | 72    | 46.57 | 46.06 | -  | 25 | 11  | 16 | 6          | -   |



Type 1F



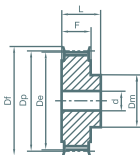
Type 2



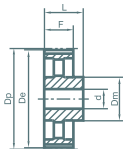
Type 3

### **XL037** PITCH 1/5" (5.08mm)

| INFO            |                | Size      | Type  | Z     | Dp     | De     | Df   | Dm   | F    | L  | d  | Flange No. |
|-----------------|----------------|-----------|-------|-------|--------|--------|------|------|------|----|----|------------|
| STEEL/ALUMINIUM | WITH FLANGE    | 10 XL 037 | 1F    | 10    | 16.17  | 15.66  | 23.0 | 9.5  | 14.3 | 20 | -  | 1          |
|                 |                | 11 XL 037 | 1F    | 11    | 17.79  | 17.28  | 23.0 | 9.5  | 14.3 | 20 | -  | 1          |
|                 |                | 12 XL 037 | 1F    | 12    | 19.40  | 18.90  | 25.0 | 10   | 14.3 | 20 | -  | 2          |
|                 |                | 13 XL 037 | 1F    | 13    | 21.02  | 20.51  | 25.0 | 10   | 14.3 | 20 | -  | 2          |
|                 |                | 14 XL 037 | 1F    | 14    | 22.64  | 22.13  | 28.0 | 15   | 14.3 | 20 | -  | 4          |
|                 |                | 15 XL 037 | 1F    | 15    | 24.26  | 23.75  | 28.0 | 15   | 14.3 | 20 | -  | 4          |
|                 |                | 16 XL 037 | 1F    | 16    | 25.87  | 25.36  | 32.0 | 16   | 14.3 | 20 | -  | 5          |
|                 |                | 17 XL 037 | 1F    | 17    | 27.49  | 26.98  | 32.0 | 20   | 14.3 | 20 | -  | 6          |
|                 |                | 18 XL 037 | 1F    | 18    | 29.11  | 28.60  | 35.0 | 20   | 14.3 | 20 | -  | 7          |
|                 |                | 19 XL 037 | 1F    | 19    | 30.72  | 30.22  | 35.0 | 20   | 14.3 | 22 | -  | 7          |
|                 |                | 20 XL 037 | 1F    | 20    | 32.34  | 31.83  | 38.0 | 23.5 | 14.3 | 22 | -  | 9          |
|                 |                | 21 XL 037 | 1F    | 21    | 33.96  | 33.45  | 38.0 | 23.5 | 14.3 | 22 | -  | 9          |
|                 |                | 22 XL 037 | 1F    | 22    | 35.57  | 35.07  | 41.0 | 25   | 14.3 | 22 | 6  | 10         |
|                 |                | 24 XL 037 | 1F    | 24    | 38.81  | 38.30  | 44.0 | 30   | 14.3 | 22 | 6  | 12         |
|                 |                | 26 XL 037 | 1F    | 26    | 42.04  | 41.53  | 48.0 | 30   | 14.3 | 22 | 8  | 11         |
|                 |                | 27 XL 037 | 1F    | 27    | 43.66  | 43.15  | 48.0 | 30   | 14.3 | 22 | 8  | 11         |
|                 |                | 28 XL 037 | 1F    | 28    | 45.28  | 44.77  | 51.0 | 34   | 14.3 | 22 | 8  | 16         |
|                 |                | 30 XL 037 | 1F    | 30    | 48.51  | 48.00  | 54.0 | 38   | 14.3 | 22 | 8  | 18         |
|                 |                | 32 XL 037 | 1F    | 32    | 51.74  | 51.24  | 57.0 | 38   | 14.3 | 25 | 8  | 20         |
|                 |                | 34 XL 037 | 1F    | 34    | 54.98  | 54.47  | 61.0 | 38   | 14.3 | 25 | 8  | 22         |
| 35 XL 037       | 1F             | 35        | 56.60 | 56.09 | 61.0   | 38     | 14.3 | 25   | 8    | 22 |    |            |
| ALUMINIUM       | WITHOUT FLANGE | 36 XL 037 | 2     | 36    | 58.21  | 57.70  | -    | 45   | 14.3 | 25 | 8  | -          |
|                 |                | 38 XL 037 | 2     | 38    | 61.45  | 60.94  | -    | 45   | 14.3 | 25 | 8  | -          |
|                 |                | 40 XL 037 | 2     | 40    | 64.68  | 64.17  | -    | 45   | 14.3 | 25 | 8  | -          |
|                 |                | 42 XL 037 | 2     | 42    | 67.91  | 67.41  | -    | 45   | 14.3 | 25 | 8  | -          |
|                 |                | 44 XL 037 | 2     | 44    | 71.15  | 70.64  | -    | 45   | 14.3 | 25 | 8  | -          |
|                 |                | 48 XL 037 | 3     | 48    | 77.62  | 77.11  | -    | 45   | 14.3 | 25 | 10 | -          |
|                 |                | 60 XL 037 | 3     | 60    | 97.02  | 96.51  | -    | 45   | 14.3 | 25 | 10 | -          |
|                 |                | 72 XL 037 | 3     | 72    | 116.42 | 115.92 | -    | 45   | 14.3 | 25 | 10 | -          |



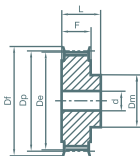
Type 1F



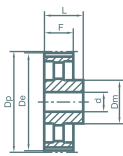
Type 4

## L050 PITCH 3/8" (9.525mm)

| INFO      |                | Size     | Type   | Z      | Dp     | De     | Df    | Dm | F    | L  | d  | Flange No. |
|-----------|----------------|----------|--------|--------|--------|--------|-------|----|------|----|----|------------|
| STEEL     | WITH FLANGE    | 10 L 050 | 1F     | 10     | 30.33  | 29.56  | 37.00 | 20 | 19.0 | 28 | 8  | 50         |
|           |                | 11 L 050 | 1F     | 11     | 33.35  | 32.59  | 37.00 | 22 | 19.0 | 30 | 8  | 50         |
|           |                | 12 L 050 | 1F     | 12     | 36.37  | 35.62  | 43.00 | 24 | 19.0 | 30 | 8  | 52         |
|           |                | 13 L 050 | 1F     | 13     | 39.41  | 38.65  | 44.00 | 28 | 19.0 | 30 | 8  | 83         |
|           |                | 14 L 050 | 1F     | 14     | 42.44  | 41.68  | 48.00 | 28 | 19.0 | 30 | 8  | 54         |
|           |                | 15 L 050 | 1F     | 15     | 45.48  | 44.72  | 51.00 | 34 | 19.0 | 30 | 8  | 55         |
|           |                | 16 L 050 | 1F     | 16     | 48.51  | 47.75  | 54.00 | 36 | 19.0 | 32 | 8  | 56         |
|           |                | 17 L 050 | 1F     | 17     | 51.54  | 50.78  | 57.00 | 36 | 19.0 | 32 | 10 | 57         |
|           |                | 18 L 050 | 1F     | 18     | 54.59  | 53.81  | 60.00 | 40 | 19.0 | 32 | 10 | 58         |
|           |                | 19 L 050 | 1F     | 19     | 57.61  | 56.84  | 64.00 | 40 | 19.0 | 32 | 10 | 59         |
|           |                | 20 L 050 | 1F     | 20     | 60.63  | 59.88  | 66.50 | 40 | 19.0 | 32 | 10 | 60         |
|           |                | 21 L 050 | 1F     | 21     | 63.68  | 62.91  | 70.00 | 45 | 19.0 | 32 | 10 | 61         |
|           |                | 22 L 050 | 1F     | 22     | 66.70  | 65.94  | 75.00 | 45 | 19.0 | 32 | 10 | 62         |
|           |                | 23 L 050 | 1F     | 23     | 69.73  | 68.97  | 79.00 | 55 | 19.0 | 32 | 10 | 63         |
|           |                | 24 L 050 | 1F     | 24     | 72.77  | 72.00  | 79.00 | 55 | 19.0 | 32 | 10 | 63         |
|           |                | 25 L 050 | 1F     | 25     | 75.80  | 75.04  | 82.50 | 58 | 19.0 | 32 | 10 | 64         |
|           |                | 26 L 050 | 1F     | 26     | 78.84  | 78.07  | 86.00 | 58 | 19.0 | 32 | 11 | 65         |
|           |                | 27 L 050 | 1F     | 27     | 81.86  | 81.10  | 86.00 | 58 | 19.0 | 32 | 11 | 65         |
|           |                | 28 L 050 | 1F     | 28     | 84.89  | 84.13  | 91.00 | 58 | 19.0 | 32 | 11 | 66         |
|           |                | 30 L 050 | 1F     | 30     | 90.96  | 90.20  | 97.00 | 70 | 19.0 | 32 | 11 | 68         |
| 32 L 050  | 1F             | 32       | 97.03  | 96.26  | 102.00 | 70     | 19.0  | 32 | 11   | 70 |    |            |
| 33 L 050  | 1F             | 33       | 100.05 | 99.29  | 106.00 | 70     | 19.0  | 32 | 11   | 71 |    |            |
| 34 L 050  | 1F             | 34       | 103.08 | 102.32 | 112.00 | 70     | 19.0  | 32 | 11   | 72 |    |            |
| 35 L 050  | 1F             | 35       | 106.12 | 105.35 | 112.00 | 70     | 19.0  | 32 | 11   | 72 |    |            |
| 36 L 050  | 1F             | 36       | 109.14 | 108.39 | 115.00 | 70     | 19.0  | 32 | 11   | 74 |    |            |
| 40 L 050  | 1F             | 40       | 121.29 | 120.51 | 128.00 | 70     | 19.0  | 32 | 11   | 78 |    |            |
| 42 L 050  | 1F             | 42       | 127.34 | 126.57 | 135.00 | 70     | 19.0  | 32 | 11   | 80 |    |            |
| 44 L 050  | 1F             | 44       | 133.40 | 132.64 | 142.00 | 70     | 19.0  | 32 | 11   | 81 |    |            |
| 45 L 050  | 1F             | 45       | 136.44 | 135.67 | 142.00 | 70     | 19.0  | 32 | 11   | 81 |    |            |
| 48 L 050  | 1F             | 48       | 145.54 | 144.77 | 150.00 | 70     | 19.0  | 32 | 11   | 85 |    |            |
| CAST-IRON | WITHOUT FLANGE | 50 L 050 | 4      | 50     | 151.60 | 150.83 | -     | 70 | 19.0 | 32 | 14 | -          |
|           |                | 52 L 050 | 4      | 52     | 157.66 | 156.90 | -     | 70 | 19.0 | 32 | 14 | -          |
|           |                | 56 L 050 | 4      | 56     | 169.79 | 169.02 | -     | 70 | 19.0 | 32 | 14 | -          |
|           |                | 57 L 050 | 4      | 57     | 172.82 | 172.06 | -     | 70 | 19.0 | 32 | 14 | -          |
|           |                | 60 L 050 | 4      | 60     | 181.92 | 181.15 | -     | 75 | 19.0 | 42 | 14 | -          |
|           |                | 72 L 050 | 4      | 72     | 218.29 | 217.53 | -     | 75 | 19.0 | 42 | 14 | -          |
|           |                | 84 L 050 | 4      | 84     | 254.69 | 253.92 | -     | 75 | 19.0 | 42 | 14 | -          |
|           |                | 96 L 050 | 4      | 96     | 291.06 | 290.30 | -     | 75 | 19.0 | 42 | 14 | -          |



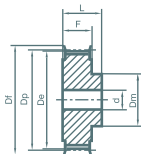
Type 1F



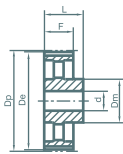
Type 4

## L075 PITCH 3/8" (9.525mm)

| INFO      |                | Size     | Type   | Z      | Dp     | De     | Df    | Dm | F    | L  | d  | Flange No. |
|-----------|----------------|----------|--------|--------|--------|--------|-------|----|------|----|----|------------|
| STEEL     | WITH FLANGE    | 10 L 075 | 1F     | 10     | 30.33  | 29.56  | 37.0  | 20 | 25.4 | 38 | 8  | 50         |
|           |                | 11 L 075 | 1F     | 11     | 33.35  | 32.59  | 37.0  | 22 | 25.4 | 38 | 8  | 50         |
|           |                | 12 L 075 | 1F     | 12     | 36.37  | 35.62  | 43.0  | 24 | 25.4 | 38 | 8  | 52         |
|           |                | 13 L 075 | 1F     | 13     | 39.41  | 38.65  | 44.0  | 28 | 25.4 | 38 | 8  | 83         |
|           |                | 14 L 075 | 1F     | 14     | 42.44  | 41.68  | 48.0  | 28 | 25.4 | 38 | 11 | 54         |
|           |                | 15 L 075 | 1F     | 15     | 45.48  | 44.72  | 51.0  | 34 | 25.4 | 38 | 11 | 55         |
|           |                | 16 L 075 | 1F     | 16     | 48.51  | 47.75  | 54.0  | 36 | 25.4 | 38 | 11 | 56         |
|           |                | 17 L 075 | 1F     | 17     | 51.54  | 50.78  | 57.0  | 36 | 25.4 | 38 | 11 | 57         |
|           |                | 18 L 075 | 1F     | 18     | 54.59  | 53.81  | 60.0  | 40 | 25.4 | 38 | 11 | 58         |
|           |                | 19 L 075 | 1F     | 19     | 57.61  | 56.84  | 64.0  | 40 | 25.4 | 38 | 11 | 59         |
|           |                | 20 L 075 | 1F     | 20     | 60.63  | 59.88  | 68.5  | 40 | 25.4 | 38 | 11 | 60         |
|           |                | 21 L 075 | 1F     | 21     | 63.68  | 62.91  | 70.0  | 45 | 25.4 | 38 | 11 | 61         |
|           |                | 22 L 075 | 1F     | 22     | 66.70  | 65.94  | 75.0  | 45 | 25.4 | 38 | 11 | 62         |
|           |                | 23 L 075 | 1F     | 23     | 69.73  | 68.97  | 79.0  | 55 | 25.4 | 38 | 11 | 63         |
|           |                | 24 L 075 | 1F     | 24     | 72.77  | 72.00  | 79.0  | 55 | 25.4 | 38 | 11 | 63         |
|           |                | 25 L 075 | 1F     | 25     | 75.80  | 75.04  | 82.5  | 58 | 25.4 | 38 | 11 | 64         |
|           |                | 26 L 075 | 1F     | 26     | 78.84  | 78.07  | 86.0  | 58 | 25.4 | 38 | 11 | 85         |
|           |                | 27 L 075 | 1F     | 27     | 81.86  | 81.10  | 86.0  | 58 | 25.4 | 38 | 11 | 85         |
|           |                | 28 L 075 | 1F     | 28     | 84.89  | 84.13  | 91.0  | 58 | 25.4 | 38 | 11 | 86         |
|           |                | 30 L 075 | 1F     | 30     | 90.98  | 90.20  | 97.0  | 70 | 25.4 | 38 | 11 | 68         |
|           |                | 32 L 075 | 1F     | 32     | 97.03  | 96.26  | 102.0 | 70 | 25.4 | 38 | 11 | 70         |
|           |                | 33 L 075 | 1F     | 33     | 100.05 | 99.29  | 106.0 | 70 | 25.4 | 38 | 11 | 71         |
|           |                | 34 L 075 | 1F     | 34     | 103.08 | 102.32 | 112.0 | 70 | 25.4 | 38 | 11 | 72         |
|           |                | 35 L 075 | 1F     | 35     | 106.12 | 105.35 | 112.0 | 70 | 25.4 | 38 | 11 | 72         |
| 36 L 075  | 1F             | 36       | 109.14 | 108.39 | 115.0  | 70     | 25.4  | 38 | 11   | 74 |    |            |
| 40 L 075  | 1F             | 40       | 121.29 | 120.51 | 128.0  | 70     | 25.4  | 38 | 11   | 78 |    |            |
| 42 L 075  | 1F             | 42       | 127.34 | 126.57 | 135.0  | 70     | 25.4  | 38 | 11   | 80 |    |            |
| 44 L 075  | 1F             | 44       | 133.40 | 132.64 | 142.0  | 70     | 25.4  | 38 | 11   | 81 |    |            |
| 45 L 075  | 1F             | 45       | 136.44 | 135.67 | 142.0  | 70     | 25.4  | 38 | 11   | 81 |    |            |
| 48 L 075  | 1F             | 48       | 145.54 | 144.77 | 150.0  | 70     | 25.4  | 38 | 11   | 85 |    |            |
| CAST-IRON | WITHOUT FLANGE | 50 L 075 | 4      | 50     | 151.60 | 150.83 | -     | 70 | 25.4 | 38 | 14 | -          |
|           |                | 52 L 075 | 4      | 52     | 157.66 | 156.90 | -     | 70 | 25.4 | 38 | 14 | -          |
|           |                | 56 L 075 | 4      | 56     | 169.79 | 169.02 | -     | 70 | 25.4 | 38 | 14 | -          |
|           |                | 57 L 075 | 4      | 57     | 172.82 | 172.06 | -     | 70 | 25.4 | 38 | 14 | -          |
|           |                | 60 L 075 | 4      | 60     | 181.92 | 181.15 | -     | 75 | 25.4 | 45 | 14 | -          |
|           |                | 72 L 075 | 4      | 72     | 218.29 | 217.53 | -     | 75 | 25.4 | 45 | 14 | -          |
|           |                | 84 L 075 | 4      | 84     | 254.69 | 253.92 | -     | 75 | 25.4 | 45 | 14 | -          |
|           |                | 96 L 075 | 4      | 96     | 291.06 | 290.30 | -     | 75 | 25.4 | 45 | 14 | -          |



Type 1F

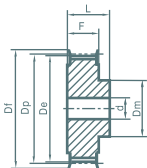


Type 4

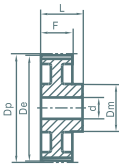
## L100 PITCH 3/8" 9.525mm

| INFO      | Size           | Type     | Z      | Dp     | De     | Df     | Dm   | F  | L    | d  | Flange No. |    |
|-----------|----------------|----------|--------|--------|--------|--------|------|----|------|----|------------|----|
|           |                |          |        |        |        |        |      |    |      |    |            |    |
| STEEL     | WITH FLANGE    | 10 L 100 | 1F     | 10     | 30.33  | 29.56  | 37.0 | 20 | 31.8 | 45 | 8          | 50 |
|           |                | 11 L 100 | 1F     | 11     | 33.35  | 32.59  | 37.0 | 22 | 31.8 | 45 | 8          | 50 |
|           |                | 12 L 100 | 1F     | 12     | 36.37  | 35.62  | 43.0 | 24 | 31.8 | 45 | 8          | 52 |
|           |                | 13 L 100 | 1F     | 13     | 39.41  | 38.65  | 44.0 | 28 | 31.8 | 45 | 8          | 83 |
|           |                | 14 L 100 | 1F     | 14     | 42.44  | 41.68  | 48.0 | 28 | 31.8 | 45 | 11         | 54 |
|           |                | 15 L 100 | 1F     | 15     | 45.48  | 44.72  | 51.0 | 34 | 31.8 | 45 | 11         | 55 |
|           |                | 16 L 100 | 1F     | 16     | 48.51  | 47.75  | 54.0 | 36 | 31.8 | 45 | 11         | 56 |
|           |                | 17 L 100 | 1F     | 17     | 51.54  | 50.78  | 57.0 | 36 | 31.8 | 45 | 11         | 57 |
|           |                | 18 L 100 | 1F     | 18     | 54.59  | 53.81  | 60.0 | 40 | 31.8 | 45 | 11         | 58 |
|           |                | 19 L 100 | 1F     | 19     | 57.61  | 56.84  | 64.0 | 40 | 31.8 | 45 | 11         | 59 |
|           |                | 20 L 100 | 1F     | 20     | 60.63  | 59.88  | 66.5 | 40 | 31.8 | 45 | 11         | 60 |
|           |                | 21 L 100 | 1F     | 21     | 63.66  | 62.91  | 70.0 | 45 | 31.8 | 45 | 11         | 61 |
|           |                | 22 L 100 | 1F     | 22     | 66.70  | 65.94  | 75.0 | 45 | 31.8 | 45 | 11         | 62 |
|           |                | 23 L 100 | 1F     | 23     | 69.73  | 68.97  | 79.0 | 55 | 31.8 | 45 | 11         | 63 |
|           |                | 24 L 100 | 1F     | 24     | 72.77  | 72.00  | 79.0 | 55 | 31.8 | 45 | 11         | 63 |
|           |                | 25 L 100 | 1F     | 25     | 75.80  | 75.04  | 82.5 | 58 | 31.8 | 45 | 11         | 64 |
|           |                | 26 L 100 | 1F     | 26     | 78.84  | 78.07  | 86.0 | 58 | 31.8 | 45 | 11         | 65 |
|           |                | 27 L 100 | 1F     | 27     | 81.86  | 81.10  | 86.0 | 58 | 31.8 | 45 | 11         | 65 |
|           |                | 28 L 100 | 1F     | 28     | 84.89  | 84.13  | 91.0 | 58 | 31.8 | 45 | 11         | 66 |
|           |                | 30 L 100 | 1F     | 30     | 90.96  | 90.20  | 97.0 | 70 | 31.8 | 45 | 11         | 68 |
| 32 L 100  | 1F             | 32       | 97.03  | 96.26  | 102.0  | 70     | 31.8 | 45 | 11   | 70 |            |    |
| 33 L 100  | 1F             | 33       | 100.05 | 99.29  | 106.0  | 70     | 31.8 | 45 | 11   | 71 |            |    |
| 34 L 100  | 1F             | 34       | 103.08 | 102.32 | 112.0  | 70     | 31.8 | 45 | 11   | 72 |            |    |
| 35 L 100  | 1F             | 35       | 106.12 | 105.35 | 112.0  | 70     | 31.8 | 45 | 11   | 72 |            |    |
| 36 L 100  | 1F             | 36       | 109.14 | 108.39 | 115.0  | 70     | 31.8 | 45 | 11   | 74 |            |    |
| 40 L 100  | 1F             | 40       | 121.29 | 120.51 | 128.0  | 70     | 31.8 | 45 | 11   | 78 |            |    |
| 42 L 100  | 1F             | 42       | 127.34 | 126.57 | 135.0  | 70     | 31.8 | 45 | 11   | 80 |            |    |
| 44 L 100  | 1F             | 44       | 133.40 | 132.64 | 142.0  | 70     | 31.8 | 45 | 11   | 81 |            |    |
| 45 L 100  | 1F             | 45       | 136.44 | 135.67 | 142.0  | 70     | 31.8 | 45 | 11   | 81 |            |    |
| 48 L 100  | 1F             | 48       | 145.54 | 144.77 | 150.0  | 70     | 31.8 | 45 | 11   | 85 |            |    |
| CAST-IRON | WITHOUT FLANGE | 50 L 100 | 4      | 50     | 151.60 | 150.83 | -    | 70 | 31.8 | 45 | 14         | -  |
|           |                | 52 L 100 | 4      | 52     | 157.66 | 156.90 | -    | 70 | 31.8 | 45 | 14         | -  |
|           |                | 56 L 100 | 4      | 56     | 169.79 | 169.02 | -    | 70 | 31.8 | 45 | 14         | -  |
|           |                | 57 L 100 | 4      | 57     | 172.82 | 172.06 | -    | 70 | 31.8 | 45 | 14         | -  |
|           |                | 60 L 100 | 4      | 60     | 181.92 | 181.15 | -    | 75 | 31.8 | 45 | 14         | -  |
|           |                | 72 L 100 | 4      | 72     | 218.29 | 217.53 | -    | 75 | 31.8 | 45 | 14         | -  |
|           |                | 84 L 100 | 4      | 84     | 254.69 | 253.92 | -    | 75 | 31.8 | 45 | 14         | -  |
|           |                | 96 L 100 | 4      | 96     | 291.06 | 290.30 | -    | 75 | 31.8 | 45 | 14         | -  |

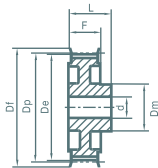




Type 1F



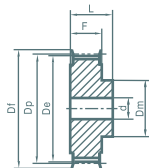
Type 4



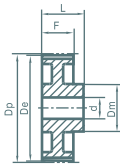
Type 5F

## H075 PITCH 1/2" (12.70mm)

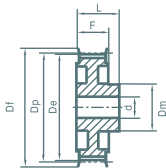
| INFO      |                | Size     | Type   | Z      | Dp     | De     | Df    | Dm | F    | L  | d  | Flange No. |
|-----------|----------------|----------|--------|--------|--------|--------|-------|----|------|----|----|------------|
| STEEL     | WITH FLANGE    | 14 H 075 | 1F     | 14     | 56.59  | 55.22  | 64.0  | 40 | 26.4 | 40 | -  | 59         |
|           |                | 15 H 075 | 1F     | 15     | 60.64  | 59.27  | 66.5  | 45 | 26.4 | 40 | -  | 60         |
|           |                | 16 H 075 | 1F     | 16     | 64.67  | 63.31  | 70.0  | 45 | 26.4 | 40 | -  | 61         |
|           |                | 17 H 075 | 1F     | 17     | 68.72  | 67.35  | 75.0  | 45 | 26.4 | 40 | -  | 62         |
|           |                | 18 H 075 | 1F     | 18     | 72.77  | 71.39  | 79.0  | 55 | 26.4 | 40 | -  | 63         |
|           |                | 19 H 075 | 1F     | 19     | 76.81  | 75.44  | 82.5  | 60 | 26.4 | 40 | 11 | 64         |
|           |                | 20 H 075 | 1F     | 20     | 80.85  | 79.48  | 87.0  | 62 | 26.4 | 40 | 11 | 76         |
|           |                | 21 H 075 | 1F     | 21     | 84.89  | 83.52  | 91.0  | 65 | 26.4 | 40 | 11 | 66         |
|           |                | 22 H 075 | 1F     | 22     | 88.93  | 87.56  | 94.0  | 68 | 26.4 | 40 | 11 | 67         |
|           |                | 23 H 075 | 1F     | 23     | 92.98  | 91.61  | 97.0  | 72 | 26.4 | 40 | 11 | 68         |
|           |                | 24 H 075 | 1F     | 24     | 97.03  | 95.65  | 102.0 | 72 | 26.4 | 40 | 11 | 70         |
|           |                | 25 H 075 | 1F     | 25     | 101.06 | 99.69  | 106.0 | 72 | 26.4 | 40 | 11 | 71         |
|           |                | 26 H 075 | 1F     | 26     | 105.11 | 103.73 | 112.0 | 80 | 26.4 | 40 | 11 | 72         |
|           |                | 27 H 075 | 1F     | 27     | 109.15 | 107.78 | 115.0 | 80 | 26.4 | 40 | 11 | 74         |
|           |                | 28 H 075 | 1F     | 28     | 113.18 | 111.82 | 120.0 | 80 | 26.4 | 40 | 11 | 75         |
|           |                | 30 H 075 | 1F     | 30     | 121.29 | 119.90 | 128.0 | 80 | 26.4 | 40 | 11 | 78         |
|           |                | 32 H 075 | 1F     | 32     | 129.30 | 127.99 | 135.0 | 80 | 26.4 | 40 | 11 | 80         |
|           |                | 33 H 075 | 1F     | 33     | 133.40 | 132.03 | 142.0 | 80 | 26.4 | 40 | 11 | 81         |
|           |                | 34 H 075 | 1F     | 34     | 137.45 | 136.07 | 142.0 | 80 | 26.4 | 40 | 11 | 81         |
|           |                | 35 H 075 | 1F     | 35     | 141.49 | 140.12 | 150.0 | 80 | 26.4 | 40 | 11 | 85         |
| 36 H 075  | 1F             | 36       | 145.54 | 144.16 | 150.0  | 80     | 26.4  | 40 | 11   | 85 |    |            |
| 38 H 075  | 1F             | 38       | 153.62 | 152.24 | 158.0  | 80     | 26.4  | 40 | 11   | 86 |    |            |
| 40 H 075  | 1F             | 40       | 161.70 | 160.33 | 168.0  | 80     | 26.4  | 40 | 11   | 90 |    |            |
| 42 H 075  | 1F             | 42       | 169.79 | 168.41 | 184.0  | 80     | 26.4  | 40 | 11   | 94 |    |            |
| CAST-IRON | WITHOUT FLANGE | 44 H 075 | 5F     | 44     | 177.80 | 176.50 | 184.0 | 80 | 26.4 | 40 | 14 | 95         |
|           |                | 48 H 075 | 5F     | 48     | 194.03 | 192.87 | 200.0 | 90 | 26.4 | 45 | 14 | 100        |
|           |                | 50 H 075 | 4      | 50     | 202.13 | 200.75 | -     | 90 | 26.4 | 45 | 14 | -          |



Type 1F



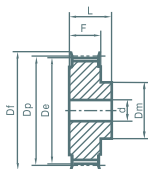
Type 4



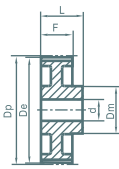
Type 5F

## H100 PITCH 1/2" (12.70mm)

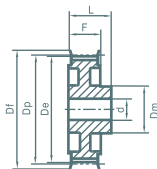
| INFO      | Size           | Type      | Z      | Dp     | De     | Df     | Dm    | F   | L    | d  | Flange No. |     |
|-----------|----------------|-----------|--------|--------|--------|--------|-------|-----|------|----|------------|-----|
|           |                |           |        |        |        |        |       |     |      |    |            |     |
| STEEL     | WITH FLANGE    | 14 H 100  | 1F     | 14     | 56.59  | 55.22  | 64.0  | 40  | 31.8 | 45 | -          | 59  |
|           |                | 15 H 100  | 1F     | 15     | 60.64  | 59.27  | 66.5  | 45  | 31.8 | 45 | -          | 60  |
|           |                | 16 H 100  | 1F     | 16     | 64.67  | 63.31  | 70.0  | 45  | 31.8 | 45 | -          | 61  |
|           |                | 17 H 100  | 1F     | 17     | 68.72  | 67.35  | 75.0  | 45  | 31.8 | 45 | -          | 62  |
|           |                | 18 H 100  | 1F     | 18     | 72.77  | 71.39  | 79.0  | 55  | 31.8 | 45 | -          | 63  |
|           |                | 19 H 100  | 1F     | 19     | 76.81  | 75.44  | 82.5  | 60  | 31.8 | 45 | 14         | 64  |
|           |                | 20 H 100  | 1F     | 20     | 80.85  | 79.48  | 87.0  | 62  | 31.8 | 45 | 14         | 76  |
|           |                | 21 H 100  | 1F     | 21     | 84.89  | 83.52  | 91.0  | 65  | 31.8 | 45 | 14         | 66  |
|           |                | 22 H 100  | 1F     | 22     | 88.93  | 87.56  | 94.0  | 68  | 31.8 | 45 | 14         | 67  |
|           |                | 23 H 100  | 1F     | 23     | 92.98  | 91.61  | 97.0  | 72  | 31.8 | 45 | 14         | 68  |
|           |                | 24 H 100  | 1F     | 24     | 97.03  | 95.65  | 102.0 | 72  | 31.8 | 45 | 14         | 70  |
|           |                | 25 H 100  | 1F     | 25     | 101.06 | 99.69  | 106.0 | 72  | 31.8 | 45 | 14         | 71  |
|           |                | 26 H 100  | 1F     | 26     | 105.11 | 103.73 | 112.0 | 80  | 31.8 | 45 | 14         | 72  |
|           |                | 27 H 100  | 1F     | 27     | 109.15 | 107.78 | 115.0 | 80  | 31.8 | 45 | 14         | 74  |
|           |                | 28 H 100  | 1F     | 28     | 113.18 | 111.82 | 120.0 | 80  | 31.8 | 45 | 14         | 75  |
|           |                | 29 H 100  | 1F     | 29     | 117.23 | 115.86 | 120.0 | 80  | 31.8 | 45 | 14         | 75  |
|           |                | 30 H 100  | 1F     | 30     | 121.29 | 119.90 | 128.0 | 80  | 31.8 | 45 | 14         | 78  |
|           |                | 32 H 100  | 1F     | 32     | 129.30 | 127.99 | 135.0 | 80  | 31.8 | 45 | 14         | 80  |
| 33 H 100  | 1F             | 33        | 133.40 | 132.03 | 142.0  | 80     | 31.8  | 45  | 14   | 81 |            |     |
| 34 H 100  | 1F             | 34        | 137.45 | 136.07 | 142.0  | 80     | 31.8  | 45  | 14   | 81 |            |     |
| 35 H 100  | 1F             | 35        | 141.49 | 140.12 | 150.0  | 80     | 31.8  | 45  | 14   | 85 |            |     |
| 36 H 100  | 1F             | 36        | 145.54 | 144.16 | 150.0  | 80     | 31.8  | 45  | 14   | 85 |            |     |
| 38 H 100  | 1F             | 38        | 153.62 | 152.24 | 158.0  | 80     | 31.8  | 45  | 14   | 86 |            |     |
| 40 H 100  | 1F             | 40        | 161.70 | 160.33 | 168.0  | 80     | 31.8  | 45  | 14   | 90 |            |     |
| 42 H 100  | 1F             | 42        | 169.79 | 168.41 | 180.0  | 80     | 31.8  | 45  | 14   | 94 |            |     |
| CAST-IRON | WITHOUT FLANGE | 44 H 100  | SF     | 44     | 177.88 | 176.50 | 184.0 | 80  | 31.8 | 50 | 14         | 95  |
|           |                | 45 H 100  | SF     | 45     | 181.91 | 180.54 | 192.0 | 80  | 31.8 | 50 | 14         | 96  |
|           |                | 48 H 100  | SF     | 48     | 194.03 | 192.67 | 200.0 | 90  | 31.8 | 50 | 14         | 100 |
|           |                | 50 H 100  | 4      | 50     | 202.13 | 200.75 | -     | 90  | 31.8 | 50 | 19         | -   |
|           |                | 52 H 100  | 4      | 52     | 210.21 | 208.84 | -     | 90  | 31.8 | 50 | 19         | -   |
|           |                | 58 H 100  | 4      | 58     | 234.47 | 233.09 | -     | 90  | 31.8 | 50 | 19         | -   |
|           |                | 60 H 100  | 4      | 60     | 242.55 | 241.18 | -     | 120 | 31.8 | 50 | 19         | -   |
|           |                | 70 H 100  | 4      | 70     | 282.98 | 281.61 | -     | 120 | 31.8 | 55 | 19         | -   |
|           |                | 72 H 100  | 4      | 72     | 291.06 | 289.69 | -     | 120 | 31.8 | 55 | 19         | -   |
|           |                | 84 H 100  | 4      | 84     | 339.57 | 338.20 | -     | 120 | 31.8 | 55 | 19         | -   |
|           |                | 96 H 100  | 4      | 96     | 388.09 | 386.71 | -     | 120 | 31.8 | 60 | 19         | -   |
|           |                | 120 H 100 | 4      | 120    | 485.12 | 483.73 | -     | 120 | 31.8 | 60 | 19         | -   |



Type 1F



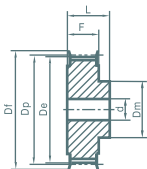
Type 4



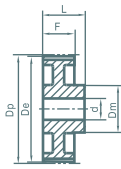
Type 5F

### H150 PITCH 1/2" (12.70mm)

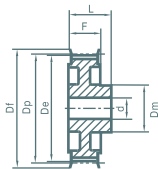
| INFO      | Size           | Type      | Z      | Dp     | De     | Df     | Dm     | F   | L    | d  | Flange No. |     |
|-----------|----------------|-----------|--------|--------|--------|--------|--------|-----|------|----|------------|-----|
|           |                |           |        |        |        |        |        |     |      |    |            |     |
| STEEL     | WITH FLANGE    | 14 H 150  | 1F     | 14     | 66.59  | 55.22  | 64.0   | 42  | 46.0 | 58 | -          | 59  |
|           |                | 15 H 150  | 1F     | 15     | 60.64  | 59.27  | 66.5   | 45  | 46.0 | 58 | -          | 60  |
|           |                | 16 H 150  | 1F     | 16     | 64.67  | 63.31  | 70.0   | 45  | 46.0 | 58 | -          | 61  |
|           |                | 17 H 150  | 1F     | 17     | 68.72  | 67.35  | 75.0   | 45  | 46.0 | 58 | -          | 62  |
|           |                | 18 H 150  | 1F     | 18     | 72.77  | 71.39  | 79.0   | 55  | 46.0 | 58 | -          | 63  |
|           |                | 19 H 150  | 1F     | 19     | 76.81  | 75.44  | 82.5   | 60  | 46.0 | 58 | -          | 64  |
|           |                | 20 H 150  | 1F     | 20     | 80.85  | 79.48  | 87.0   | 62  | 46.0 | 58 | -          | 76  |
|           |                | 21 H 150  | 1F     | 21     | 84.89  | 83.52  | 91.0   | 65  | 46.0 | 58 | -          | 66  |
|           |                | 22 H 150  | 1F     | 22     | 88.93  | 87.56  | 94.0   | 68  | 46.0 | 58 | -          | 67  |
|           |                | 23 H 150  | 1F     | 23     | 92.98  | 91.61  | 97.0   | 72  | 46.0 | 58 | -          | 68  |
|           |                | 24 H 150  | 1F     | 24     | 97.03  | 95.65  | 102.0  | 72  | 46.0 | 58 | -          | 70  |
|           |                | 25 H 150  | 1F     | 25     | 101.06 | 99.69  | 106.0  | 72  | 46.0 | 58 | -          | 71  |
|           |                | 26 H 150  | 1F     | 26     | 105.11 | 103.73 | 112.0  | 80  | 46.0 | 58 | -          | 72  |
|           |                | 27 H 150  | 1F     | 27     | 109.15 | 107.78 | 115.0  | 80  | 46.0 | 58 | -          | 74  |
|           |                | 28 H 150  | 1F     | 28     | 113.18 | 111.82 | 120.0  | 80  | 46.0 | 58 | -          | 75  |
|           |                | 29 H 150  | 1F     | 29     | 117.23 | 115.86 | 120.0  | 80  | 46.0 | 58 | -          | 75  |
|           |                | 30 H 150  | 1F     | 30     | 121.29 | 119.90 | 128.0  | 80  | 46.0 | 58 | -          | 78  |
|           |                | 32 H 150  | 1F     | 32     | 129.30 | 127.99 | 135.0  | 80  | 46.0 | 58 | -          | 80  |
|           |                | 33 H 150  | 1F     | 33     | 133.40 | 132.03 | 142.0  | 80  | 46.0 | 58 | -          | 81  |
|           |                | 34 H 150  | 1F     | 34     | 137.45 | 136.07 | 142.0  | 80  | 46.0 | 58 | -          | 81  |
| 35 H 150  | 1F             | 35        | 141.49 | 140.12 | 150.0  | 80     | 46.0   | 58  | -    | 85 |            |     |
| 36 H 150  | 1F             | 36        | 145.54 | 144.16 | 150.0  | 80     | 46.0   | 58  | -    | 85 |            |     |
| 38 H 150  | 1F             | 38        | 153.62 | 152.24 | 158.0  | 80     | 46.0   | 58  | -    | 86 |            |     |
| 40 H 150  | 1F             | 40        | 161.70 | 160.33 | 168.0  | 80     | 46.0   | 58  | -    | 90 |            |     |
| 42 H 150  | 1F             | 42        | 169.79 | 168.41 | 180.0  | 80     | 46.0   | 58  | -    | 94 |            |     |
| CAST-IRON | WITHOUT FLANGE | 44 H 150  | 5F     | 44     | 177.88 | 176.50 | 184.00 | 80  | 46.0 | 58 | 19         | 95  |
|           |                | 45 H 150  | 5F     | 45     | 181.91 | 180.54 | 192.00 | 80  | 46.0 | 58 | 19         | 96  |
|           |                | 48 H 150  | 5F     | 48     | 194.03 | 192.67 | 200.00 | 90  | 46.0 | 65 | 19         | 100 |
|           |                | 50 H 150  | 4      | 50     | 202.13 | 200.75 | -      | 90  | 46.0 | 65 | 19         | -   |
|           |                | 52 H 150  | 4      | 52     | 210.21 | 208.84 | -      | 90  | 46.0 | 65 | 19         | -   |
|           |                | 58 H 150  | 4      | 58     | 234.47 | 233.09 | -      | 90  | 46.0 | 65 | 19         | -   |
|           |                | 60 H 150  | 4      | 60     | 242.55 | 241.18 | -      | 120 | 46.0 | 65 | 19         | -   |
|           |                | 70 H 150  | 4      | 70     | 282.98 | 281.61 | -      | 120 | 46.0 | 65 | 24         | -   |
|           |                | 72 H 150  | 4      | 72     | 291.06 | 289.69 | -      | 120 | 46.0 | 65 | 24         | -   |
|           |                | 84 H 150  | 4      | 84     | 339.57 | 338.20 | -      | 120 | 46.0 | 65 | 24         | -   |
|           |                | 96 H 150  | 4      | 96     | 388.09 | 386.71 | -      | 120 | 46.0 | 65 | 24         | -   |
|           |                | 120 H 150 | 4      | 120    | 485.12 | 483.73 | -      | 120 | 46.0 | 65 | 24         | -   |



Type 1F



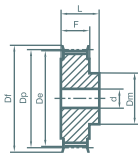
Type 4



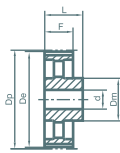
Type 5F

## H200 PITCH 1/2" (12.70mm)

| INFO      | Size           | Type     | Z      | Dp     | De     | Df     | Dm    | F   | L    | d  | Flange No. |     |
|-----------|----------------|----------|--------|--------|--------|--------|-------|-----|------|----|------------|-----|
|           |                |          |        |        |        |        |       |     |      |    |            |     |
| STEEL     | WITH FLANGE    | 14 H 200 | 1F     | 14     | 56.59  | 55.22  | 64.0  | 42  | 58.7 | 70 | -          | 59  |
|           |                | 15 H 200 | 1F     | 15     | 60.64  | 59.27  | 66.5  | 45  | 58.7 | 70 | -          | 60  |
|           |                | 16 H 200 | 1F     | 16     | 64.67  | 63.31  | 70.0  | 45  | 58.7 | 70 | -          | 61  |
|           |                | 17 H 200 | 1F     | 17     | 68.72  | 67.35  | 75.0  | 45  | 58.7 | 70 | -          | 62  |
|           |                | 18 H 200 | 1F     | 18     | 72.77  | 71.39  | 79.0  | 55  | 58.7 | 70 | -          | 63  |
|           |                | 19 H 200 | 1F     | 19     | 76.81  | 75.44  | 82.5  | 60  | 58.7 | 70 | -          | 64  |
|           |                | 20 H 200 | 1F     | 20     | 80.85  | 79.48  | 87.0  | 62  | 58.7 | 70 | -          | 76  |
|           |                | 21 H 200 | 1F     | 21     | 84.89  | 83.52  | 91.0  | 65  | 58.7 | 70 | -          | 66  |
|           |                | 22 H 200 | 1F     | 22     | 88.93  | 87.56  | 94.0  | 68  | 58.7 | 70 | -          | 67  |
|           |                | 23 H 200 | 1F     | 23     | 92.98  | 91.61  | 97.0  | 72  | 58.7 | 70 | -          | 68  |
|           |                | 24 H 200 | 1F     | 24     | 97.03  | 95.65  | 102.0 | 72  | 58.7 | 70 | -          | 70  |
|           |                | 25 H 200 | 1F     | 25     | 101.06 | 99.69  | 106.0 | 72  | 58.7 | 70 | -          | 71  |
|           |                | 26 H 200 | 1F     | 26     | 105.11 | 103.73 | 112.0 | 80  | 58.7 | 70 | -          | 72  |
|           |                | 27 H 200 | 1F     | 27     | 109.15 | 107.78 | 115.0 | 80  | 58.7 | 70 | -          | 74  |
|           |                | 28 H 200 | 1F     | 28     | 113.18 | 111.82 | 120.0 | 80  | 58.7 | 70 | -          | 75  |
|           |                | 29 H 200 | 1F     | 29     | 117.23 | 115.86 | 120.0 | 80  | 58.7 | 70 | -          | 75  |
|           |                | 30 H 200 | 1F     | 30     | 121.29 | 119.90 | 128.0 | 80  | 58.7 | 70 | -          | 78  |
|           |                | 32 H 200 | 1F     | 32     | 129.30 | 127.99 | 135.0 | 80  | 58.7 | 70 | -          | 80  |
|           |                | 33 H 200 | 1F     | 33     | 133.40 | 132.03 | 142.0 | 80  | 58.7 | 70 | -          | 81  |
|           |                | 34 H 200 | 1F     | 34     | 137.45 | 136.07 | 142.0 | 80  | 58.7 | 70 | -          | 81  |
| 35 H 200  | 1F             | 35       | 141.49 | 140.12 | 150.0  | 80     | 58.7  | 70  | -    | 85 |            |     |
| 36 H 200  | 1F             | 36       | 145.54 | 144.16 | 150.0  | 80     | 58.7  | 70  | -    | 85 |            |     |
| 38 H 200  | 1F             | 38       | 153.62 | 152.24 | 158.0  | 80     | 58.7  | 70  | -    | 86 |            |     |
| 40 H 200  | 1F             | 40       | 161.70 | 160.33 | 168.0  | 80     | 58.7  | 70  | -    | 90 |            |     |
| 42 H 200  | 1F             | 42       | 169.79 | 168.41 | 180.0  | 80     | 58.7  | 70  | -    | 94 |            |     |
| CAST-IRON | WITHOUT FLANGE | 44 H 200 | 5F     | 44     | 177.88 | 176.50 | 184.0 | 80  | 58.7 | 70 | 19         | 95  |
|           |                | 45 H 200 | 5F     | 45     | 181.91 | 180.54 | 192.0 | 80  | 58.7 | 70 | 19         | 96  |
|           |                | 48 H 200 | 5F     | 48     | 194.03 | 192.67 | 200.0 | 90  | 58.7 | 75 | 24         | 100 |
|           |                | 50 H 200 | 4      | 50     | 202.13 | 200.75 | -     | 90  | 58.7 | 75 | 24         | -   |
|           |                | 52 H 200 | 4      | 52     | 210.21 | 208.84 | -     | 90  | 58.7 | 75 | 24         | -   |
|           |                | 58 H 200 | 4      | 58     | 234.47 | 233.09 | -     | 90  | 58.7 | 75 | 24         | -   |
|           |                | 60 H 200 | 4      | 60     | 242.55 | 241.18 | -     | 120 | 58.7 | 75 | 24         | -   |
|           |                | 70 H 200 | 4      | 70     | 282.98 | 281.61 | -     | 120 | 58.7 | 75 | 28         | -   |
|           |                | 72 H 200 | 4      | 72     | 291.06 | 289.69 | -     | 120 | 58.7 | 75 | 28         | -   |
|           |                | 84 H 200 | 4      | 84     | 339.57 | 338.20 | -     | 120 | 58.7 | 75 | 28         | -   |
| 96 H 200  | 4              | 96       | 388.09 | 386.71 | -      | 120    | 58.7  | 75  | 28   | -  |            |     |
| 120 H 200 | 4              | 120      | 485.12 | 483.73 | -      | 120    | 58.7  | 75  | 28   | -  |            |     |



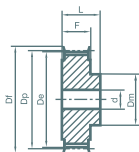
Type 1F



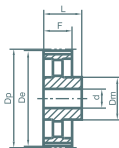
Type 4

## H300 PITCH 1/2" (12.70mm)

| INFO      | Size           | Type     | Z      | Dp     | De     | Df     | Dm    | F   | L    | d   | Flange No. |    |
|-----------|----------------|----------|--------|--------|--------|--------|-------|-----|------|-----|------------|----|
|           |                |          |        |        |        |        |       |     |      |     |            |    |
| STEEL     | WITH FLANGE    | 14 H 300 | 1F     | 14     | 56.59  | 55.22  | 64.0  | 42  | 85.7 | 100 | -          | 59 |
|           |                | 15 H 300 | 1F     | 15     | 60.64  | 59.27  | 66.5  | 45  | 85.7 | 100 | -          | 60 |
|           |                | 16 H 300 | 1F     | 16     | 64.67  | 63.31  | 70.0  | 45  | 85.7 | 100 | -          | 61 |
|           |                | 17 H 300 | 1F     | 17     | 68.72  | 67.35  | 75.0  | 45  | 85.7 | 100 | -          | 62 |
|           |                | 18 H 300 | 1F     | 18     | 72.77  | 71.39  | 79.0  | 55  | 85.7 | 100 | -          | 63 |
|           |                | 19 H 300 | 1F     | 19     | 76.81  | 75.44  | 82.5  | 60  | 85.7 | 100 | -          | 64 |
|           |                | 20 H 300 | 1F     | 20     | 80.85  | 79.48  | 87.0  | 62  | 85.7 | 100 | -          | 76 |
|           |                | 21 H 300 | 1F     | 21     | 84.89  | 83.52  | 91.0  | 65  | 85.7 | 100 | -          | 66 |
|           |                | 22 H 300 | 1F     | 22     | 88.93  | 87.56  | 94.0  | 68  | 85.7 | 100 | -          | 67 |
|           |                | 23 H 300 | 1F     | 23     | 92.98  | 91.61  | 97.0  | 72  | 85.7 | 100 | -          | 68 |
|           |                | 24 H 300 | 1F     | 24     | 97.03  | 95.65  | 102.0 | 72  | 85.7 | 100 | -          | 70 |
|           |                | 25 H 300 | 1F     | 25     | 101.06 | 99.69  | 106.0 | 72  | 85.7 | 100 | -          | 71 |
|           |                | 26 H 300 | 1F     | 26     | 105.11 | 103.73 | 112.0 | 80  | 85.7 | 100 | -          | 72 |
|           |                | 27 H 300 | 1F     | 27     | 109.15 | 107.78 | 115.0 | 80  | 85.7 | 100 | -          | 74 |
|           |                | 28 H 300 | 1F     | 28     | 113.18 | 111.82 | 120.0 | 80  | 85.7 | 100 | -          | 75 |
|           |                | 30 H 300 | 1F     | 30     | 121.29 | 119.90 | 128.0 | 80  | 85.7 | 100 | -          | 78 |
|           |                | 32 H 300 | 1F     | 32     | 129.30 | 127.99 | 135.0 | 80  | 85.7 | 100 | -          | 80 |
|           |                | 33 H 300 | 1F     | 33     | 133.40 | 132.03 | 142.0 | 80  | 85.7 | 100 | -          | 81 |
|           |                | 34 H 300 | 1F     | 34     | 137.45 | 136.07 | 142.0 | 80  | 85.7 | 100 | -          | 81 |
|           |                | 35 H 300 | 1F     | 35     | 141.49 | 140.12 | 150.0 | 80  | 85.7 | 100 | -          | 85 |
| 36 H 300  | 1F             | 36       | 145.54 | 144.16 | 150.0  | 80     | 85.7  | 100 | -    | 85  |            |    |
| 38 H 300  | 1F             | 38       | 153.62 | 152.24 | 158.0  | 80     | 85.7  | 100 | -    | 86  |            |    |
| 40 H 300  | 1F             | 40       | 161.70 | 160.33 | 168.0  | 80     | 85.7  | 100 | -    | 90  |            |    |
| 42 H 300  | 1F             | 42       | 169.79 | 168.41 | 180.0  | 80     | 85.7  | 100 | -    | 94  |            |    |
| CAST-IRON | WITHOUT FLANGE | 44 H 300 | 4      | 44     | 177.88 | 176.50 | -     | 80  | 85.7 | 100 | 24         | -  |
|           |                | 48 H 300 | 4      | 48     | 194.03 | 192.67 | -     | 90  | 85.7 | 100 | 24         | -  |
|           |                | 50 H 300 | 4      | 50     | 202.13 | 200.75 | -     | 90  | 85.7 | 100 | 24         | -  |
|           |                | 58 H 300 | 4      | 58     | 234.47 | 233.09 | -     | 90  | 85.7 | 100 | 24         | -  |
|           |                | 60 H 300 | 4      | 60     | 242.55 | 241.18 | -     | 120 | 85.7 | 100 | 24         | -  |
|           |                | 72 H 300 | 4      | 72     | 291.06 | 289.69 | -     | 120 | 85.7 | 100 | 28         | -  |
|           |                | 84 H 300 | 4      | 84     | 339.57 | 338.20 | -     | 120 | 85.7 | 100 | 28         | -  |
|           |                | 96 H 300 | 4      | 96     | 388.09 | 386.71 | -     | 120 | 85.7 | 100 | 28         | -  |
| 120 H 300 | 4              | 120      | 485.12 | 483.73 | -      | 120    | 85.7  | 100 | 28   | -   |            |    |



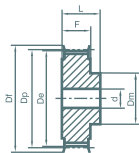
Type 1F



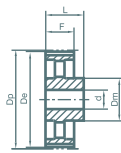
Type 4

## **XH200** PITCH 7/8" (22,22mm)

| STEEL     | INFO           | Size        | Type | Z   | Dp     | De     | Df    | Dm  | F  | L   | d  | Flange No. |
|-----------|----------------|-------------|------|-----|--------|--------|-------|-----|----|-----|----|------------|
|           |                |             |      |     |        |        |       |     |    |     |    |            |
|           |                | 18 XH 200   | 1F   | 18  | 127.34 | 124.55 | 140.0 | 100 | 65 | 80  | 24 | 155        |
|           |                | 19 XH 200   | 1F   | 19  | 134.41 | 131.62 | 146.0 | 100 | 65 | 80  | 24 | 156        |
|           |                | 20 XH 200   | 1F   | 20  | 141.49 | 138.69 | 155.0 | 100 | 65 | 80  | 24 | 157        |
|           |                | 21 XH 200   | 1F   | 21  | 148.56 | 145.77 | 160.0 | 110 | 65 | 80  | 24 | 158        |
|           |                | 22 XH 200   | 1F   | 22  | 155.64 | 152.84 | 170.0 | 110 | 65 | 80  | 24 | 159        |
|           |                | 24 XH 200   | 1F   | 24  | 169.79 | 166.99 | 184.0 | 120 | 65 | 80  | 24 | 161        |
|           |                | 25 XH 200   | 1F   | 25  | 176.86 | 174.07 | 188.0 | 120 | 65 | 80  | 24 | 162        |
|           |                | 26 XH 200   | 1F   | 26  | 183.93 | 181.14 | 198.0 | 120 | 65 | 80  | 24 | 163        |
|           |                | 27 XH 200   | 1F   | 27  | 191.01 | 188.22 | 205.0 | 120 | 65 | 80  | 24 | 164        |
|           |                | 28 XH 200   | 1F   | 28  | 198.09 | 195.29 | 212.0 | 120 | 65 | 80  | 24 | 165        |
|           |                | 30 XH 200   | 1F   | 30  | 212.23 | 209.44 | 227.0 | 120 | 65 | 80  | 24 | 167        |
|           |                | 32 XH 200   | 1F   | 32  | 226.38 | 223.59 | 240.0 | 120 | 65 | 80  | 24 | 169        |
|           |                | 34 XH 200   | 1F   | 34  | 240.53 | 237.74 | 256.0 | 120 | 65 | 80  | 24 | 170        |
| CAST-IRON | WITHOUT FLANGF | *38 XH 200  | 4    | 38  | 268.83 | 266.03 | -     | 150 | 65 | 80  | 28 | -          |
|           |                | *40 XH 200  | 4    | 40  | 282.98 | 280.18 | -     | 150 | 65 | 100 | 28 | -          |
|           |                | *48 XH 200  | 4    | 48  | 339.57 | 336.78 | -     | 150 | 65 | 100 | 28 | -          |
|           |                | *60 XH 200  | 4    | 60  | 424.47 | 421.67 | -     | 150 | 65 | 100 | 28 | -          |
|           |                | *72 XH 200  | 4    | 72  | 509.36 | 506.56 | -     | 160 | 65 | 100 | 28 | -          |
|           |                | *84 XH 200  | 4    | 84  | 594.25 | 591.46 | -     | 160 | 65 | 100 | 28 | -          |
|           |                | *96 XH 200  | 4    | 96  | 679.15 | 676.35 | -     | 160 | 65 | 100 | 28 | -          |
|           |                | *120 XH 200 | 4    | 120 | 848.93 | 846.14 | -     | 160 | 65 | 100 | 28 | -          |



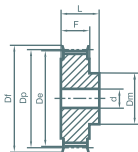
Type 1F



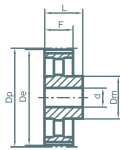
Type 4

## XH300 PITCH 7/8" 22.22mm

| INFO        | Size        | Type      | Z              | Dp         | De     | Df     | Dm     | F      | L    | d   | Flange No. |     |
|-------------|-------------|-----------|----------------|------------|--------|--------|--------|--------|------|-----|------------|-----|
|             |             |           |                |            |        |        |        |        |      |     |            |     |
| STEEL       | WITH FLANGE | 18 XH 300 | 1F             | 18         | 127.34 | 124.55 | 140.0  | 100    | 90.5 | 110 | 28         | 155 |
|             |             | 19 XH 300 | 1F             | 19         | 134.41 | 131.62 | 146.0  | 100    | 90.5 | 110 | 28         | 156 |
|             |             | 20 XH 300 | 1F             | 20         | 141.49 | 138.69 | 155.0  | 100    | 90.5 | 110 | 28         | 157 |
|             |             | 21 XH 300 | 1F             | 21         | 148.56 | 145.77 | 160.0  | 110    | 90.5 | 110 | 28         | 158 |
|             |             | 22 XH 300 | 1F             | 22         | 155.64 | 152.84 | 170.0  | 110    | 90.5 | 110 | 28         | 159 |
|             |             | 24 XH 300 | 1F             | 24         | 169.79 | 166.99 | 184.0  | 120    | 90.5 | 110 | 28         | 161 |
|             |             | 25 XH 300 | 1F             | 25         | 176.86 | 174.07 | 188.0  | 120    | 90.5 | 110 | 28         | 162 |
|             |             | 26 XH 300 | 1F             | 26         | 183.93 | 181.14 | 198.0  | 120    | 90.5 | 110 | 28         | 163 |
|             |             | 27 XH 300 | 1F             | 27         | 191.01 | 188.22 | 205.0  | 120    | 90.5 | 110 | 28         | 164 |
|             |             | 28 XH 300 | 1F             | 28         | 198.09 | 195.29 | 212.0  | 150    | 90.5 | 110 | 28         | 165 |
|             |             | 30 XH 300 | 1F             | 30         | 212.23 | 209.44 | 227.0  | 150    | 90.5 | 110 | 28         | 167 |
|             |             | 32 XH 300 | 1F             | 32         | 226.38 | 223.59 | 240.0  | 150    | 90.5 | 110 | 28         | 168 |
|             |             | 34 XH 300 | 1F             | 34         | 240.53 | 237.74 | 256.0  | 150    | 90.5 | 110 | 28         | 170 |
|             |             | CAST-IRON | WITHOUT FLANGE | *38 XH 300 | 4      | 38     | 268.63 | 266.03 | -    | 150 | 90.5       | 120 |
| *40 XH 300  | 4           |           |                | 40         | 282.98 | 280.18 | -      | 150    | 90.5 | 120 | 32         | -   |
| *48 XH 300  | 4           |           |                | 48         | 339.67 | 336.78 | -      | 175    | 90.5 | 120 | 32         | -   |
| *60 XH 300  | 4           |           |                | 60         | 424.47 | 421.67 | -      | 175    | 90.5 | 120 | 32         | -   |
| *72 XH 300  | 4           |           |                | 72         | 509.36 | 506.56 | -      | 175    | 90.5 | 120 | 32         | -   |
| *84 XH 300  | 4           |           |                | 84         | 594.25 | 591.46 | -      | 175    | 90.5 | 120 | 32         | -   |
| *96 XH 300  | 4           |           |                | 96         | 679.15 | 676.35 | -      | 175    | 90.5 | 120 | 32         | -   |
| *120 XH 300 | 4           |           |                | 120        | 848.83 | 846.14 | -      | 175    | 90.5 | 120 | 32         | -   |



Type 1F

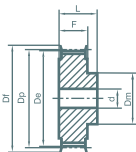


Type 4

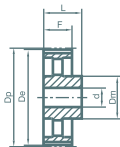
## XH400 PITCH 7/8" 22.22mm

| INFO        |             | Size      | Type           | Z          | Dp     | De     | Df     | Dm     | F   | L   | d   | Flange No. |
|-------------|-------------|-----------|----------------|------------|--------|--------|--------|--------|-----|-----|-----|------------|
| STEEL       | WITH FLANGE | 18 XH 400 | 1F             | 18         | 127.34 | 124.55 | 140.0  | 100    | 118 | 132 | 32  | 155        |
|             |             | 19 XH 400 | 1F             | 19         | 134.41 | 131.62 | 146.0  | 100    | 118 | 132 | 32  | 156        |
|             |             | 20 XH 400 | 1F             | 20         | 141.49 | 138.69 | 155.0  | 100    | 118 | 132 | 32  | 157        |
|             |             | 21 XH 400 | 1F             | 21         | 148.56 | 145.77 | 160.0  | 110    | 118 | 132 | 32  | 158        |
|             |             | 22 XH 400 | 1F             | 22         | 155.64 | 152.84 | 170.0  | 110    | 118 | 132 | 32  | 159        |
|             |             | 24 XH 400 | 1F             | 24         | 169.79 | 166.99 | 184.0  | 120    | 118 | 132 | 32  | 161        |
|             |             | 25 XH 400 | 1F             | 25         | 176.86 | 174.07 | 188.0  | 120    | 118 | 132 | 32  | 162        |
|             |             | 26 XH 400 | 1F             | 26         | 183.93 | 181.14 | 198.0  | 120    | 118 | 132 | 32  | 163        |
|             |             | 27 XH 400 | 1F             | 27         | 191.01 | 188.22 | 205.0  | 120    | 118 | 132 | 32  | 164        |
|             |             | 28 XH 400 | 1F             | 28         | 198.09 | 195.29 | 212.0  | 150    | 118 | 132 | 32  | 165        |
|             |             | 30 XH 400 | 1F             | 30         | 212.23 | 209.44 | 227.0  | 150    | 118 | 132 | 32  | 167        |
|             |             | 32 XH 400 | 1F             | 32         | 226.38 | 223.59 | 240.0  | 150    | 118 | 132 | 32  | 169        |
|             |             | 34 XH 400 | 1F             | 34         | 240.53 | 237.74 | 256.0  | 150    | 118 | 132 | 32  | 170        |
|             |             | CAST-IRON | WITHOUT FLANGE | *38 XH 400 | 4      | 38     | 268.83 | 266.03 | -   | 150 | 118 | 132        |
| *40 XH 400  | 4           |           |                | 40         | 282.98 | 280.18 | -      | 150    | 118 | 132 | 32  | -          |
| *48 XH 400  | 4           |           |                | 48         | 339.57 | 336.78 | -      | 175    | 118 | 132 | 32  | -          |
| *60 XH 400  | 4           |           |                | 60         | 424.47 | 421.67 | -      | 175    | 118 | 132 | 32  | -          |
| *72 XH 400  | 4           |           |                | 72         | 509.36 | 506.56 | -      | 175    | 118 | 132 | 32  | -          |
| *84 XH 400  | 4           |           |                | 84         | 594.25 | 591.46 | -      | 175    | 118 | 132 | 32  | -          |
| *96 XH 400  | 4           |           |                | 96         | 679.15 | 676.35 | -      | 175    | 118 | 132 | 32  | -          |
| *120 XH 400 | 4           | 120       | 848.93         | 846.14     | -      | 175    | 118    | 132    | 32  | -   |     |            |





Type 1F



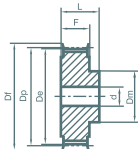
Type 4

## XXH200 PITCH 1 1/4" 31.75mm

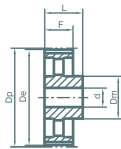
| INFO      |                | Size        | Type | Z  | Dp     | De     | Df    | Dm  | F    | L   | d  | Flange No. |
|-----------|----------------|-------------|------|----|--------|--------|-------|-----|------|-----|----|------------|
| STEEL     | WITH FLANGE    | 18 XXH 200  | 1F   | 18 | 181.91 | 178.87 | 198.0 | 140 | 64.2 | 100 | 28 | 163        |
|           |                | 20 XXH 200  | 1F   | 20 | 202.13 | 199.08 | 212.0 | 150 | 64.2 | 100 | 28 | 165        |
|           |                | 22 XXH 200  | 1F   | 22 | 222.34 | 219.29 | 240.0 | 150 | 64.2 | 100 | 28 | 169        |
|           |                | 24 XXH 200  | 1F   | 24 | 242.55 | 239.50 | 267.0 | 150 | 64.2 | 100 | 28 | 173        |
|           |                | 26 XXH 200  | 1F   | 26 | 262.76 | 259.79 | 290.0 | 150 | 64.2 | 100 | 28 | 178        |
| CAST-IRON | WITHOUT FLANGE | *30 XXH 200 | 4    | 30 | 303.19 | 300.14 | -     | 150 | 64.2 | 100 | 28 | -          |
|           |                | *40 XXH 200 | 4    | 40 | 404.25 | 401.21 | -     | 150 | 64.2 | 100 | 28 | -          |
|           |                | *48 XXH 200 | 4    | 48 | 485.10 | 482.06 | -     | 175 | 64.2 | 120 | 32 | -          |
|           |                | *60 XXH 200 | 4    | 60 | 606.38 | 603.33 | -     | 175 | 64.2 | 120 | 32 | -          |
|           |                | *72 XXH 200 | 4    | 72 | 727.66 | 724.61 | -     | 175 | 64.2 | 120 | 38 | -          |
|           |                | *90 XXH 200 | 4    | 90 | 909.57 | 906.52 | -     | 175 | 64.2 | 120 | 38 | -          |

## XXH300 PITCH 1 1/4" (31.75mm)

| INFO      |                | Size        | Type | Z  | Dp     | De     | Df    | Dm  | F    | L   | d  | Flange No. |
|-----------|----------------|-------------|------|----|--------|--------|-------|-----|------|-----|----|------------|
| STEEL     | WITH FLANGE    | 18 XXH 300  | 1F   | 18 | 181.91 | 178.87 | 198.0 | 140 | 91.4 | 110 | 28 | 163        |
|           |                | 20 XXH 300  | 1F   | 20 | 202.13 | 199.08 | 212.0 | 150 | 91.4 | 110 | 28 | 165        |
|           |                | 22 XXH 300  | 1F   | 22 | 222.34 | 219.29 | 240.0 | 150 | 91.4 | 110 | 28 | 169        |
|           |                | 24 XXH 300  | 1F   | 24 | 242.55 | 239.50 | 267.0 | 150 | 91.4 | 110 | 28 | 173        |
|           |                | 26 XXH 300  | 1F   | 26 | 262.76 | 259.79 | 290.0 | 150 | 91.4 | 110 | 28 | 178        |
| CAST-IRON | WITHOUT FLANGE | *30 XXH 300 | 4    | 30 | 303.19 | 300.14 | -     | 150 | 91.4 | 110 | 28 | -          |
|           |                | *40 XXH 300 | 4    | 40 | 404.25 | 401.21 | -     | 150 | 91.4 | 110 | 28 | -          |
|           |                | *48 XXH 300 | 4    | 48 | 485.10 | 482.06 | -     | 175 | 91.4 | 120 | 32 | -          |
|           |                | *60 XXH 300 | 4    | 60 | 606.38 | 603.33 | -     | 175 | 91.4 | 120 | 32 | -          |
|           |                | *72 XXH 300 | 4    | 72 | 727.66 | 724.61 | -     | 175 | 91.4 | 120 | 38 | -          |
|           |                | *90 XXH 300 | 4    | 90 | 909.57 | 906.52 | -     | 175 | 91.4 | 120 | 38 | -          |



Type 1F



Type 4

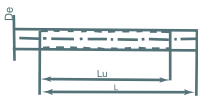
## XXH400 PITCH 1 1/4" (31.75mm)

| INFO      |                | Size        | Type | Z  | Dp     | De     | Df    | Dm  | F     | L   | d  | Flange No. |
|-----------|----------------|-------------|------|----|--------|--------|-------|-----|-------|-----|----|------------|
| STEEL     | WITH FLANGF    | 18 XXH 400  | 1F   | 18 | 181.91 | 178.87 | 198.0 | 140 | 118.2 | 140 | 32 | 163        |
|           |                | 20 XXH 400  | 1F   | 20 | 202.13 | 199.08 | 212.0 | 150 | 118.2 | 140 | 32 | 165        |
|           |                | 22 XXH 400  | 1F   | 22 | 222.34 | 219.29 | 240.0 | 150 | 118.2 | 140 | 32 | 169        |
|           |                | 24 XXH 400  | 1F   | 24 | 242.55 | 239.50 | 267.0 | 150 | 118.2 | 140 | 32 | 173        |
|           |                | 26 XXH 400  | 1F   | 26 | 262.76 | 259.79 | 290.0 | 150 | 118.2 | 140 | 32 | 178        |
| CAST-IRON | WITHOUT FLANGF | *30 XXH 400 | 4    | 30 | 303.19 | 300.14 | -     | 185 | 118.2 | 140 | 32 | -          |
|           |                | *40 XXH 400 | 4    | 40 | 404.25 | 401.21 | -     | 185 | 118.2 | 140 | 32 | -          |
|           |                | *48 XXH 400 | 4    | 48 | 485.10 | 482.06 | -     | 185 | 118.2 | 140 | 38 | -          |
|           |                | *60 XXH 400 | 4    | 60 | 606.38 | 603.33 | -     | 185 | 118.2 | 140 | 38 | -          |
|           |                | *72 XXH 400 | 4    | 72 | 727.66 | 724.61 | -     | 220 | 118.2 | 140 | 38 | -          |
|           |                | *90 XXH 400 | 4    | 90 | 909.57 | 906.52 | -     | 220 | 118.2 | 140 | 38 | -          |

## XXH500 PITCH 1 1/4" 31.75mm

| INFO      |                | Size        | Type | Z  | Dp     | De     | Df    | Dm  | F     | L   | d  | Flange No. |
|-----------|----------------|-------------|------|----|--------|--------|-------|-----|-------|-----|----|------------|
| STEEL     | WITH FLANGF    | 18 XXH 500  | 1F   | 18 | 181.91 | 178.87 | 198.0 | 140 | 145.3 | 168 | 32 | 163        |
|           |                | 20 XXH 500  | 1F   | 20 | 202.13 | 199.08 | 212.0 | 150 | 145.3 | 168 | 32 | 165        |
|           |                | 22 XXH 500  | 1F   | 22 | 222.34 | 219.29 | 240.0 | 150 | 145.3 | 168 | 32 | 169        |
|           |                | 24 XXH 500  | 1F   | 24 | 242.55 | 239.50 | 267.0 | 150 | 145.3 | 168 | 32 | 173        |
|           |                | 26 XXH 500  | 1F   | 26 | 262.76 | 259.79 | 290.0 | 150 | 145.3 | 168 | 32 | 178        |
| CAST-IRON | WITHOUT FLANGF | *30 XXH 500 | 4    | 30 | 303.19 | 300.14 | -     | 215 | 145.3 | 168 | 32 | -          |
|           |                | *40 XXH 500 | 4    | 40 | 404.25 | 401.21 | -     | 215 | 145.3 | 168 | 32 | -          |
|           |                | *48 XXH 500 | 4    | 48 | 485.10 | 482.06 | -     | 215 | 145.3 | 168 | 38 | -          |
|           |                | *60 XXH 500 | 4    | 60 | 606.38 | 603.33 | -     | 240 | 145.3 | 168 | 38 | -          |
|           |                | *72 XXH 500 | 4    | 72 | 727.66 | 724.61 | -     | 240 | 145.3 | 168 | 38 | -          |
|           |                | *90 XXH 500 | 4    | 90 | 909.57 | 906.52 | -     | 240 | 145.3 | 168 | 38 | -          |

## Standard toothed bars



## MXL-0.08"

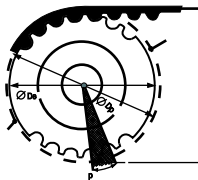
## XL-1/5"

| Type   | Z  | De    | LU  | L   |
|--------|----|-------|-----|-----|
| MXL 12 | 12 | 7.26  | 50  | 75  |
| MXL 14 | 14 | 8.56  | 50  | 75  |
| MXL 15 | 15 | 9.19  | 50  | 75  |
| MXL 16 | 16 | 9.83  | 50  | 75  |
| MXL 18 | 18 | 11.12 | 50  | 75  |
| MXL 20 | 20 | 12.42 | 90  | 120 |
| MXL 22 | 22 | 13.72 | 125 | 140 |
| MXL 24 | 24 | 15.01 | 125 | 140 |
| MXL 25 | 25 | 15.67 | 125 | 140 |
| MXL 26 | 26 | 16.31 | 125 | 140 |
| MXL 28 | 28 | 17.60 | 125 | 140 |
| MXL 30 | 30 | 18.90 | 125 | 140 |
| MXL 32 | 32 | 20.19 | 125 | 140 |
| MXL 34 | 34 | 21.49 | 125 | 140 |
| MXL 36 | 36 | 22.78 | 132 | 140 |
| MXL 38 | 38 | 24.08 | 132 | 140 |
| MXL 40 | 40 | 25.37 | 132 | 140 |
| MXL 42 | 42 | 26.67 | 140 | 140 |
| MXL 44 | 44 | 27.94 | 140 | 140 |
| MXL 45 | 45 | 28.60 | 140 | 140 |
| MXL 48 | 48 | 30.53 | 140 | 140 |
| MXL 50 | 50 | 31.83 | 140 | 140 |
| MXL 60 | 60 | 38.30 | 160 | 160 |
| MXL 70 | 70 | 44.78 | 160 | 160 |
| MXL 72 | 72 | 46.05 | 160 | 160 |

| Type  | Z  | De     | LU  | L   |
|-------|----|--------|-----|-----|
| XL 10 | 10 | 15.66  | 125 | 140 |
| XL 11 | 11 | 17.28  | 125 | 140 |
| XL 12 | 12 | 18.90  | 125 | 140 |
| XL 13 | 13 | 20.51  | 125 | 140 |
| XL 14 | 14 | 22.13  | 132 | 140 |
| XL 15 | 15 | 23.75  | 132 | 140 |
| XL 16 | 16 | 25.36  | 140 | 140 |
| XL 17 | 17 | 26.98  | 140 | 140 |
| XL 18 | 18 | 28.60  | 140 | 140 |
| XL 19 | 19 | 30.22  | 140 | 140 |
| XL 20 | 20 | 31.83  | 140 | 140 |
| XL 21 | 21 | 33.45  | 160 | 160 |
| XL 22 | 22 | 35.07  | 160 | 160 |
| XL 23 | 23 | 36.60  | 160 | 160 |
| XL 24 | 24 | 38.30  | 160 | 160 |
| XL 25 | 25 | 39.93  | 160 | 160 |
| XL 26 | 26 | 41.53  | 160 | 160 |
| XL 27 | 27 | 43.15  | 160 | 160 |
| XL 28 | 28 | 44.77  | 160 | 160 |
| XL 29 | 29 | 46.39  | 160 | 160 |
| XL 30 | 30 | 48.00  | 160 | 160 |
| XL 32 | 32 | 51.24  | 160 | 160 |
| XL 33 | 33 | 52.76  | 160 | 160 |
| XL 34 | 34 | 54.47  | 160 | 160 |
| XL 35 | 35 | 56.09  | 160 | 160 |
| XL 36 | 36 | 57.70  | 160 | 160 |
| XL 38 | 38 | 60.94  | 160 | 160 |
| XL 39 | 39 | 62.56  | 160 | 160 |
| XL 40 | 40 | 64.17  | 160 | 160 |
| XL 41 | 41 | 65.79  | 160 | 160 |
| XL 42 | 42 | 67.41  | 160 | 160 |
| XL 43 | 43 | 69.02  | 160 | 160 |
| XL 44 | 44 | 70.64  | 160 | 160 |
| XL 48 | 48 | 77.11  | 160 | 160 |
| XL 56 | 56 | 90.04  | 160 | 160 |
| XL 60 | 60 | 96.51  | 160 | 160 |
| XL 72 | 72 | 115.92 | 160 | 160 |

## L-3/8"





| Type | Z  | De    | LU  | L   |
|------|----|-------|-----|-----|
| L10  | 10 | 29.56 | 140 | 140 |
| L11  | 11 | 32.59 | 140 | 140 |
| L12  | 12 | 35.62 | 160 | 160 |
| L13  | 13 | 38.65 | 160 | 160 |
| L14  | 14 | 41.68 | 160 | 160 |
| L15  | 15 | 44.72 | 160 | 160 |
| L16  | 16 | 47.75 | 160 | 160 |
| L17  | 17 | 50.78 | 160 | 160 |
| L18  | 18 | 53.81 | 160 | 160 |
| L19  | 19 | 56.84 | 160 | 160 |
| L20  | 20 | 59.88 | 160 | 160 |
| L21  | 21 | 62.91 | 160 | 160 |
| L22  | 22 | 65.94 | 160 | 160 |
| L23  | 23 | 68.97 | 160 | 160 |
| L24  | 24 | 72.00 | 160 | 160 |
| L27  | 27 | 81.10 | 160 | 160 |
| L30  | 30 | 90.20 | 160 | 160 |



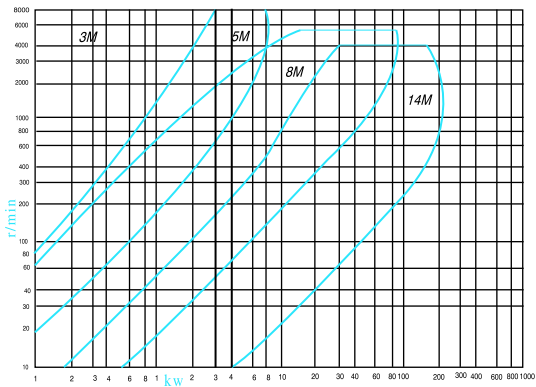
P= Pitch is the distance measured from the central line between two adjacent teeth of timing pulleys.

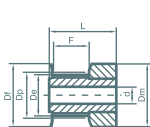
Dp= Pitch circle diameter of timing pulley.

De= External diameter of timing pulley.

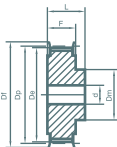
| SPECIFICATION OF BELT AND PULLEY | TEETH DIMENSION OF BELT  |
|----------------------------------|--|
| HTB 3M                           |   |
| HTB 5M                           |   |
| HTB 8M                           |   |
| HTB 14M                          |  |

## DESIGN HORSEPOWER (HORSEPOWER SERVICE FACTOR)

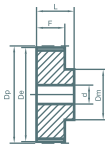




Type 0F



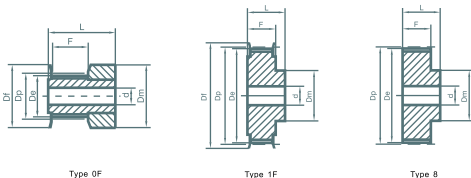
Type 1F



Type 8

## HTB 3M-09

| ALUMINIUM | INFO           | Size        | Z        | Type | Dp    | De    | Df   | Dm   | F    | L    | d    | Flange No. |
|-----------|----------------|-------------|----------|------|-------|-------|------|------|------|------|------|------------|
|           |                | WITH FLANGE | 10-3M-09 | 10   | 0F    | 9.55  | 8.79 | 13.0 | 13.0 | 10.2 | 17.5 | -          |
|           |                | 12-3M-09    | 12       | 0F   | 11.46 | 10.70 | 15.0 | 15.0 | 10.2 | 17.5 | -    | 502        |
|           |                | 14-3M-09    | 14       | 0F   | 13.37 | 12.61 | 16.0 | 16.0 | 10.2 | 17.5 | -    | 503        |
|           |                | 15-3M-09    | 15       | 0F   | 14.32 | 13.56 | 17.5 | 17.5 | 10.2 | 17.5 | -    | 516        |
|           |                | 16-3M-09    | 16       | 1F   | 15.28 | 14.52 | 17.5 | 10.0 | 12.8 | 20.6 | 4.0  | 504        |
|           |                | 18-3M-09    | 18       | 1F   | 17.19 | 16.43 | 20.0 | 11.0 | 12.8 | 20.6 | 6.0  | 505        |
|           |                | 20-3M-09    | 20       | 1F   | 19.10 | 18.34 | 23.0 | 13.0 | 12.8 | 20.6 | 6.0  | 517        |
|           |                | 21-3M-09    | 21       | 1F   | 20.05 | 19.29 | 25.0 | 14.0 | 12.8 | 20.6 | 6.0  | 518        |
|           |                | 22-3M-09    | 22       | 1F   | 21.01 | 20.25 | 25.0 | 14.0 | 12.8 | 20.6 | 6.0  | 518        |
|           |                | 24-3M-09    | 24       | 1F   | 22.92 | 22.16 | 25.0 | 14.0 | 12.8 | 20.6 | 6.0  | 518        |
|           |                | 26-3M-09    | 26       | 1F   | 24.83 | 24.07 | 28.0 | 16.0 | 12.8 | 20.6 | 6.0  | 508        |
|           |                | 28-3M-09    | 28       | 1F   | 26.74 | 25.98 | 32.0 | 18.0 | 12.8 | 20.6 | 6.0  | 509        |
|           |                | 30-3M-09    | 30       | 1F   | 28.65 | 27.89 | 32.0 | 20.0 | 12.8 | 20.6 | 6.0  | 509        |
|           |                | 32-3M-09    | 32       | 1F   | 30.56 | 29.80 | 36.0 | 22.0 | 12.8 | 20.6 | 6.0  | 510        |
|           |                | 36-3M-09    | 36       | 1F   | 34.38 | 33.62 | 39.0 | 26.0 | 13.4 | 22.2 | 6.0  | 519        |
|           |                | 40-3M-09    | 40       | 1F   | 38.20 | 37.44 | 42.0 | 28.0 | 13.4 | 22.2 | 6.0  | 513        |
|           |                | 44-3M-09    | 44       | 1F   | 42.02 | 41.26 | 48.0 | 33.0 | 13.4 | 22.2 | 6.0  | 520        |
|           | WITHOUT FLANGE | 48-3M-09    | 48       | 8    | 45.84 | 45.08 | -    | 33.0 | 13.4 | 22.2 | 8.0  | -          |
|           |                | 60-3M-09    | 60       | 8    | 57.30 | 56.54 | -    | 33.0 | 13.4 | 22.2 | 8.0  | -          |
|           |                | 72-3M-09    | 72       | 8    | 68.75 | 67.99 | -    | 33.0 | 13.4 | 22.2 | 8.0  | -          |



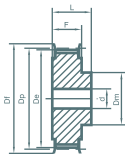
Type 0F

Type 1F

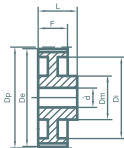
Type 8

## HTB3M-15

| ALUMINIUM | INFO           | Size        | Z        | Type | Dp    | De    | Df   | Dm   | F    | L    | d    | Flange No. |
|-----------|----------------|-------------|----------|------|-------|-------|------|------|------|------|------|------------|
|           |                | WITH FLANGE | 10-3M-15 | 10   | 0F    | 9.55  | 8.79 | 13.0 | 13.0 | 17.0 | 26.0 | -          |
|           |                | 12-3M-15    | 12       | 0F   | 11.46 | 10.70 | 15.0 | 15.0 | 17.0 | 26.0 | -    | 502        |
|           |                | 14-3M-15    | 14       | 0F   | 13.37 | 12.61 | 16.0 | 16.0 | 17.0 | 26.0 | -    | 503        |
|           |                | 15-3M-15    | 15       | 0F   | 14.32 | 13.56 | 17.5 | 17.5 | 17.0 | 26.0 | -    | 516        |
|           |                | 16-3M-15    | 16       | 1F   | 15.28 | 14.52 | 17.5 | 10.0 | 19.5 | 26.0 | 4.0  | 504        |
|           |                | 18-3M-15    | 18       | 1F   | 17.19 | 16.43 | 20.0 | 11.0 | 19.5 | 26.0 | 6.0  | 505        |
|           |                | 20-3M-15    | 20       | 1F   | 19.10 | 18.34 | 23.0 | 13.0 | 19.5 | 26.0 | 6.0  | 517        |
|           |                | 21-3M-15    | 21       | 1F   | 20.05 | 19.29 | 25.0 | 14.0 | 19.5 | 26.0 | 6.0  | 518        |
|           |                | 22-3M-15    | 22       | 1F   | 21.01 | 20.25 | 25.0 | 14.0 | 19.5 | 26.0 | 6.0  | 518        |
|           |                | 24-3M-15    | 24       | 1F   | 22.92 | 22.16 | 25.0 | 14.0 | 19.5 | 26.0 | 6.0  | 518        |
|           |                | 26-3M-15    | 26       | 1F   | 24.83 | 24.07 | 28.0 | 16.0 | 19.5 | 26.0 | 6.0  | 508        |
|           |                | 28-3M-15    | 28       | 1F   | 26.74 | 25.98 | 32.0 | 18.0 | 19.5 | 26.0 | 6.0  | 509        |
|           |                | 30-3M-15    | 30       | 1F   | 28.65 | 27.89 | 32.0 | 20.0 | 19.5 | 26.0 | 6.0  | 509        |
|           |                | 32-3M-15    | 32       | 1F   | 30.56 | 29.80 | 36.0 | 22.0 | 19.5 | 26.0 | 6.0  | 510        |
|           |                | 36-3M-15    | 36       | 1F   | 34.38 | 33.62 | 39.0 | 26.0 | 20.0 | 30.0 | 6.0  | 519        |
|           |                | 40-3M-15    | 40       | 1F   | 38.20 | 37.44 | 42.0 | 28.0 | 20.0 | 30.0 | 6.0  | 513        |
|           |                | 44-3M-15    | 44       | 1F   | 42.02 | 41.26 | 48.0 | 33.0 | 20.0 | 30.0 | 6.0  | 520        |
|           | WITHOUT FLANGE | 48-3M-15    | 48       | 8    | 45.84 | 45.08 | -    | 33.0 | 20.0 | 30.0 | 8.0  | -          |
|           |                | 60-3M-15    | 60       | 8    | 57.30 | 56.54 | -    | 33.0 | 20.0 | 30.0 | 8.0  | -          |
|           |                | 72-3M-15    | 72       | 8    | 68.75 | 67.99 | -    | 33.0 | 20.0 | 30.0 | 8.0  | -          |



Type 1F

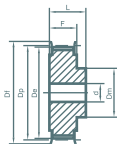


Type 3

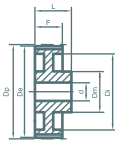
## HTB 5M-09

| INFO           |             | Size        | Z        | Type   | Dp    | De    | Df    | Dm   | Di   | F    | L    | d    | Flange No. |    |
|----------------|-------------|-------------|----------|--------|-------|-------|-------|------|------|------|------|------|------------|----|
| STEEL          | WITH FLANGE | 12-5M-09    | 12       | 1F     | 19.10 | 17.96 | 23.0  | 13.0 | -    | 14.5 | 20.0 | 4.0  | 14         |    |
|                |             | 14-5M-09    | 14       | 1F     | 22.28 | 21.14 | 25.0  | 13.0 | -    | 14.5 | 20.0 | 6.0  | 2          |    |
|                |             | 15-5M-09    | 15       | 1F     | 23.87 | 22.73 | 28.0  | 16.0 | -    | 14.5 | 20.0 | 6.0  | 4          |    |
|                |             | 16-5M-09    | 16       | 1F     | 25.46 | 24.32 | 28.0  | 16.5 | -    | 14.5 | 20.0 | 6.0  | 4          |    |
|                |             | 18-5M-09    | 18       | 1F     | 28.65 | 27.51 | 32.0  | 20.0 | -    | 14.5 | 20.0 | 6.0  | 6          |    |
|                |             | 20-5M-09    | 20       | 1F     | 31.83 | 30.69 | 36.0  | 23.0 | -    | 14.5 | 22.5 | 6.0  | 8          |    |
|                | ALUMINIUM   | WITH FLANGE | 21-5M-09 | 21     | 1F    | 33.42 | 32.28 | 38.0 | 24.0 | -    | 14.5 | 22.5 | 6.0        | 9  |
|                |             |             | 22-5M-09 | 22     | 1F    | 35.01 | 33.87 | 39.0 | 25.5 | -    | 14.5 | 22.5 | 6.0        | 15 |
|                |             |             | 24-5M-09 | 24     | 1F    | 38.20 | 37.06 | 42.0 | 27.0 | -    | 14.5 | 22.5 | 6.0        | 13 |
|                |             |             | 26-5M-09 | 26     | 1F    | 41.38 | 40.24 | 44.0 | 30.0 | -    | 14.5 | 22.5 | 6.0        | 12 |
|                |             |             | 28-5M-09 | 28     | 1F    | 44.56 | 43.42 | 48.0 | 30.5 | -    | 14.5 | 22.5 | 6.0        | 11 |
|                |             |             | 30-5M-09 | 30     | 1F    | 47.75 | 46.60 | 51.0 | 35.0 | -    | 14.5 | 22.5 | 6.0        | 16 |
| WITHOUT FLANGE |             | 32-5M-09    | 32       | 1F     | 50.93 | 49.79 | 54.0  | 38.0 | -    | 14.5 | 22.5 | 8.0  | 18         |    |
|                |             | 36-5M-09    | 36       | 1F     | 57.30 | 56.16 | 60.0  | 38.0 | -    | 14.5 | 22.5 | 8.0  | 21         |    |
|                |             | 40-5M-09    | 40       | 1F     | 63.66 | 62.52 | 71.0  | 38.0 | -    | 14.5 | 22.5 | 8.0  | 25         |    |
|                |             | 44-5M-09    | 44       | 3      | 70.03 | 68.89 | -     | 38.0 | 54   | 14.5 | 25.5 | 8.0  | -          |    |
| 48-5M-09       | 48          | 3           | 76.39    | 75.25  | -     | 45.0  | 61    | 14.5 | 25.5 | 8.0  | -    |      |            |    |
| 60-5M-09       | 60          | 3           | 95.49    | 94.35  | -     | 45.0  | 80    | 14.5 | 25.5 | 8.0  | -    |      |            |    |
| 72-5M-09       | 72          | 3           | 114.59   | 113.45 | -     | 45.0  | 100   | 14.5 | 25.5 | 8.0  | -    |      |            |    |





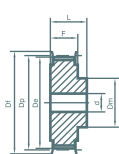
Type 1F



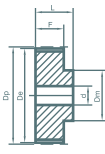
Type 3

## HTB 5M-15

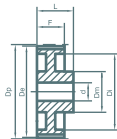
| INFO     |             | Size           | Z        | Type  | Dp     | De     | Df    | Dm   | Di   | F    | L    | d    | Flange No. |
|----------|-------------|----------------|----------|-------|--------|--------|-------|------|------|------|------|------|------------|
| STEEL    | WITH FLANGE | 12-5M-15       | 12       | 1F    | 19.10  | 17.96  | 23.0  | 13.0 | -    | 20.5 | 26.0 | -    | 14         |
|          |             | 14-5M-15       | 14       | 1F    | 22.28  | 21.14  | 25.0  | 13.0 | -    | 20.5 | 26.0 | 6.0  | 2          |
|          |             | 15-5M-15       | 15       | 1F    | 23.87  | 22.73  | 28.0  | 16.0 | -    | 20.5 | 26.0 | 6.0  | 4          |
|          |             | 16-5M-15       | 16       | 1F    | 25.46  | 24.32  | 28.0  | 16.5 | -    | 20.5 | 26.0 | 6.0  | 4          |
|          |             | 18-5M-15       | 18       | 1F    | 28.65  | 27.51  | 32.0  | 20.0 | -    | 20.5 | 26.0 | 6.0  | 6          |
|          |             | 20-5M-15       | 20       | 1F    | 31.83  | 30.69  | 36.0  | 23.0 | -    | 20.5 | 26.0 | 6.0  | 8          |
|          |             | 21-5M-15       | 21       | 1F    | 33.42  | 32.28  | 38.0  | 24.0 | -    | 20.5 | 26.0 | 6.0  | 9          |
|          |             | 22-5M-15       | 22       | 1F    | 35.01  | 33.87  | 39.0  | 25.5 | -    | 20.5 | 26.0 | 6.0  | 15         |
|          | 24-5M-15    | 24             | 1F       | 38.20 | 37.06  | 42.0   | 27.0  | -    | 20.5 | 28.0 | 6.0  | 13   |            |
|          | 26-5M-15    | 26             | 1F       | 41.38 | 40.24  | 44.0   | 30.0  | -    | 20.5 | 28.0 | 6.0  | 12   |            |
|          | 28-5M-15    | 28             | 1F       | 44.56 | 43.42  | 48.0   | 30.5  | -    | 20.5 | 28.0 | 6.0  | 11   |            |
|          | 30-5M-15    | 30             | 1F       | 47.75 | 46.60  | 51.0   | 35.0  | -    | 20.5 | 28.0 | 6.0  | 16   |            |
|          | 32-5M-15    | 32             | 1F       | 50.93 | 49.79  | 54.0   | 38.0  | -    | 20.5 | 28.0 | 8.0  | 18   |            |
|          | 36-5M-15    | 36             | 1F       | 57.30 | 56.16  | 60.0   | 38.0  | -    | 20.5 | 28.0 | 8.0  | 21   |            |
|          | 40-5M-15    | 40             | 1F       | 63.66 | 62.52  | 71.0   | 38.0  | -    | 20.5 | 28.0 | 8.0  | 25   |            |
|          | ALUMINIUM   | WITHOUT FLANGE | 44-5M-15 | 44    | 3      | 70.03  | 68.89 | -    | 38.0 | 54   | 20.5 | 30.0 | 8.0        |
| 48-5M-15 |             |                | 48       | 3     | 76.39  | 75.25  | -     | 38.0 | 61   | 20.5 | 30.0 | 8.0  | -          |
| 60-5M-15 |             |                | 60       | 3     | 95.49  | 94.35  | -     | 50.0 | 80   | 20.5 | 30.0 | 8.0  | -          |
| 72-5M-15 |             |                | 72       | 3     | 114.59 | 113.45 | -     | 50.0 | 100  | 20.5 | 30.0 | 8.0  | -          |



Type 1F



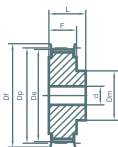
Type 8



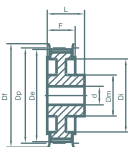
Type 3

## HTB 5M-25

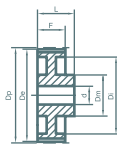
| INFO     |             | Size      | Z              | Type     | Dp     | De     | Df    | Dm    | Di  | F    | L  | d    | Flange No. |
|----------|-------------|-----------|----------------|----------|--------|--------|-------|-------|-----|------|----|------|------------|
| STEEL    | WITH FLANGE | 12-5M-25  | 12             | 1F       | 19.10  | 17.96  | 23.0  | 13.0  | -   | 30.5 | 36 | -    | 14         |
|          |             | 14-5M-25  | 14             | 1F       | 22.28  | 21.14  | 25.0  | 13.0  | -   | 30.5 | 36 | 6.0  | 2          |
|          |             | 15-5M-25  | 15             | 1F       | 23.87  | 22.73  | 28.0  | 16.0  | -   | 30.5 | 36 | 6.0  | 4          |
|          |             | 16-5M-25  | 16             | 1F       | 25.46  | 24.32  | 28.0  | 16.5  | -   | 30.5 | 36 | 6.0  | 4          |
|          |             | 18-5M-25  | 18             | 1F       | 28.65  | 27.51  | 32.0  | 20.0  | -   | 30.5 | 36 | 6.0  | 6          |
|          |             | 20-5M-25  | 20             | 1F       | 31.83  | 30.69  | 36.0  | 23.0  | -   | 30.5 | 36 | 6.0  | 8          |
|          |             | 21-5M-25  | 21             | 1F       | 33.42  | 32.28  | 38.0  | 24.0  | -   | 30.5 | 38 | 6.0  | 9          |
|          |             | 22-5M-25  | 22             | 1F       | 35.01  | 33.87  | 39.0  | 25.5  | -   | 30.5 | 38 | 6.0  | 15         |
|          |             | 24-5M-25  | 24             | 1F       | 38.20  | 37.06  | 42.0  | 27.0  | -   | 30.5 | 38 | 6.0  | 13         |
|          |             | 26-5M-25  | 26             | 1F       | 41.38  | 40.24  | 44.0  | 30.0  | -   | 30.5 | 38 | 6.0  | 12         |
|          |             | 28-5M-25  | 28             | 1F       | 44.56  | 43.42  | 48.0  | 30.5  | -   | 30.5 | 38 | 6.0  | 11         |
|          |             | 30-5M-25  | 30             | 1F       | 47.75  | 46.60  | 51.0  | 35.0  | -   | 30.5 | 38 | 6.0  | 16         |
|          |             | 32-5M-25  | 32             | 1F       | 50.93  | 49.79  | 54.0  | 38.0  | -   | 30.5 | 38 | 8.0  | 18         |
|          |             | 36-5M-25  | 36             | 1F       | 57.30  | 56.16  | 60.0  | 38.0  | -   | 30.5 | 38 | 8.0  | 21         |
|          |             | 40-5M-25  | 40             | 1F       | 63.66  | 62.52  | 71.0  | 38.0  | -   | 30.5 | 38 | 8.0  | 25         |
|          |             | ALUMINIUM | WITHOUT FLANGE | 44-5M-25 | 44     | 8      | 70.03 | 68.89 | -   | 38.0 | -  | 30.5 | 40         |
| 48-5M-25 | 48          |           |                | 3        | 76.39  | 75.25  | -     | 38.0  | 61  | 30.5 | 40 | 8.0  | -          |
| 60-5M-25 | 60          |           |                | 3        | 95.49  | 94.35  | -     | 50.0  | 80  | 30.5 | 40 | 8.0  | -          |
| 72-5M-25 | 72          |           |                | 3        | 114.59 | 113.45 | -     | 50.0  | 100 | 30.5 | 40 | 8.0  | -          |



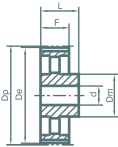
Type 1F



Type 2F



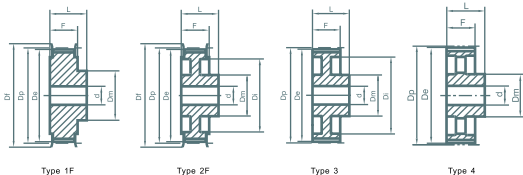
Type 3



Type 4

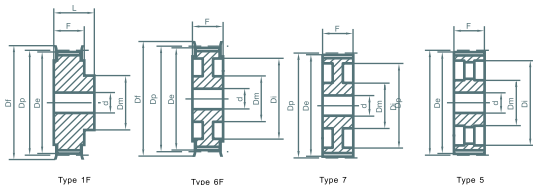
## HTB 8M-20

| INFO       | Size        | Z              | Type     | Dp     | De     | Df     | Dm     | Di  | F   | L   | d  | Flange No. |    |
|------------|-------------|----------------|----------|--------|--------|--------|--------|-----|-----|-----|----|------------|----|
|            |             |                |          |        |        |        |        |     |     |     |    |            |    |
| STEEL      | WITH FLANGE | 22-8M-20       | 22       | 1F     | 56.02  | 54.65  | 60     | 43  | -   | 28  | 38 | 12         | 53 |
|            |             | 24-8M-20       | 24       | 1F     | 61.12  | 59.75  | 66     | 45  | -   | 28  | 38 | 12         | 69 |
|            |             | 26-8M-20       | 26       | 1F     | 66.21  | 64.85  | 70     | 48  | -   | 28  | 38 | 12         | 61 |
|            |             | 28-8M-20       | 28       | 1F     | 71.30  | 70.08  | 75     | 50  | -   | 28  | 38 | 15         | 79 |
|            |             | 30-8M-20       | 30       | 1F     | 76.39  | 75.13  | 82.5   | 55  | -   | 28  | 38 | 15         | 64 |
|            |             | 32-8M-20       | 32       | 1F     | 81.49  | 80.16  | 87     | 60  | -   | 28  | 38 | 15         | 76 |
|            | 34-8M-20    | 34             | 1F       | 86.58  | 85.22  | 91     | 66     | -   | 28  | 38  | 15 | 66         |    |
|            | 36-8M-20    | 36             | 1F       | 91.67  | 90.30  | 97     | 70     | -   | 28  | 38  | 15 | 68         |    |
|            | 38-8M-20    | 38             | 1F       | 96.77  | 95.39  | 102    | 75     | -   | 28  | 38  | 15 | 70         |    |
|            | 40-8M-20    | 40             | 1F       | 101.86 | 100.49 | 106    | 75     | -   | 28  | 38  | 15 | 77         |    |
|            | 44-8M-20    | 44             | 1F       | 112.05 | 110.67 | 120    | 75     | -   | 28  | 38  | 15 | 75         |    |
|            | 48-8M-20    | 48             | 1F       | 122.23 | 120.86 | 128    | 75     | -   | 28  | 38  | 15 | 78         |    |
|            | 56-8M-20    | 56             | 2F       | 142.60 | 141.23 | 150    | 80     | 116 | 28  | 38  | 15 | 85         |    |
|            | 64-8M-20    | 64             | 2F       | 162.97 | 161.60 | 168    | 80     | 137 | 28  | 38  | 15 | 90         |    |
|            | 72-8M-20    | 72             | 2F       | 183.35 | 181.97 | 192    | 80     | 158 | 28  | 38  | 15 | 97         |    |
|            | ALUMINIUM   | WITHOUT FLANGE | 80-8M-20 | 80     | 3      | 203.72 | 202.35 | -   | 90  | 180 | 28 | 38         | 15 |
| 90-8M-20   |             |                | 90       | 3      | 229.18 | 227.81 | -      | 90  | 204 | 28  | 38 | 15         | -  |
| *112-8M-20 |             |                | 112      | 4      | 285.21 | 283.83 | -      | 90  | 254 | 28  | 38 | 18         | -  |
| *144-8M-20 |             |                | 144      | 4      | 366.69 | 365.32 | -      | 90  | 336 | 28  | 38 | 20         | -  |
| *168-8M-20 |             |                | 168      | 4      | 427.81 | 426.44 | -      | 100 | 400 | 28  | 38 | 20         | -  |
| *192-8M-20 |             |                | 192      | 4      | 488.92 | 487.55 | -      | 100 | 460 | 28  | 38 | 20         | -  |



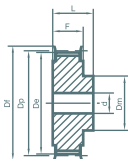
## HTB 8M-30

| INFO      |                | Size      | Z      | Type   | Dp     | De     | Df   | Dm  | Di  | F  | L  | d  | Flange No. |
|-----------|----------------|-----------|--------|--------|--------|--------|------|-----|-----|----|----|----|------------|
| STEEL     | WITH FLANGE    | 22-8M-30  | 22     | 1F     | 56.02  | 54.65  | 60   | 43  | -   | 38 | 48 | 12 | 53         |
|           |                | 24-8M-30  | 24     | 1F     | 61.12  | 59.75  | 66   | 45  | -   | 38 | 48 | 12 | 69         |
|           |                | 26-8M-30  | 26     | 1F     | 66.21  | 64.85  | 70   | 48  | -   | 38 | 48 | 12 | 61         |
|           |                | 28-8M-30  | 28     | 1F     | 71.30  | 70.08  | 75   | 50  | -   | 38 | 48 | 15 | 79         |
|           |                | 30-8M-30  | 30     | 1F     | 76.39  | 75.13  | 82.5 | 55  | -   | 38 | 48 | 15 | 73         |
|           |                | 32-8M-30  | 32     | 1F     | 81.49  | 80.16  | 87   | 60  | -   | 38 | 48 | 15 | 76         |
|           |                | 34-8M-30  | 34     | 1F     | 86.58  | 85.22  | 91   | 66  | -   | 38 | 48 | 15 | 66         |
|           |                | 36-8M-30  | 36     | 1F     | 91.67  | 90.30  | 97   | 70  | -   | 38 | 48 | 15 | 68         |
|           |                | 38-8M-30  | 38     | 1F     | 96.77  | 95.39  | 102  | 75  | -   | 38 | 48 | 15 | 70         |
|           |                | 40-8M-30  | 40     | 1F     | 101.86 | 100.49 | 106  | 75  | -   | 38 | 48 | 15 | 77         |
|           |                | 44-8M-30  | 44     | 1F     | 112.05 | 110.67 | 120  | 75  | -   | 38 | 48 | 15 | 75         |
|           |                | 48-8M-30  | 48     | 1F     | 122.23 | 120.86 | 128  | 75  | -   | 38 | 48 | 15 | 78         |
|           |                | 56-8M-30  | 56     | 2F     | 142.60 | 141.23 | 150  | 90  | 116 | 38 | 48 | 15 | 85         |
|           |                | 64-8M-30  | 64     | 2F     | 162.97 | 161.60 | 168  | 90  | 137 | 38 | 48 | 15 | 90         |
| 72-8M-30  | 72             | 2F        | 183.35 | 181.97 | 192    | 95     | 158  | 38  | 48  | 15 | 97 |    |            |
| CAST-IRON | WITHOUT FLANGE | 80-8M-30  | 80     | 3      | 203.72 | 202.35 | -    | 100 | 180 | 38 | 48 | 15 | -          |
|           |                | 90-8M-30  | 90     | 3      | 229.18 | 227.81 | -    | 100 | 204 | 38 | 48 | 15 | -          |
|           |                | 112-8M-30 | 112    | 4      | 285.21 | 283.83 | -    | 100 | 254 | 38 | 48 | 18 | -          |
|           |                | 144-8M-30 | 144    | 4      | 366.69 | 365.32 | -    | 100 | 336 | 38 | 48 | 20 | -          |
|           |                | 168-8M-30 | 168    | 4      | 427.81 | 426.44 | -    | 100 | 400 | 38 | 48 | 20 | -          |
|           |                | 192-8M-30 | 192    | 4      | 488.92 | 487.55 | -    | 100 | 460 | 38 | 48 | 20 | -          |

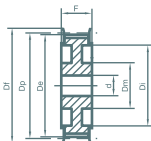


## HTB 8M-50

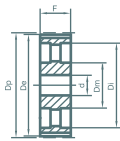
| INFO      | Size           | Z        | Type   | Dp     | De     | Df     | Dm   | Di  | F   | L  | d  | Flange No. |    |
|-----------|----------------|----------|--------|--------|--------|--------|------|-----|-----|----|----|------------|----|
|           |                |          |        |        |        |        |      |     |     |    |    |            |    |
| STEEL     | WITH FLANGE    | 22-8M-50 | 22     | 1F     | 56.02  | 54.65  | 60   | 43  | -   | 60 | 70 | -          | 53 |
|           |                | 24-8M-50 | 24     | 1F     | 61.12  | 59.75  | 66   | 45  | -   | 60 | 70 | -          | 59 |
|           |                | 26-8M-50 | 26     | 1F     | 66.21  | 64.85  | 70   | 48  | -   | 60 | 70 | -          | 61 |
|           |                | 28-8M-50 | 28     | 1F     | 71.30  | 70.08  | 75   | 50  | -   | 60 | 70 | -          | 79 |
|           |                | 30-8M-50 | 30     | 1F     | 76.39  | 75.13  | 82.5 | 55  | -   | 60 | 70 | -          | 73 |
|           |                | 32-8M-50 | 32     | 1F     | 81.49  | 80.16  | 87   | 60  | -   | 60 | 70 | -          | 76 |
|           | 34-8M-50       | 34       | 1F     | 86.58  | 85.22  | 91     | 66   | -   | 60  | 70 | -  | 66         |    |
|           | 36-8M-50       | 36       | 1F     | 91.67  | 90.30  | 97     | 70   | -   | 60  | 70 | -  | 68         |    |
|           | 38-8M-50       | 38       | 1F     | 96.77  | 95.39  | 102    | 75   | -   | 60  | 70 | -  | 70         |    |
|           | 40-8M-50       | 40       | 1F     | 101.86 | 100.49 | 106    | 75   | -   | 60  | 70 | -  | 77         |    |
|           | 44-8M-50       | 44       | 1F     | 112.05 | 110.67 | 120    | 75   | -   | 60  | 70 | -  | 75         |    |
|           | 48-8M-50       | 48       | 1F     | 122.23 | 120.86 | 128    | 80   | -   | 60  | 70 | -  | 78         |    |
| 56-8M-50  | 56             | 6F       | 142.60 | 141.23 | 150    | 90     | 116  | 60  | 60  | 18 | 85 |            |    |
| 64-8M-50  | 64             | 6F       | 162.97 | 161.60 | 168    | 100    | 137  | 60  | 60  | 18 | 90 |            |    |
| 72-8M-50  | 72             | 6F       | 183.35 | 181.97 | 132    | 100    | 158  | 60  | 60  | 18 | 97 |            |    |
| CAST-IRON | WITHOUT FLANGE | 80-8M-50 | 80     | 7      | 203.72 | 202.35 | -    | 110 | 180 | 60 | 60 | 18         | -  |
|           |                | 90-8M-50 | 90     | 7      | 229.18 | 227.81 | -    | 110 | 204 | 60 | 60 | 18         | -  |
|           | 112-8M-50      | 112      | 5      | 285.21 | 283.83 | -      | 110  | 254 | 60  | 60 | 18 | -          |    |
|           | 144-8M-50      | 144      | 5      | 366.69 | 365.32 | -      | 110  | 336 | 60  | 60 | 20 | -          |    |
|           | 168-8M-50      | 168      | 5      | 427.81 | 426.44 | -      | 120  | 400 | 60  | 60 | 20 | -          |    |
|           | 192-8M-50      | 192      | 5      | 488.92 | 487.55 | -      | 130  | 460 | 60  | 60 | 20 | -          |    |



Type 1F



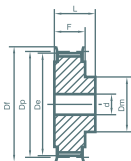
Type 6F



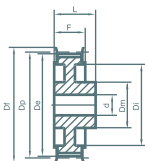
Type 5

## HTB 8M-85

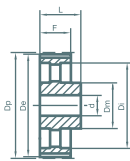
| INFO      |                | Size       | Z      | Type   | Dp     | De     | Df   | Dm  | Di  | F   | L   | d  | Flange No. |
|-----------|----------------|------------|--------|--------|--------|--------|------|-----|-----|-----|-----|----|------------|
| STEEL     | WITH FLANGE    | 22-8M-85   | 22     | 1F     | 58.02  | 54.85  | 60   | 43  | -   | 95  | 105 | -  | 53         |
|           |                | 24-8M-85   | 24     | 1F     | 61.12  | 59.75  | 66   | 45  | -   | 95  | 105 | -  | 69         |
|           |                | 26-8M-85   | 26     | 1F     | 66.21  | 64.85  | 70   | 48  | -   | 95  | 105 | -  | 61         |
|           |                | 28-8M-85   | 28     | 1F     | 71.30  | 70.08  | 75   | 50  | -   | 95  | 105 | -  | 79         |
|           |                | 30-8M-85   | 30     | 1F     | 78.39  | 75.13  | 82.5 | 55  | -   | 95  | 105 | -  | 73         |
|           |                | 32-8M-85   | 32     | 1F     | 81.49  | 80.16  | 87   | 60  | -   | 95  | 105 | -  | 76         |
|           |                | 34-8M-85   | 34     | 1F     | 86.58  | 85.22  | 91   | 66  | -   | 95  | 105 | -  | 66         |
|           | 36-8M-85       | 36         | 1F     | 91.67  | 90.30  | 97     | 70   | -   | 95  | 105 | -   | 68 |            |
|           | 38-8M-85       | 38         | 1F     | 96.77  | 95.39  | 102    | 75   | -   | 95  | 105 | -   | 70 |            |
|           | 40-8M-85       | 40         | 1F     | 101.86 | 100.49 | 106    | 75   | -   | 95  | 105 | -   | 77 |            |
|           | 44-8M-85       | 44         | 1F     | 112.05 | 110.67 | 120    | 75   | -   | 95  | 105 | -   | 75 |            |
|           | 48-8M-85       | 48         | 1F     | 122.23 | 120.86 | 128    | 80   | -   | 95  | 105 | -   | 78 |            |
|           | 56-8M-85       | 56         | 1F     | 142.60 | 141.23 | 150    | 90   | -   | 95  | 105 | 20  | 85 |            |
|           | 64-8M-85       | 64         | 6F     | 162.97 | 161.60 | 168    | 100  | 137 | 95  | 95  | 20  | 90 |            |
| 72-8M-85  | 72             | 6F         | 183.35 | 181.97 | 192    | 100    | 158  | 95  | 95  | 20  | 97  |    |            |
| CAST-IRON | WITHOUT FLANGE | 80-8M-85   | 80     | 5      | 203.72 | 202.35 |      | 110 | 180 | 95  | 95  | 20 | -          |
|           |                | 90-8M-85   | 90     | 5      | 229.18 | 227.81 |      | 110 | 204 | 95  | 95  | 20 | -          |
|           |                | 112-8M-85  | 112    | 5      | 285.21 | 283.83 |      | 110 | 254 | 95  | 95  | 24 | -          |
|           |                | 144-8M-85  | 144    | 5      | 366.69 | 365.32 |      | 110 | 336 | 95  | 95  | 24 | -          |
|           |                | *168-8M-85 | 168    | 5      | 427.81 | 426.44 |      | 120 | 400 | 95  | 95  | 24 | -          |
|           |                | *192-8M-85 | 192    | 5      | 488.92 | 487.55 |      | 130 | 460 | 95  | 95  | 24 | -          |



Type 1F



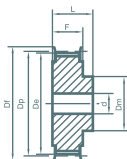
Type 2F



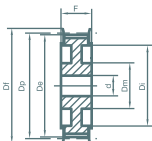
Type 4

## HTB 14M-40

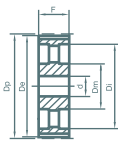
| INFO      |                | Size        | Z   | Type | Dp     | De     | Df  | Dm  | Di  | F  | L  | d  | Flange No. |
|-----------|----------------|-------------|-----|------|--------|--------|-----|-----|-----|----|----|----|------------|
| STEEL     | WITH FLANGE    | 28-14M-40   | 28  | 1F   | 124.78 | 122.12 | 128 | 100 | -   | 54 | 69 | 24 | 153        |
|           |                | *29-14M-40  | 29  | 1F   | 129.23 | 126.57 | 138 | 100 | -   | 54 | 69 | 24 | 154        |
|           |                | 30-14M-40   | 30  | 1F   | 133.69 | 130.99 | 138 | 100 | -   | 54 | 69 | 24 | 154        |
|           |                | 32-14M-40   | 32  | 1F   | 142.60 | 139.88 | 154 | 100 | -   | 54 | 69 | 24 | 160        |
|           |                | 34-14M-40   | 34  | 1F   | 151.52 | 148.79 | 160 | 100 | -   | 54 | 69 | 24 | 166        |
|           |                | 36-14M-40   | 36  | 1F   | 160.43 | 157.68 | 168 | 100 | -   | 54 | 69 | 24 | 168        |
|           |                | 38-14M-40   | 38  | 1F   | 169.34 | 166.60 | 183 | 120 | -   | 54 | 69 | 24 | 172        |
|           |                | 40-14M-40   | 40  | 1F   | 178.25 | 175.49 | 188 | 120 | -   | 54 | 69 | 24 | 162        |
|           |                | 44-14M-40   | 44  | 1F   | 196.08 | 193.28 | 211 | 120 | -   | 54 | 69 | 24 | 175        |
|           |                | 48-14M-40   | 48  | 2F   | 213.90 | 211.11 | 226 | 135 | 170 | 54 | 69 | 24 | 180        |
| CAST-IRON | WITHOUT FLANGE | 56-14M-40   | 56  | 2F   | 249.55 | 246.76 | 256 | 135 | 207 | 54 | 69 | 28 | 182        |
|           |                | 64-14M-40   | 64  | 2F   | 285.21 | 282.41 | 296 | 135 | 240 | 54 | 69 | 28 | 184        |
|           |                | 72-14M-40   | 72  | 4    | 320.86 | 318.06 | -   | 135 | 278 | 54 | 69 | 28 | -          |
|           |                | 80-14M-40   | 80  | 4    | 356.51 | 353.71 | -   | 135 | 314 | 54 | 69 | 28 | -          |
|           |                | 90-14M-40   | 90  | 4    | 401.07 | 398.28 | -   | 135 | 368 | 54 | 69 | 28 | -          |
|           |                | 112-14M-40  | 112 | 4    | 499.11 | 496.32 | -   | 135 | 456 | 54 | 69 | 28 | -          |
|           |                | *144-14M-40 | 144 | 4    | 641.71 | 638.92 | -   | 135 | 600 | 54 | 69 | 28 | -          |
|           |                | *168-14M-40 | 168 | 4    | 748.66 | 745.87 | -   | 135 | 706 | 54 | 69 | 28 | -          |
|           |                | *192-14M-40 | 192 | 4    | 855.62 | 852.82 | -   | 135 | 813 | 54 | 69 | 28 | -          |
|           |                | *216-14M-40 | 216 | 4    | 962.57 | 959.76 | -   | 150 | 920 | 54 | 69 | 28 | -          |



Type 1F



Type 6F

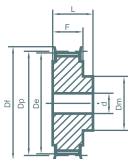


Type 5

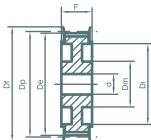
## HTB 14M-55

| MATERIAL    | INFO        | Size       | Z              | Type      | Dp     | De     | Df     | Dm     | Di  | F   | L   | d  | Flange No. |
|-------------|-------------|------------|----------------|-----------|--------|--------|--------|--------|-----|-----|-----|----|------------|
|             |             |            |                |           |        |        |        |        |     |     |     |    |            |
| STEEL       | WITH FLANGF | 28-14M-55  | 28             | 1F        | 124.78 | 122.12 | 128    | 100    | -   | 70  | 85  | 24 | 153        |
|             |             | *29-14M-55 | 29             | 1F        | 129.23 | 126.57 | 138    | 100    | -   | 70  | 85  | 24 | 154        |
|             |             | 30-14M-55  | 30             | 1F        | 133.69 | 130.99 | 138    | 100    | -   | 70  | 85  | 24 | 154        |
|             |             | 32-14M-55  | 32             | 1F        | 142.60 | 139.88 | 154    | 100    | -   | 70  | 85  | 24 | 160        |
|             |             | 34-14M-55  | 34             | 1F        | 151.52 | 148.79 | 160    | 100    | -   | 70  | 85  | 24 | 166        |
|             |             | 36-14M-55  | 36             | 1F        | 160.43 | 157.68 | 168    | 100    | -   | 70  | 85  | 24 | 168        |
|             |             | 38-14M-55  | 38             | 1F        | 169.34 | 166.6  | 183    | 120    | -   | 70  | 85  | 24 | 172        |
|             |             | 40-14M-55  | 40             | 1F        | 178.25 | 175.49 | 188    | 120    | -   | 70  | 85  | 24 | 162        |
|             |             | 44-14M-55  | 44             | 1F        | 196.08 | 193.28 | 211    | 120    | -   | 70  | 85  | 24 | 175        |
|             |             | CAST-IRON  | WITHOUT FLANGF | 48-14M-55 | 48     | 6F     | 213.90 | 211.11 | 226 | 135 | 170 | 70 | 70         |
| 56-14M-55   | 56          |            |                | 6F        | 249.55 | 246.76 | 256    | 135    | 207 | 70  | 70  | 28 | 182        |
| 64-14M-55   | 64          |            |                | 6F        | 285.21 | 282.41 | 296    | 135    | 240 | 70  | 70  | 28 | 184        |
| 72-14M-55   | 72          |            |                | 5         | 320.86 | 318.06 | -      | 135    | 278 | 70  | 70  | 28 | -          |
| 80-14M-55   | 80          |            |                | 5         | 356.51 | 353.71 | -      | 135    | 314 | 70  | 70  | 28 | -          |
| 90-14M-55   | 90          |            |                | 5         | 401.07 | 398.28 | -      | 135    | 358 | 70  | 70  | 28 | -          |
| 112-14M-55  | 112         |            |                | 5         | 499.11 | 496.32 | -      | 135    | 456 | 70  | 70  | 28 | -          |
| 144-14M-55  | 144         |            |                | 5         | 641.71 | 638.92 | -      | 135    | 600 | 70  | 70  | 28 | -          |
| 168-14M-55  | 168         |            |                | 5         | 748.66 | 745.87 | -      | 135    | 706 | 70  | 70  | 28 | -          |
| 192-14M-55  | 192         |            |                | 5         | 855.62 | 852.82 | -      | 135    | 813 | 70  | 70  | 28 | -          |
| *216-14M-55 | 216         | 5          | 962.57         | 959.76    | -      | 150    | 920    | 70     | 70  | 28  | -   |    |            |

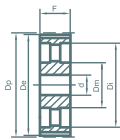




Type 1F



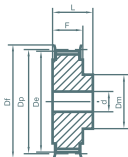
Type 6F



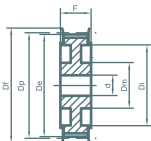
Type 5

## HTB 14M-85

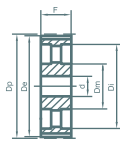
| INFO      |                | Size        | Z   | Type | Dp     | De     | Df  | Dm  | Di  | F   | L   | d  | Flange No. |
|-----------|----------------|-------------|-----|------|--------|--------|-----|-----|-----|-----|-----|----|------------|
| STEEL     | WITH FLANGE    | 28-14M-85   | 28  | 1F   | 124.78 | 122.12 | 128 | 100 | -   | 102 | 117 | -  | 153        |
|           |                | *29-14M-85  | 29  | 1F   | 129.23 | 126.57 | 138 | 100 | -   | 102 | 117 | -  | 154        |
|           |                | 30-14M-85   | 30  | 1F   | 133.69 | 130.99 | 138 | 100 | -   | 102 | 117 | -  | 154        |
|           |                | 32-14M-85   | 32  | 1F   | 142.60 | 139.88 | 154 | 100 | -   | 102 | 117 | -  | 160        |
|           |                | 34-14M-85   | 34  | 1F   | 151.52 | 148.79 | 160 | 100 | -   | 102 | 117 | -  | 166        |
|           |                | 36-14M-85   | 36  | 1F   | 160.43 | 157.68 | 168 | 100 | -   | 102 | 117 | -  | 168        |
|           |                | 38-14M-85   | 38  | 1F   | 169.34 | 166.60 | 183 | 120 | -   | 102 | 117 | -  | 172        |
|           |                | 40-14M-85   | 40  | 1F   | 178.25 | 175.49 | 188 | 135 | -   | 102 | 117 | -  | 162        |
|           |                | 44-14M-85   | 44  | 1F   | 196.08 | 193.28 | 211 | 135 | -   | 102 | 117 | -  | 175        |
|           |                | 48-14M-85   | 48  | 1F   | 213.90 | 211.11 | 226 | 150 | -   | 102 | 117 | -  | 180        |
| CAST-IRON | WITHOUT FLANGE | 56-14M-85   | 56  | 6F   | 249.55 | 246.76 | 256 | 150 | 207 | 102 | 102 | 32 | 182        |
|           |                | 64-14M-85   | 64  | 6F   | 285.21 | 282.41 | 296 | 150 | 240 | 102 | 102 | 32 | 184        |
|           |                | 72-14M-85   | 72  | 5    | 320.86 | 318.06 | -   | 150 | 278 | 102 | 102 | 32 | -          |
|           |                | 80-14M-85   | 80  | 5    | 356.51 | 353.71 | -   | 150 | 314 | 102 | 102 | 32 | -          |
|           |                | 90-14M-85   | 90  | 5    | 401.07 | 398.28 | -   | 150 | 358 | 102 | 102 | 32 | -          |
|           |                | 112-14M-85  | 112 | 5    | 499.11 | 496.32 | -   | 150 | 456 | 102 | 102 | 32 | -          |
|           |                | 144-14M-85  | 144 | 5    | 641.71 | 638.92 | -   | 150 | 600 | 102 | 102 | 32 | -          |
|           |                | 168-14M-85  | 168 | 5    | 748.66 | 745.87 | -   | 150 | 706 | 102 | 102 | 32 | -          |
|           |                | 192-14M-85  | 192 | 5    | 855.62 | 852.82 | -   | 165 | 813 | 102 | 102 | 32 | -          |
|           |                | *216-14M-85 | 216 | 5    | 962.57 | 959.76 | -   | 165 | 920 | 102 | 102 | 32 | -          |



Type 1F



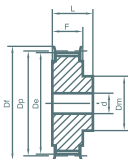
Type 6F



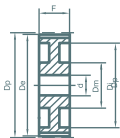
Type 5

## HTB 14M-115

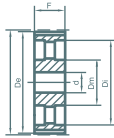
| INFO       |                | Size         | Z      | Type   | Dp     | De     | Df  | Dm  | Di  | F   | L   | d  | Flange No. |
|------------|----------------|--------------|--------|--------|--------|--------|-----|-----|-----|-----|-----|----|------------|
| STEEL      | WITH FLANGE    | 28-14M-115   | 28     | 1F     | 124.78 | 122.12 | 128 | 100 | -   | 133 | 148 | -  | 153        |
|            |                | *29-14M-115  | 29     | 1F     | 129.23 | 126.57 | 138 | 100 | -   | 133 | 148 | -  | 154        |
|            |                | 30-14M-115   | 30     | 1F     | 133.69 | 130.99 | 138 | 100 | -   | 133 | 148 | -  | 154        |
|            |                | 32-14M-115   | 32     | 1F     | 142.60 | 139.88 | 154 | 100 | -   | 133 | 148 | -  | 160        |
|            |                | 34-14M-115   | 34     | 1F     | 151.52 | 148.79 | 160 | 100 | -   | 133 | 148 | -  | 166        |
|            |                | 36-14M-115   | 36     | 1F     | 160.43 | 157.68 | 168 | 120 | -   | 133 | 148 | -  | 168        |
|            |                | 38-14M-115   | 38     | 1F     | 169.34 | 166.60 | 183 | 120 | -   | 133 | 148 | -  | 172        |
|            |                | 40-14M-115   | 40     | 1F     | 178.25 | 175.49 | 188 | 135 | -   | 133 | 148 | -  | 162        |
|            |                | 44-14M-115   | 44     | 1F     | 196.08 | 193.28 | 211 | 140 | -   | 133 | 148 | -  | 175        |
|            |                | 48-14M-115   | 48     | 1F     | 213.90 | 211.11 | 226 | 150 | -   | 133 | 148 | -  | 180        |
| 56-14M-115 | 56             | 1F           | 249.55 | 246.76 | 256    | 150    | -   | 133 | 148 | -   | 182 |    |            |
| CAST-IRON  | WITHOUT FLANGE | 64-14M-115   | 64     | 6F     | 285.21 | 282.41 | 296 | 150 | 240 | 133 | 133 | 32 | 184        |
|            |                | 72-14M-115   | 72     | 5      | 320.86 | 318.06 | -   | 150 | 278 | 133 | 133 | 32 | -          |
|            |                | 80-14M-115   | 80     | 5      | 356.51 | 353.71 | -   | 150 | 314 | 133 | 133 | 32 | -          |
|            |                | 90-14M-115   | 90     | 5      | 401.07 | 398.28 | -   | 150 | 358 | 133 | 133 | 32 | -          |
|            |                | 112-14M-115  | 112    | 5      | 499.11 | 496.32 | -   | 150 | 456 | 133 | 133 | 32 | -          |
|            |                | 144-14M-115  | 144    | 5      | 641.71 | 638.92 | -   | 165 | 600 | 133 | 133 | 32 | -          |
|            |                | 168-14M-115  | 168    | 5      | 748.66 | 745.87 | -   | 165 | 706 | 133 | 133 | 32 | -          |
|            |                | 192-14M-115  | 192    | 5      | 855.62 | 852.82 | -   | 165 | 813 | 133 | 133 | 32 | -          |
|            |                | *216-14M-115 | 216    | 5      | 962.57 | 959.76 | -   | 165 | 920 | 133 | 133 | 32 | -          |



Type 1F



Type 7



Type 5

## HTB 14M-170

| MATERIAL  | INFO           | Size         | Z   | Type | Dp     | De     | Df  | Dm  | Di  | F   | L   | d  | Flange No. |
|-----------|----------------|--------------|-----|------|--------|--------|-----|-----|-----|-----|-----|----|------------|
|           |                |              |     |      |        |        |     |     |     |     |     |    |            |
| STEEL     | WITH FLANGE    | 28-14M-170   | 28  | 1F   | 124.78 | 122.12 | 128 | 100 | -   | 187 | 202 | -  | 153        |
|           |                | *29-14M-170  | 29  | 1F   | 129.23 | 126.57 | 138 | 100 | -   | 187 | 202 | -  | 154        |
|           |                | 30-14M-170   | 30  | 1F   | 133.69 | 130.99 | 138 | 100 | -   | 187 | 202 | -  | 154        |
|           |                | 32-14M-170   | 32  | 1F   | 142.60 | 139.88 | 154 | 100 | -   | 187 | 202 | -  | 160        |
|           |                | 34-14M-170   | 34  | 1F   | 151.52 | 148.79 | 160 | 100 | -   | 187 | 202 | -  | 168        |
|           |                | 36-14M-170   | 36  | 1F   | 160.43 | 157.68 | 168 | 120 | -   | 187 | 202 | -  | 168        |
|           |                | 38-14M-170   | 38  | 1F   | 169.34 | 166.60 | 183 | 135 | -   | 187 | 202 | -  | 172        |
|           |                | 40-14M-170   | 40  | 1F   | 178.25 | 175.49 | 188 | 140 | -   | 187 | 202 | -  | 162        |
|           |                | *44-14M-170  | 44  | 1F   | 196.08 | 193.28 | 211 | 160 | -   | 187 | 202 | -  | 175        |
|           |                | *48-14M-170  | 48  | 1F   | 213.90 | 211.11 | 226 | 160 | -   | 187 | 202 | -  | 180        |
|           |                | *56-14M-170  | 56  | 1F   | 249.55 | 246.76 | 256 | 160 | -   | 187 | 202 | -  | 182        |
|           |                | *64-14M-170  | 64  | 1F   | 285.21 | 282.41 | 296 | 180 | -   | 187 | 202 | -  | 184        |
| CAST-IRON | WITHOUT FLANGE | *72-14M-170  | 72  | 7    | 320.86 | 318.06 | -   | 180 | 278 | 187 | 187 | 32 | -          |
|           |                | 80-14M-170   | 80  | 7    | 356.51 | 353.71 | -   | 180 | 314 | 187 | 187 | 32 | -          |
|           |                | 90-14M-170   | 90  | 5    | 401.07 | 398.28 | -   | 180 | 358 | 187 | 187 | 38 | -          |
|           |                | 112-14M-170  | 112 | 5    | 499.11 | 496.32 | -   | 200 | 456 | 187 | 187 | 38 | -          |
|           |                | 144-14M-170  | 144 | 5    | 641.71 | 638.92 | -   | 220 | 600 | 187 | 187 | 38 | -          |
|           |                | 168-14M-170  | 168 | 5    | 748.66 | 745.87 | -   | 220 | 706 | 187 | 187 | 38 | -          |
|           |                | *192-14M-170 | 192 | 5    | 855.61 | 852.82 | -   | 220 | 813 | 187 | 187 | 38 | -          |
|           |                | *216-14M-170 | 216 | 5    | 962.57 | 959.76 | -   | 220 | 920 | 187 | 187 | 38 | -          |