

## Item description/product images



## Description

### Product description:

Ball lock pins are used for easy fastening or joining of components. The lockable type prevents unauthorised loosening or connections.

The two balls are disengaged by opening the cylinder lock with a key and the pin can be slipped into holes in the workpieces. When the cylinder lock is pressed in manually, the balls lock and the connection is secure. The balls can only be disengaged using a matching key.

### Material:

Steel parts stainless steel.

Lock Zamac.

Key electro zinc-plated steel.

### Version:

Bright.

### Note:

Shear force double shear (F) = S · τ aB max.

The values given for the shear force are the theoretical breaking load. These are non-binding reference values without consideration of safety factors and exclude any liability. The values given are for information purposes only and do not constitute a legally binding assurance of properties.

The load values have been calculated in accordance with DIN 50141. Each user must determine individually whether the ball lock pin is suitable for the respective application.

Different materials in which the ball lock pins are used, weather conditions and wear can influence the determined values.

The cylinder lock is a single-key system. All cylinder locks can be opened using the same key. The lockable ball lock pins are supplied with two keys.

### On request:

Other versions.

### Accessory:

Locating bushes for ball lock pins 03197

Safety spiral cable 03199

Retaining cable with loop 03199

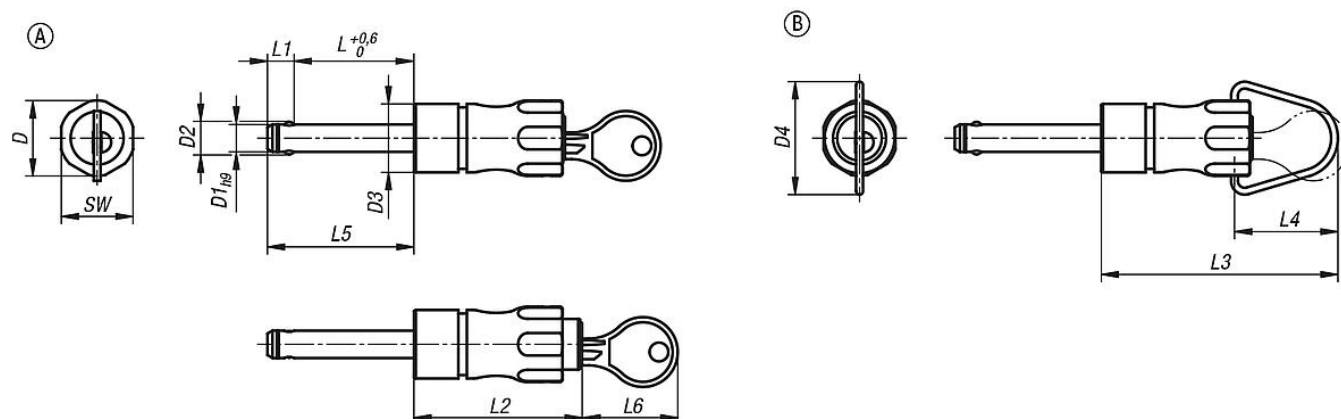
Key ring 03199

### Drawing reference:

Form A: with recessed grip

Form B: with recessed grip and ring

## Drawings



## Overview of items

| Order No.          | Form | Form definition             | D  | D1 | D2   | D3 | D4 | L  | L1   | L2   | L3   | L4   | L5   | L6 | SW | Receiving hole H11 | Shearing force double shear max.kN |
|--------------------|------|-----------------------------|----|----|------|----|----|----|------|------|------|------|------|----|----|--------------------|------------------------------------|
| 03415-05-002208020 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 20 | 7,8  | 49,2 | -    | -    | 27,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208025 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 25 | 7,8  | 49,2 | -    | -    | 32,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208030 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 30 | 7,8  | 49,2 | -    | -    | 37,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208035 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 35 | 7,8  | 49,2 | -    | -    | 42,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208040 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 40 | 7,8  | 49,2 | -    | -    | 47,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208045 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 45 | 7,8  | 49,2 | -    | -    | 52,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002208050 | A    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | -  | 50 | 7,8  | 49,2 | -    | -    | 57,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-002210020 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 20 | 8,9  | 49,2 | -    | -    | 28,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210025 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 25 | 8,9  | 49,2 | -    | -    | 33,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210030 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 30 | 8,9  | 49,2 | -    | -    | 38,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210035 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 35 | 8,9  | 49,2 | -    | -    | 43,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210040 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 40 | 8,9  | 49,2 | -    | -    | 48,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210045 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 45 | 8,9  | 49,2 | -    | -    | 53,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210050 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 50 | 8,9  | 49,2 | -    | -    | 58,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002210060 | A    | with recessed grip and ring | 22 | 10 | 12   | 20 | -  | 60 | 8,9  | 49,2 | -    | -    | 68,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-002212025 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 25 | 9,9  | 49,2 | -    | -    | 34,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212030 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 30 | 9,9  | 49,2 | -    | -    | 39,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212035 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 35 | 9,9  | 49,2 | -    | -    | 44,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212040 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 40 | 9,9  | 49,2 | -    | -    | 49,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212045 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 45 | 9,9  | 49,2 | -    | -    | 54,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212050 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 50 | 9,9  | 49,2 | -    | -    | 59,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212060 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 60 | 9,9  | 49,2 | -    | -    | 69,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212070 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 70 | 9,9  | 49,2 | -    | -    | 79,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002212080 | A    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | -  | 80 | 9,9  | 49,2 | -    | -    | 89,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-002216030 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 30 | 13,1 | 51,2 | -    | -    | 43,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216035 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 35 | 13,1 | 51,2 | -    | -    | 48,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216040 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 40 | 13,1 | 51,2 | -    | -    | 53,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216045 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 45 | 13,1 | 51,2 | -    | -    | 58,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216050 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 50 | 13,1 | 51,2 | -    | -    | 63,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216060 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 60 | 13,1 | 51,2 | -    | -    | 73,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216070 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 70 | 13,1 | 51,2 | -    | -    | 83,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-002216080 | A    | with recessed grip and ring | 22 | 16 | 19   | 20 | -  | 80 | 13,1 | 51,2 | -    | -    | 93,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102208020 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 20 | 7,8  | 49,2 | 69,3 | 30,3 | 27,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208025 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 25 | 7,8  | 49,2 | 69,3 | 30,3 | 32,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208030 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 30 | 7,8  | 49,2 | 69,3 | 30,3 | 37,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208035 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 35 | 7,8  | 49,2 | 69,3 | 30,3 | 42,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208040 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 40 | 7,8  | 49,2 | 69,3 | 30,3 | 47,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208045 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 45 | 7,8  | 49,2 | 69,3 | 30,3 | 52,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102208050 | B    | with recessed grip and ring | 22 | 8  | 9,5  | 20 | 33 | 50 | 7,8  | 49,2 | 69,3 | 30,3 | 57,8 | 28 | 21 | 8                  | 38                                 |
| 03415-05-102210020 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 20 | 8,9  | 49,2 | 69,3 | 30,3 | 28,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210025 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 25 | 8,9  | 49,2 | 69,3 | 30,3 | 33,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210030 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 30 | 8,9  | 49,2 | 69,3 | 30,3 | 38,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210035 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 35 | 8,9  | 49,2 | 69,3 | 30,3 | 43,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210040 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 40 | 8,9  | 49,2 | 69,3 | 30,3 | 48,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210045 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 45 | 8,9  | 49,2 | 69,3 | 30,3 | 53,9 | 28 | 21 | 10                 | 60                                 |

## Overview of items

| Order No.          | Form | Form definition             | D  | D1 | D2   | D3 | D4 | L  | L1   | L2   | L3   | L4   | L5   | L6 | SW | Receiving hole H11 | Shearing force double shear max.kN |
|--------------------|------|-----------------------------|----|----|------|----|----|----|------|------|------|------|------|----|----|--------------------|------------------------------------|
| 03415-05-102210050 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 50 | 8,9  | 49,2 | 69,3 | 30,3 | 58,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102210060 | B    | with recessed grip and ring | 22 | 10 | 12   | 20 | 33 | 60 | 8,9  | 49,2 | 69,3 | 30,3 | 68,9 | 28 | 21 | 10                 | 60                                 |
| 03415-05-102212025 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 25 | 9,9  | 49,2 | 69,3 | 30,3 | 34,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212030 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 30 | 9,9  | 49,2 | 69,3 | 30,3 | 39,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212035 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 35 | 9,9  | 49,2 | 69,3 | 30,3 | 44,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212040 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 40 | 9,9  | 49,2 | 69,3 | 30,3 | 49,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212045 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 45 | 9,9  | 49,2 | 69,3 | 30,3 | 54,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212050 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 50 | 9,9  | 49,2 | 69,3 | 30,3 | 59,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212060 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 60 | 9,9  | 49,2 | 69,3 | 30,3 | 69,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212070 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 70 | 9,9  | 49,2 | 69,3 | 30,3 | 79,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102212080 | B    | with recessed grip and ring | 22 | 12 | 14,5 | 20 | 33 | 80 | 9,9  | 49,2 | 69,3 | 30,3 | 89,9 | 28 | 21 | 12                 | 86                                 |
| 03415-05-102216030 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 30 | 13,1 | 51,2 | 69,3 | 30,3 | 43,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216035 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 35 | 13,1 | 51,2 | 69,3 | 30,3 | 48,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216040 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 40 | 13,1 | 51,2 | 69,3 | 30,3 | 53,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216045 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 45 | 13,1 | 51,2 | 69,3 | 30,3 | 58,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216050 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 50 | 13,1 | 51,2 | 69,3 | 30,3 | 63,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216060 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 60 | 13,1 | 51,2 | 69,3 | 30,3 | 73,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216070 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 70 | 13,1 | 51,2 | 69,3 | 30,3 | 83,1 | 28 | 21 | 16                 | 153                                |
| 03415-05-102216080 | B    | with recessed grip and ring | 22 | 16 | 19   | 20 | 33 | 80 | 13,1 | 51,2 | 69,3 | 30,3 | 93,1 | 28 | 21 | 16                 | 153                                |