

## Item description/product images



## Description

**Material:**

Grip and push button thermoplastic.  
Metal parts stainless steel.

**Version:**

Grip black.  
Push button traffic red.  
Steel parts bright.

**Note:**

Ball lock pins are used for easy fastening or joining of components.  
The two balls are disengaged by pressing the push button and the pin can be slipped into holes in the workpieces. When the push button is released, the balls lock the connection securely.

Shear force double shear ( $F$ ) =  $S \cdot \tau \cdot aB$  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.

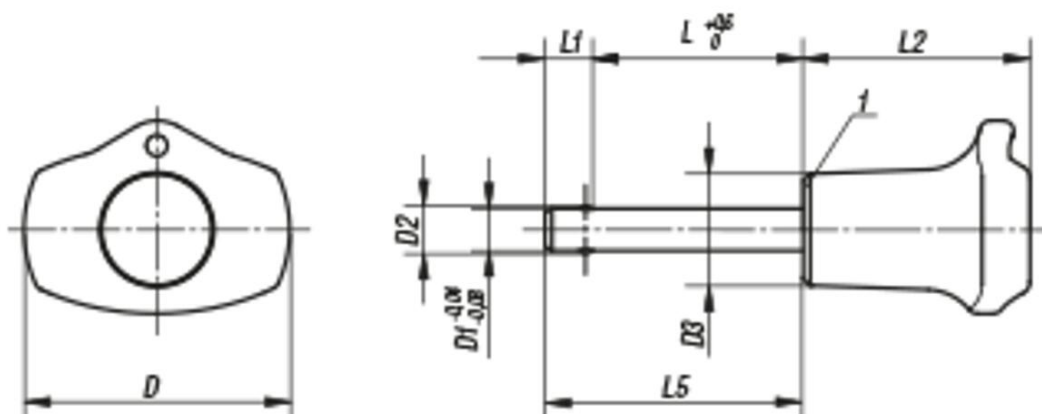
**Accessory:**

Bushing for ball lock pins 03197  
Safety spiral cable 03199  
Retaining cable with loop 03199  
Key ring 03199

**Drawing reference:**

1) Metal collar

## Drawings



## Overview of items

## Ball Lock Pins, Inch

Order No.	D	D1	D2	D3	L	L1	L2	L5	Receiving hole H11	Shearing force double shear max.kN
03193-38CLL08	38	3/16	5,25	16	0,5	6	32,5	18,7	3/16	13
03193-38CLL12	38	3/16	5,25	16	0,75	6	32,5	25,05	3/16	13
03193-38CLL16	38	3/16	5,25	16	1,0	6	32,5	31,4	3/16	13
03193-38CLL20	38	3/16	5,25	16	1,25	6	32,5	37,75	3/16	13
03193-38CML08	38	1/4	7,2	16	0,5	6,9	32,5	19,6	1/4	24
03193-38CML12	38	1/4	7,2	16	0,75	6,9	32,5	25,95	1/4	24
03193-38CML16	38	1/4	7,2	16	1,0	6,9	32,5	32,3	1/4	24
03193-38CML20	38	1/4	7,2	16	1,25	6,9	32,5	38,65	1/4	24
03193-38CML24	38	1/4	7,2	16	1,5	6,9	32,5	45	1/4	24
03193-38CML28	38	1/4	7,2	16	1,75	6,9	32,5	51,35	1/4	24
03193-38CML32	38	1/4	7,2	16	2,0	6,9	32,5	57,7	1/4	24
03193-38CNL16	38	5/16	9,5	16	1,0	7,9	32,5	33,3	5/16	38
03193-38CNL20	38	5/16	9,5	16	1,25	7,9	32,5	39,65	5/16	38
03193-38CNL24	38	5/16	9,5	16	1,5	7,9	32,5	46	5/16	38
03193-38CNL28	38	5/16	9,5	16	1,75	7,9	32,5	52,35	5/16	38
03193-38CNL32	38	5/16	9,5	16	2,0	7,9	32,5	58,7	5/16	38
03193-47COL16	47	3/8	11,5	23	1,0	8,8	40	34,2	3/8	54
03193-47COL20	47	3/8	11,5	23	1,25	8,8	40	40,55	3/8	54
03193-47COL24	47	3/8	11,5	23	1,5	8,8	40	46,9	3/8	54
03193-47COL28	47	3/8	11,5	23	1,75	8,8	40	53,25	3/8	54
03193-47COL32	47	3/8	11,5	23	2,0	8,8	40	59,6	3/8	54
03193-47CUL16	47	7/16	13	23	1,0	9,7	40	35,1	7/16	74
03193-47CUL20	47	7/16	13	23	1,25	9,7	40	41,45	7/16	74
03193-47CUL24	47	7/16	13	23	1,5	9,7	40	47,8	7/16	74
03193-47CUL28	47	7/16	13	23	1,75	9,7	40	54,15	7/16	74
03193-47CUL32	47	7/16	13	23	2,0	9,7	40	60,5	7/16	74
03193-47CUL36	47	7/16	13	23	2,5	9,7	40	73,2	7/16	74
03193-47CUL40	47	7/16	13	23	3,0	9,7	40	85,9	7/16	74
03193-47CPL16	47	1/2	15	23	1,0	10	40	35,4	1/2	96
03193-47CPL20	47	1/2	15	23	1,25	10	40	41,75	1/2	96
03193-47CPL24	47	1/2	15	23	1,5	10	40	48,1	1/2	96
03193-47CPL28	47	1/2	15	23	1,75	10	40	54,45	1/2	96
03193-47CPL32	47	1/2	15	23	2,0	10	40	60,8	1/2	96
03193-47CPL36	47	1/2	15	23	2,5	10	40	73,5	1/2	96
03193-47CPL40	47	1/2	15	23	3,0	10	40	86,2	1/2	96
03193-47CQL16	47	5/8	19	23	1,0	13,3	40	38,7	5/8	150
03193-47CQL20	47	5/8	19	23	1,25	13,3	40	45,05	5/8	150
03193-47CQL24	47	5/8	19	23	1,5	13,3	40	51,4	5/8	150
03193-47CQL28	47	5/8	19	23	1,75	13,3	40	57,75	5/8	150
03193-47CQL32	47	5/8	19	23	2,0	13,3	40	64,1	5/8	150
03193-47CQL36	47	5/8	19	23	2,5	13,3	40	76,8	5/8	150
03193-47CQL40	47	5/8	19	23	3,0	13,3	40	89,5	5/8	150