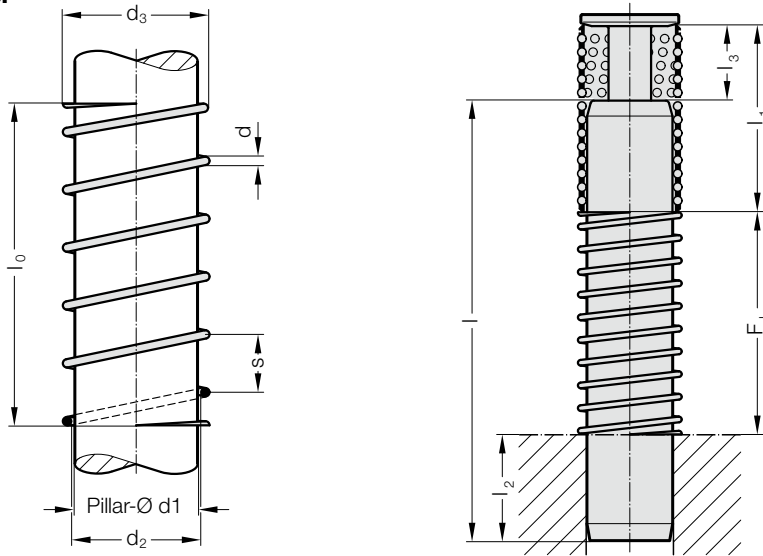


# HELICAL SPRING FOR BALL CAGE RETENTION

241.18.



## 241.18. Helical spring for ball cage retention

d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	s	d	l <sub>0</sub>	Gradation l <sub>0</sub>
19/20	20.5	22.5	14	1	40 - 140	10
24/25	25.5	27.9	14	1.2	40 - 160	10
30/32	32.5	35.7	16	1.6	50 - 230	10
38	38.5	42.5	18	2	60 - 230	10
40	40.5	45.1	20	2.3	60 - 230	10
48/50	50.5	55.7	20	2.6	70 - 280	10
60	60.5	66.9	20	3.2	80 - 250	10
63	63.5	69.9	20	3.2	80 - 250	10

## Calculation:

Formula for selecting spring 241.18.:

$$F_L = [l - (l_2 + (l_1 - l_3))] \times 1,1$$

Formula for calculating the block length L<sub>BL</sub> of the selected spring:

$$L_{BL} = (l_0 \times d : s) + 2 \times d$$

F<sub>L</sub> = Length of compressed spring

l = Length of guide pillar (Customer specified)

l<sub>1</sub> = Cage length (Customer specified)

l<sub>2</sub> = Compression length of guide pillar (Customer specified)

l<sub>3</sub> = Cage retainer size (Customer specified)

1.1 = Safety factor

l<sub>0</sub> = Length of uncompressed spring

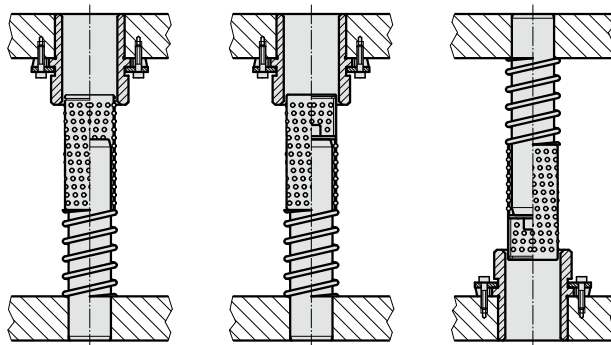
d = Spring wire diameter

s = Pitch

## Ordering Code (example):

Helical spring for ball cage retention	=	241.18.
Inner diameter d <sub>2</sub> 40.5 mm	=	405.
Length l <sub>0</sub> 60 mm	=	060
Order No	=	241.18. 405.060

## Mounting example

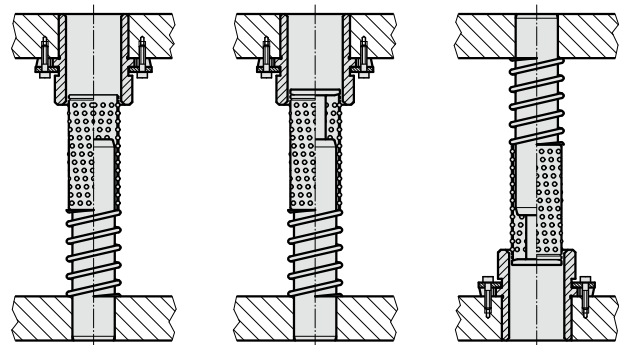


Without ball cage retainer

With ball cage retainer 202.92.1.

With ball cage retainer 202.92.1.

## Mounting example



Without ball cage retainer

With ball cage retainer 202.91.

With ball cage retainer 202.91.