

Hexagonal bolt with shank

ISO 4014 steel 8.8, zinc-flake coating, silver (ZFSHL)

Zinc flake coatings are chrome (VI)-free corrosion protection coatings for commercial vehicle construction, construction machines, agricultural vehicles and equipment, and all other fields that require vehicle construction standard corrosion protection requirements.

The corrosion resistance of ZFSHL is as follows:

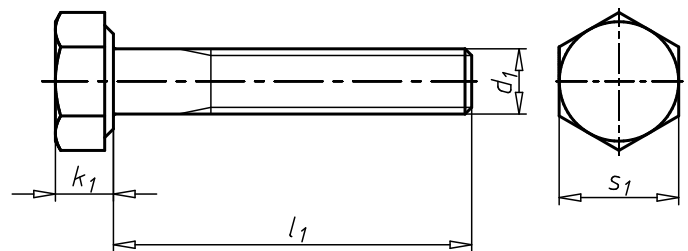
- Diameter \geq M6 - 480h*
- Diameter \geq M10 - 720h*
- * Guideline values: No base metal corrosion at points without thread in salt spray mist testing according to DIN EN ISO 9227 NSS.

The designation ZFSHL refers to the following corrosion coating:

- Zinc flake coating, with top coat, silver colour, with lubrication that alters the friction coefficient.
- Adjusted friction coefficient range from 0.09μ - 0.14μ due to top coat with integrated lubricating particles



Standards	ISO 4014
Material	Steel
Property class	8.8
Surface	Zinc nickel silver
RoHS-compliant	Yes



Thread type x nominal diameter (d ₁)	Length (l ₁)	Head height (k ₁)	Thread length (metric thread) (b)	External drive (s ₁)	Corrosion protection period	Art. no.	P. Qty.
M6	30 mm	4 mm	18 mm	WS10	480 h	4145 46 30	500
M6	35 mm	4 mm	18 mm	WS10	480 h	4145 46 35	200
M6	40 mm	4 mm	18 mm	WS10	480 h	4145 46 40	200
M6	45 mm	4 mm	18 mm	WS10	480 h	4145 46 45	200
M6	50 mm	4 mm	18 mm	WS10	480 h	4145 46 50	200/400
M6	55 mm	4 mm	18 mm	WS10	480 h	4145 46 55	200
M6	60 mm	4 mm	18 mm	WS10	480 h	4145 46 60	200
M6	65 mm	4 mm	18 mm	WS10	480 h	4145 46 65	200
M6	70 mm	4 mm	18 mm	WS10	480 h	4145 46 70	200
M6	75 mm	4 mm	18 mm	WS10	480 h	4145 46 75	200
M6	80 mm	4 mm	18 mm	WS10	480 h	4145 46 80	200
M8	40 mm	5.3 mm	22 mm	WS13	480 h	4145 48 40	200
M8	45 mm	5.3 mm	22 mm	WS13	480 h	4145 48 45	200

Thread type x nominal diameter (d ₁)	Length (l ₁)	Head height (k ₁)	Thread length (metric thread) (b)	External drive (s ₁)	Corrosion protection period	Art. no.	P. Qty.
M8	50 mm	5.3 mm	22 mm	WS13	480 h	4145 48 50	200
M8	55 mm	5.3 mm	22 mm	WS13	480 h	4145 48 55	200
M8	60 mm	5.3 mm	22 mm	WS13	480 h	4145 48 60	100/200
M8	65 mm	5.3 mm	22 mm	WS13	480 h	4145 48 65	100/200
M8	70 mm	5.3 mm	22 mm	WS13	480 h	4145 48 70	100/200
M8	75 mm	5.3 mm	22 mm	WS13	480 h	4145 48 75	100/200
M8	80 mm	5.3 mm	22 mm	WS13	480 h	4145 48 80	100/200
M8	85 mm	5.3 mm	22 mm	WS13	480 h	4145 48 85	100
M8	90 mm	5.3 mm	22 mm	WS13	480 h	4145 48 90	100
M8	95 mm	5.3 mm	22 mm	WS13	480 h	4145 48 95	100
M8	100 mm	5.3 mm	22 mm	WS13	480 h	4145 48 100	100
M8	105 mm	5.3 mm	22 mm	WS13	480 h	4145 48 105	100
M8	110 mm	5.3 mm	22 mm	WS13	480 h	4145 48 110	75
M8	115 mm	5.3 mm	22 mm	WS13	480 h	4145 48 115	100
M8	120 mm	5.3 mm	22 mm	WS13	480 h	4145 48 120	75
M8	130 mm	5.3 mm	28 mm	WS13	480 h	4145 48 130	75
M8	135 mm	5.3 mm	28 mm	WS13	480 h	4145 48 135	50
M8	140 mm	5.3 mm	28 mm	WS13	480 h	4145 48 140	50
M8	150 mm	5.3 mm	28 mm	WS13	480 h	4145 48 150	50
M8	170 mm	5.3 mm	28 mm	WS13	480 h	4145 48 170	50
M10	45 mm	6.4 mm	26 mm	WS16	720 h	4145 410 45	100
M10	50 mm	6.4 mm	26 mm	WS16	720 h	4145 410 50	100
M10	55 mm	6.4 mm	26 mm	WS16	720 h	4145 410 55	100
M10	60 mm	6.4 mm	26 mm	WS16	720 h	4145 410 60	100
M10	65 mm	6.4 mm	26 mm	WS16	720 h	4145 410 65	100
M10	70 mm	6.4 mm	26 mm	WS16	720 h	4145 410 70	100
M10	75 mm	6.4 mm	26 mm	WS16	720 h	4145 410 75	100
M10	80 mm	6.4 mm	26 mm	WS16	720 h	4145 410 80	100
M10	85 mm	6.4 mm	26 mm	WS16	720 h	4145 410 85	100
M10	90 mm	6.4 mm	26 mm	WS16	720 h	4145 410 90	100
M10	95 mm	6.4 mm	26 mm	WS16	720 h	4145 410 95	100
M10	100 mm	6.4 mm	26 mm	WS16	720 h	4145 410 100	50/100
M10	105 mm	6.4 mm	32 mm	WS16	720 h	4145 410 105	50
M10	110 mm	6.4 mm	26 mm	WS16	720 h	4145 410 110	50
M10	115 mm	6.4 mm	26 mm	WS16	720 h	4145 410 115	25
M10	120 mm	6.4 mm	26 mm	WS16	720 h	4145 410 120	50
M10	125 mm	6.4 mm	26 mm	WS16	720 h	4145 410 125	50
M10	130 mm	6.4 mm	32 mm	WS16	720 h	4145 410 130	50
M10	140 mm	6.4 mm	32 mm	WS16	720 h	4145 410 140	50
M10	150 mm	6.4 mm	32 mm	WS16	720 h	4145 410 150	50
M10	160 mm	6.4 mm	32 mm	WS16	720 h	4145 410 160	50
M10	180 mm	6.4 mm	32 mm	WS16	720 h	4145 410 180	50
M10	200 mm	6.4 mm	32 mm	WS16	720 h	4145 410 200	25
M10	210 mm	6.4 mm	45 mm	WS16	720 h	4145 410 210	25
M10	220 mm	6.4 mm	45 mm	WS16	720 h	4145 410 220	25
M12	50 mm	7.5 mm	30 mm	WS18	720 h	4145 412 50	100
M12	55 mm	7.5 mm	30 mm	WS18	720 h	4145 412 55	100
M12	60 mm	7.5 mm	30 mm	WS18	720 h	4145 412 60	100
M12	65 mm	7.5 mm	30 mm	WS18	720 h	4145 412 65	50
M12	70 mm	7.5 mm	30 mm	WS18	720 h	4145 412 70	50
M12	75 mm	7.5 mm	30 mm	WS18	720 h	4145 412 75	50
M12	80 mm	7.5 mm	30 mm	WS18	720 h	4145 412 80	50
M12	85 mm	7.5 mm	30 mm	WS18	720 h	4145 412 85	50

Thread type x nominal diameter (d ₁)	Length (l ₁)	Head height (k ₁)	Thread length (metric thread) (b)	External drive (s ₁)	Corrosion protection period	Art. no.	P. Qty.
M12	90 mm	7.5 mm	30 mm	WS18	720 h	4145 412 90	50
M12	100 mm	7.5 mm	30 mm	WS18	720 h	4145 412 100	50
M12	110 mm	7.5 mm	30 mm	WS18	720 h	4145 412 110	50
M12	115 mm	7.5 mm	30 mm	WS18	720 h	4145 412 115	50
M12	120 mm	7.5 mm	30 mm	WS18	720 h	4145 412 120	50
M12	130 mm	7.5 mm	36 mm	WS18	720 h	4145 412 130	50
M12	135 mm	7.5 mm	36 mm	WS18	720 h	4145 412 135	50
M12	140 mm	7.5 mm	36 mm	WS18	720 h	4145 412 140	50
M12	150 mm	7.5 mm	36 mm	WS18	720 h	4145 412 150	50
M12	160 mm	7.5 mm	36 mm	WS18	720 h	4145 412 160	25
M12	170 mm	7.5 mm	36 mm	WS18	720 h	4145 412 170	25
M12	180 mm	7.5 mm	36 mm	WS18	720 h	4145 412 180	25
M12	190 mm	7.5 mm	36 mm	WS18	720 h	4145 412 190	25
M12	210 mm	7.5 mm	49 mm	WS18	720 h	4145 412 210	25
M12	240 mm	7.5 mm	49 mm	WS18	720 h	4145 412 240	25
M12	260 mm	7.5 mm	49 mm	WS18	720 h	4145 412 260	25
M12	280 mm	7.5 mm	49 mm	WS18	720 h	4145 412 280	25
M14	60 mm	8.8 mm	34 mm	WS21	720 h	4145 414 60	50
M14	70 mm	8.8 mm	34 mm	WS21	720 h	4145 414 70	50
M14	75 mm	8.8 mm	34 mm	WS21	720 h	4145 414 75	50
M14	80 mm	8.8 mm	34 mm	WS21	720 h	4145 414 80	50
M14	90 mm	8.8 mm	34 mm	WS21	720 h	4145 414 90	50
M14	100 mm	8.8 mm	34 mm	WS21	720 h	4145 414 100	50
M14	110 mm	8.8 mm	34 mm	WS21	720 h	4145 414 110	50
M14	120 mm	8.8 mm	34 mm	WS21	720 h	4145 414 120	50
M14	140 mm	8.8 mm	40 mm	WS21	720 h	4145 414 140	25
M14	160 mm	8.8 mm	40 mm	WS21	720 h	4145 414 160	25
M14	180 mm	8.8 mm	40 mm	WS21	720 h	4145 414 180	25
M14	200 mm	8.8 mm	40 mm	WS21	720 h	4145 414 200	25
M16	65 mm	10 mm	38 mm	WS24	720 h	4145 416 65	25/50
M16	70 mm	10 mm	38 mm	WS24	720 h	4145 416 70	25/50
M16	75 mm	10 mm	38 mm	WS24	720 h	4145 416 75	25
M16	80 mm	10 mm	38 mm	WS24	720 h	4145 416 80	25
M16	85 mm	10 mm	38 mm	WS24	720 h	4145 416 85	25
M16	90 mm	10 mm	38 mm	WS24	720 h	4145 416 90	25
M16	95 mm	10 mm	38 mm	WS24	720 h	4145 416 95	25
M16	100 mm	10 mm	38 mm	WS24	720 h	4145 416 100	25
M16	105 mm	10 mm	38 mm	WS24	720 h	4145 416 105	25
M16	110 mm	10 mm	38 mm	WS24	720 h	4145 416 110	25
M16	120 mm	10 mm	38 mm	WS24	720 h	4145 416 120	25
M16	130 mm	10 mm	44 mm	WS24	720 h	4145 416 130	25
M16	140 mm	10 mm	44 mm	WS24	720 h	4145 416 140	25
M16	150 mm	10 mm	44 mm	WS24	720 h	4145 416 150	25
M16	160 mm	10 mm	44 mm	WS24	720 h	4145 416 160	25
M16	170 mm	10 mm	44 mm	WS24	720 h	4145 416 170	25
M16	180 mm	10 mm	44 mm	WS24	720 h	4145 416 180	25
M16	190 mm	10 mm	44 mm	WS24	720 h	4145 416 190	25
M16	200 mm	10 mm	44 mm	WS24	720 h	4145 416 200	25
M16	210 mm	10 mm	57 mm	WS24	720 h	4145 416 210	25
M16	220 mm	10 mm	57 mm	WS24	720 h	4145 416 220	25
M16	240 mm	10 mm	57 mm	WS24	720 h	4145 416 240	25
M16	250 mm	10 mm	57 mm	WS24	720 h	4145 416 250	25
M16	260 mm	10 mm	57 mm	WS24	720 h	4145 416 260	25

Thread type x nominal diameter (d ₁)	Length (l ₁)	Head height (k ₁)	Thread length (metric thread) (b)	External drive (s ₁)	Corrosion protection period	Art. no.	P. Qty.
M20	75 mm	12.5 mm	46 mm	WS30	720 h	4145 420 75	25
M20	80 mm	12.5 mm	46 mm	WS30	720 h	4145 420 80	25
M20	90 mm	12.5 mm	46 mm	WS30	720 h	4145 420 90	25
M20	95 mm	12.5 mm	46 mm	WS30	720 h	4145 420 95	25
M20	100 mm	12.5 mm	46 mm	WS30	720 h	4145 420 100	25/50
M20	110 mm	12.5 mm	46 mm	WS30	720 h	4145 420 110	25
M20	120 mm	12.5 mm	46 mm	WS30	720 h	4145 420 120	25
M20	125 mm	12.5 mm	46 mm	WS30	720 h	4145 420 125	25
M20	130 mm	12.5 mm	52 mm	WS30	720 h	4145 420 130	25
M20	140 mm	12.5 mm	52 mm	WS30	720 h	4145 420 140	25
M20	150 mm	12.5 mm	52 mm	WS30	720 h	4145 420 150	25
M20	160 mm	12.5 mm	52 mm	WS30	720 h	4145 420 160	10
M20	170 mm	12.5 mm	52 mm	WS30	720 h	4145 420 170	10
M20	180 mm	12.5 mm	52 mm	WS30	720 h	4145 420 180	10
M20	190 mm	12.5 mm	52 mm	WS30	720 h	4145 420 190	10
M20	200 mm	12.5 mm	52 mm	WS30	720 h	4145 420 200	10
M20	210 mm	12.5 mm	65 mm	WS30	720 h	4145 420 210	10
M20	220 mm	12.5 mm	65 mm	WS30	720 h	4145 420 220	20
M20	230 mm	12.5 mm	65 mm	WS30	720 h	4145 420 230	10
M20	240 mm	12.5 mm	65 mm	WS30	720 h	4145 420 240	10
M20	260 mm	12.5 mm	65 mm	WS30	720 h	4145 420 260	10
M20	280 mm	12.5 mm	65 mm	WS30	720 h	4145 420 280	30
M20	290 mm	12.5 mm	65 mm	WS30	720 h	4145 420 290	10
M20	300 mm	12.5 mm	65 mm	WS30	720 h	4145 420 300	10
M20	320 mm	12.5 mm	65 mm	WS30	720 h	4145 420 320	10
M24	90 mm	15 mm	54 mm	WS36	720 h	4145 424 90	10
M24	100 mm	15 mm	54 mm	WS36	720 h	4145 424 100	10
M24	110 mm	15 mm	54 mm	WS36	720 h	4145 424 110	10
M24	120 mm	15 mm	54 mm	WS36	720 h	4145 424 120	10
M24	130 mm	15 mm	60 mm	WS36	720 h	4145 424 130	10
M24	140 mm	15 mm	60 mm	WS36	720 h	4145 424 140	10
M24	150 mm	15 mm	60 mm	WS36	720 h	4145 424 150	10
M24	160 mm	15 mm	60 mm	WS36	720 h	4145 424 160	10
M24	170 mm	15 mm	60 mm	WS36	720 h	4145 424 170	10
M24	180 mm	15 mm	60 mm	WS36	720 h	4145 424 180	10
M24	200 mm	15 mm	60 mm	WS36	720 h	4145 424 200	10
M24	220 mm	15 mm	73 mm	WS36	720 h	4145 424 220	10
M24	230 mm	15 mm	73 mm	WS36	720 h	4145 424 230	10
M24	240 mm	15 mm	73 mm	WS36	720 h	4145 424 240	10
M24	250 mm	15 mm	73 mm	WS36	720 h	4145 424 250	10
M24	280 mm	15 mm	73 mm	WS36	720 h	4145 424 280	10
M24	300 mm	15 mm	73 mm	WS36	720 h	4145 424 300	10
M24	310 mm	15 mm	73 mm	WS36	720 h	4145 424 310	10
M24	340 mm	15 mm	73 mm	WS36	720 h	4145 424 340	5
M30	130 mm	18.7 mm	72 mm	WS46	720 h	4145 430 130	10
M30	140 mm	18.7 mm	72 mm	WS46	720 h	4145 430 140	10
M30	170 mm	18.7 mm	72 mm	WS46	720 h	4145 430 170	10
M30	180 mm	18.7 mm	72 mm	WS46	720 h	4145 430 180	10
M30	200 mm	18.7 mm	72 mm	WS46	720 h	4145 430 200	10
M30	220 mm	18.7 mm	85 mm	WS46	720 h	4145 430 220	10
M30	240 mm	18.7 mm	85 mm	WS46	720 h	4145 430 240	5
M30	250 mm	18.7 mm	85 mm	WS46	720 h	4145 430 250	10
M30	270 mm	18.7 mm	85 mm	WS46	720 h	4145 430 270	10

Thread type x nominal diameter (d ₁)	Length (l ₁)	Head height (k ₁)	Thread length (metric thread) (b)	External drive (s ₁)	Corrosion protection period	Art. no.	P. Qty.
M30	280 mm	18.7 mm	85 mm	WS46	720 h	4145 430 280	5
M30	290 mm	18.7 mm	85 mm	WS46	720 h	4145 430 290	5
M30	300 mm	18.7 mm	85 mm	WS46	720 h	4145 430 300	5
M30	320 mm	18.7 mm	85 mm	WS46	720 h	4145 430 320	5
M30	340 mm	18.7 mm	85 mm	WS46	720 h	4145 430 340	10
M30	350 mm	18.7 mm	85 mm	WS46	720 h	4145 430 350	10

Notice

ISO 4014 replaces DIN 931 | There is some similarity | Nominal size extended | Width across flats for M10, M12, M14 and M22 changed.