

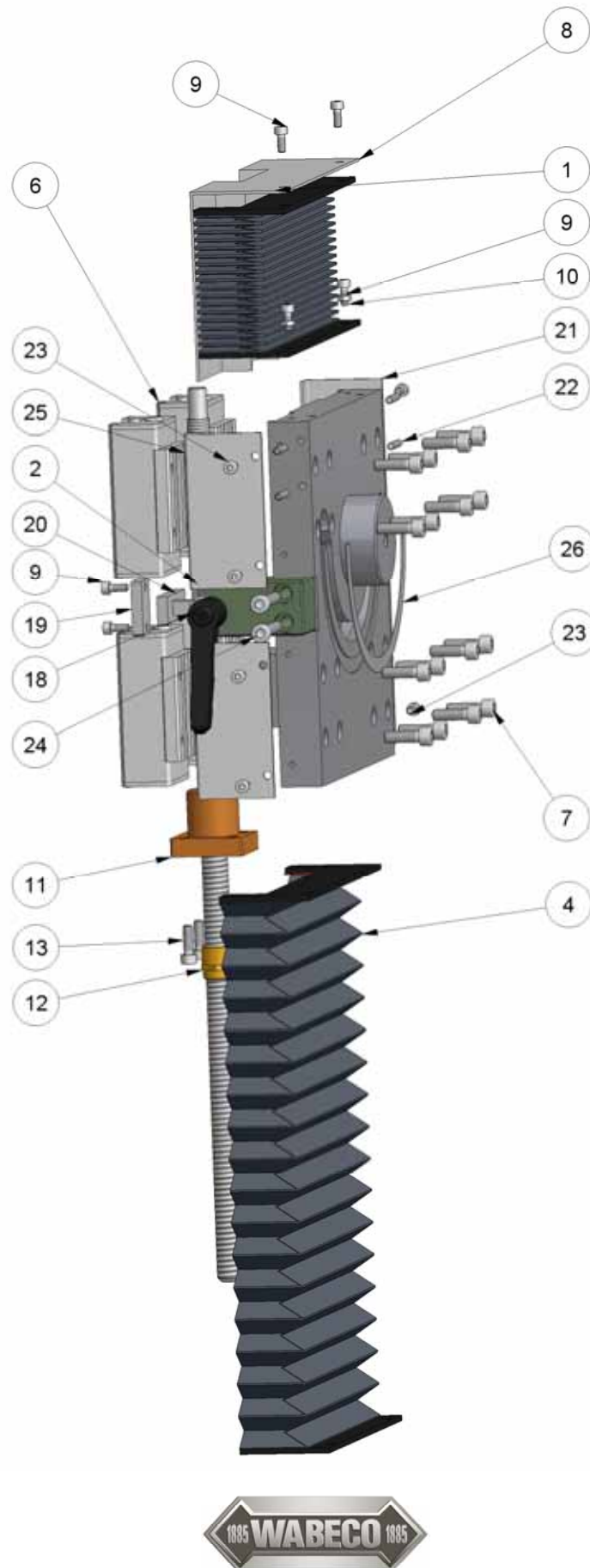
## 13. Drawing and list of parts

### 13.12 Z-Column for milling machines with linear guides **with trapezoid thread spindle** F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	16400301	Z-Column
2	1	16400203	Base plate
3	1	11200320	Cover plate
4	4	11700033	Screw
5	4	11700034	Spring lock washer
6	2	11700035	Hexagon nut
7	2	11810023	Guide rail 460 mm
8	29	11700031	Screw
9	2	11810024	Guide rail 580 mm
10	1	16400224	Spindle extension
11	4	11700046	Screw
12	1	16400342	bush
13	2	11700125	Screw
14	2	11700031	Screw
15	4	11700019	Nut
17	10	11700026	Screw

## 13. Drawing and list of parts

### 13.13 Vertical slide for milling machines with Linear guides **with trapezoid thread spindle** F1410 LF



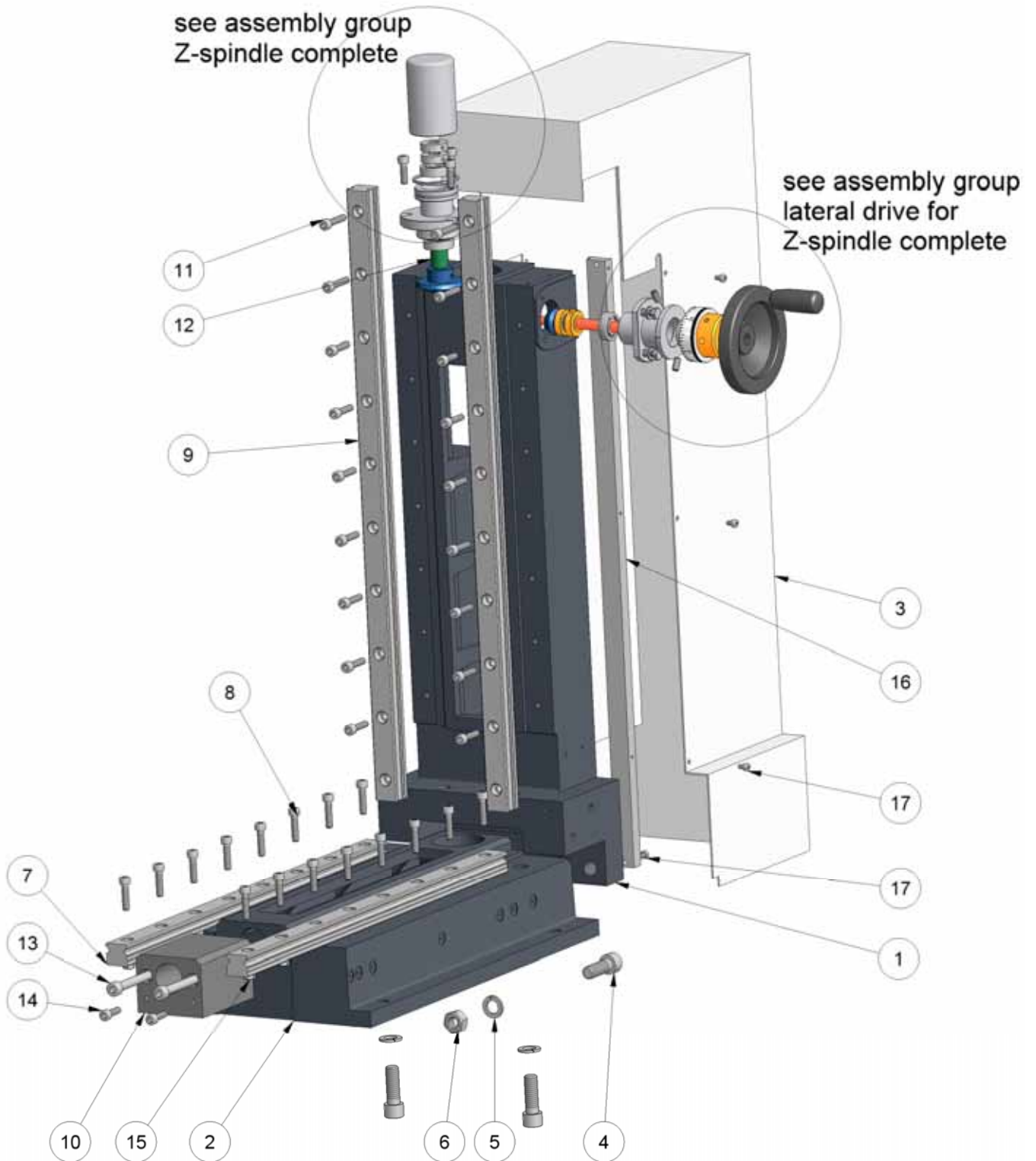
## 13. Drawing and list of parts

### 13.13 Vertical slide for milling machines with linear guides **with trapezoid thread spindle** F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	11860003	Concertina cover Z-axis, top
2	1	16400302	Jam
4	1	11860003	Concertina cover Z-axis, bottom
5	1	16400303	Vertical slide
6	4	11810026	Guide carriage
7	16	11700031	Cylinder screw
8	1	16410208	Holding plate Z-axis, top
9	10	11700026	Cylinder screw
10	2	11700002	Hexagon nut
11	1	16400311	Spindle nut
12	1	16400312	Adjusting nut
13	4	11700070	Cylinder screw
18	1	11840004	Clamping lever
19	1	16400319	Clamping plate
20	1	16400320	Jam
21	1	16410206	Cover plate
23	4	11700026	Cylinder screw
24	2	11700052	Cylinder screw
25	2	16410207	Cover plate
26	1	11870001	Alu scale

# 13. Drawing and list of parts

## 13.14 Z-column for milling machines with linear guides **with ball screw** F1410 LF



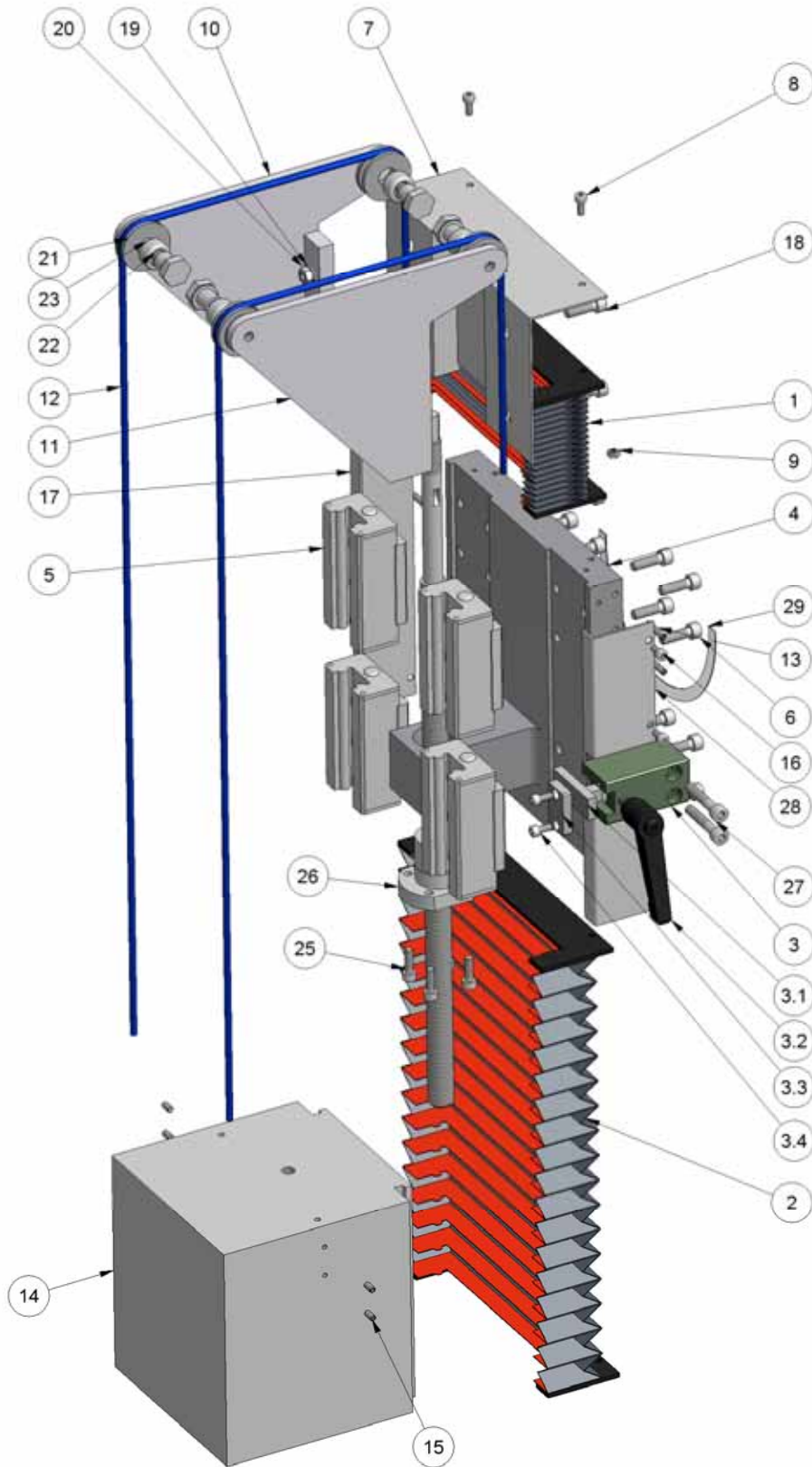
## 13. Drawing and list of parts

### 13.14 Z-column for milling machines with linear guides **with ball screw** F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	16400301	Z column
2	1	16400203	Base plate
3	1	16400347	Protective cover z-axis
4	4	11700033	Screw
5	4	11700034	Spring lock washer
6	2	11700035	Hexagon nut
7	2	11810023	Guide rail 460 mm
8	29	11700031	Screw
9	2	11810024	Guide rail 580 mm
10	1	16400224	Spindle extension
11	4	11700046	Screw
12	1	16400342	Bush
13	2	11700125	Screw
14	2	11700031	Screw
15	4	11700019	Nut
16	2	16400332	Guide rails counter weight
17	10	11700026	Screw

# 13. Drawing and list of parts

## 13.15 Vertical slide for milling machines with linear guides with ball screw F1410 LF



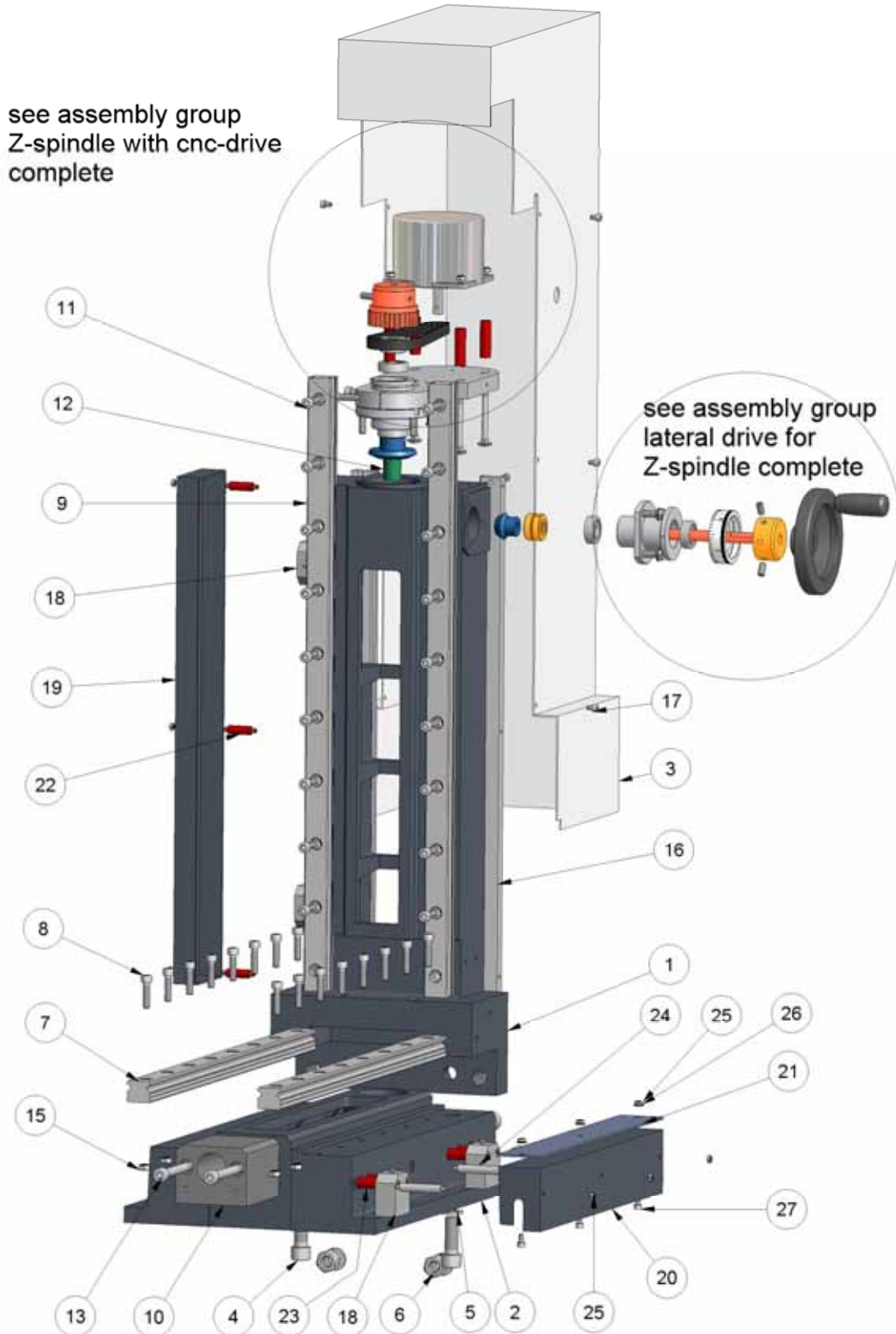
## 13. Drawing and list of parts

### 13.15 Vertical slide for milling machines with linear guides **with ball screw** F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	11860003	Concertina cover Z-axis, top
2	1	11860003	Concertina cover Z-axis,base
3	1	16400302	Jam
3.1	1	16400319	Clamping plate
3.2	1	11840004	Clamping lever
3.3	1	16400320	Jam
3.4	2	11700026	Cylinder screw
4	1	16400303	Vertical slide
5	4	11810026	Guide carriage
6	16	11700031	Cylinder screw
7	1	16410208	Holding plate Z-axis, top
8	4	11700026	Cylinder screw
9	2	11700002	Hexagon nut
10	1	16400337/01	Roller holder left
11	1	16400337/02	Roller holder right
12	2	16400341	Wire rope
14	1	16400340	Counter weight
15	4	11700089	Threaded pin
16	6	11700026	Cylinder screw
17	1	14610206	Cover plate
18	4	11700031	Cylinder screw
19	4	11700018	Limpet washer
20	4	11700019	Hexagon nut
21	4	16400339	Redirecting roller
22	4	16400338	Bolt
23	4	11810027	Needle bearing
25	4	11700070	Cylinder screw
26			Spindle nut (contained in ball screw order no.11245327)
27	2	11700052	Cylinder screw
28	2	14610207	Cover plate
29	1	11870001	Alu scale

# 13. Drawing and list of parts

## 13.16 Z-column for CNC milling machines with linear guides **with ball screw** CC-F1410 LF





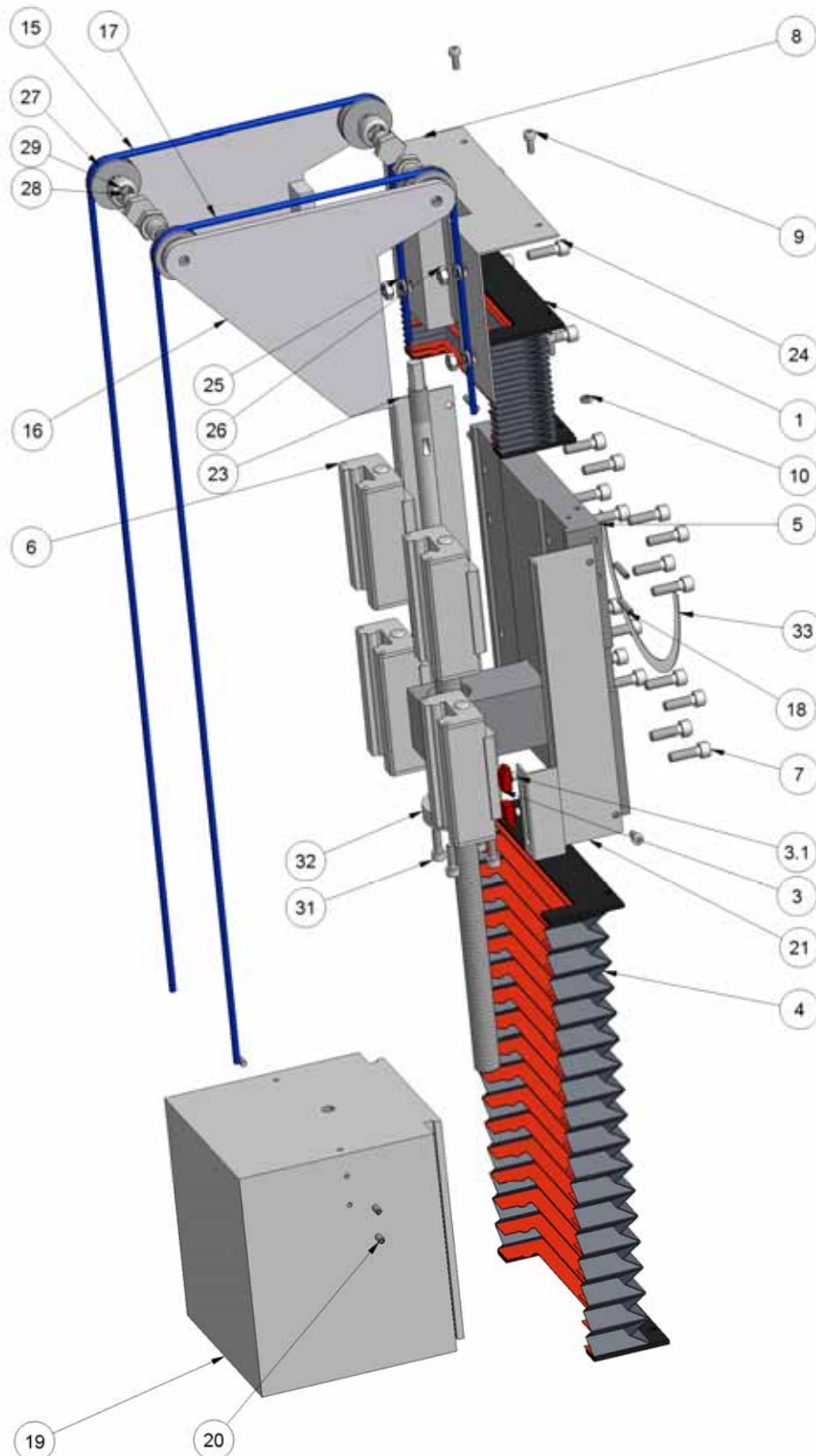
## 13. Drawing and list of parts

### 13.16 Z-column for CNC milling machines mit linear guides **with ball screw** CC-F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	16400301	Z-column
2	1	16400203	Base plate
3	1	16400347	Protective cover Z-axis
4	4	11700033	Screw
5	4	11700034	Spring lock washer
6	2	11700035	Hexagon nut
7	2	11810023	Guide rail 460 mm
8	29	11700031	Screw
9	2	11810024	Guide rail 580 mm
10	1	16400224	Spindle extension
11	4	11700046	Screw
12	1	16400342	Liner
13	2	11700125	Screw
15	4	11700019	Nut
16	2	16400332	Guide rail counter weight
17	10	11700026	Screw
18	4	11900017	Limit switch
19	1	16410205	Limit switch cover Z-axis
20	1	16410204	Limit switch cover Y-axis
21	1	16400206	Rubber plate
22	3	16400211	Distance piece limit switch
23	4	16400205	Limit switch holder
24	3	16400212	Distance piece limit switch
25	9	11700002	Nut
26	3	11700038	Limpet washer
27	3	11700031	Screw

## 13. Drawing and list of parts

### 13.17 Vertical slide for CNC milling machines with linear guides **with ball screw** CC-F1410 LF



## 13. Drawing and list of parts

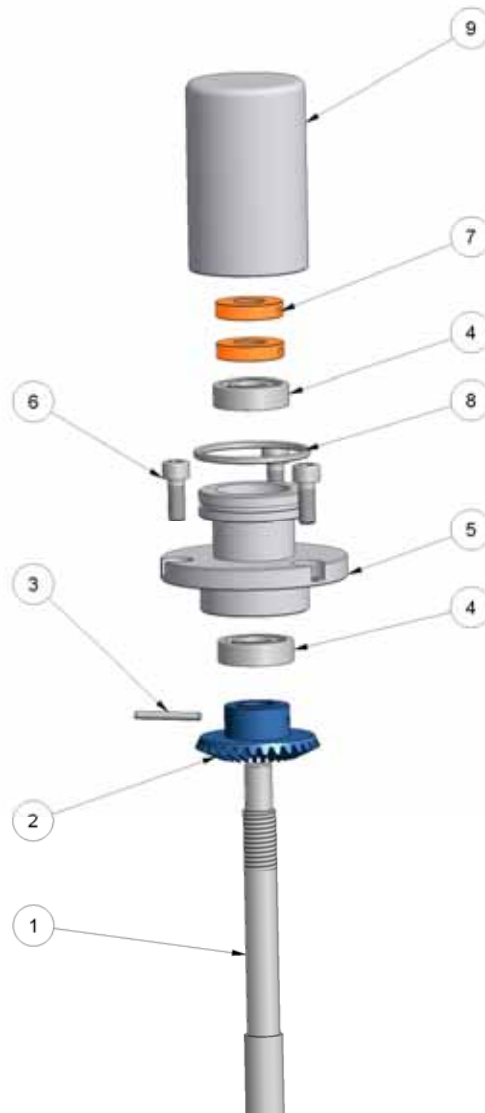
### 13.17 Vertical slide for CNC milling machines with linear guides **with ball screw** CC-F1410 LF

Part-No.	Pieces	Order-No.	Designation
1	1	11860003	Concertina cover Z-axis, top
3	2	16400227	Switch cam
3.1	2	11700112	Hexagon cylinder screw
4	1	11860003	Concertina cover Z-axis, base
5	1	16400303	Vertical slide
6	4	11810026	Guide carriage
7	16	11700031	Cylinder screw
8	1	16410208	Holding plate Z-axis, top
9	4	11700026	Cylinder screw
10	2	11700002	Hexagon nut
15	1	16400337/01	Roller holder left
16	1	16400337/02	Roller holder right
17	2	16400341	Wire rope
18	4	11700089	Threaded pin
19	1	16400330	Counter weight
20	4	11700089	Threaded pin
21	1	16410209	Switch cam support plate
22	4	11700026	Cylinder screw
23	1	16410206	Cover plate
24	4	11700031	Cylinder screw
25	4	11700018	Washer
26	4	11700019	Hexagon nut
27	4	16400339	Redirecting roller
28	4	16400338	Bolt
29	4	11810027	Needle bearing
31	4	11700070	Cylinder screw
32	1		Spindle nut (is contained in ball screw order no.11245327)
33	1	11870001	Alu scale

## 13. Drawing and list of parts

### 13.18 Z-spindle complete for milling machines

F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed



Part-No.	Pieces	Order-No.	Designation
1	1	11200327	Spindle <i>for milling machines with trapezoid thread spindle</i>
	1	11245327	Spindle with Spindle nut <i>for milling machines with ball screw</i>
2	1	112003226	Bevel gear
3	1	11700027	Spiral pin
4	2	11810007	Ball bearing
5	1	112003224	Spindle flange
6	3	11700031	Screw
7	2	112003222	Adjusting nut
8	1	11810025	O-ring
9	1	11200325	Cover

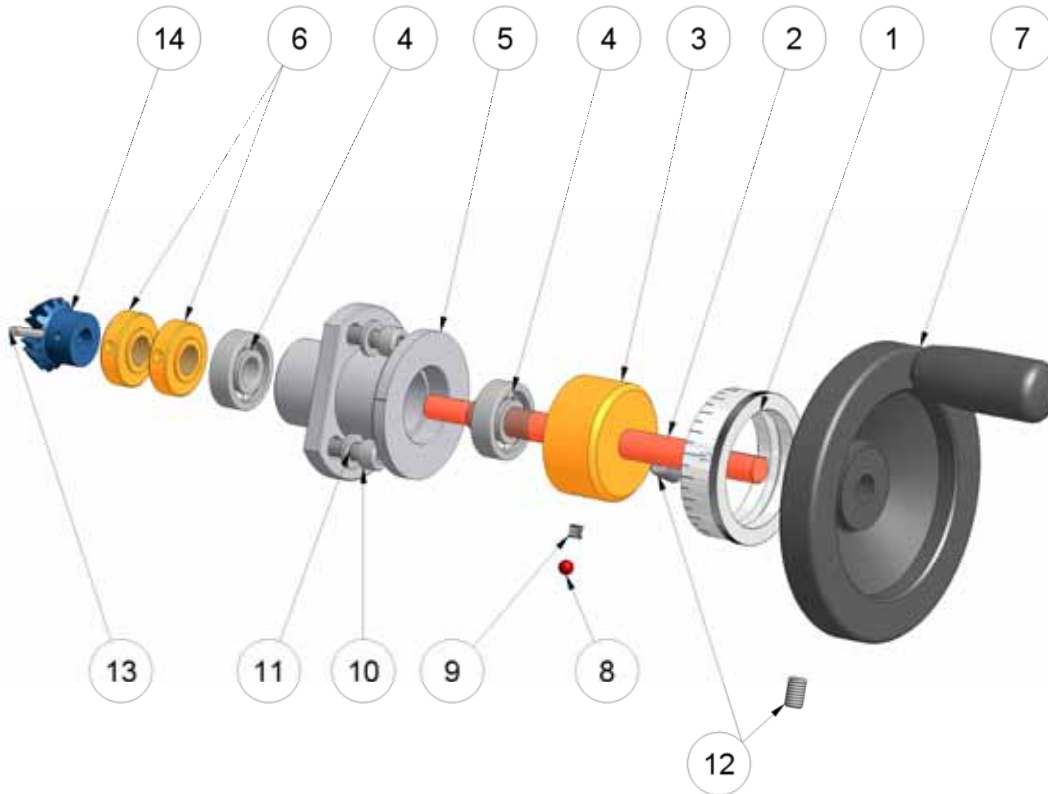
## 13. Drawing and list of parts

### 13.19 Lateral drive for Z-spindle complete for milling machines

F1200 – F1200 high speed – CC-F1200 – CC-F1200 high speed

F1210 – F1210 high speed – CC-F1210 – CC-F1210 high speed

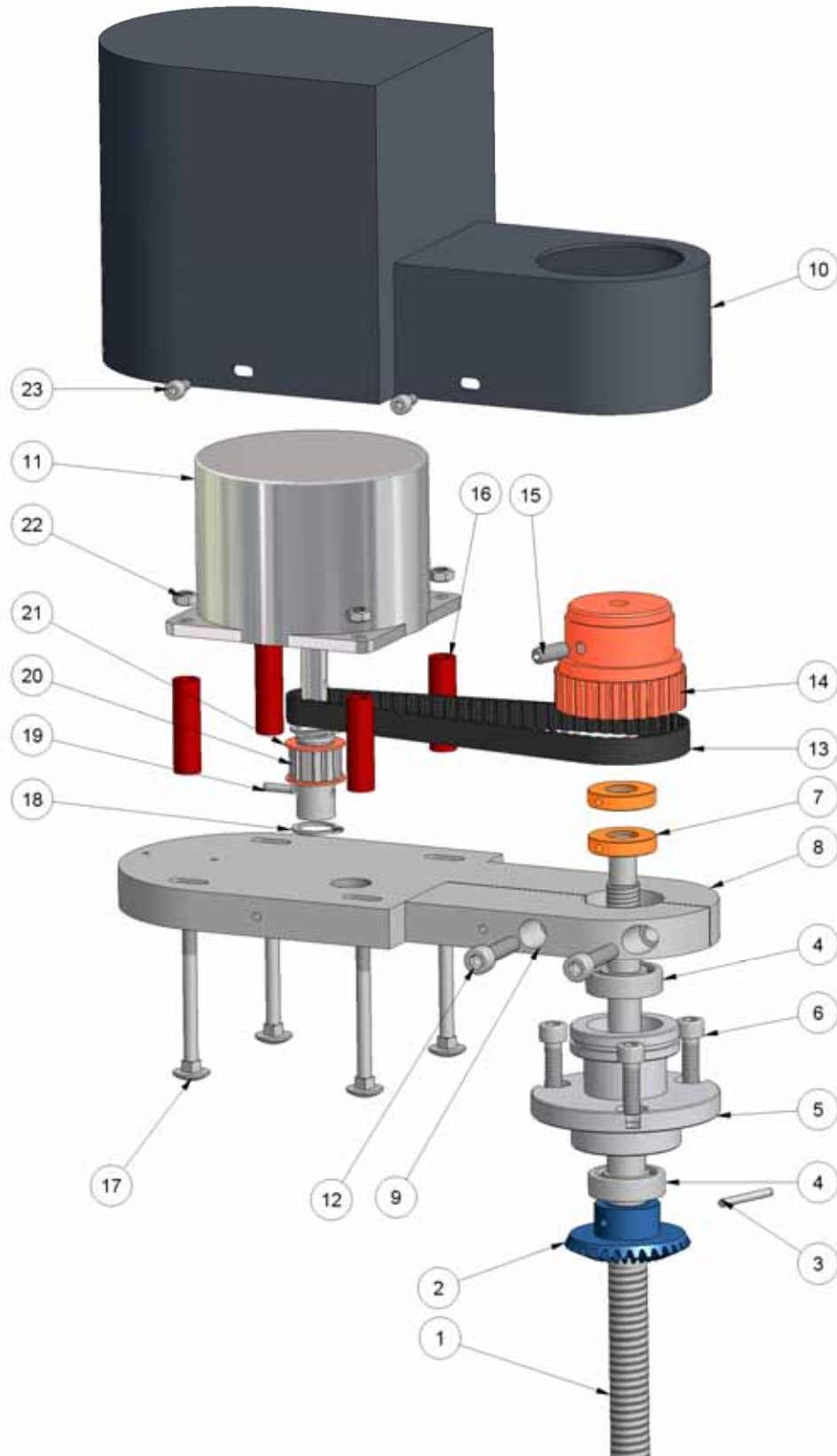
F1410 LF – F1410 LF high speed – CC-F1410 LF - CC-F1410 LF high speed



Part-No.	Pieces	Order-No.	Designation
1	1	112003187	Scale ring (40 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112453187	Graduated collar (50 graduation marks) <i>for milling machines with ball screw</i>
2	1	112003183	Spindle
3	1	1120031810	Adjusting ring
4	2	11810003	Ball bearing
5	1	112003186	Spindle flange
6	2	112003184	Adjusting nut
7	1	11840005	Handwheel
	1	11840003	Hinged handwheel <i>for CNC milling machines</i>
8	1	11810004	Ball
9	1	11850002	Spring
10	3	11700031	Screw
11	3	11700018	Limpet washer
12	2	11700087	Threaded pin
13	1	11700023	Spiral pin
14	1	112003182	Bevel gear

## 13. Drawing and list of parts

**13.20 Z-spindle with CNC drive complete for milling machines**  
CC-F1200 – CC-F1200 high speed – CC-F1210 – CC-F1210 high speed  
CC-F1410 LF – CC-F1410 LF high speed



## 13. Drawing and list of parts

### 13.20 Z-spindle with CNC drive complete for milling machines

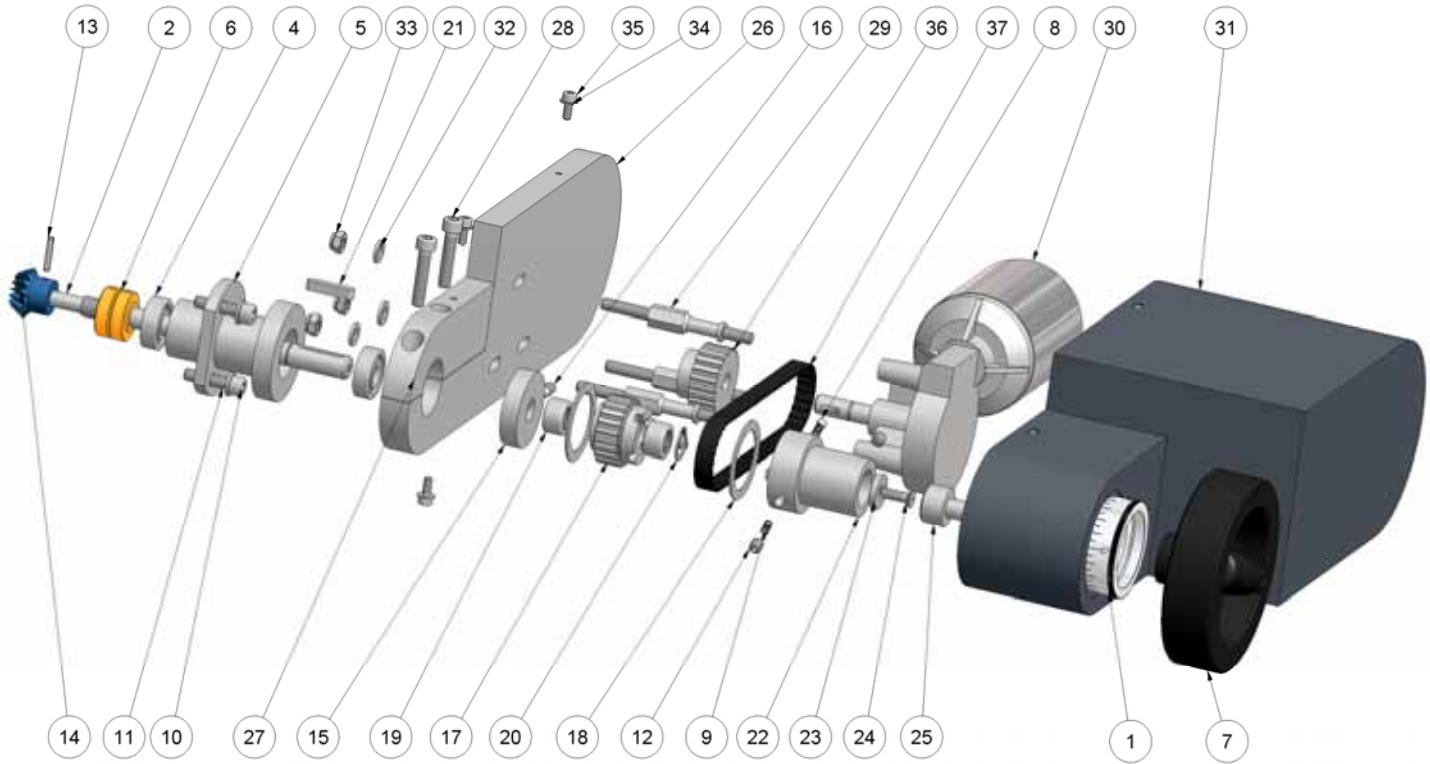
CC-F1200 – CC-F1200 high speed – CC-F1210 – CC-F1210 high speed

CC-F1410 LF – CC-F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	11200327	Spindle <i>for milling machines with trapezoid thread spindle</i>
	1	11245327	Spindle with spindle nut <i>for milling machines with ball screw</i>
2	1	112003226	Bevel gear
3	1	11700027	Spiral pin
4	2	11810007	Ball bearing
5	1	112003224	Spindle flange
6	3	11700031	Screw
7	2	112003222	Adjusting nut
8	1	112103192	Motor support
9	1	112103193	Jam motor holder
10	1	1121031917	Protective cover (not required for linear guide machine with ball screw)
11	1	11800003	Stepper motor <i>nccad basic</i>
	1	11800028	Stepper motor <i>nccad professional</i>
12	2	11700046	Screw
13	1	11820003	Belt
14	1	112103196	Toothed belt pulley
15	1	11700009	Threaded pin
16	4	112103195	Distance piece
17	4	11700047	Truss head bolt
18	2	11700048	Lock ring
19	1	11700049	Spiral pin
20	1	1121021213	Belt pulley
21	2	1121021212	Flanged wheel
22	4	11700050	Nut
23	4	11700026	Screw

### 13. Drawing and list of parts

13.21 Lateral drive for Z-spindle with automatic feed complete for milling machines  
F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed





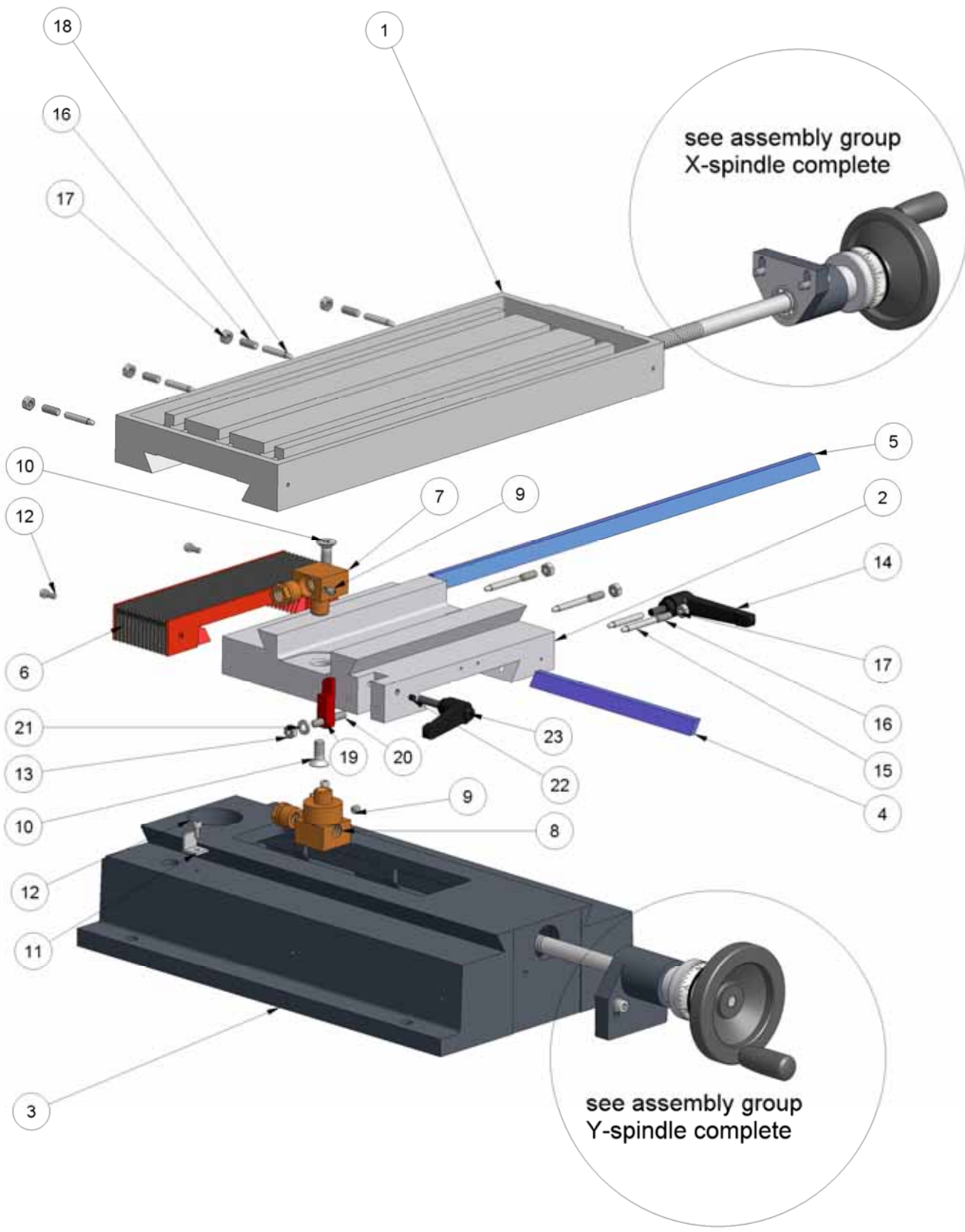
## 13. Drawing and list of parts

### 13.21 Lateral drive for Z-spindle with automatic feed complete for milling machines F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112003187	Scale ring (40 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112453187	Graduated collar (50 graduation marks) <i>for milling machines with ball screw</i>
2	1	11204101	Threaded spindle
4	2	11810003	Ball bearing
5	1	112043186	Spindle flange
6	2	112003184	Adjusting nut
7	1	11840003	Hinged handwheel
8	1	11810004	Ball
9	1	11850002	Spring
10	3	11700031	Screw
11	3	11700018	Washer
12	2	11700087	Threaded pin
13	1	11700023	Spiral pin
14	1	112003182	Bevel gear
15	1	11204104	Thrust washer
16	1	11700087	Threaded pin
17	1	11204106	Belt pulley
18	2	11204105	Flanged wheel
19	2	11810027	Needle bearing
20	1	11700042	Circlip
21	1	11700043	Feather key
22	1	11204108	Coupling
23	1	11204109	Connecting washer
24	1	11700130	Flat-headed screw
25	1	11204110	Handwheel extension
26	1	11204112	Motor support plate
27	1	11204113	Jam motor holder
28	2	11700046	Screw
29	3	11204111	Stud bolt
30	1	11800002	Motor
31	1	11204116	Protective cover
32	3	11700018	Washer
33	3	11700020	Nut
34	4	11700038	Washer
35	4	11700026	Screw
36	1	11204114	Belt pulley
37	1	11820003	Toothed belt

# 13. Drawing and list of parts

## 13.22 Cross support for milling machines with trapezoid thread spindle F1200 – F1200 high speed – F1210 – F1210 high speed



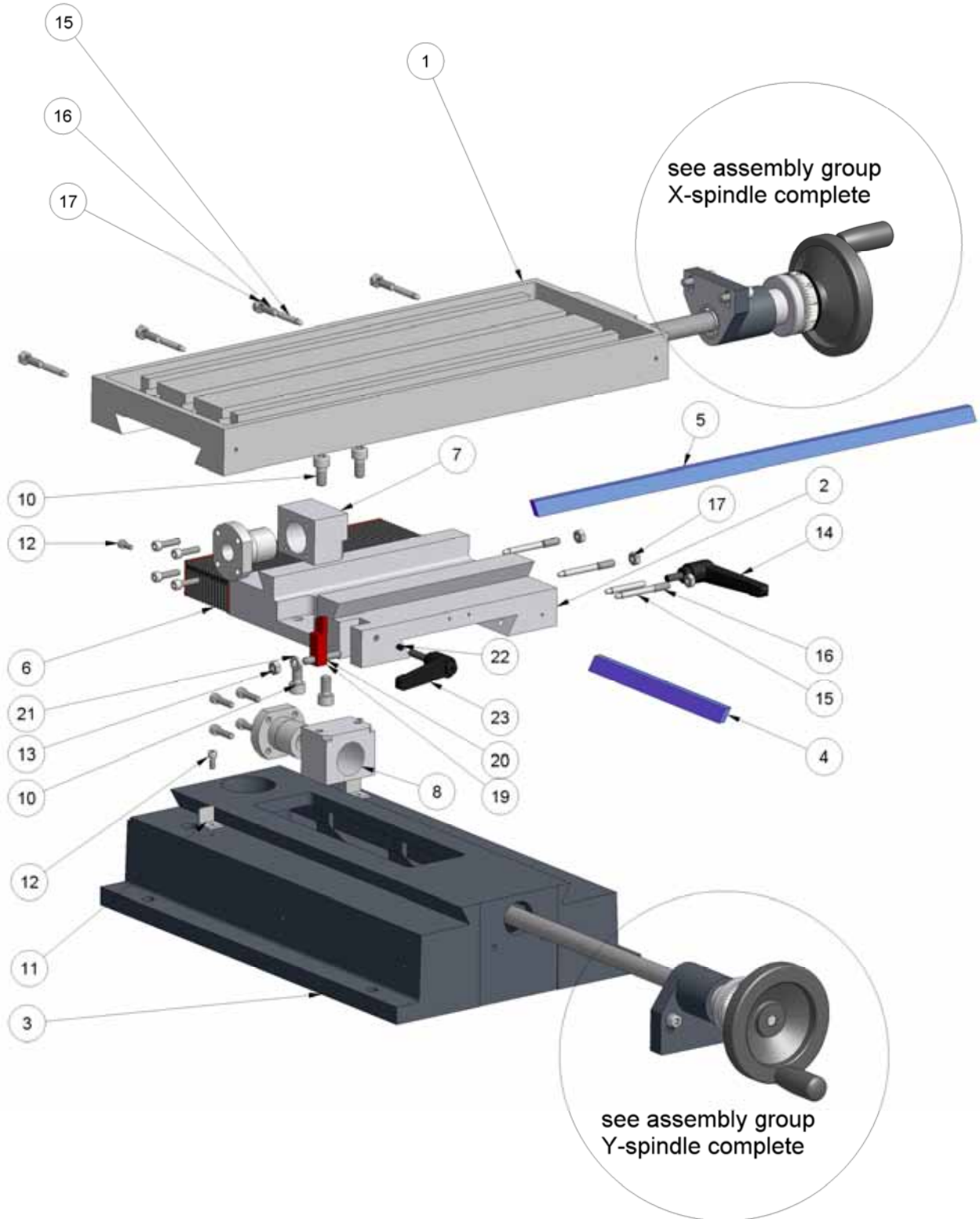
## 13. Drawing and list of parts

### 13.22 Cross support for milling machines **with trapezoid thread spindle** F1200 – F1200 high speed – F1210 – F1210 high speed

Part-No.	Pieces	Order-No.	Designation
1	1	11200201	Top slide <i>F1200 – F1200 high speed</i>
1	1	11400201	Top slide <i>F1210 – F1210 high speed</i>
2	1	11200202	Cross slide
3	1	11200203	Base plate
4	1	11200204	Adjusting strip
5	1	11200205	Adjusting strip <i>F1200 – F1200 high speed</i>
5	1	11400205	Adjusting strip <i>F1210 – F1210 high speed</i>
6	1	11860002	Concertina cover
7	1	11200208	Spindle nut with adjusting nut
8	1	11200209	Spindle nut with adjusting nut
9	2	11700009	Threaded pin
10	2	11700126	Flat-headed screw
11	2	11200228	Alu angle
12	4	11700026	Screw
13	1	11700020	Lock nut
14	1	11840004	Clamping lever
15	4	11200216	Thrust piece
16	7	11700123	Threaded pin
17	7	11700019	Nut
18	4	11200217	Thrust piece
19	1	11200219	Clamping piece
20	1	11700032	Stud bolt
21	1	11700018	Washer
22	1	11850003	Spring
23	1	11840006	Clamping lever

# 13. Drawing and list of parts

## 13.23 Cross support for milling machines **with ball screw** F1200 – F1200 high speed – F1210 – F1210 high speed



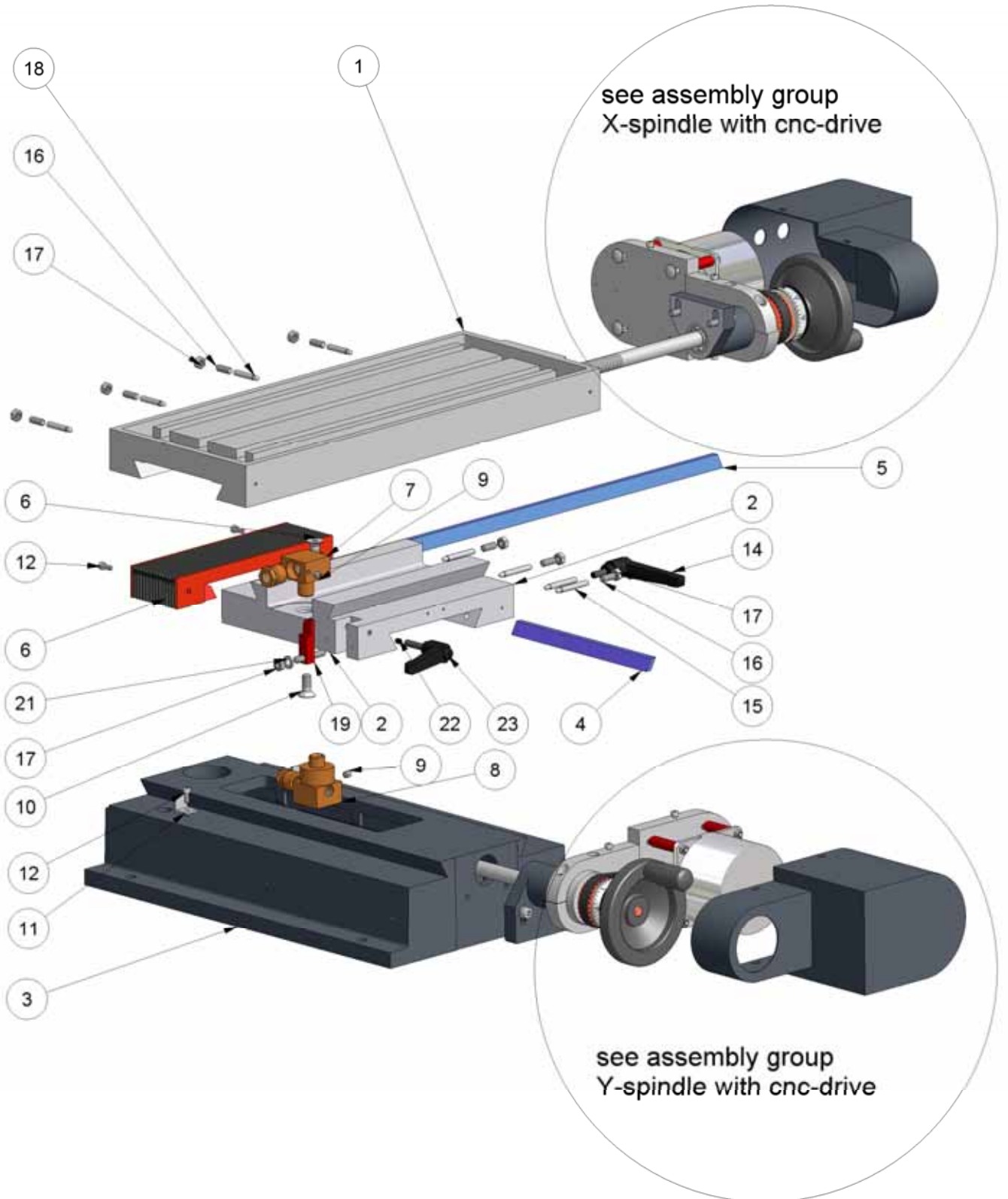
## 13. Drawing and list of parts

### 13.23 Cross support for Milling machines **with ball screw** F1200 – F1200 high speed – F1210 – F1210 high speed

Part-No.	Pieces	Order-No.	Designation
1	1	11200201	Top slide <i>F1200 – F1200 high speed</i>
1	1	11400201	Top slide <i>F1210 – F1210 high speed</i>
2	1	11245202	Cross slide
3	1	11200203	Base plate
4	1	11200204	Adjusting strip
5	1	11200205	Adjusting strip <i>F1200 – F1200 high speed</i>
5	1	11400205	Adjusting strip <i>F1210 – F1210 high speed</i>
6	1	11860002	Concertina cover
7	1	11245208	Nut holder A-axis
8	1	11245209	Nut holder Y-axis
9	8	11700039	Screw
10	4	11700040	Screw
11	2	11200228	Alu angle
12	4	11700026	Screw
13	1	11700020	Lock nut
14	1	11840004	Clamping lever
15	4	11200216	Thrust piece
16	7	11700123	Threaded pin
17	7	11700019	Nut
18	4	11200217	Thrust piece
19	1	11200219	Clamping piece
20	1	11700032	Stud bolt
21	1	11700018	Washer
22	1	11850003	Spring
23	1	11840006	Clamping lever

# 13. Drawing and list of parts

13.24 Cross support for CNC milling machines **with trapezoid thread spindle**  
CC-F1200 – CC-F1200 high speed – CC-F1210 – CC-F1210 high speed



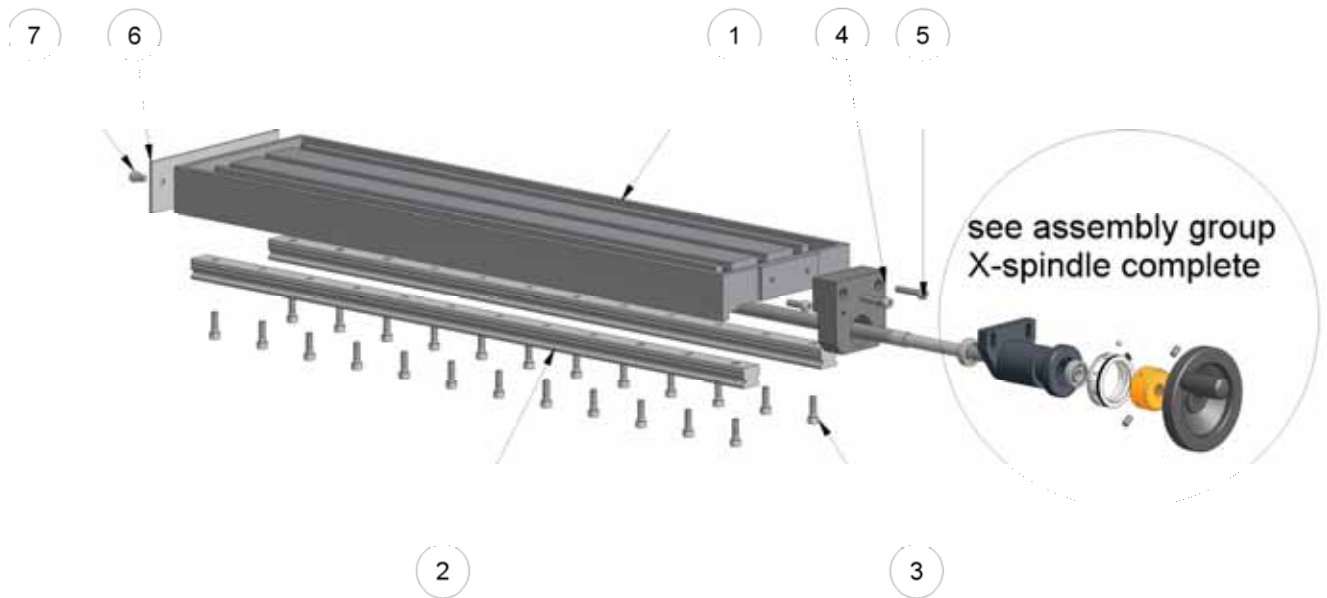
## 13. Drawing and list of parts

### 13.24 Cross support for CNC milling machines **with trapezoid thread spindle** CC-F1200 – CC-F1200 high speed – CC-F1210 – CC-F1210 high speed

Part-No.	Pieces	Order-No.	Designation
1	1	11200201	Top slide <i>F1200 – F1200 high speed</i>
1	1	11400201	Top slide <i>F1210 – F1210 high speed</i>
2	1	11200202	Cross slide
3	1	11200203	Base plate
4	1	11200204	Adjusting strip
5	1	11200205	Adjusting strip <i>F1200 – F1200 high speed</i>
5	1	11400205	Adjusting strip <i>F1210 – F1210 high speed</i>
6	1	11860002	Concertina cover
7	1	11200208	Spindle nut with adjusting nut
8	1	11200209	Spindle nut with adjusting nut
9	2	11700009	Threaded pin
10	2	11700126	Flat-headed screw
11	2	11200228	Alu angle
12	4	11700026	Screw
13	1	11700020	Lock nut
14	1	11840004	Clamping lever
15	4	11200216	Thrust piece
16	7	11700123	Headless pin
17	7	11700019	Nut
18	4	11200217	Thrust piece
19	1	11200219	Clamping piece
20	1	11700032	Stud bolt
21	1	11700018	Washer
22	1	11850003	Spring
23	1	11840006	Clamping lever

## 13. Drawing and list of parts

### 13.25 Top slide for milling machines with **linear guides** F1410 LF

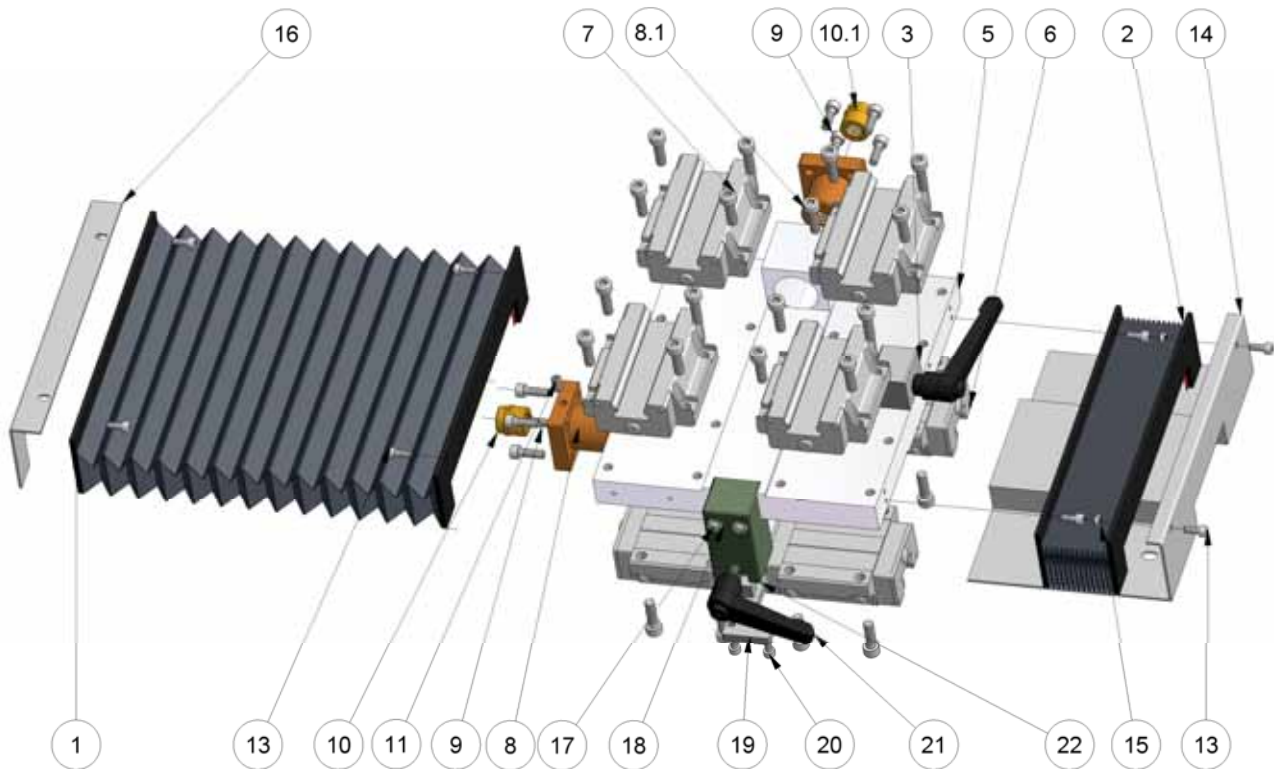


Part-No.	Pieces	Order-No.	Designation
1	1	16400201	Top slide
2	2	11810028	Guide rail 700 mm
3	26	11700031	Cylinder screw
4	1	16400212	Spindle extension X-axis
5	2	11700046	Cylinder screw
6	1	16410210	Connecting plate
7	2	11700022	Cylinder screw



## 13. Drawing and list of parts

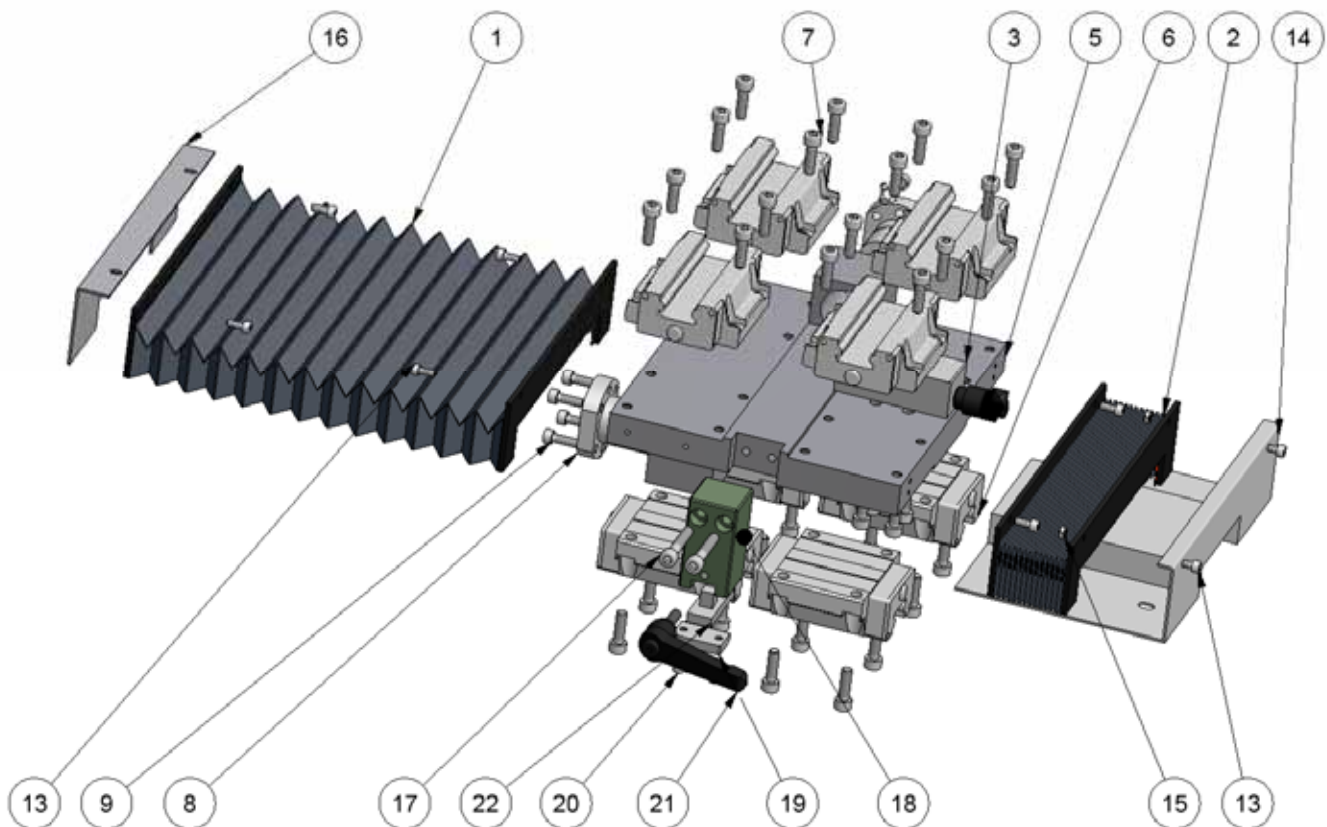
### 13.26 Cross slide for milling machines with **linear guides and trapezoid thread spindle** F1410 LF



Part-No.	Pieces	Order-No.	Designation
1	1	11860004	Concertina cover, rear
2	1	11860004	Concertina cover, front
3	1	11810029	Jam complete
5	1	16400202	Cross slide
6	8	11810026	Guide carriage
7	32	11700031	Cylinder screw
8	1	16400208	Nut
8.1	1	16400311	Nut
9	8	11700070	Cylinder screw
10	1	16400209	Adjusting nut
10.1	1	16400312	Adjusting nut
11	2	11700087	Threaded pin
13	8	11700070	Cylinder screw
14	1	16410212	Holding plate
15	2	11700002	Hexagon nut
16	1	16410213	Holding plate
17	2	11700052	Cylinder screw
18	1	16400302	Jam housing
19	1	16400319	Jam plate
20	2	11700026	Cylinder screw
21	1	11840006	Clamping lever
22	1	16400320	Jam

## 13. Drawing and list of parts

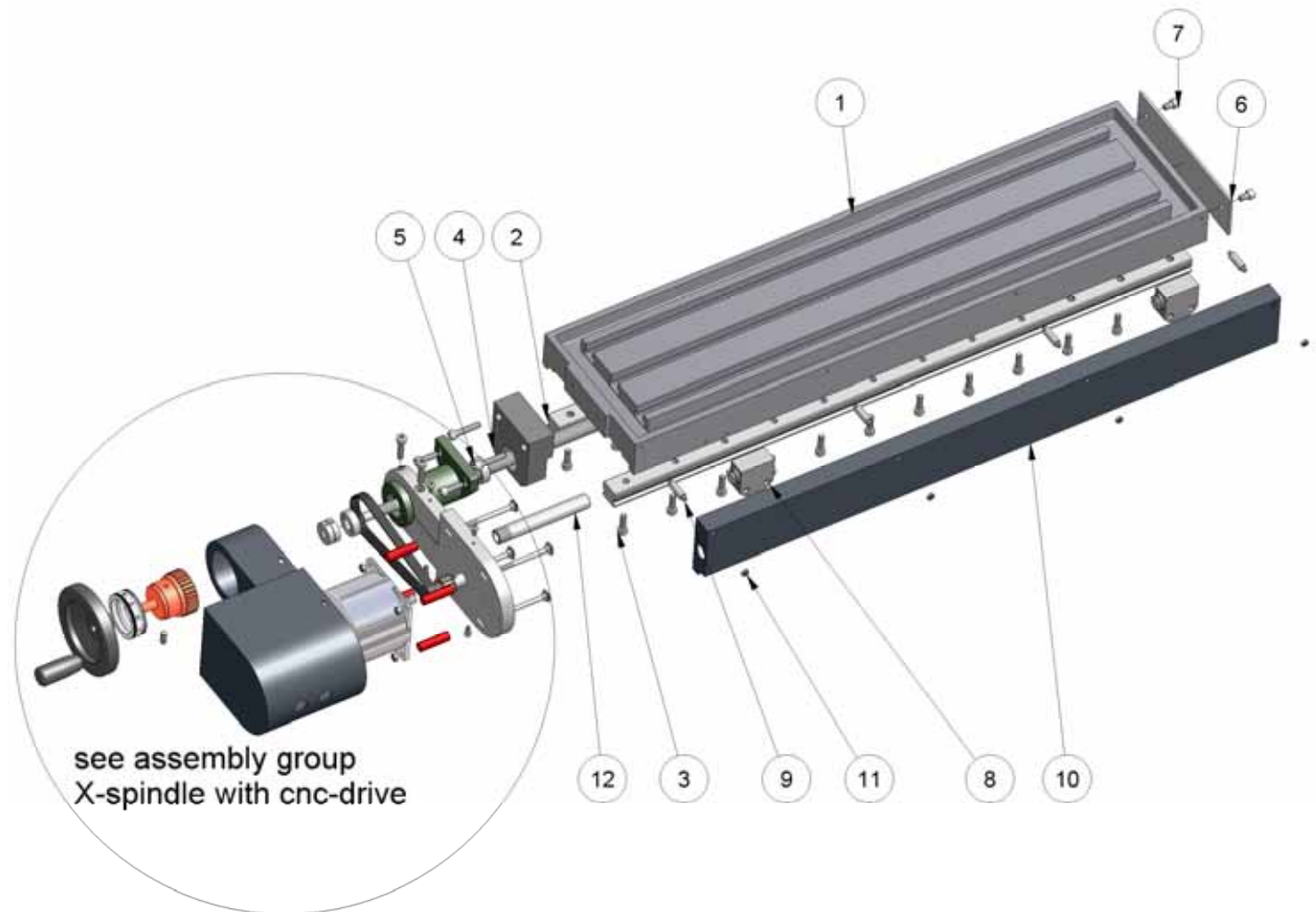
### 13.27 Cross slide for milling machines with **linear guides and ball screw** F1410 LF



Part-No.	Pieces	Order-No.	Designation
1	1	11860004	Concertina cover, rear
2	1	11860004	Concertina cover, front
3	1	11810029	Jam complete
5	1	16400202	Cross slide
6	8	11810026	Guide carriage
7	32	11700031	Cylinder screw
8	2		Spindle nut (is contained in ball screw)
9	8	11700070	Cylinder screw
13	8	11700070	Cylinder screw
14	1	16410212	Holding plate
15	2	11700002	Hexagon nut
16	1	16410213	Holding plate
17	2	11700052	Cylinder screw
18	1	16400302	Clamper housing
19	1	16400319	Jam plate
20	2	11700026	Cylinder screw
21	1	11840006	Clamping lever
22	1	16400320	Jam

## 13. Drawing and list of parts

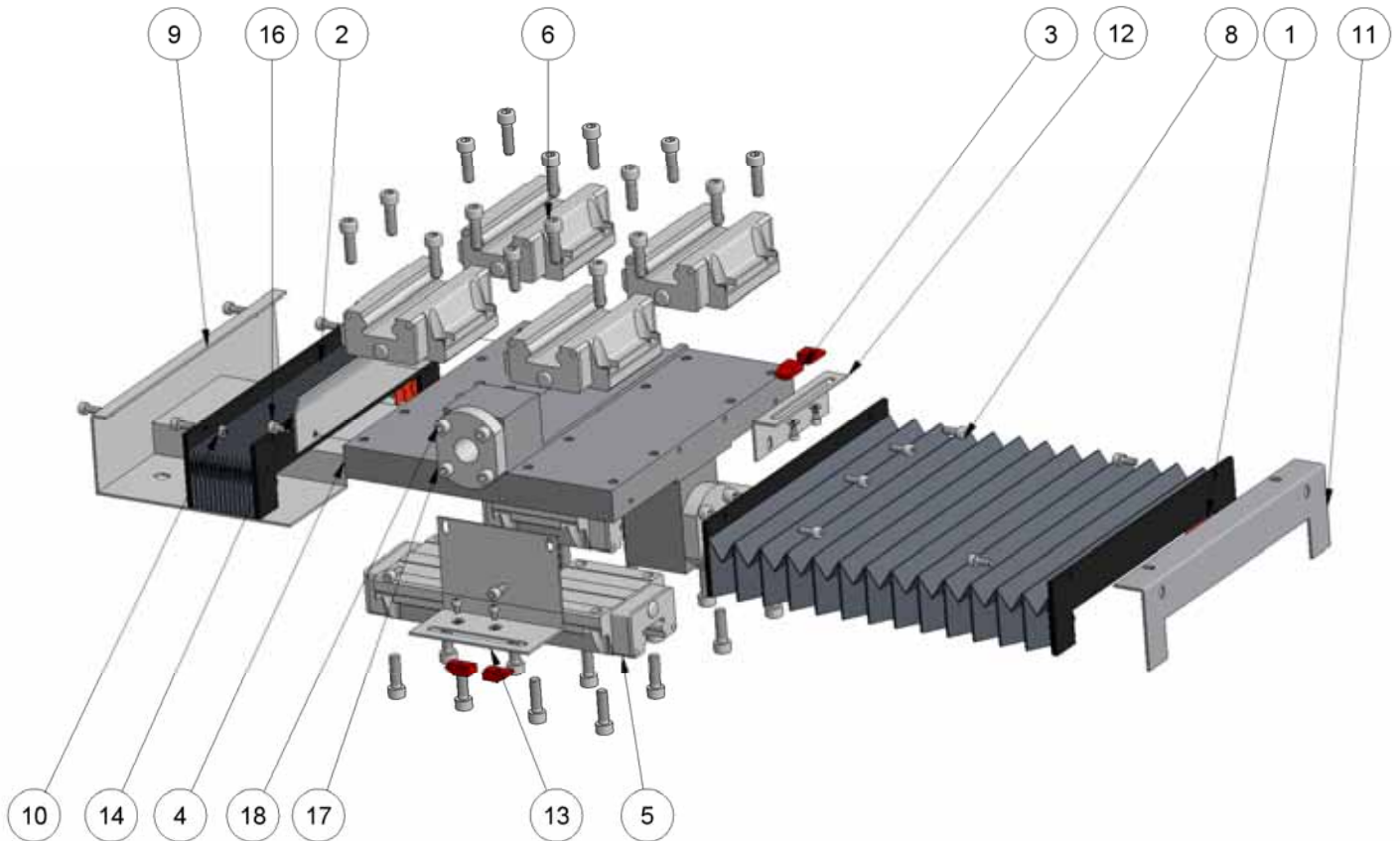
### 13.28 Top slide for CNC milling machines **with linear guides** CC-F1410 LF



Part-No.	Pieces	Order-No.	Designation
1	1	16400201	Top slide
2	2	11810028	Guide rails 700 mm
3	26	11700031	Hexagon cylinder screw
4	1	16400212	Spindle bearing extension
5	2	11700046	Hexagon cylinder screw
6	1	16410210	Connecting plate
7	2	11700022	Hexagon cylinder screw
8	2	11900017	Limit switch
9	4	16400211	Distance piece
10	1	16410211	Cover limiting switch
11	4	11700002	Hexagon nut
12	1	16400215	Tube X-axis

## 13. Drawing and list of parts

### 13.29 Cross slide for CNC milling machines **with linear guides** CC-F1410 LF

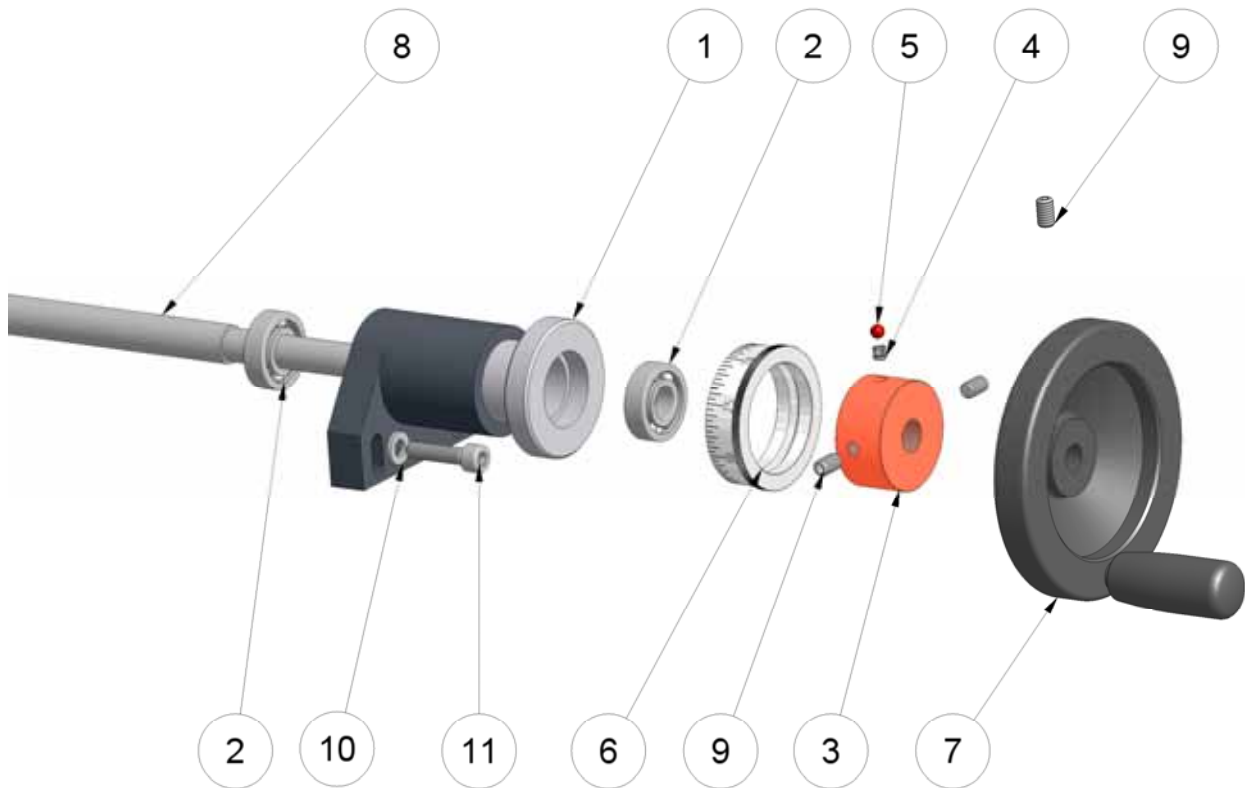


Part-No.	Pieces	Order-No.	Designation
1	1	11860004	Concertina cover
2	1	11860004	Concertina cover
3	4	16400227	Switch cams
4	1	16400202	Cross slide
5	8	11810026	Guide carriage
6	32	11700031	Cylinder screw
8	12	11700070	Cylinder screw
9	1	16410212	Holding plate Y-axis
10	2	11700002	Hexagon nut
11	1	16410213	Holding plate
12	1	16410214	Switch cam support plate X-axis
13	1	16410215	Switch cam support plate Y-axis
14	1	16410216	Linear guide cover
16	2	11700026	Cylinder screw
17	2		Spindle nut (is contained in ball screw no.16400216)
18	8	11700070	Cylinder screw

## 13. Drawing and list of parts

### 13.30 X-spindle for milling machines

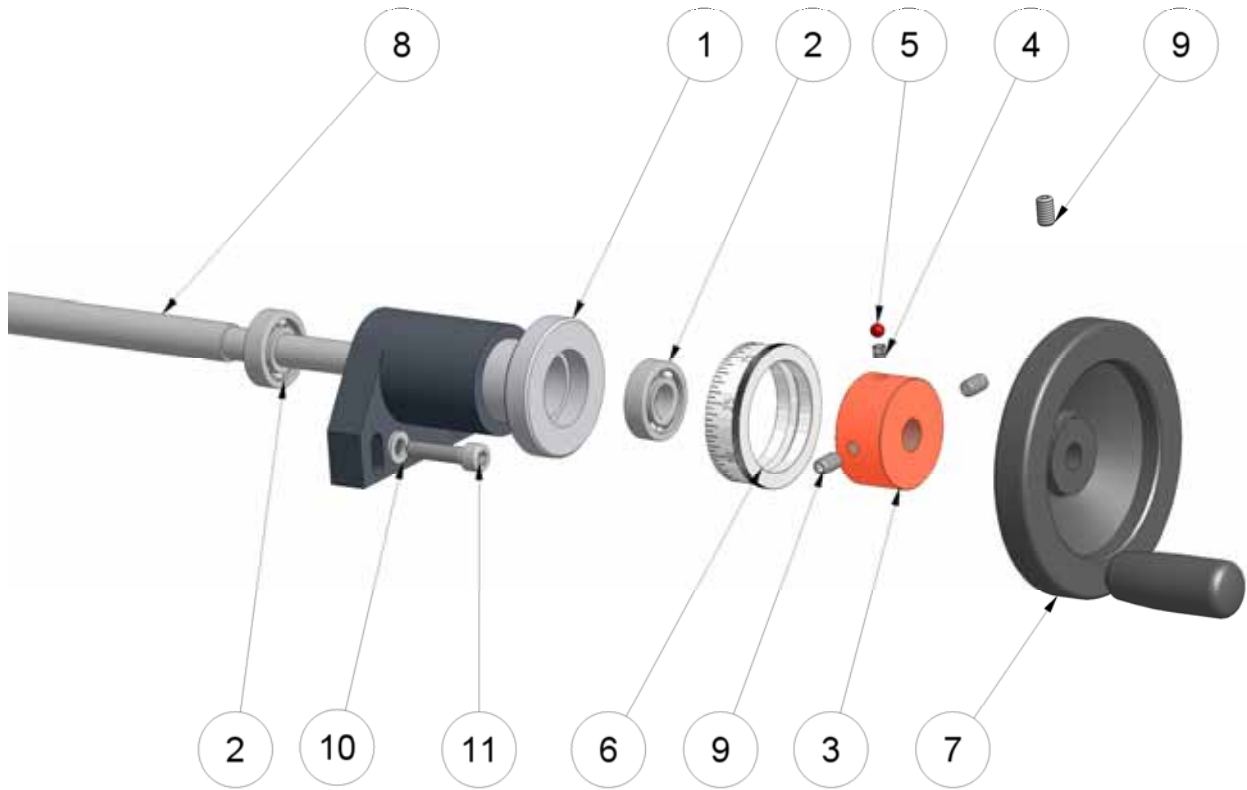
F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed



Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
3	1	112002105	Adjusting ring
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112452104	Scale ring (100 graduation marks) <i>for milling machines with ball screw</i>
7	1	11840005	Handwheel
			<i>Milling machines with trapezoid thread spindle</i>
8	1	11200206	Spindle <i>F1200 – F1200 high speed</i>
	1	11400206	Spindle <i>F1210 – F1210 high speed</i>
	1	16401206	Spindle <i>F1410LF – F1410 LF high speed</i>
			<i>Milling machines with ball screw</i>
	1	11245206	Spindle with Spindle nut <i>F1200 – F1200 high speed</i>
	1	11445206	Spindle with Spindle nut <i>F1210 – F1210 high speed</i>
	1	16400216	Spindle with Spindle nut <i>F1410LF – F1410 LF high speed</i>
9	3	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw

# 13. Drawing and list of parts

13.31 Y-spindle for milling machines  
F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed



## 13. Drawing and list of parts

### 13.31 Y-spindle for milling machines

F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
3	1	112002105	Adjusting ring
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112452104	Scale ring (100 graduation marks) <i>for milling machines with ball screw</i>
7	1	11840005	Handwheel  <i>milling machines with trapezoid thread spindle</i>
8	1	11200207	Spindle <i>F1200 – F1200 high speed</i>
8	1	11200207	Spindle <i>F1210 – F1210 high speed</i>
	1	16400207	Spindle <i>for transversal extension</i>
	1	16400207	Spindle <i>F1410LF – F1410 LF high speed</i>  <i>milling machines with ball screw</i>
	1	11245207	Spindle with Spindle nut <i>F1200 – F1200 high speed</i>
	1	11245207	Spindle with Spindle nut <i>F1210 – F1210 high speed</i>
	1	11235207	Spindle with Spindle nut <i>for transversal extension</i>
	1	16400209	Spindle with Spindle nut <i>F1410LF – F1410 LF high speed</i>
9	3	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw

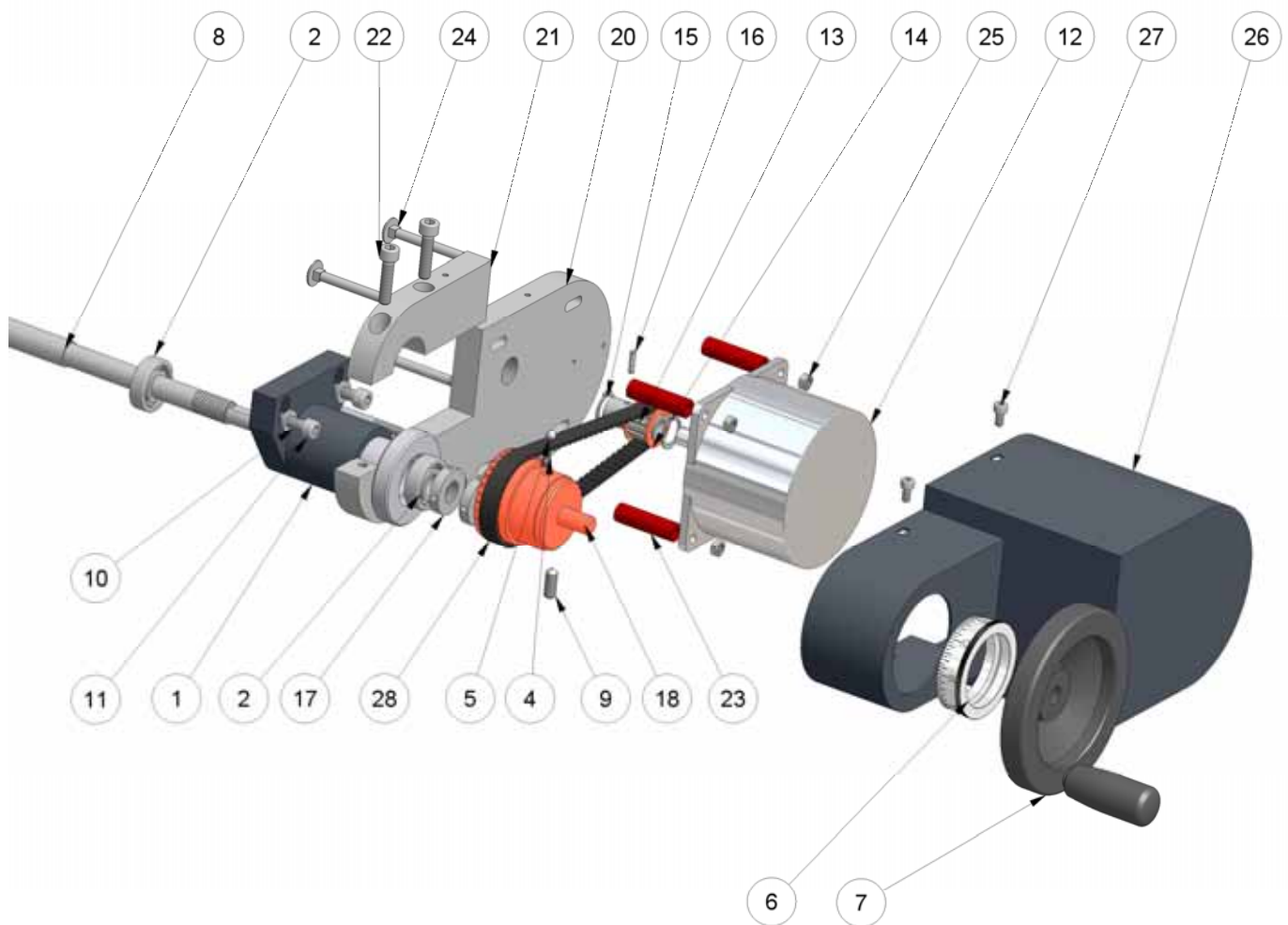
## 13. Drawing and list of parts

### 13.32 X-spindle for CNC milling machines

CC-F1200 – CC-F1200 high speed

CC-F1210 – CC-F1210 high speed

CC-F1410 LF – CC-F1410 LF high speed





## 13. Drawing and list of parts

### 13.32 X-spindle for CNC milling machines

CC-F1200 – CC-F1200 high speed

CC-F1210 – CC-F1210 high speed

CC-F1410 LF – CC-F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112452104	Scale ring (100 graduation marks) <i>for milling machines with ball screw</i>
7	1	11840003	Hinged handwheel  <i>milling machines with trapezoid thread spindle</i>
8	1	11200206	Spindle <i>F1200 – F1200 high speed</i>
	1	11400206	Spindle <i>F1210 – F1210 high speed</i>
	1	16401206	Spindle <i>F1410LF – F1410 LF high speed</i>  <i>milling machines with ball screw</i>
	1	11245206	Spindle with Spindle nut <i>F1200 – F1200 high speed</i>
	1	11445206	Spindle with Spindle nut <i>F1210 – F1210 high speed</i>
	1	16400216	Spindle with Spindle nut <i>F1410LF – F1410 LF high speed</i>
9	3	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw
12	1	11800003	Stepper motor <i>nccad basic</i>
	1	11800028	Stepper motor <i>nccad professional</i>
13	1	1121021213	Belt pulley
14	2	1121021212	Flanged wheel
15	2	11700048	Lock ring
16	1	11700049	Spiral pin
17	2	112003222	Adjusting nut
18	1	112102126	Toothed belt pulley
20	1	112102122	Motor support
21	1	112102123	Jam for motor support
22	2	11700115	Screw
23	4	112103195	Distance sleeve Stepper motor
24	4	11700047	Round-head screw
25	4	11700050	Nut
26	1	1121021217	Protective cover Stepper motor
27	4	11700026	Screw
28	1	11820003	Belt

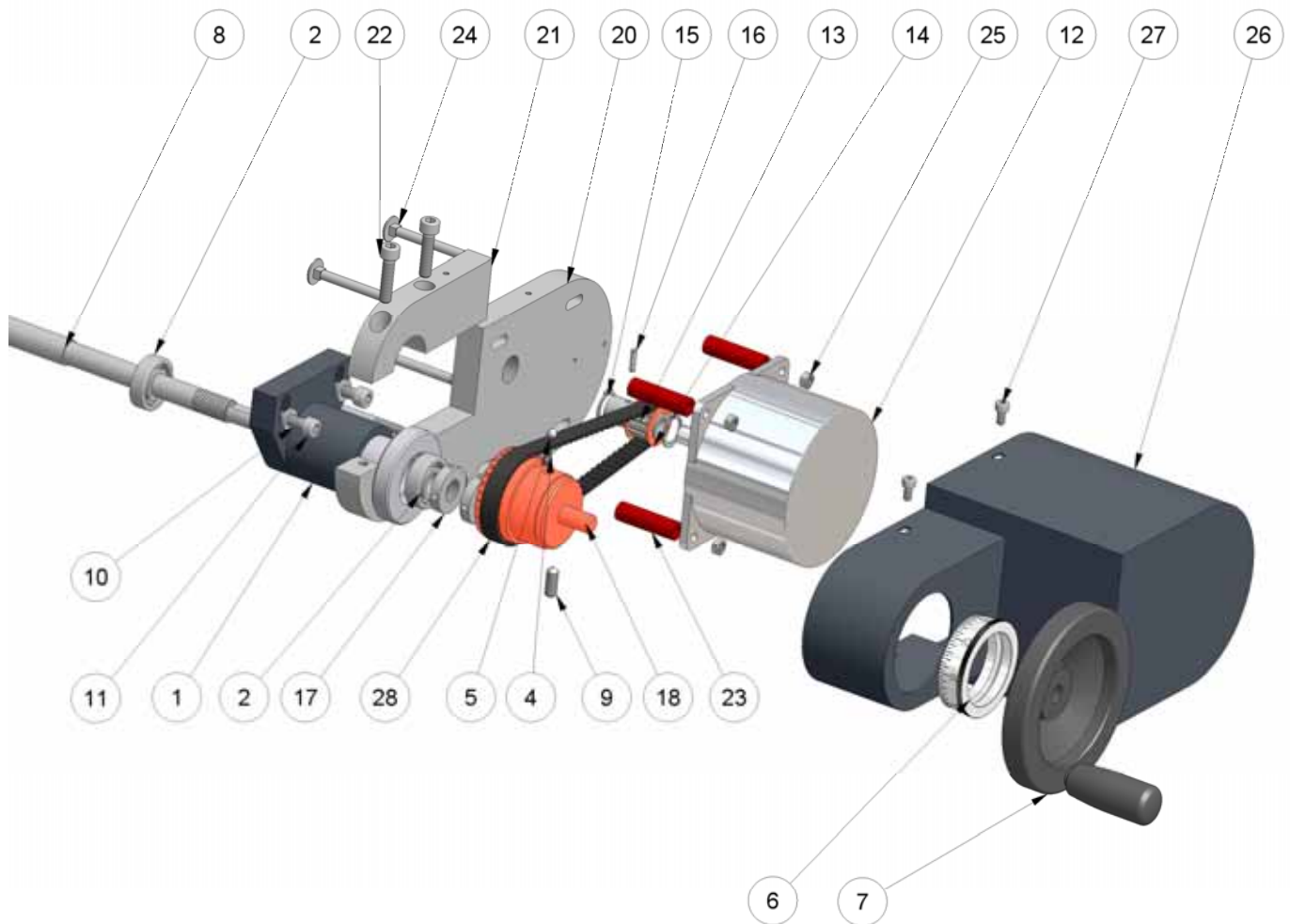
## 13. Drawing and list of parts

### 13.33 Y-spindle for CNC milling machines

CC-F1200 – CC-F1200 high speed

CC-F1210 – CC-F1210 high speed

CC-F1410 LF – CC-F1410 LF high speed



## 13. Drawing and list of parts

### 13.33 Y-spindle for CNC milling machines

CC-F1200 – CC-F1200 high speed

CC-F1210 – CC-F1210 high speed

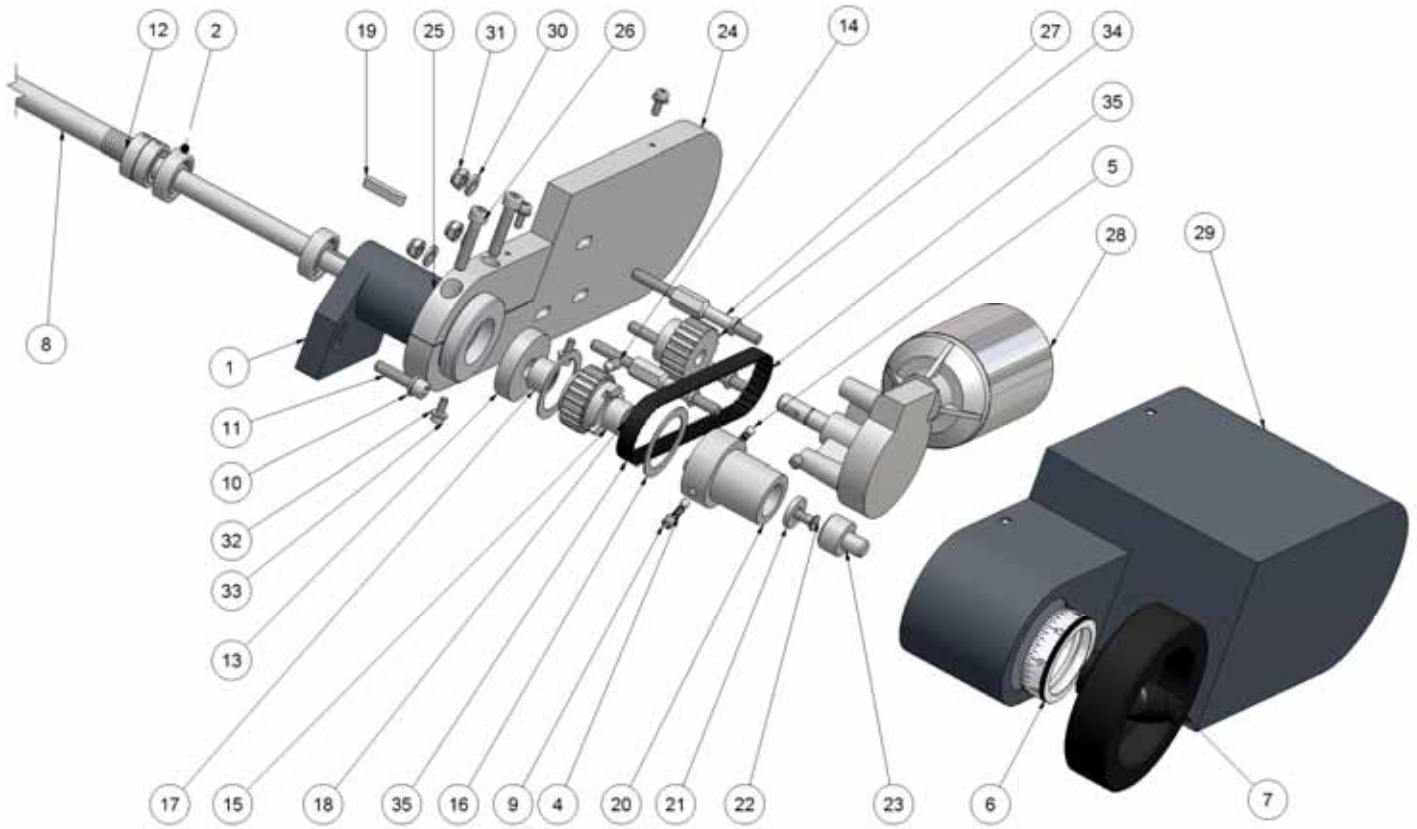
CC-F1410 LF – CC-F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
	1	112452104	Scale ring (100 graduation marks) <i>for milling machines with ball screw</i>
7	1	11840003	Hinged handwheel  <i>milling machines with trapezoid thread spindle</i>
8	1	11200207	Spindle <i>F1200 – F1200 high speed</i>
8	1	11200207	Spindle <i>F1210 – F1210 high speed</i>
	1	16400207	Spindle <i>for transversal extension</i>
	1	16400207	Spindle <i>F1410LF – F1410 LF high speed</i>
			<i>milling machines with ball screw</i>
	1	11245207	Spindle with Spindle nut <i>F1200 – F1200 high speed</i>
	1	11245207	Spindle with Spindle nut <i>F1210 – F1210 high speed</i>
	1	11235207	Spindle with Spindle nut <i>for transversal extension</i>
	1	16400209	Spindle with Spindle nut <i>F1410LF – F1410 LF high speed</i>
9	3	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw
12	1	11800003	Stepper motor <i>nccad basic</i>
	1	11800028	Stepper motor <i>nccad professional</i>
13	1	1121021213	Belt pulley
14	2	1121021212	Flanged wheel
15	2	11700048	Lock ring
16	1	11700049	Spiral pin
17	2	112003222	Adjusting nut
18	1	112102126	Toothed belt pulley
20	1	112102122	Motor support
21	1	112102123	Jam for motor support
22	2	11700115	Screw
23	4	112103195	Distance sleeve stepper motor
24	4	11700047	Round-head screw
25	4	11700050	Nut
26	1	1121021217	Protective cover Stepper motor
27	4	11700026	Screw
28	1	11820003	Belt

## 13. Drawing and list of parts

### 13.34 X-spindle for automatic feed for milling machines

F1200 – F1200 high speed – F1210 – F1210 high speed– F1410 LF – F1410 LF high speed



## 13. Drawing and list of parts

### 13.34 X-spindle for automatic feed for milling machines

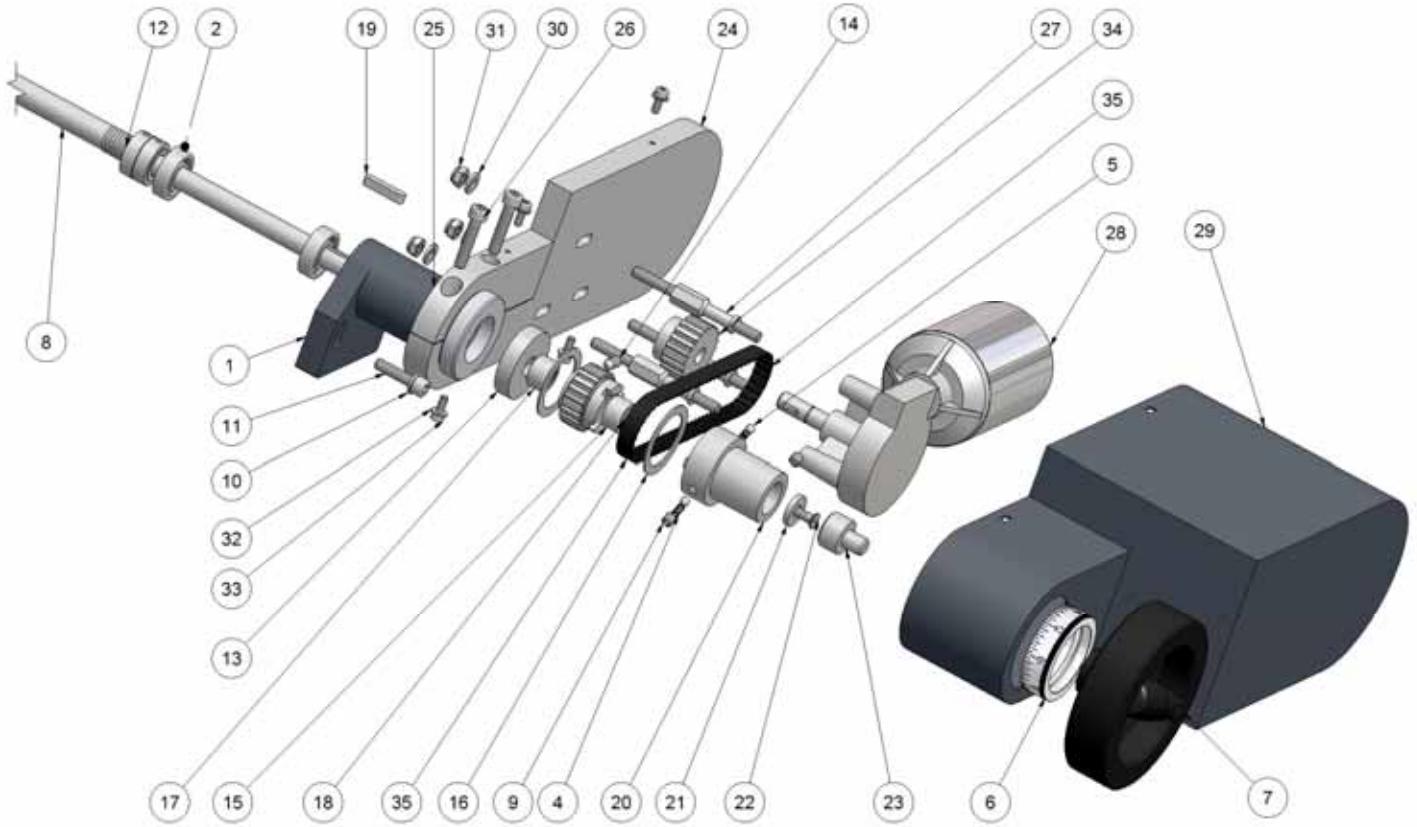
F1200 – F1200 high speed – F1210 – F1210 high speed– F1410 LF – F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
7	1	11840003	Hinged handwheel
8	1	11204002	Threaded spindle <i>F1200 – F1200 high speed</i>
	1	11404002	Threaded spindle <i>F1210 – F1210 high speed</i>
	1	16404002	Threaded spindle <i>F1410 – F1410 high speed</i>
9	1	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw
12	2	11204103	Adjusting nut
13	1	11204104	Thrust washer
14	1	11700087	Threaded pin
15	1	11204106	Belt pulley
16	2	11204105	Flanged wheel
17	2	11810027	Needle bearing
18	1	11700042	Lock ring
19	1	11700043	Feather key
20	1	11204108	Coupling
21	1	11204109	Connecting washer
22	1	17000130	Flat-headed screw
23	1	11204110	Handwheel extension
24	1	11204112	Motor support plate
25	1	11204113	Jam motor holder
26	2	11700046	Screw
27	3	11204111	Stud bolt
28	1	11800002	Motor
29	1	11204116	Protective cover
30	3	11700018	Washer
31	3	11700020	Nut
32	4	11700038	Washer
33	4	11700026	Screw
34	1	11204114	Belt pulley
35	1	11820003	Belt

# 13. Drawing and list of parts

## 13.35 Y-spindle for automatic feed for milling machines

F1200 – F1200 high speed – F1210 – F1210 high speed– F1410 LF – F1410 LF high speed



## 13. Drawing and list of parts

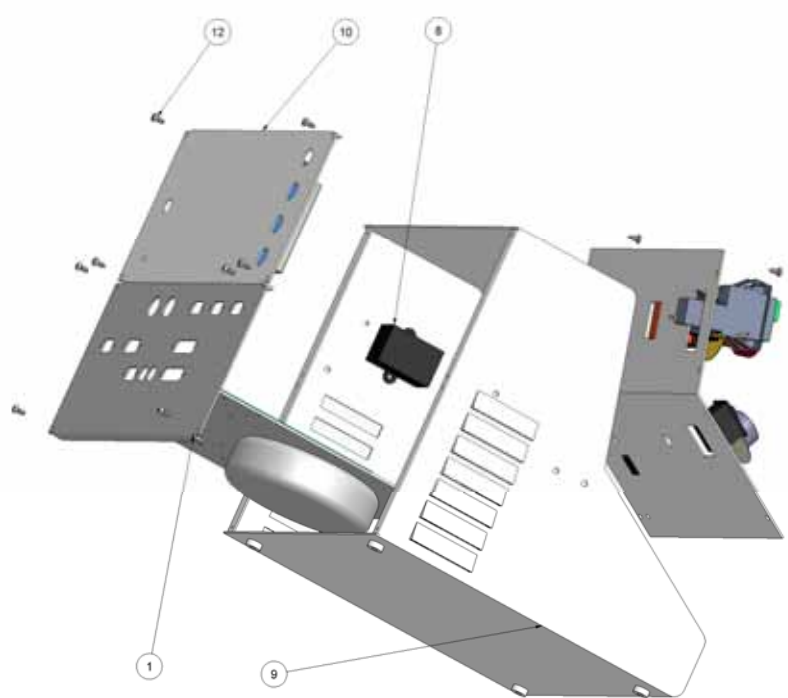
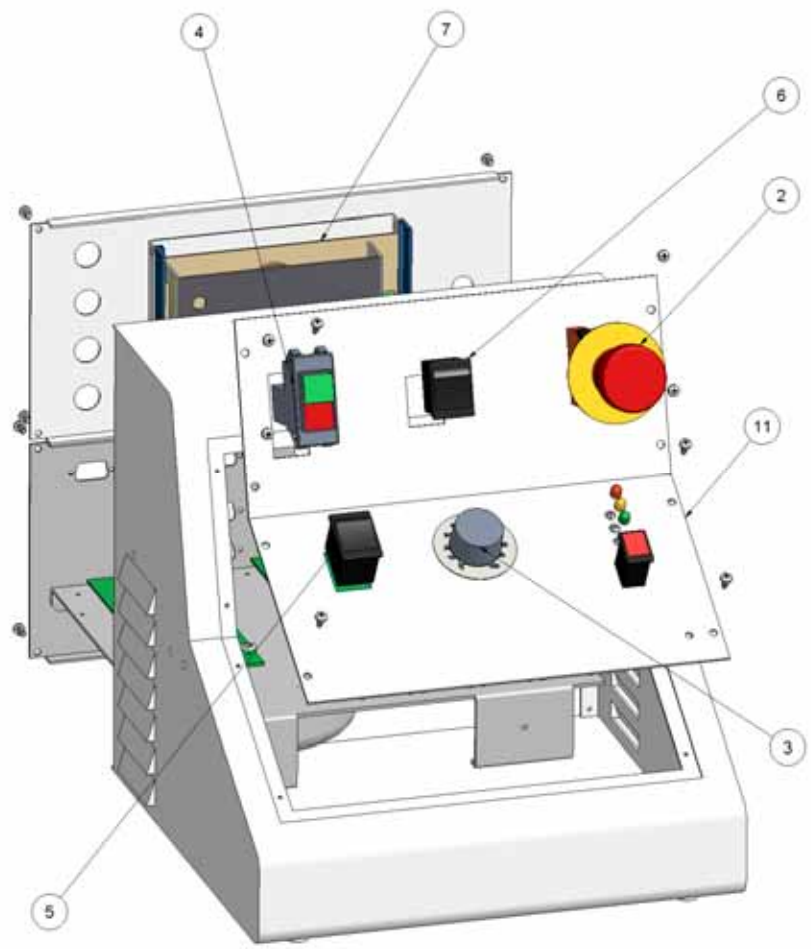
### 13.35 Y-spindle for automatic feed for milling machines

F1200 – F1200 high speed – F1210 – F1210 high speed– F1410 LF – F1410 LF high speed

Part-No.	Pieces	Order-No.	Designation
1	1	112002103	Spindle bearing
2	2	11810007	Ball bearing
4	1	11850002	Spring
5	1	11810004	Ball
6	1	112002104	Scale ring (80 graduation marks) <i>for milling machines with trapezoid thread spindle</i>
7	1	11840003	Hinged handwheel
8	1	11204001	Threaded spindle <i>F1200 – F1200 high</i>
8	1	11204001	Threaded spindle <i>F1210 – F1210 high speed</i>
	1	16404001	Threaded spindle <i>F1410 – F1410 high speed</i>
9	1	11700087	Threaded pin
10	2	11700018	Washer
11	2	11700031	Screw
12	2	11204103	Adjusting nut
13	1	11204104	Thrust washer
14	1	11700087	Threaded pin
15	1	11204106	Belt pulley
16	2	11204105	Flanged wheel
17	2	11810027	Needle bearing
18	1	11700042	Lock ring
19	1	11700043	Feather key
20	1	11204108	Coupling
21	1	11204109	Connecting washer
22	1	17000130	Flat-headed screw
23	1	11204110	Handwheel extension
24	1	11204112	Motor support plate
25	1	11204113	Jam motor holder
26	2	11700046	Screw
27	3	11204111	Stud bolt
28	1	11800002	Motor
29	1	11204116	Protective cover
30	3	11700018	Washer
31	3	11700020	Nut
32	4	11700038	Washer
33	4	11700026	Screw
34	1	11204114	Belt pulley
35	1	11820003	Belt

# 13. Drawing and list of parts

## 13.36 Control console **nccad with 1.4 kW motor**





# 13. Drawing and list of parts

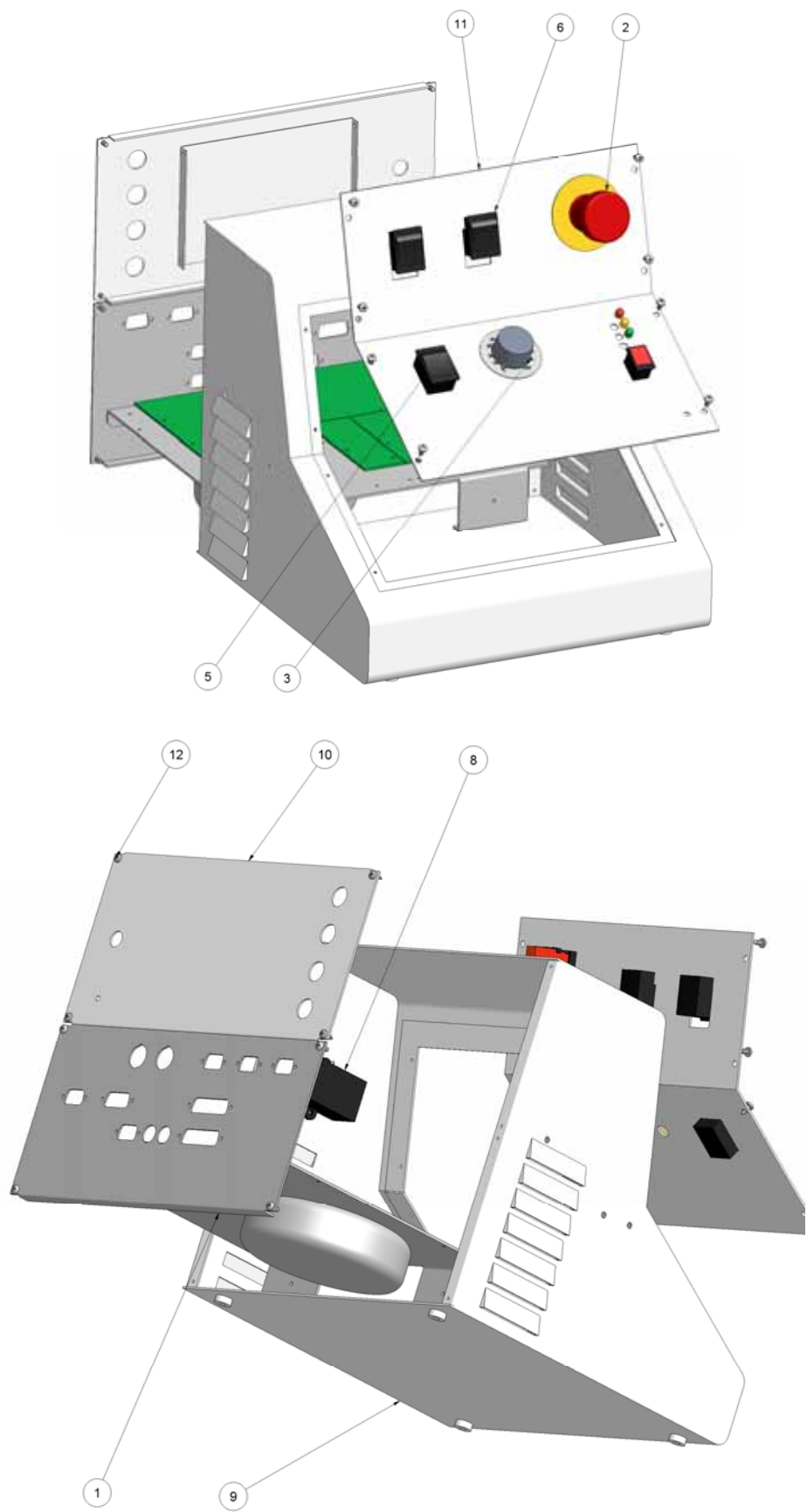
## 13.36 Control console **nccad with 1.4 kW motor**

Part-No.	Pieces	Order-No.	Designation
1	1		Control package nccad basic
	1		Control package nccad professional
2	1	11800008	Emergency OFF switch
3	1	11800004	Potentiometer
4	1	11800001	ON/OFF switch
5	1	11800021	Toggle switch
6	1	11800023	Toggle switch
7	1	11800005	Circuit board
8	1	11800030	Interference filter
9	1	11200504	Controller housing
10	1	11200509	Cap, top
11	1	11200513	Switch cover
12	16	11700003	Tapping screw



# 13. Drawing and list of parts

## 13.37 Control console nccad with 2.0 kW motor



# 13. Drawing and list of parts

## 13.37 Control console **nccad with 2.0 kW motor**

Part-No.	Pieces	Order-No.	Designation
1	1	11800031	Control package Milling basic
	1	11800032	Control package Milling professional
2	1	11800008	Emergency OFF switch
3	1	11800026	Potentiometer
5	1	11800021	Toggle switch
6	2	11800023	Toggle switch
8	1	11800030	Interference filter
9	1	11200504	Controller housing
10	1	11200509	Cap, top
11	1	11200511	Switch cover
12	16	11700003	Tapping screw



# 13. Drawing and list of parts

## 13.38 Support arm for control console

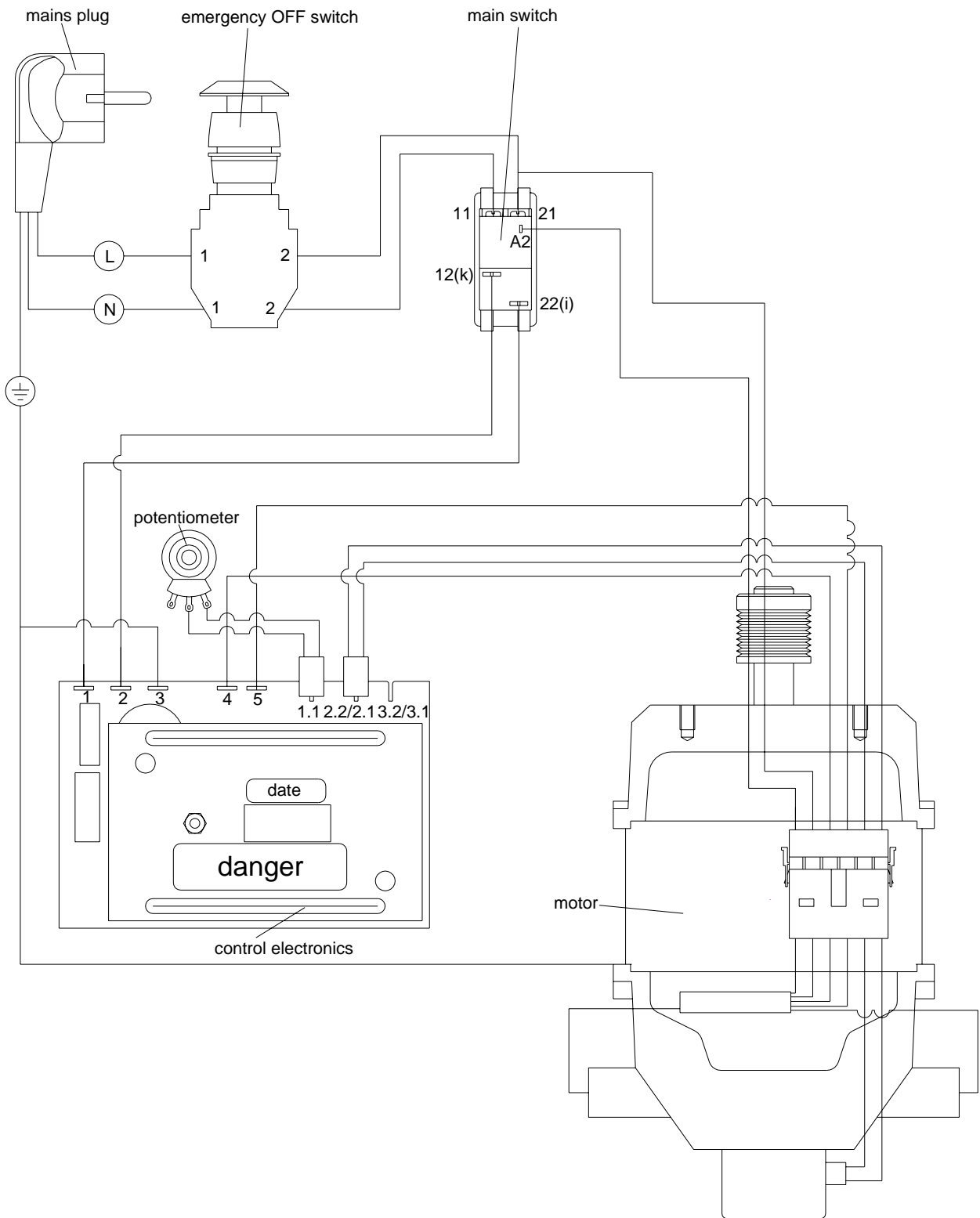


Part-No.	Pieces	Order-No.	Designation
1	1	16400501	Arm support
2	1	16400502	Arm support
3	4	16400503	Spacer
4	2	11840004	Clamping lever
5	1	16400500	Console arm
6	2	16400504	Ring stop
7	4	11700079	Threaded pin

# 14. Circuit diagram

## 14.1 Motor 1.4 kW

This document shows all units of the electrical equipment including the mains connection

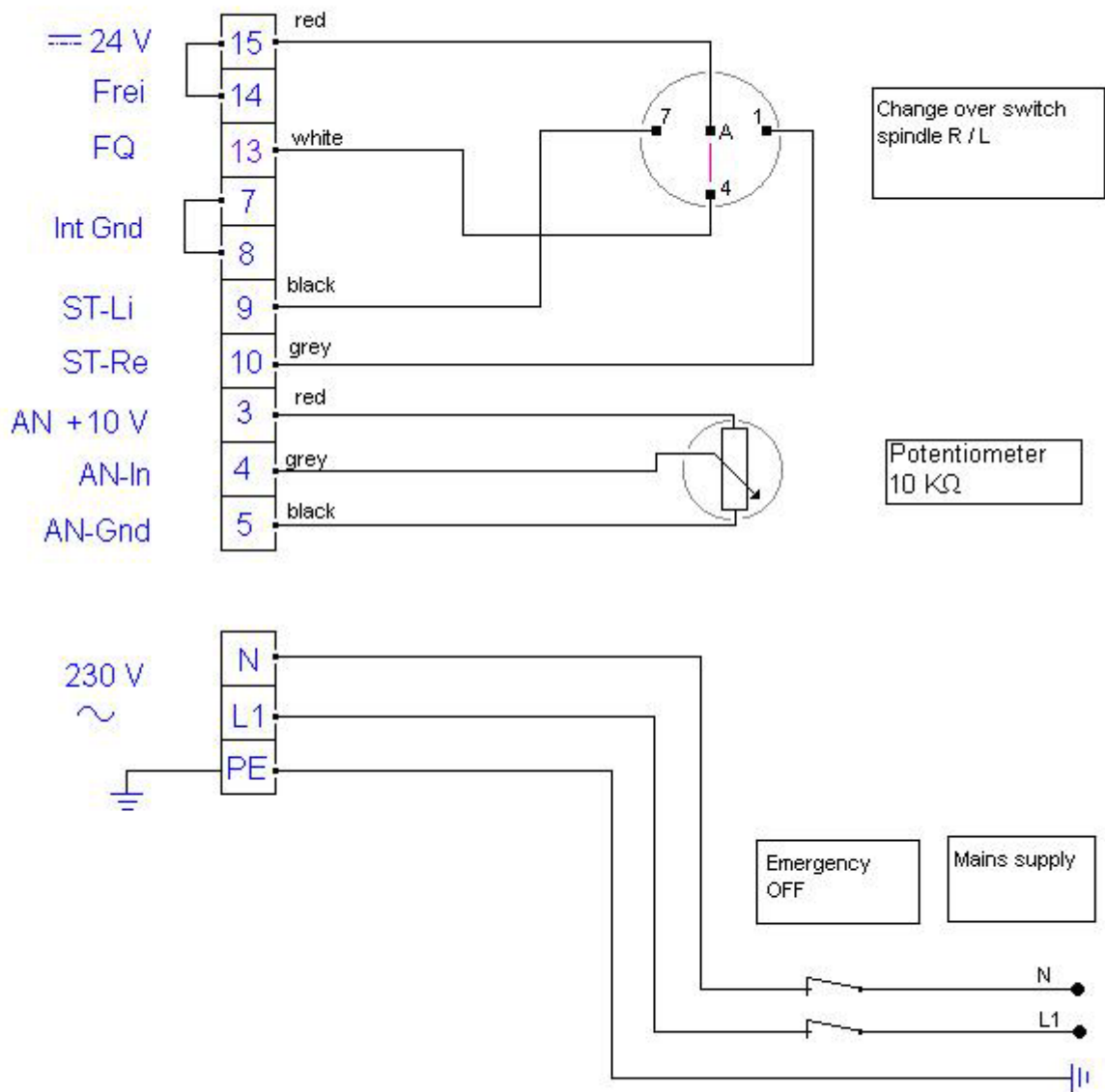


# 14. Circuit diagram

## 14.2 High speed motor 2.0 kW

This document shows all units of the electrical equipment including the mains connection

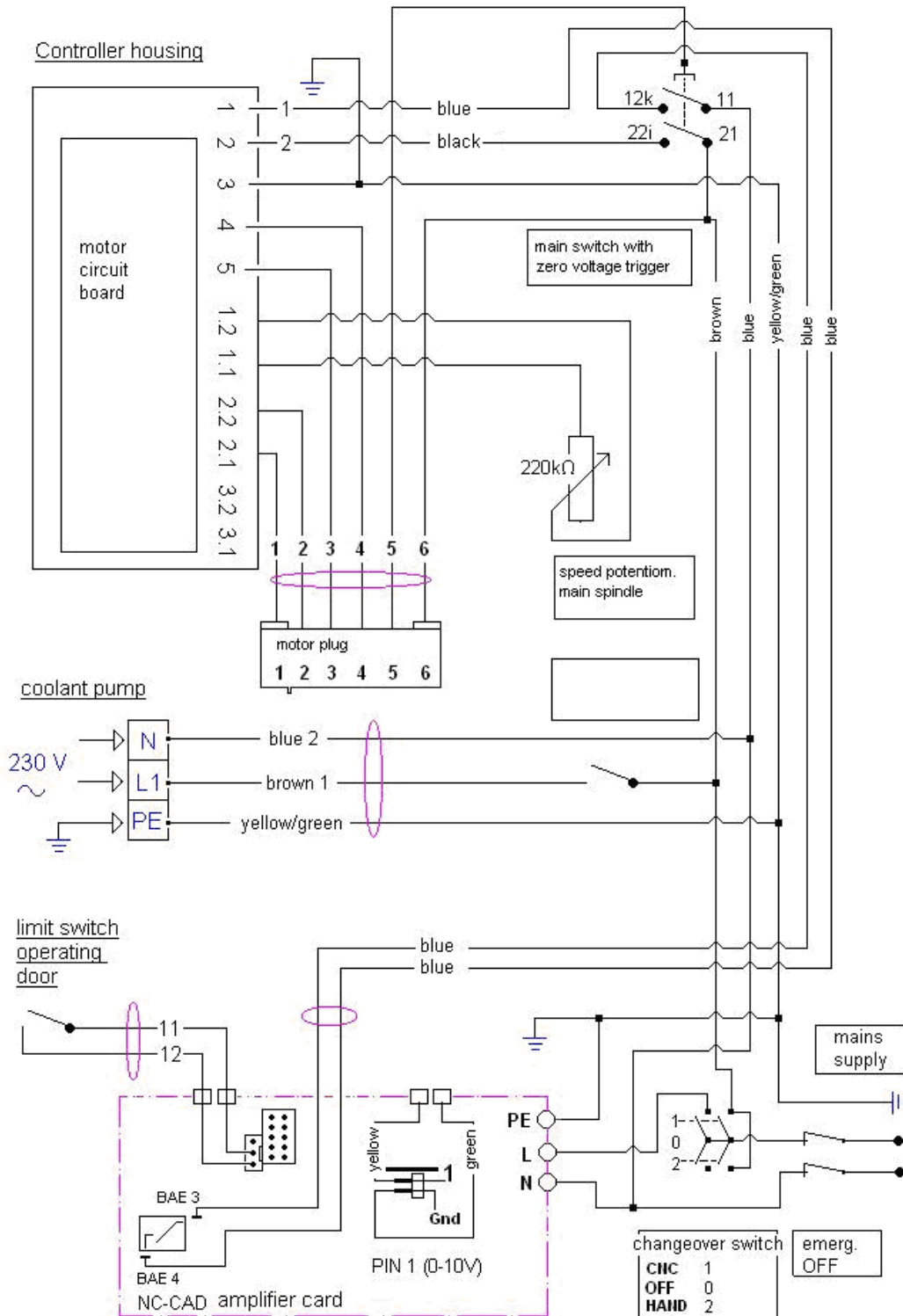
Switch box  
High speed motor



# 14. Circuit diagram

## 14.3 nccad with 1.4 kW motor

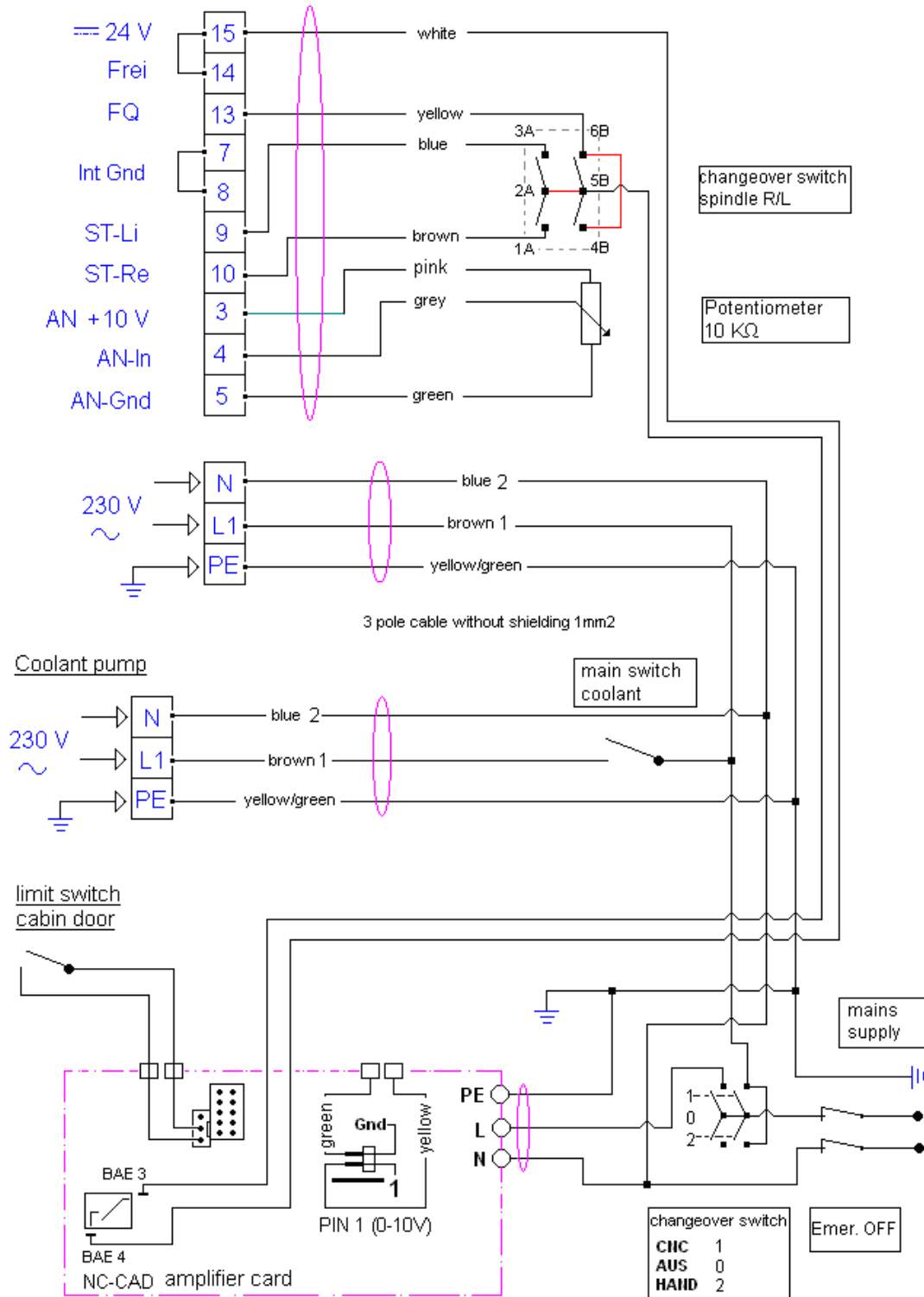
This document shows all units of the electrical equipment including the mains connection



# 14. Circuit diagram

## 14.4 nccad with 2.0 kW motor

This document shows all units of the electrical equipment including the mains connection



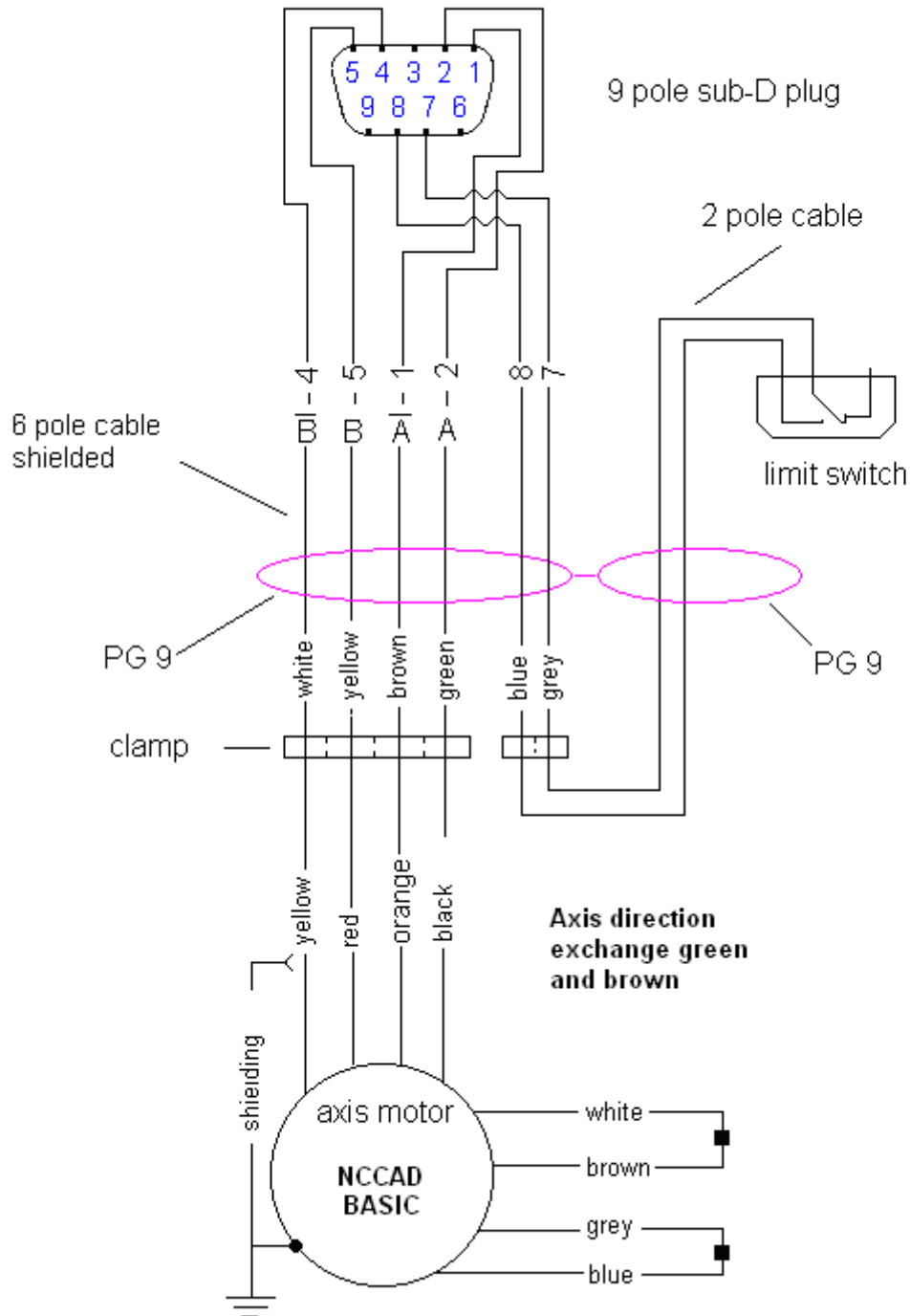


# 14. Circuit diagram

## 14.5 Stepper motor **basic version**

This document shows all units of the electrical equipment including the mains connection

Circuit diagram axes motors XYZ  
nccad BASIC



# 14. Circuit diagram

## 14.6 Stepper motor **professional version**

This document shows all units of the electrical e including the mains connection

Wiring diagram XYZ  
nccad profi

