

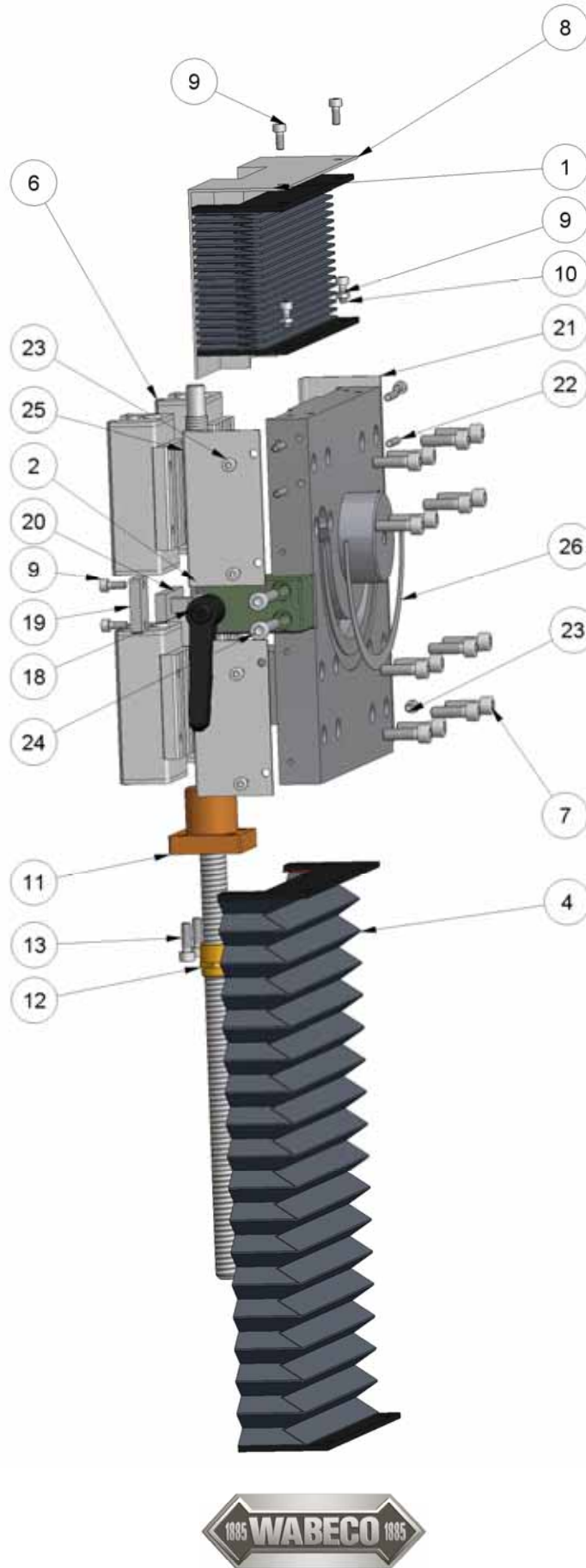
13. Drawing and list of parts

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



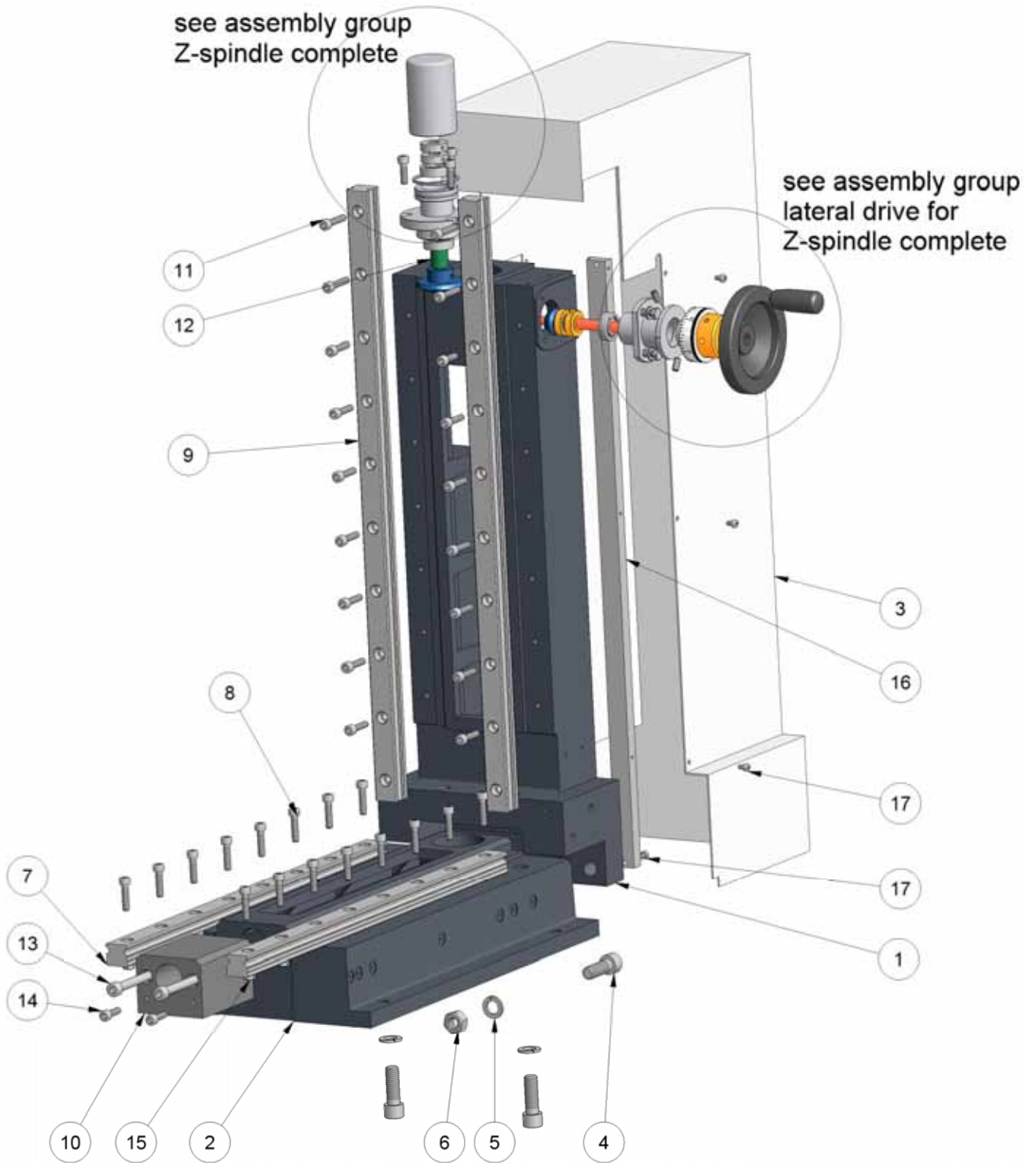
13. Drawing and list of parts

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



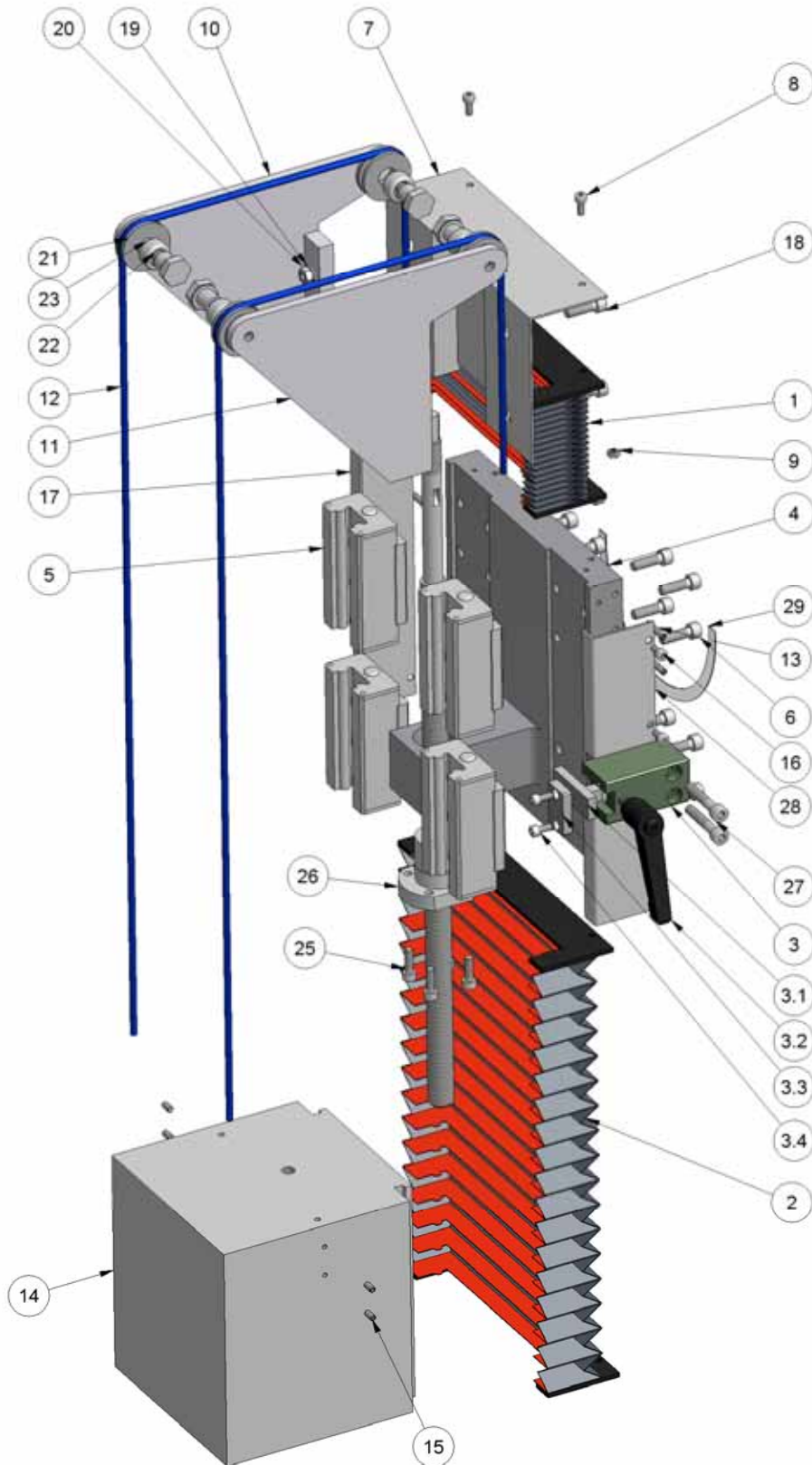
13. Drawing and list of parts

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



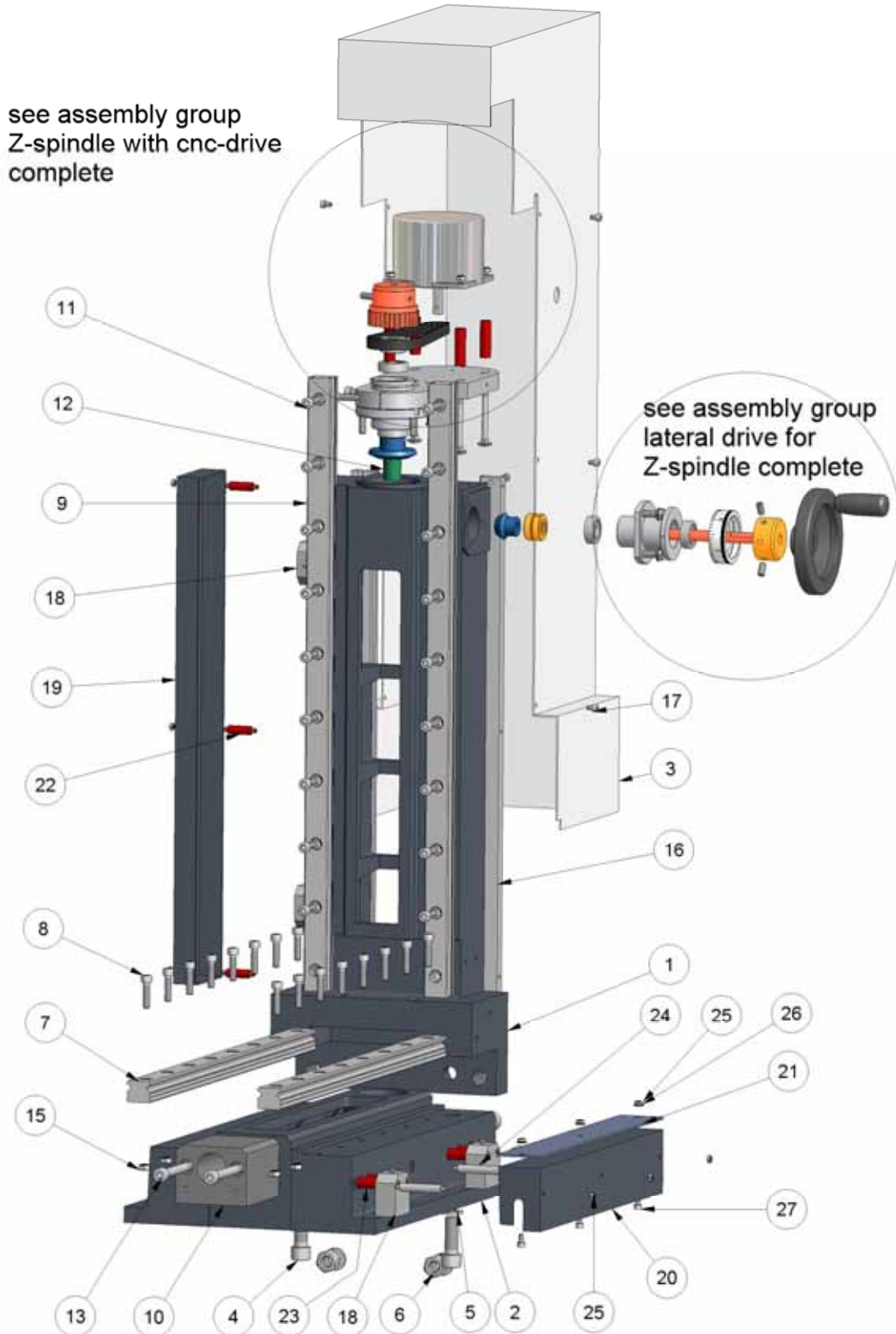
13. Drawing and list of parts

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



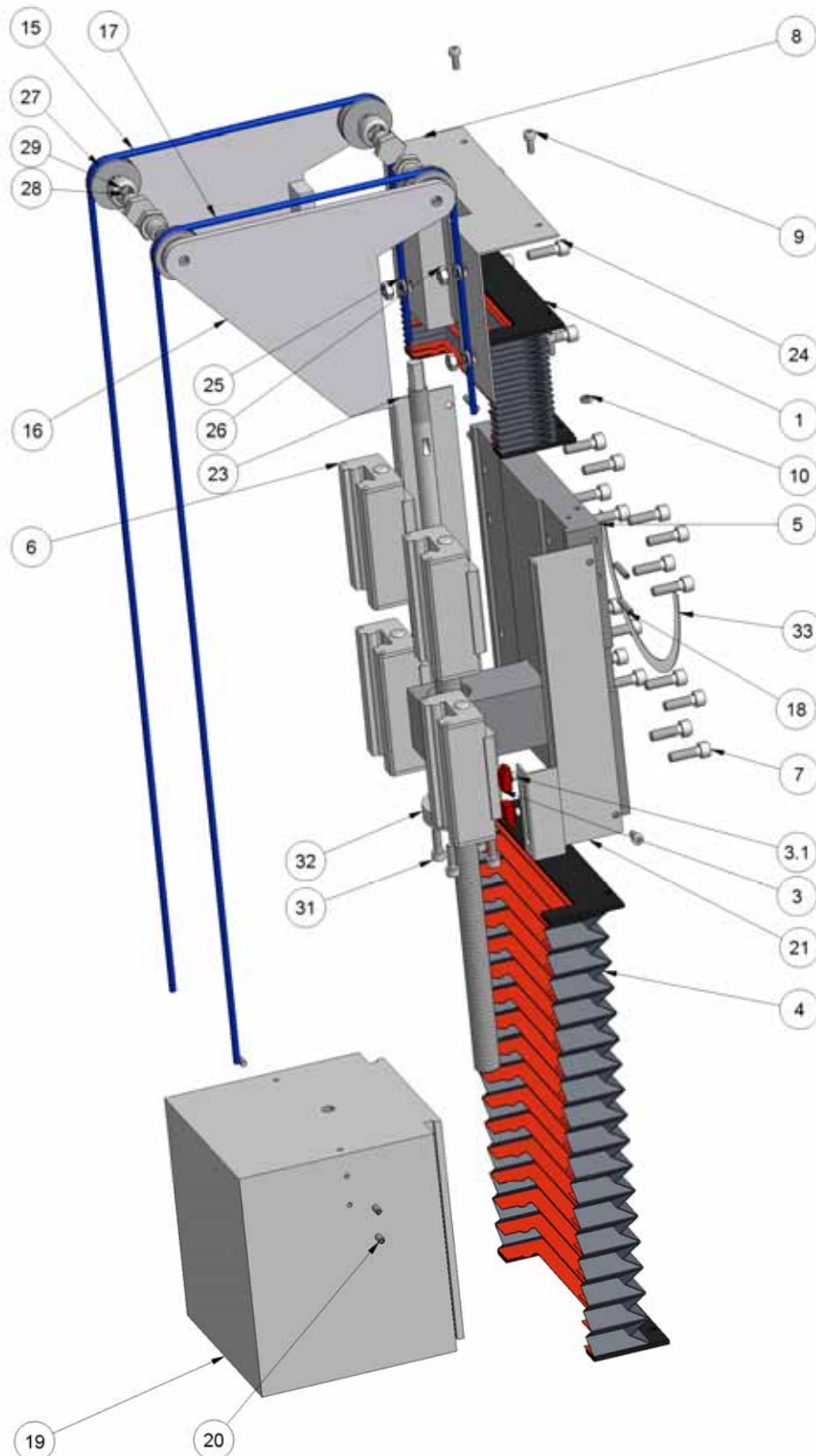
13. Drawing and list of parts

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

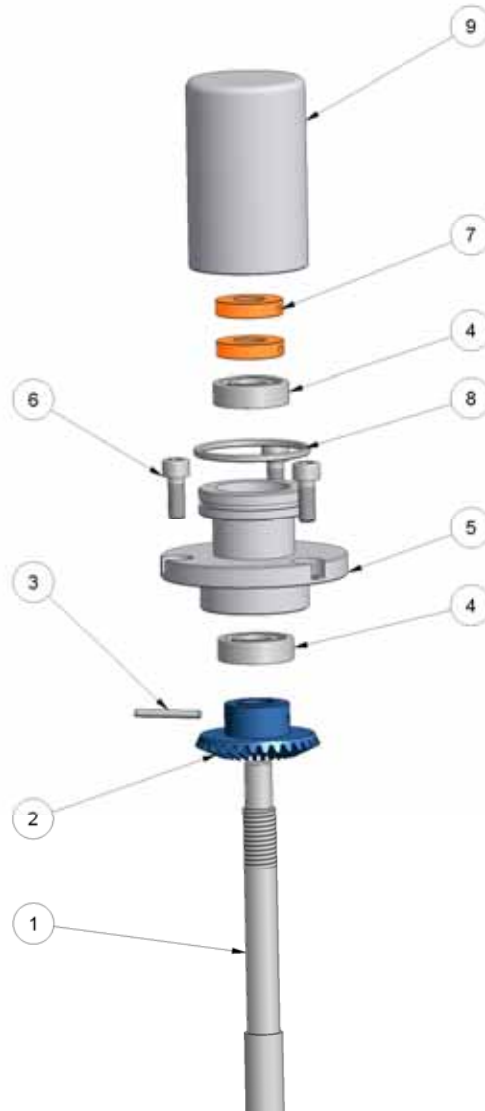
13.17 Vertical slide for CNC milling machines with linear guides **with ball screw** CC-F1410 LF

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

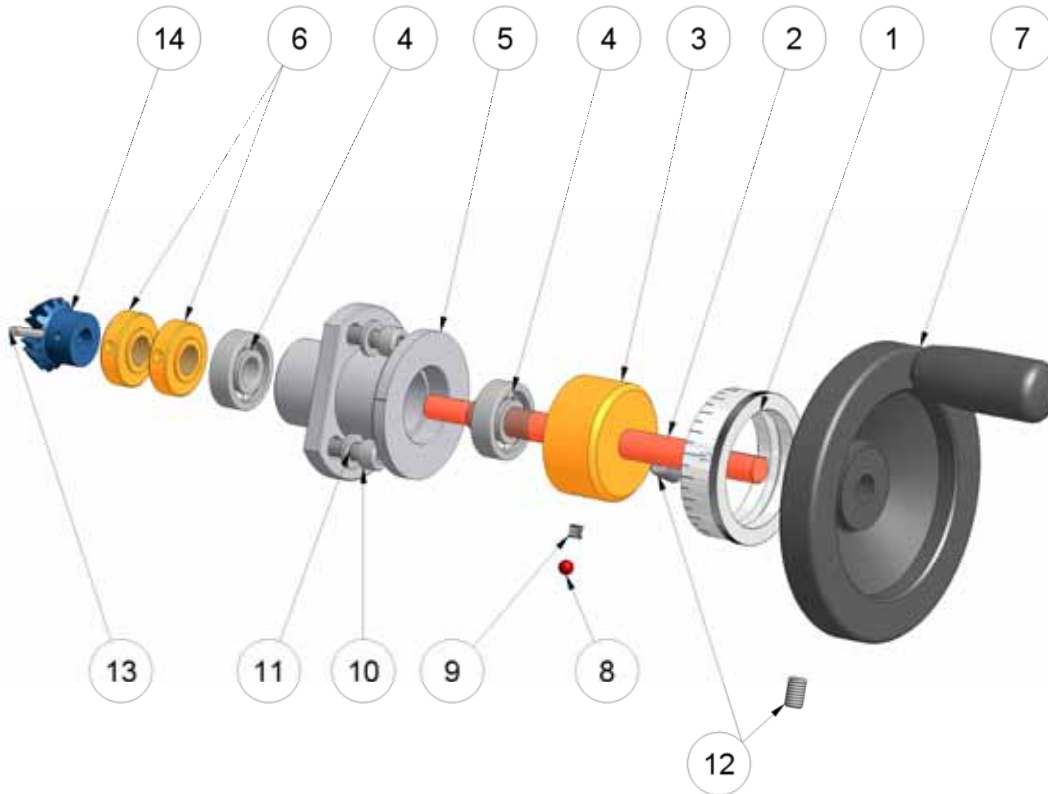
13. Drawing and list of parts

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

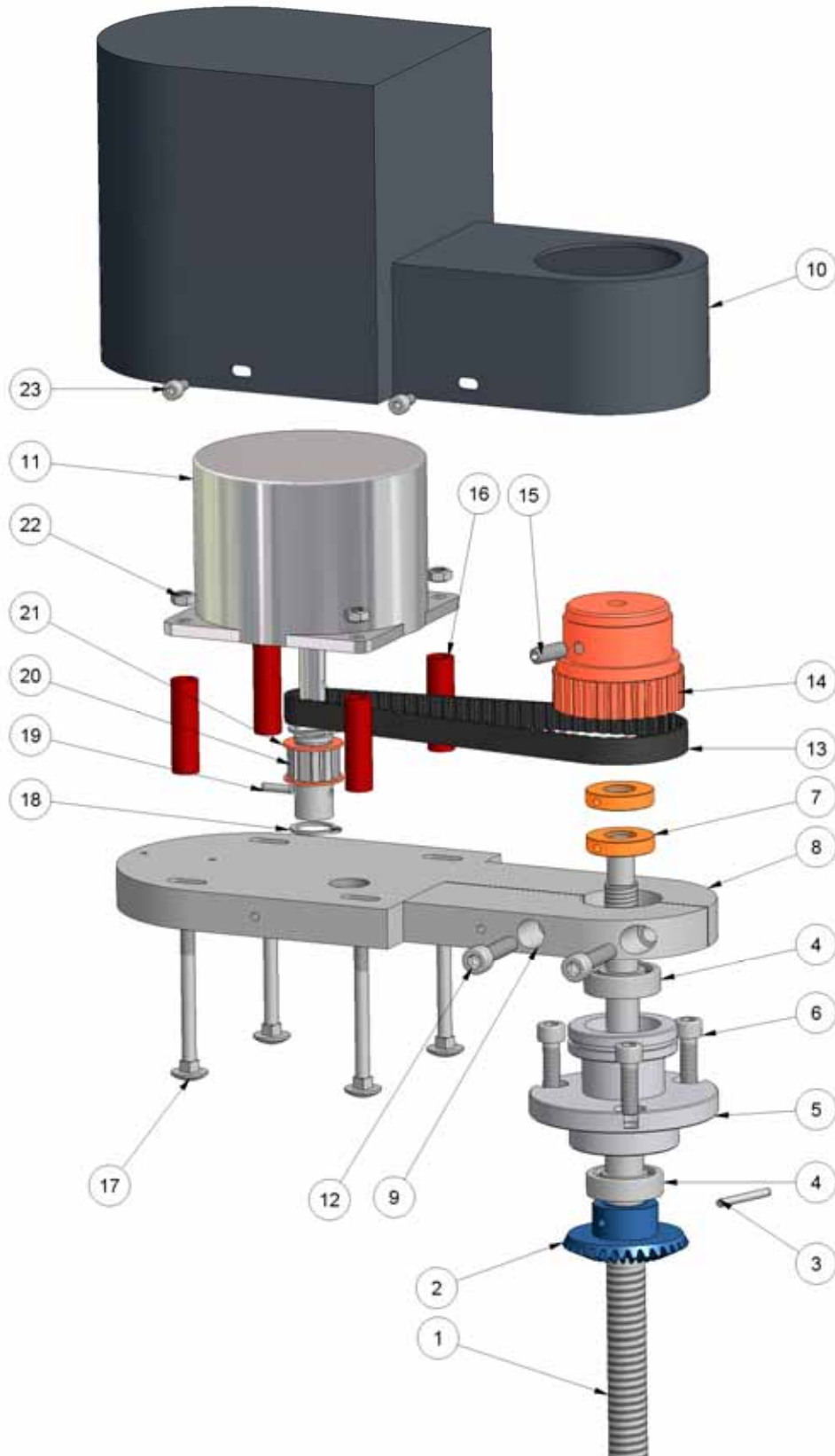
F1410 LF – F1410 LF high speed – CC-F1410 LF - CC-F1410 LF high speed



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

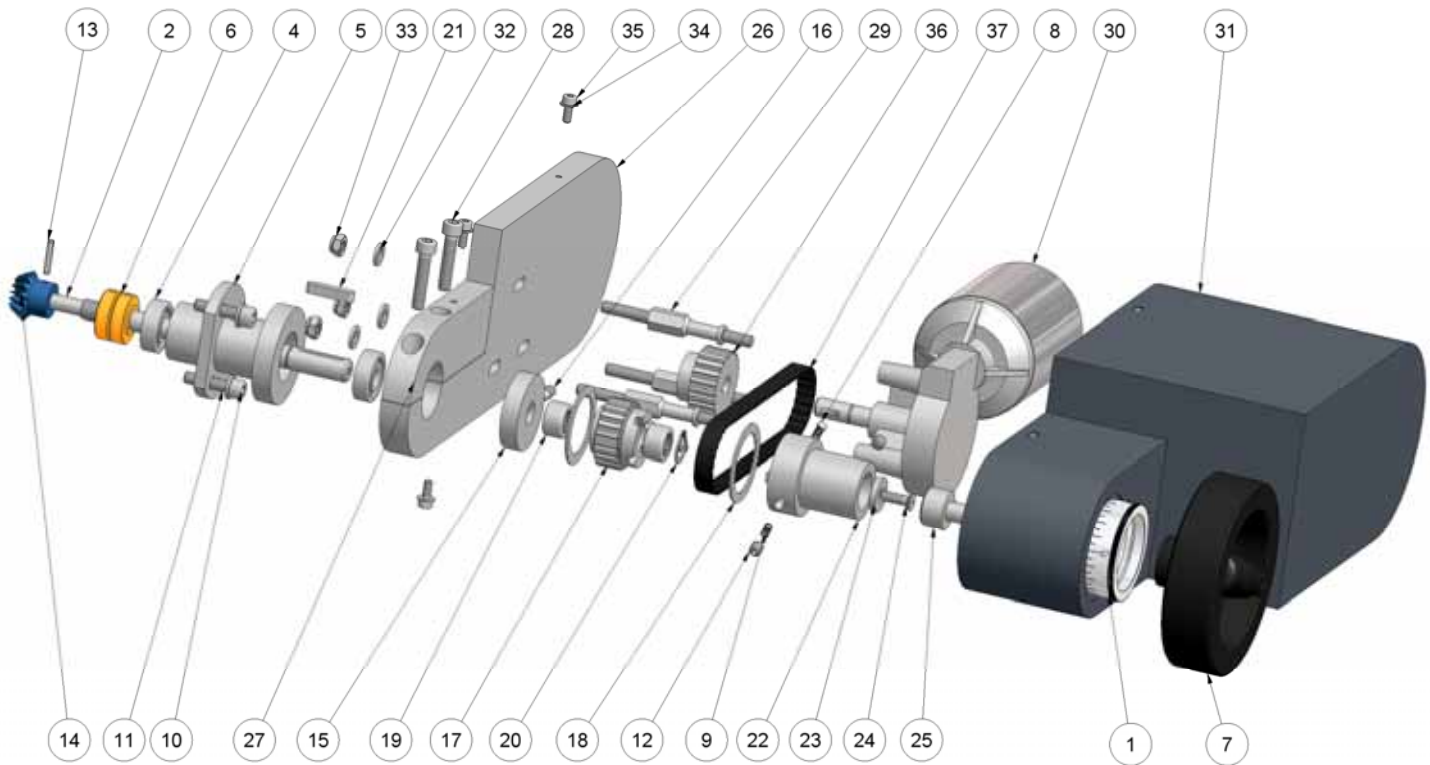
CC-F1200 – CC-F1200 high speed – CC-F1210 – CC-F1210 high speed

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



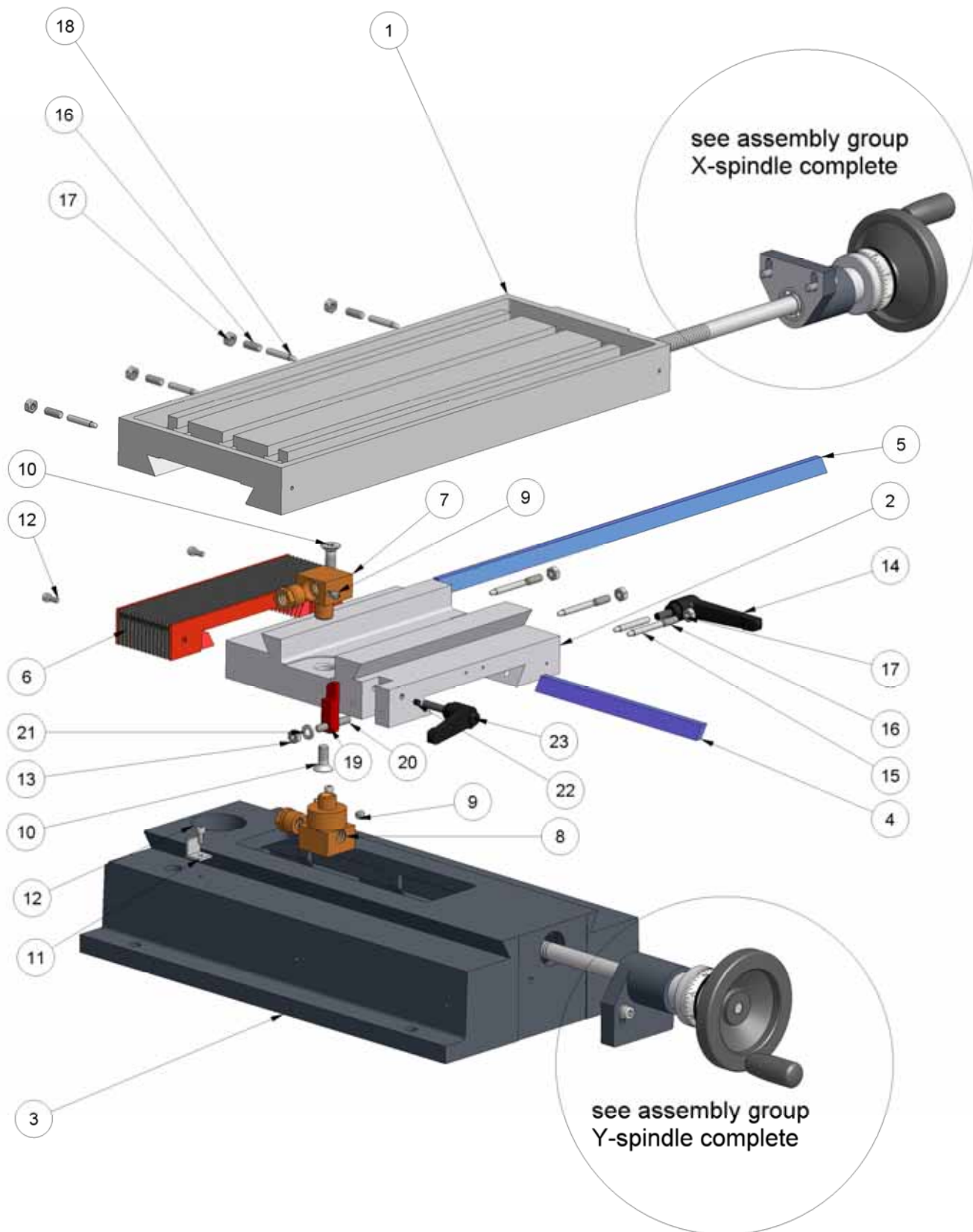
13. Drawing and list of parts

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



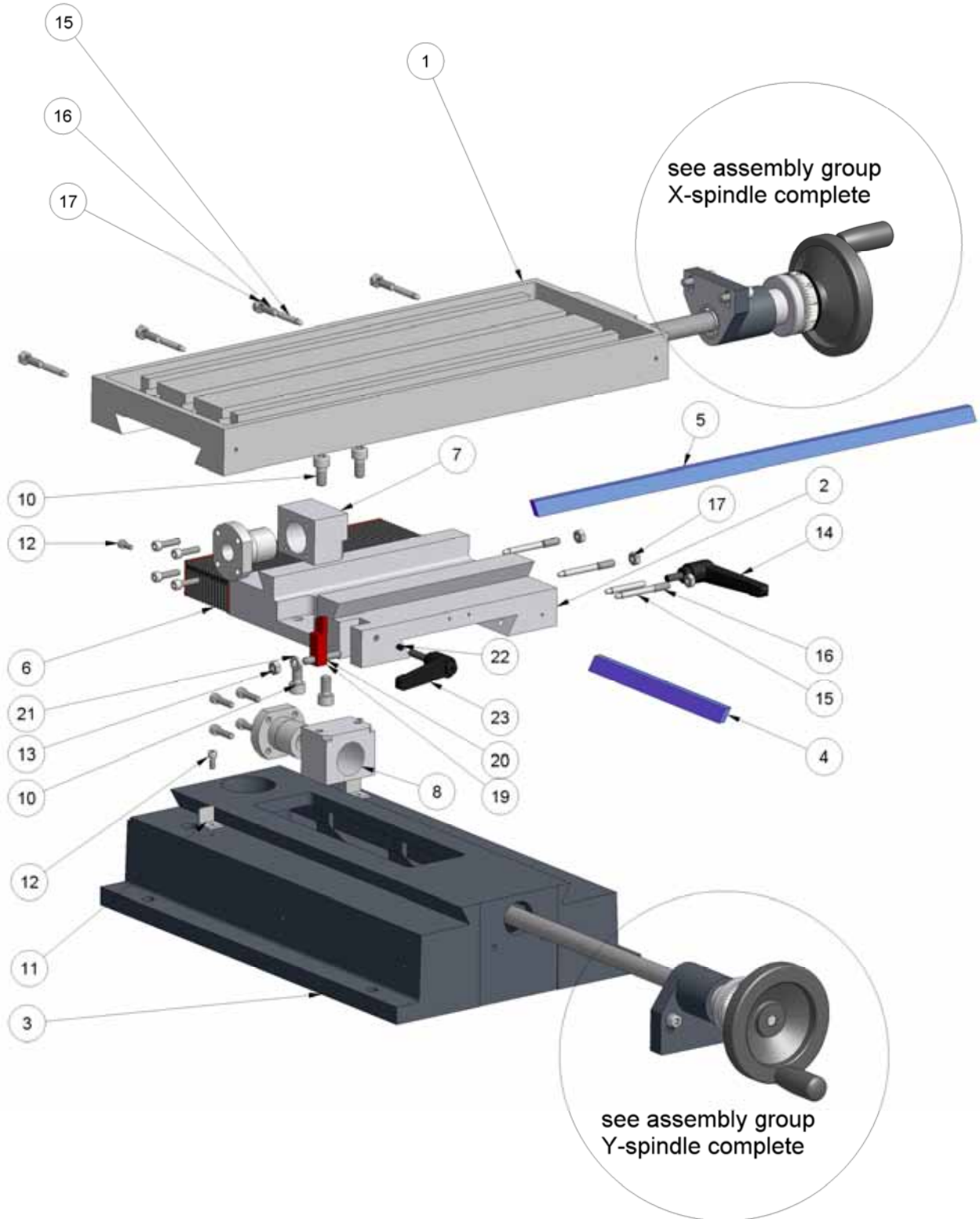
13. Drawing and list of parts

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



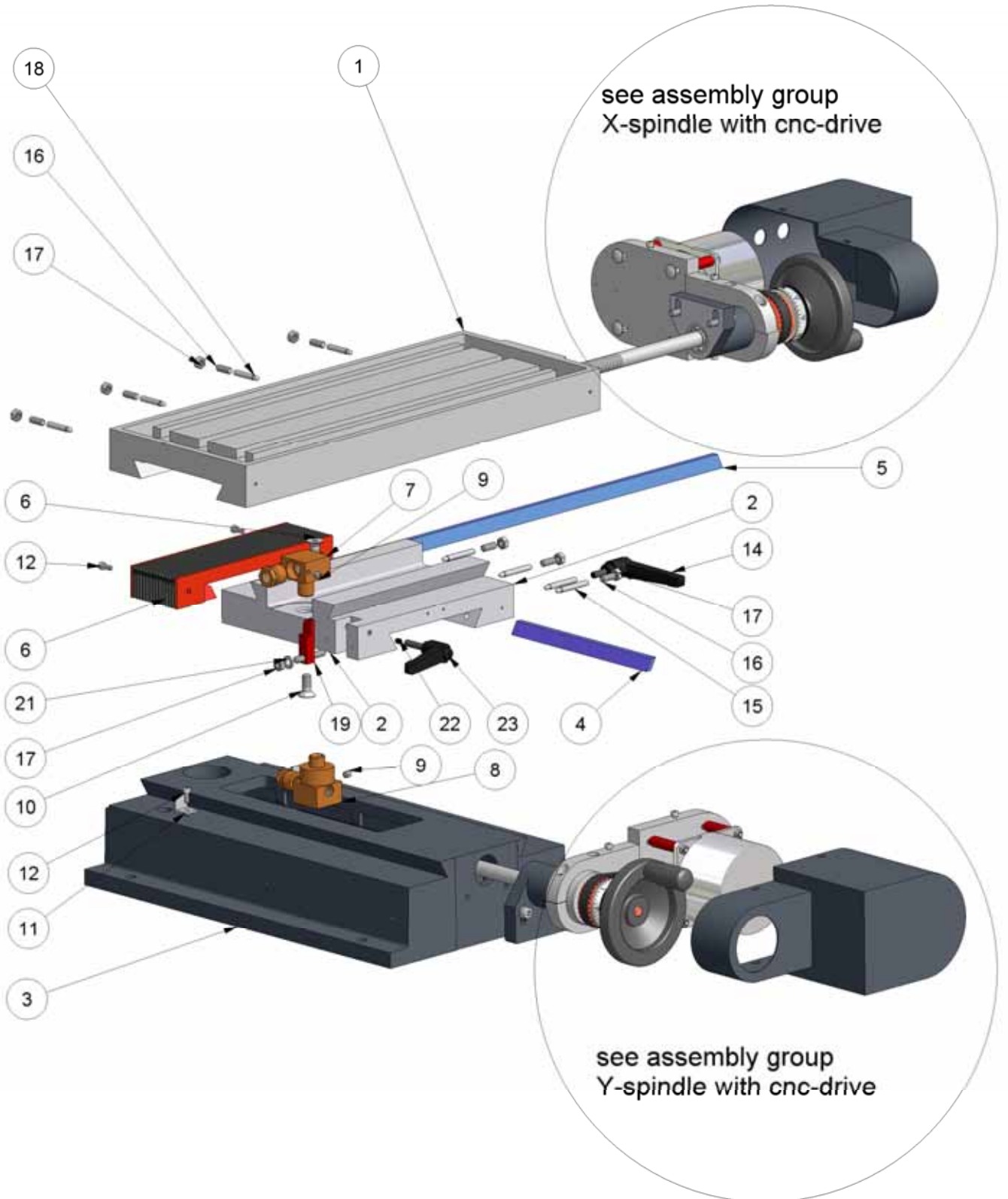
13. Drawing and list of parts

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



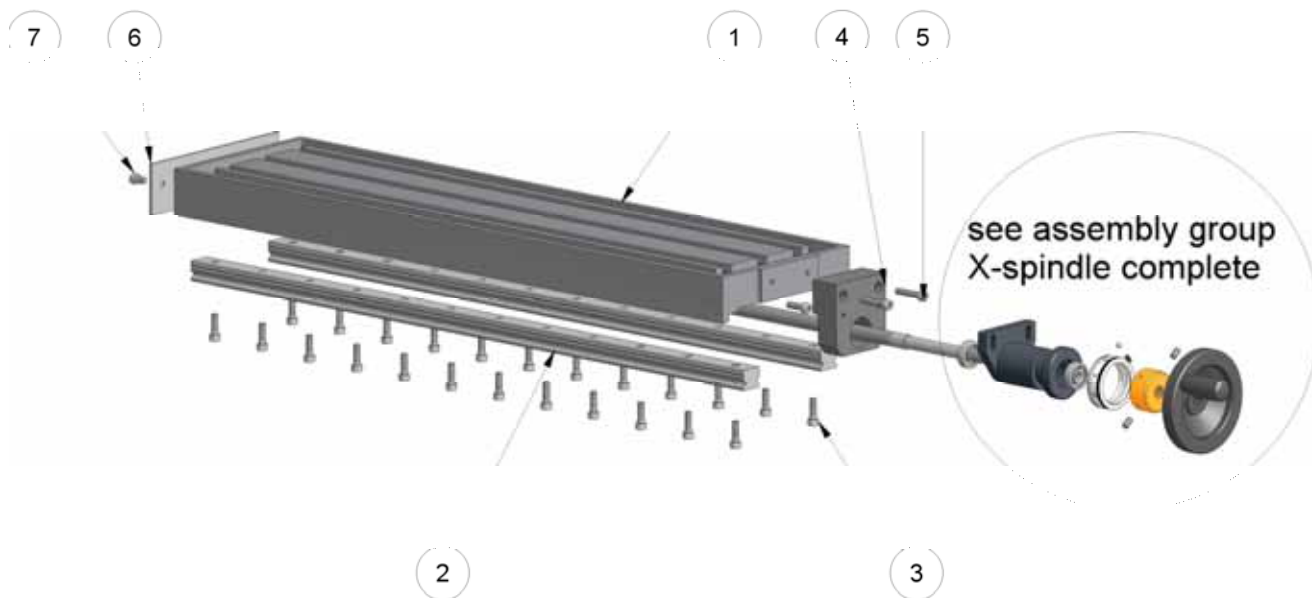
13. Drawing and list of parts

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

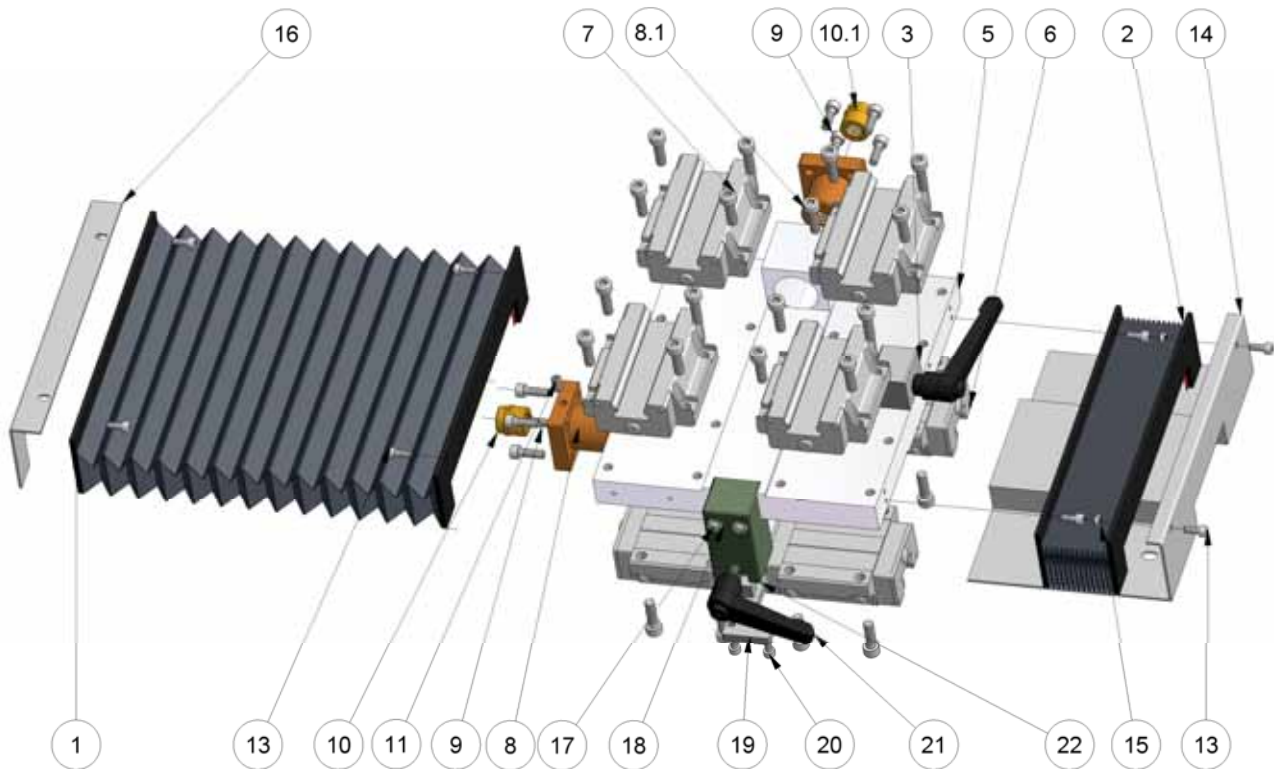
13.25 Top slide for milling machines with **linear guides** F1410 LF



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

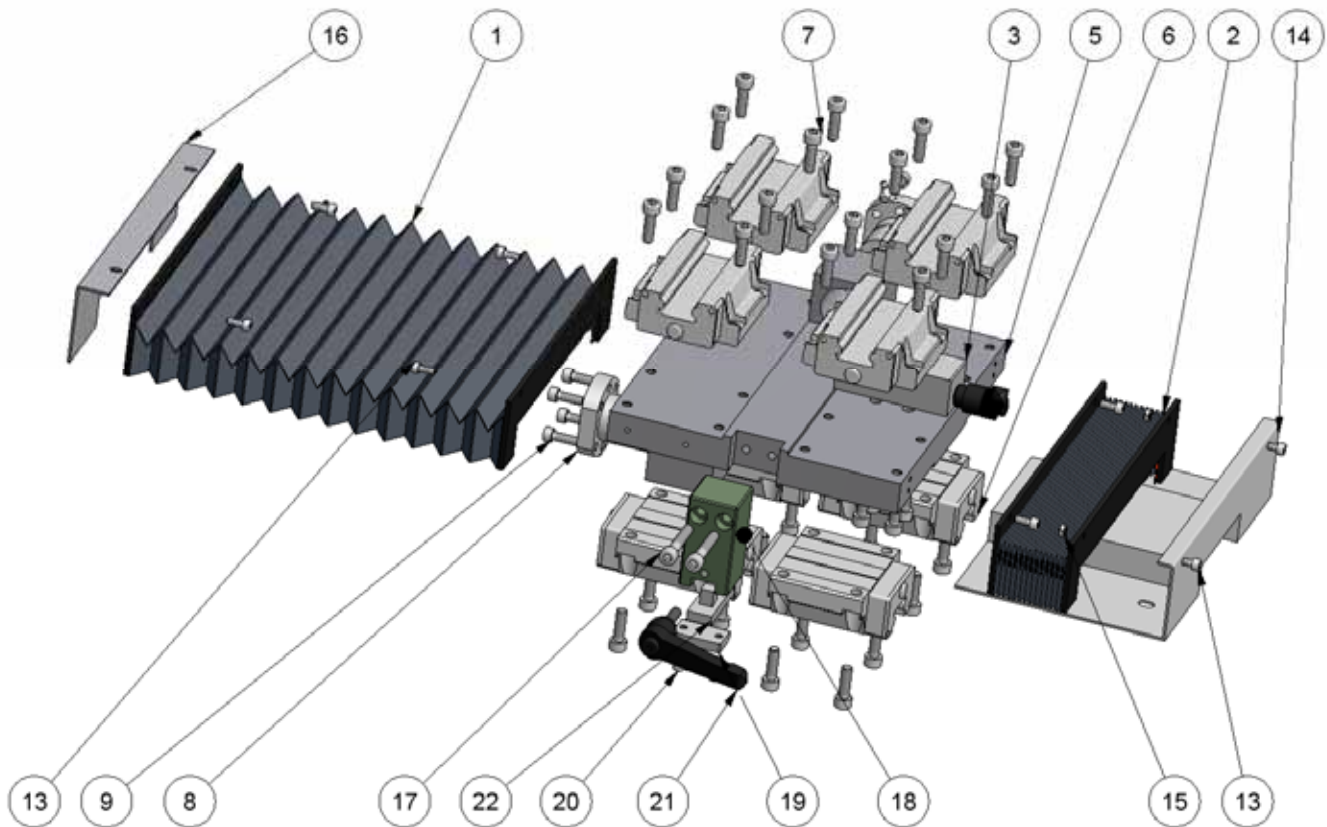
13.26 Cross slide for milling machines with **linear guides and trapezoid thread spindle** F1410 LF



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

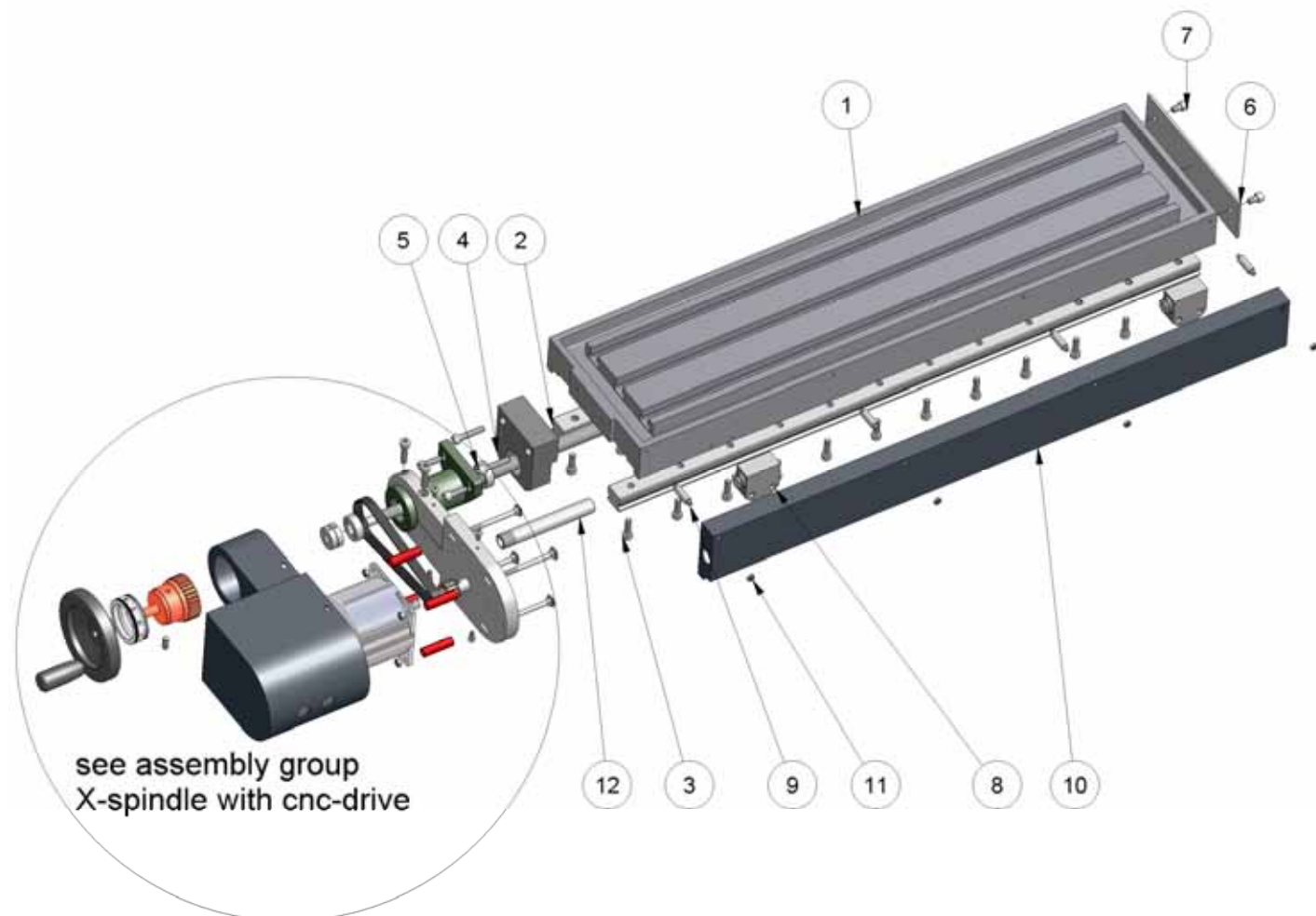
13.27 Cross slide for milling machines with **linear guides and ball screw** F1410 LF



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

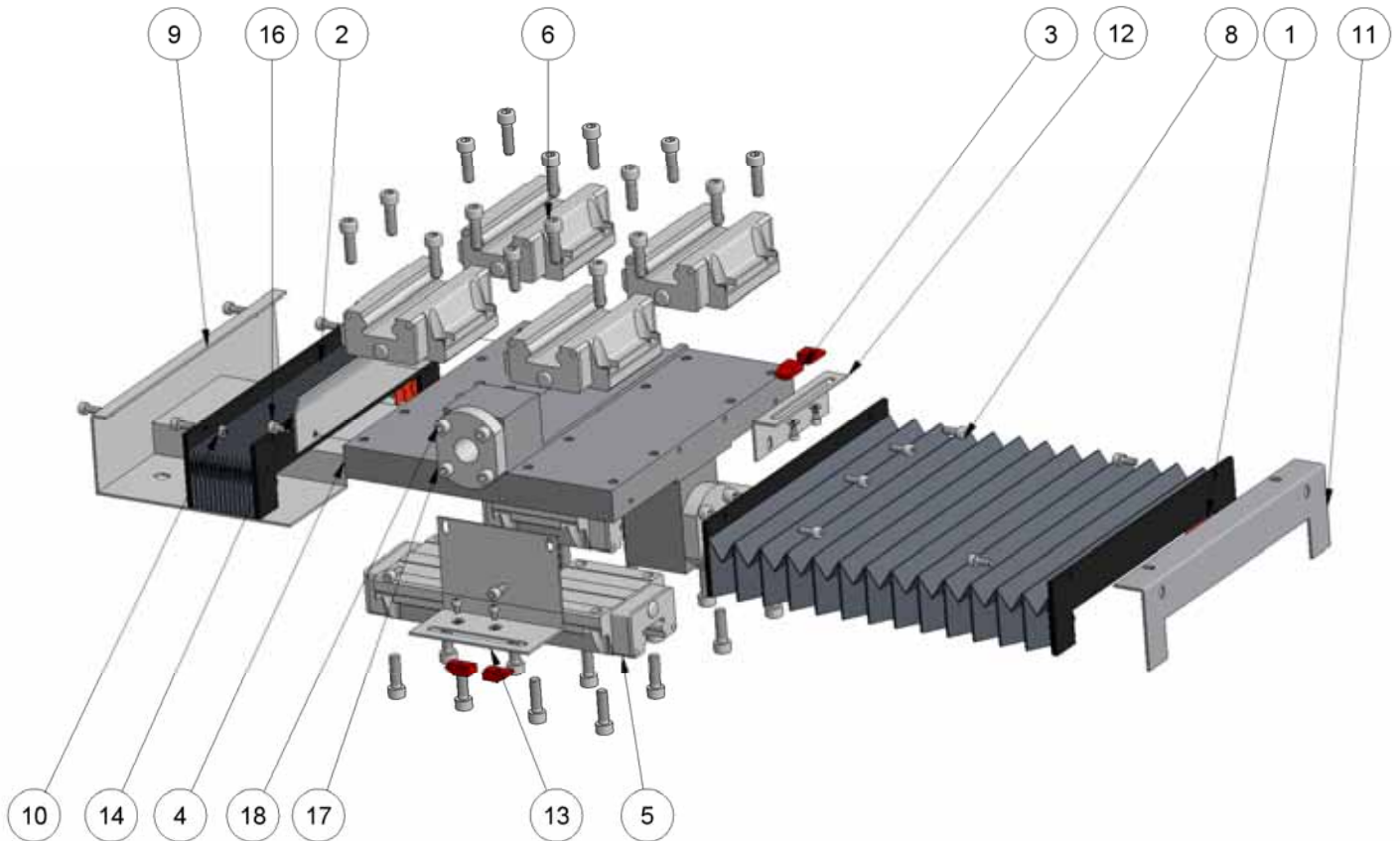
13.28 Top slide for CNC milling machines **with linear guides** CC-F1410 LF



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

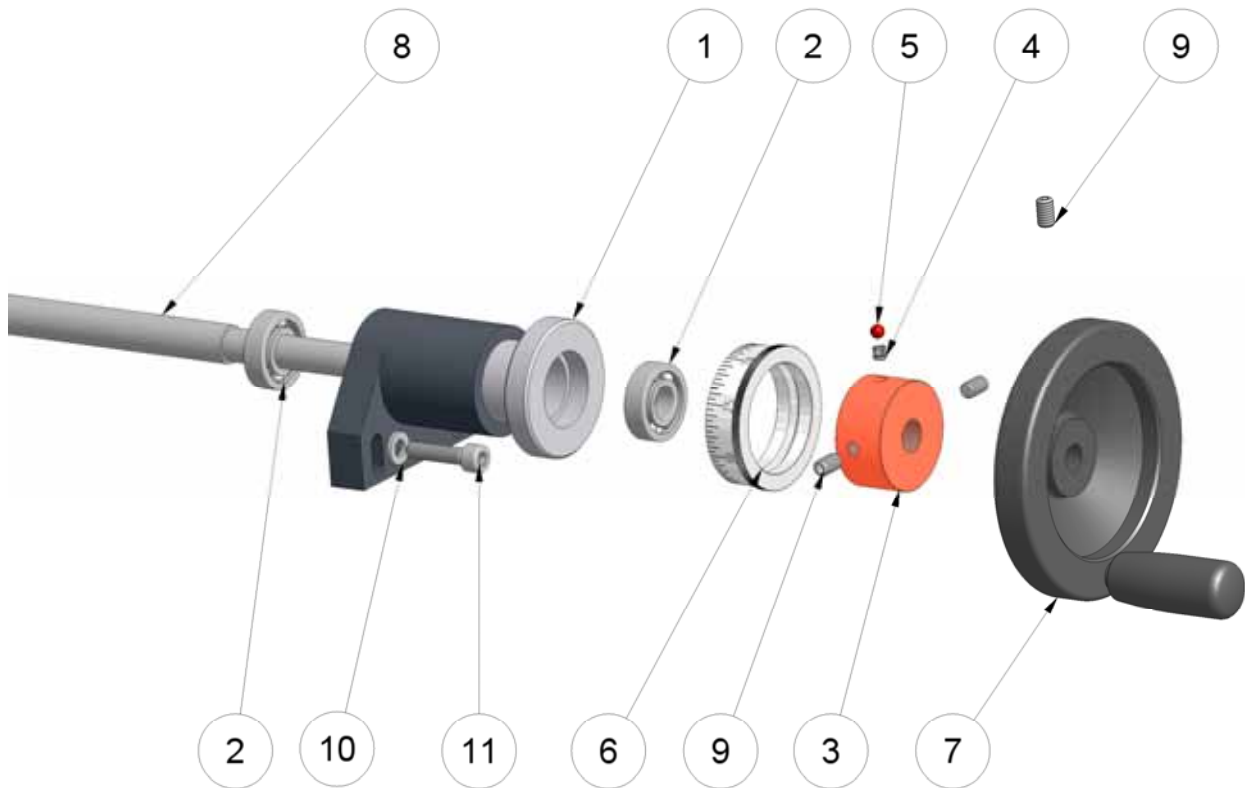


Part-No.	Pieces	Order-No.	Designation
1	1	11860004	Concertina cover
2	1	11860004	Concertina cover
3	4	16400227	Switch cams
4	1	16400202	Cross slide
5	8	11810026	Guide carriage
6	32	11700031	Cylinder screw
8	12	11700070	Cylinder screw
9	1	16410212	Holding plate Y-axis
10	2	11700002	Hexagon nut
11	1	16410213	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

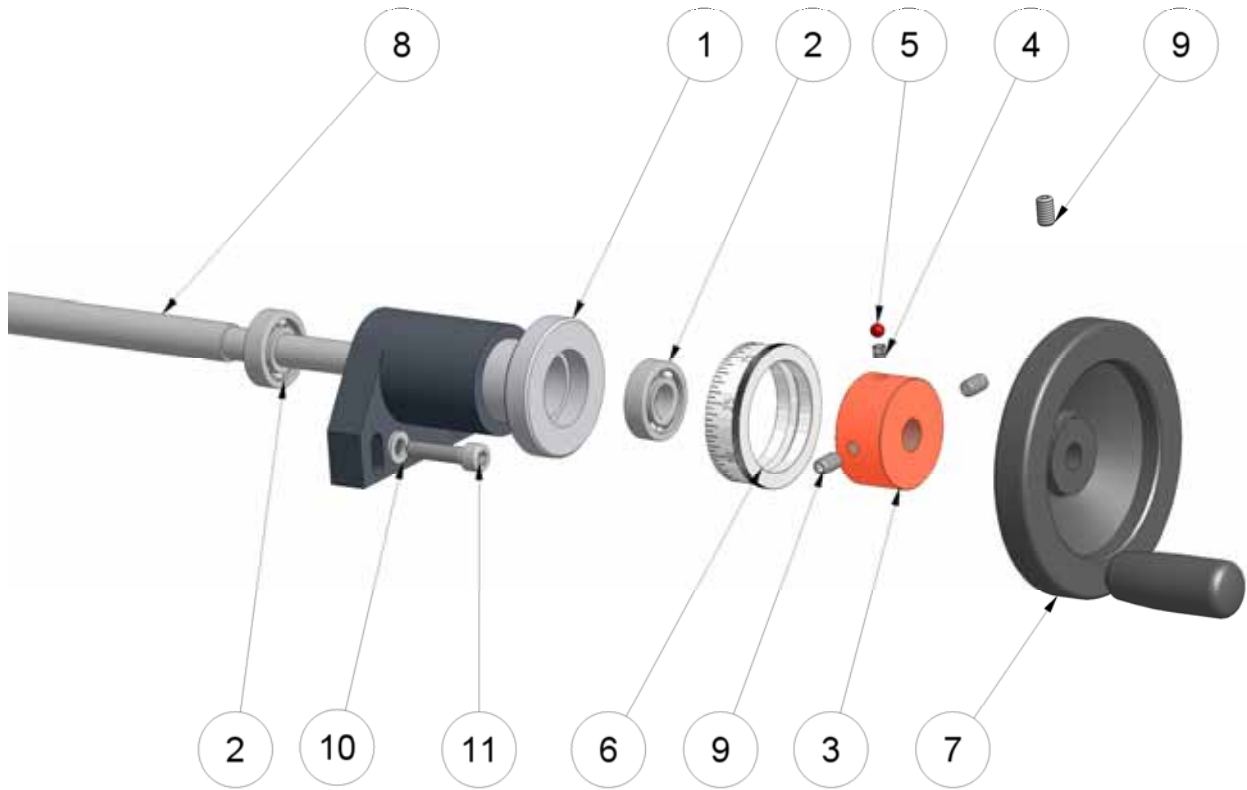
F1200 – F1200 high speed – F1210 – F1210 high speed – F1410 LF – F1410 LF high speed



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

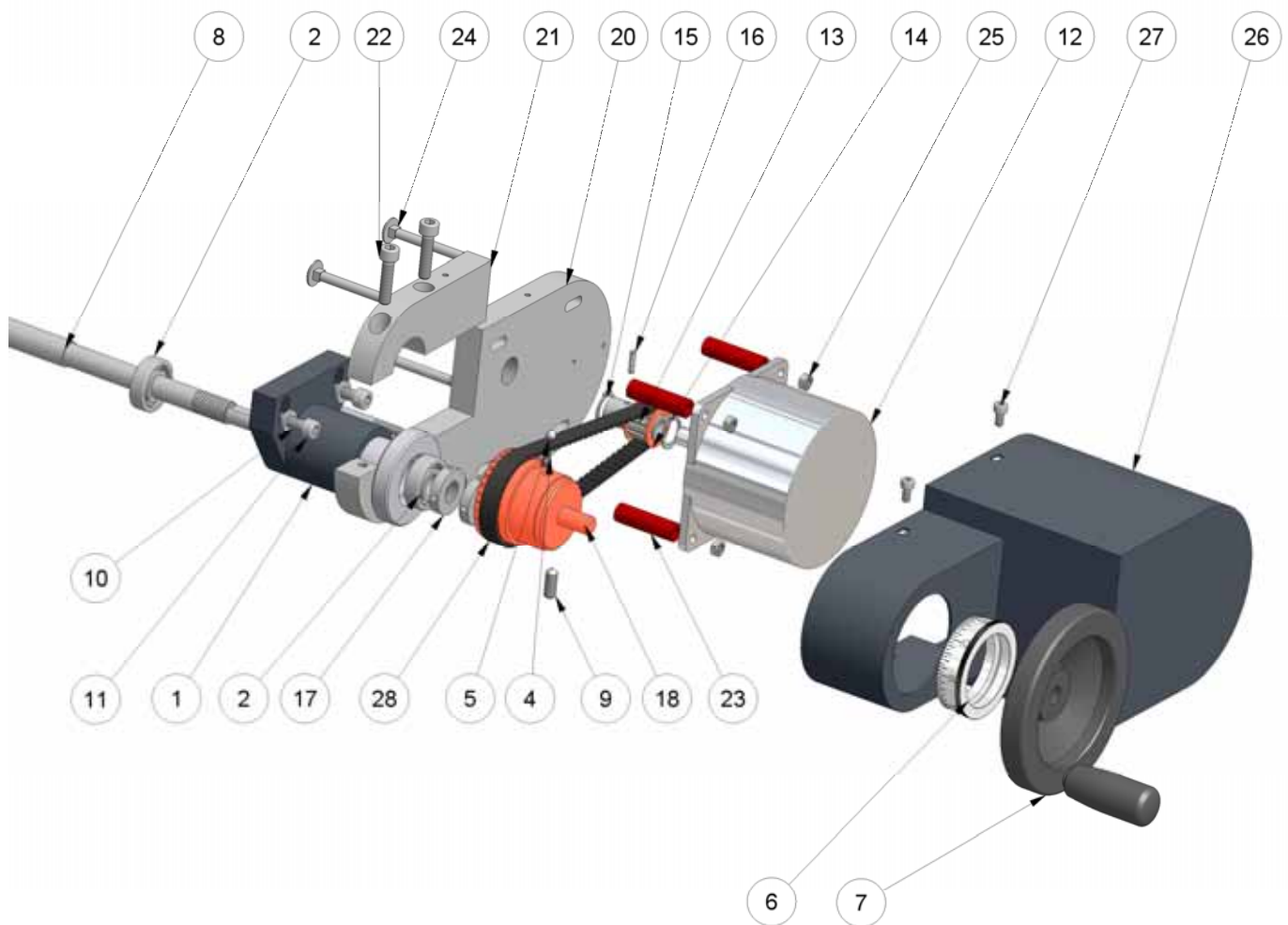
13. Drawing and list of parts

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

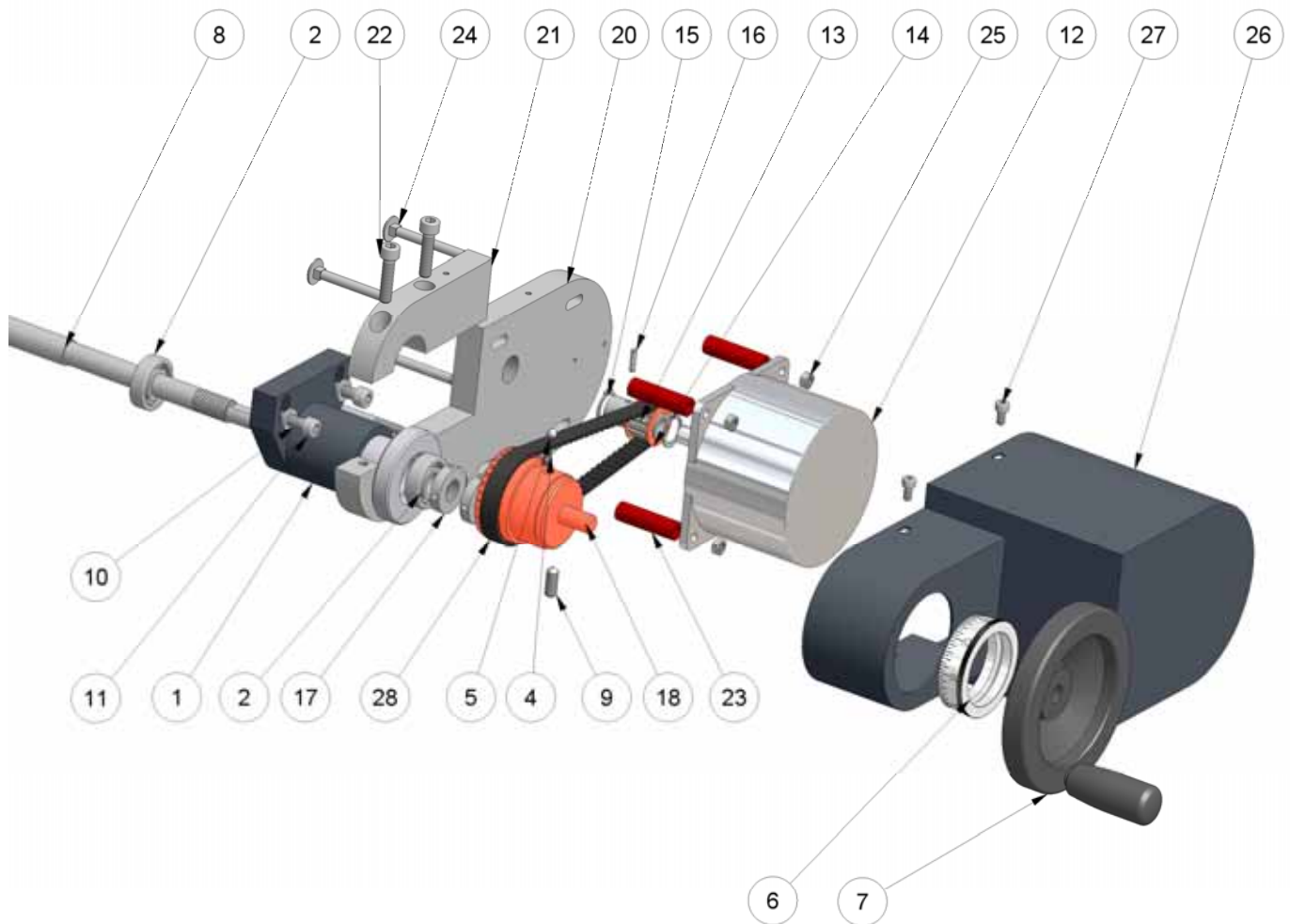
13. Drawing and list of parts

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

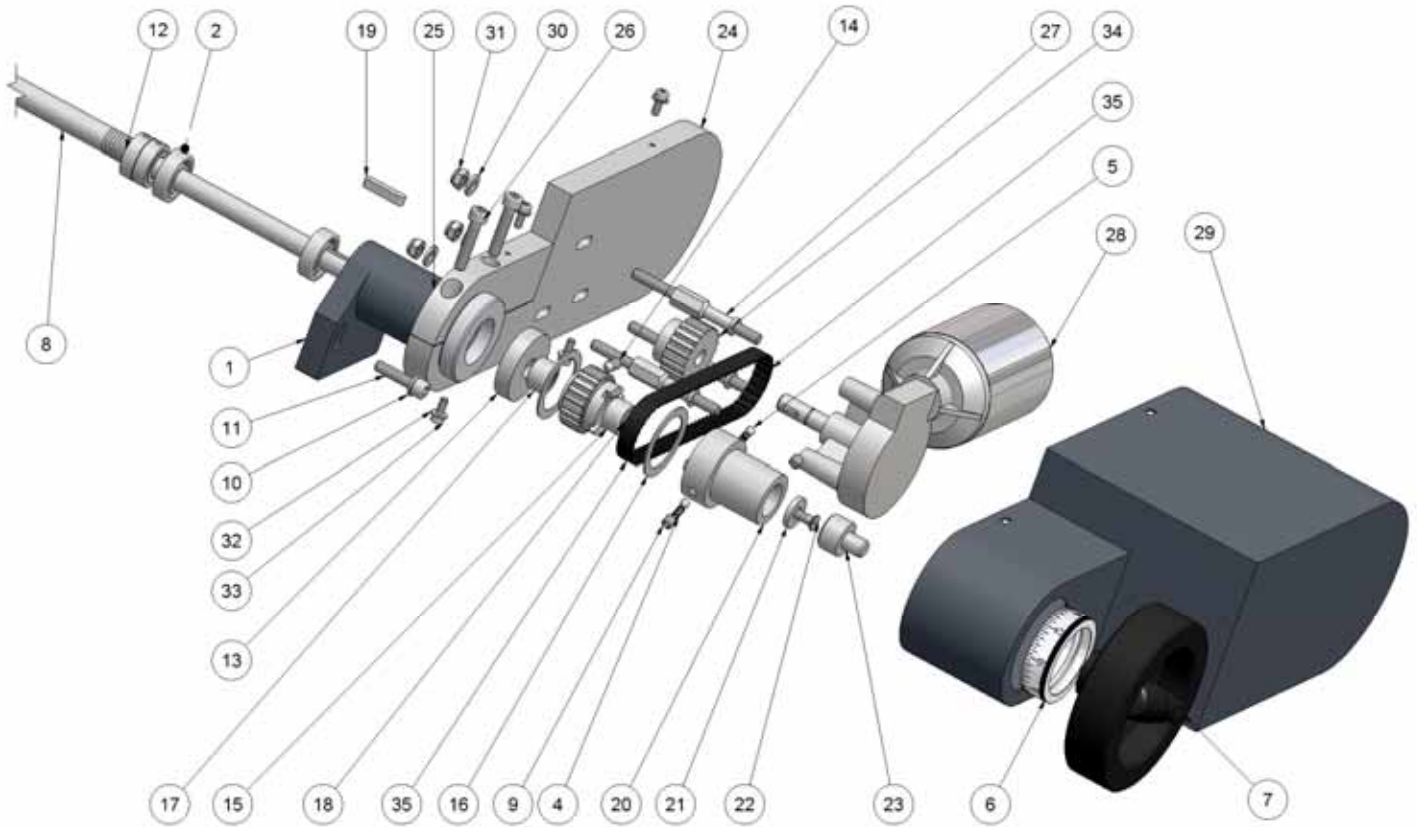
CC-F1410 LF – CC-F1410 LF high speed

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

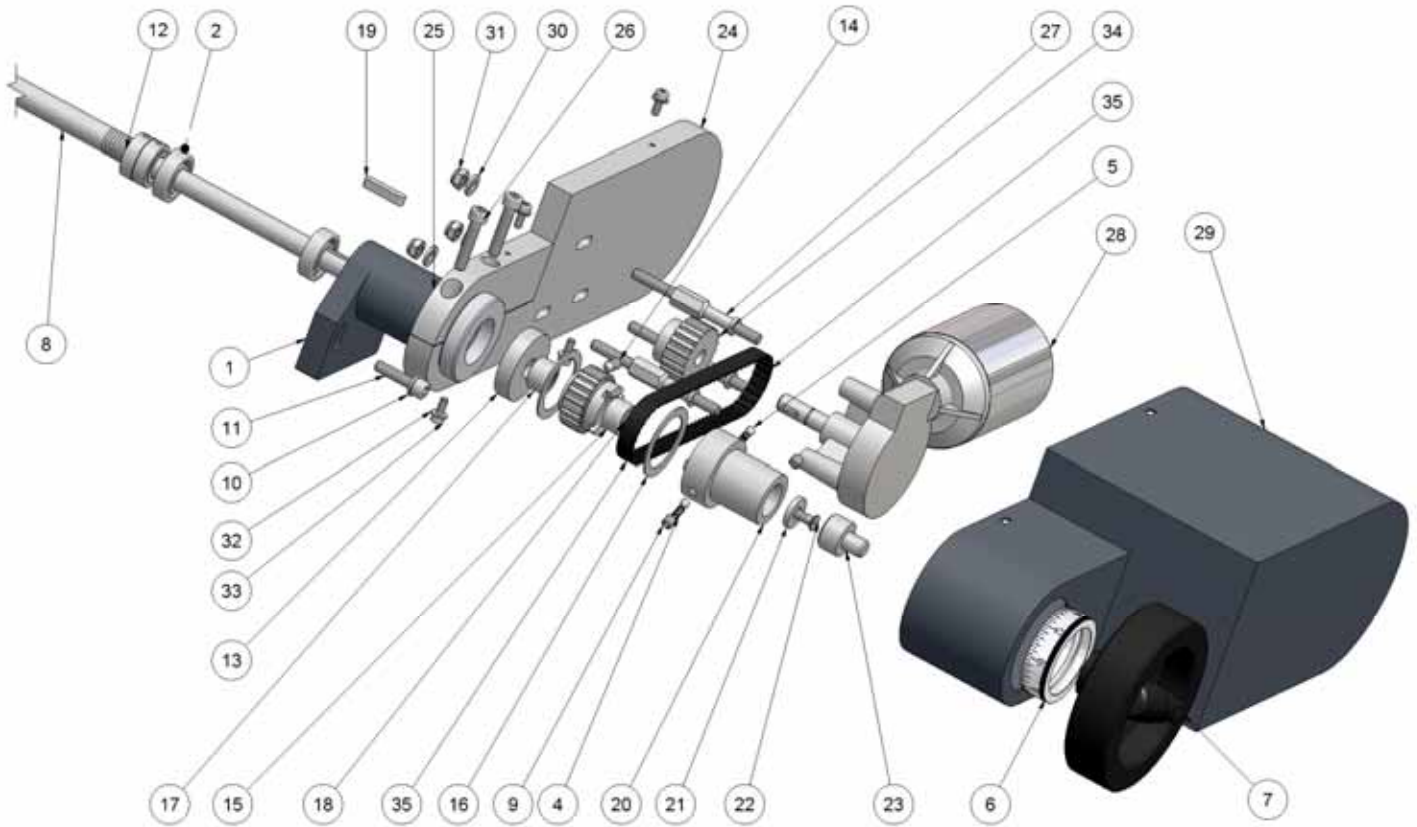
F1200 – F1200 high speed – F1210 – F1210 high speed– F1410 LF – F1410 LF high speed

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

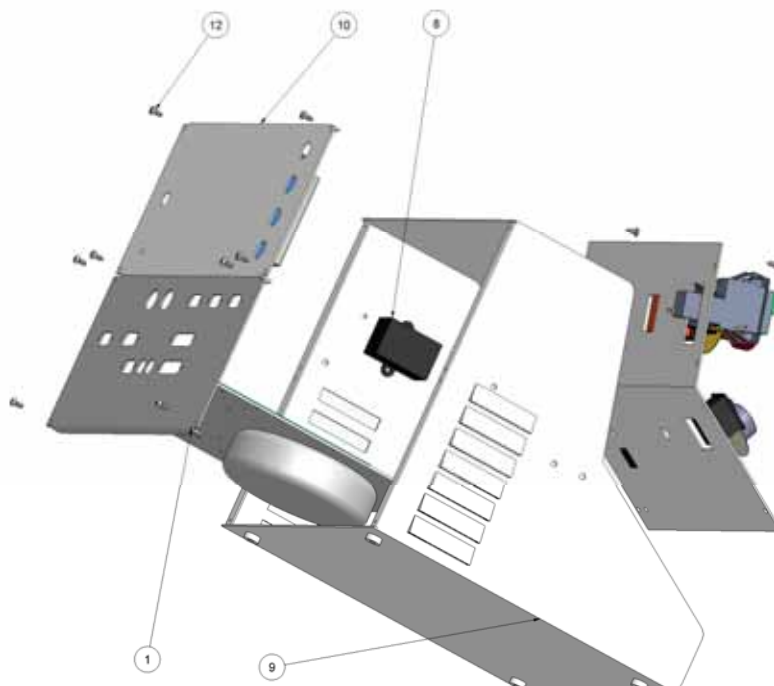
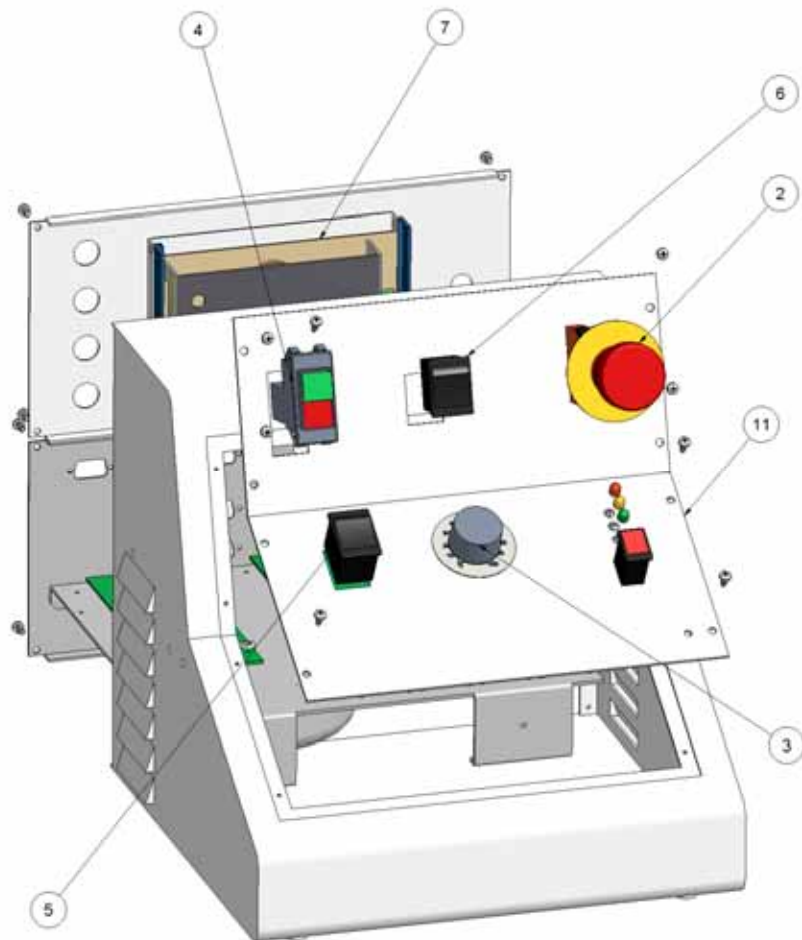
13.35 Y-spindle for automatic feed for milling machines

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

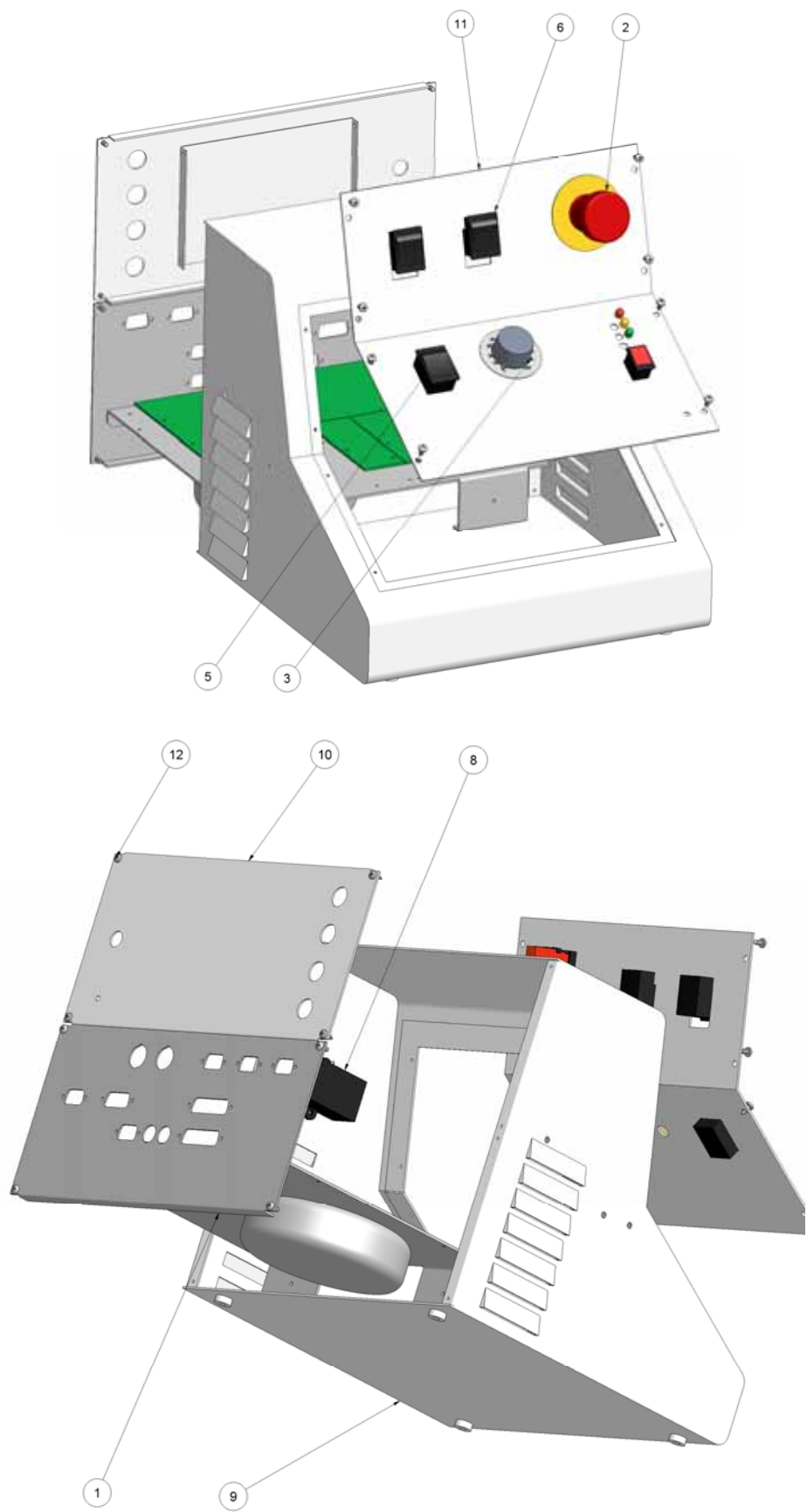
13.36 Control console **nccad with 1.4 kW motor**

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

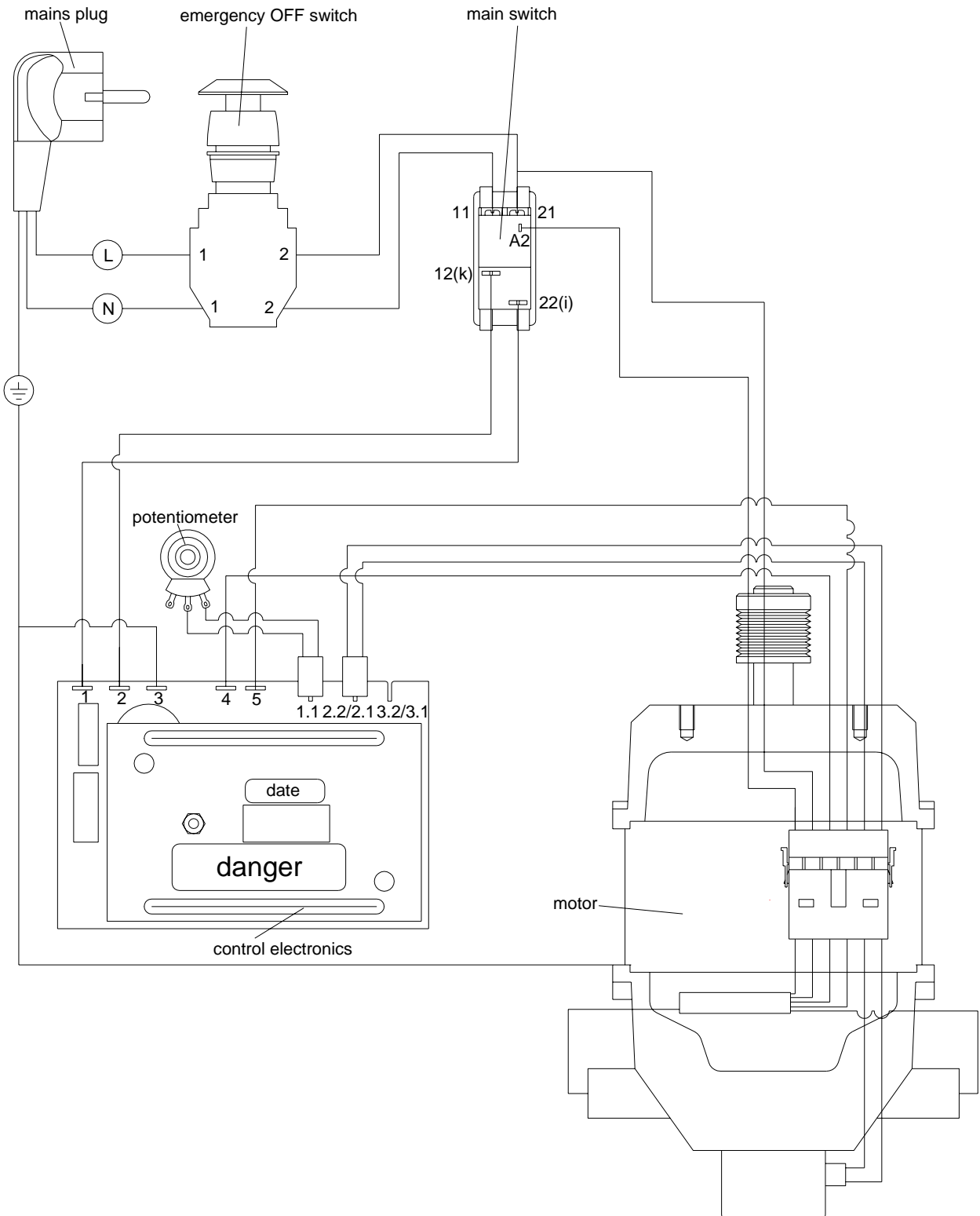


Part-No.	Pieces	Order-No.	Designation
1	1	16400501	Arm support
2	1	16400502	Arm support
3	4	16400503	Spacer
4	2	11840004	Clamping lever
5	1	16400500	Console arm
6	2	16400504	Ring stop
7	4	11700079	Threaded pin

14. Circuit diagram

14.1 Motor 1.4 kW

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

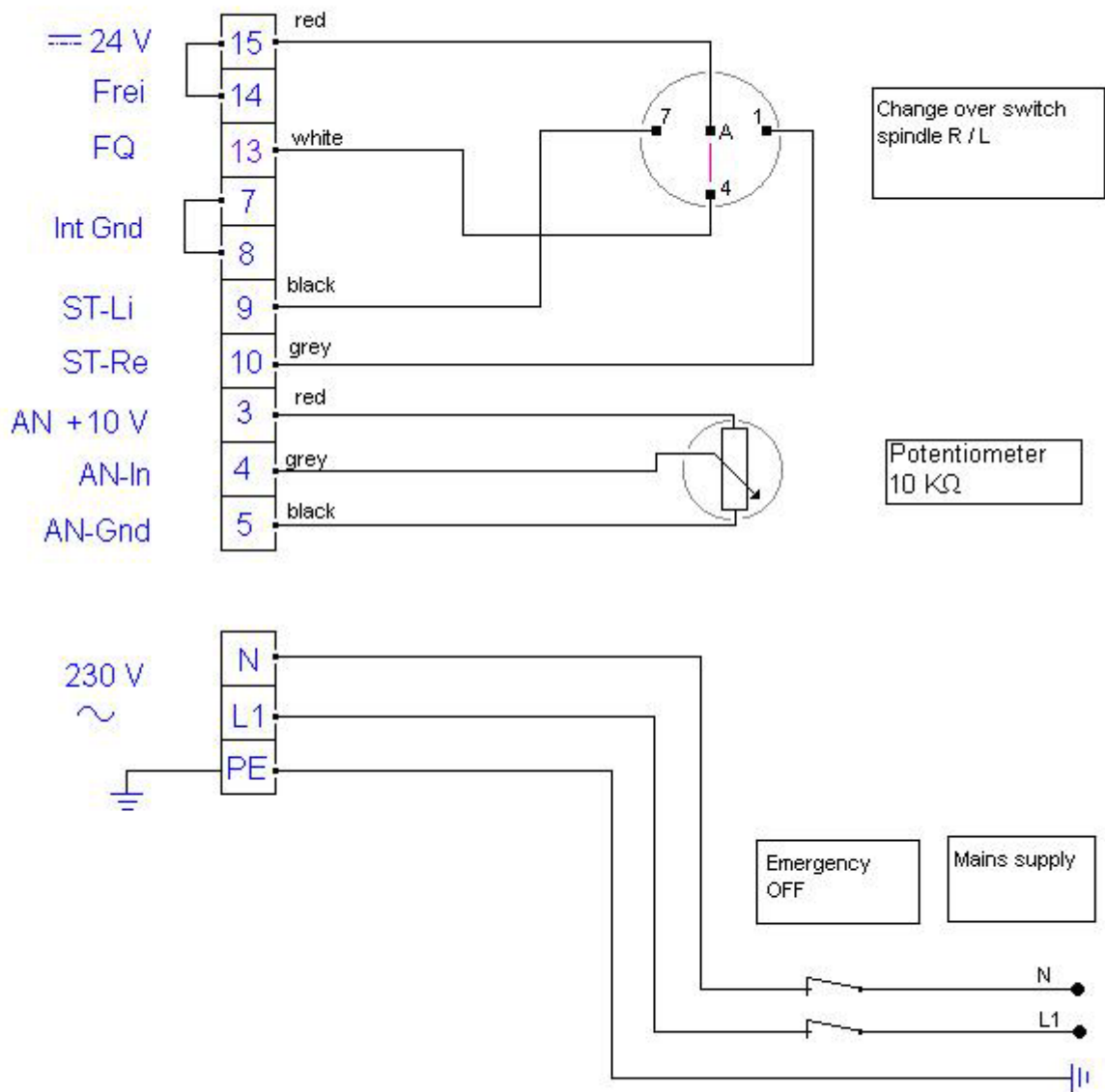


14. Circuit diagram

14.2 High speed motor 2.0 kW

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

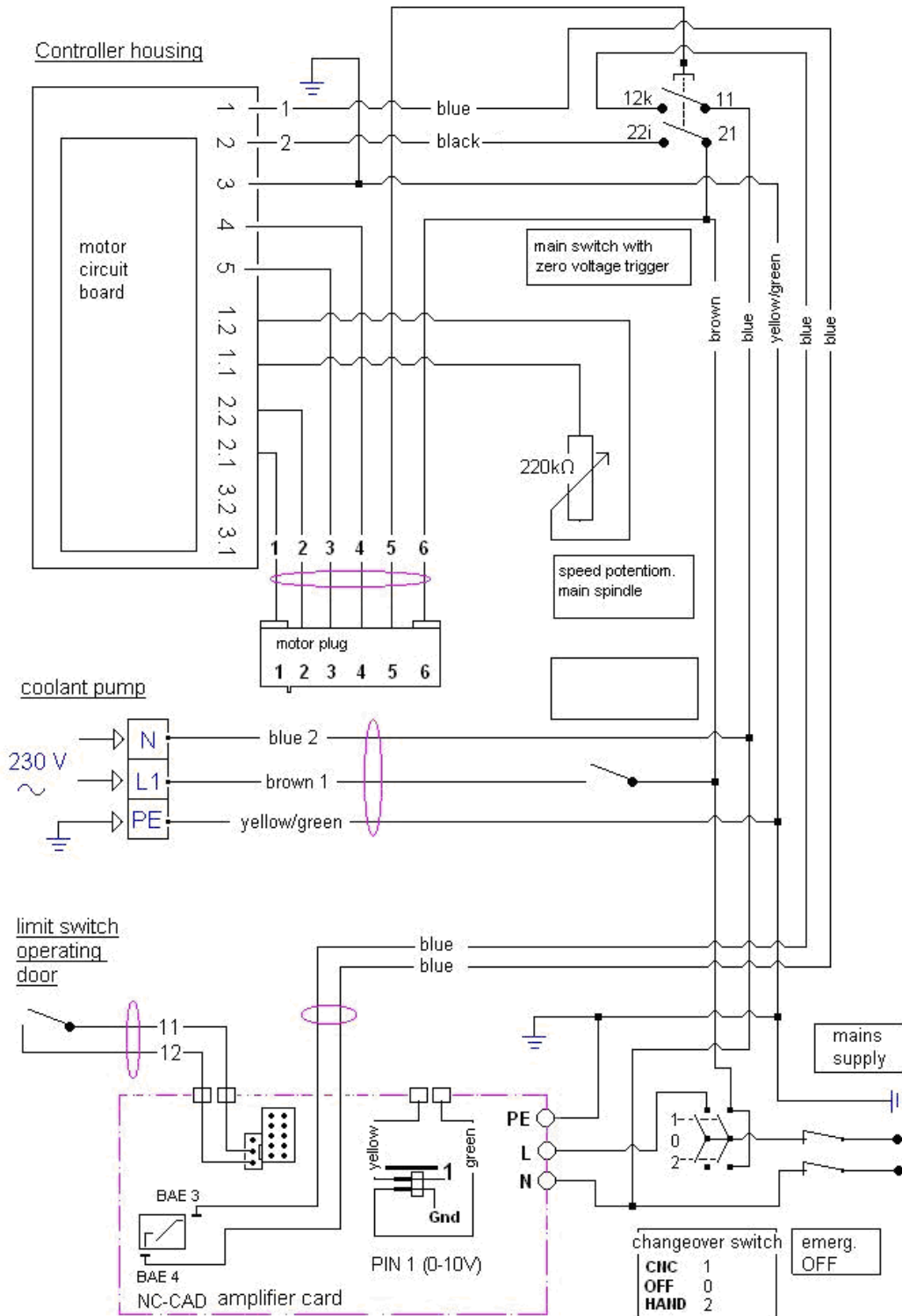
Switch box
High speed motor



14. Circuit diagram

14.3 nccad with 1.4 kW motor

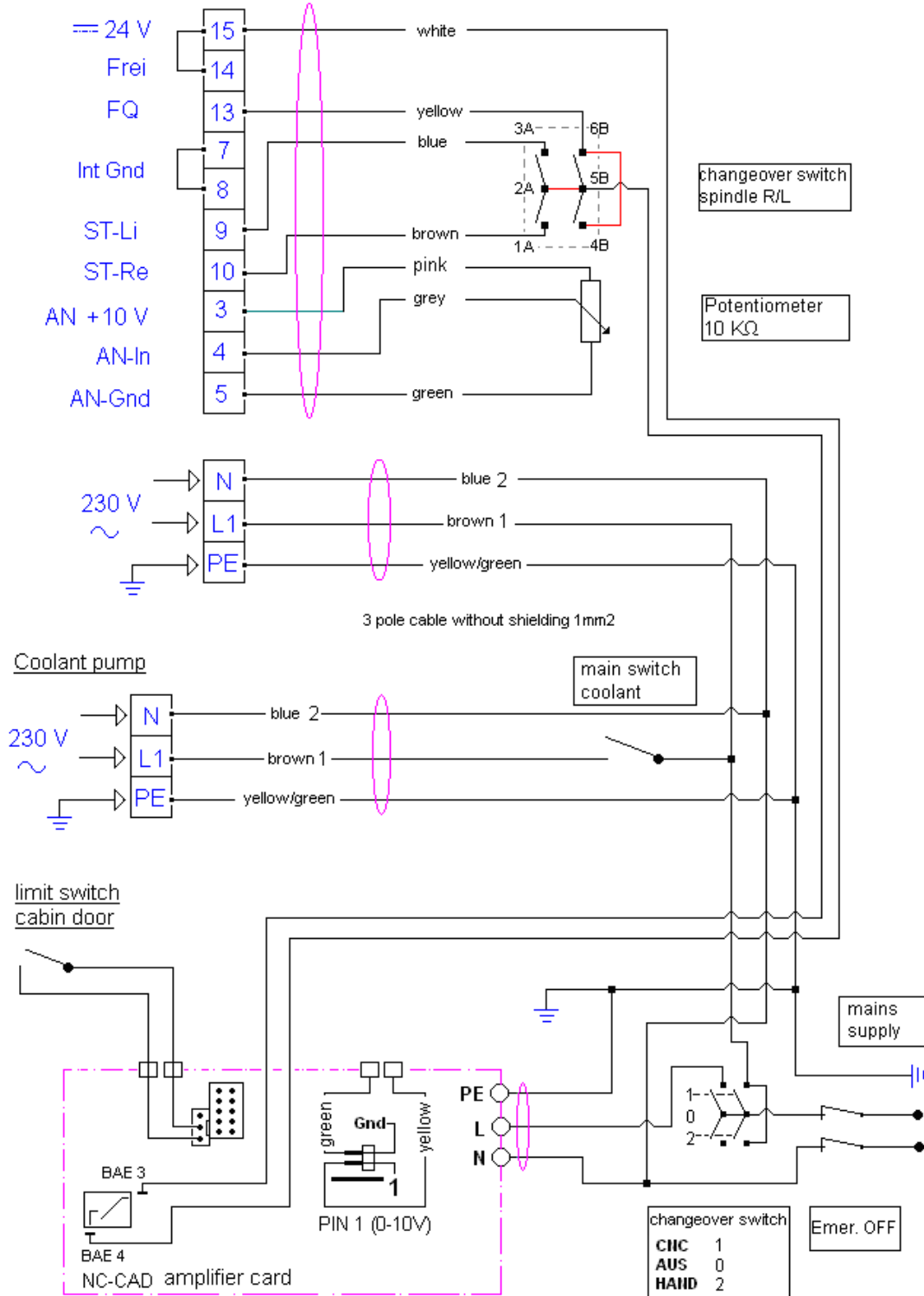
This document shows all units of the electrical equipment including the mains connection



14. Circuit diagram

14.4 nccad with 2.0 kW motor

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

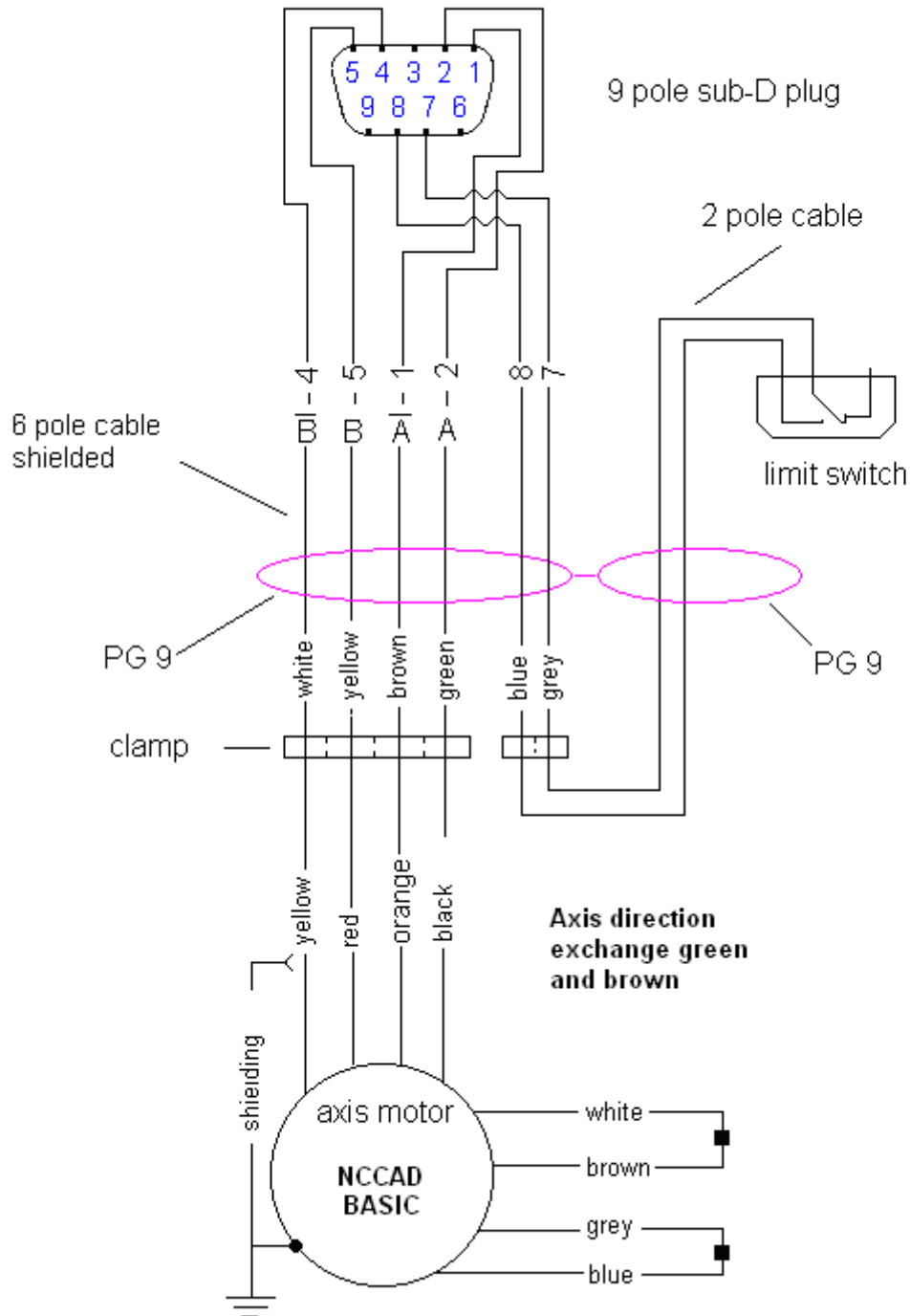


14. Circuit diagram

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

