



KDS SCREWDRIVERS

Torque range: 0.1 - 70 Nm

OPERATOR MANUAL



IDENTIFICATION DATA OF THE MANUFACTURER

KOLVER S.r.l.
VIA M. CORNER, 19/21
36016 THIENE (VI) ITALIA

TECHNICAL DATA OF THE PRODUCT

DIMENSIONS: 254 x 40 mm
WEIGHT: 0,7 Kg
VOLTAGE: 40V DC
POWER: 600W
NOISE LEVEL: < 70 dB(A)
VIBRATION LEVEL: < 2.5 m/s²

DECLARATION OF CONFORMITY



KOLVER S.r.l. declares that the new tool here described: screwdrivers KDS series (see table) are in conformity with the following standards and other normative documents:

2006/42/CE, LVD 2014/35/UE, EMCD 2014/30/UE, EN 62841-2-2:2014, EN 62841-1: 2015, EN 60204-1, EN 61000-6-2, EN 61000-6-4.

It is also in conformity with RoHS III normative (2011/65/UE and following 2015/863).

Name: Giovanni Colasante

Position: CEO

Person authorized to compile the technical file in Kolver

Thiene, January 1st 2022

Giovanni Colasante

IDENTIFICATION DATA OF THE PRODUCT

Code	Model	Torque (Nm)	Speed (rpm)	
			Min	Max
175015	KDS-MT1.5	0.1 - 1.5	50	850
175015/ESD	KDS-MT1.5/ESD	0.1 - 1.5	50	850
175016/ESD	KDS-MT1.5P	0.1 - 1.5	50	850
175016/U/ESD	KDS-MT1.5P/U	0.1 - 1.5	50	850
175115	KDS-MT1.5CA	0.1 - 1.5	50	850
175115/FN	KDS-MT1.5CA/FN	0.1 - 1.5	50	850
175015/A	KDS-MT1.5ANG	0.1 - 1.5	50	850
135006	KDS-PL6	0.5 - 6	50	850
135006/ESD	KDS-PL6	0.5 - 6	50	850
135007/ESD	KDS-PL6P	0.5 - 6	50	850
135007/U/ESD	KDS-PL6P/U	0.5 - 6	50	850
135106	KDS-PL6CA	0.5 - 6	50	850
135106/FN	KDS-PL6CA/FN	0.5 - 6	50	850
135006/A/ESD	KDS-PL6ANG	0.5 - 5.5	50	850
135010	KDS-PL10	0.8 - 10	50	600
135010/ESD	KDS-PL10	0.8 - 10	50	600
135011/ESD	KDS-PL10P	0.8 - 10	50	600
135011/U/ESD	KDS-PL10P/U	0.8 - 10	50	600
135110	KDS-PL10CA	0.8 - 10	50	600
135110/FN	KDS-PL10CA/FN	0.8 - 10	50	600
135010/A/ESD	KDS-PL10ANG	0.8 - 9	50	600
135015	KDS-PL15	0.5 - 15	50	320
135015/ESD	KDS-PL15	0.5 - 15	50	320
135016/ESD	KDS-PL15P	0.5 - 15	50	320
135016/U/ESD	KDS-PL15P/U	0.5 - 15	50	320
135115	KDS-PL15CA	0.5 - 15	50	320
135115/FN	KDS-PL15CA/FN	0.5 - 15	50	320
135015/A/ESD	KDS-PL15ANG	0.5 - 12	50	320
135020	KDS-PL20	2 - 20	20	210
135120	KDS-PL20CA	2 - 20	20	210
135120/FN	KDS-PL20CA/FN	2 - 20	20	210
135030/ANG	KDS-PL30ANG	3 - 30	20	140
135035	KDS-PL35	3 - 35	20	140
135135	KDS-PL35CA	3 - 35	20	140
135135/FN	KDS-PL35CA/FN	3 - 35	20	140
135045/ANG	KDS-PL45ANG	4 - 45	20	90
135050	KDS-PL50	5 - 50	20	90
135150	KDS-PL50CA	5 - 50	20	90
135150/FN	KDS-PL50CA/FN	5 - 50	20	90
135070/ANG	KDS-PL70ANG	7 - 70	20	50

DECLARATION OF USE

Screwdriver (class I) suitable for industrial environment only. It shall be used for tightening. No other use will be permitted. For professional use only.

WARNING: To reduce the risk of injury, before using or servicing screwdriver, read and understand the following information as well as separately provided safety instructions (item code: 0MS000). The features and descriptions of our products are subject to change without prior notice.

DECLARATION OF NOISE AND VIBRATION EMISSION

NOISE LEVEL: < 70 dB(A)

VIBRATION LEVEL: < 2.5 m/s²

These declared values were obtained by laboratory type testing in compliance with the stated standards and are not adequate for use in risk assessments. Values measured in individual work places may be higher than the declared values. The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, the work piece and the workstation design, as well as upon the exposure time and the physical condition of the user. We, KOLVER, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

OPERATING MODE

The screwdriver can be manual or used as fixed spindle on an automatic machine.

CONTROL UNIT

Power source by KDU 1 series, depending on the model.

MAINTENANCE INSTRUCTIONS

Maintenance should be performed by qualified personnel only.

- Prior to any maintenance task: disconnect the screwdriver.
- When disassembling / reassembling the screwdriver, take the following precautions:
 - Check that the controller is switched off.
 - Disconnect the cable.

According to Directive 2012/19/EU concerning Waste Electrical and Electronic Equipment (WEEE), this product must be recycled.

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INSTALLATION OF KDS SCREWDRIVER

Cable connection and part numbers

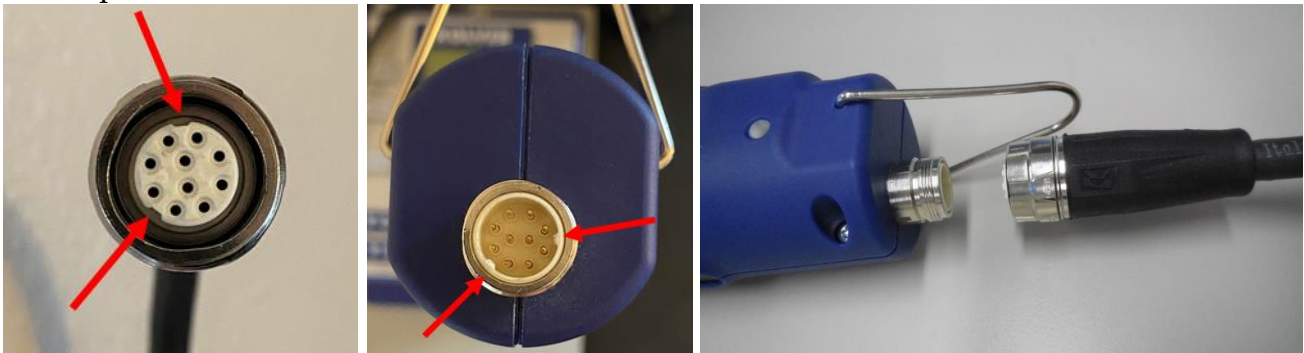
The KDS screwdriver series require one of the following cables:

- 2.5m male/female cable (code 250064)
- 2.5m male/female cable with strain relief (code 250064/H)
- 5.0m male/female cable (code 250564)
- 5.0m male/female cable with strain relief (code 250564/H)



To connect the screwdriver to the unit:

1. insert the male connector into the appropriate TOOL connector on the bottom of the unit, taking care to respect the alignment tabs. Push the connector into its position and turn the OPEN/CLOSE nut* clockwise.
2. insert the female connector into the appropriate connector at the top of the screwdriver, taking care to respect the alignment tabs. Push the connector into its position and turn the OPEN/CLOSE nut* clockwise.

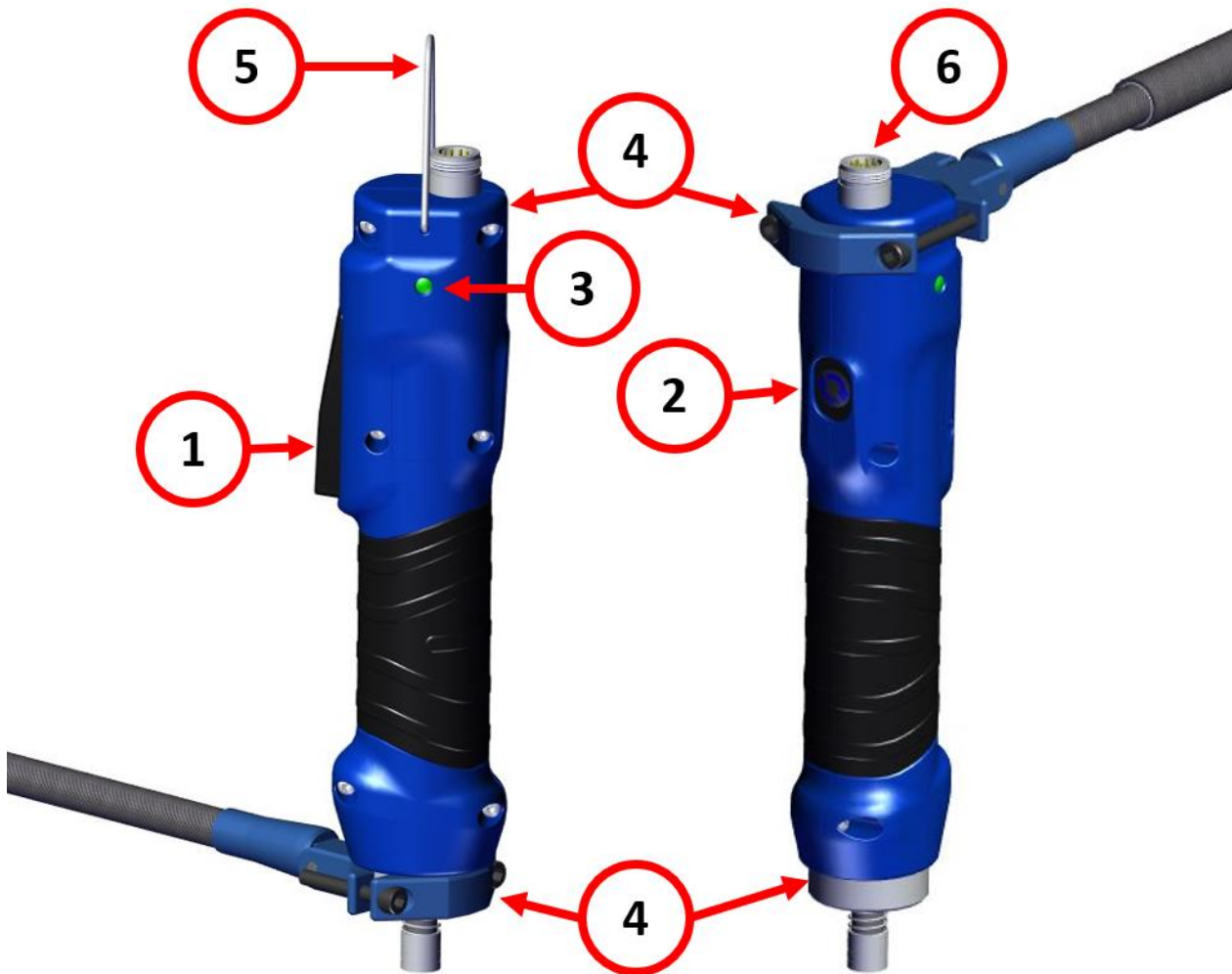


To disconnect the cable:

1. lightly push the connector in towards the screwdriver (or the unit)
2. turn the OPEN/CLOSE nut* counterclockwise
3. pull the connector out

*note: some models use a threaded nut instead of an OPEN/CLOSE nut. In this case, tighten the nut all the way until it stops, without overtightening with excessive force.

OPERATING THE KDS SCREWDRIVER



(1) Lever

Press and hold the lever to initiate a rundown.

The screwdriver will automatically stop according to the configured program, in either an OK or a NOK state, depending on the success of the rundown.

The screwdriver will also stop if the lever is released in the middle of the rundown, and either return to the READY state or raise the NOK state if the LEVER ERROR option is active for the current program (Programs menu > Other > LEVER ERROR).

(2) Reverse button

Press and hold the button to initiate a defix run, rotating in the opposite direction of the selected direction of rotation for the lever (see Programs menu > Other > ROTATION).

The behavior of the reverse button can be changed from the general settings menu (General Settings > REVERSE BUTTON).

(3) LED

The two LEDs indicate the state of the screwdriver:

●	Blinking white: the screwdriver was just connected to the K-Ducer control unit
●	Off: the screwdriver is ready, or the screwdriver is not connected
●	Solid green: the last screw result was OK
●	Solid red: the last screw result was NOK
●	Solid blue: screwdriver is running in the tightening direction, either via the lever or via remote control
●	Solid purple: the screwdriver is running in the de-fix direction, either via the reverse button, or via remote control
●	Blinking purple: the reverse button is in switch mode and is activated. The screwdriver is ready to run in de-fix rotation via the main lever.

(4) Reaction arm connections

Fix the reaction arm to one these areas only, and never anywhere else on the screwdriver. Kolver recommends using a reaction arm for operator comfort, especially for applications with torques above 5 Nm.

The KDS series screwdriver has two positions designed for connecting to the reaction arm:

1. The naked metal cylinder near the head of the screwdriver
2. The reinforced plastic section at the very top of the screwdriver
 - **NOT** present on KDS-PL20-35-50
 - **NOT** present on the the pistol-shaped versions

Warning: do not connect the reaction arm anywhere other than the above designated areas. Fixing the reaction arm to the middle of the screwdriver handle will squeeze the screwdriver shell, causing damage to the internal components, and failing to absorb the torque reaction safely and reliably.

(5) Hanging hook

To hang the screwdriver somewhere easily accessible in the operator's workbench.

(6) Female connector

To connect the screwdriver to the K-Ducer control unit

SCREWDRIVER VARIANTS AND ACCESSORIES

Pistol screwdrivers

Reaction arm connection:



START / REVERSE button and LEDs are on the back of the screwdriver:



Status LED also found front facing on the top of the screwdriver:



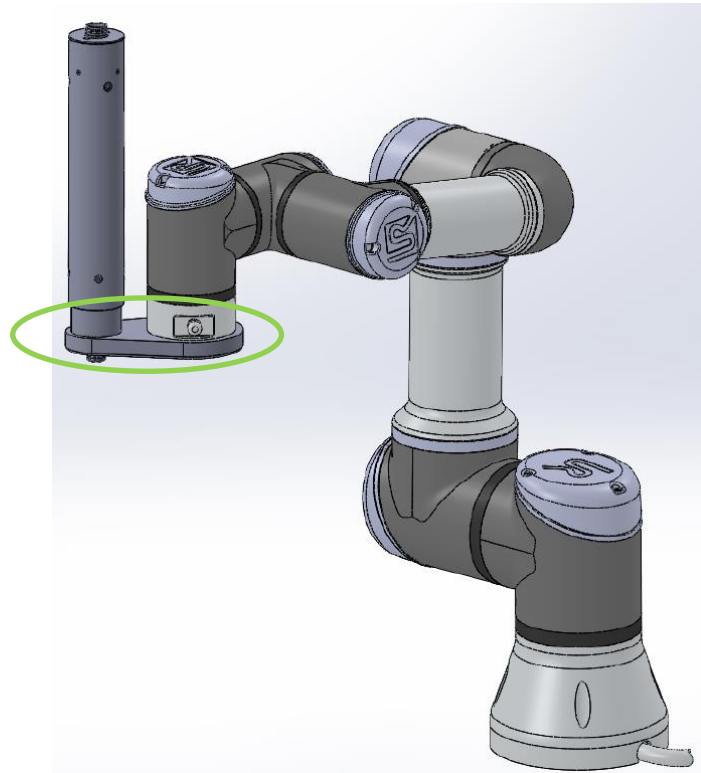
Pistol screwdrivers can be purchased with either bottom or top mounted female cable connector:



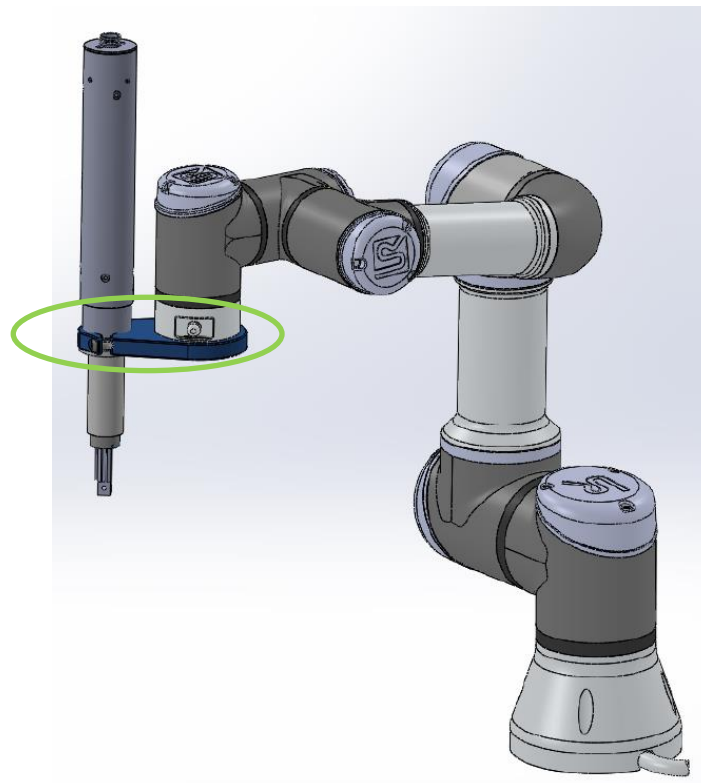
Pistol screwdriver holder Cod 010175



Fixing plate for UR Robot KDS xxCA Cod 010695/UR



Fixing plate for UR Robot KDS xxCA/FN (with flange max diameter 37mm) Cod 010695/URN



Suction heads

Code	Description
010119	ASP HD8 SUCTION HEAD MITO
010119/UNI	ASP HD8 SUCTION HEAD MITO WITH TUBE
010121	ASP HD9 SUCTION HEAD PLUTO
010121/UNI	ASP HD9/UNI SUCTION HEAD PLUTO WITH TUBE

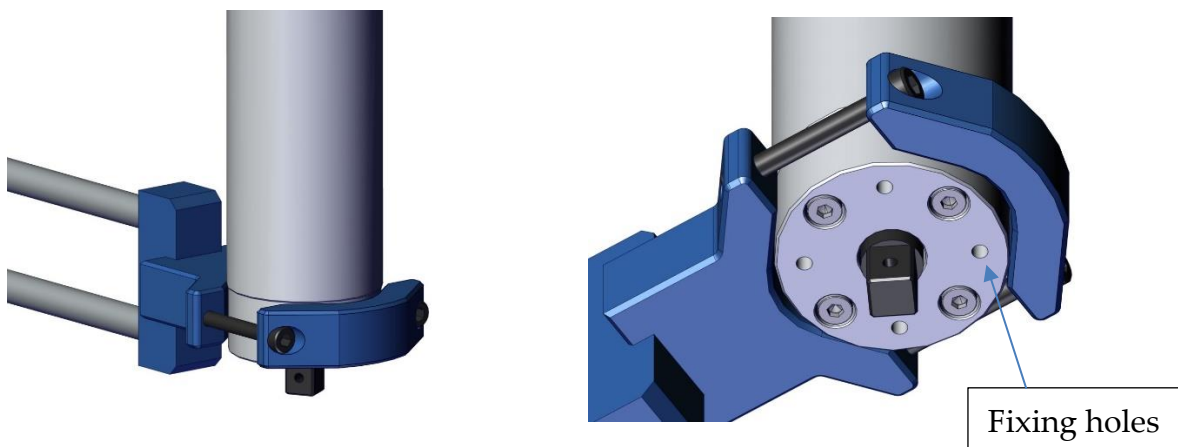


KDS PL 20 – 35 - 50

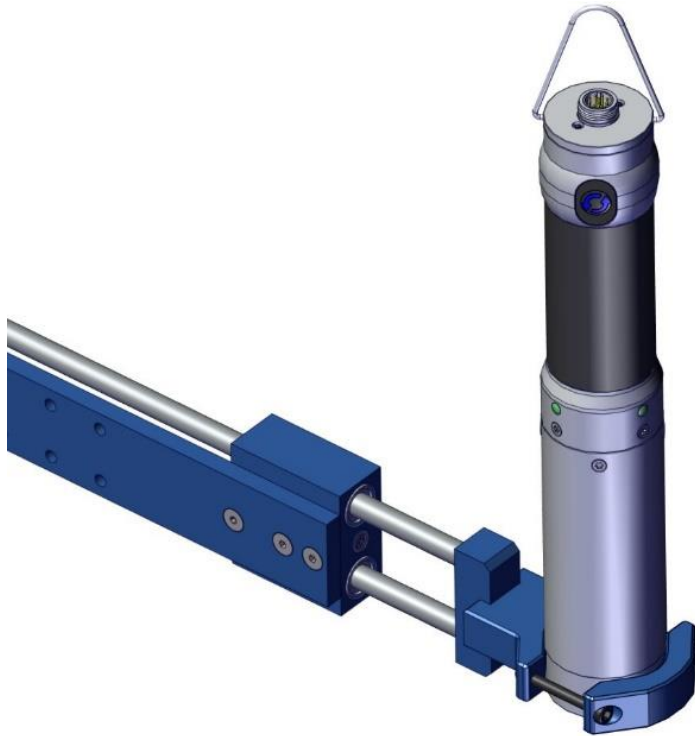
Reaction arm connection and fixing holes

Reaction arm connection is ONLY available at the head of the screwdriver

Additional M5 fixing holes for custom fixing plates are available at the head of the screwdriver:



Hand version



START / REVERSE buttons are at the top of the screwdriver:



/CA version



Angle head screwdrivers KDS PL 6-10 ANG

Hand version



/CA version



Angle head screwdrivers KDS PL 15 ANG

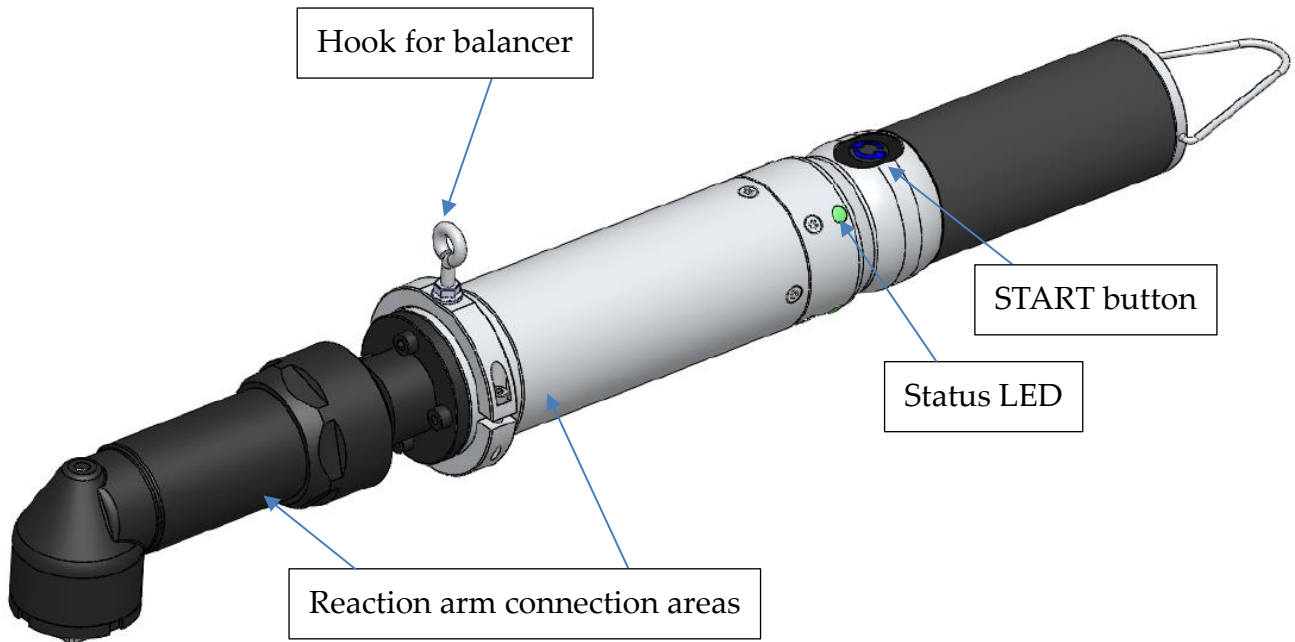
Hand version

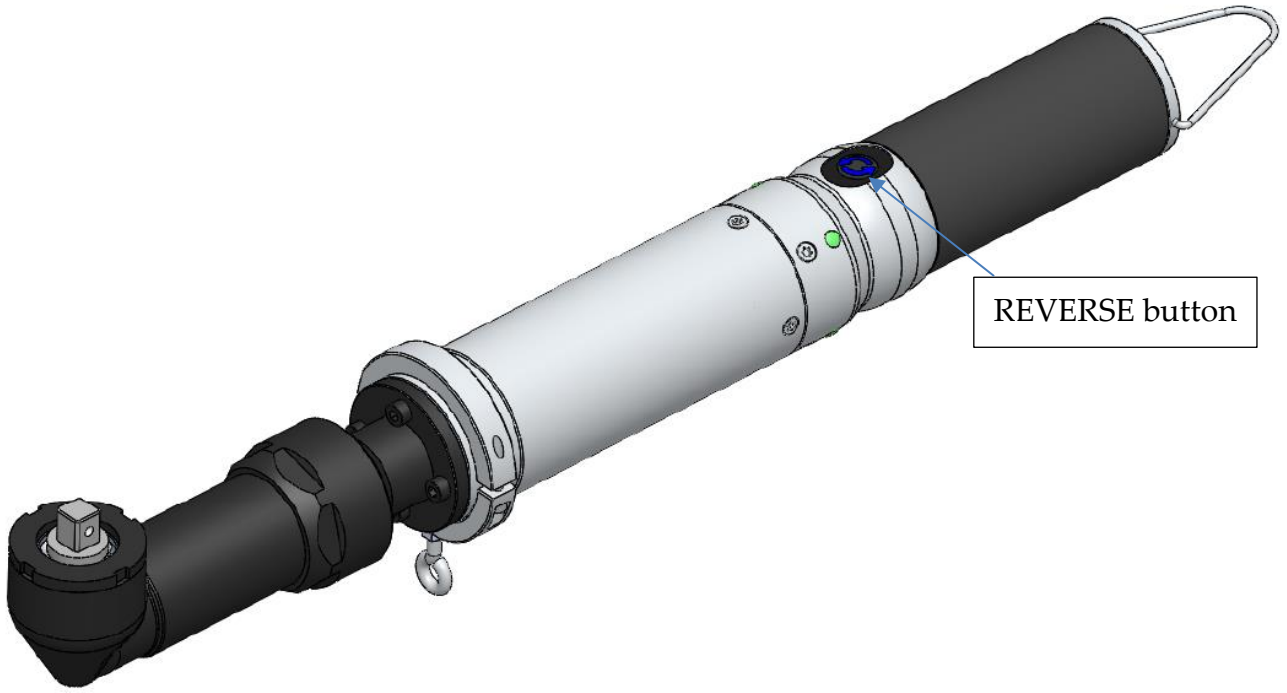


/CA version

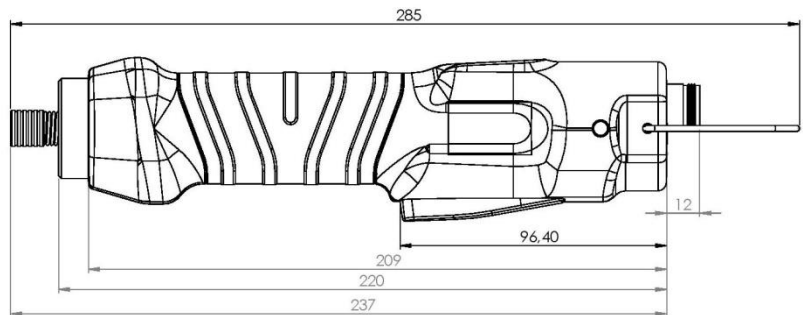
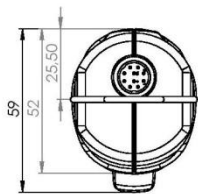
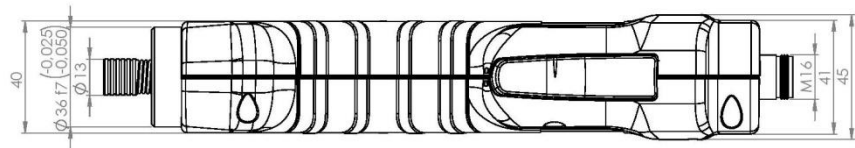
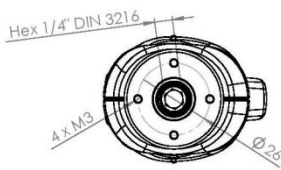
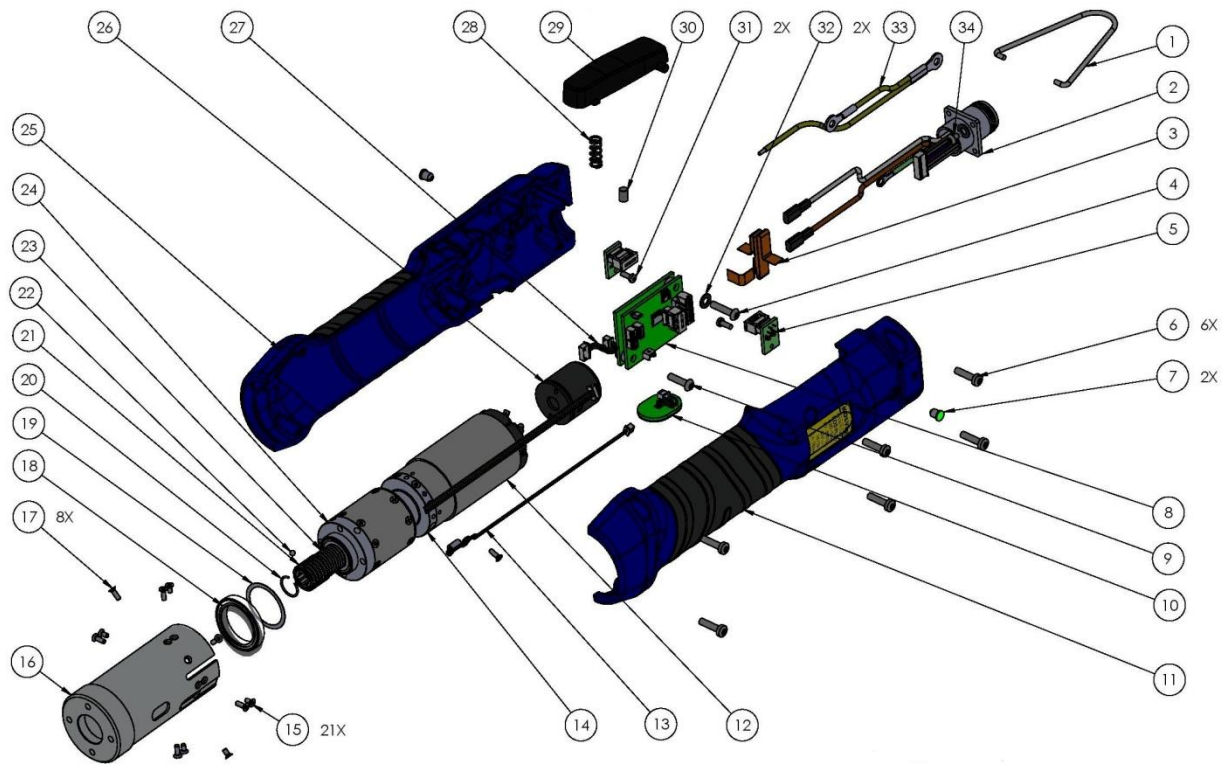


Angle head screwdrivers KDS PL 30-45-70 ANG





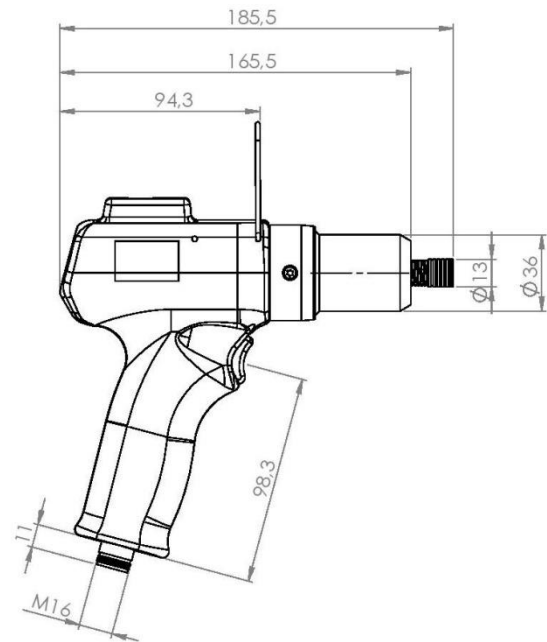
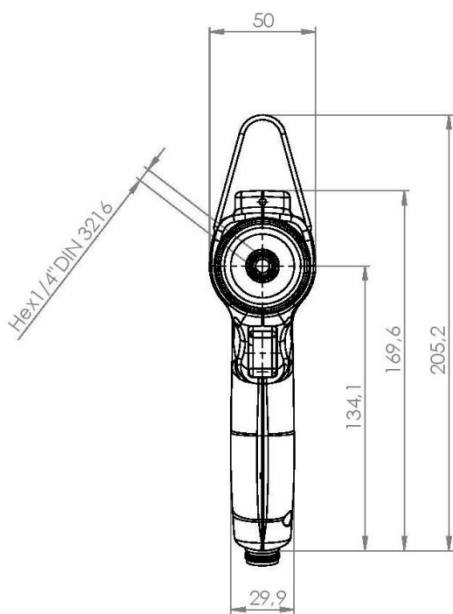
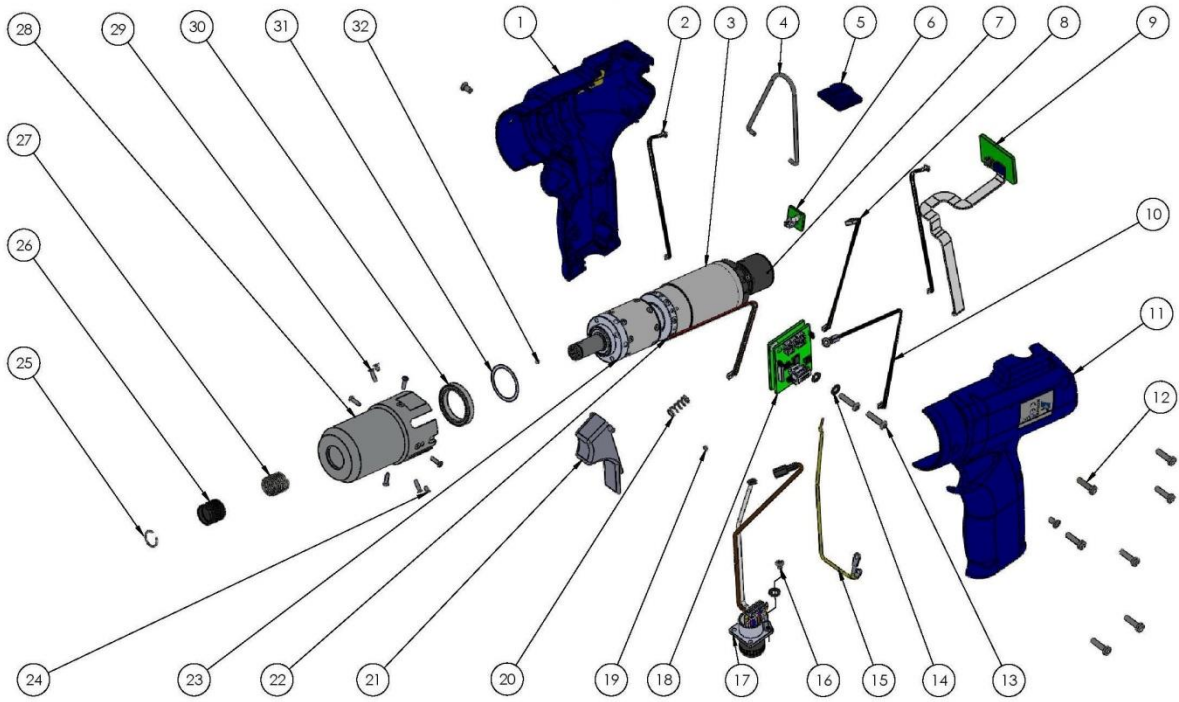
EXPLODED VIEW KDS-PLxx:



SPARE PARTS KDS-PLxx:

Pos.	Description	Qty	Code
1	HOOK	1	200060
2	MALE CONNECTOR M16 10 PIN	1	201667
3	PCB FLEX – LED BOARD	1	852537
4	SCREW ZN M3X12 TX10	1	231545
5	LED BOARD KDS/D	1	852535
6	SCREW ZN M3X12 TX10	6	231541
7	LED KDS-XX/D	2	231553
8	BOARD	1	852528
9	SCREW M3X12 ZN TX10	1	231547
10	REVERSE BUTTON	1	231535
11	HOUSING KDS-XX/D	1	231551
	HOUSING ESD KDS-XX/D	1	231551/ESD
12	MOTOR KDS-6x	1	231509/L
	MOTOR KDS-10x	1	231509/L
	MOTOR KDS-15x	1	231509/15L
13	SENSOR	1	231534
14	TRANSDUCER	1	231522/E
15	SCREW TSP M2X4 TX6 ZN	21	231531
16	MOTOR SEAT	1	234505/TD
17	SCREW TSP M2X6 TX6 ZN	8	231527
18	BEARING	1	231533
19	WASHER	1	231532
20	RING	1	200007
21	RING	1	230020/1
22	BALL 2.5MM	1	219817
23	SPRING	1	230021
24	REDUCTION GEARS KDS-6x	1	231510/6D
	REDUCTION GEARS KDS-10x	1	231510/10D
	REDUCTION GEARS KDS-15x	1	231510/15D
25	HOUSING KDS-XX/D	1	231550
	HOUSING ESD KDS-XX/D	1	231550/ESD
26	ENCODER	1	231528
27	ENCODER WIRING	1	231536
28	LEVER SPRING	1	221061
29	LEVER	1	231552
	LEVER ESD	1	231552/ESD
30	MAGNET KDS-XX/D	1	231540
31	SCREW M2,2X6 TX6	2	231538
32	WASHER	1	800041
33	GROUND WIRING	1	231546
34	SCREW M2,5X4 TX8 ZN	1	872487
	LABEL	1	800199
	LABEL ESD	1	800199/ESD

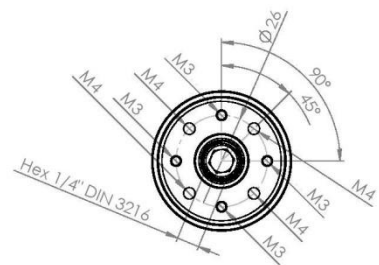
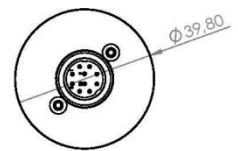
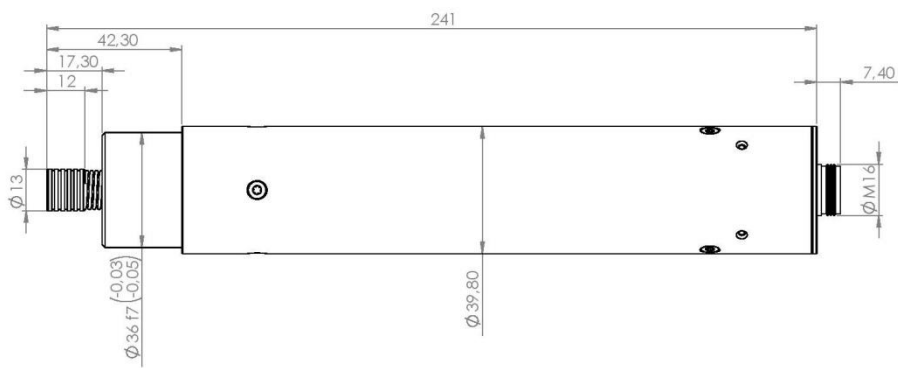
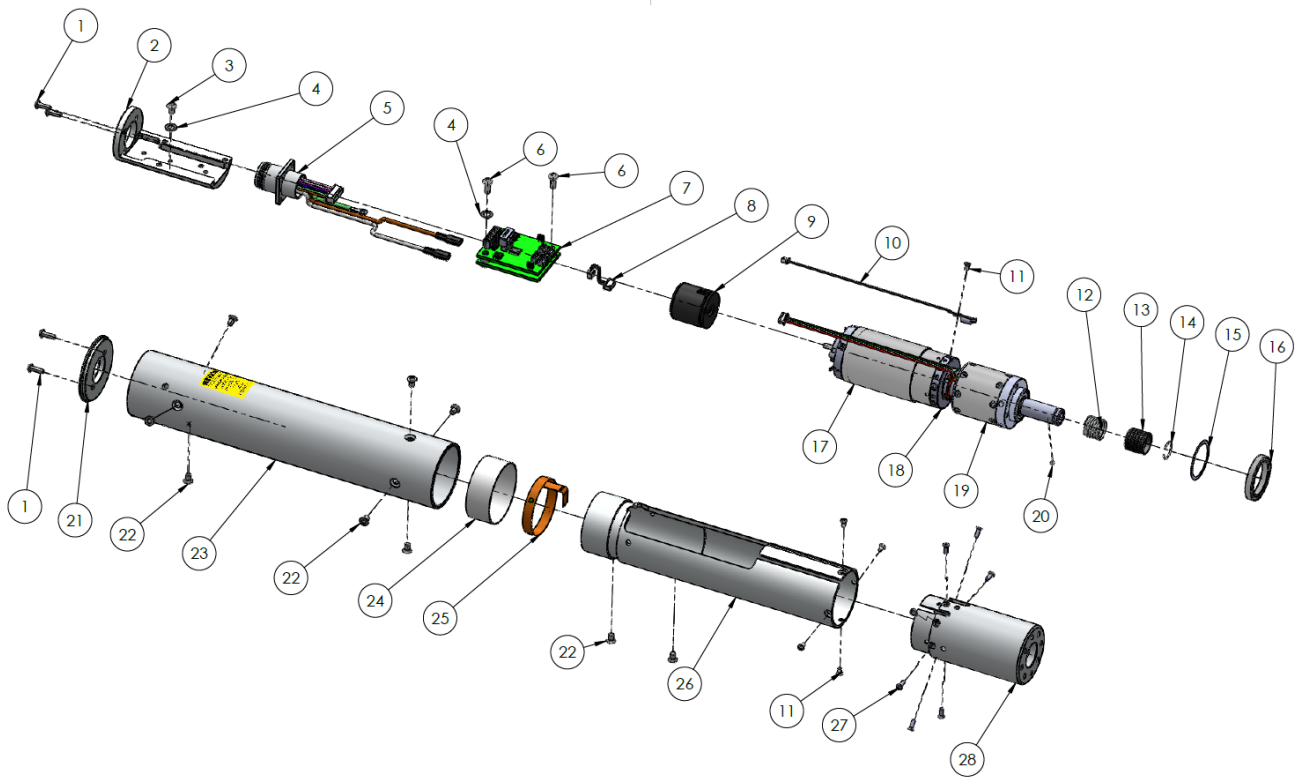
EXPLODED VIEW KDS-PLxxP:



SPARE PARTS KDS-PLxxP:

Pos.	Description	Qty	Code
1	HOUSING KDS-XX/P	1	231560
	HOUSING KDS-XX/P-ESD	1	231560/ESD
2	PICOBLADE	2	231557
3	MOTOR KDS-6x	1	231509/L
	MOTOR KDS-10x	1	231509/L
	MOTOR KDS-15x	1	231509/15L
4	HOOK	1	200060
5	CONNECTOR COVER KDS-XX/P	1	231562
	CONNECTOR COVER KDS-XX/P-ESD	1	231562/ESD
6	WHITE LED BOARD KDSXX/P	1	852538
7	ENCODER	1	231528
8	ENCODER WIRING (KDS-PLxxP)	1	231536/L
9	REVERSE SWITCH + LED KDS-PLxxP	1	231535/P
10	SENSOR	1	231534
11	HOUSING KDS-XX/P	1	231561
	HOUSING KDS-XX/P-ESD	1	231561/ESD
12	SCREW ZN M3X10 TX10	7	231539
13	SCREW M3X12 ZN TX10	2	231547
14	WASHER M3	2	800041
15	GROUND WIRING KDS-P	1	231546/P
	GROUND WIRING KDS-PU	1	231546/PU
16	SCREW M2,5X6 TX8 ZN TX8	1	872487
17	MALE CONNECTOR M16 10 PIN	1	201667/P
	MALE CONNECTOR M16 10 PIN	1	201667/PU
18	BOARD KDS-P	1	852528/P
19	MAGNET	1	231540/P
20	SPRING LEVER	1	221061
21	LEVER KDS-XX/P	1	231563
	LEVER KDS-XX/P-ESD	1	231563/ESD
22	TRANSDUCER	1	231522/E
23	REDUCTION GEARS KDS-6x	1	231510/6D
	REDUCTION GEARS KDS-10x	1	231510/10D
	REDUCTION GEARS KDS-15x	1	231510/15D
24	SCREW TSP M2X4 TX6 ZN	18	231531
25	RING	1	200007
26	RING	1	230020/1
27	SPRING	1	230021
28	MOTOR SEAT KDS-PLxxP	1	234505/TP
29	SCREW TSP M2X8 TX6 ZN	8	231554
30	BEARING	1	231533
31	WASHER	1	231532
32	BALL 2.5MM	1	219817
33	SCREW TSP M3X5 TX10 ZN	2	801003
	LABEL	1	800199
	LABEL ESD	1	800199/ESD

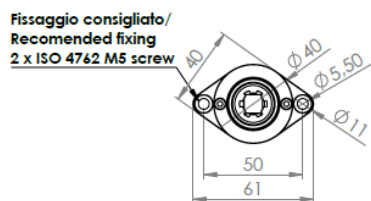
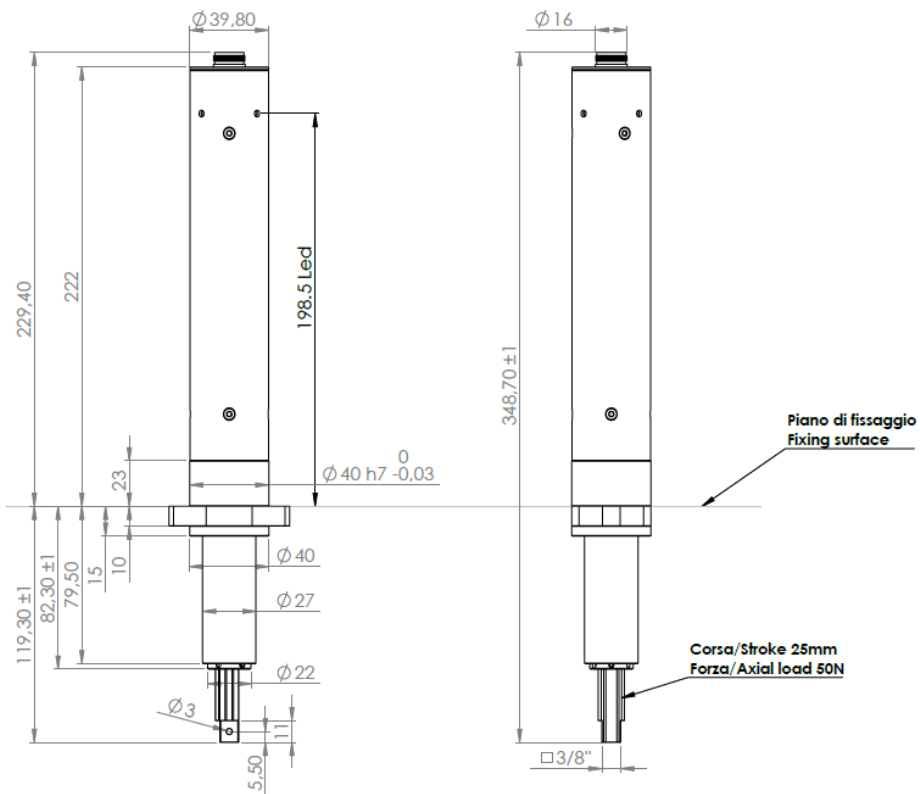
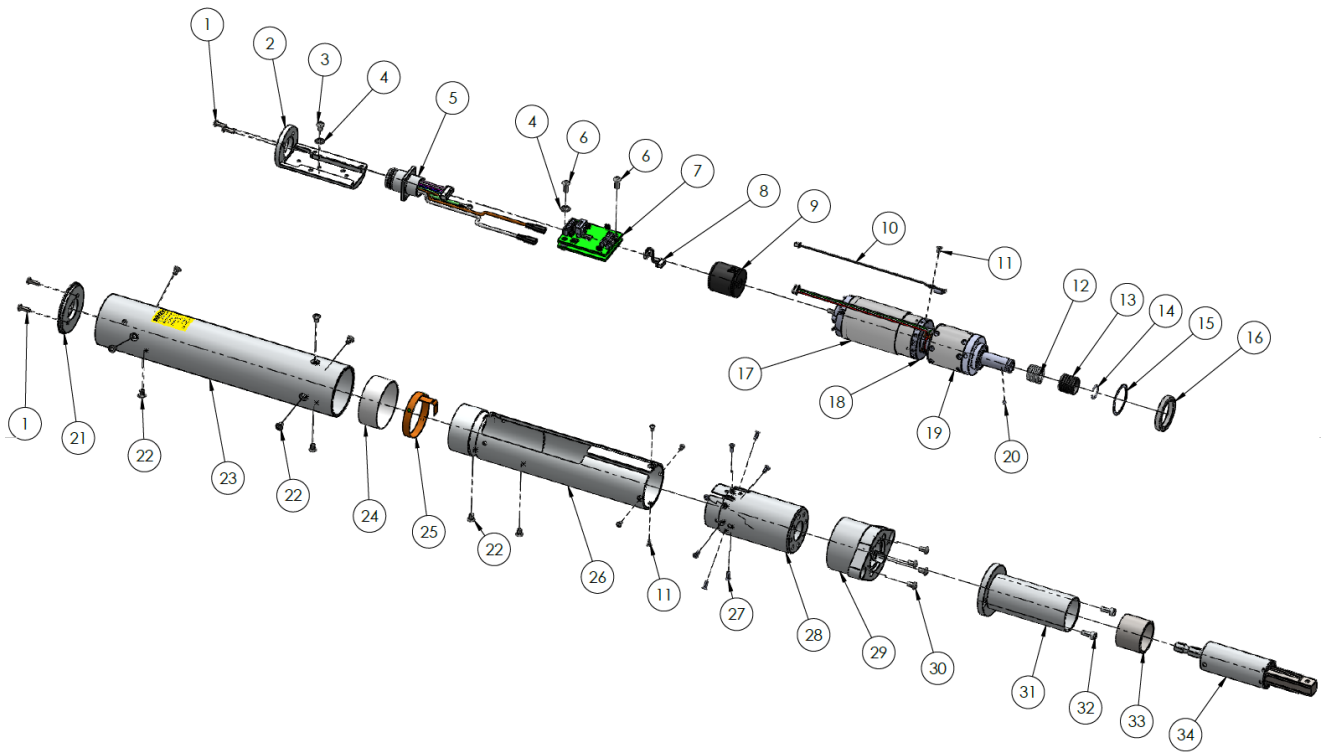
EXPLODED VIEW KDS-PLxxCA:



SPARE PARTS KDS-PLxxCA:

Pos.	Description	Qty	Code
1	SCREW M2,5X8 TX8 ZN	4	872478
2	BOARD SUPPORT	1	231523
3	SCREW M3X5	1	872444
4	WASHER	2	800041
5	MALE CONNECTOR M16 10 PIN	1	201667
6	SCREW M3X12 ZN TX10	2	231547
7	BOARD	1	852528
8	ENCODER WIRING	1	231536
9	ENCODER	1	231528
10	TEMPERATURE SENSOR	1	231534
11	M2X4MM TX6	5	231531
12	SPRING	1	230021
13	RING	1	230020/1
14	RING	1	200007
15	WASHER	1	231532
16	BEARING	1	231533
17	MOTOR KDS-6x	1	231509/L
	MOTOR KDS-10x		231509/L
	MOTOR KDS-15x		231509/15L
18	TRANSDUCER	1	231522/E
19	REDUCTION GEAR KDS-PL6X	1	231510/6D
	REDUCTION GEAR KDS-PL10X		231510/10D
	REDUCTION GEAR KDS-PL15X		231510/15D
20	BALL 2,5 MM	1	219817
21	COVER KDS-XXCA	1	231526
22	SCREW M3X5 TX10	9	801003
23	ALUMINIUM BODY KDS-XXCA	1	231525
24	LED RING KDS-XXCA	1	231537
25	PCB FLEX LED	1	852531
26	ALUMINIUM BODY (BOARD SUPPORT)	1	231524
27	SCREW M2X6MM TX6	8	231527
28	MOTOR SEAT	1	234505

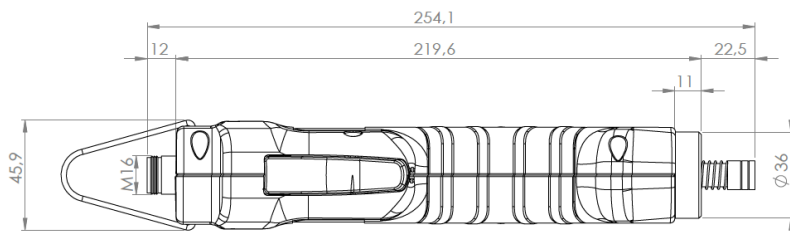
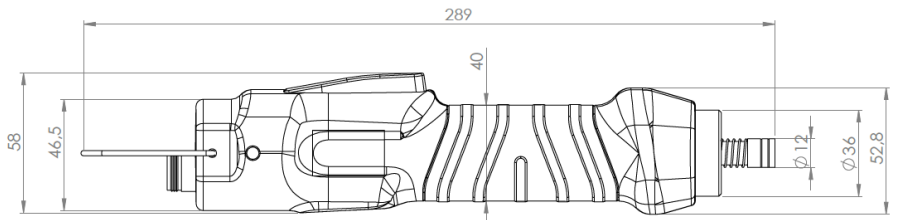
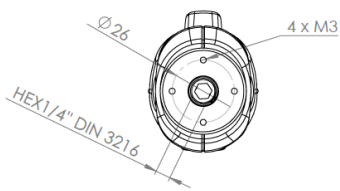
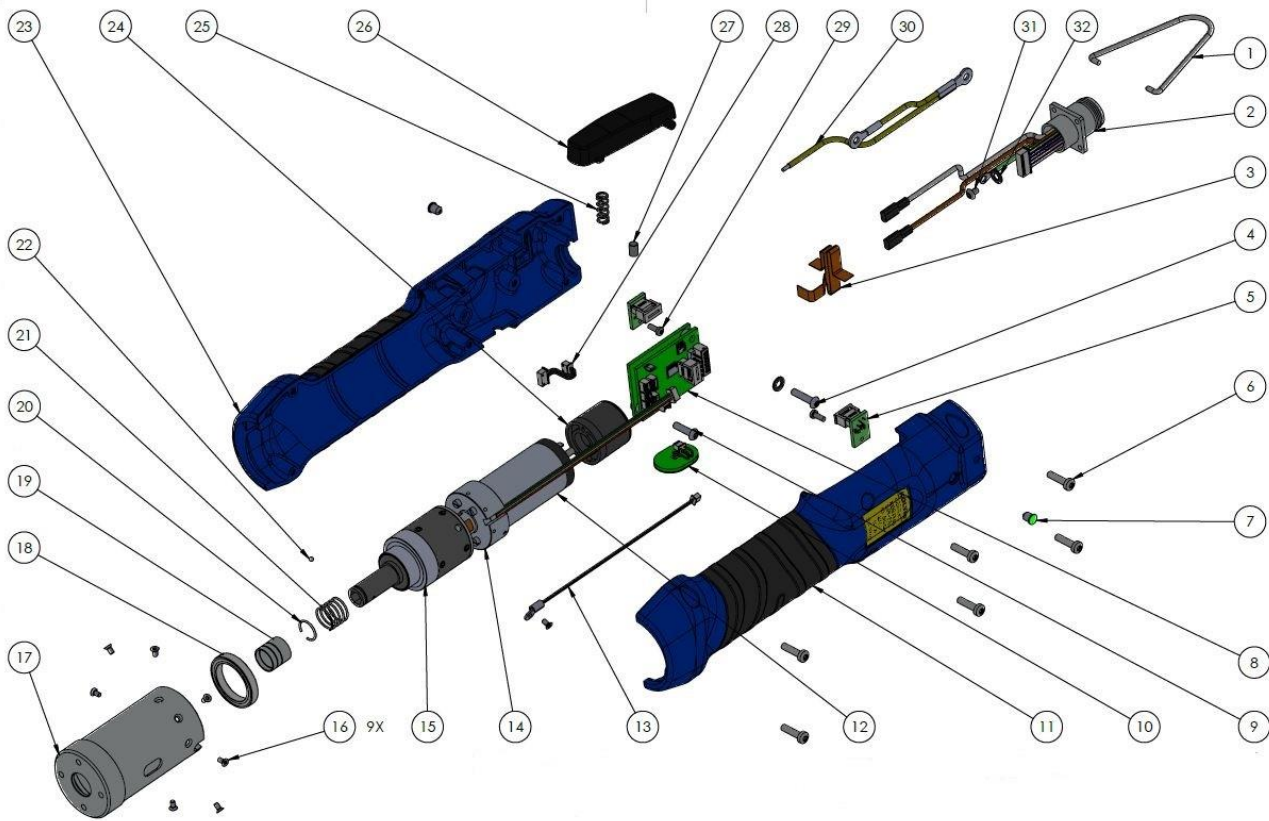
EXPLODED VIEW KDS-PLxxCA/FN:



SPARE PARTS KDS-PLxxCA/FN:

Pos.	Description	Qty	Code
1	SCREW M2,5X8 TX8 ZN	4	872478
2	BOARD SUPPORT	1	231523
3	SCREW M3X5	1	872444
4	WASHER	2	800041
5	MALE CONNECTOR M16 10 PIN	1	201667
6	SCREW M3X12 ZN TX10	2	231547
7	BOARD	1	852528
8	ENCODER WIRING	1	231536
9	ENCODER	1	231528
10	TEMPERATURE SENSOR	1	231534
11	M2X4MM TX6	5	231531
12	SPRING	1	230021
13	RING	1	230020/1
14	RING	1	200007
15	WASHER	1	231532
16	BEARING	1	231533
17	MOTOR KDS-6x	1	231509/L
	MOTOR KDS-10x		231509/L
	MOTOR KDS-15x		231509/15L
18	TRANSDUCER	1	231522/E
19	REDUCTION GEAR KDS-PL6X	1	231510/6D
	REDUCTION GEAR KDS-PL10X		231510/10D
	REDUCTION GEAR KDS-PL15X		231510/15D
20	BALL 2,5 MM	1	219817
21	COVER KDS-XXCA	1	231526
22	SCREW M3X5 TX10	9	801003
23	ALUMINIUM BODY KDS-XXCA	1	231525
24	LED RING KDS-XXCA	1	231537
25	PCB FLEX LED	1	852531
26	ALUMINIUM BODY (BOARD SUPPORT)	1	231524
27	SCREW M2X6MM TX6	8	231527
28	MOTOR SEAT	1	234505
29	SUPPORT PLUTO 10FN	1	234547
30	SCREW M4 x 5	1	231502
31	GUIDE	1	234548
32	SCREW M3 X 8	2	240005/ZN
33	SLIDING BEARING	1	800317-1
34	TELESCOPIC SPINDLE 1/4" - 3/8"	1	800320

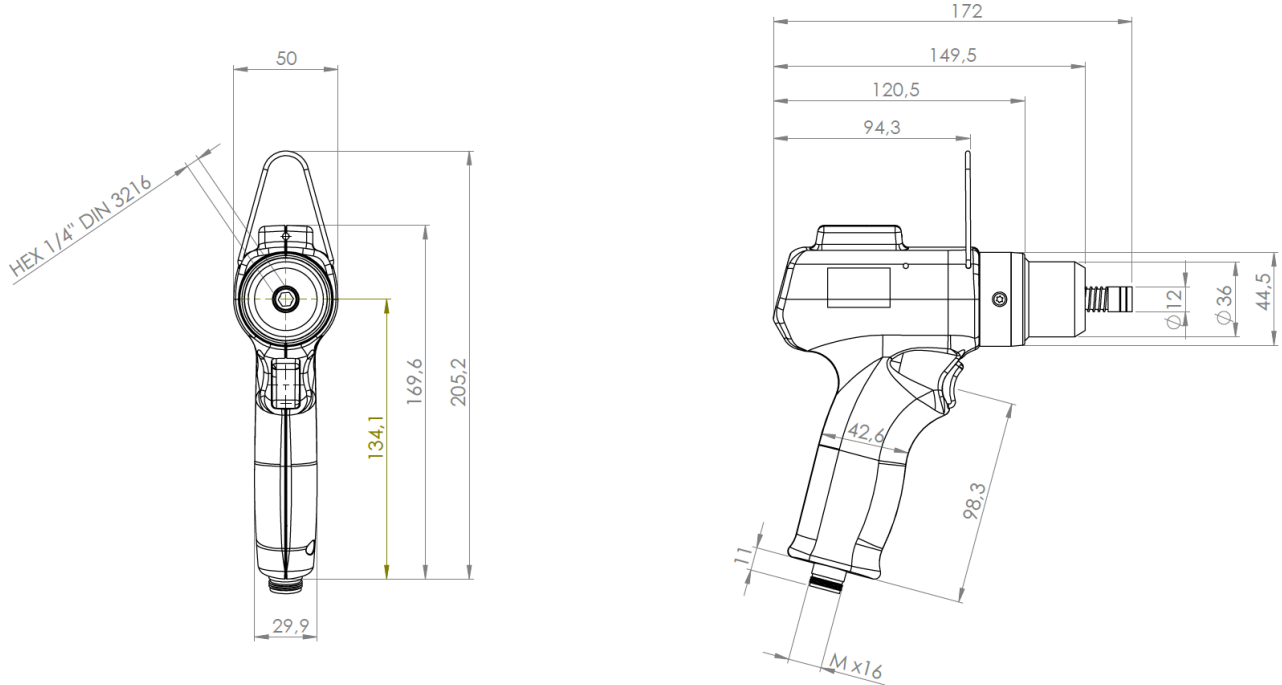
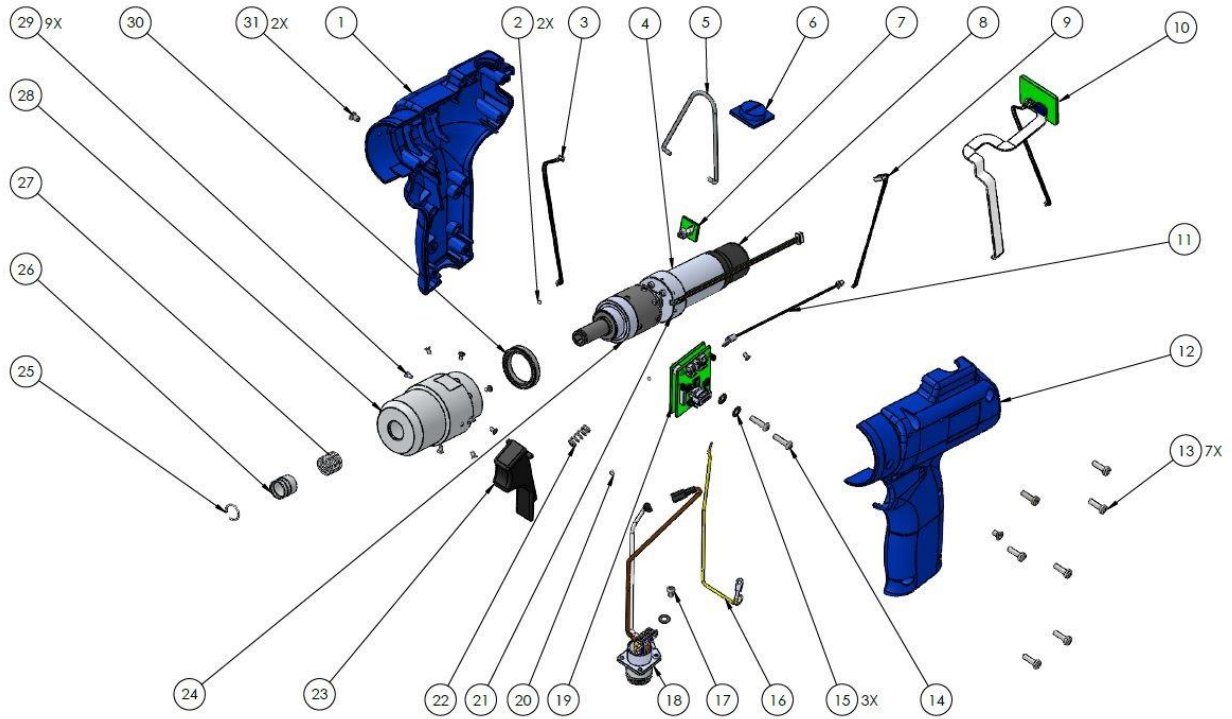
EXPLODED VIEW KDS-MT1.5:



SPARE PARTS KDS-MT1.5:

Pos.	Description	Qty	Code
1	HOOK	1	200060
2	MALE CONNECTOR M16 10 PIN	1	201667
3	PCB FLEX – LED BOARD	1	852537
4	SCREW ZN M3X12 TX10	1	231545
5	LED BOARD KDS/D	1	852535
6	SCREW ZN M3X12 TX10	6	231541
7	LED KDS-XX/D	2	231553
8	BOARD	1	852528
9	SCREW M3X12 ZN TX10	1	231547
10	REVERSE BUTTON KDS	1	231535
11	HOUSING KDS-XX/D	1	231551
	HOUSING ESD KDS-XX/D	1	231551/ESD
12	MOTOR KDS-MT1.5	1	231509/2L
13	SENSOR	1	231534
14	TRANSDUCER	1	210050/T
15	REDUCTION GEARS KDS-MT1.5	1	250040/TMT
16	SCREW TSP M2X4 TX6 ZN	3	231531
17	MOTOR SEAT	1	234504/TD
18	BEARING	1	231533
19	RING	1	230020/1
20	RING	1	200007
21	SPRING	1	200009
22	BALL 2 MM	1	200011
23	HOUSING KDS-XX/D	1	231550
	HOUSING ESD KDS-XX/D	1	231550/ESD
24	ENCODER	1	231528
25	LEVER SPRING	1	221061
26	LEVER	1	231552
	LEVER ESD	1	231552/ESD
27	MAGNET KDS-XX/D	1	231540
28	ENCODER WIRING	1	231536
29	SCREW 2,2X6 TX6	1	231538
30	ENCODER WIRING	1	231546
31	SCREW M2,5X4 TX8	1	872487
32	WASHER	2	800041
	LABEL	1	800199
	LABEL ESD	1	800199/ESD

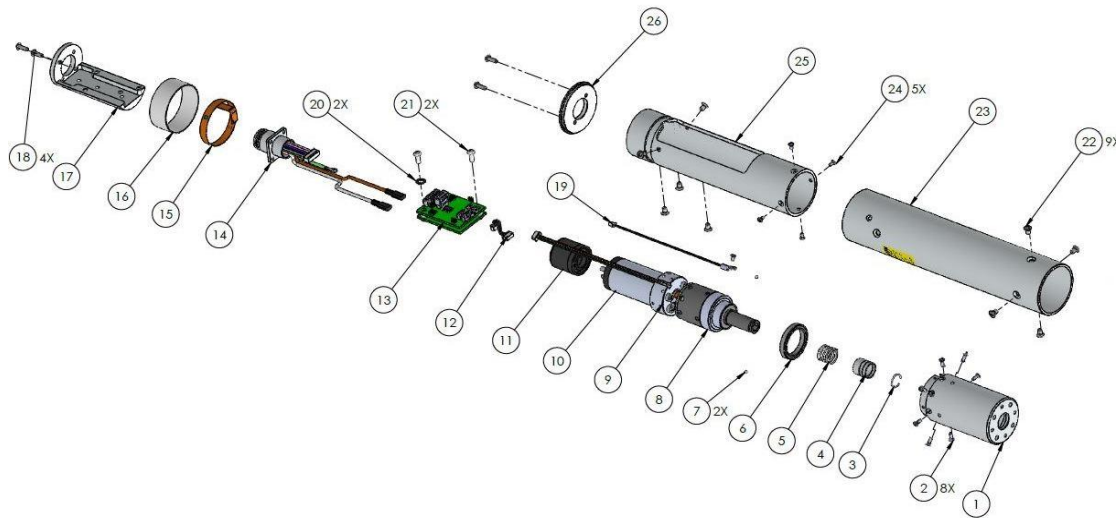
EXPLODED VIEW KDS-MT1.5P:



SPARE PARTS KDS-MT1.5P:

Pos.	Description	Qty	Code
1	HOUSING KDS-XX/P	1	231560
	HOUSING KDS-XX/P-ESD	1	231560/ESD
2	BALL 2 MM	2	200011
3	PICOBLADE	2	231557
4	MOTOR KDS-MT1.5	1	231509/2L
5	HOOK	1	200060
6	CONNECTOR COVER KDS-XX/P	1	231562
	CONNECTOR COVER KDS-XX/P-ESD	1	231562/ESD
7	WHITE LED BOARD KDSXX/P	1	852538
8	ENCODER	1	231528
9	ENCODER WIRING (KDS-PLxxP)	1	231536/L
10	REVERSE SWITCH + LED KDS-PLxxP	1	231535/P
11	SENSOR	1	231534
12	HOUSING KDS-XX/P	1	231561
	HOUSING KDS-XX/P-ESD	1	231561/ESD
13	SCREW ZN M3X10 TX10	7	231539
14	SCREW M3X12 ZN TX10	2	231547
15	WASHER M3	3	800041
16	GROUND WIRING KDS-P	1	231546/P
	GROUND WIRING KDS-PU	1	231546/PU
17	SCREW M2,5X6 TX8 ZN TX8	1	872487
18	MALE CONNECTOR M16 10 PIN	1	201667/P
	MALE CONNECTOR M16 10 PIN	1	201667/PU
19	BOARD KDS-P	1	852528/P
20	MAGNET	1	231540/P
21	TRANSDUCER	1	210050/T
22	SPRING LEVER	1	221061
23	LEVER KDS-XX/P	1	231563
	LEVER KDS-XX/P-ESD	1	231563/ESD
24	REDUCTION GEARS KDS-MT1.5	1	250040/TMT
25	RING	1	200007
26	RING	1	230020/1
27	SPRING	1	230021
28	MOTOR SEAT KDS-MT1.5	1	234505/TPM
29	SCREW TSP M2X8 TX6 ZN	8	231554
30	BEARING	1	231533
31	SCREW M3X5 TX10 ZN	2	801003
	LABEL	1	800199
	LABEL ESD	1	800199/ESD

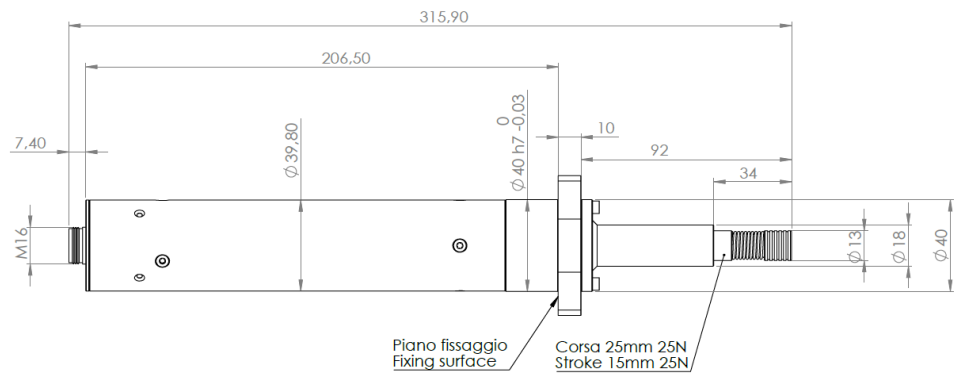
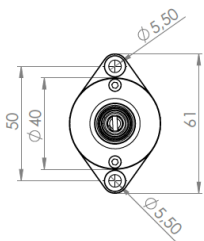
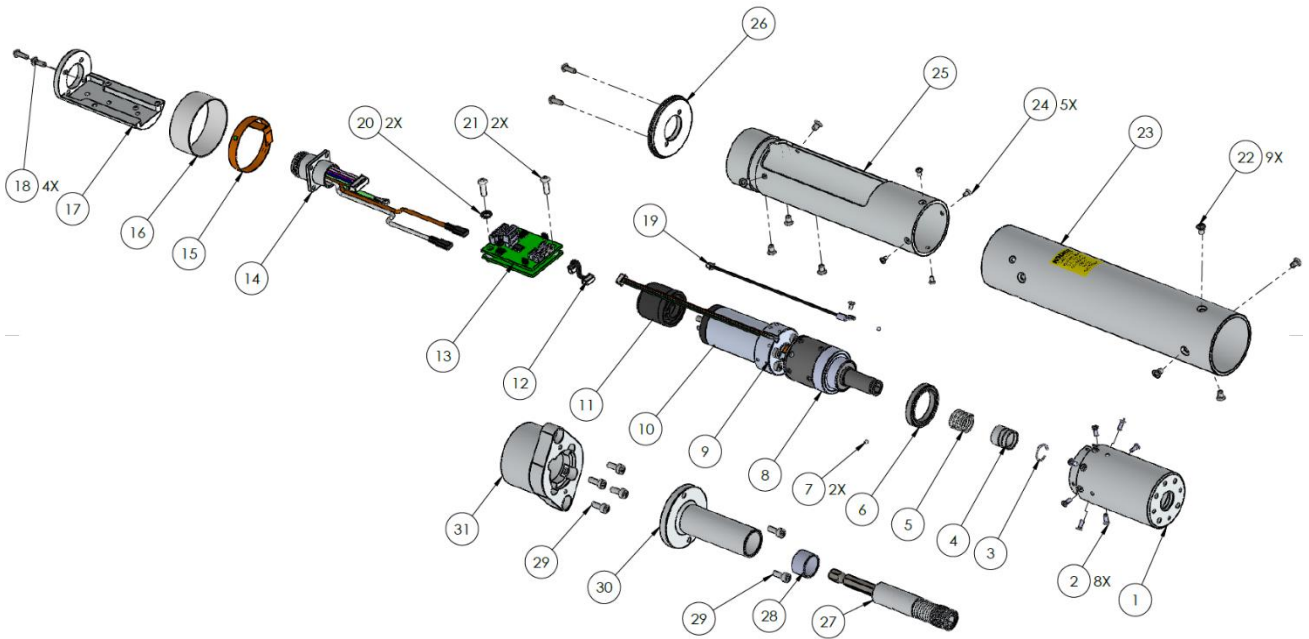
EXPLODED VIEW KDS-MT1.5CA:



SPARE PARTS KDS-MT1.5CA:

Pos.	Description	Qty	Code
1	MOTOR SEAT	1	234505/TCAMT
2	SCREW TSP M2X6 TX6 ZN	8	231527
3	RING	1	200007
4	RING	1	230020/1
5	SPRING	1	230021
6	BEARING	1	231533
7	BALL 2 MM	1	200011
8	REDUCTION GEARS KDS-MT1.5	1	250040/TMT
9	TRANSDUCER	1	210050/T
10	MOTOR KDS-MT1.5	1	231509/2L
11	ENCODER	1	231528
12	ENCODER WIRING	1	231536
13	BOARD	1	852528
14	MALE CONNECTOR M16 10 PIN	1	201667
15	PCB FLEX LED	1	852531
16	LED RING KDS-XXCA	1	231537
17	BOARD SUPPORT	1	231523
18	SCREW M2,5X8 TX8 ZN	4	872478
19	SENSOR	1	231534
20	WASHER	2	800041
21	SCREW M3X10 ZN TX10	2	231530
22	SCREW M3X5 TX10 ZN	9	801003
23	ALUMINIUM BODY	1	231525/MT
24	SCREW M3X5 TX10 ZN	5	801003
25	ALUMINIUM BODY (BOARD SUPPORT)	1	231524/MT
26	CAP	1	231526
	LABEL	1	800199

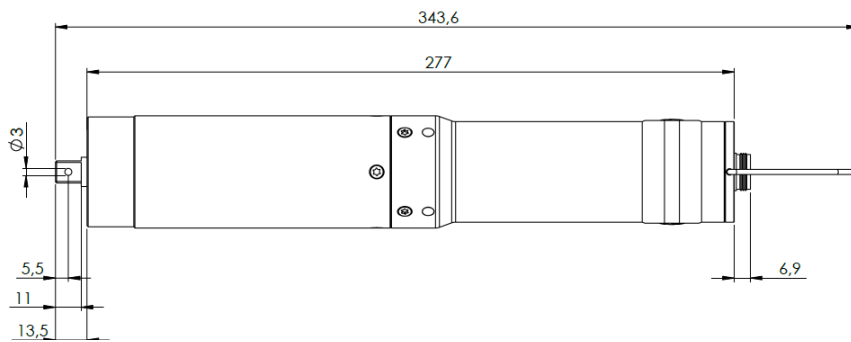
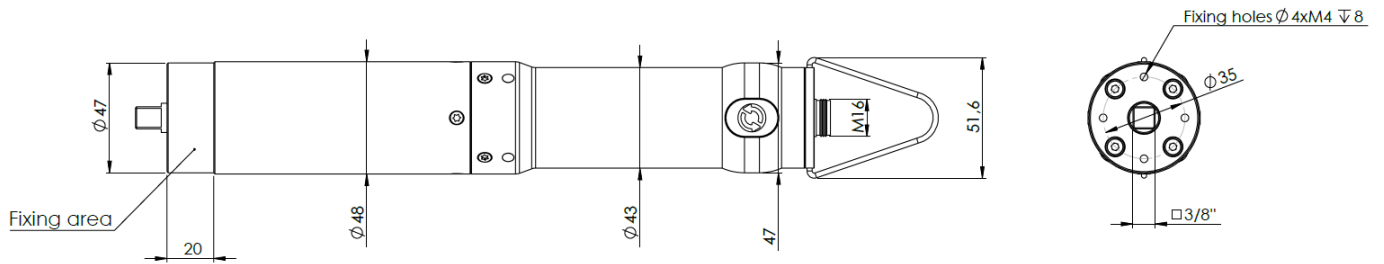
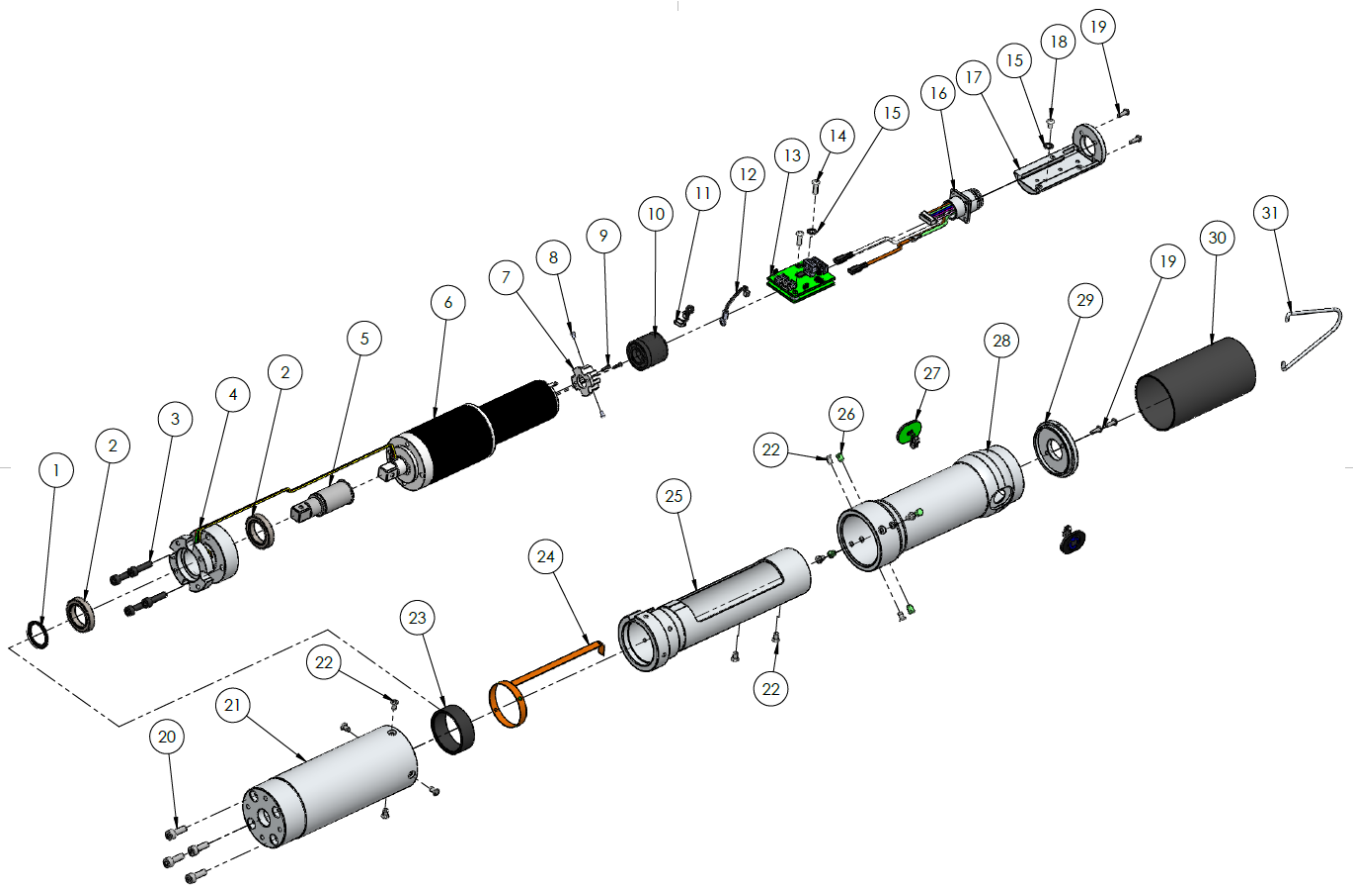
EXPLODED VIEW KDS-MT1.5CA/FN:



SPARE PARTS KDS-MT1.5CA/FN:

Pos.	Description	Qty	Code
1	MOTOR SEAT	1	234505/TCAMT
2	SCREW TSP M2X6 TX6 ZN	8	231527
3	RING	1	200007
4	RING	1	230020/1
5	SPRING	1	230021
6	BEARING	1	231533
7	BALL 2 MM	1	200011
8	REDUCTION GEARS KDS-MT1.5	1	250040/TMT
9	TRANSDUCER	1	210050/T
10	MOTOR KDS-MT1.5	1	231509/2L
11	ENCODER	1	231528
12	ENCODER WIRING	1	231536
13	BOARD	1	852528
14	MALE CONNECTOR M16 10 PIN	1	201667
15	PCB FLEX LED	1	852531
16	LED RING KDS-XXCA	1	231537
17	BOARD SUPPORT	1	231523
18	SCREW M2,5X8 TX8 ZN	4	872478
19	SENSOR	1	231534
20	WASHER	2	800041
21	SCREW M3X10 ZN TX10	2	231530
22	SCREW M3X5 TX10 ZN	9	801003
23	ALUMINIUM BODY	1	231525/MT
24	SCREW M3X5 TX10 ZN	5	801003
25	ALUMINIUM BODY	1	231524/MT
26	CAP	1	231526
27	COMPENSATOR 1/4"-1/4"	1	800322
28	PERMAGLIDE	1	800334
29	SCREW M3X6	6	231504/ZN
30	TELESCOPIC DRIVE BUSH	1	250010
31	SUPPORT PLATE	1	234547

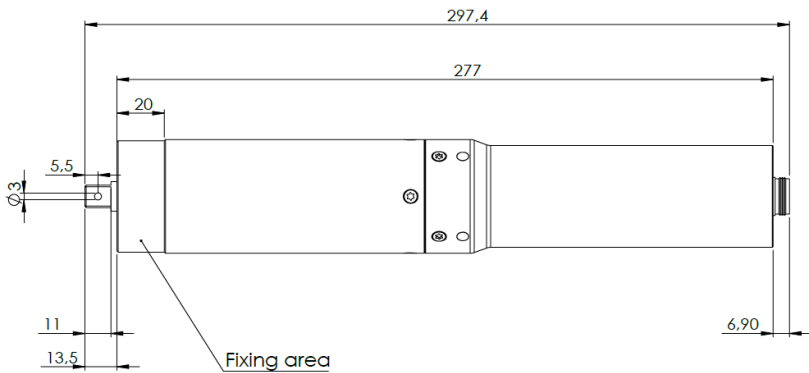
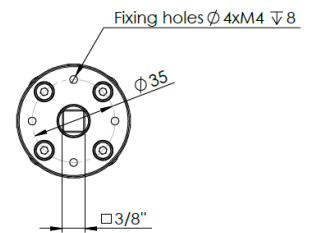
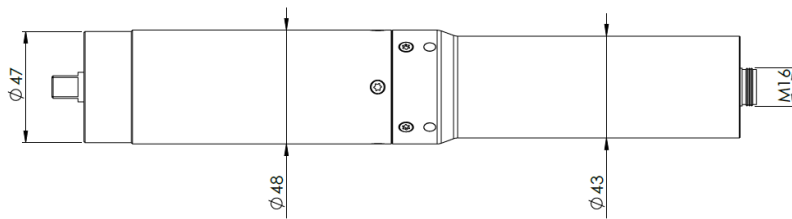
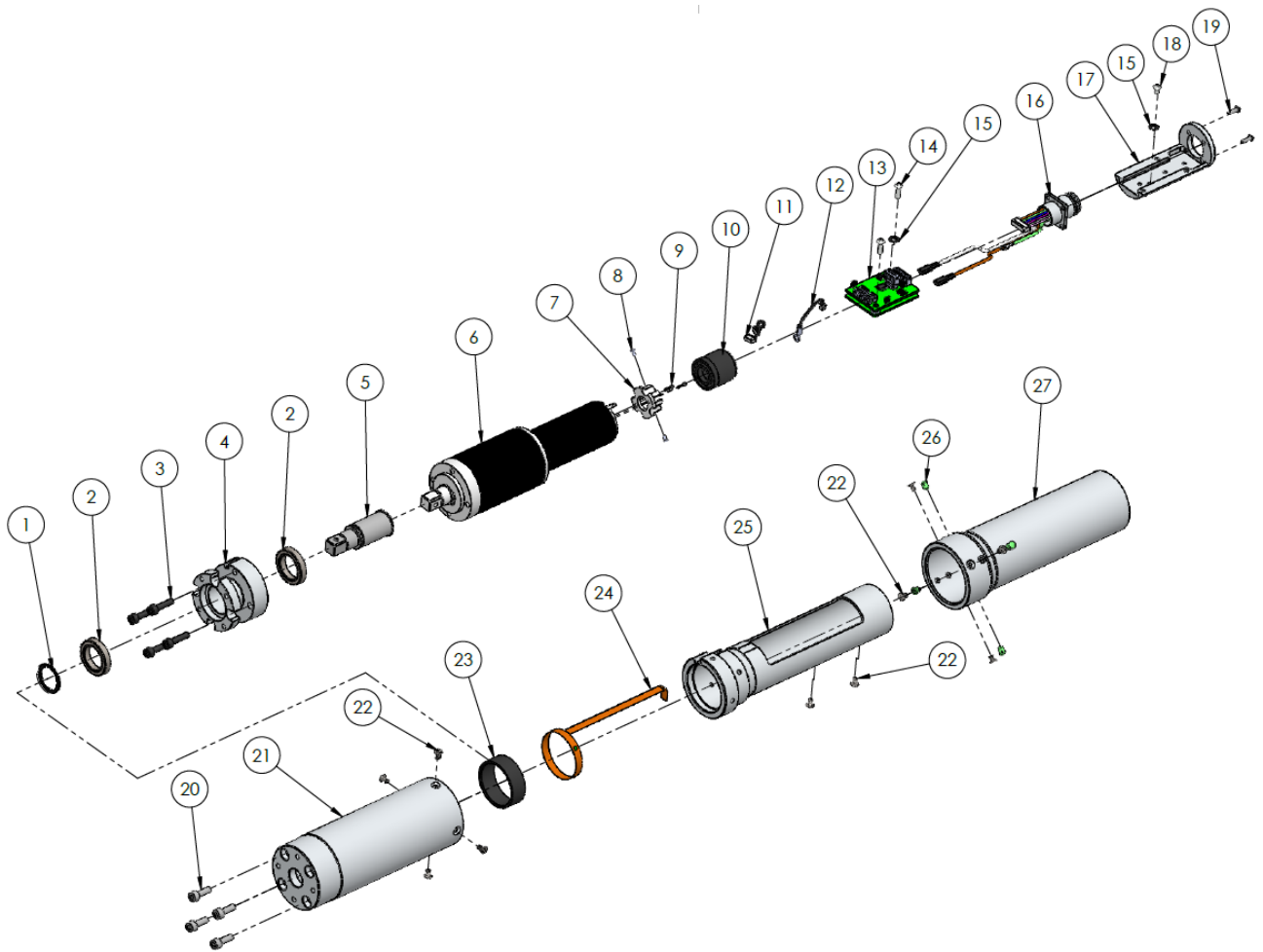
EXPLODED VIEW KDS-PL20:



SPARE PARTS KDS-PL20:

Pos.	Description	Qty	Code
1	RING 17mm	1	234920
2	TRANSDUCER BEARING KDS PL20	2	234922
3	SCREW 8.8 M4X16	4	240020
4	TRANSDUCER KDS PL20	1	234903
5	JOINT SHAFT KDS PL20	1	234904
6	MOTOR+REDUCTION GEARS KDS PL20	1	231612/20M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1.6X6	3	872473
10	ENCODER	1	231528
11	ENCODER WIRING	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	4	872478
20	SCREW M4X12	4	231507
21	BODY (REDUCTION GEARS)	1	234900
22	SCREW M3X6 TX10	10	801002
23	BUSH KDS PL20	1	234924
24	PCB FLEX LED KDS PL20	1	852531/L
25	BOARD SUPPORT BODY	1	234902
26	LED GUIDE KDS-XX/D	4	231553
27	REVERSE/START BUTTON	2	231535
28	BODY (BOARD)	1	234901
29	CAP KDS PL20-35-50	1	234911
30	HOUSING RUBBER 87 mm	1	234923
31	HOOK	1	200060

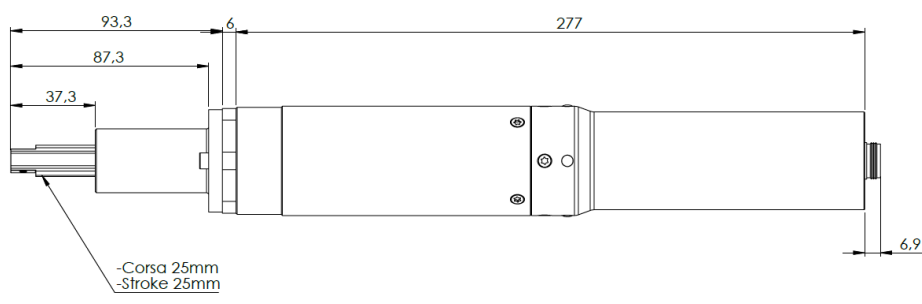
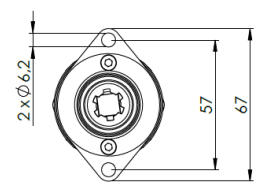
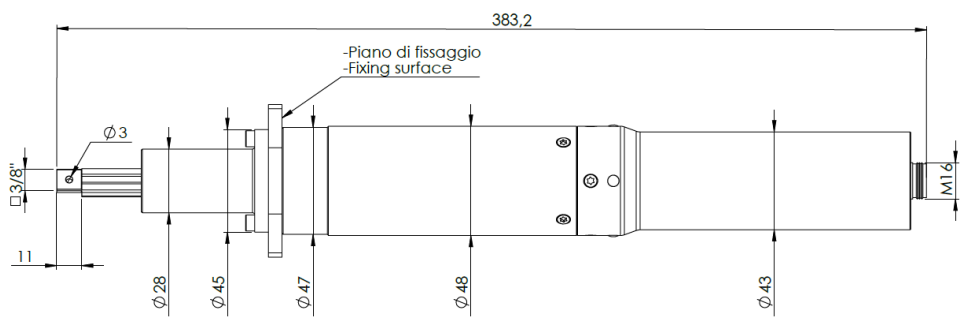
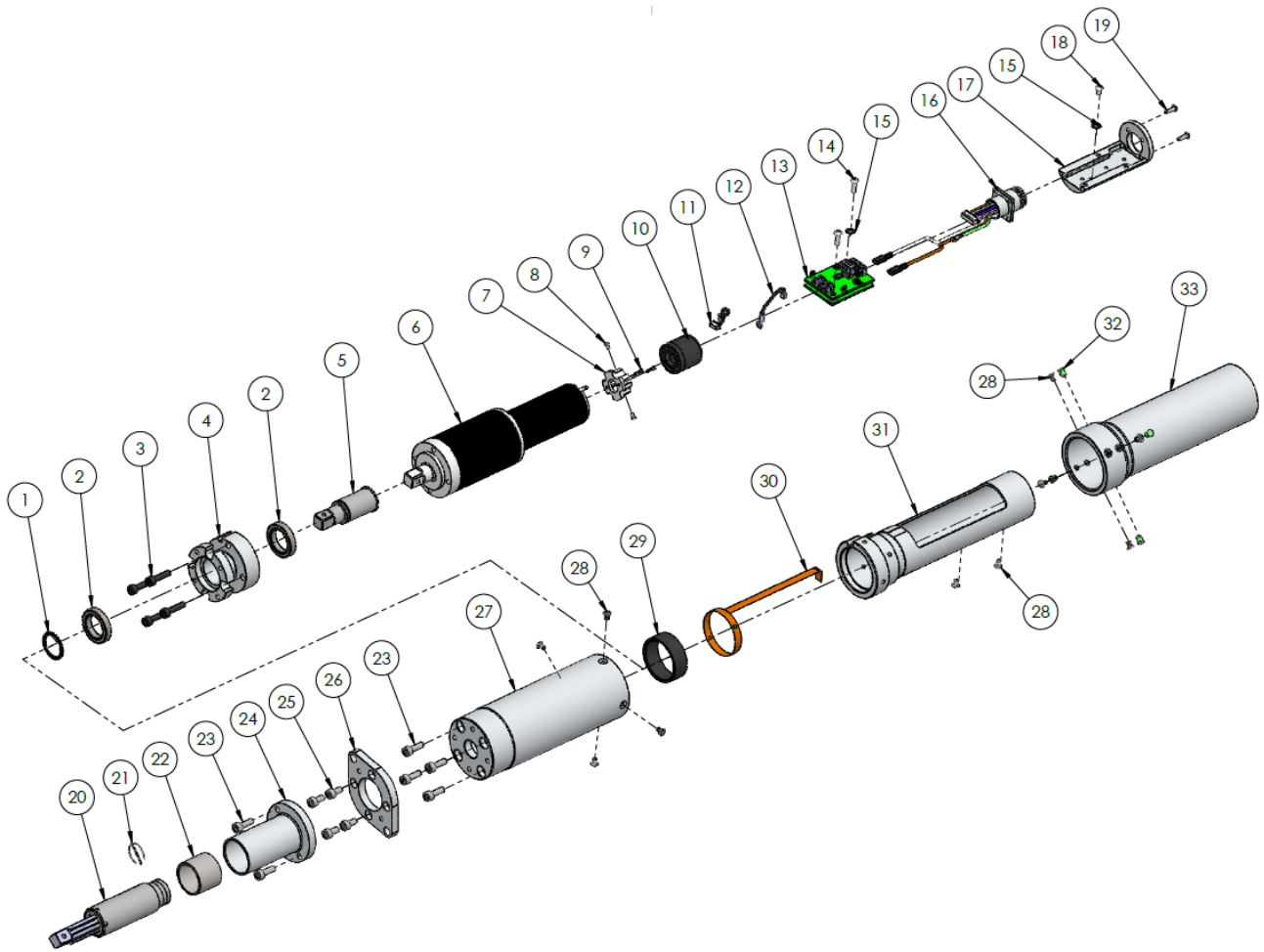
EXPLODED VIEW KDS-PL20CA:



SPARE PARTS KDS-PL20CA:

Pos.	Description	Qty	Code
1	RING 17mm	1	234920
2	TRANSDUCER BEARING KDS PL20	2	234922
3	SCREW 8.8 M4X16	4	240020
4	TRANSDUCER KDS PL20	1	234903
5	JOINT SHAFT KDS PL20	1	234904
6	MOTOR+REDUCTION GEARS KDS PL20	1	231612/20M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1.6X6	3	872473
10	ENCODER	1	231528
11	ENCODER WIRING	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	SCREW M4X12	4	231507
21	BODY (REDUCTION GEARS)	1	234900
22	SCREW M3X6 TX10	10	801002
23	BUSH KDS PL20	1	234924
24	PCB FLEX LED KDS PL20	1	852531/L
25	BOARD SUPPORT BODY	1	234902
26	LED GUIDE KDS-XX/D	4	231553
27	BODY	1	234910

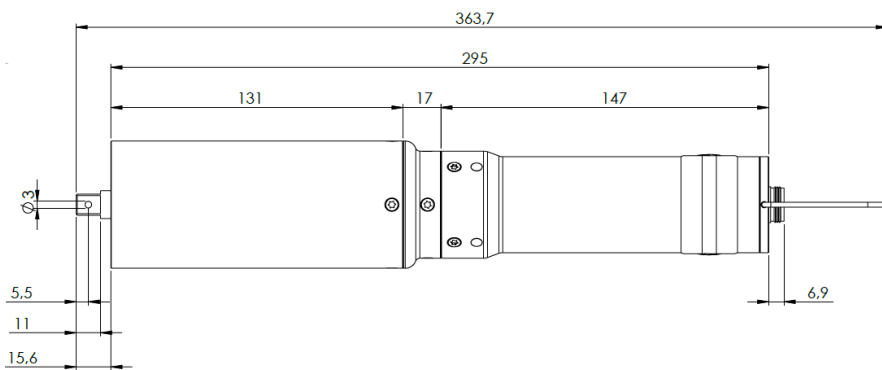
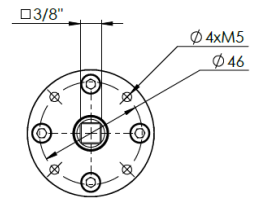
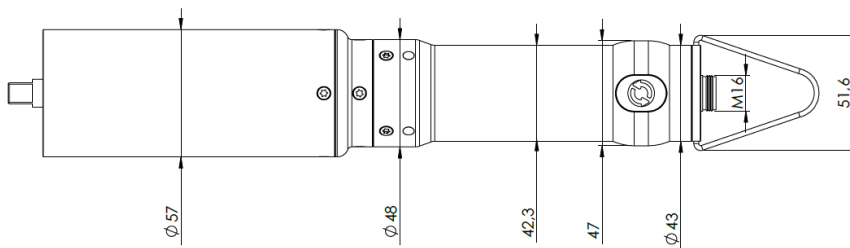
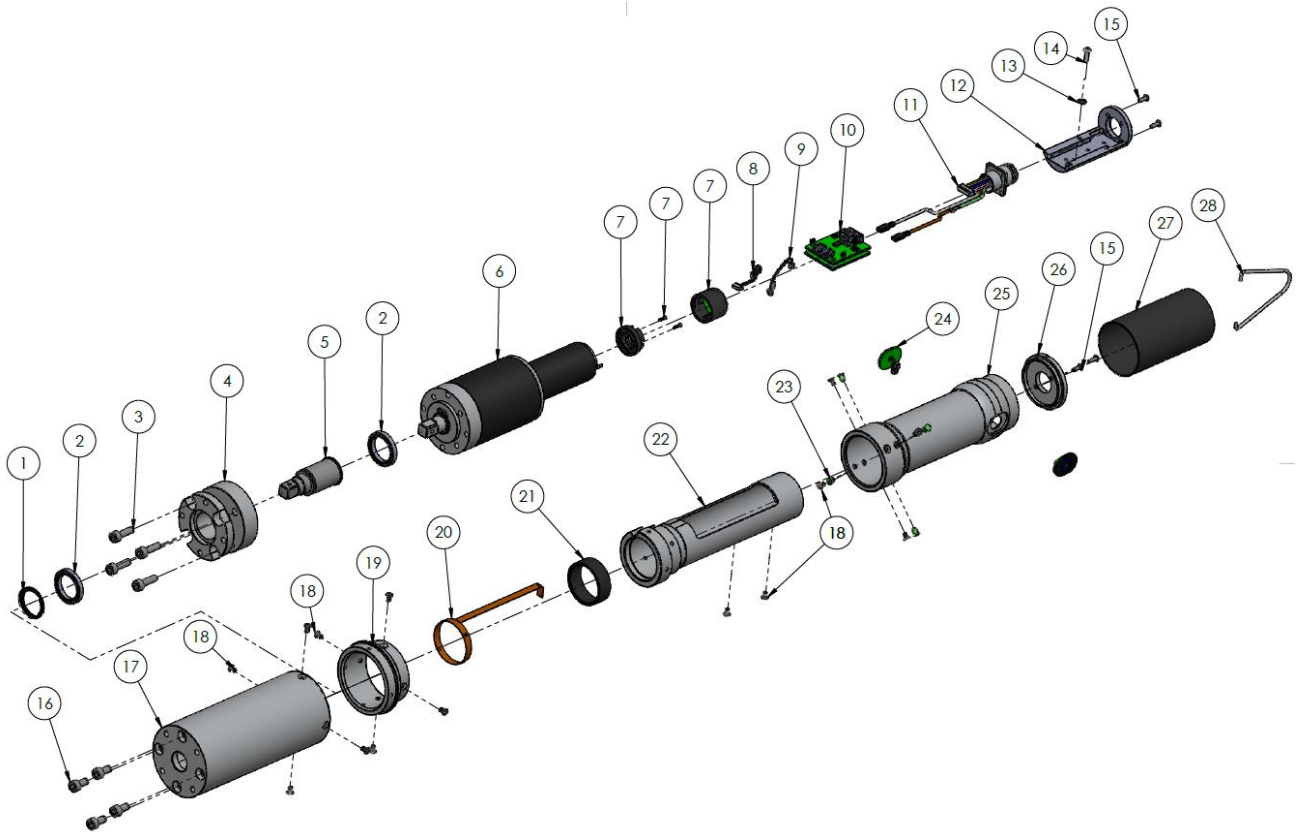
EXPLODED VIEW KDS-PL20CA/FN:



SPARE PARTS KDS-PL20CA/FN:

Pos.	Description	Qty	Code
1	RING 17mm	1	234920
2	TRANSDUCER BEARING KDS PL20	2	234922
3	SCREW 8.8 M4X16	4	240020
4	TRANSDUCER KDS PL20	1	234903
5	JOINT SHAFT KDS PL20	1	234904
6	MOTOR+REDUCTION GEARS KDS PL20	1	231612/20M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1.6X6	3	872473
10	ENCODER	1	231528
11	ENCODER WIRING	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	COMPENSATOR 3/8"	1	800321
21	1301-C SPINE 3/8"	1	FE-1301C
22	PERMAGLIDE	1	800317/1
23	SCREW M4X12	6	231507
24	TELESCOPIC GUIDE	1	800302/20
25	SCREW M4X8	4	231505
26	CLAMP	1	234510/20/3
27	BODY (REDUCTION GEARS)	1	234900
28	SCREW M3X6 TX	10	801002
29	BUSH KDS PL20	1	234924
30	PCB FLEX LED KDS PL20	1	852531/L
31	BOARD SUPPORT BODY	1	234902
32	LED GUIDE KDS-XX/D	4	231553
33	BODY (BOARD)	1	234910

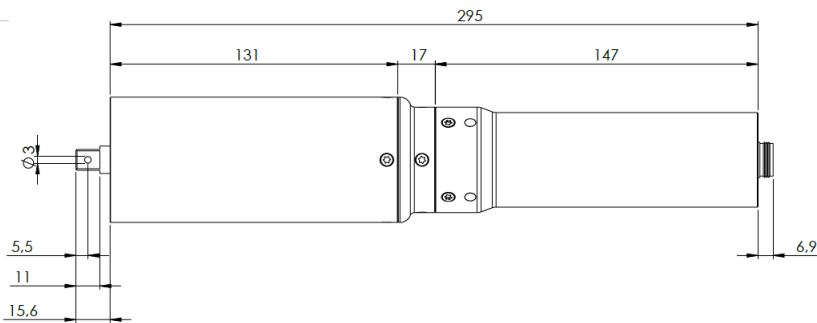
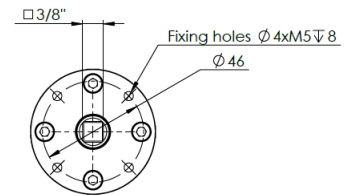
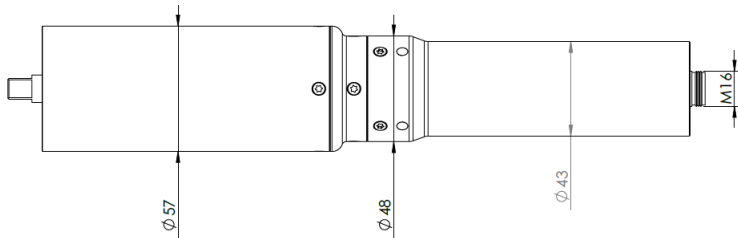
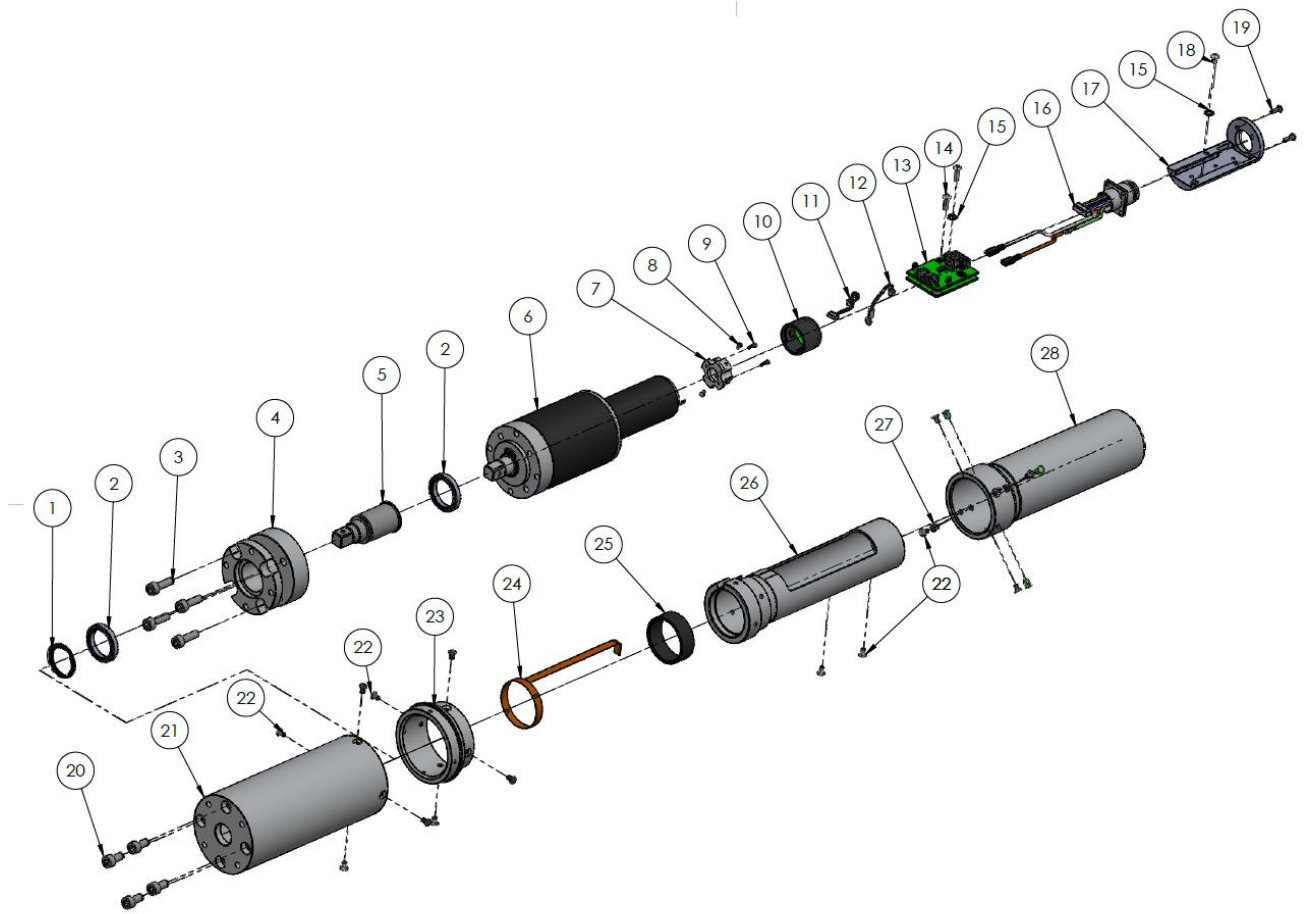
EXPLODED VIEW KDS-PL35/SR:



SPARE PARTS KDS-PL35:

Pos.	Description	Qty	Code
1	RING 17mm	1	234921
2	TRANSDUCER BEARING KDS	2	231533
3	SCREW 8.8 M4X16	4	234588
4	TRANSDUCER KDS PL35	1	234907
5	JOINT SHAFT KDS PL35	1	234908
6	MOTOR+REDUCTION GEARS KDS PL35	1	231612/30M
7	ENCODER KDS	1	231528
8	ENCODER WIRING	1	231536
9	SENSOR	1	231534
10	BOARD	1	852528
11	MALE CONNECTOR M16 10 PIN	1	201667
12	BOARD SUPPORT	1	231523
13	WASHER	1	800041
14	SCREW M3X10	1	231530
15	SCREW M2,5X8 TX8	4	872478
16	SCREW M5X10	4	231503
17	BODY (REDUCTION GEARS)	1	234905
18	SCREW M3X6 TX10	14	801002
19	JUNCTION	1	234906
20	PCB FLEX LED	1	852531/L
21	BUSH	1	234924
22	BOARD SUPPORT BODY	1	234902
23	LEDGUIDE	4	231553
24	REVERSE/START BUTTON	2	231535
25	BODY (BOARD)	1	234901
26	CAP KDS PL20-35-50	1	234911
27	HOUSING RUBBER KDS PL20-35-50	1	234923
28	HOOK	1	200060

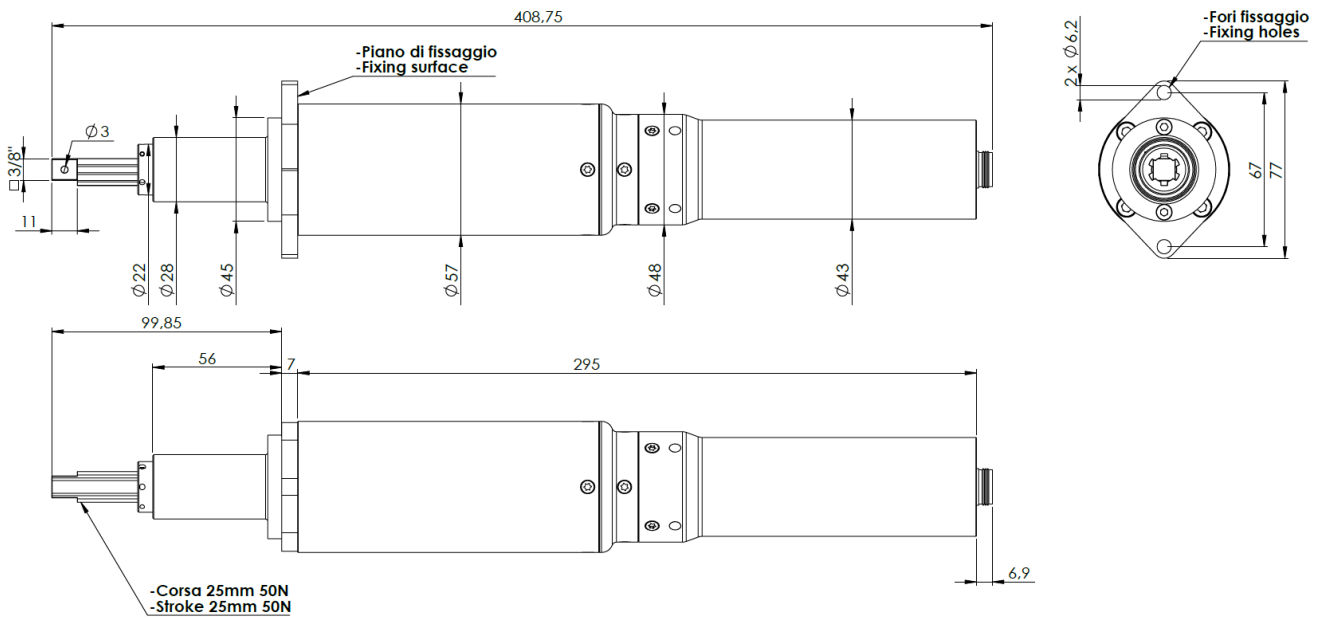
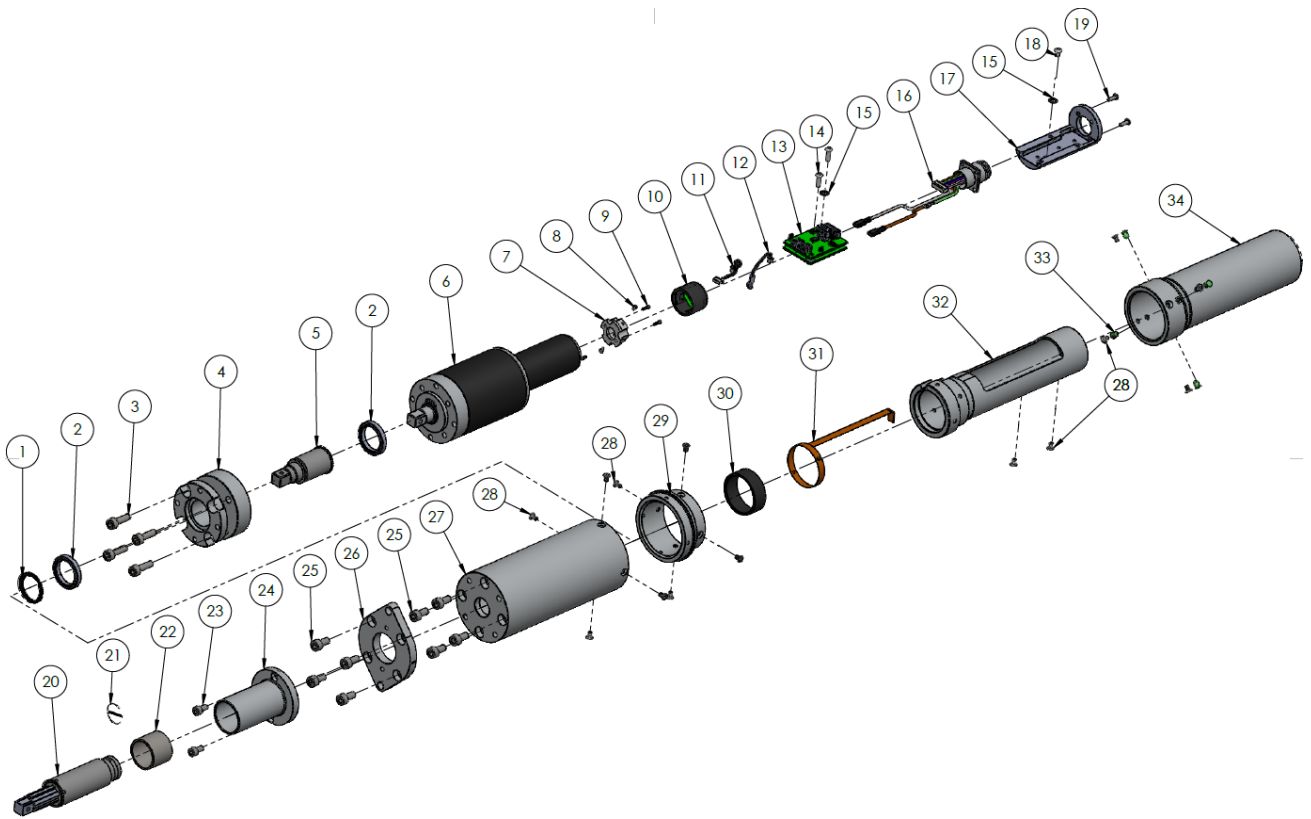
EXPLODED VIEW KDS-PL35CA:



SPARE PARTS KDS-PL35CA:

Pos.	Description	Qty	Code
1	RING 17mm	1	234921
2	TRANSDUCER BEARING KDS	2	231533
3	SCREW 8.8 M4X16	4	234588
4	TRANSDUCER KDS PL35	1	234907
5	JOINT SHAFT KDS PL35	1	234908
6	MOTOR+REDUCTION GEARS KDS PL35	1	231612/30M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6	2	872473
10	ENCODER	1	231528
11	ENCODER WIRING	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	1	800041
16	MALE CONNECTOR M16 10 PIN	1	201667
17	SUPPORT BOARD	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	SCREW M5X10	4	231503
21	BODY (REDUCTION GEARS)	1	234905
22	SCREW M3X6 TX10	14	801002
23	JUNCTION	1	234906
24	PCB FLEX LED	1	852531/L
25	BUSH	1	234924
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	BODY	1	234910

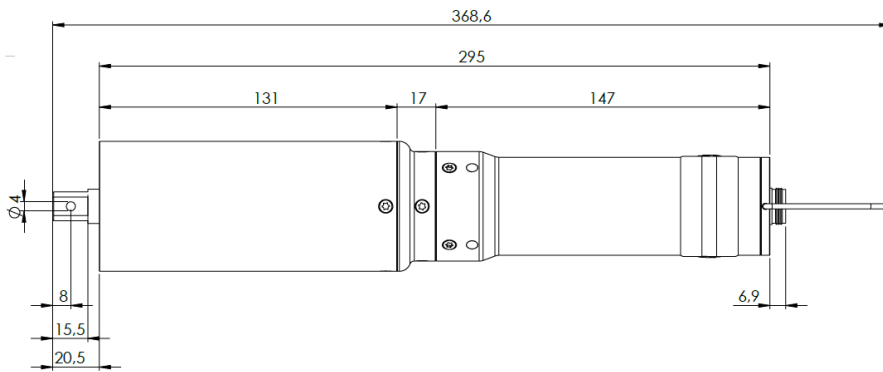
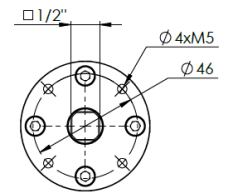
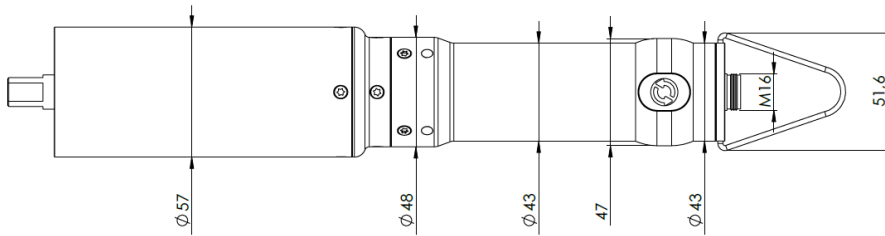
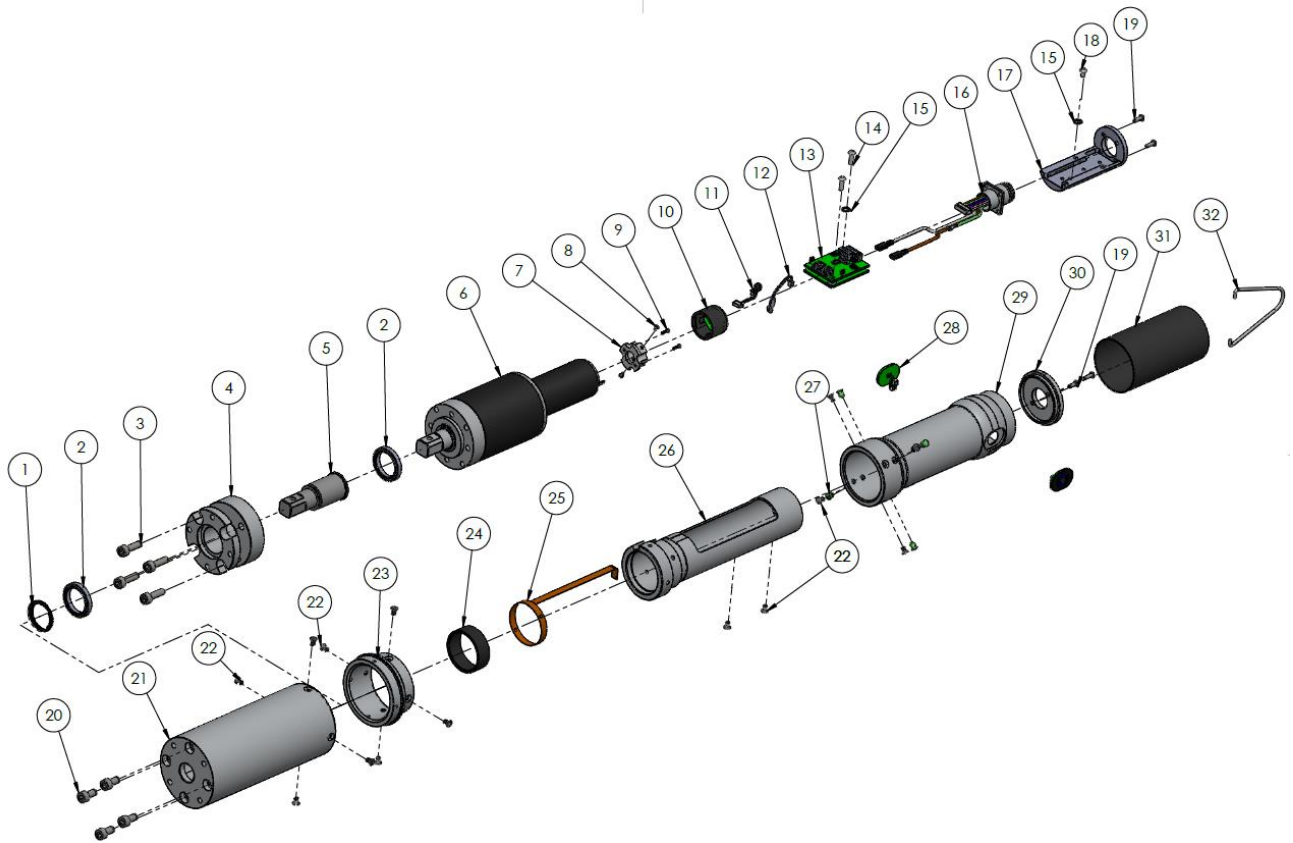
EXPLODED VIEW KDS-PL35CA/FN:



SPARE PARTS KDS-PL35CA/FN:

Pos.	Description	Qty	Code
1	RING 20mm	1	234921
2	TRANSDUCER BEARING KDS	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35	1	234907
5	JOINT SHAFT KDS PL35	1	234908
6	MOTOR+REDUCTION GEARS KDS PL35	1	231612/30M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6	2	872473
10	ENCODER	1	231528
11	ENCODER WIRING	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	1	800041
16	MALE CONNECTOR M16 10 PIN	1	201667
17	SUPPORT BOARD	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	COMPENSATOR 3/8"	1	800321
21	1301-C SPINE 3/8"	1	FE-1301C
22	PERMAGLIDE	1	800317/1
23	SCREW M4X8	2	231505
24	TELESCOPI BUSH GUIDE	1	800302/20
25	SCREW M5X10	8	231503
26	CLAMP	1	234510/30/3
27	BODY (REDUCTION GEARS)	1	234905
28	SCREW M3X6 TX10	14	801002
29	JONCTION	1	234906
30	BUSH	1	234924
31	PCB FLEX LED	1	852531/L
32	BOARD SUPPORT BODY	1	234902
33	LED GUIDE	4	231553
34	BODY	1	234910

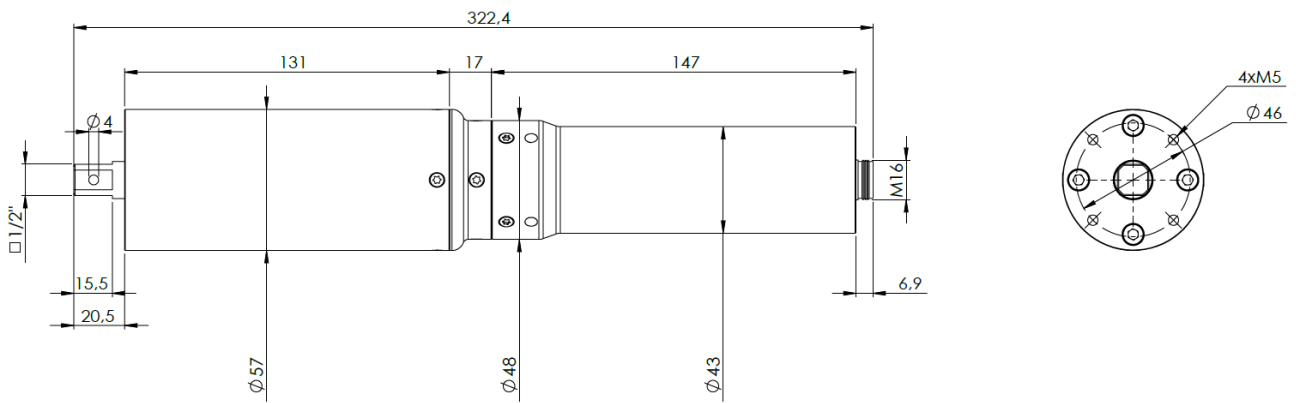
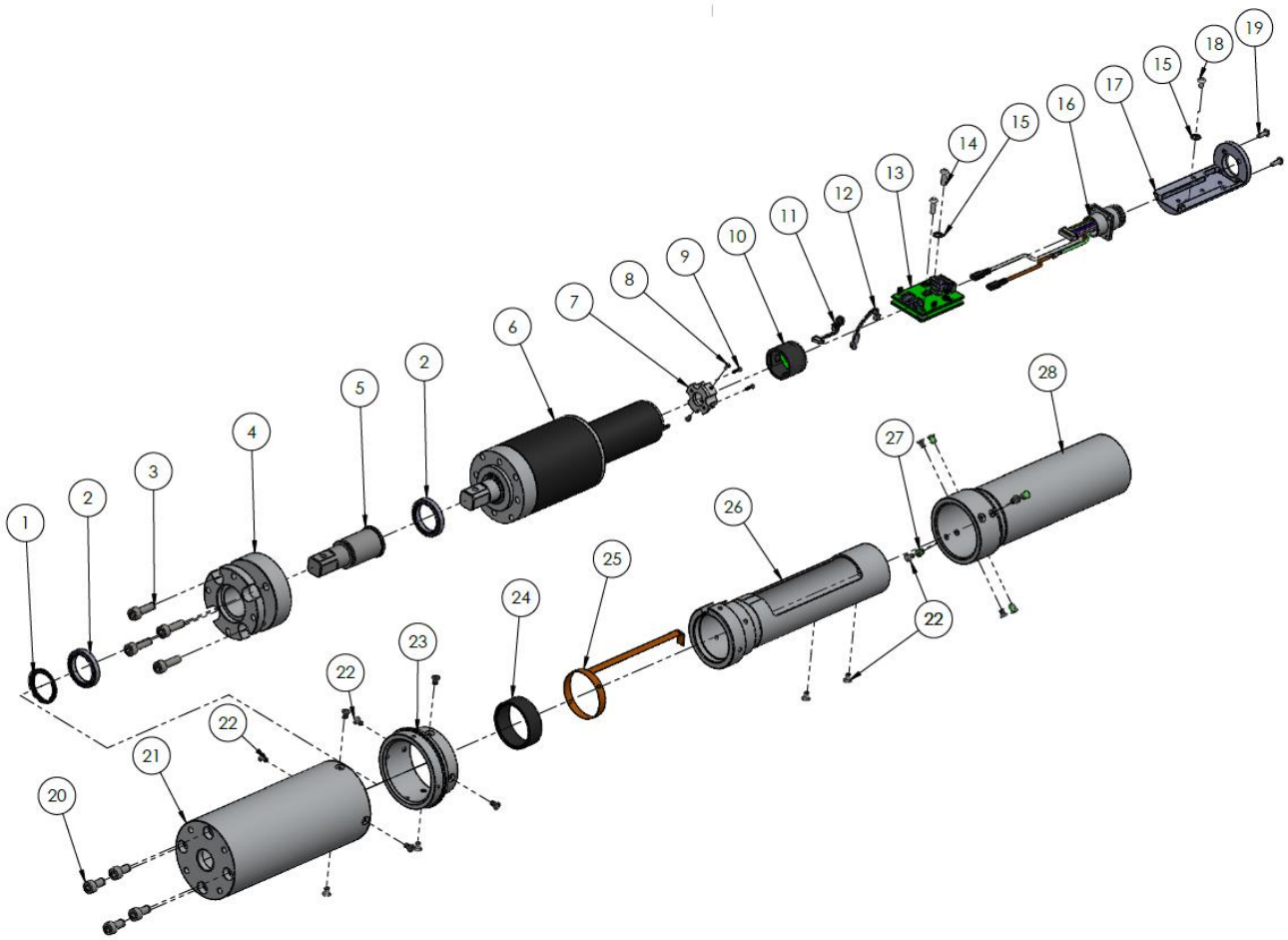
EXPLODED VIEW KDS-PL50/SR:



SPARE PARTS KDS-PL50:

Pos.	Description	Qty	Code
1	RING	1	234921
2	BEARING	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35-PL50	1	234907
5	JOINT SHAFT KDS PL50	1	234909
6	MOTOR+REDUCTION GEARS KDS PL50	1	231612/50M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6 ENCODER	2	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	SUPPORT BOARD	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	4	872478
20	SCREW M5X10	4	231503
21	BODY (REDUCTION GEARS)	1	234905
22	SCREW M3X6 TX10 ZN	14	801002
23	JUNCTION	1	234906
24	BUSH	1	234924
25	PCB FLEX LED	1	852531/L
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	REVERSE/START BUTTON	2	231535
29	BODY (BOARD)	1	234901
30	CAP	1	234911
31	RUBBER	1	234923
32	HOOK	1	200060

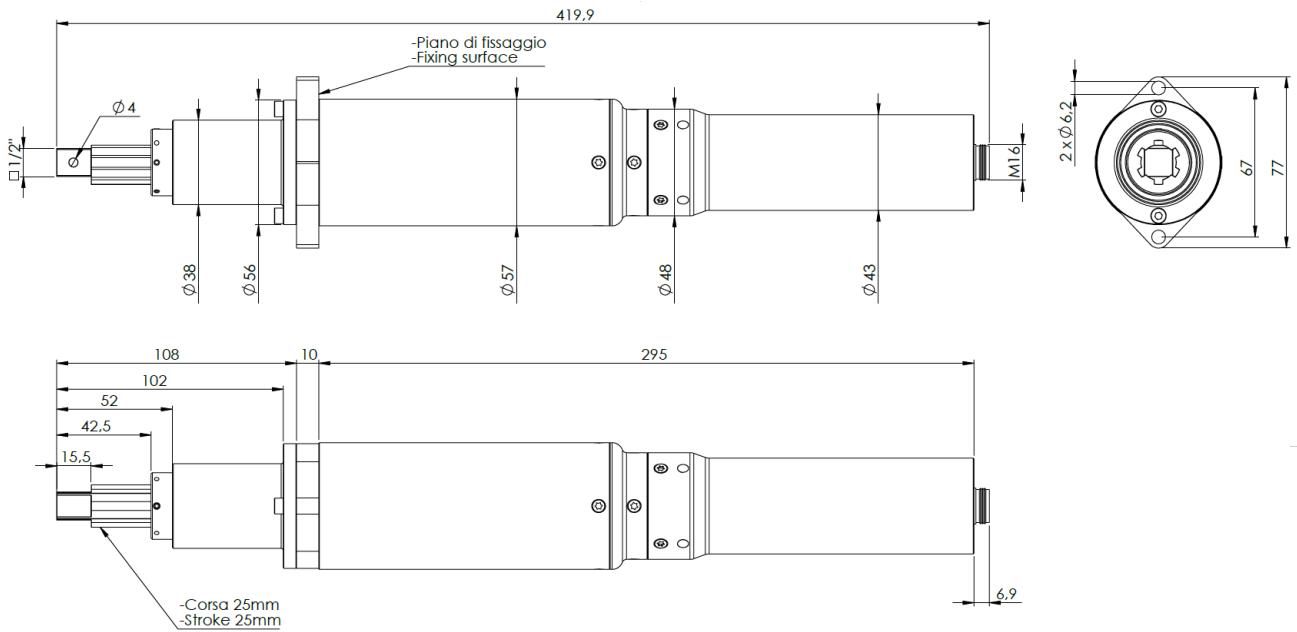
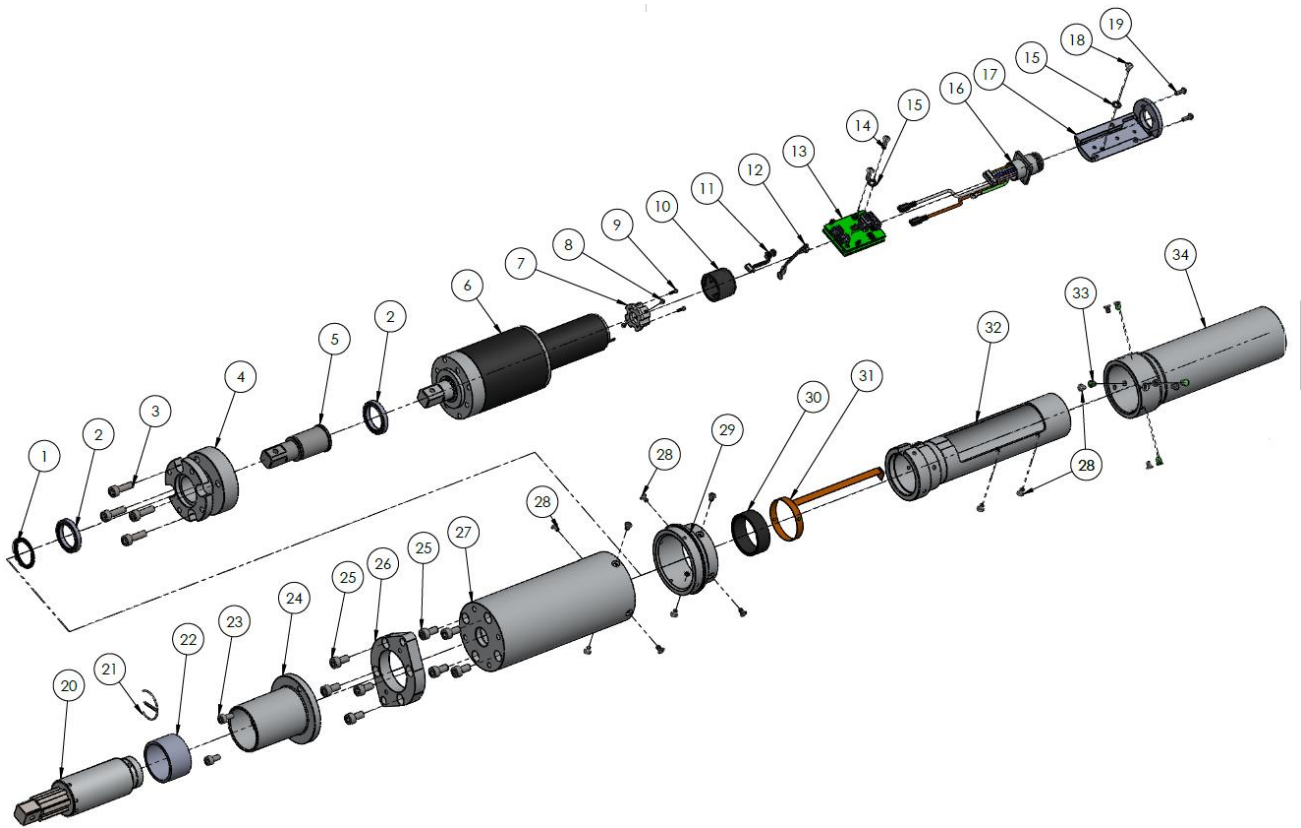
EXPLODED VIEW KDS-PL50CA:



SPARE PARTS KDS-PL50CA:

Pos.	Description	Qty	Code
1	RING	1	234921
2	BEARING	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35-PL50	1	234907
5	JOINT SHAFT KDS PL50	1	234909
6	MOTOR+REDUCTION GEARS KDS PL50	1	231612/50M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6 ENCODER	2	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	SUPPORT BOARD	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	SCREW M5X10	4	231503
21	BODY (REDUCTION GEARS)	1	234905
22	SCREW M3X6 TX10	14	801002
23	JUNCTION	1	234906
24	BUSH	1	234924
25	PCB FLEX LED	1	852531/L
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	BODY	1	234910

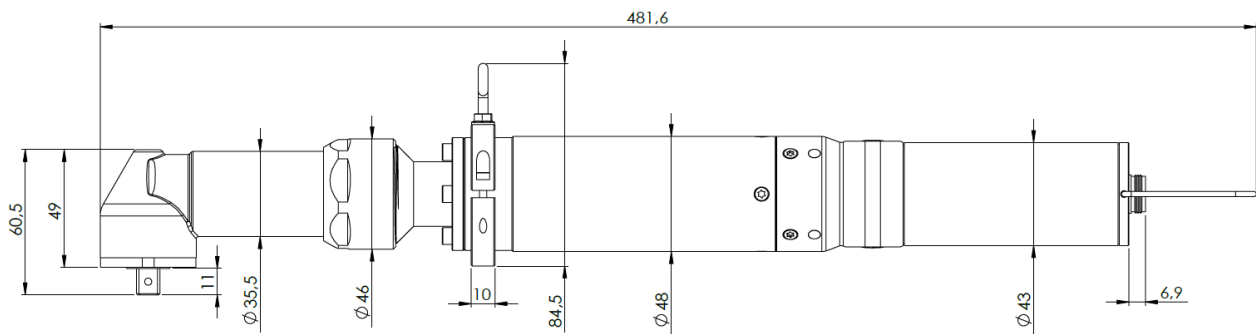
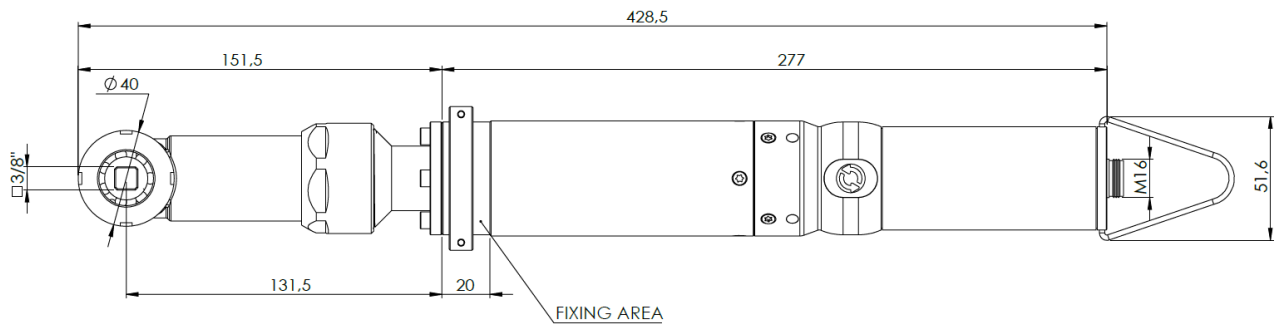
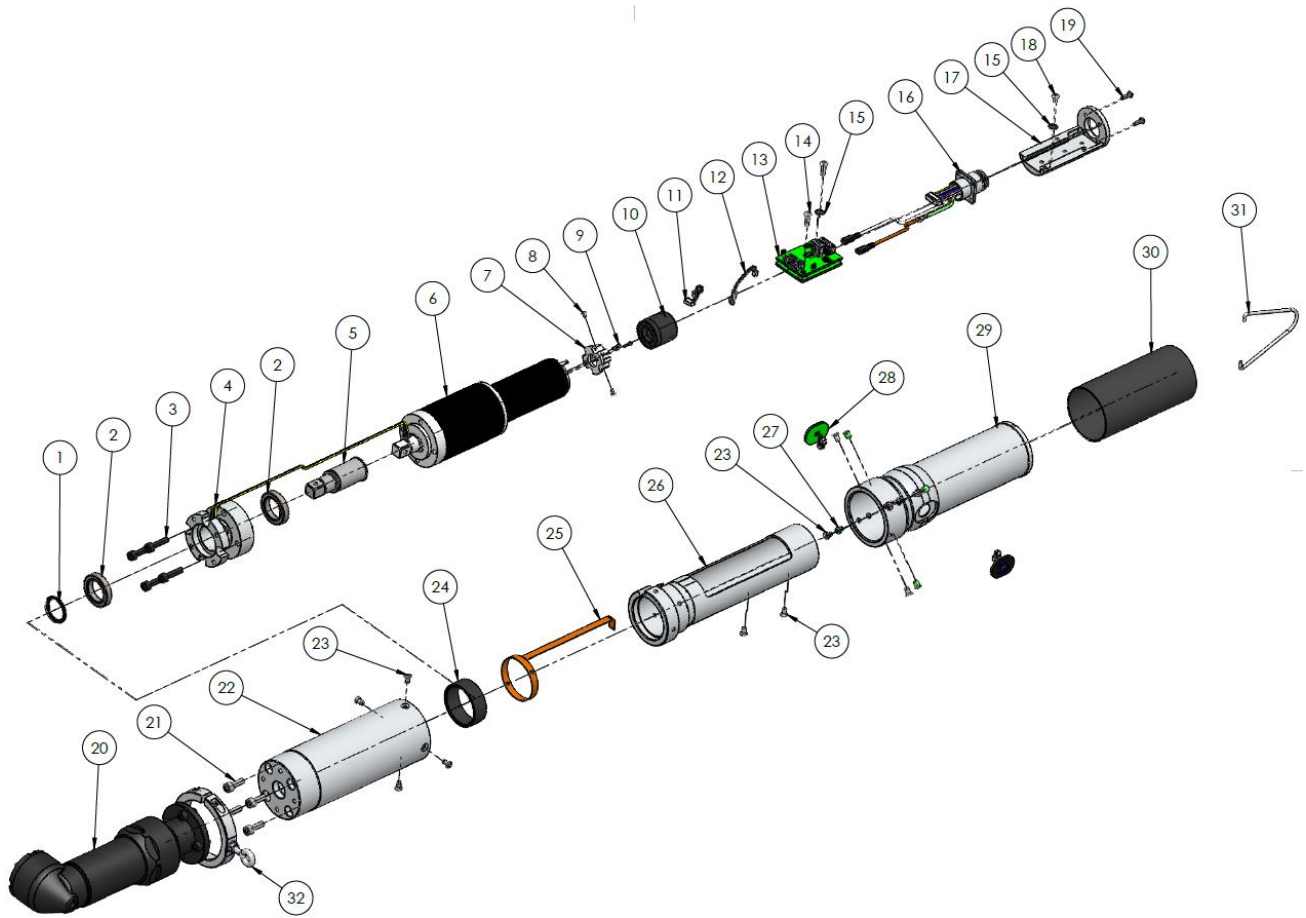
EXPLODED VIEW KDS-PL50CA/FN:



SPARE PARTS KDS-PL50CA/FN:

Pos.	Description	Qty	Code
1	RING	1	234921
2	BEARING	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35-PL50	1	234907
5	JOINT SHAFT KDS PL50	1	234909
6	MOTOR+REDUCTION GEARS KDS PL50	1	231612/50M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6 ENCODER	2	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	SUPPORT BOARD	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	COMPENSATOR 1/2"	1	800319
21	SPINE 1/2"	1	FE-1401C
22	PERMAGLIDE	1	800327
23	SCREW M4X8	2	231505
24	TELESCOPIC GUIDE PLUTO50CA	1	800302/50
25	SCREW VITE M5X10	8	231503
26	CLAMP	1	234510/50
27	BODY (REDUCTION GEARS)	1	234905
28	SCREW M3X6 TX10	14	801002
29	JONCTION	1	234906
30	BUSH	1	234924
31	PCB FLEX LED	1	852531/L
32	BOARD SUPPORT BODY	1	234902
33	LED GUIDE	4	231553
34	BODY	1	234910

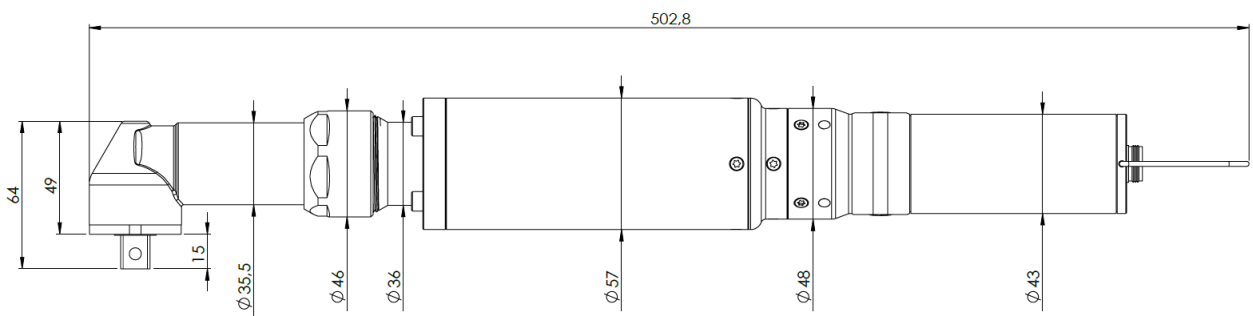
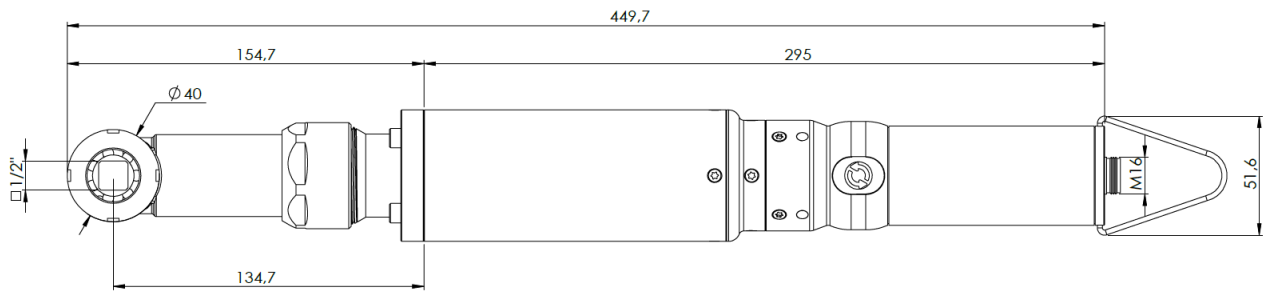
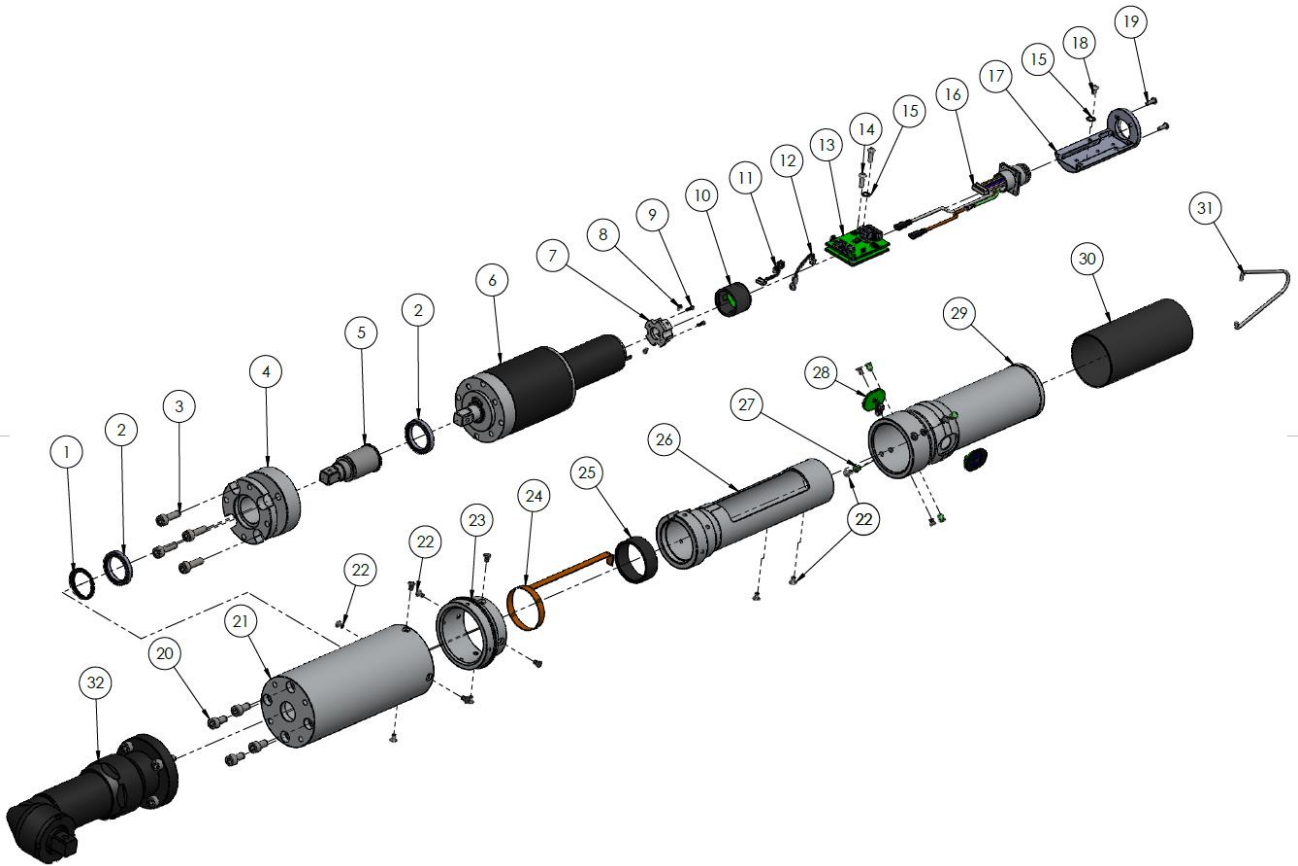
EXPLODED VIEW KDS-PL30ANG:



SPARE PARTS KDS-PL30ANG:

Pos.	Description	Qty	Code
1	RING	1	234920
2	BEARING	2	234922
3	SCREW M4X16	4	240020
4	TRANSDUCER PL20	1	234903
5	JOINT SHAFT KDS PL20	1	234904
6	MOTOR+REDUCTION GEARS KDS PL20	1	231612/20M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1.6X6 ENCODER	3	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	ANG HD20	1	010157
21	SCREW M4X12	4	231507
22	BODY (REDUCTION GEARS)	1	234900
23	SCREW M3X6 TX	10	801002
24	BUSH	1	234924
25	PCB FLEX LED	1	852531/L
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	REVERSE/START BUTTON	2	231535
29	BODY (BOARD)	1	234901
30	RUBBER	1	234923
31	HOOK	1	200060
32	SUPPORT RING KIT	1	010173

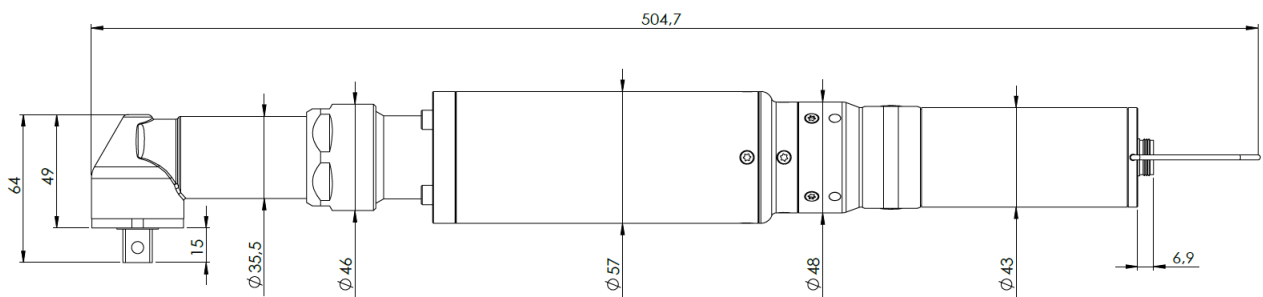
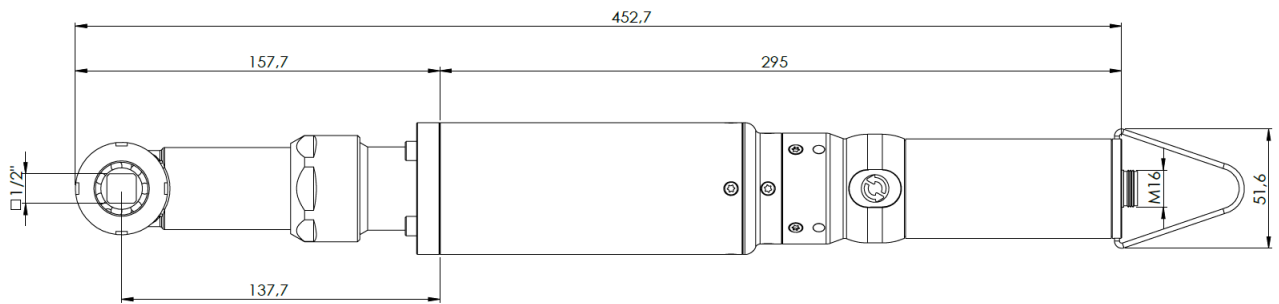
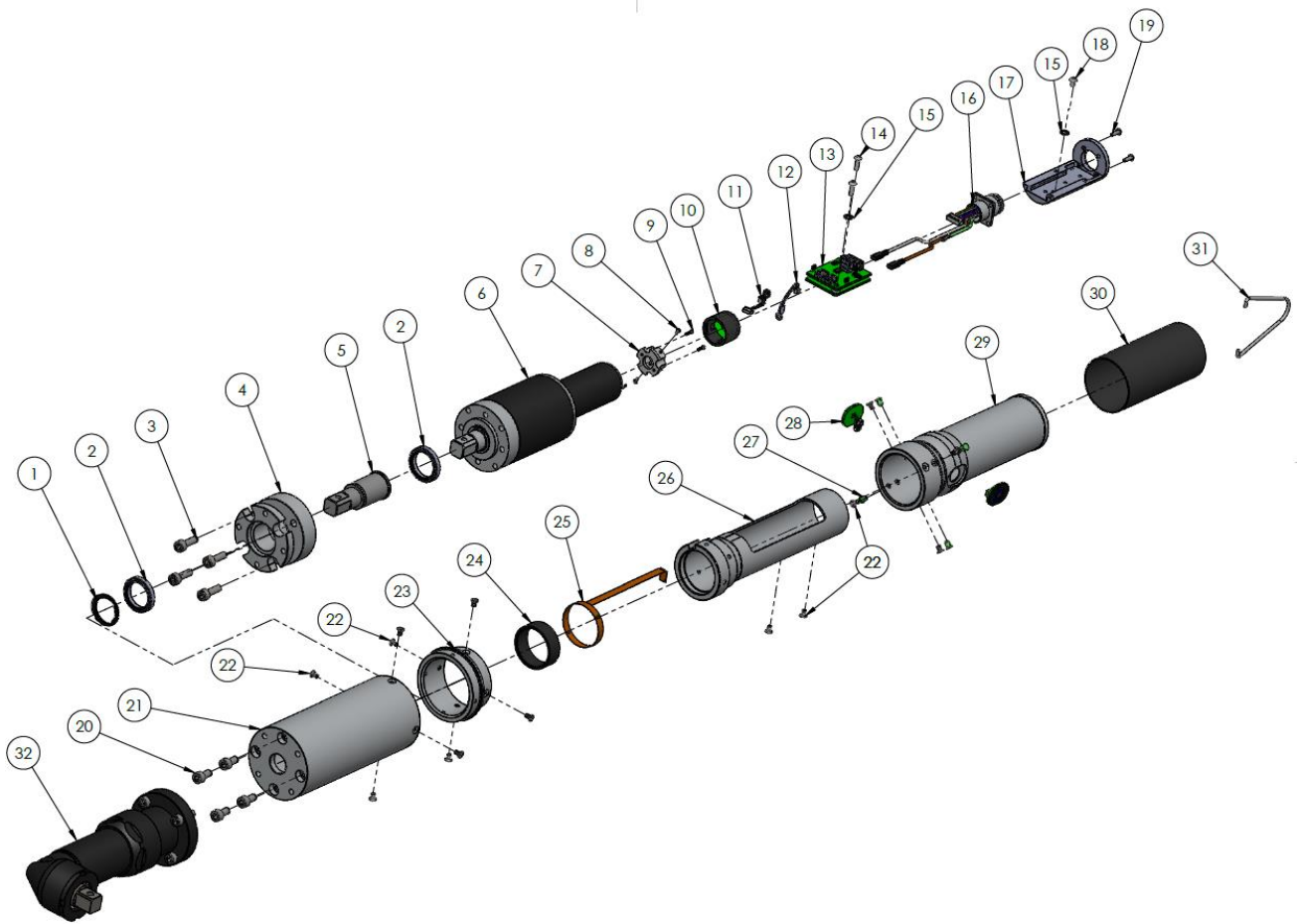
EXPLODED VIEW KDS-PL45ANG:



SPARE PARTS KDS-PL45ANG:

Pos.	Description	Qty	Code
1	RING	1	234921
2	BEARING	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35-PL50	1	234907
5	JOINT SHAFT KDS PL35	1	234908
6	MOTOR+REDUCTION GEARS KDS PL35	1	231612/30M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	SCREW M1_6X6 ENCODER	2	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	SCREW M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	SCREW M5X10	4	231503
21	BODY (REDUCTION GEARS)	1	234905
22	SCREW M3X6 TX10	14	801002
23	JUNCTION	1	234906
24	PCB FLEX LED	1	852531/L
25	BUSH	1	234924
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	REVERSE/START BUTTON	2	231535
29	BODY (BOARD)	1	234901
30	RUBBER	1	234923
31	HOOK	1	200060
32	ANG HD 21	1	010158

EXPLODED VIEW KDS-PL70ANG:



EXPLODED VIEW KDS-PL70ANG:

Pos.	Description	Qty	Code
1	RING	1	234921
2	BEARING	2	231533
3	SCREW M5X16	4	234588
4	TRANSDUCER PL35-PL50	1	234907
5	JOINT SHAFT	1	234909
6	MOTOR+REDUCTION GEARS KDS	1	231612/50M
7	ENCODER CLAMP	1	234530/S
8	SCREW M2X4	2	801004
9	VITE M1_6X6 ENCODER	2	872473
10	ENCODER	1	231528
11	ENCODER WIRES	1	231536
12	SENSOR	1	231534
13	BOARD	1	852528
14	BN 6404 M3X10	2	231530
15	WASHER	2	801005
16	MALE CONNECTOR M16 10 PIN	1	201667
17	BOARD SUPPORT	1	231523
18	SCREW M3X5	1	872444
19	SCREW M2,5X8 TX8	2	872478
20	SCREW M5X10	4	231503
21	BODY (REDUCTION GEARS)	1	234905
22	SCREW M3X6 TX10	14	801002
23	JUNCTION	1	234906
24	BUSH	1	234924
25	PCB FLEX LED	1	852531/L
26	BOARD SUPPORT BODY	1	234902
27	LED GUIDE	4	231553
28	REVERSE/START BUTTON	2	231535
29	BODY (BOARD)	1	234901
30	RUBBER	1	234923
31	HOOK	1	200060
32	ANG HD 22	1	010159

GUARANTEE

This KOLVER product is guaranteed against defective workmanship or materials, for a maximum period of 12 months following the date of purchase from KOLVER, provided that its usage is limited to single shift operation throughout that period. If the usage rate exceeds of single shift operation, the guarantee period shall be reduced on a prorata basis. If, during the guarantee period, the product appears to be defective in workmanship or materials, it should be returned to KOLVER or its distributors, transport prepaied, together with a short description of the alleged defect. KOLVER shall, at its sole discretion, arrange to repair or replace free of charge such items.

This guarantee does not cover repair or replacement required as a consequence of products which have been abused, misused or modified, or which have been repaired using not original KOLVER spare parts or by not authorized service personnel.

KOLVER accepts no claim for labour or other expenditure made upon defective products.

Any direct, incidental or consequential damages whatsoever arising from any defect are expressly excluded.

This guarantee replaces all other guarantees, or conditions, expressed or implied, regarding the quality, the marketability or the fitness for any particular purpose.

No one, whether an agent, servant or employee of KOLVER, is authorized to add to or modify the terms of this limited guarantee in any way. However it's possible to extend the warranty with an extra cost. Further information at kolver@kolver.it.