

UNIMOTION



MAINTENANCE INSTRUCTIONS


CTV SERIES


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OVERVIEW

Used symbols

 Remark, note

 Warning!


 For more information see the catalogue

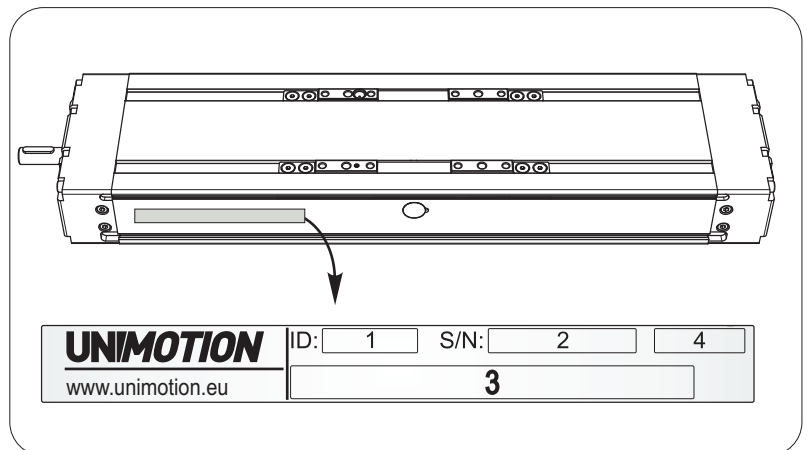
Recommended tightening torques (strength class 8.8)

8.8	M2	M2,5	M3	M4	M5	M6	M8	M10	M12
M_{max} [Nm]	0,4	0,7	1,3	3,0	6,0	10,3	25	45	74

Identification label and additional or replacement parts of the Linear Unit

- 1 - ID number
- 2 - Serial number
- 3 - Type of Linear Unit (ordering code)
- 4 - Special version


 In the case of ordering additional or replacement parts for the Linear Unit there must be given all data from the identification label.




MOUNTING

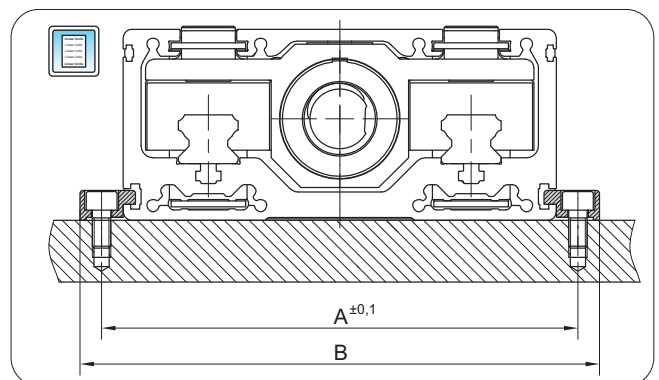
Fixing system



 Linear Unit must be mounted by the aluminium profile with evenly distributed clamping fixtures along the entire length!



 Number of clamping fixtures
Recommended number of clamping fixtures: 3 per meter on each side.



The modules are mounted by using fixtures which are placed in the slot on the side of the profile.

CTV	A [mm]	B [mm]
90	102	112
110	125	140
145	160	175

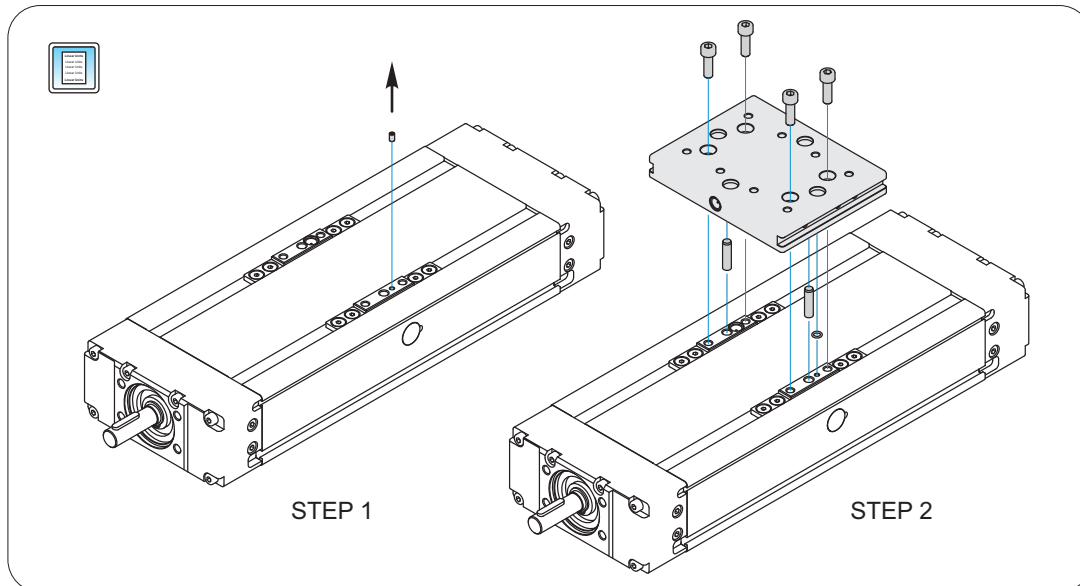
MOUNTING

Connection plates

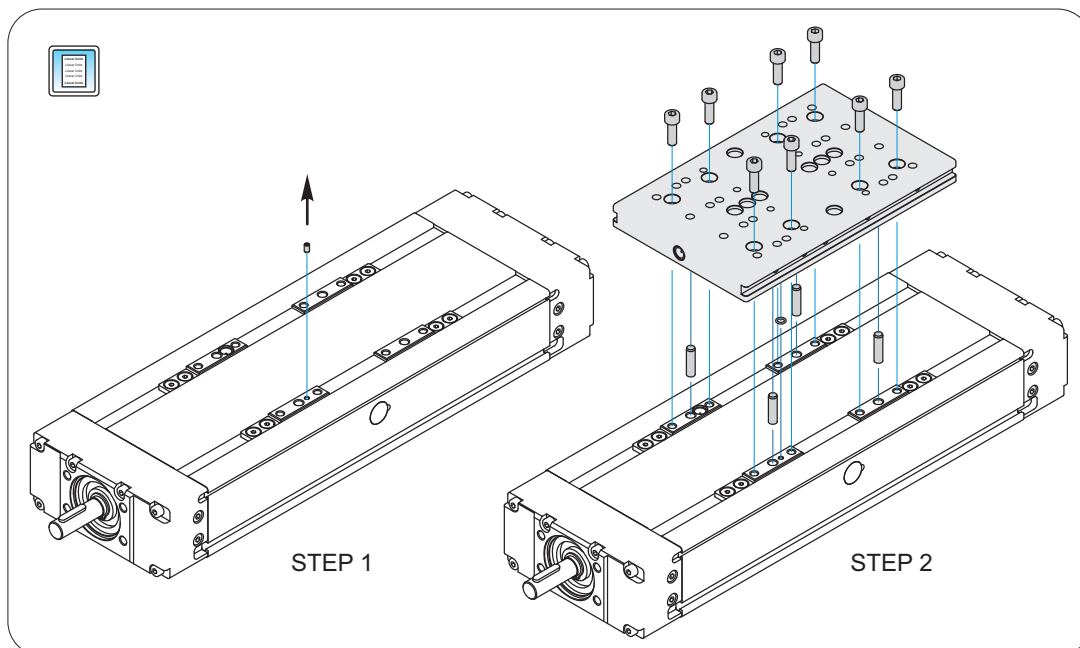


Connection plate contains two lubrication nipples DIN 3405D for the carriage and the ball nut. Before mounting the connection plate on the Linear Unit it must be fully filled with grease. The connection plate can be removed and replaced at any time.

Short Carriage version



Long Carriage version



STEP 1: The lubrication port is closed by a screw DIN 913. Untight the screw (DIN 913), which is placed on the carriage of the Linear Unit.

STEP 2: Place the O-RING seal on the location where the connection plate has it's deepening for the O-ring seal.

O-RING type for: CTV 90, CTV 110 and CTV 145

- O-RING - 4 x 1mm

- PART NUMBER: 46063

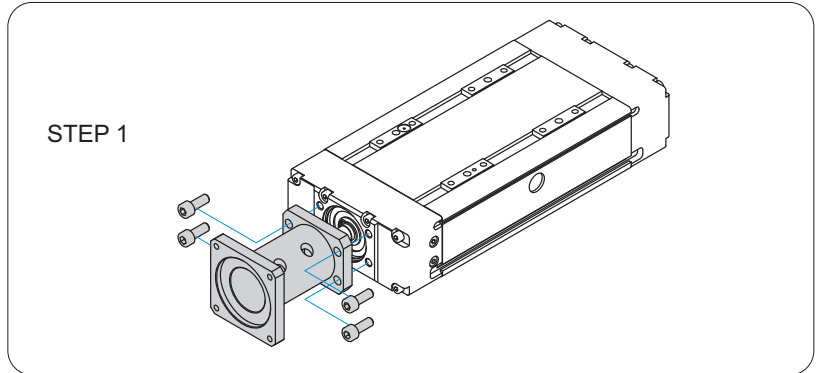
Insert cylindrical pins (DIN EN 28734 A) on the connection plate.

Insert the screws (DIN 912) for attachment of the connection plate on the carriage and screw them.

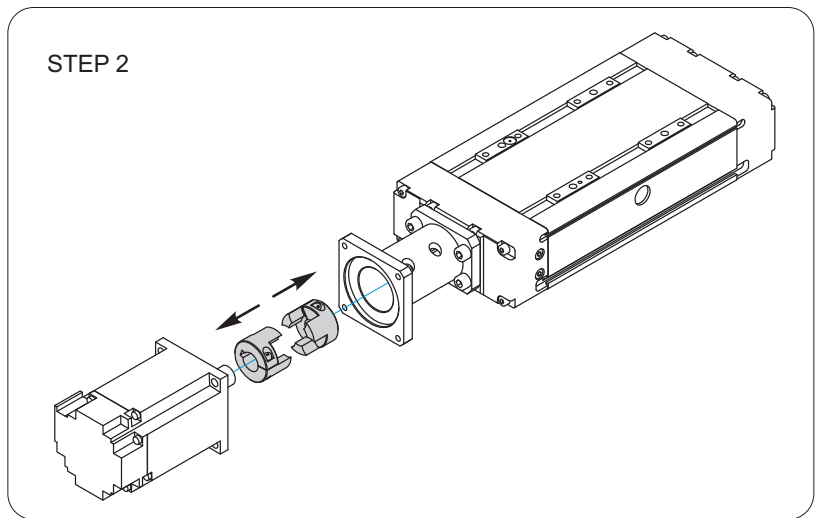
MOUNTING

Motor with coupling

STEP 1: Attach the motor adapter on a pre-prepared location on the Linear Unit and screw down.



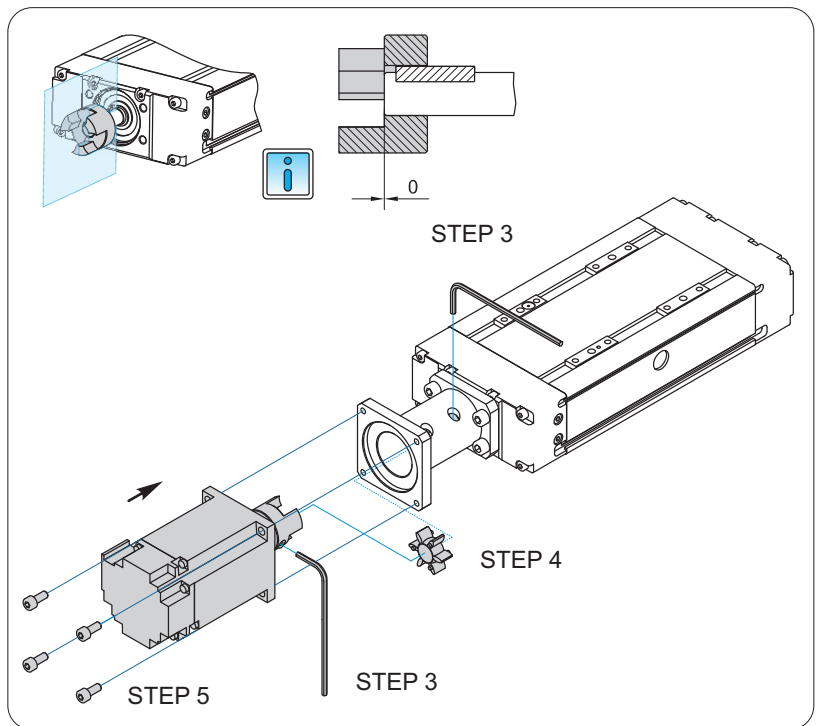
STEP 2: Place the coupling halves on the drive journal of the Linear Unit and the motor.



STEP 3: Ensure that the coupling halves and the drive journals are correctly aligned.



Tighten the screws on the coupling halves with coupling tightening torque.



STEP 4: Insert the coupling spider into one of the coupling half.

STEP 5: Attach the motor on the motor adapter with screws and combine the coupling halves together at the same time.



Maximum torque and maximum speed of the motor must never exceed the limits of the Linear Unit!

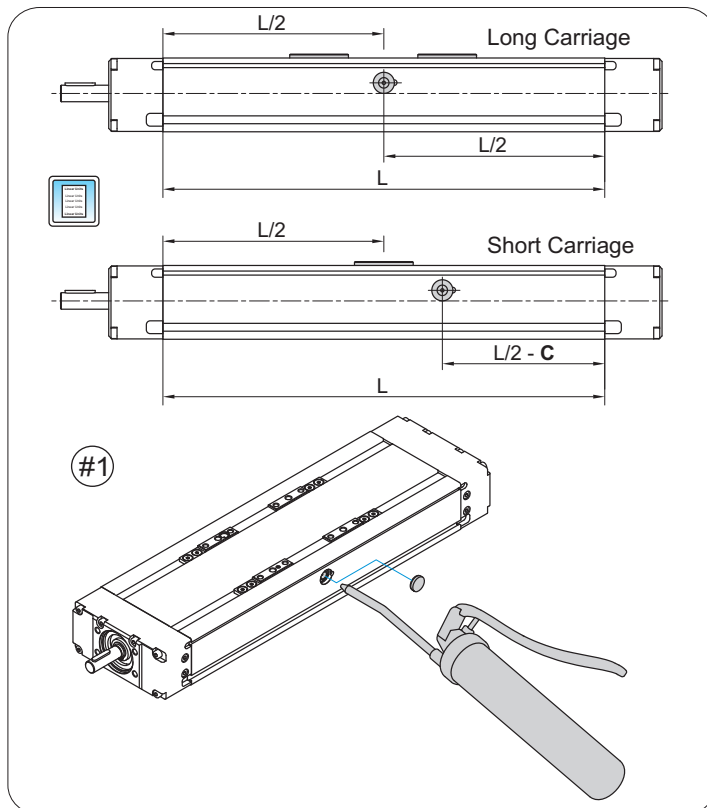


MAINTENANCE



For each Linear Unit the basic lubrication is done in factory before shipment. All bearings of the ball screw have been lubricated for life and not require any additional lubrication under normal operating conditions.

Lubrication of the carriage and the ball nut

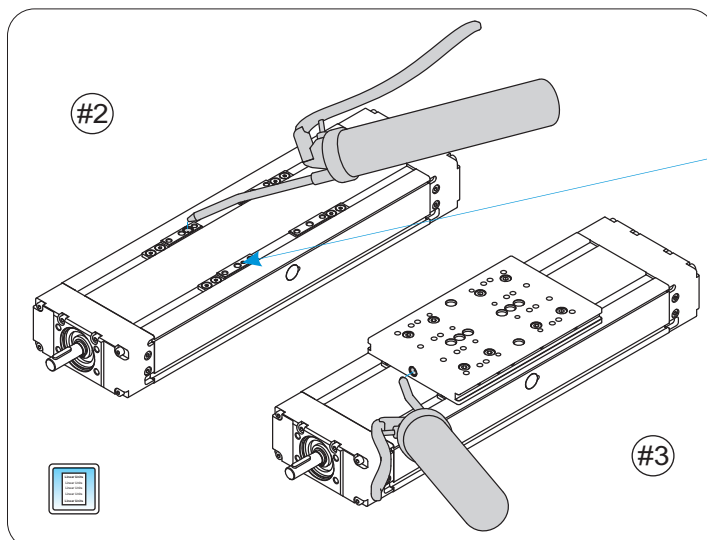


Lubrication ports for Long and Short Carriage version are placed on both sides of the profile as it is shown in figure beside.

CTV	C [mm]
90 S	24
110 S	39
145 S	46

For access to the lubrication nipples (DIN 3405 D) inside, the carriage must be moved to the middle position, i.e. $L/2$.

Lubrication ports have a cover, which must be removed in case of lubrication. The lubrication ports are central, which means you can lubricate the ball nut and the carriage through one lubrication port #1.



Lubrication port on the top of the carriage has a lubrication nipple (DIN 3405 D) #2.

The other lubrication port is closed with a screw DIN 913 which can be removed #2. For more details look at the page 1.005.0

It is sufficient to lubricate the carriage and the ball nut through one of the two lubrication ports

Linear Unit with connection plate:

The connection plate has a lubrication nipple (DIN 3405 D) on each side.

It is sufficient to lubricate the carriage and the ball nut through one of the two lubrication nipples (#3).



It is recommended that the carriage is lubricated separately from the ball nut.

The carriage can be lubricated through one of the ports on the side of the profile of the linear unit (#1).

The ball nut can be lubricated on the carriage through one of the lubrication ports #2 or through the one of the lubrication nipples on the connection plate #3.

MAINTENANCE

Lubricant

Recommended grease for the lubrication

Lubcon TURMOGREASE Highspeed L 252/3 (K HC P 2/3 K-50)



For lubrication and re-lubrication of linear units must be used grease lubricant only!
Do not use the grease which contains solid parts!

Lubricant quantities and intervals

	Ball Nut type <i>Kugelmutter- uttertyp</i>	Ball screw <i>Kugelgewinde- spindel</i>	Travel path <i>Hubweg</i>	Grease - relubrication quantity <i>Fett-Nachschmiermenge</i>					
				LV short carriage			LV long carriage		
				Ball nut [cm ³]	Carriage [cm ³]	2nd Carriage [cm ³]	Ball nut [cm ³]	Carriage [cm ³]	2nd Carriage [cm ³]
CTV 90	RSY	12 × 5	250	0,4	0,3	0,3	0,4	0,6	0,6
		12 × 10	500	0,7	0,3	0,3	0,7	0,6	0,6
CTV 110	RSY	16 × 5	250	1,4	0,8	0,8	1,4	1,6	1,6
		16 × 10	500	1,8	0,8	0,8	1,8	1,6	1,6
		16 × 16	800	2	0,8	0,8	2	1,6	1,6
CTV 145	RSY	20 × 5	250	2,2	1,4	1,4	2,2	2,4	2,4
		20 × 10	500	4,4	1,4	1,4	4,4	2,4	2,4
		20 × 20	1000	4,8	1,4	1,4	4,8	2,4	2,4



Lubrication ports for Long and Short Carriage version are placed on both sides of the profile. The lubrication ports are central ports which means you can lubricate the ball nut and the carriage through one lubrication port, however it is recommended that the carriage is lubricated separately from the ball nut.

The stated lubrication intervals in the table above are sufficient for normal operating conditions. If you have special operating systems please contact us.

Lubrication intervals are every 500 operating hours or after the specified travel path stated in the table above.



For Linear Units with two carriages apply the quantity for the 1st Carriage and for the 2nd Carriage.

Normal operating conditions

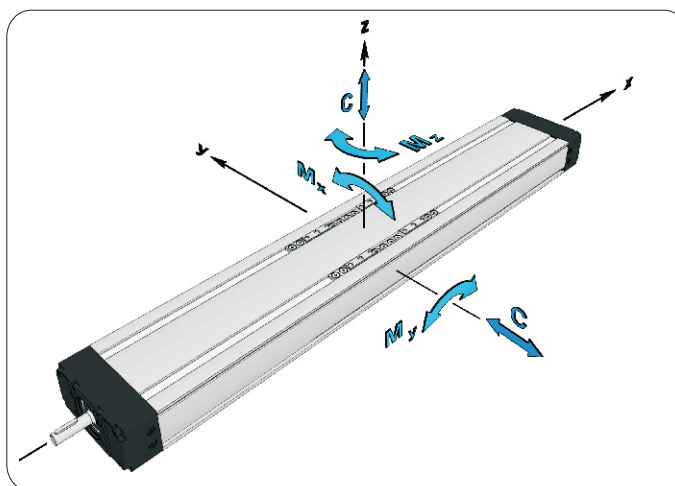
Temperature: 10 °C - 40 °C

Travel speed: ≤ 1 m/s

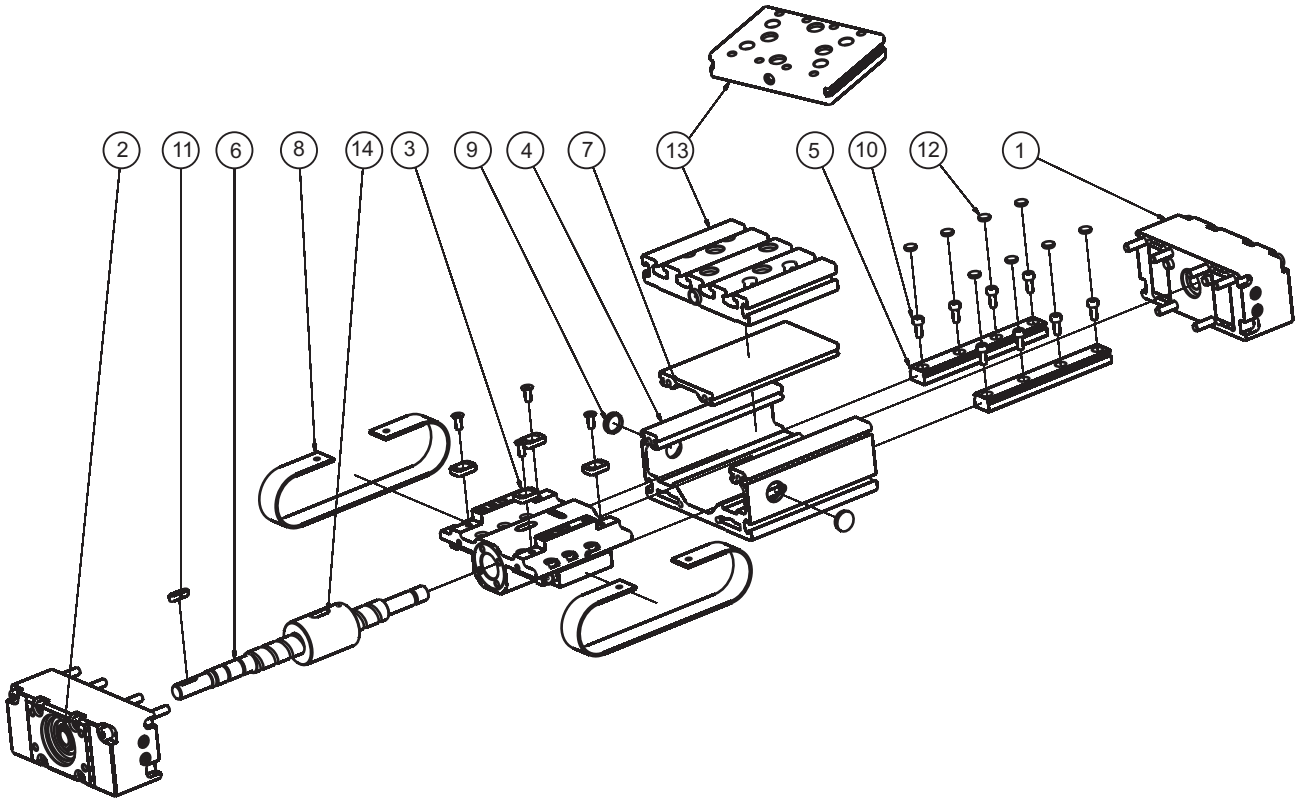
Ball screw speed (RPM): 2500 1/min

Stroke: CTV 90 > 40 mm
CTV 110 > 50 mm
CTV 145 > 60 mm

Load: ≤ 0,2 C

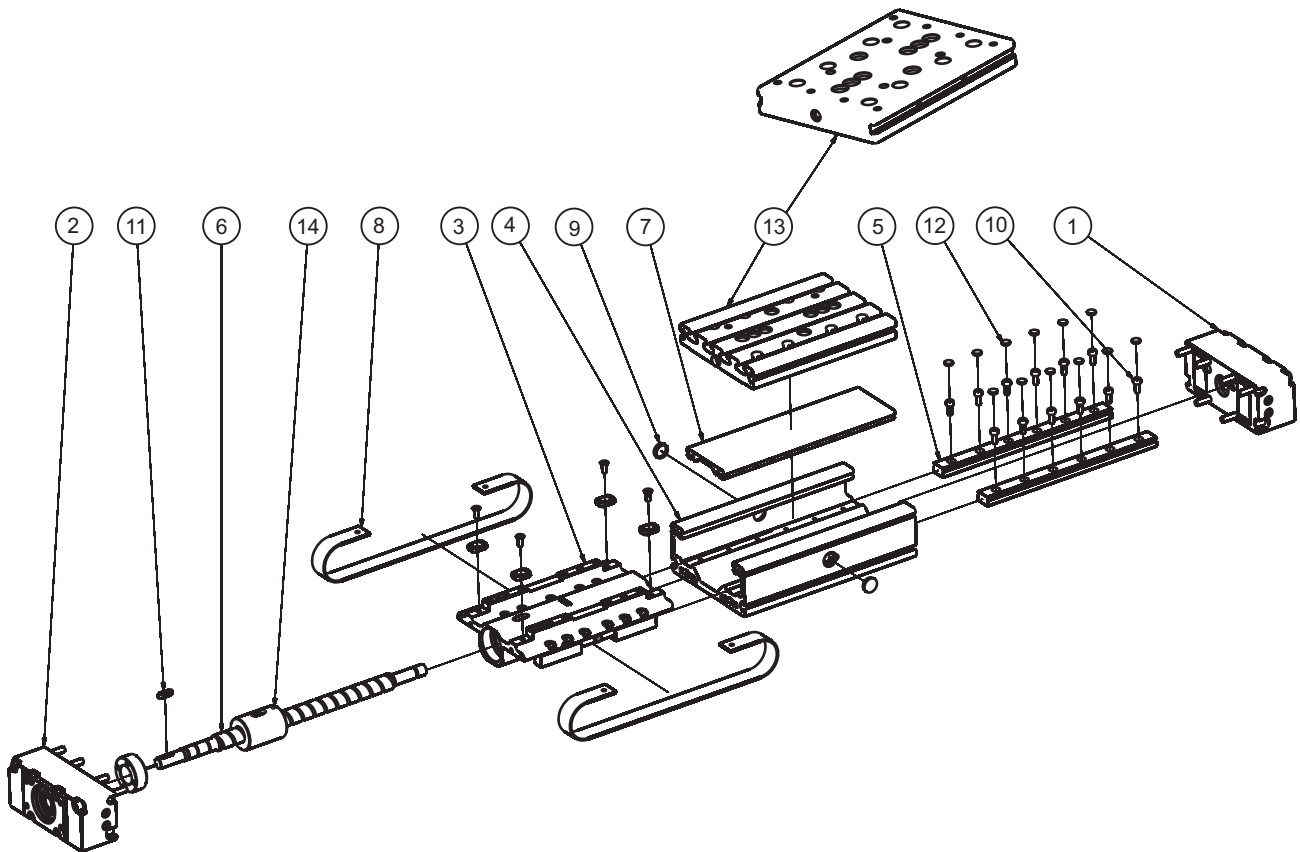


ASSEMBLY CTV 90 S



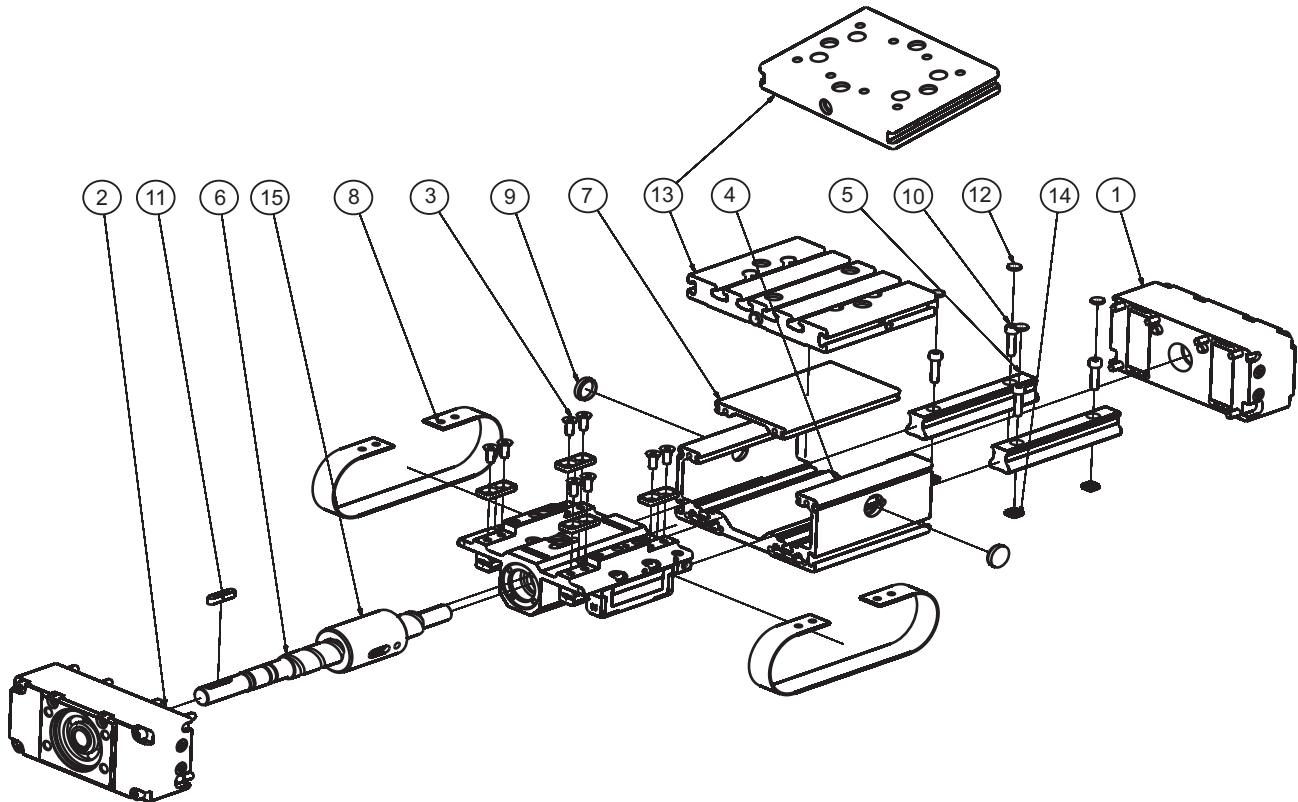
ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 90		46712
2	1	FRONT BLOCK CTV 90		46711
3	1	CARRIAGE CTV 90 S		46728
4	1	PROFILE CTV 90	STROKE + 85	46622
5	2	RAIL GUIDE MR 12 - M	STROKE + 83	8207
6	1	BALL SCREW CTV 90	STROKE + 168	
		12 x 5 ISO7 - STANDARD		46903
		12 x 10 ISO7 - STANDARD		46904
		12 x 10 ISO5		47334
7	1	PROFILE COVER CTV 90	STROKE + 85	46623
8	2	PROTECTION STRIP ANTISTATIC PU CTV 90	STROKE + 227	46725
	2	PROTECTION STRIP CORROSION-RESISTANT CTV 90	STROKE + 227	46725
9	2	COVER FOR BGR 25		-
10	8	ALLEN SCREW M3 x 8 DIN 912		47083
11	1	KEY ROUNDED 3 x 3 x 12 DIN 6885A		40770
12	8	COVER FOR MR 12 - M		-
13	1	CONNECTION PLATE CTV 90 S		46906
		CONNETCTION PLATE CTV 90 S - CARVED		46906
14	1	BALL NUT RSY		
		12 x 5		46908
		12 x 10		46909

ASSEMBLY CTV 90 L



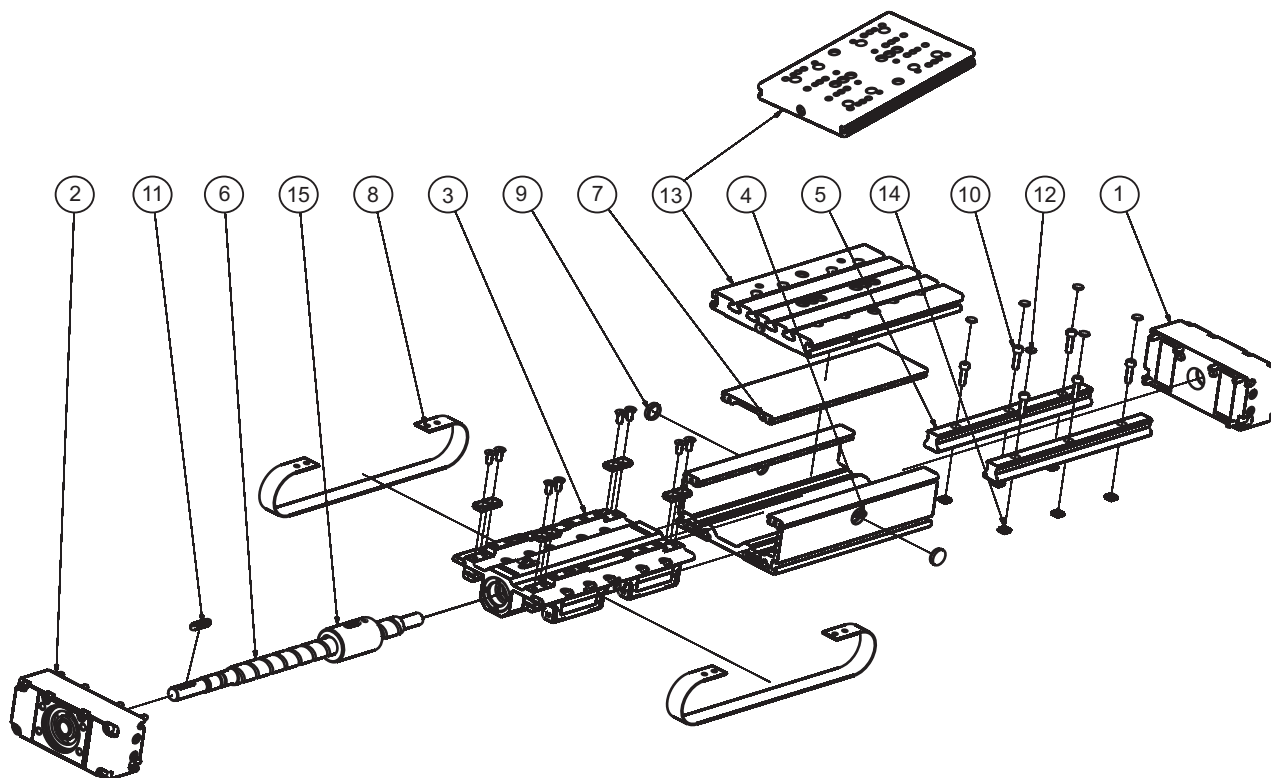
ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 90		46712
2	1	FRONT BLOCK CTV 90		46711
3	1	CARRIAGE CTV 90 L		46713
4	1	PROFILE CTV 90	STROKE + 150	46622
5	2	RAIL GUIDE MR 12 - M	STROKE + 148	8207
6	1	BALL SCREW CTV 90	STROKE + 233	
		12 x 5 ISO7 - STANDARD		46903
		12 x 10 ISO7 - STANDARD		46904
		12 x 10 ISO5		47334
7	1	PROFILE COVER CTV 90	STROKE + 150	46623
8	2	PROTECTION STRIP ANTISTATIC PU CTV 90	STROKE + 292	46725
	2	PROTECTION STRIP CORROSION-RESISTANT CTV 90	STROKE + 292	46725
9	2	COVER FOR BGR 25		-
10	8	ALLEN SCREW M3 x 8 DIN 912		47083
11	1	KEY ROUNDED 3 x 3 x 12 DIN 6885A		40770
12	8	COVER FOR MR 12 - M		-
13	1	CONNECTION PLATE CTV 90 L		46907
		CONNETCTION PLATE CTV 90 L - CARVED		46907
14	1	BALL NUT RSY		
		12 x 5		46908
		12 x 10		46909

ASSEMBLY CTV 110 S



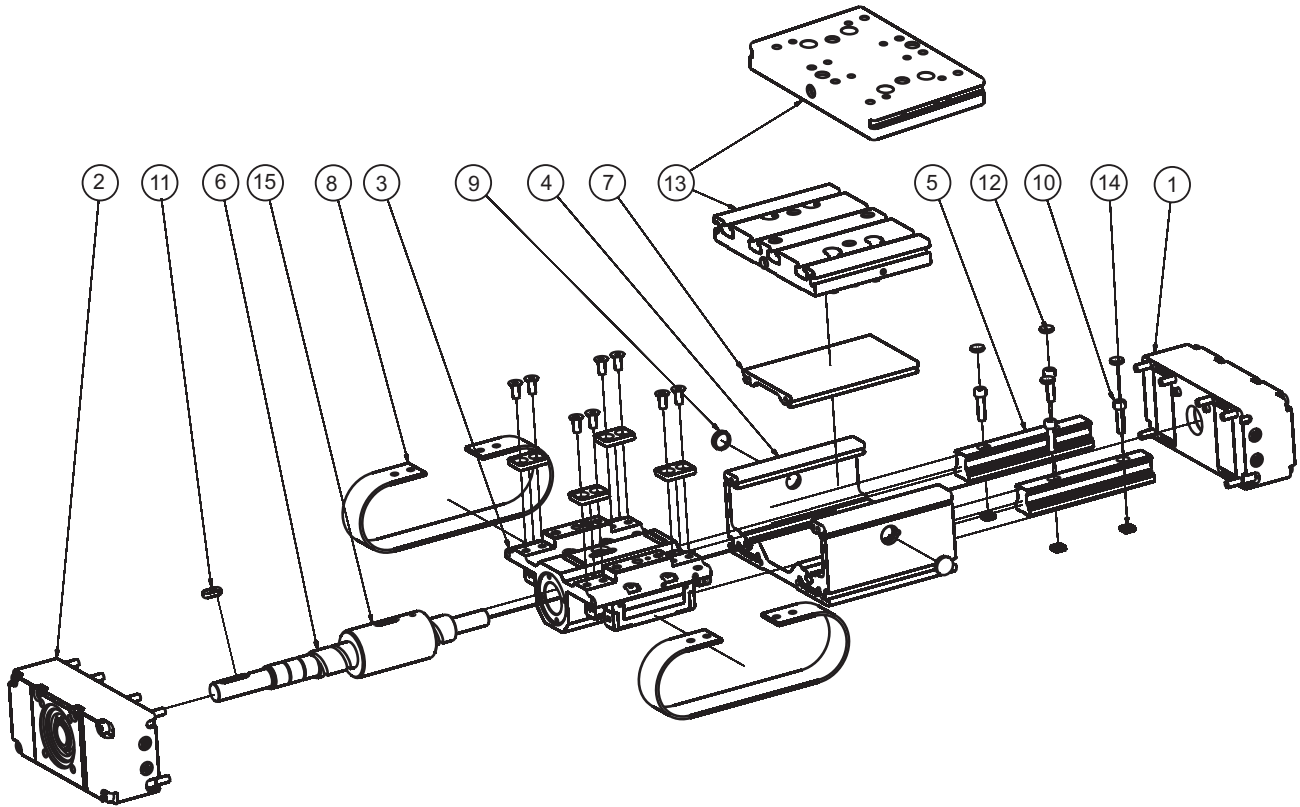
ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 110		40492
2	1	FRONT BLOCK CTV 110		40489
3	1	CARRIAGE CTV 110 S		40496
4	1	PROFILE CTV 110	STROKE + 90	39731
5	2	RAIL GUIDE AR-HR 15	STROKE + 88	41518
6	1	BALL SCREW CTV 110	STROKE + 192	
		16 x 5 ISO7 - STANDARD		33829
		16 x 5 ISO5		35452
		16 x 10 ISO7 - STANDARD		35430
		16 x 10 ISO5		35462
		16 x 20 ISO7 - STANDARD		35431
		16 x 20 ISO5		35463
7	1	PROFILE COVER CTV 110	STROKE + 90	39896
8	2	PROTECTION STRIP ANTISTATIC PU FOR CTV 110	STROKE + 275	38930
	2	PROTECTION STRIP CORROSION RESISTANT CTV 110	STROKE + 275	
9	2	COVER FOR BGR 30		-
10	4	ALLEN SCREW M4 x 14 DIN 912		40690
11	1	KEY ROUNDED 4 x 4 x 20 DIN 6885A		40778
12	4	COVER FOR AR-HR 20		-
13	1	CONNECTION PLATE CTV 110 S		40696
	1	CONNECTION PLATE CTV 110 S CARVED		40696
14	4	NUT SQUARE M4 DIN 562		40682
15	1	BALL NUT RSY		
		16 x 5		45961
		16 x 10		39440
		16 X 20		39441

ASSEMBLY CTV 110 L



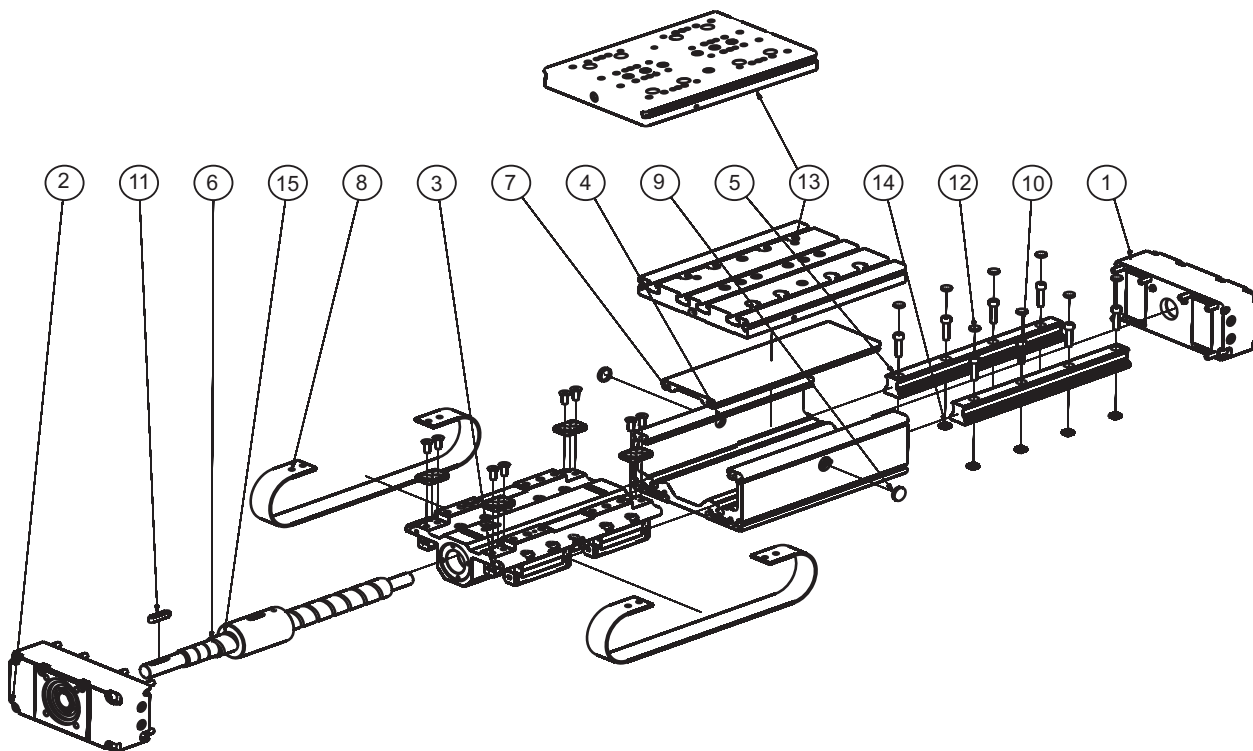
ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 110		40492
2	1	FRONT BLOCK CTV 110		40489
3	1	CARRIAGE CTV 110 L		40503
4	1	PROFILE CTV 110	STROKE + 175	39731
5	2	RAIL GUIDE AR-HR 15	STROKE + 173	41518
6	1	BALL SCREW CTV 110	STROKE + 277	
		16 x 5 ISO7 - STANDARD		33829
		16 x 5 ISO5		35452
		16 x 10 ISO7 - STANDARD		35430
		16 x 10 ISO5		35462
		16 x 20 ISO7 - STANDARD		35431
		16 x 20 ISO5		35463
7	1	PROFILE COVER CTV 110	STROKE + 175	39896
8	2	PROTECTION STRIP ANTISTATIC PU FOR CTV 110	STROKE + 360	38930
	2	PROTECTION STRIP CORROSION RESISTANT CTV 110	STROKE + 360	
9	2	COVER FOR BGR 30		-
10	4	ALLEN SCREW M4 x 14 DIN 912		40690
11	1	KEY ROUNDED 4 x 4 x 20 DIN 6885A		40778
12	4	COVER FOR AR-HR 20		-
13	1	CONNECTION PLATE CTV 110 L		40619
	1	CONNECTION PLATE CTV 110 L CARVED		40619
14	4	NUT SQUARE M4 DIN 562		40682
15	1	BALL NUT RSY		
		16 x 5		45961
		16 x 10		39440
		16 X 20		39441

ASSEMBLY CTV 145 S



ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 145		40508
2	1	FRONT BLOCK CTV 145		40507
3	1	CARRIAGE CTV 145 S		40509
4	1	PROFILE CTV 145	STROKE + 110	39733
5	2	RAIL GUIDE AR-HR 20	STROKE + 108	41515
6	1	BALL SCREW CTV 145	STROKE + 235	
		20 x 5 ISO7 - STANDARD		33830
		20 x 5 ISO5		35453
		20 x 10 ISO7 - STANDARD		39457
		20 x 10 ISO5		42091
		20 x 20 ISO7 - STANDARD		35432
		20 x 20 ISO5		35464
7	1	PROFILE COVER CTV 145	STROKE + 110	39897
8	2	PROTECTION STRIP ANTISTATIC PU FOR CTV 145	STROKE + 338	40551
	2	PROTECTION STRIP CORROSION RESISTANT CTV 145	STROKE + 338	46080
9	2	COVER FOR BGR 30		-
10	4	ALLEN SCREW M5 x 18 DIN 912		47074
11	1	KEY ROUNDED 5 x 5 x 25 DIN 6885A		37038
12	4	COVER FOR AR-HR 20		-
13	1	CONNECTION PLATE CTV 145 S		40699
	1	CONNECTION PLATE CTV 145 S CARVED		40699
14	4	NUT SQUARE M5 DIN 562		40768
15	1	BALL NUT RSY		
		20 x 5		39449
		20 x 10		39442
		20 X 20		39443

ASSEMBLY CTV 145 L



ITEM	QTY	PART NAME	LENGTH	ID
1	1	BACK BLOCK CTV 145		40508
2	1	FRONT BLOCK CTV 145		40507
3	1	CARRIAGE CTV 145 L		40510
4	1	PROFILE CTV 145	STROKE + 210	39733
5	2	RAIL GUIDE AR-HR 20	STROKE + 208	41515
6	1	BALL SCREW CTV 145	STROKE + 335	
		20 x 5 ISO7 - STANDARD		33830
		20 x 5 ISO5		35453
		20 x 10 ISO7 - STANDARD		39457
		20 x 10 ISO5		42091
		20 x 20 ISO7 - STANDARD		35432
		20 x 20 ISO5		35464
7	1	PROFILE COVER CTV 145	STROKE + 210	39897
8	2	PROTECTION STRIP ANTISTATIC PU FOR CTV 145	STROKE + 438	40551
	2	PROTECTION STRIP CORROSION RESISTANT CTV 145	STROKE + 438	46080
9	2	COVER FOR BGR 30		-
10	4	ALLEN SCREW M5 x 18 DIN 912		47074
11	1	KEY ROUNDED 5 x 5 x 25 DIN 6885A		37038
12	4	COVER FOR AR-HR 20		-
13	1	CONNECTION PLATE CTV 145 L		40698
	1	CONNECTION PLATE CTV 145 L CARVED		40698
14	4	NUT SQUARE M5 DIN 562		40768
15	1	BALL NUT RSY		
		20 x 5		39449
		20 x 10		39442
		20 X 20		39443