



From the Buta Shipping Team

Dear Partners,

We are pleased to present our spare parts catalog for the **Wärtsilä 6L20** marine diesel engine — one of the most reliable and widely used engines in the global fleet. This 6-cylinder, four-stroke, medium-speed engine has proven its performance across various vessel types, including bulk carriers, tankers, passenger ships, and auxiliary vessels. It is known for its **fuel efficiency, operational stability, and ease of maintenance**.

Understanding the critical role this engine plays in vessel operations, **Buta Shipping** offers a carefully curated selection of spare parts. Our inventory includes both **European OEM components** and **certified OEM alternatives from China**, all meeting industry standards. This enables us to provide **cost-effective solutions** without compromising on quality.

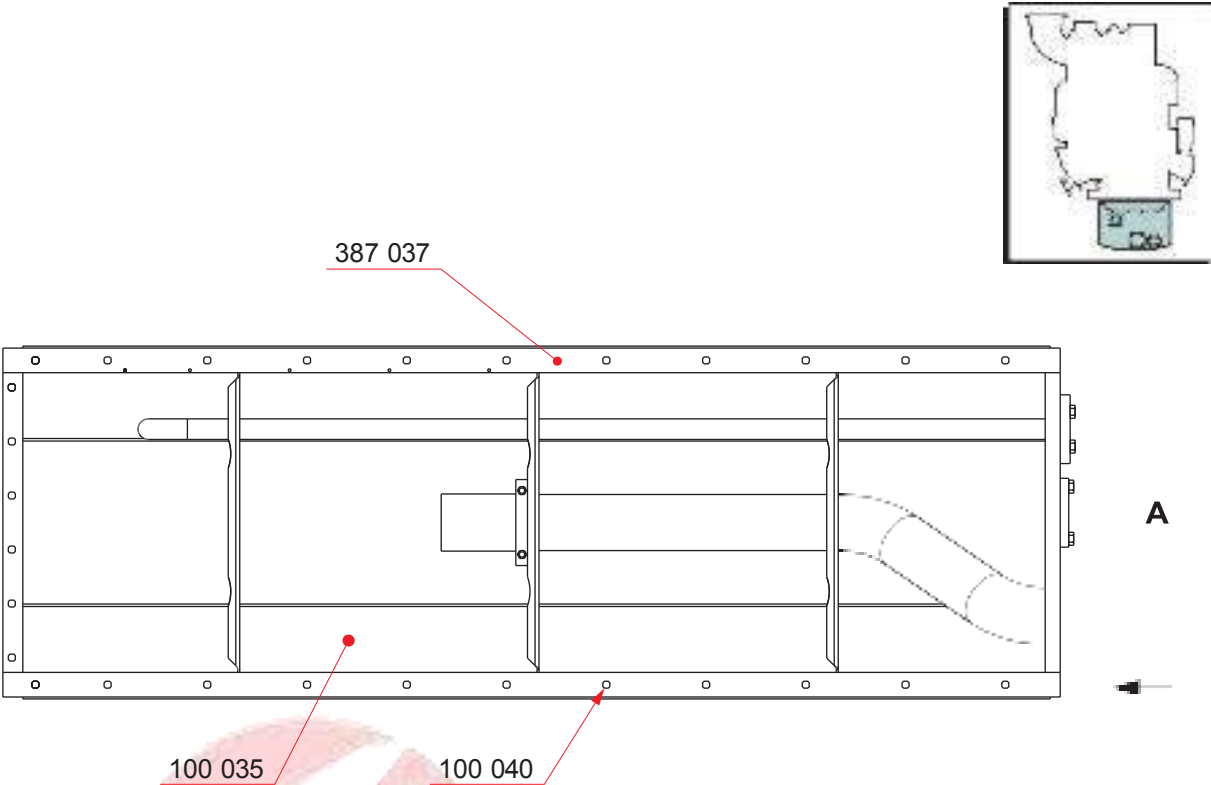
In addition to the 6L20 model, we supply **spare parts for the full range of Wärtsilä engines**, including but not limited to the **L20, Vasa, RT-flex, W26, W32, W46** series and more.

Our mission is to be more than just a supplier — we strive to be your **reliable technical partner** in ensuring the uninterrupted operation of your vessels.

Thank you for your trust. We hope this catalog becomes a valuable tool in your daily operations.

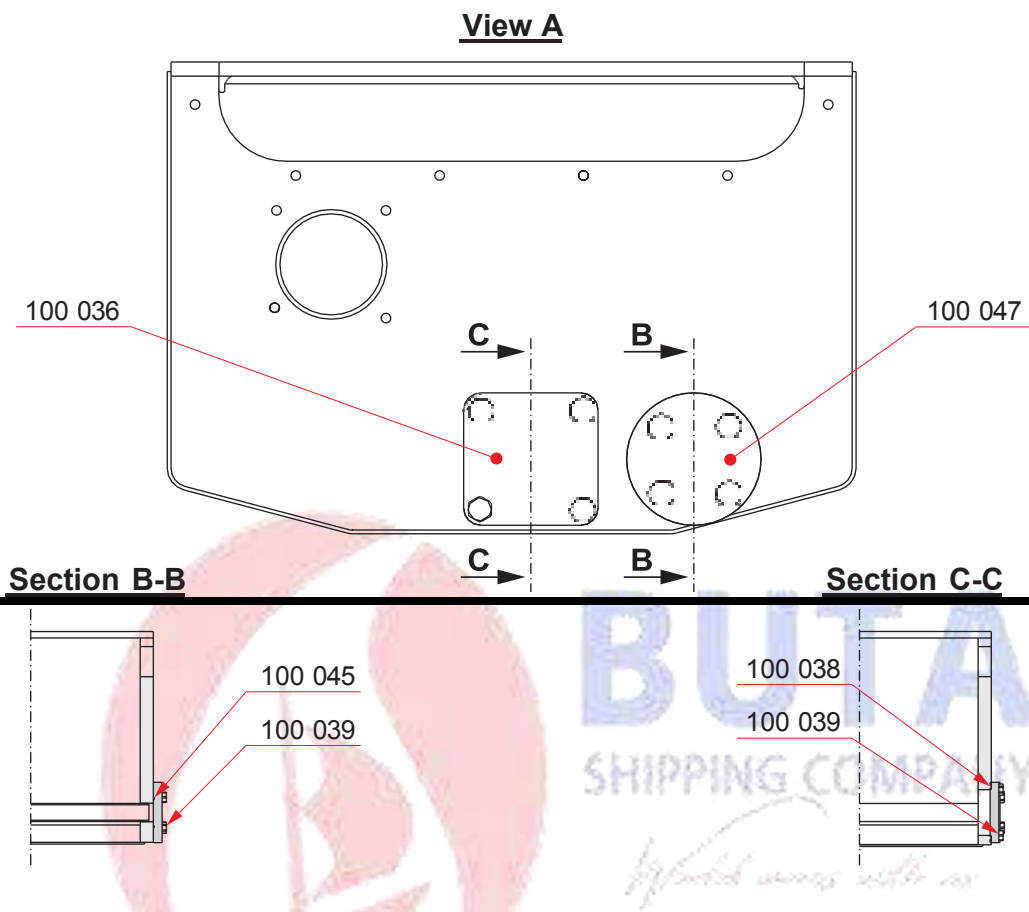
Sincerely,

The Buta Shipping Team



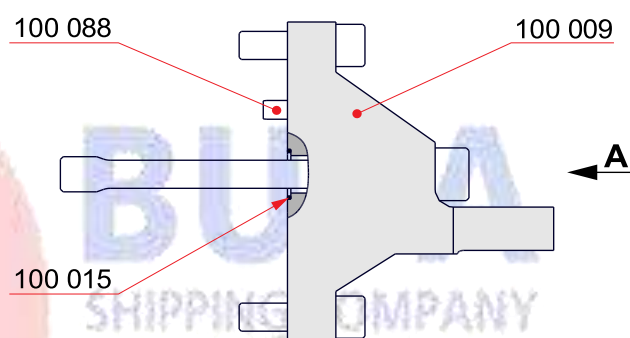
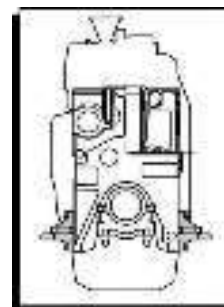
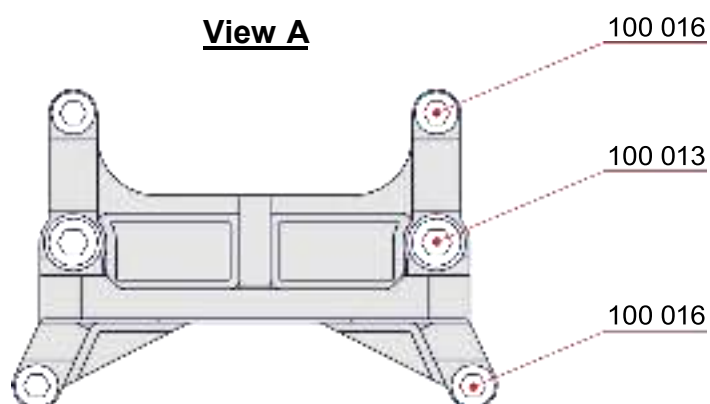
Part No.	Description	[Pcs]	[Kg]
100 035	Oil sump	1	-
100 040	Screw	22	-
387 037	Glue compound	1	-

Oil sump, deep



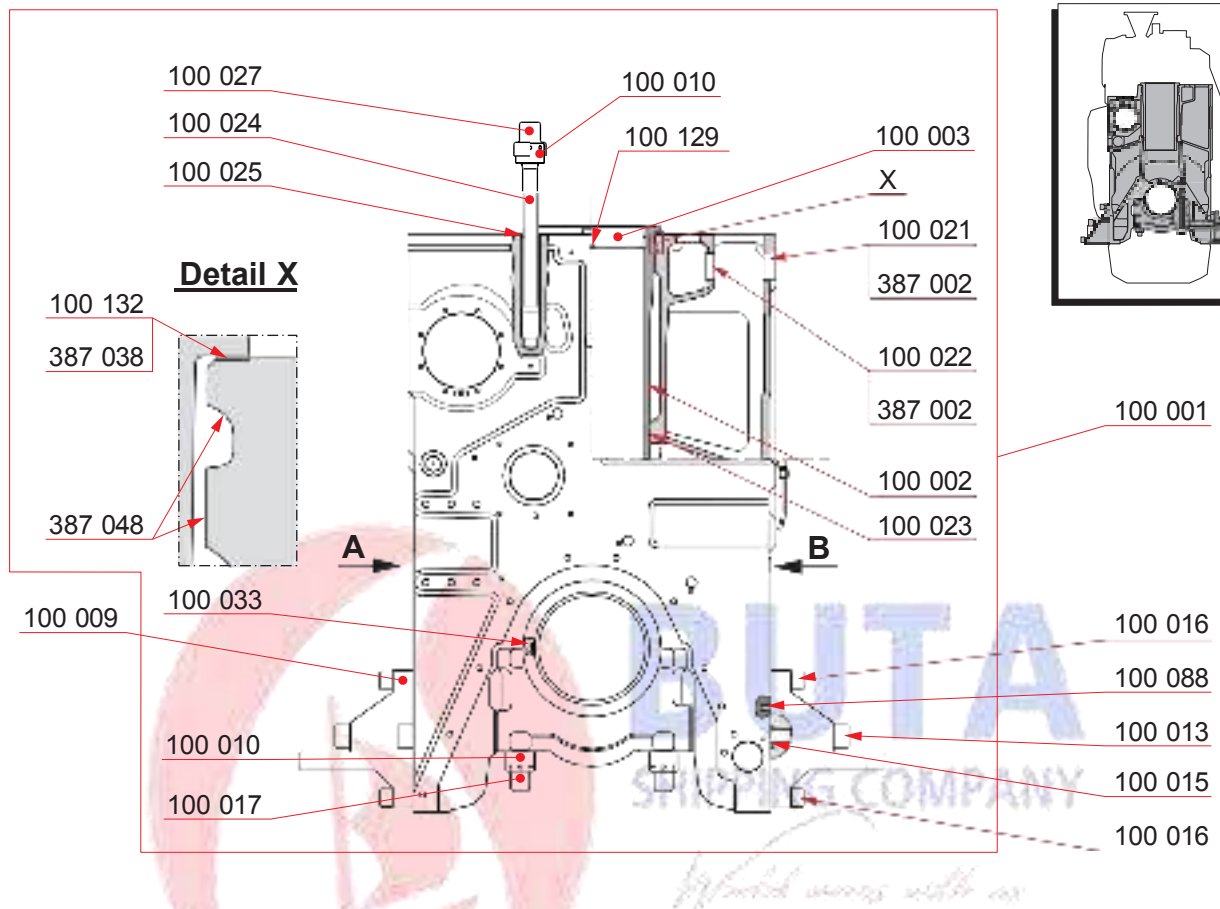
Part No.	Description	[Pcs]	[Kg]
100 036	Flange	1	2.9
100 038	O-ring	1	-
100 039	Screw	8	-
100 045	O-ring	1	-
100 047	Flange	1	2.2

Engine foot



Part No.	Description	[Pcs]	[Kg]
100 009	Engine foot	1	28.7
100 013	Side screw, long	2	1.5
100 015	O-ring	2	-
100 016	Screw	4	0.4
100 088	Pin	2	-

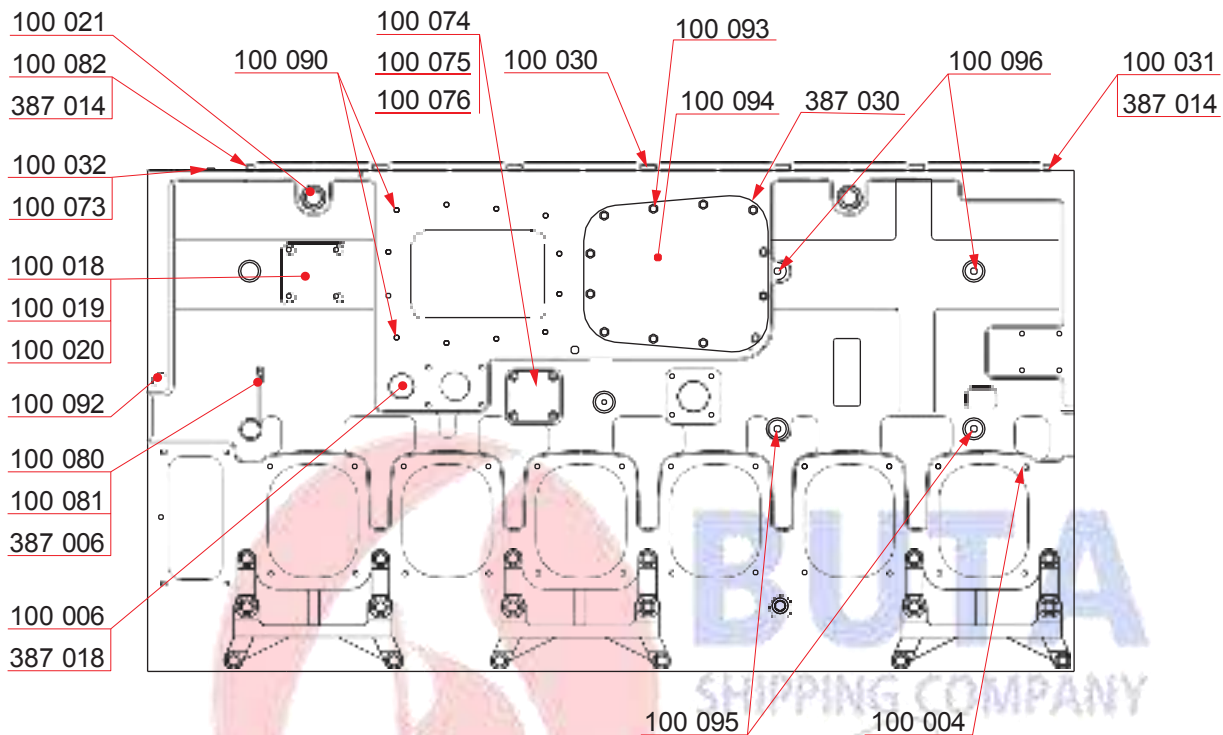
Engine block



Part No.	Description	[Pcs]	[Kg]
100 001	Engine block	1	-
100 002	Cylinder liner	*	41
100 003	Anti-polishing ring	*	0.8
100 010	Round nut	*	0.6
100 017	Main bearing screw	*	2.4
100 021	Plug	*	0.3
100 022	Plug	*	0.3
100 023	Sealing ring	*	-
100 024	Cylinder head screw	*	3.2
100 025	O-ring	*	-
100 027	Cap	*	-
100 033	Pin	1	-
100 129	Plug	1	-
100 132	Shim ring	*	-
100 009	Engine foot	*	-
100 013	Side screw, long	*	-
100 015	O-ring	*	-
100 016	Screw	*	-
100 088	Pin	*	-
387 002	Glue compound	1	-
387 038	Contact lubrication	1	-

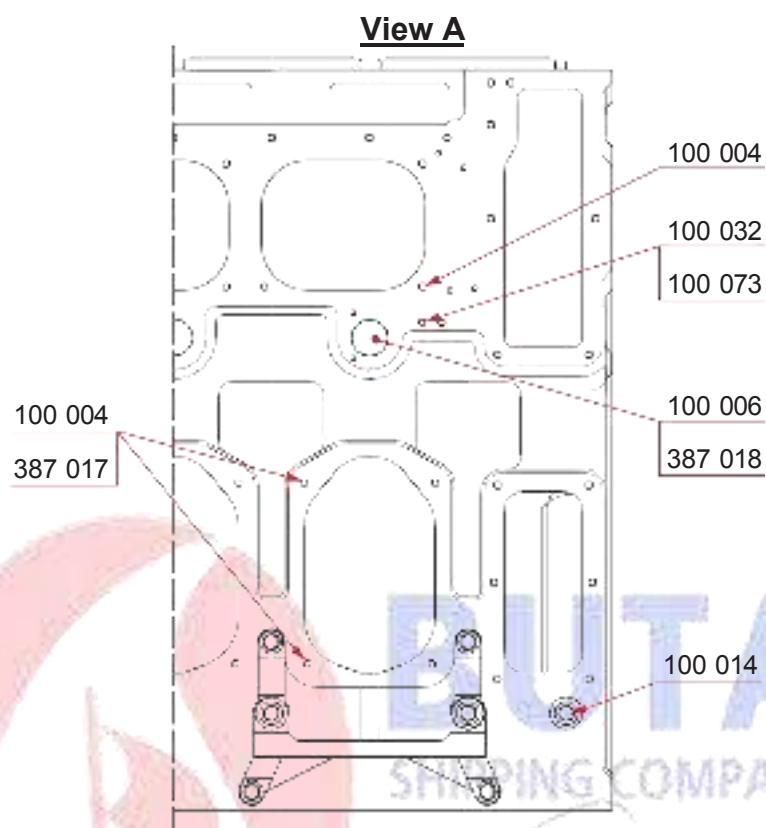
Engine block

View B



Part No.	Description	[Pcs]	[Kg]	Part No.	Description	[Pcs]	[Kg]
100 004	Screw	*	-	387 006	Glue compound	1	-
100 006	Sealing push-in cap	*	-	387 014	Glue compound	1	-
100 018	Cover for air receiver	*	1.2	387 018	Glue compound	1	-
100 019	Gasket	*	-	387 030	Glue compound	1	-
100 020	Screw	*	-				
100 021	Plug	*	0.3	NOTE!	(#) Not used if VIC is installed		
100 030	Sealing piece	*	-	NOTE!	*) See page 5		
100 031	Sealing piece	1	-				
100 032	Plug (#)	3	-				
100 073	Sealing ring (#)	3	-				
100 074	Flange	1	1.4				
100 075	Gasket	1	-				
100 076	Screw	4	-				
100 080	Pipe union	1	-				
100 081	Pipe	1	-				
100 082	Sealing piece	1	-				
100 090	Screw	*	-				
100 092	Plug	1	0.2				
100 093	Screw	12	-				
100 094	Blind flange	1	4.2				
100 095	Screw	2	0.2				
100 096	Screw	2	0.2				

Engine block

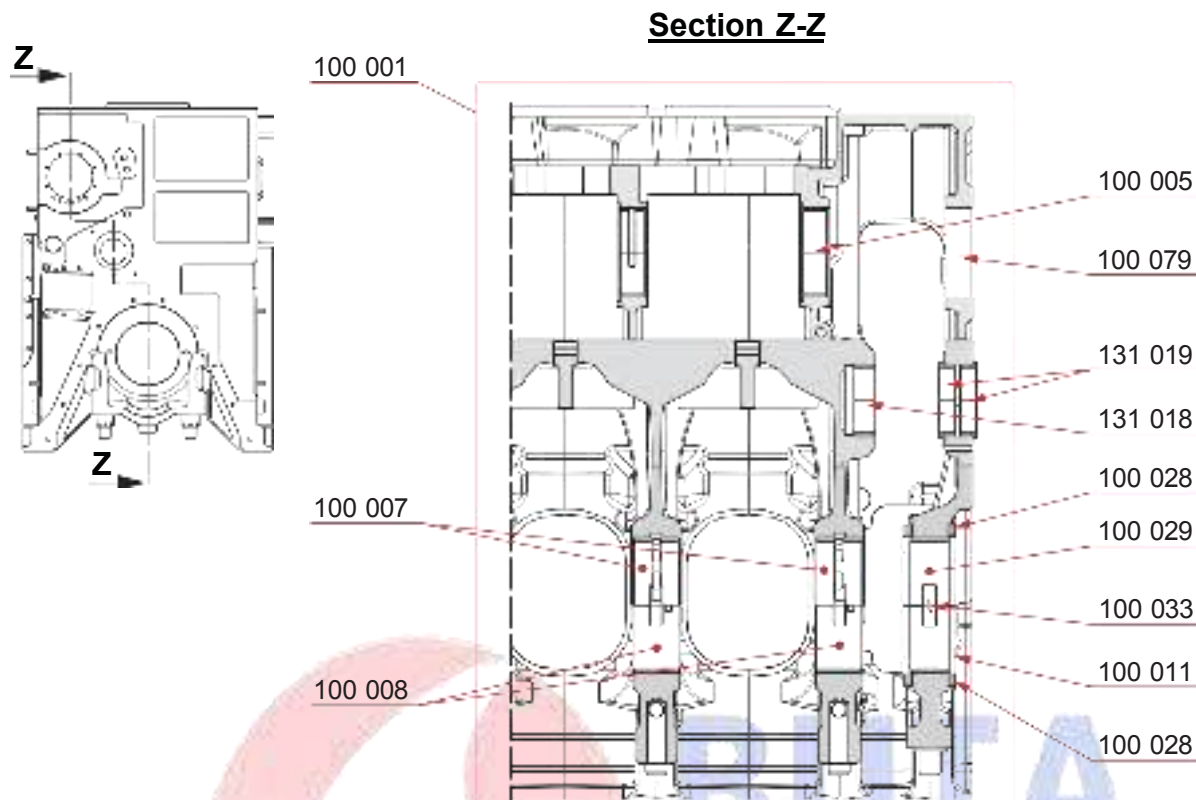


Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 004	Screw	*	-
100 006	Sealing push-in cap	*	-
100 014	Side screw, short	*	1.1
100 032	Plug	2	-
100 073	Sealing ring	2	-
387 017	Glue compound	1	-
387 018	Glue compound	1	-

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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NOTE! *) See page 5

Engine block



Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 001	Engine block	1	-				
100 005	Camshaft bearing bush	*	-				
100 007	Main bearing shell, upper	*	-				
100 008	Main bearing shell, lower	*	-				
100 011	Pin	4	-				
100 028	Thrust bearing	4	-				
100 029	Flywheel bearing shell	2	-				
100 033	Pin	1	-				
100 079	Camshaft bearing bush	1	-				
131 018	Bearing bush	1	-				
131 019	Bearing bush	2	-				

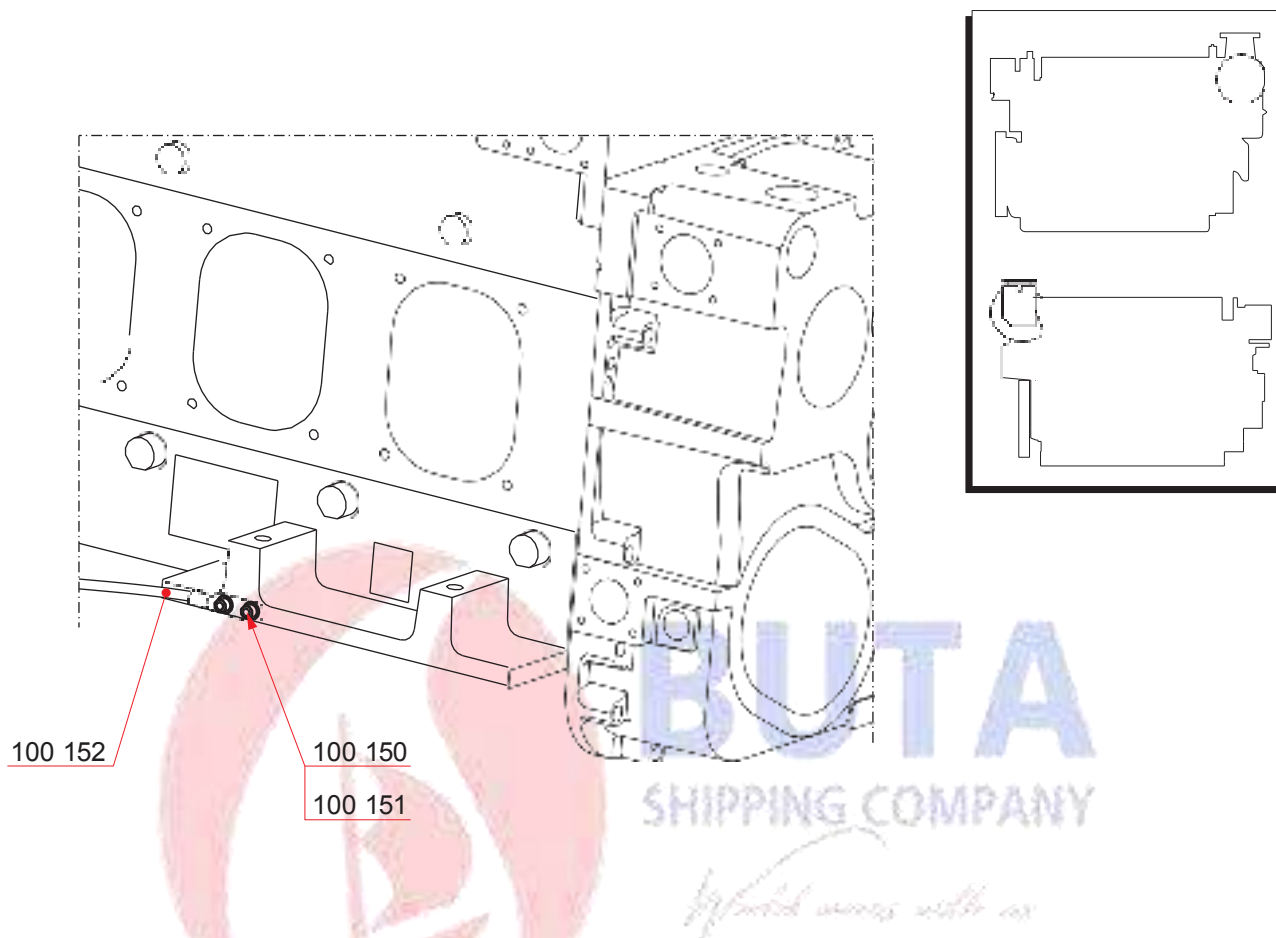
NOTE! *) See page 5

Engine block

Quantity according to number of cylinders

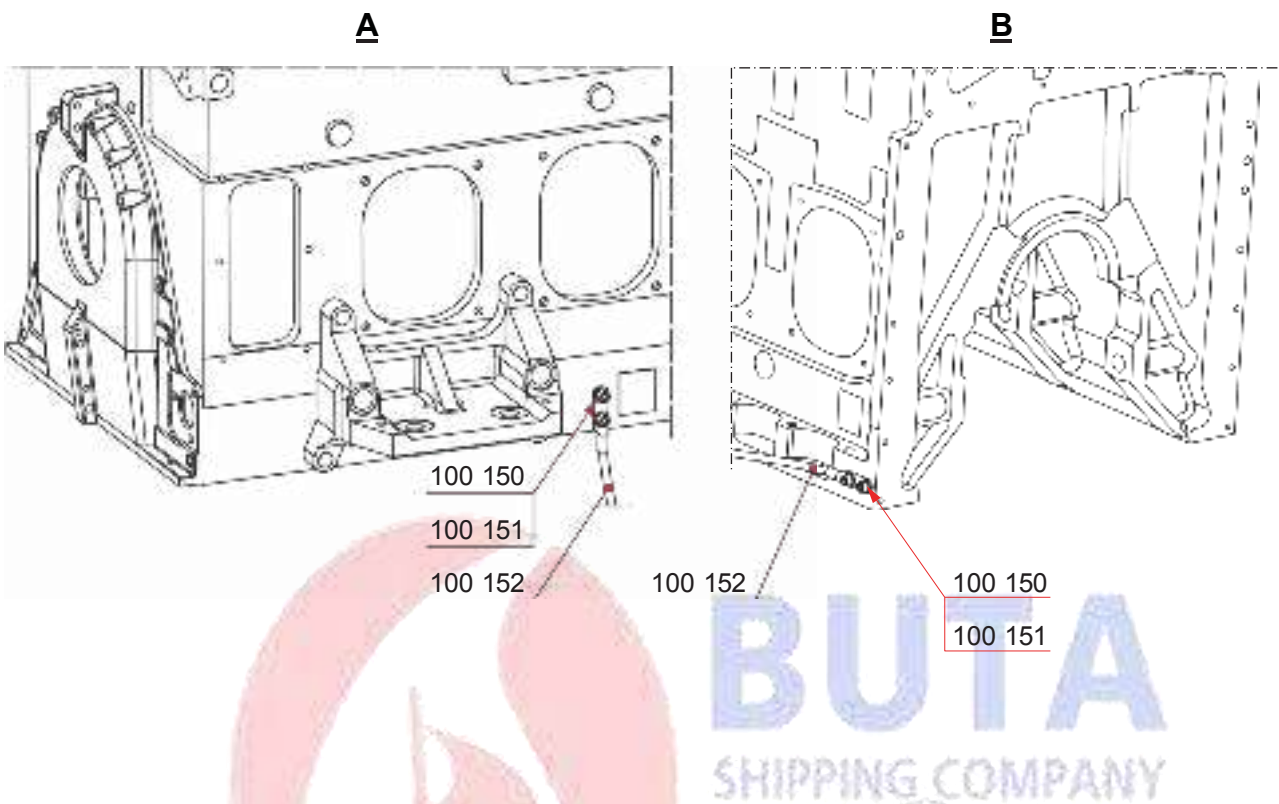
Part No. and Description	Quantity in pieces		
	6L	8L	9L
100 002 Cylinder liner	6	8	9
100 003 Anti-polishing ring	6	8	9
100 004 Screw	72	95	107
100 005 Camshaft bearing bush	6	8	9
100 006 Sealing push-in cap	7	9	10
100 007 Main bearing shell, upper	7	9	10
100 008 Main bearing shell, lower	7	9	10
100 009 Engine foot	4	4	6
100 010 Round nut	40	52	58
100 013 Side screw, long	8	8	12
100 014 Side screw, short	7	11	9
100 015 O-ring	8	8	12
100 016 Screw	16	16	24
100 017 Main bearing screw	16	20	22
100 018 Cover for air receiver	1	2	2
100 019 Gasket	1	2	2
100 020 Screw	4	8	8
100 021 Plug	2	3	3
100 022 Plug	2	3	3
100 023 Sealing ring	12	16	18
100 024 Cylinder head screw	24	32	36
100 025 O-ring	24	32	36
100 027 Cap	24	32	36
100 030 Sealing piece	5	7	8
100 088 Pin	8	8	12
100 090 Screw	2	6	6
100 132 Shim ring	6	8	9

Grounding equipment



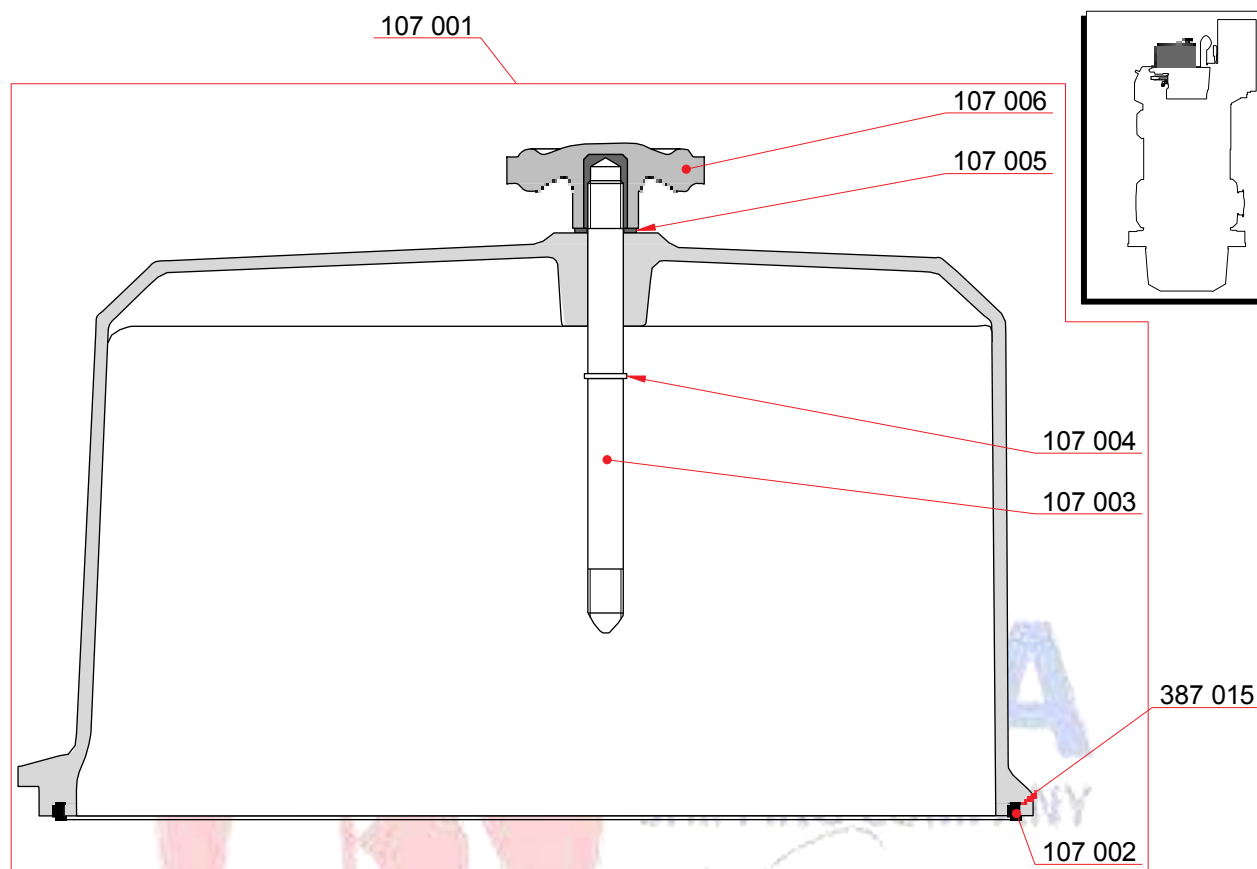
Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 150	Screw	2	-
100 151	Washer	2	-
100 152	Cable set	1	0.7

Grounding equipment



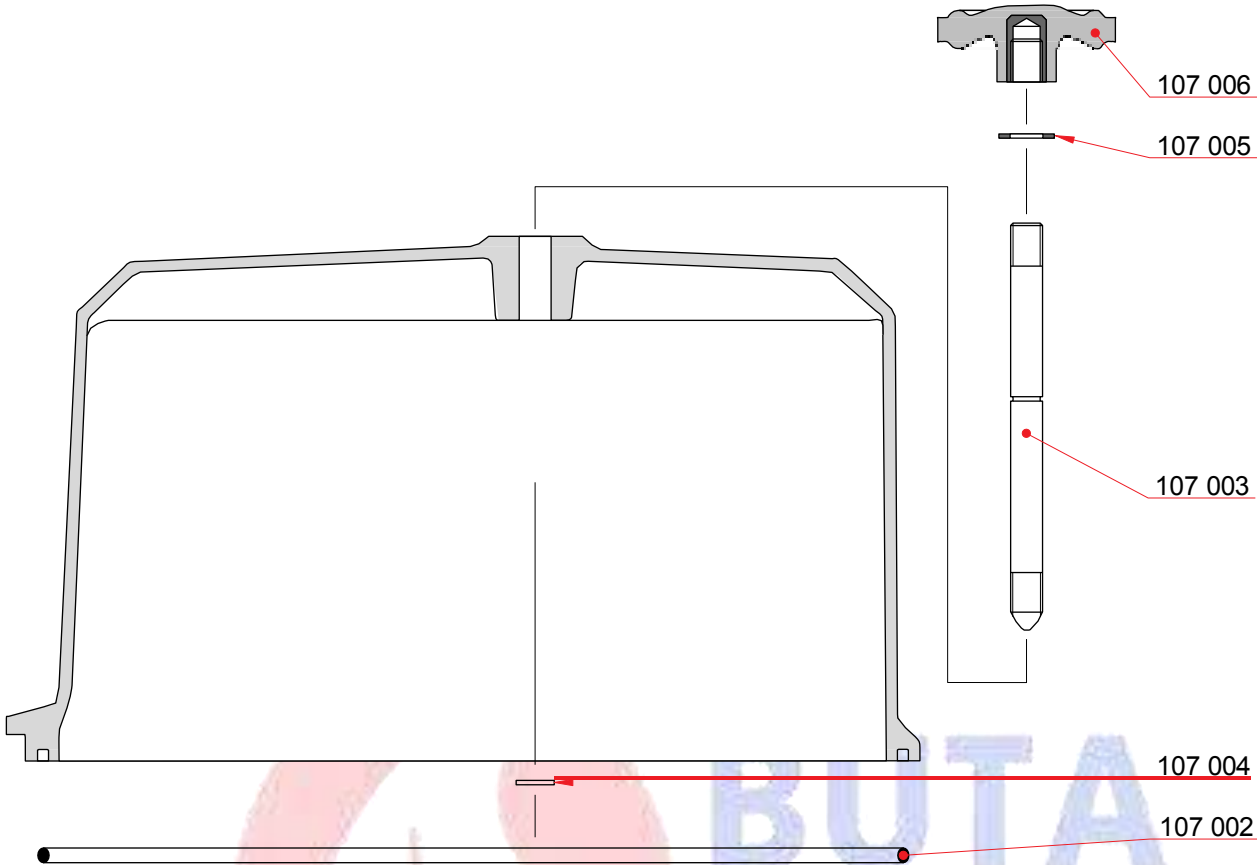
Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 150	Screw	2	-
100 151	Washer	2	-
100 152	Cable set	1	0.7

Cover for cylinder head



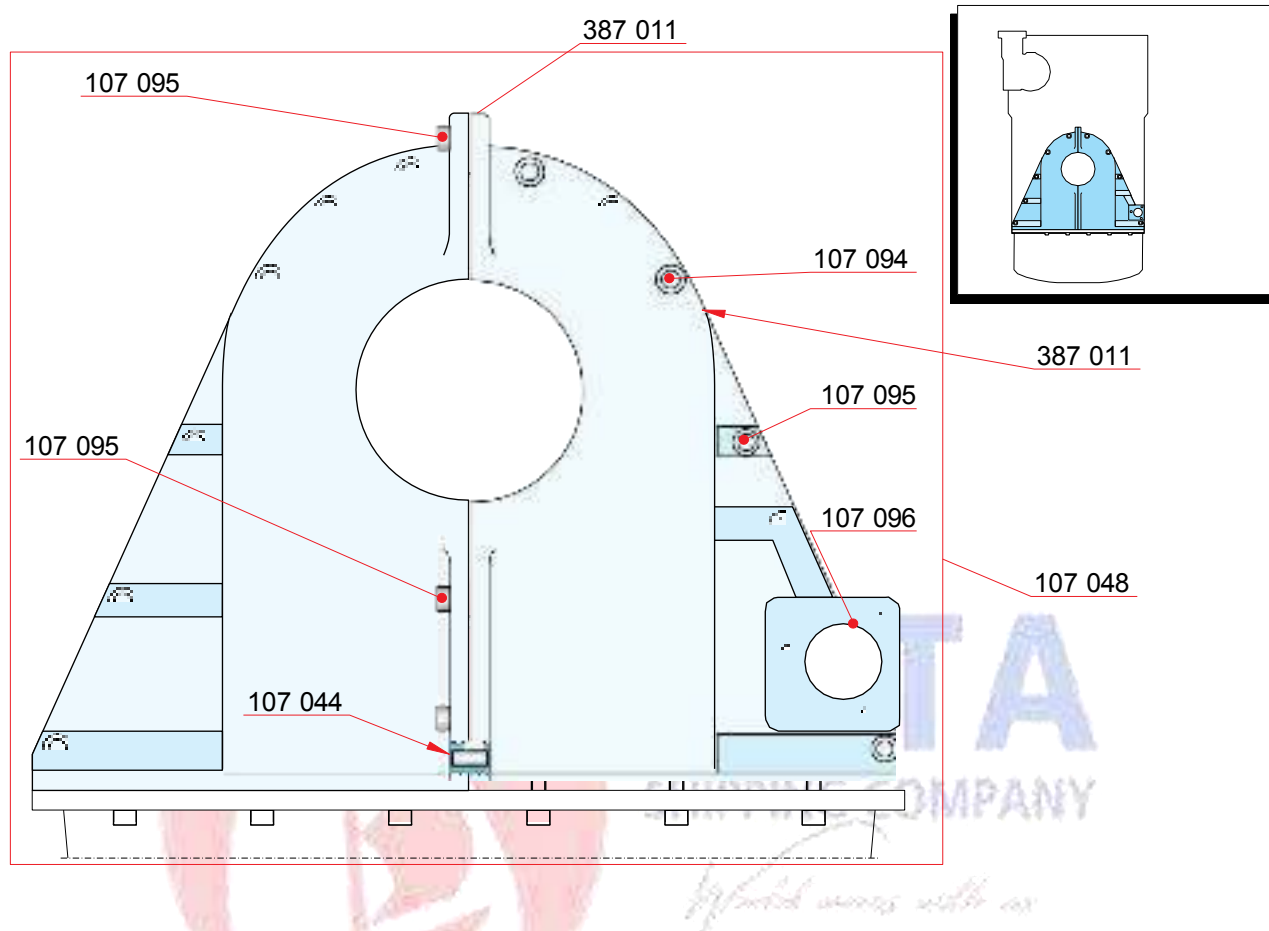
Part No.	Description	[Pcs]	Qty	Wt. [Kg]
107 001	Cover for cyl. head	1		3.6
107 002	Hose gasket for cylinder head cover	1		-
107 003	Screw	1		0.1
107 004	Retainer ring	1		-
107 005	Sealing washer	1		-
107 006	Hand wheel	1		-
387 015	Glue compound	1		-

Cover for cylinder head



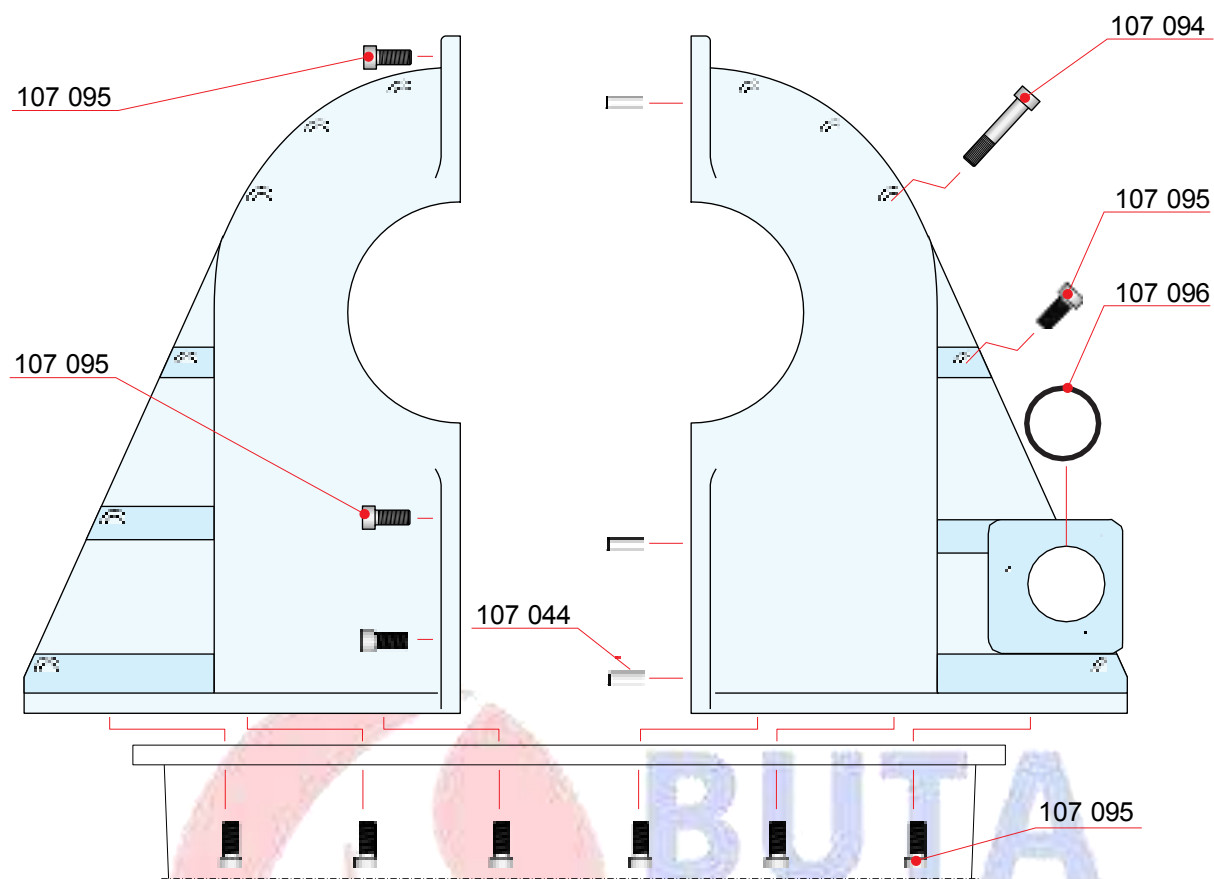
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 002	Hose gasket for cylinder head cover	1	-
107 003	Screw	1	0.1
107 004	Retainer ring	1	-
107 005	Sealing washer	1	-
107 006	Hand wheel	1	-

End cover



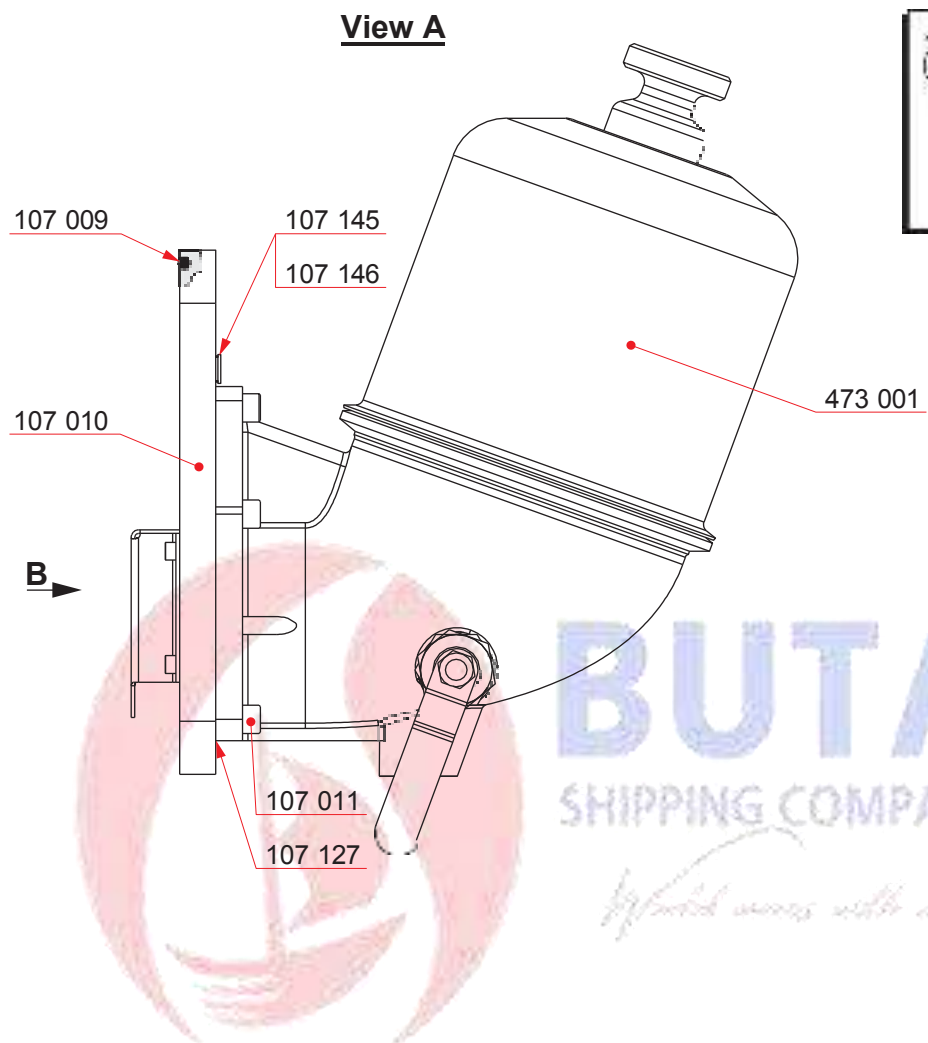
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 048	End cover, compl.	1	-
107 044	Pin	3	-
107 094	Screw	4	-
107 095	Screw	16	-
107 096	O-ring	1	-
387 011	Glue compound	1	-

End cover



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 044	Pin	3	-
107 094	Screw	4	-
107 095	Screw	16	-
107 096	O-ring	1	-

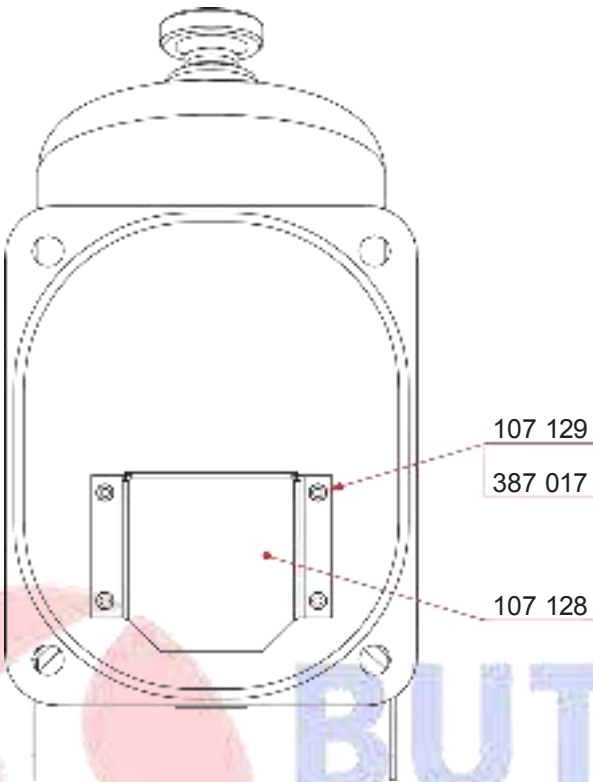
Crankcase cover with centrifugal filter



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 009	Hose gasket	1	-
107 010	Crankcase cover	1	-
107 011	Screw	6	-
107 127	O-ring	1	-
107 145	Plug	1	-
107 146	Sealing ring	1	-
473 001	Centrifugal filter (1)	1	-

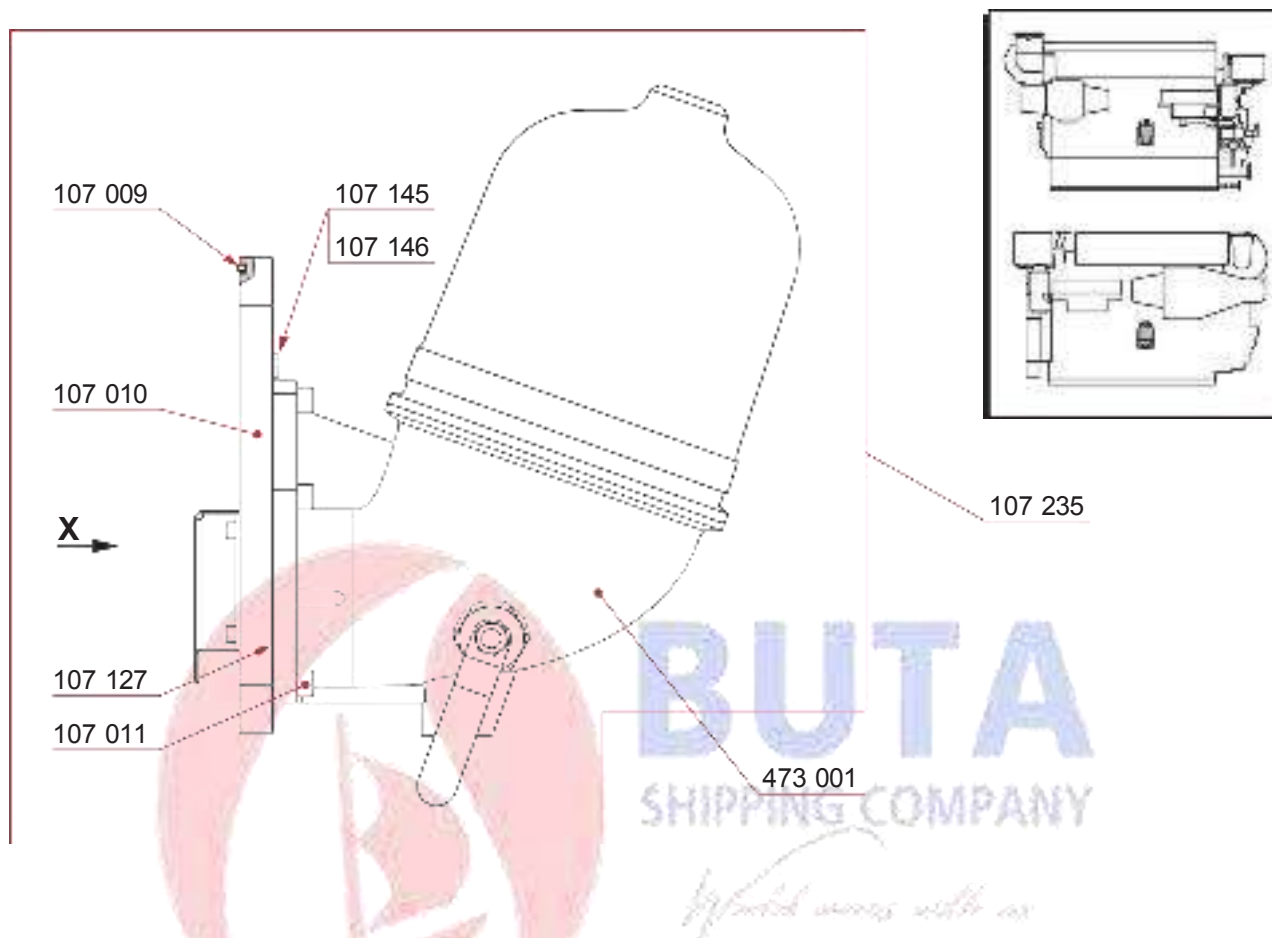
Crankcase cover with centrifugal filter

View B



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 128	Protecting cover	1	-
107 129	Screw	4	0.3
387 017	Glue compound	1	-

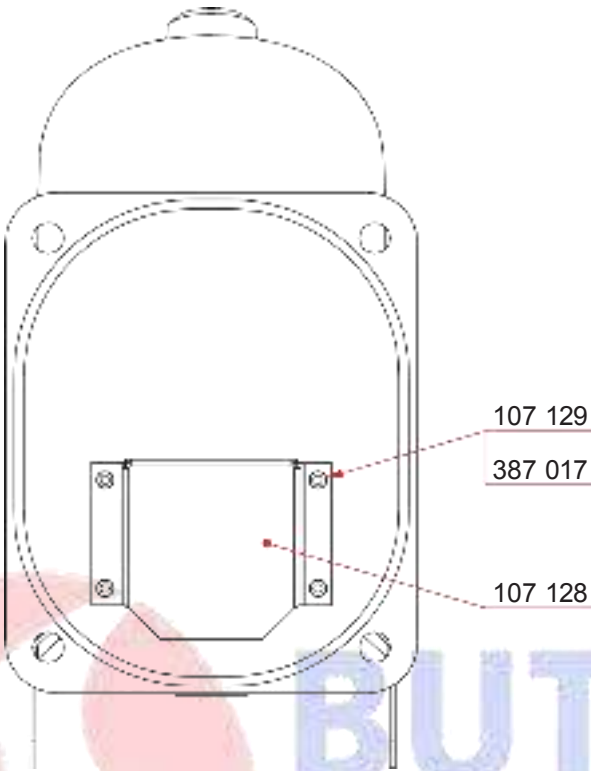
Crankcase cover with centrifugal filter



Part No.	Description	[Pcs]	[Kg]
107 235	Crankcase cover compl. without centrifugal filter	1	-
107 009	Hose gasket	1	-
107 010	Crankcase cover	1	-
107 011	Screw	6	-
107 127	O-ring	1	-
107 145	Plug	1	-
107 146	Sealing ring	1	-
473 001	Centrifugal filter (1)	1	-

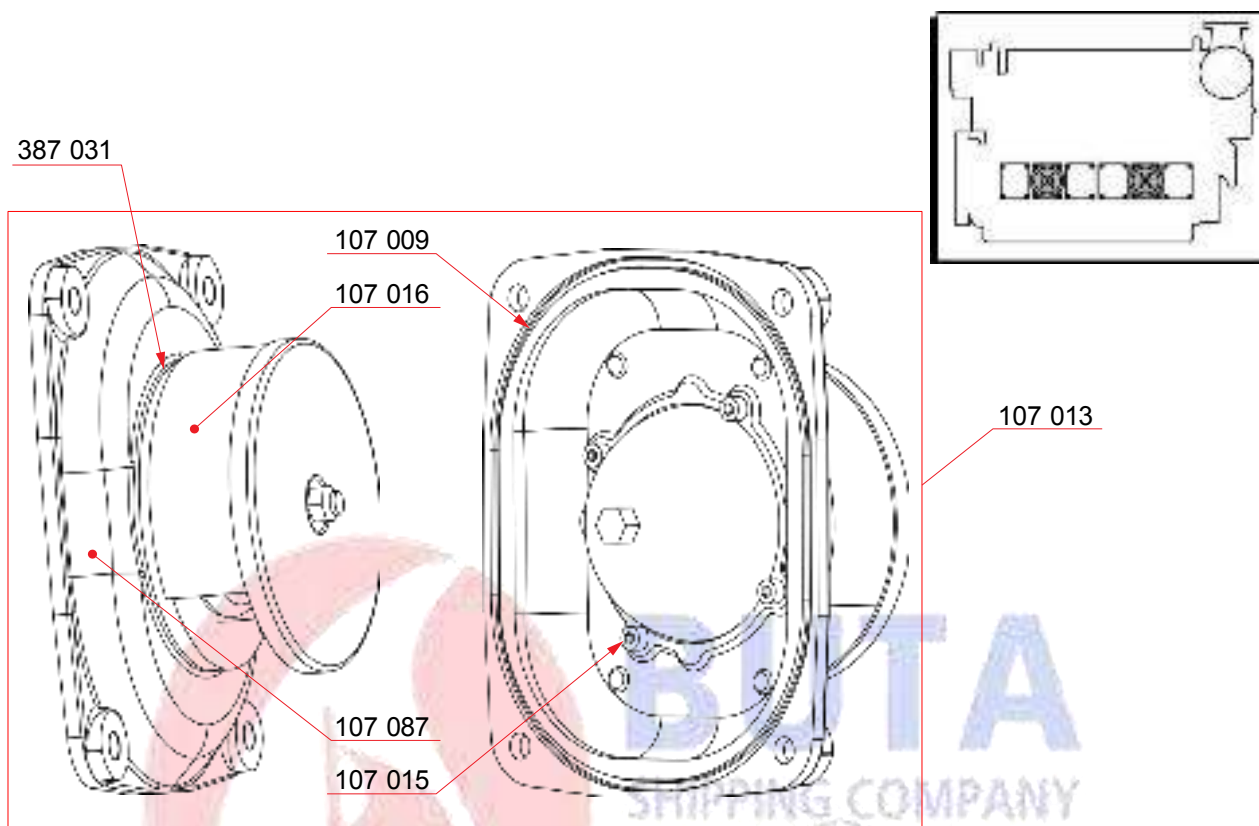
Crankcase cover with centrifugal filter

X



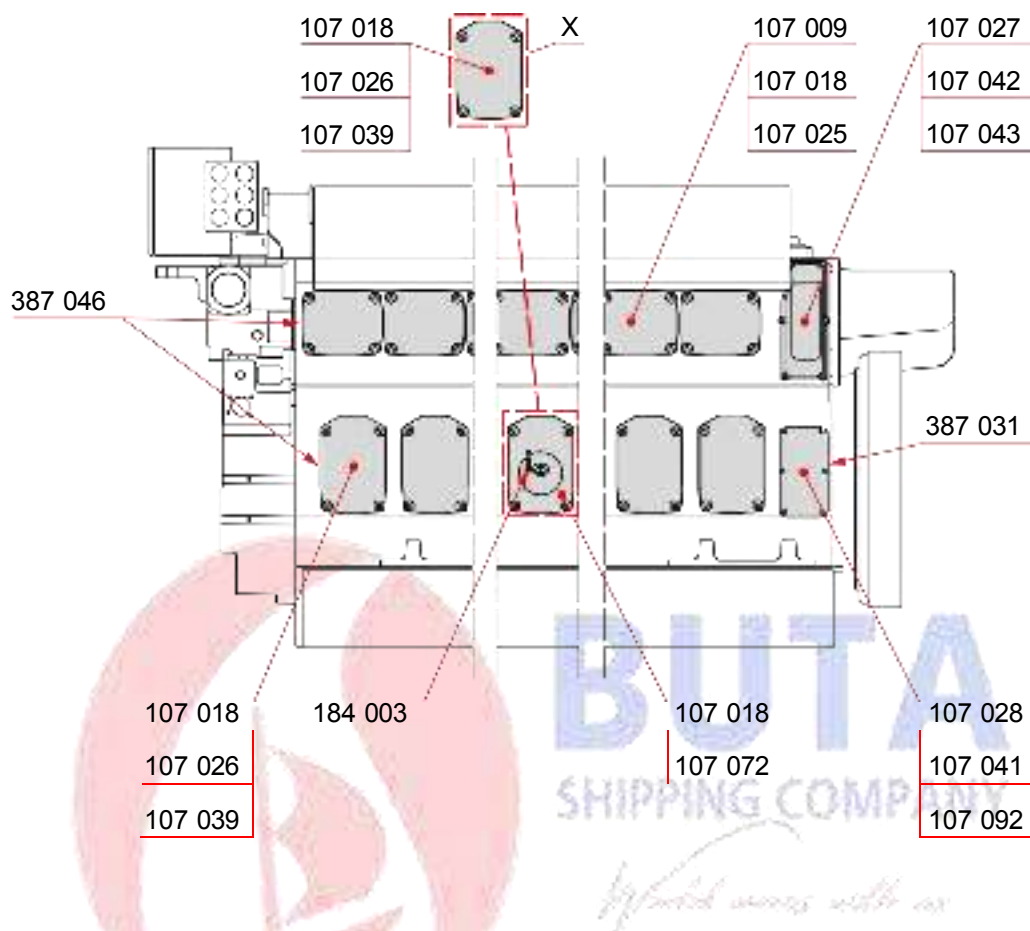
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 128	Protecting cover	1	-
107 129	Screw	4	-
387 017	Glue compound	1	-

Crankcase cover with relief valve



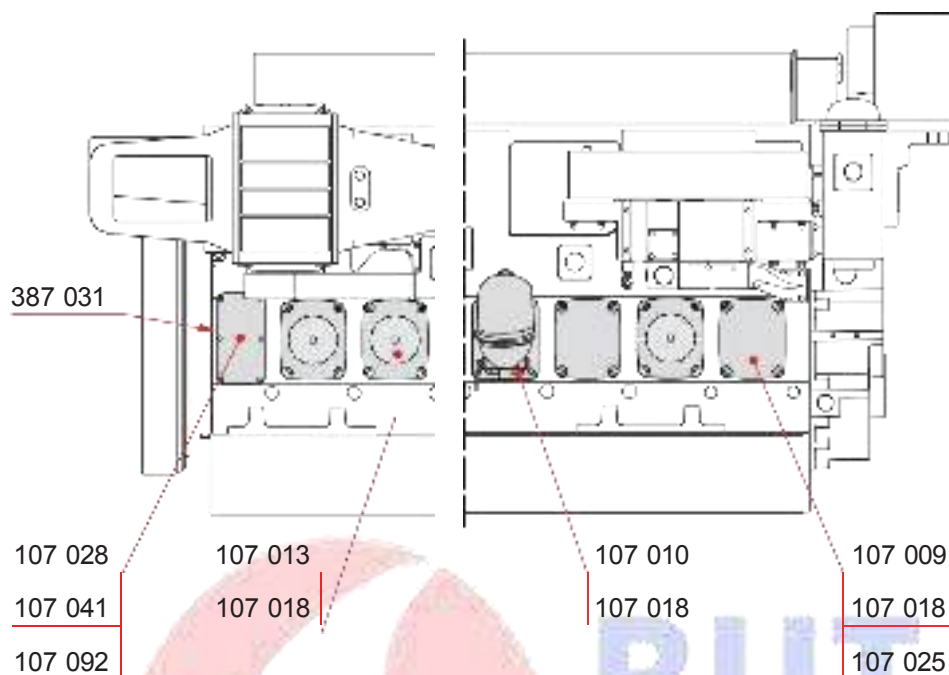
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 013	Crankcase cover with relief valve	1	4
107 009	Hose gasket	1	-
107 015	Screw	4	-
107 016	Relief valve	1	2.4
107 087	Screw	1	1.5
387 031	Glue compound	1	-

Covers



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 009	Hose gasket	*	-
107 018	Nut	*	-
107 025	Cover	*	1.5
107 026	Crankcase cover	*	1.7
107 027	Cover for camshaft gear	1	2.1
107 028	Cover	2	1.5
107 039	Hose gasket for lower side cover	*	-
107 041	Screw	12	-
107 042	Hose gasket for camshaft gear cover	1	-
107 043	Screw	6	-
107 072	Crankcase cover with oil filling opening	*	8
107 092	Washer	4	-
184 003	Oil dipstick	*	0.1
387 031	Glue compound	1	-
387 046	Glue compound	1	-

Covers



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 009	Hose gasket	*	-
107 010	Crankcase cover	1	-
107 013	Crankcase cover with relief valve	*	4
107 018	Nut	*	-
107 025	Cover	*	1.5
107 028	Cover	2	1.5
107 041	Screw	12	-
107 092	Washer	4	-
387 031	Glue compound	1	-

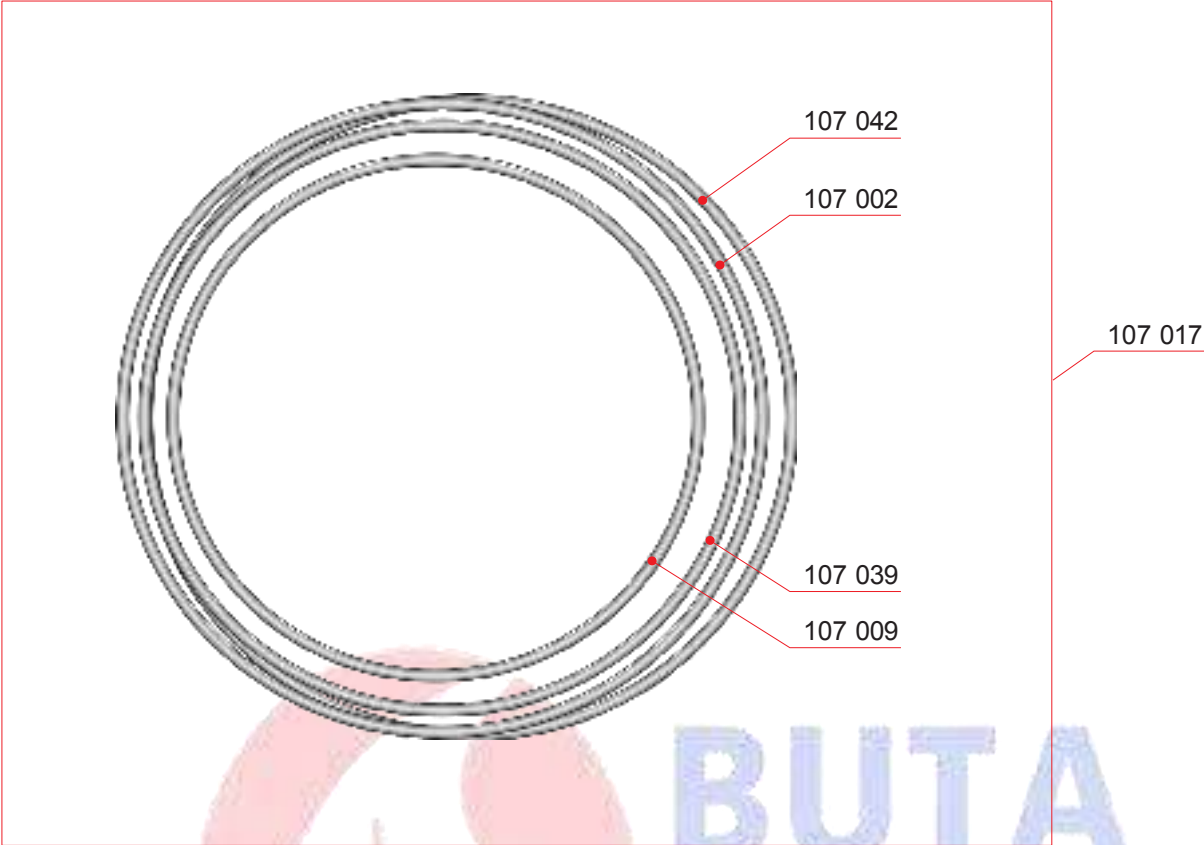
Covers

Quantity according to number of cylinders and used sump type.

Part No	Pieces								
	6L20			8L20			9L20		
	Wet	Dry	Deep	Wet	Dry	Deep	Wet	Dry	Deep
107 009	8	8	8	11	11	11	12	12	12
107 013	3	3	3	4	4	4	5	5	5
107 018	72	72	72	96	96	96	108	108	108
107 025	8	8	8	11	11	11	12	12	12
107 026	5	6	5	7	8	7	8	9	8
107 039	5	6	5	7	8	7	8	9	8
107 072	1	-	1	1	-	1	1	-	1
184 003	1	-	1	1	-	1	1	-	1

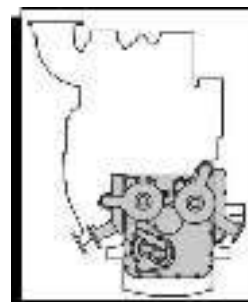
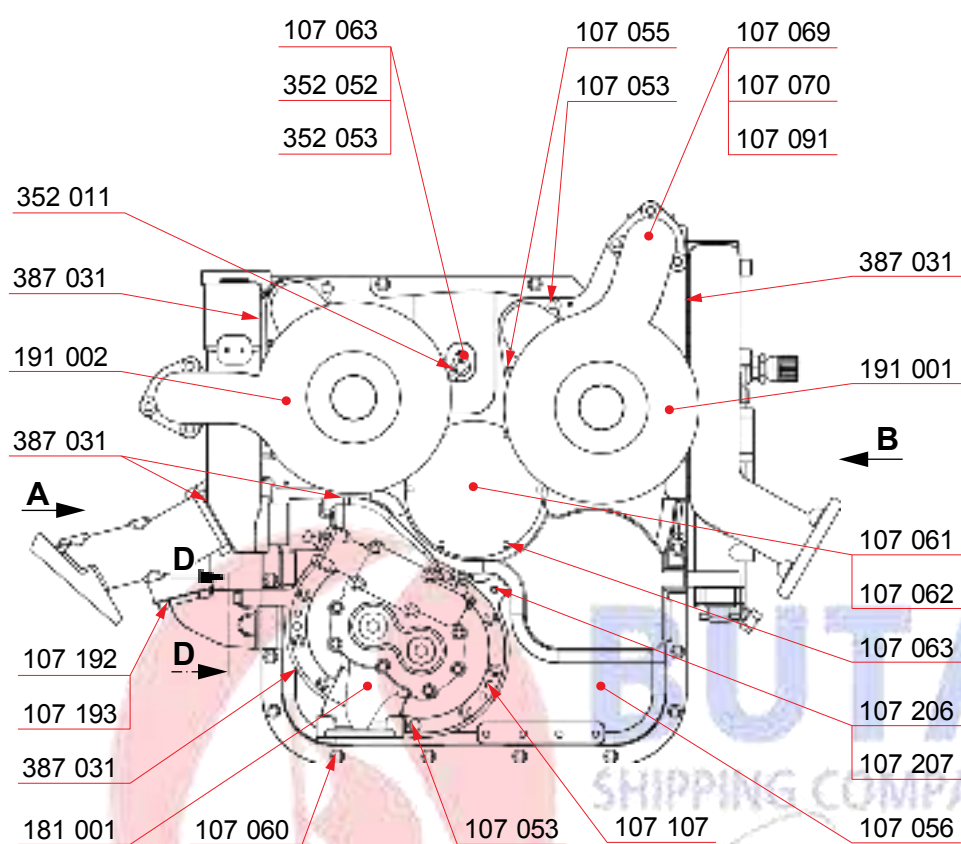


Covers



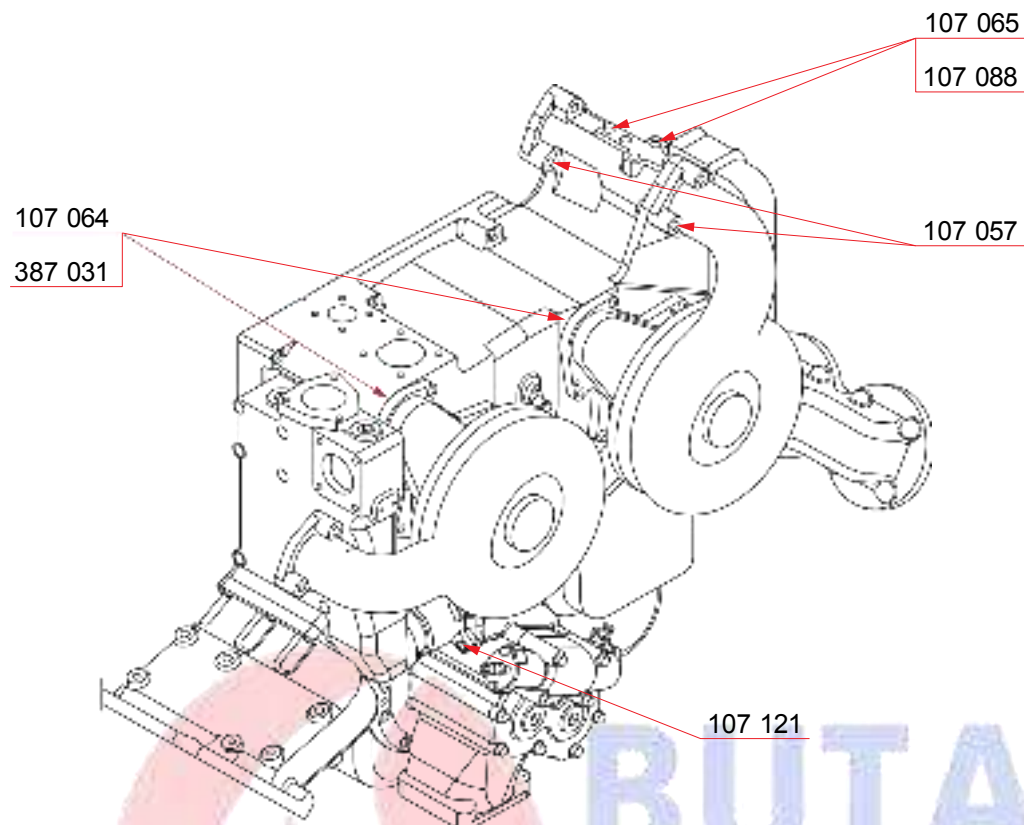
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 017	Sealing set for covers	1	-
107 002	Hose gasket for cylinder head cover	1	-
107 009	Hose gasket	1	-
107 039	Hose gasket for lower side cover	1	-
107 042	Hose gasket for camshaft gear cover	1	-

Pump cover assembly



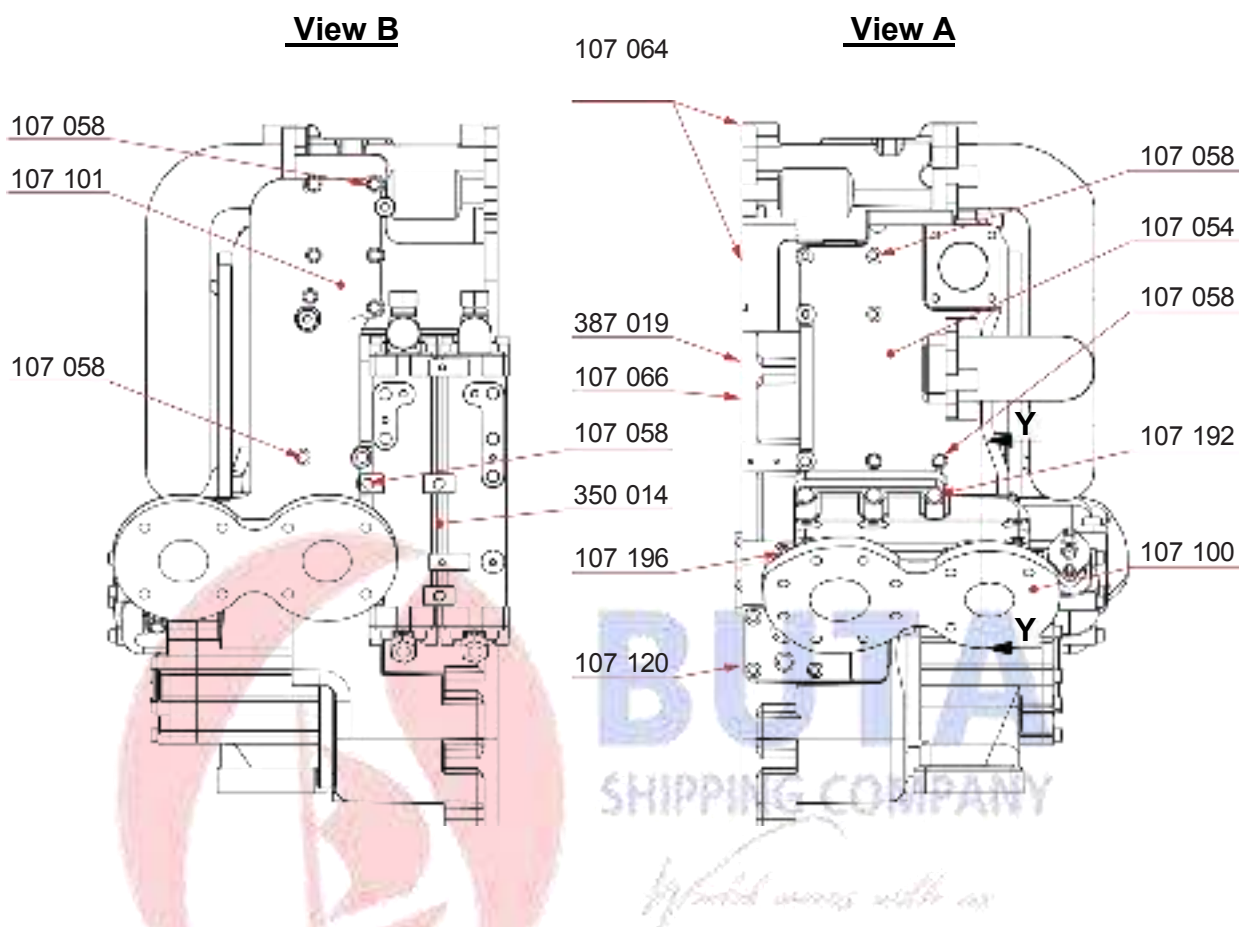
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 053	Screw	19	-
107 055	Pin	4	-
107 056	Pump cover	1	170
107 060	Screw	15	-
107 061	Gasket	1	-
107 062	Cover	1	3
107 063	Screw	7	-
107 069	Pin	1	-
107 070	Non-return valve	1	0.5
107 090	O-ring	1	-
107 107	Pin	2	-
107 192	Screw	1	-
107 193	Washer	1	-
107 206	Sealing ring	1	-
107 207	Plug	1	-
181 001	Lubricating oil pump (1)	1	-
191 001	HT water pump (2)	1	-
191 002	LT water pump (2)	1	-
352 011	Pipe union	1	-
352 052	Oil nozzle	1	-
352 053	O-ring	1	-

Pump cover assembly



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 057	Screw	6	-
107 064	O-ring	4	-
107 065	Plug	3	-
107 088	Sealing ring	2	-
107 121	Screw	4	-
387 031	Glue compound	1	-

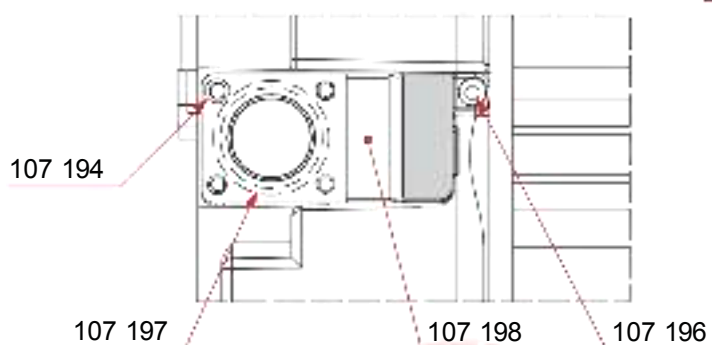
Pump cover assembly



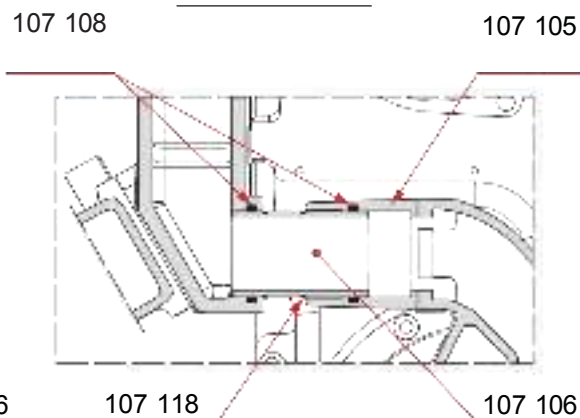
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 054	Water connection	1	31
107 058	Screw	19	0.1
107 064	O-ring	4	-
107 066	Pin	2	-
107 100	Water connection	1	24
107 101	Water connection	1	-
107 120	O-ring	1	-
107 192	Screw	8	-
107 196	Screw	2	-
350 014	Pulse damper (3)	1	-
387 019	Glue compound	1	-

Pump cover assembly

Section D-D

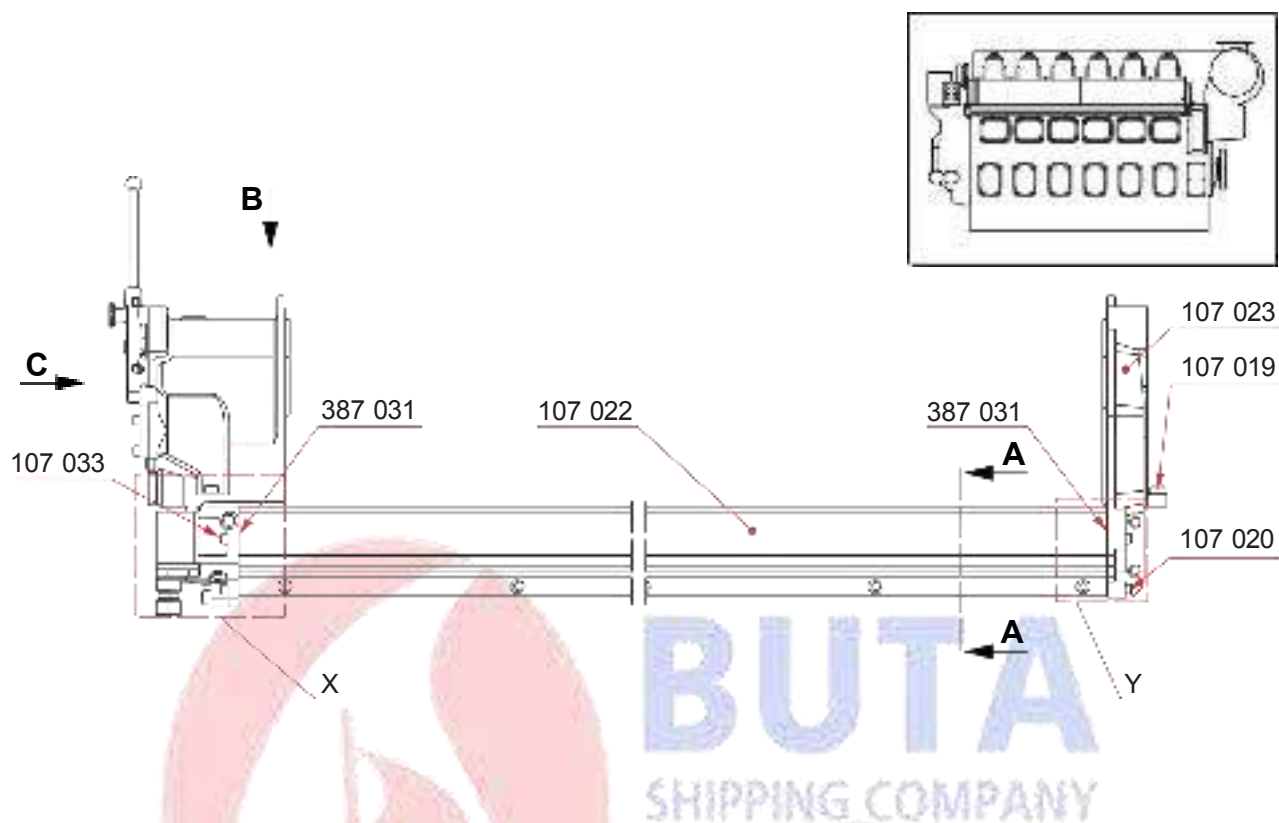


Section Y-Y



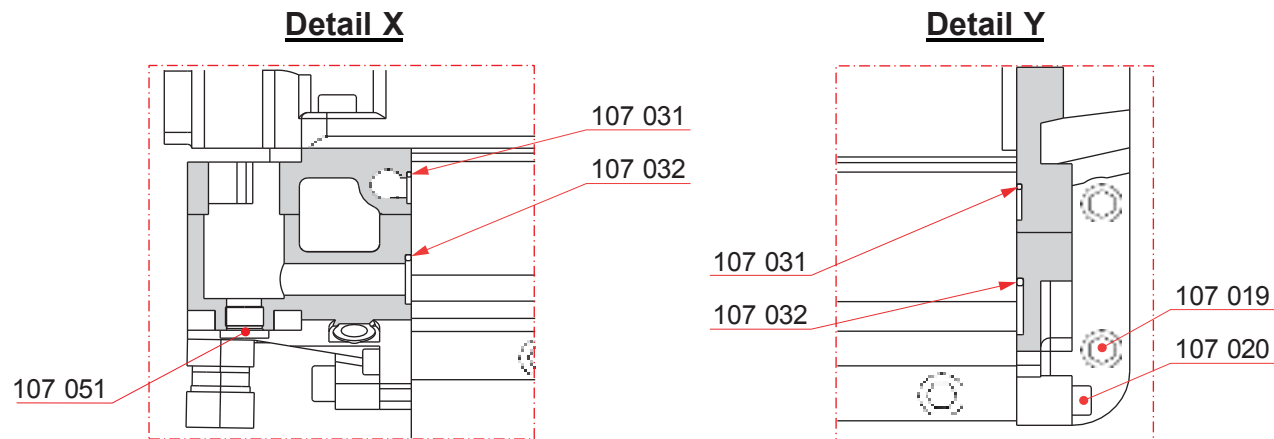
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 105	Connection piece	1	2.1
107 106	Pipe	1	0.9
107 108	O-ring	2	-
107 118	Retaining ring	2	-
107 194	Stud	1	-
107 196	Screw	2	-
107 197	O-ring	1	-
107 198	Connecting piece	1	7

Side covers



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 019	Screw	9	-
107 020	Screw	2	-
107 022	Side cover, lower part	1	-
107 023	End cover, upper half	1	14.8
107 033	Screw	2	-
387 031	Glue compound	1	-

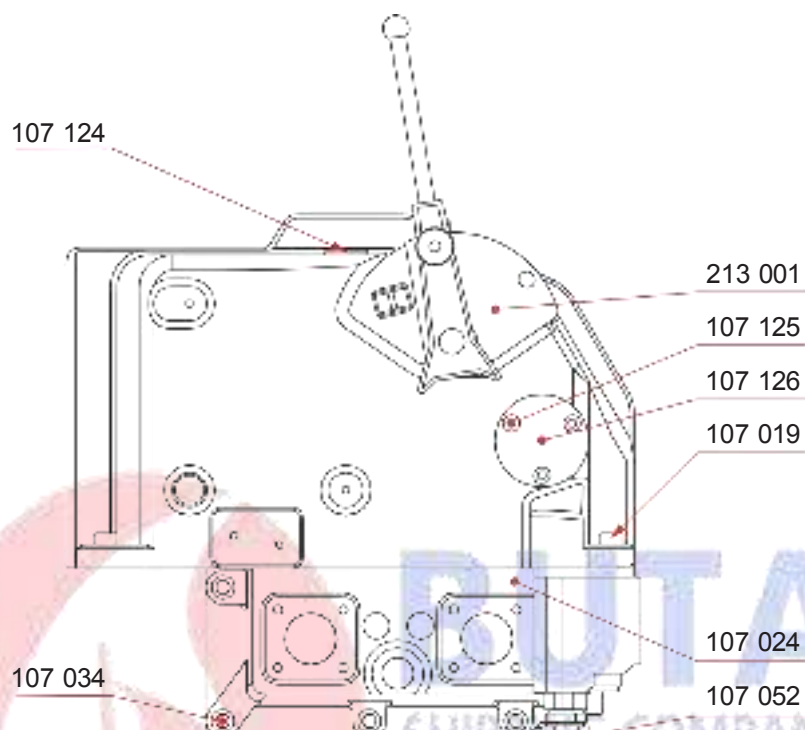
Side covers



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 019	Screw	9	-
107 020	Screw	2	-
107 031	O-ring	4	-
107 032	O-ring	4	-
107 051	Plug	1	-

Side covers

View C

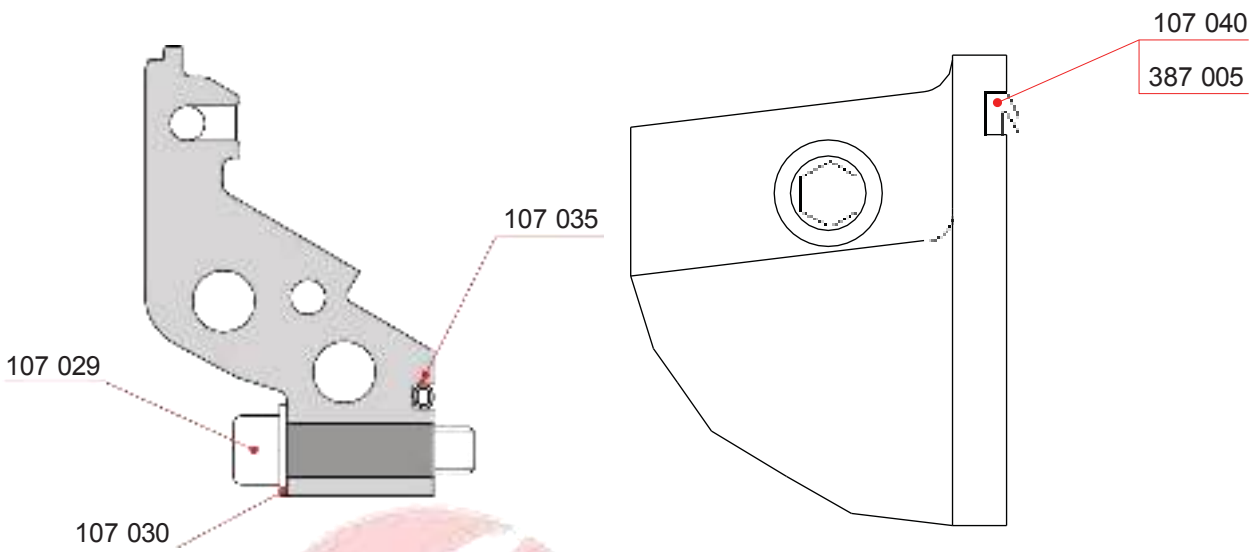


Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 019	Screw	9	-
107 024	End cover, lower half	1	9.5
107 034	Screw	4	-
107 052	Pipe union	1	0.1
107 124	Plug	1	-
107 125	Screw	3	-
107 126	Bearing housing	1	-
213 001	Stop lever and end cover	1	-

Side covers

Section A-A

View B



Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 029	Screw	*	-
107 030	Washer	*	-
107 035	Hose gasket	*	-
107 040	Gasket	1	-
387 005	Glue compound	1	-

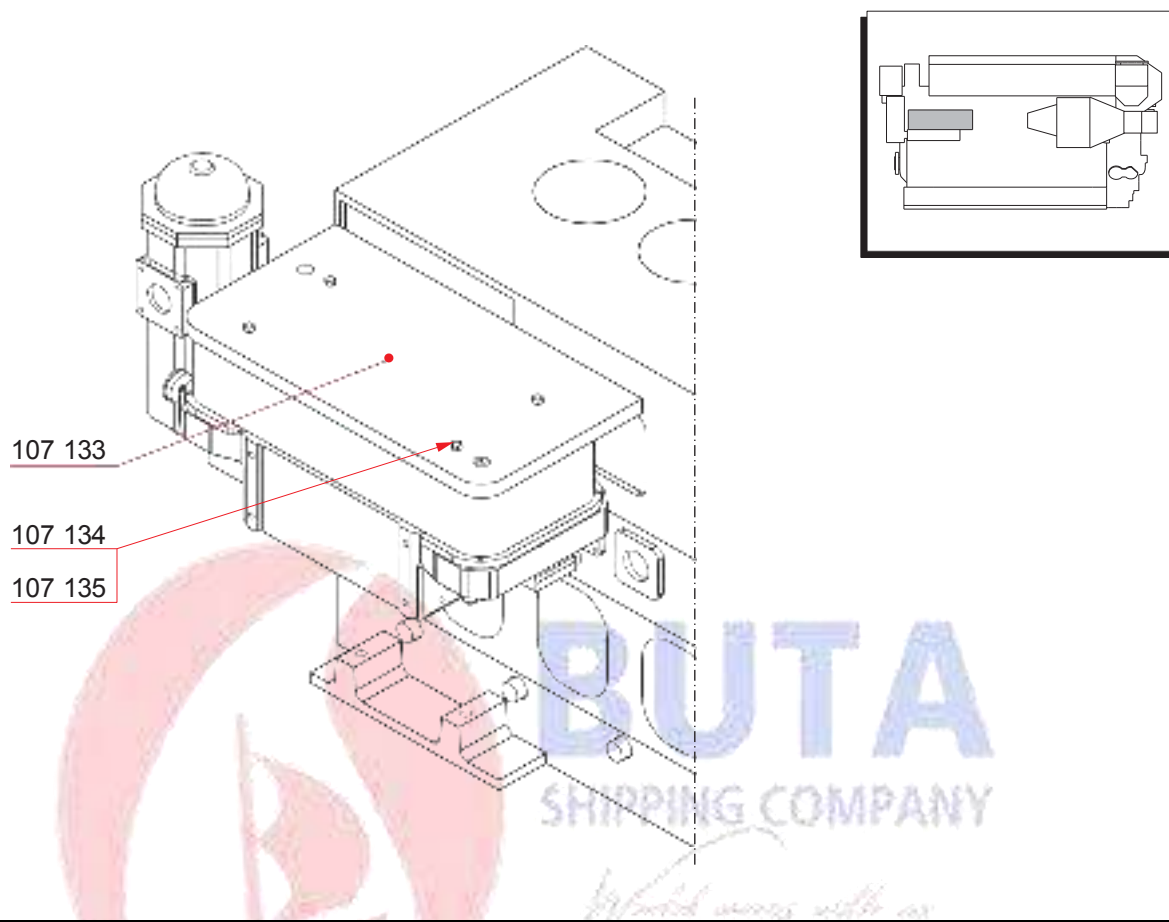
Side covers

Quantity according to number of cylinders

Part No	Pieces		
	6L20	8L20	9L20
107 029	7	9	10
107 030	7	9	10
107 035	1,87m	2,47m	2,77m

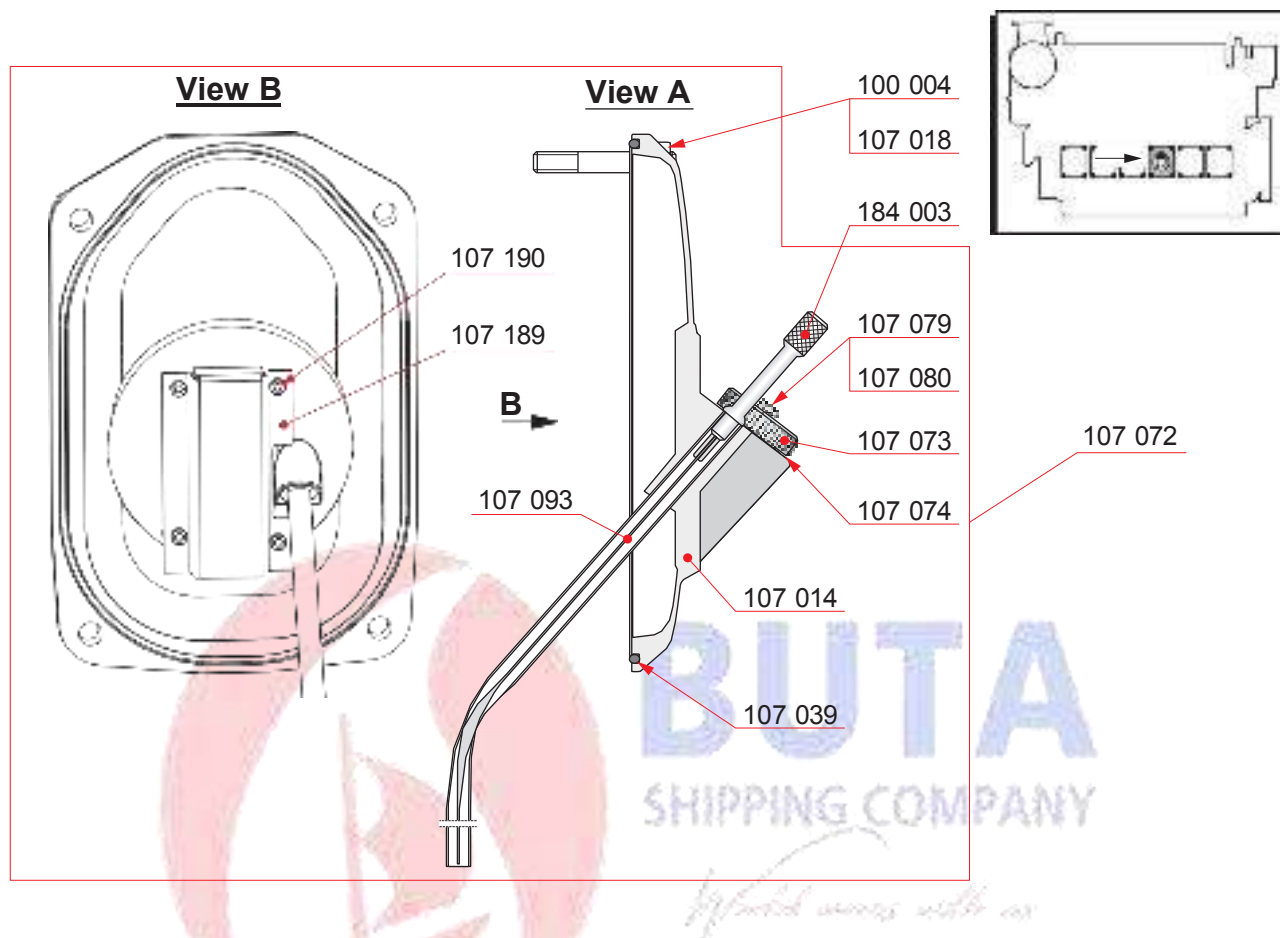
							
Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]

Shield for lube oil module



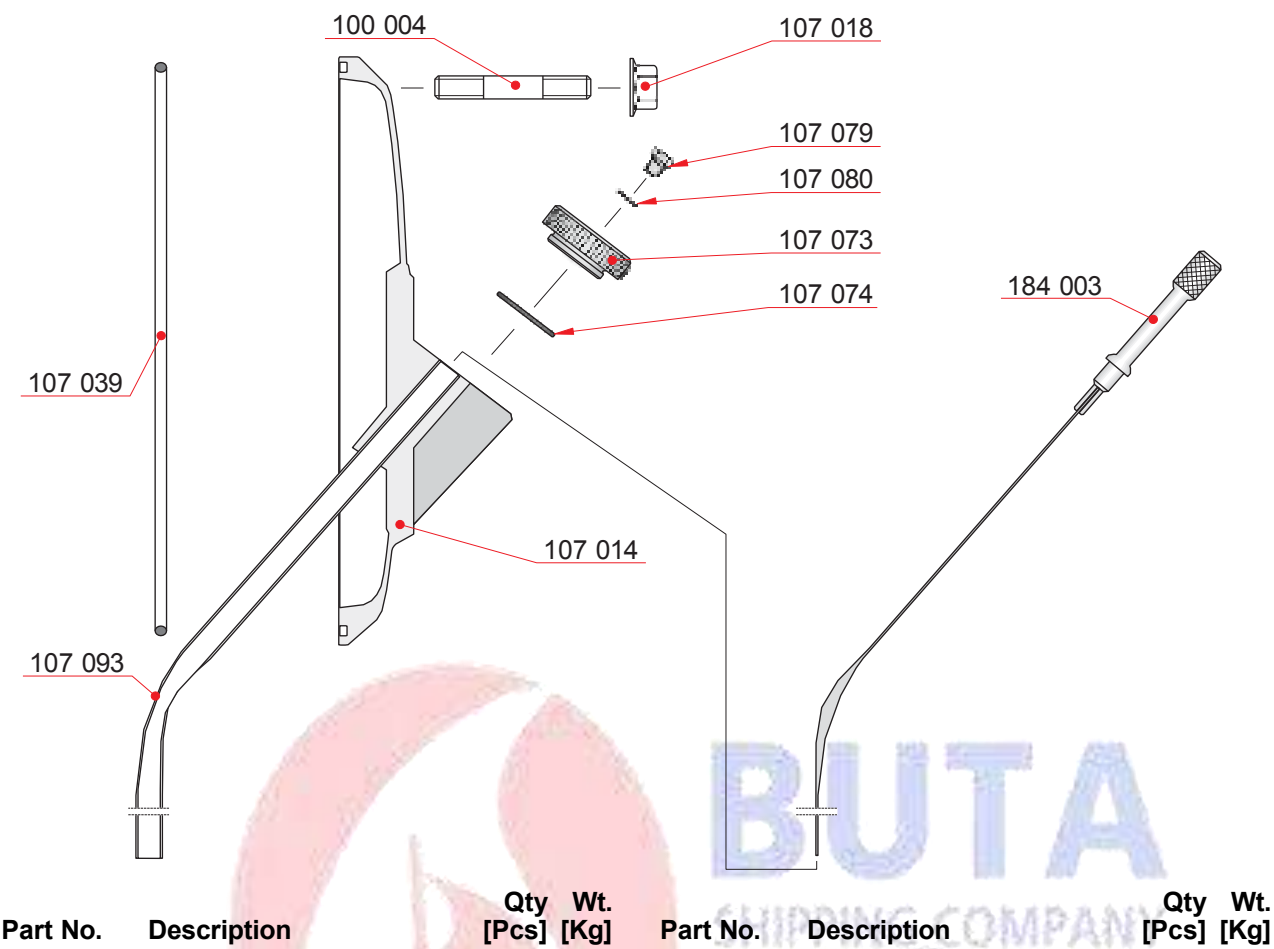
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 133	Shield	1	-
107 134	Screw	4	-
107 135	Washer	4	-

Crankcase cover with oil filling opening and dipstick



Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 004	Screw	4	-
107 018	Nut	4	-
107 072	Crankcase cover with oil filling opening	1	8
107 014	Crankcase cover	1	-
107 039	Hose gasket for lower side cover	1	-
107 073	Plug	1	0.4
107 074	O-ring	1	-
107 079	Plug	1	-
107 080	Sealing ring	1	-
107 093	Protecting pipe	1	0.8
107 189	Protecting cover	1	-
107 190	Screw	4	-
184 003	Oil dipstick	1	-

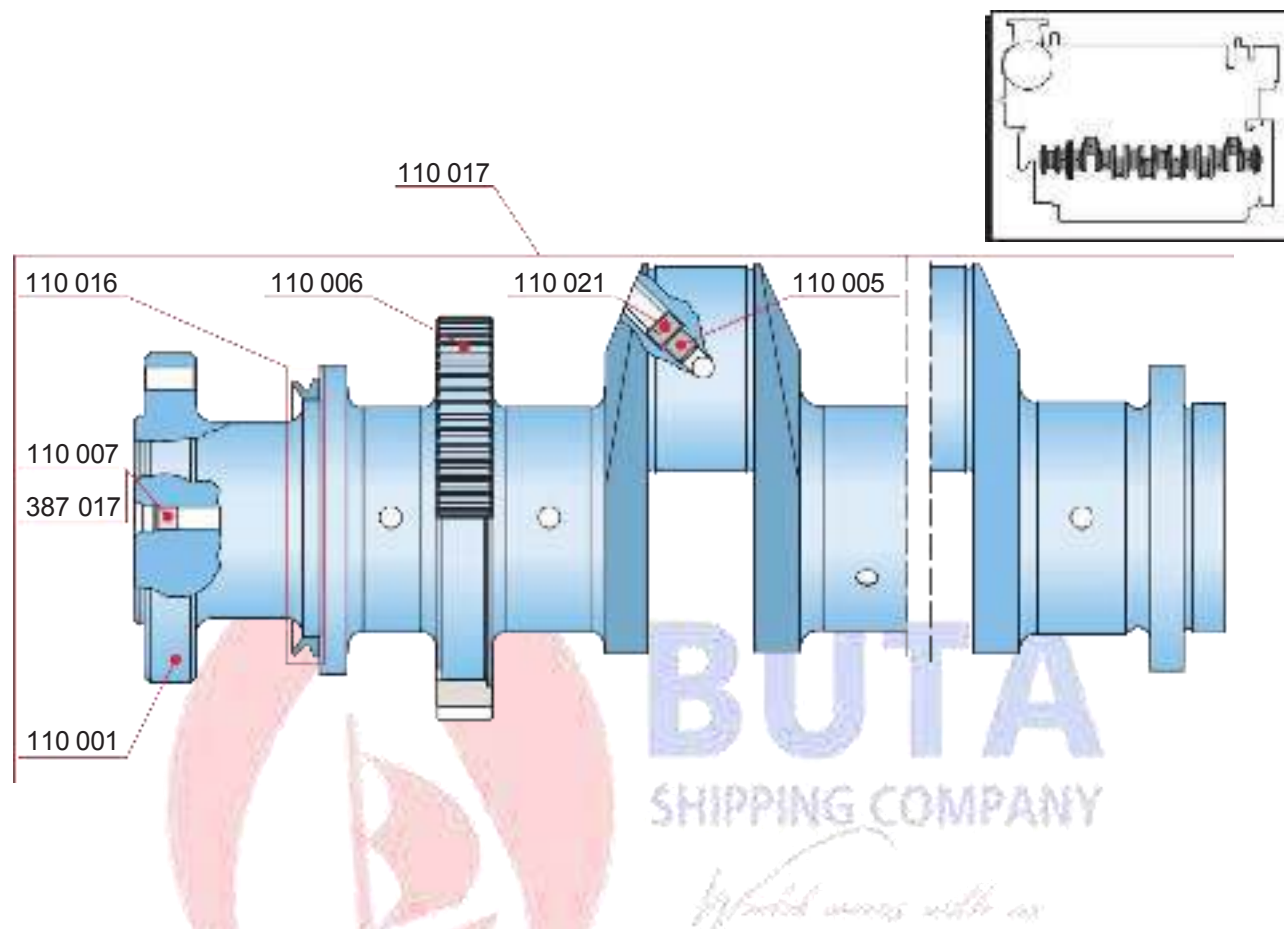
Crankcase cover with oil filling opening and dipstick



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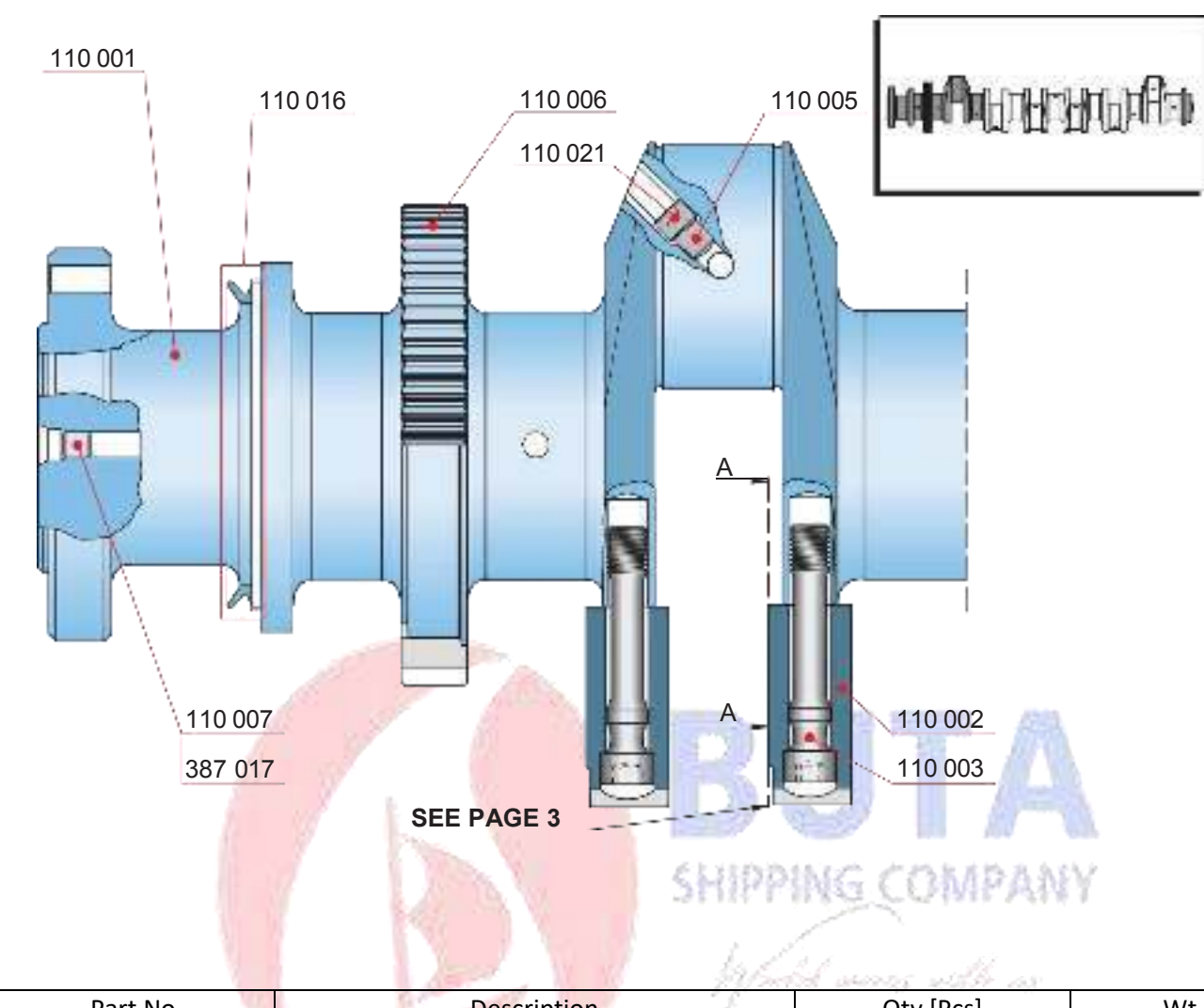
Hydraulic services with car

Crankshaft



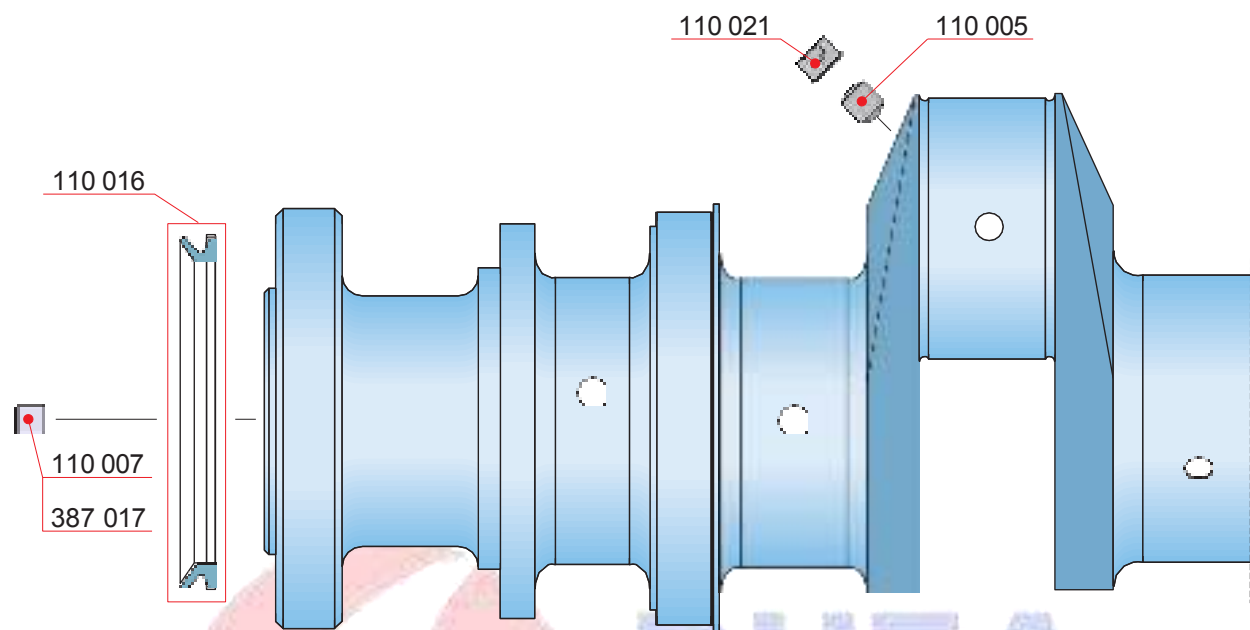
Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 017	Crankshaft, assembly	1	1000
110 001	Crankshaft	1	-
110 005	Plug	*	-
110 006	Gear wheel	1	11.1
110 007	Plug	1	-
110 016	V-ring spare part kit	1	0.4
110 021	Screw	*	-
387 017	Glue compound	1	-

Crankshaft



Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 001	Crankshaft	1	-
110 002	Counterweight (1)	*	14.9
110 003	Screw (1)	*	0.6
110 005	Plug	*	-
110 006	Gear wheel	1	11.1
110 007	Plug	1	-
110 016	V-ring spare part kit	1	0.4
110 021	Screw	*	-
387 017	Glue compound	1	-

Crankshaft



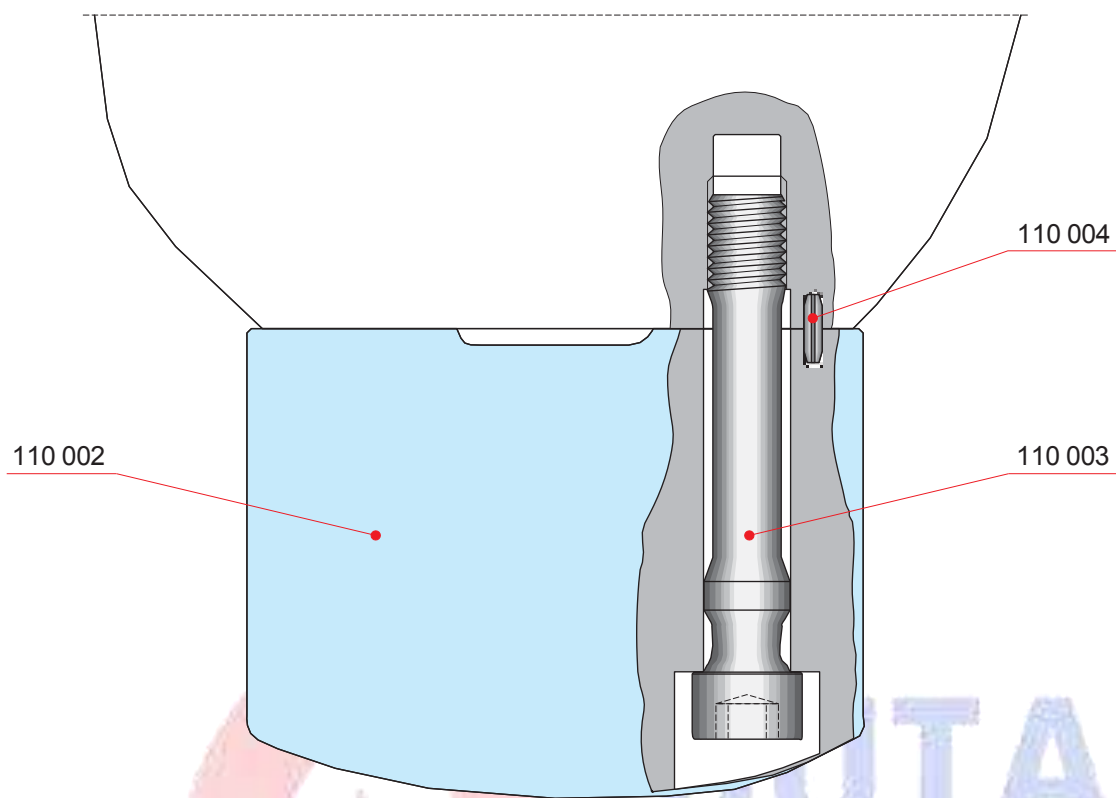
Part No. Description		Qty	Wt.			Qty	Wt.
		[Pcs]	[Kg]			[Pcs]	[Kg]

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Hydraulic assembly with oil
Part No. Description

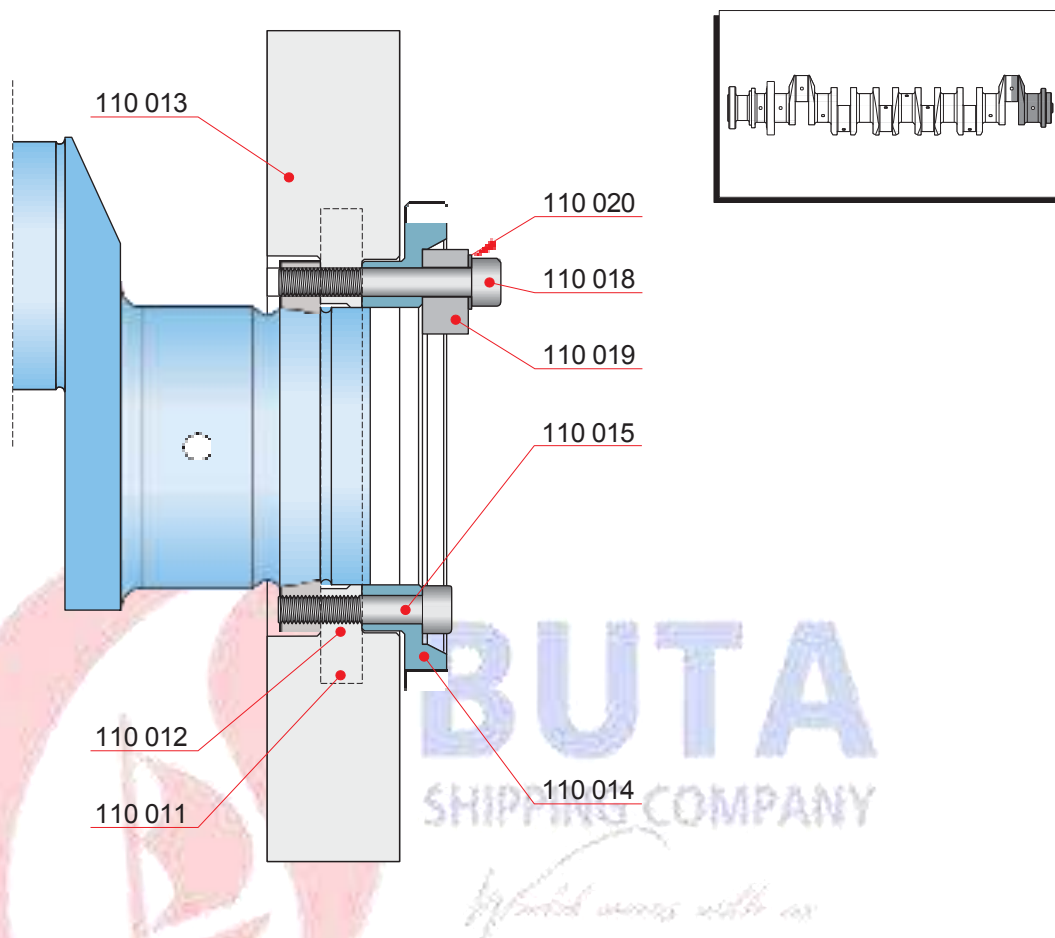
Crankshaft

SECTION A-A



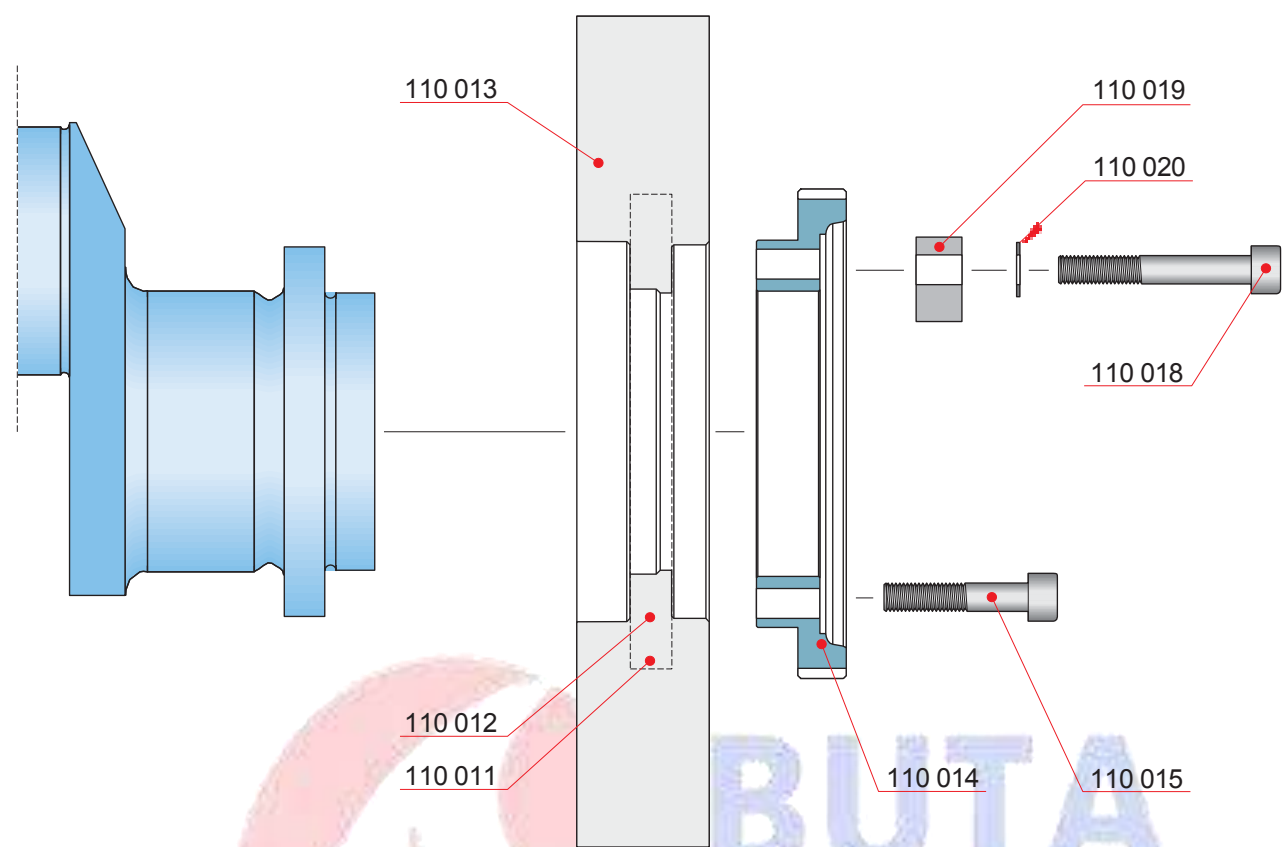
Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 002	Counterweight (1)	*	14.9
110 003	Screw (1)	*	0.6
110 004	Pin (1)	*	-

Crankshaft



Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 011	Tuning mass (1)	1	-
110 012	Distance ring (1)	1	-
110 013	Vibration damper (1)	1	-
110 014	Gear wheel	1	15.3
110 015	Screw	*	0.5
110 018	Screw (2)	4	-
110 019	Counterweight (2)	1	-
110 020	Washer (2)	4	-

Crankshaft



Part No.	Description	Qty	Wt.	Part No.	Description	Qty	Wt.
		[Pcs]	[Kg]			[Pcs]	[Kg]

Hydraulic sensors with air

Crankshaft

Quantity according to number of cylinders

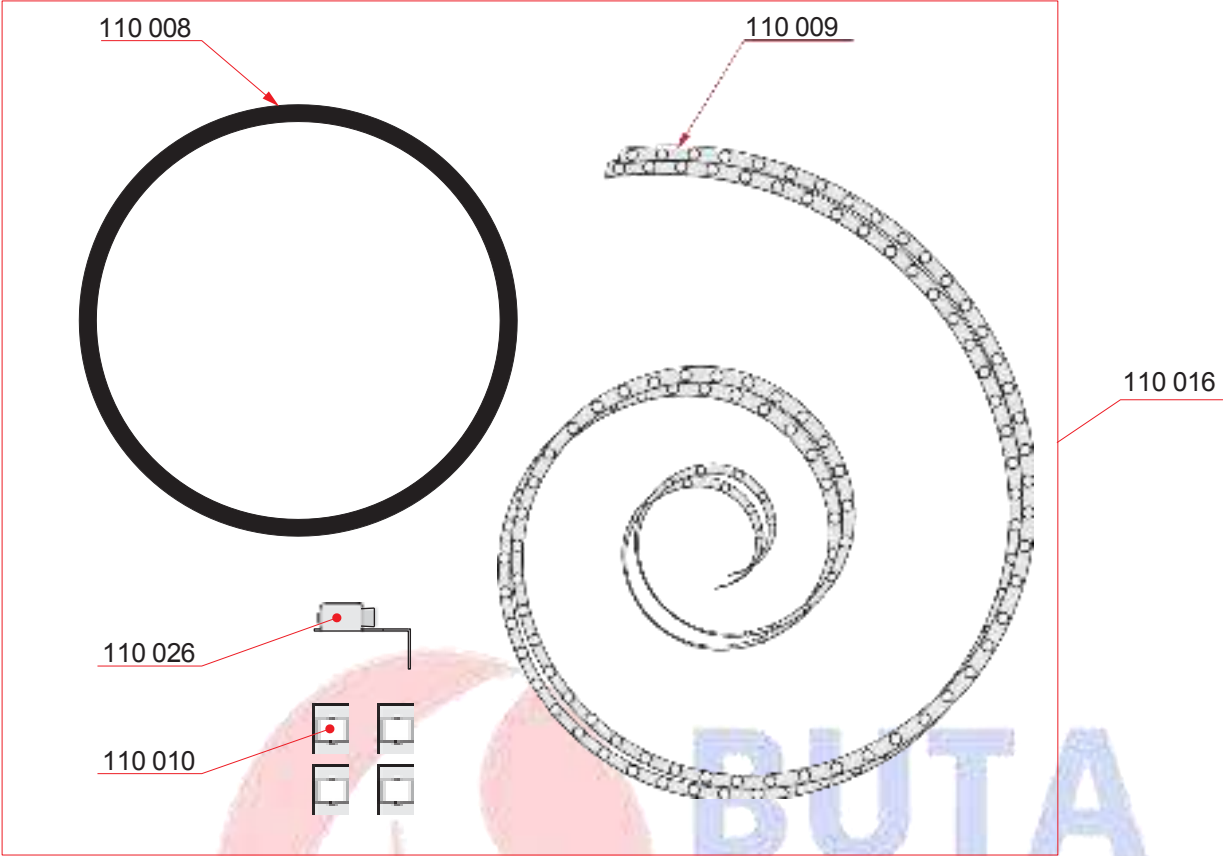
Part No	Pieces			
	4L20	6L20	8L20	9L20
110 002	-	12	16	18
110 003	-	24	32	36
110 004	-	12	16	18
110 005	4	6	8	9
110 015	8	8	16	12
110 021	4	6	8	9



Part No.	Description	Qty [Pcs]	Wt. [Kg]
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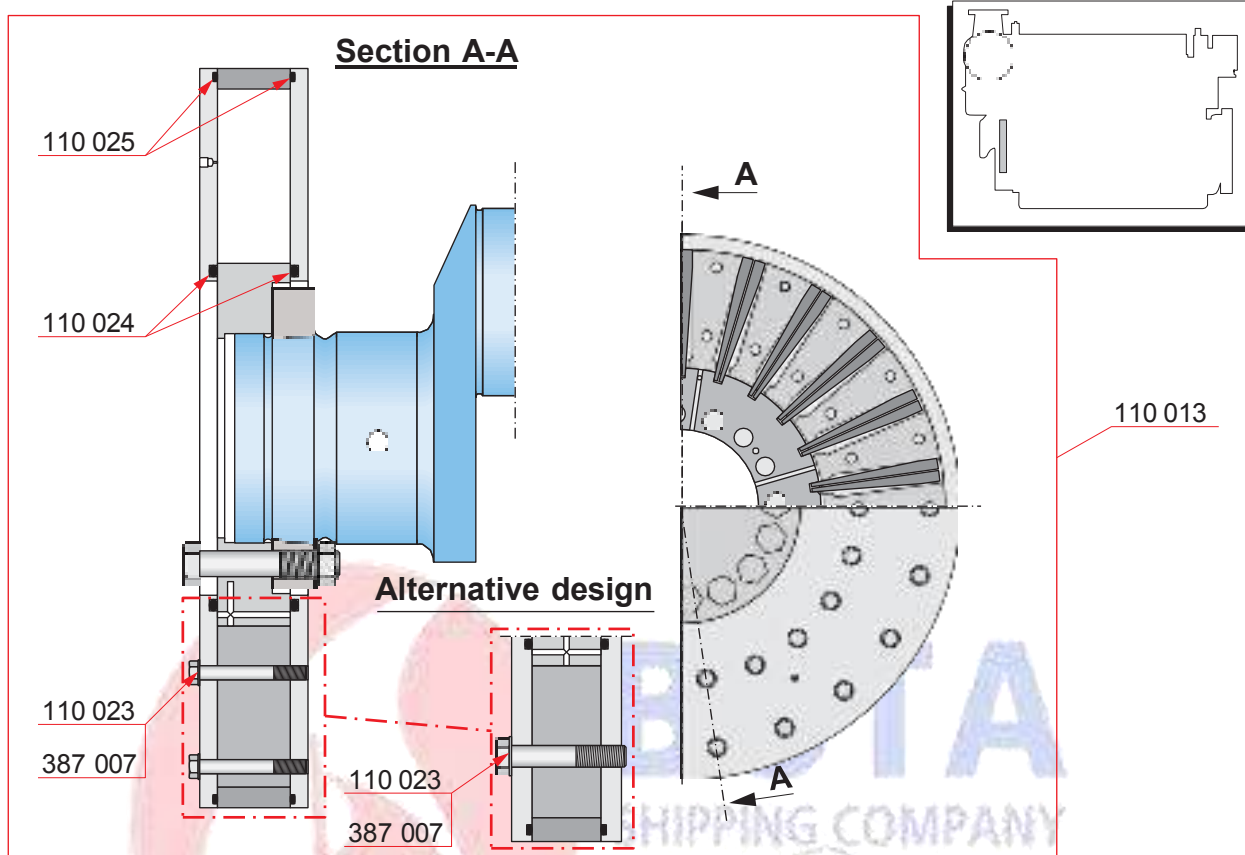
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Crankshaft



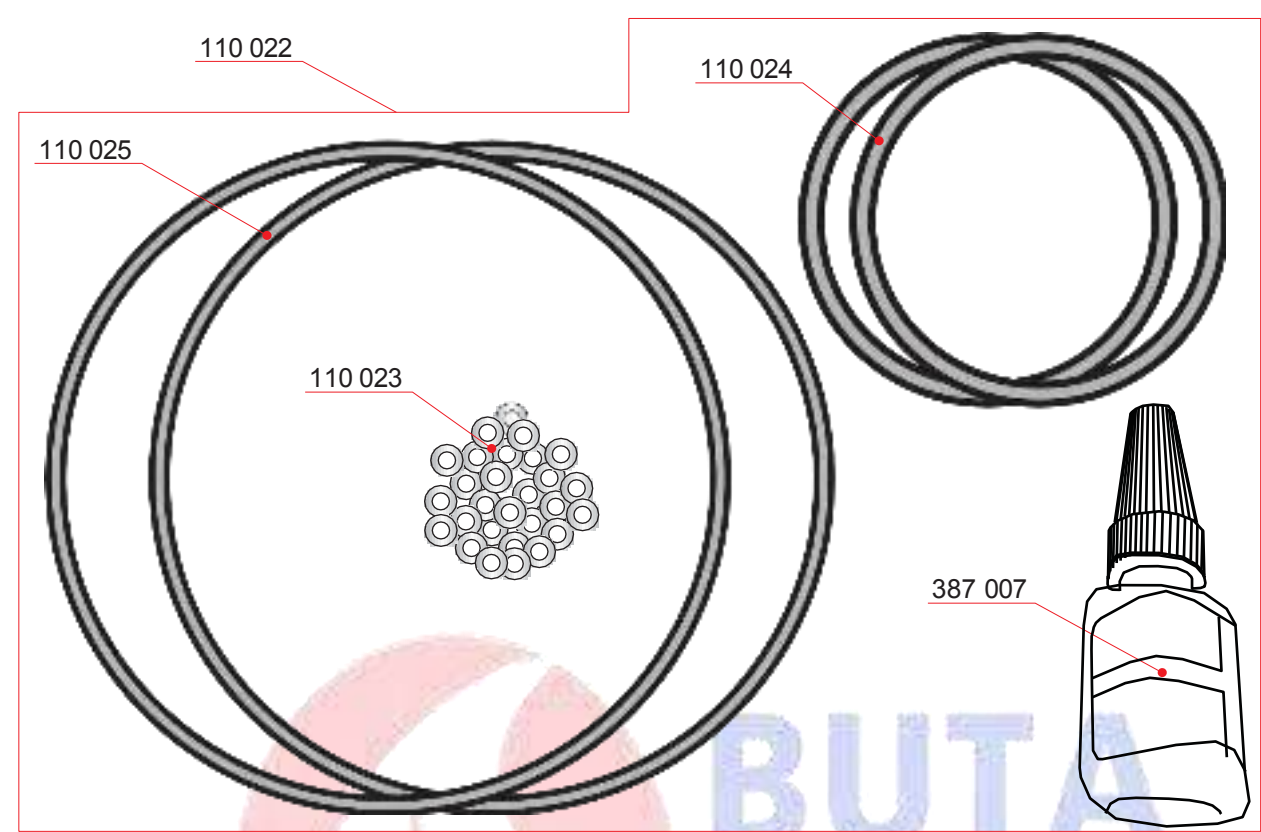
Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 016	V-ring spare part kit	1	0.4
110 008	Sealing ring	1	0.2
110 009	Strap (1)	1	-
110 010	Stretcher	4	-
110 026	Screw	1	-

Vibration damper



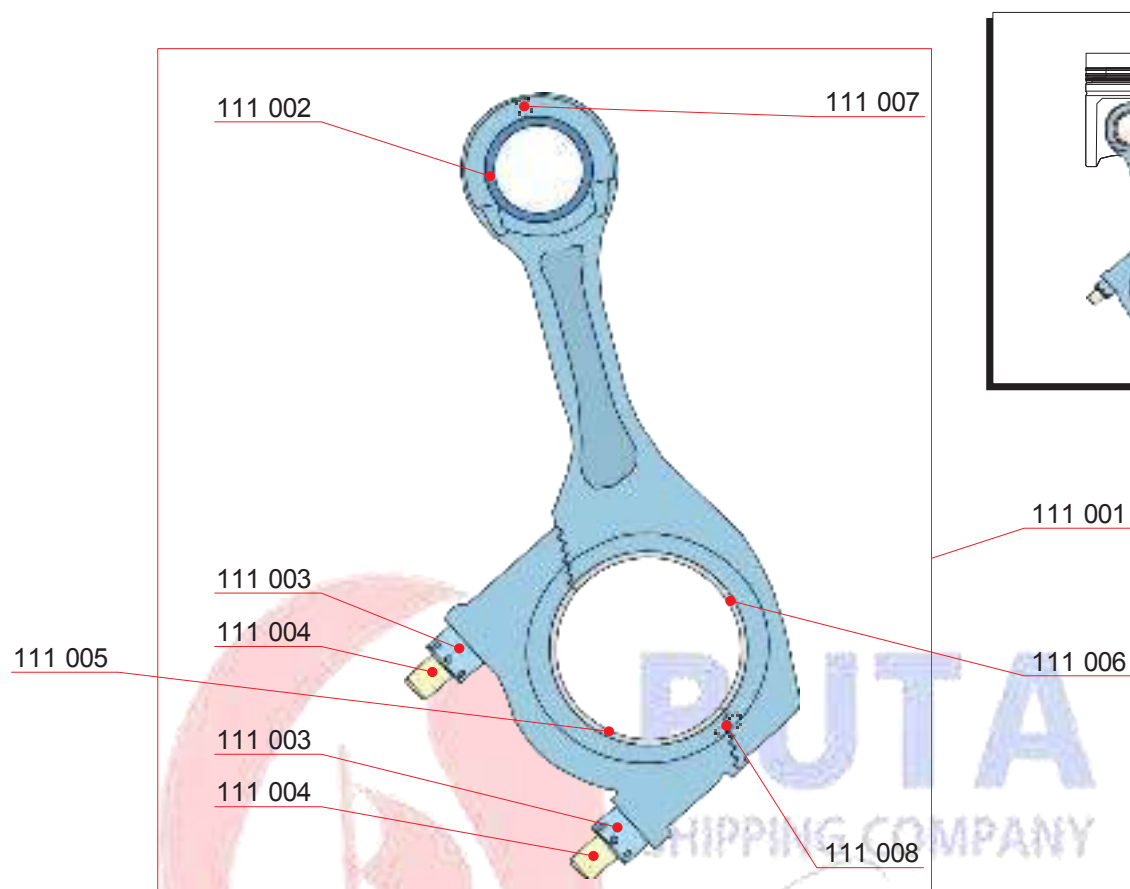
Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 013	Vibration damper	1	160
110 023	Disc spring	*	-
110 024	O-ring	2	-
110 025	O-ring	2	-
387 007	Glue compound	1	-

Vibration damper



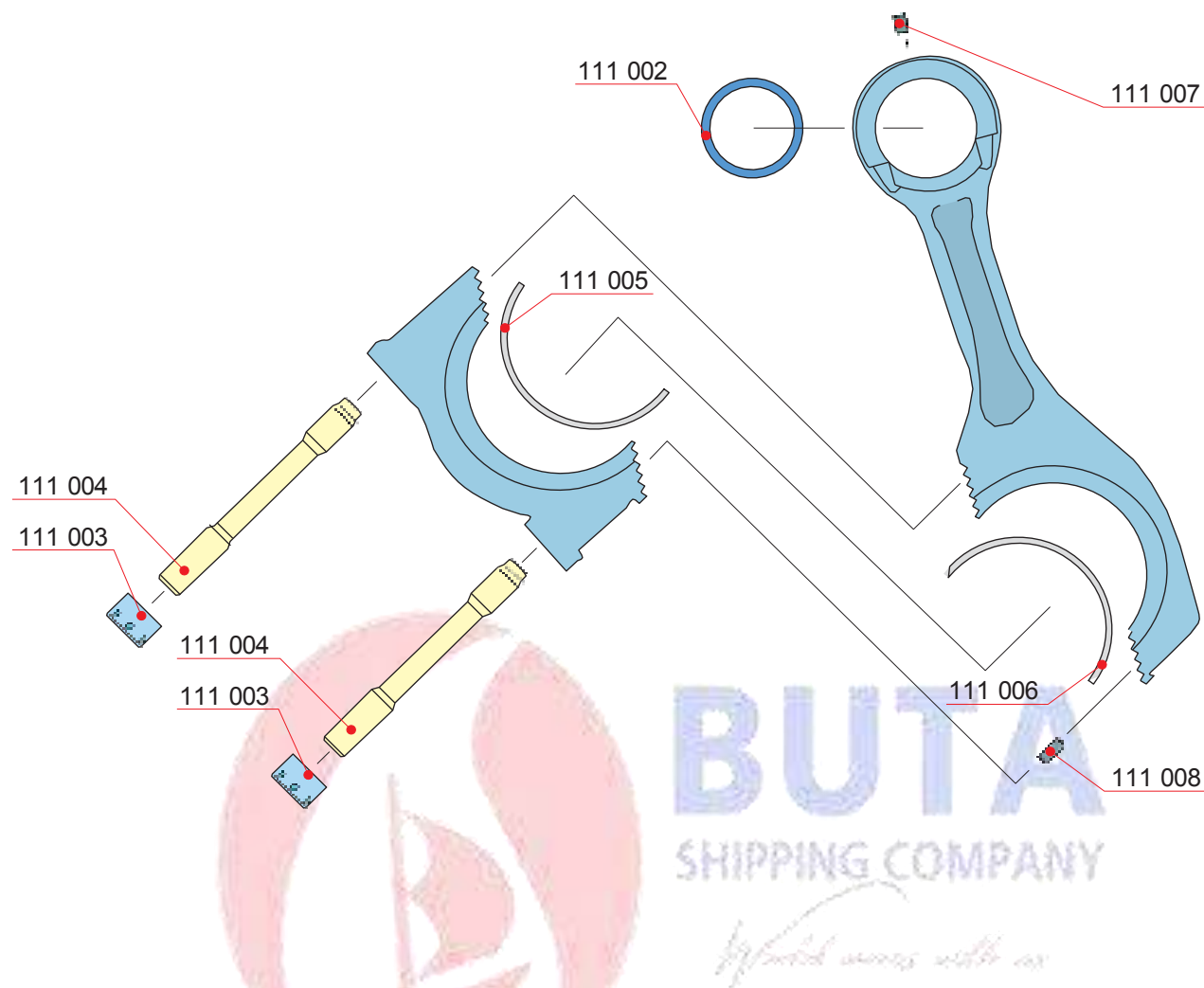
Part No.	Description	Qty [Pcs]	Wt. [Kg]
110 013	Vibration damper	1	160
110 023	Disc spring	*	-
110 024	O-ring	2	-
110 025	O-ring	2	-
387 007	Glue compound	1	-

Connecting rod



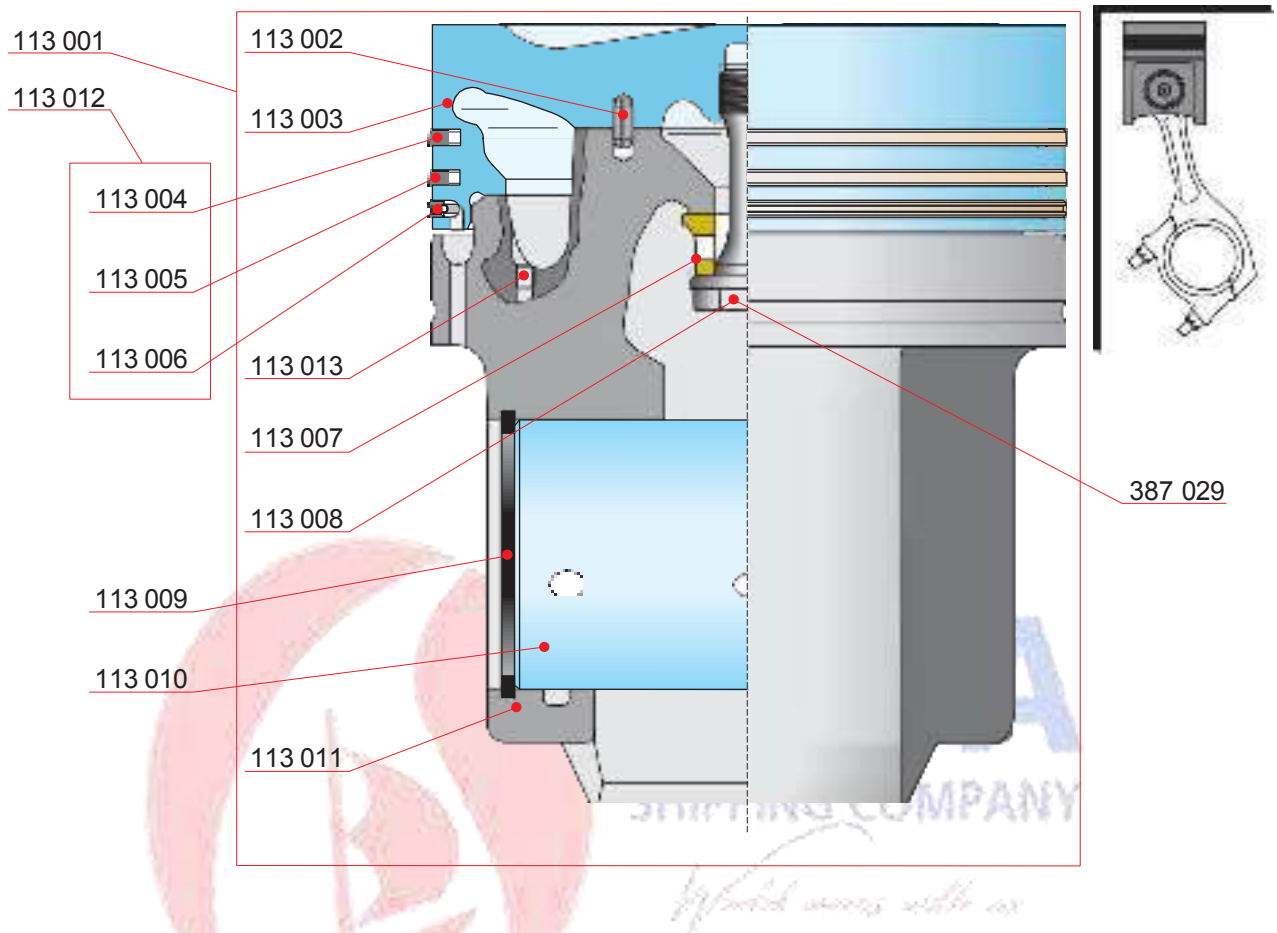
Part No.	Description	[Pcs]	Qty	Wt. [Kg]
111 001	Connecting rod	1		35
111 002	Gudgeon pin bearing bush	1		1.2
111 003	Nut	2		0.3
111 004	Screw	2		-
111 007	Plug	1		-
111 008	Pin	1		-
111 005	Big end bearing shell, lower	1		-
111 006	Big end bearing shell, upper	1		-

Connecting rod



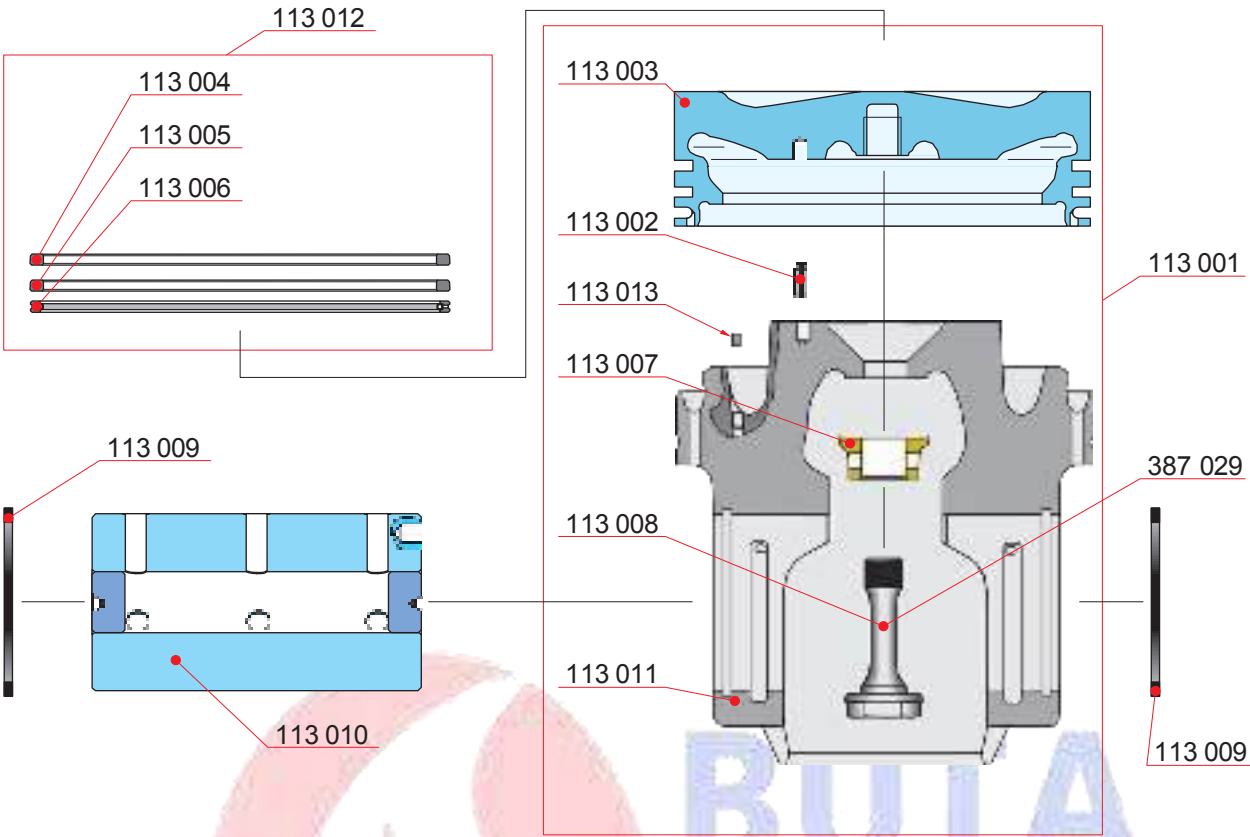
Part No.	Description	Qty [Pcs]	Wt. [Kg]
111 002	Gudgeon pin bearing bush	1	1.2
111 003	Nut	2	0.3
111 004	Screw	2	-
111 005	Big end bearing shell, lower	1	-
111 006	Big end bearing shell, upper	1	-
111 007	Plug	1	-
111 008	Pin	1	-

Piston



Part No.	Description	Qty [Pcs]	Wt. [Kg]
113 001	Piston	1	23.4
113 003	Piston crown	1	-
113 002	Pin	2	-
113 007	Washer	1	-
113 008	Screw	1	0.2
113 011	Piston skirt	1	-
113 013	Hexagon socket set screw	2	-
113 009	Securing ring	2	-
113 010	Gudgeon pin	1	1.5
113 012	Piston ring set	1	0.5
113 004	Piston ring I	1	-
113 005	Piston ring II	1	0.2
113 006	Piston ring III	1	-
387 029	Lubricant *	1	-

Piston

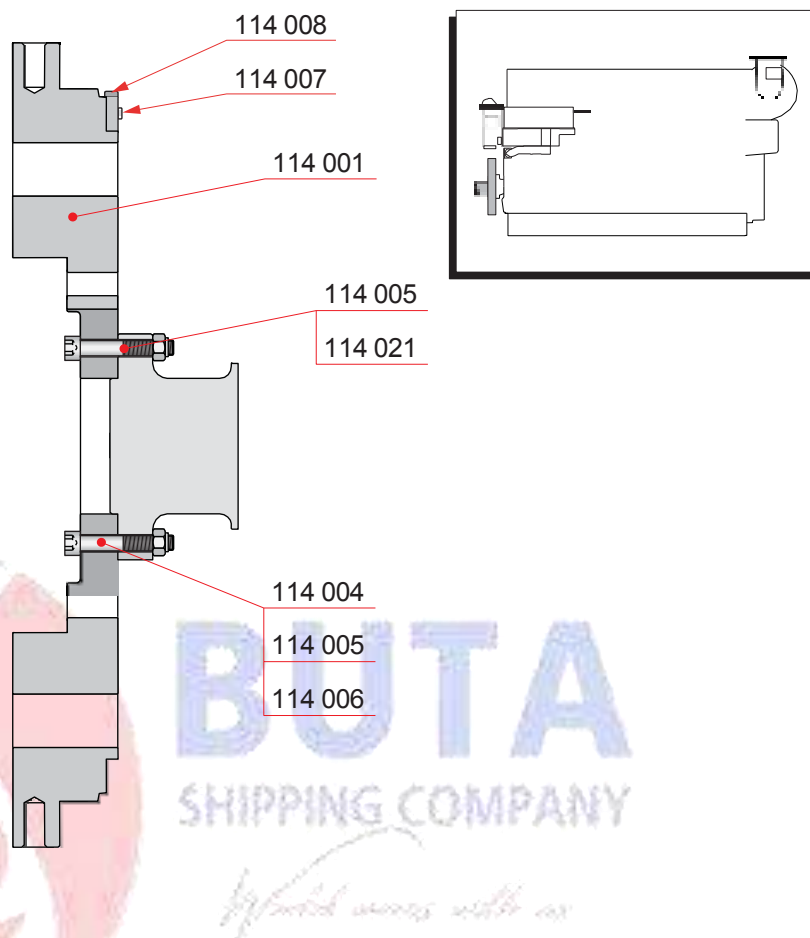


Part No.	Description	Qty	Wt.	Part No.	Description	Qty	Wt.
		[Pcs]	[Kg]			[Pcs]	[Kg]

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Hydraulic services with car

Flywheel connection



Part No.	Description	Qty [Pcs]	Wt. [Kg]
114 001	Flywheel	1	-
114 004	Screw	*	0.3
114 005	Nut	8	-
114 006	Washer	*	-
114 007	Screw	20	-
114 008	Gear rim	1	-
114 021	Screw	*	0.4

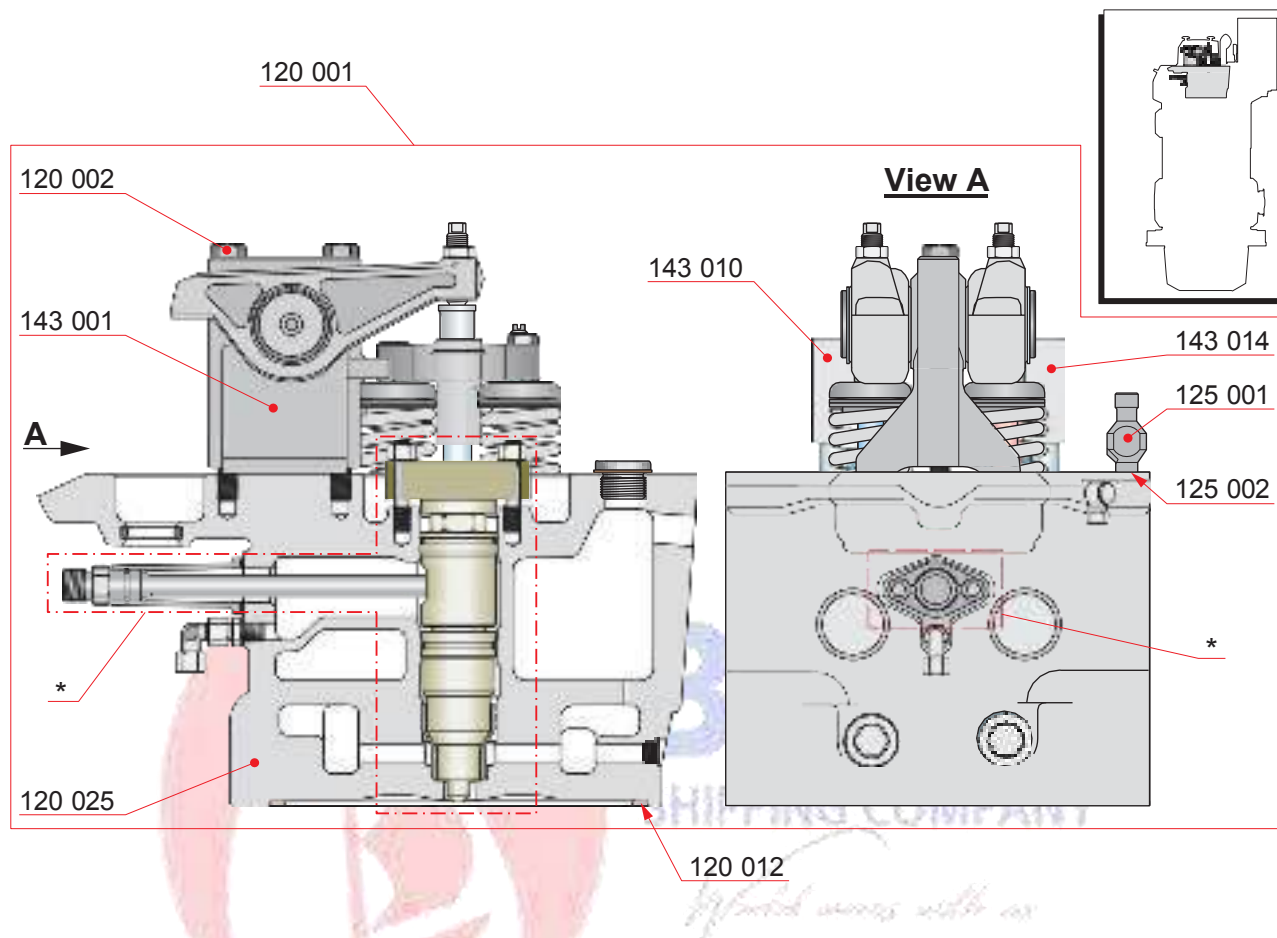
Flywheel connection

Quantity according to number of cylinders

Part No. and Description	Quantity in pieces			
	4L	6L	8L	9L
114 004 Screw	4	3	-	-
114 006 Washer	4	3	-	-
114 021 Screw	4	5	8	8

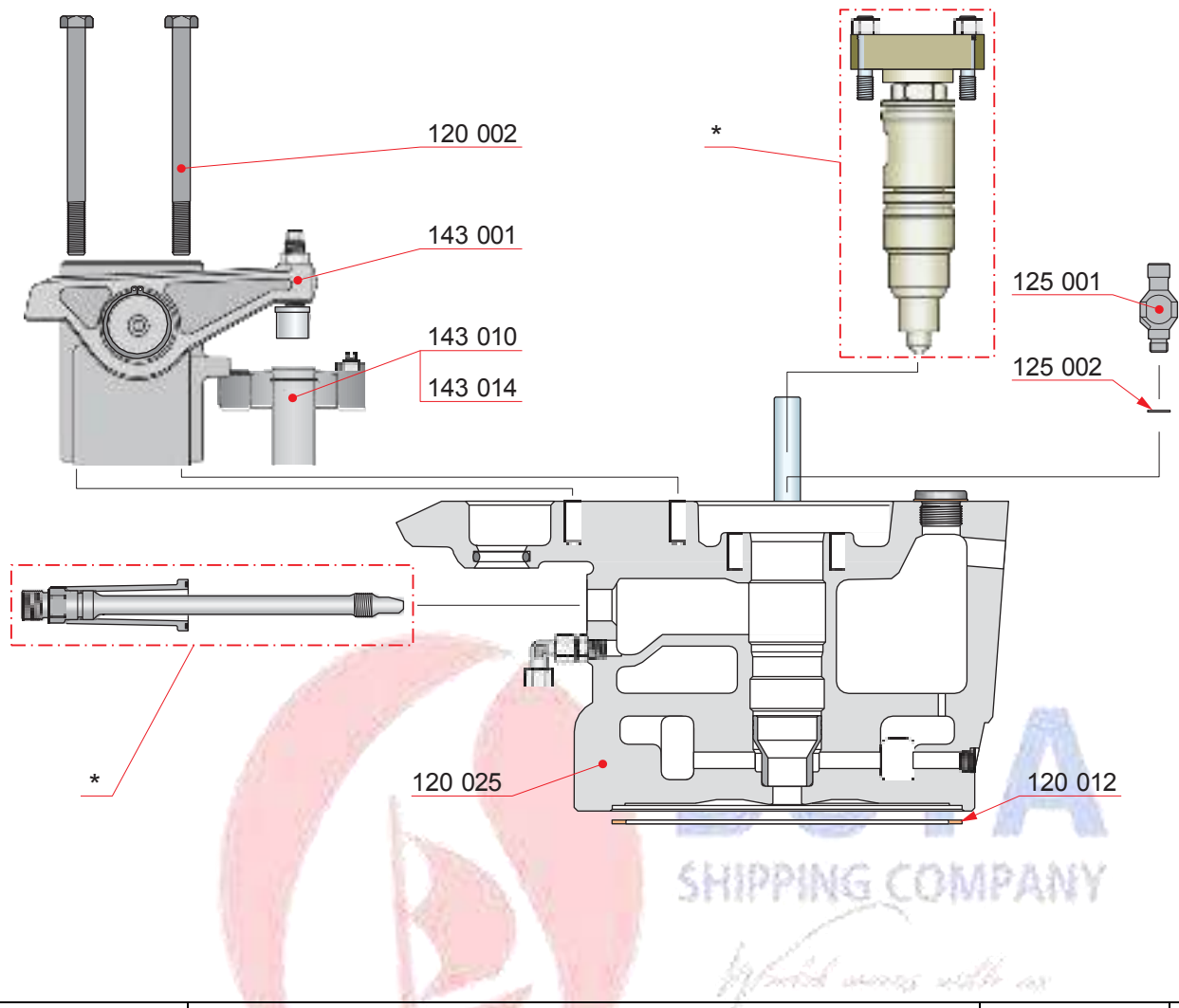


Cylinder head, complete



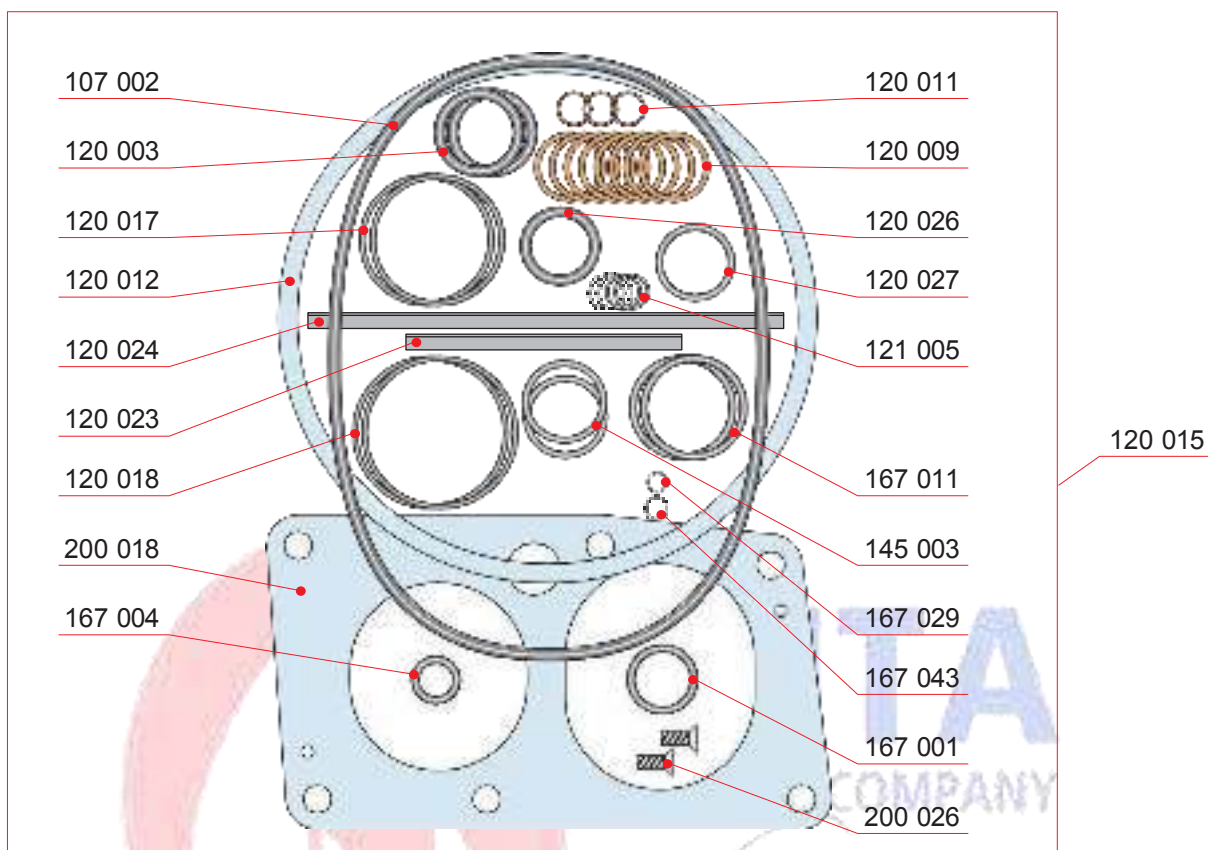
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 001	Cylinder head, complete	1	120
120 002	Screw	2	0.3
120 025	Cylinder head with inlet and exhaust valve	1	105
125 001	Indicator valve (2)	1	0.6
125 002	Sealing ring selection (2)	1	-
143 001	Rocker arms with bracket (1)	1	9.8
143 010	Yoke for exhaust valve, compl. (1)	1	-
143 014	Yoke for inlet valve, compl. (1)	1	-
120 012	Gasket	1	-

Cylinder head, complete



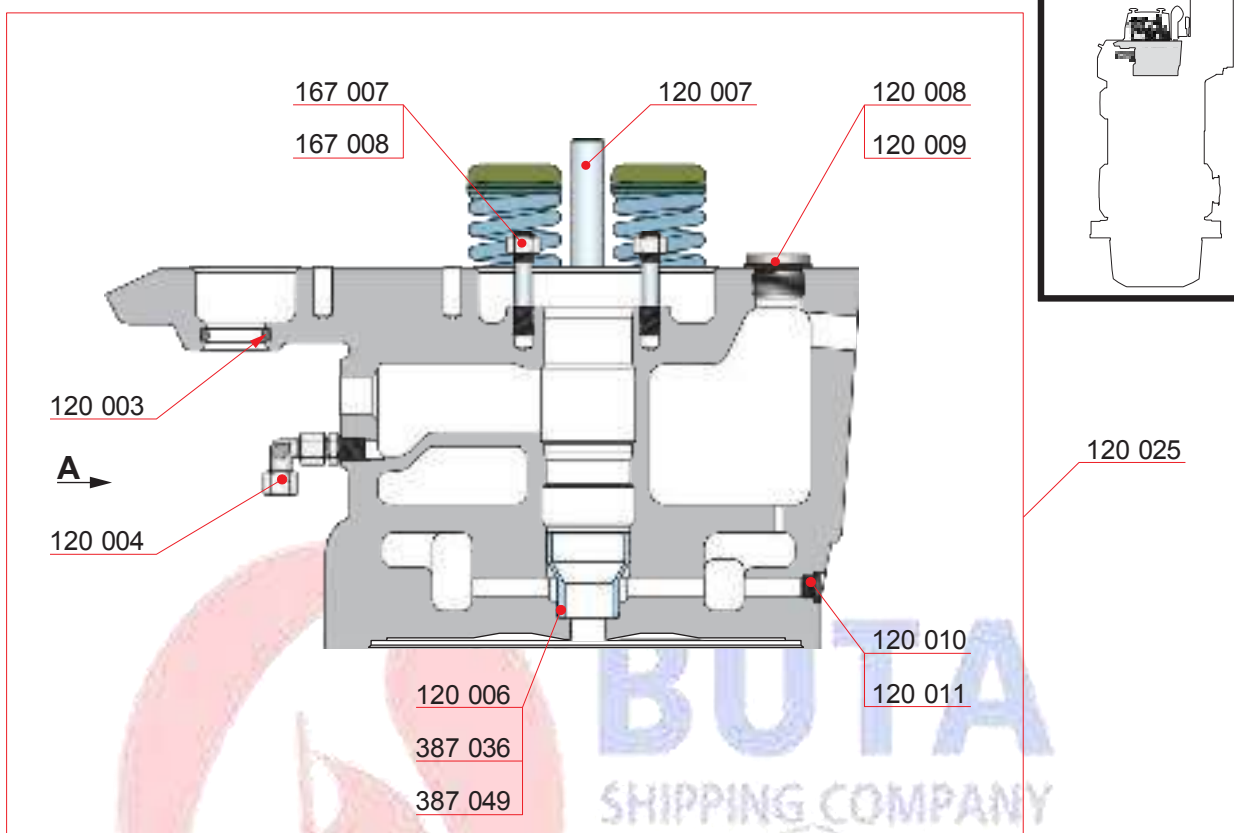
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 002	Screw	2	0.3
120 012	Gasket	1	-
120 025	Cylinder head with inlet and exhaust valve	1	105
125 001	Indicator valve (2)	1	0.6
125 002	Sealing ring selection (2)	1	-
143 001	Rocker arms with bracket (1)	1	9.8
143 010	Yoke for exhaust valve, compl. (1)	1	-
143 014	Yoke for inlet valve, compl. (1)	1	-

Cylinder head, complete



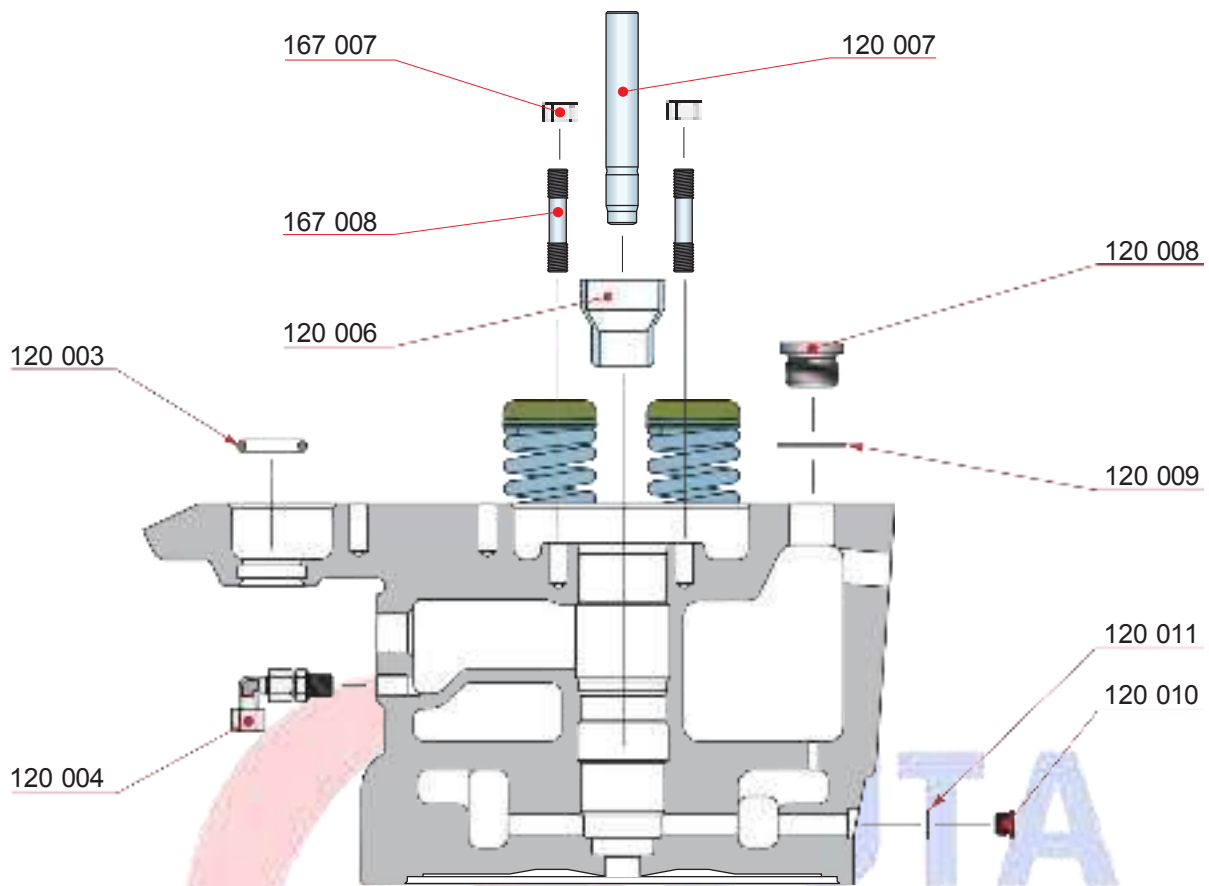
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 015	Sealing set for cylinder head overhaul	1	0.3
107 002	Hose gasket for cylinder head cover	1	-
120 003	O-ring	2	-
120 009	Sealing ring	8	-
120 011	Sealing ring	3	-
120 012	Gasket	1	-
120 017	O-ring	2	-
120 018	O-ring (*)	1	-
120 023	Gasket	1	-
120 024	Gasket	1	-
120 026	O-ring	1	-
120 027	O-ring	1	-
121 005	O-ring	1	-
145 003	O-ring	2	-
167 001	O-ring	1	-
167 004	O-ring	1	-
167 011	O-ring	1	-
167 029	O-ring	1	-
167 043	O-ring	1	-
200 018	Gasket	1	-
200 026	Rivet	2	-

Cylinder head



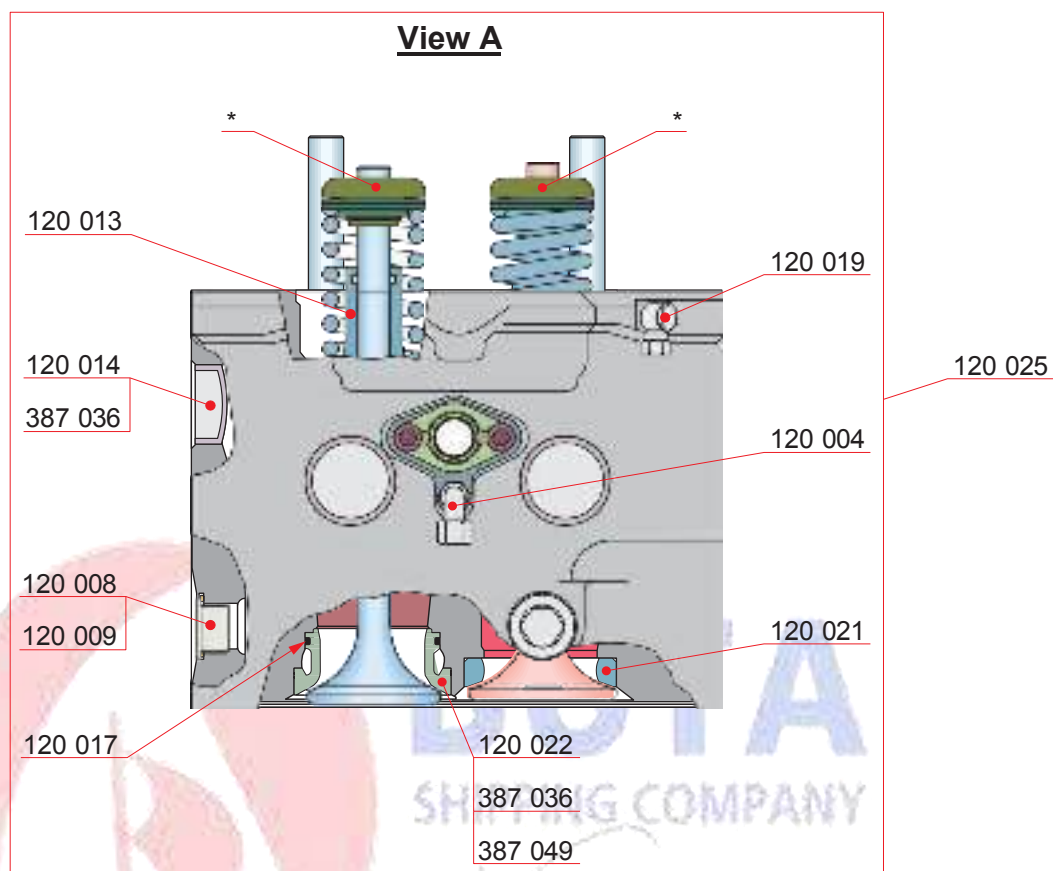
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 025	Cylinder head with inlet and exhaust valve	1	105
120 003	O-ring	2	-
120 004	Pipe union	1	-
120 006	Sleeve	1	0.2
120 007	Yoke pin	2	0.3
120 008	Plug	8	-
120 009	Sealing ring	8	-
120 010	Plug	3	-
120 011	Sealing ring	3	-
167 007	Nut	2	-
167 008	Screw	2	-
387 036	Glue compound	1	-
387 049	Cleaner	1	-

Cylinder head



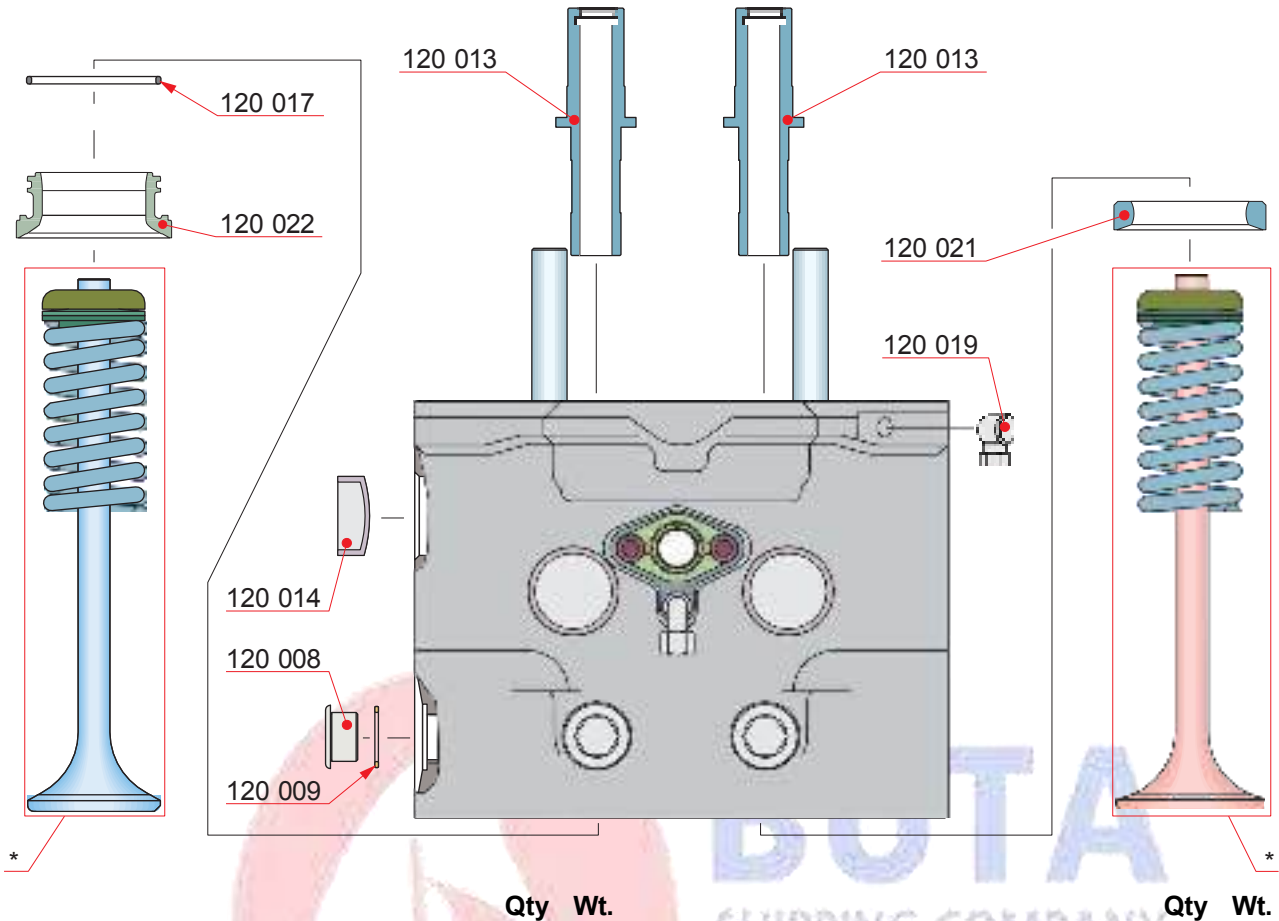
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 003	O-ring	2	-
120 004	Pipe union	1	-
120 006	Sleeve	1	0.2
120 007	Yoke pin	2	0.3
120 008	Plug	8	-
120 009	Sealing ring	8	-
120 010	Plug	3	-
120 011	Sealing ring	3	-
167 007	Nut	2	-
167 008	Screw	2	-

Cylinder head



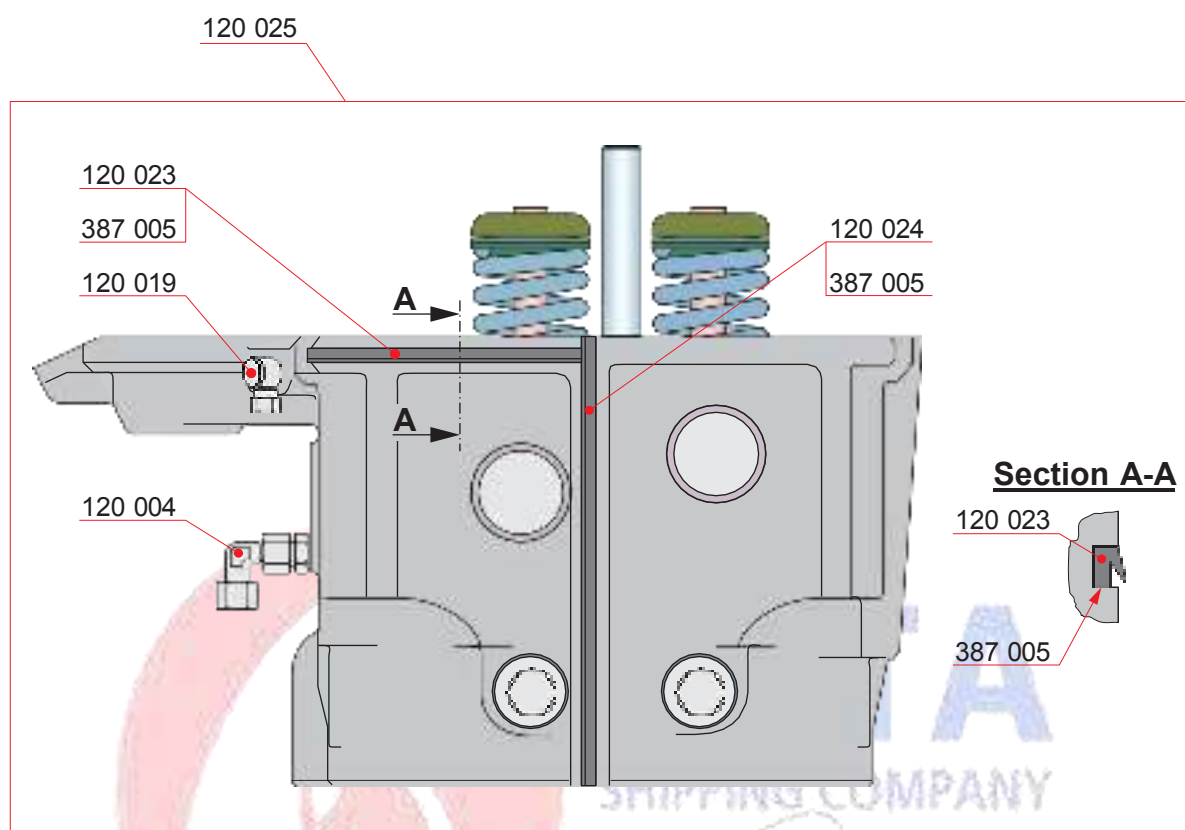
Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 025	Cylinder head with inlet and exhaust valve	1	105
120 004	Pipe union	1	-
120 008	Plug	8	-
120 009	Sealing ring	8	-
120 013	Valve guide	4	0.3
120 014	Sealing push-in cap (2)	6	-
120 017	O-ring	2	-
120 019	Pipe union	1	-
120 021	Seat ring for inlet valve	2	0.1
120 022	Seat ring for outlet valve	2	0.3
387 036	Glue compound	1	-
387 049	Cleaner	1	-

Cylinder head



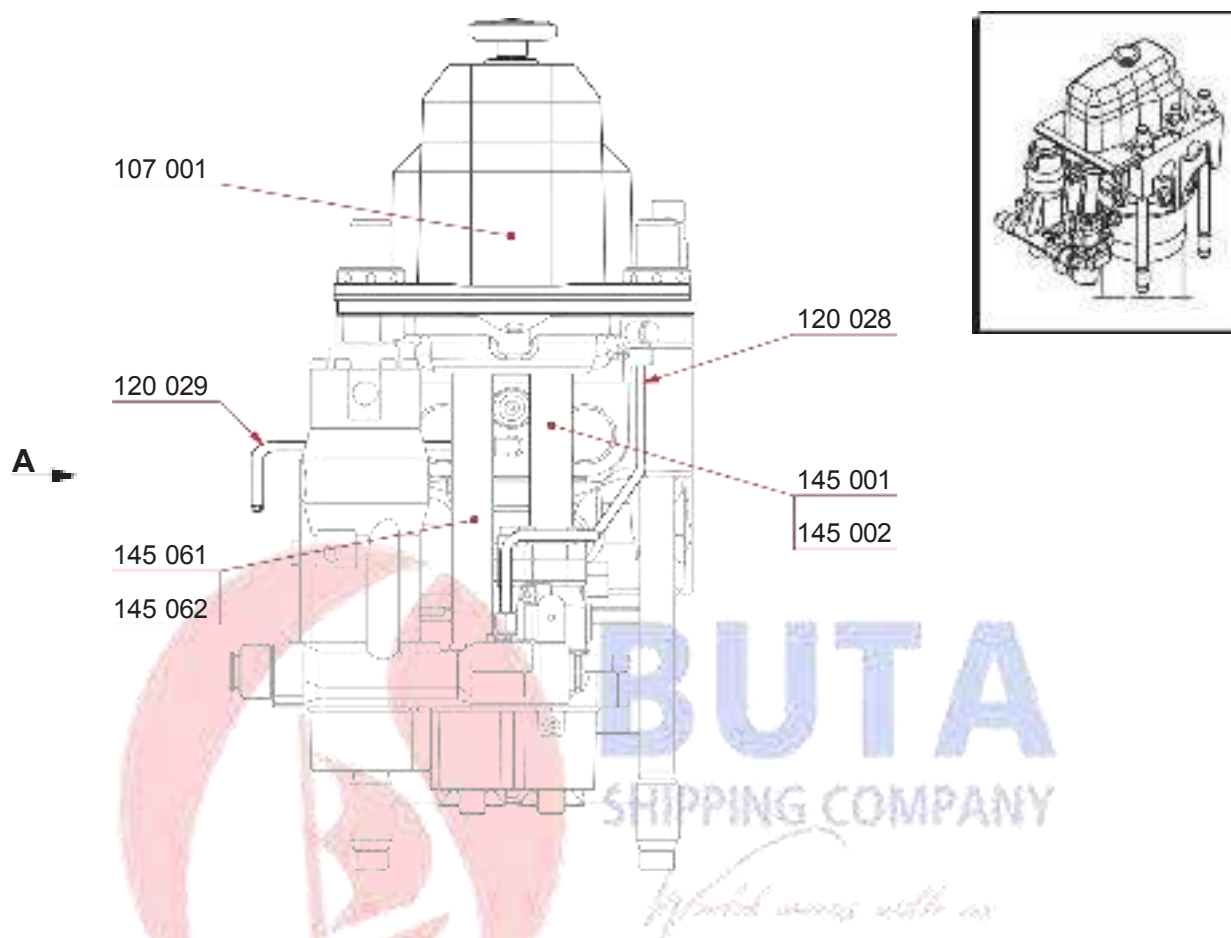
Part No.	Description	[Pcs]	Qty	Wt. [Kg]
120 008	Plug	8		-
120 009	Sealing ring	8		-
120 013	Valve guide	4		0.3
120 014	Sealing push-in cap (2)	6		-
120 017	O-ring	2		-
120 019	Pipe union	1		-
120 021	Seat ring for inlet valve	2		0.1
120 022	Seat ring for outlet valve	2		0.3

Cylinder head



Part No.	Description	Qty [Pcs]	Wt. [Kg]
120 025	Cylinder head with inlet and exhaust valve	1	105
120 004	Pipe union	1	-
120 019	Pipe union	1	-
120 023	Gasket	1	-
120 024	Gasket	1	-
387 005	Glue compound	1	-

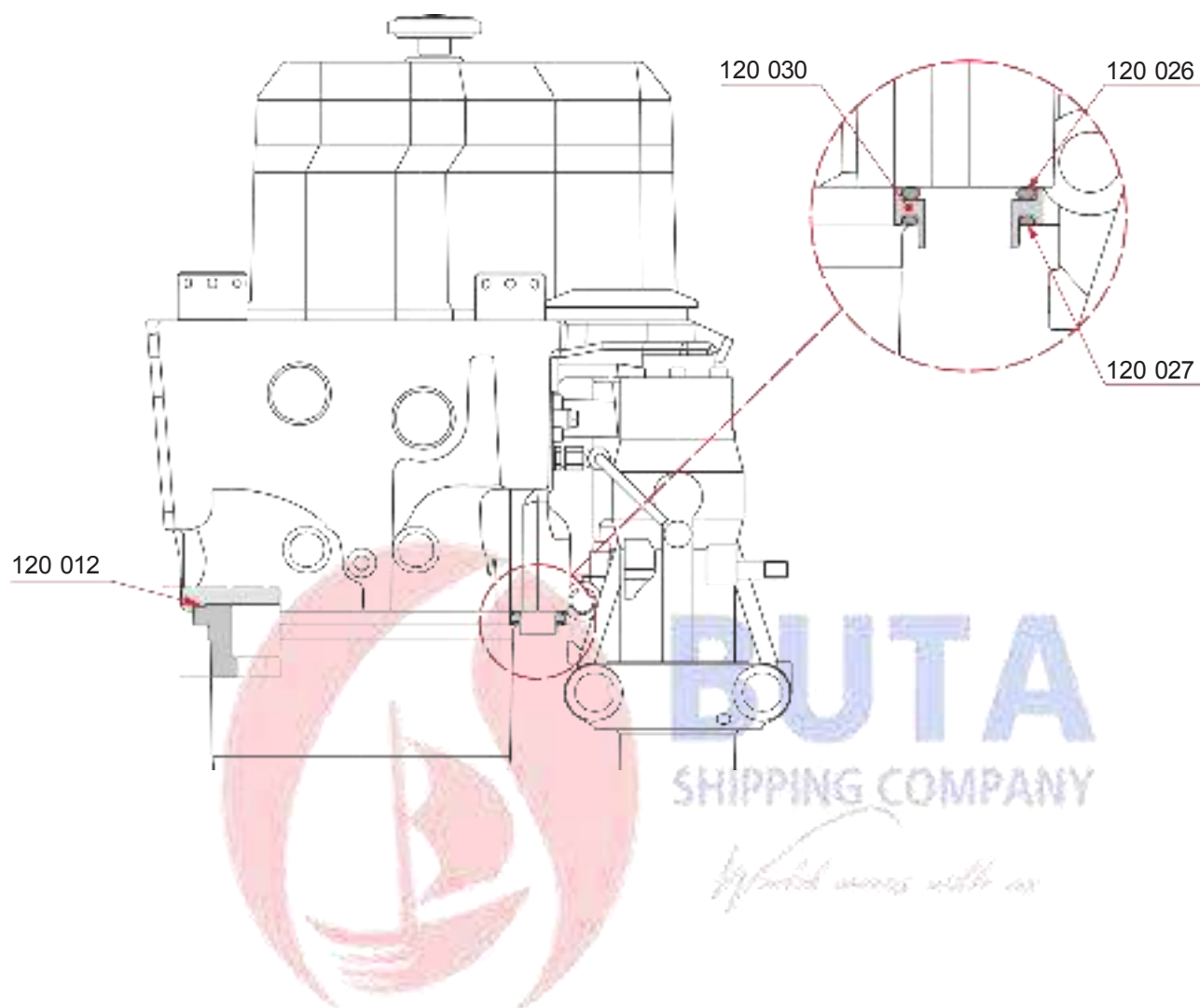
Cylinder head equipment



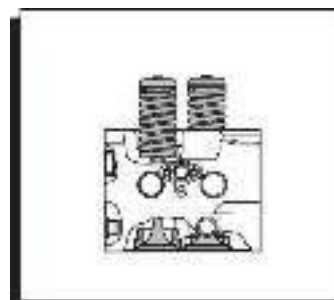
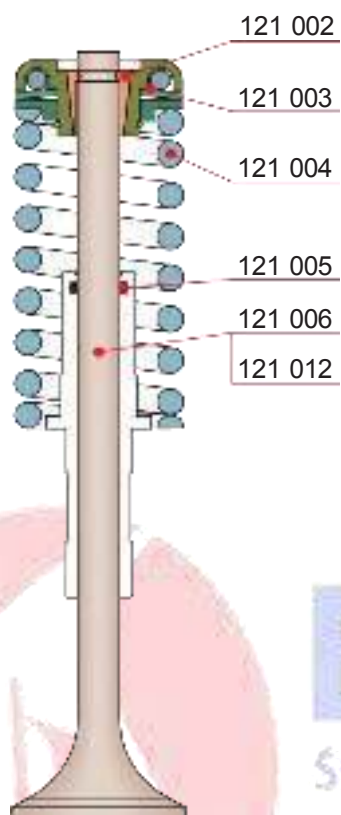
Part No.	Description	Qty [Pcs]	Wt. [Kg]
107 001	Cover for cyl. head	1	3.6
120 028	Pipe	1	-
120 029	Pipe	1	-
145 001	Push rod	1	0.8
145 002	Protecting pipe	1	0.4
145 061	Protecting pipe	1	0.6
145 062	Push rod	1	1.2

Cylinder head equipment

View A



Valve assembly

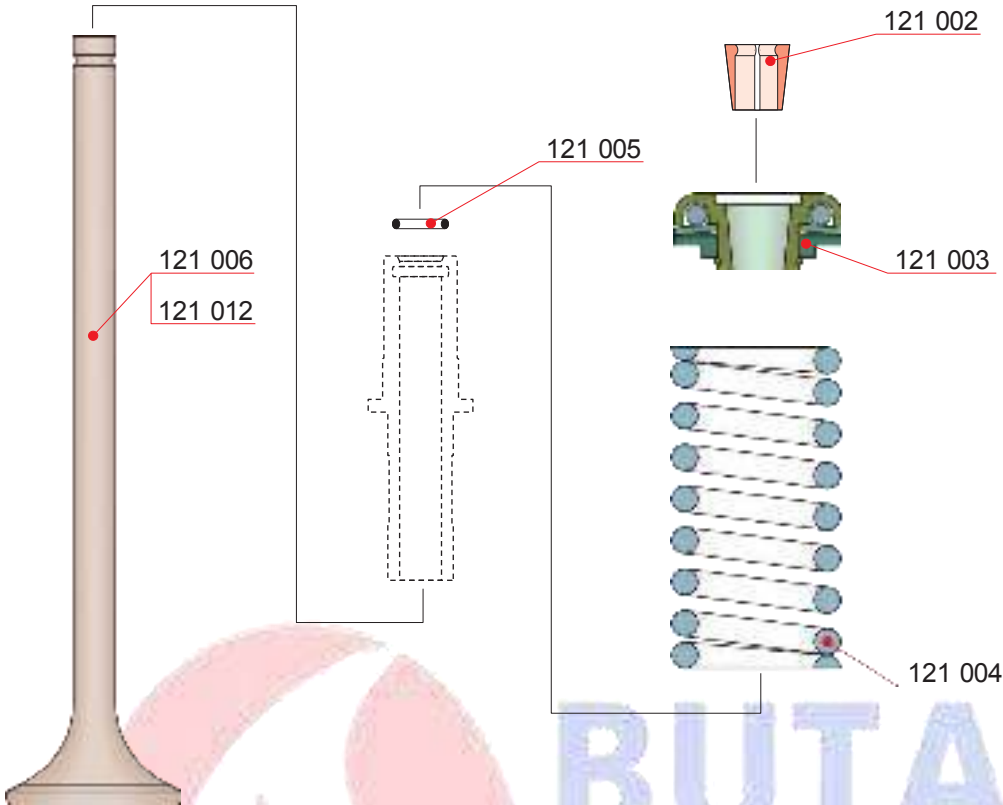


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Part No.	Description	Qty [Pcs]	Wt. [Kg]
121 002	Valve cotter pair	4	-
121 003	Rotocap	4	-
121 004	Spring	4	-
121 005	O-ring	4	-
121 006	Exhaust valve	2	-
121 012	Inlet valve	2	-

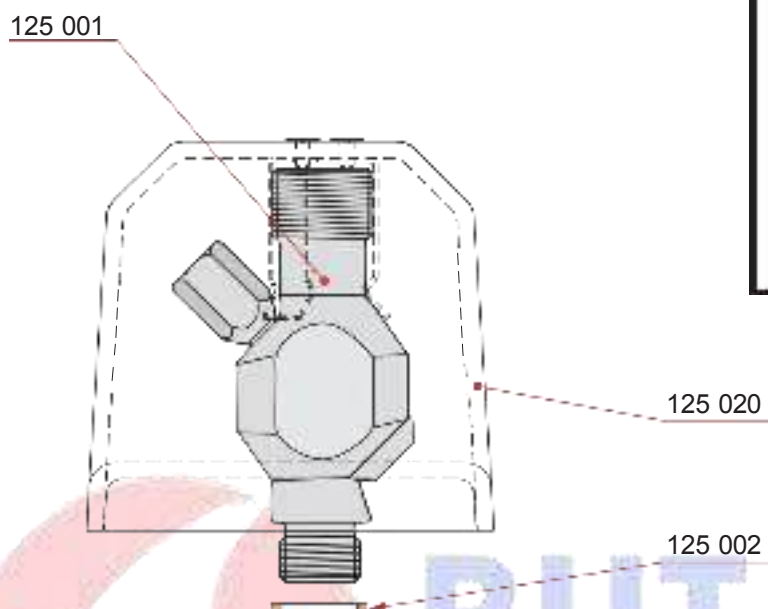
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Valve assembly



Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
121 002	Valve cotter pair	4	-				
121 003	Rotocap	4	-				
121 004	Spring	4	-				
121 005	O-ring	4	-				
121 006	Exhaust valve	2	-				
121 012	Inlet valve	2	-				

Indicator valve

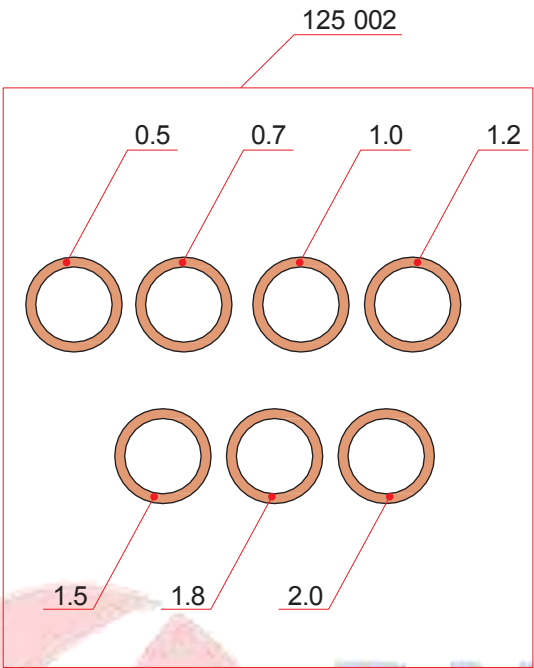


Part No.	Description	Qty [Pcs]	Wt. [Kg]
125 001	Indicator valve	1	-
125 002	Sealing ring selection (1)	1	-
125 020	Heat shield	1	-

NOTE! (1) See page 2.

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Indicator valve

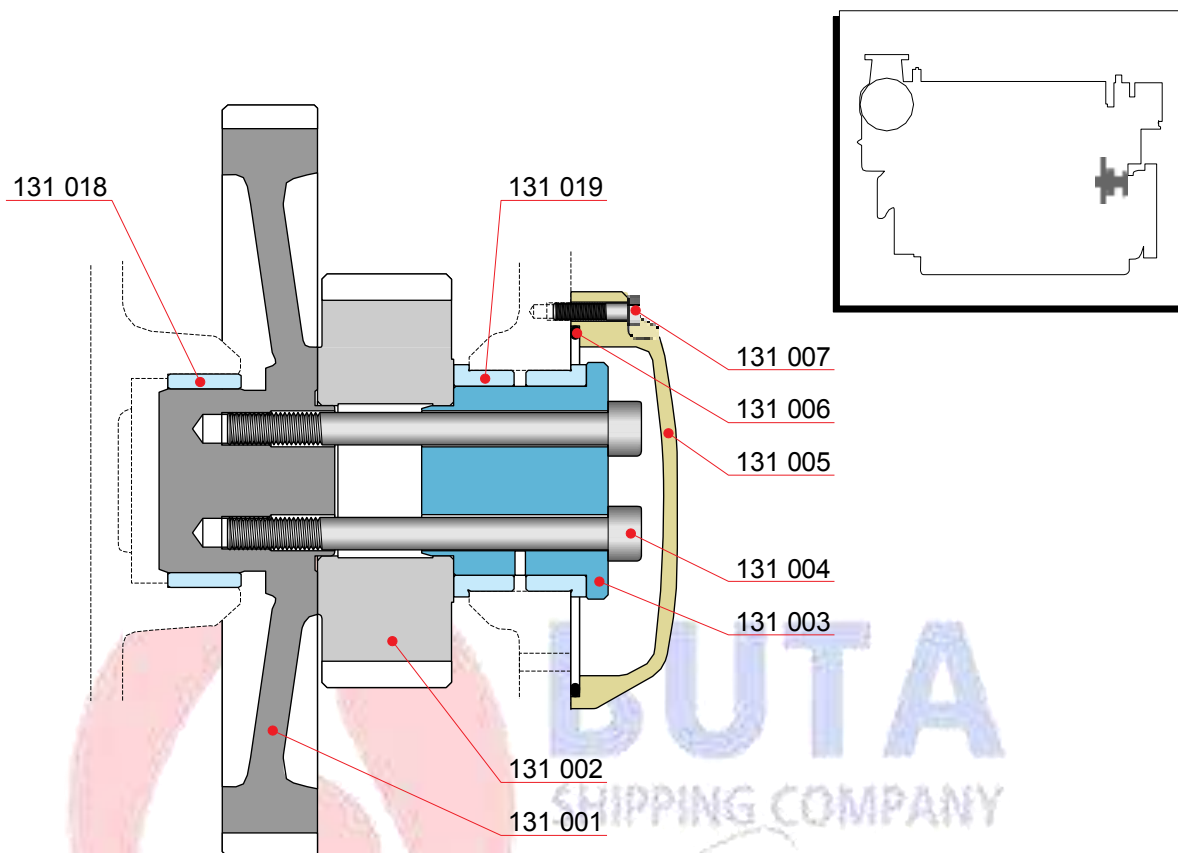


Part No.	Description	Qty [Pcs]	Wt. [Kg]
125 002	Sealing ring selection	1	-

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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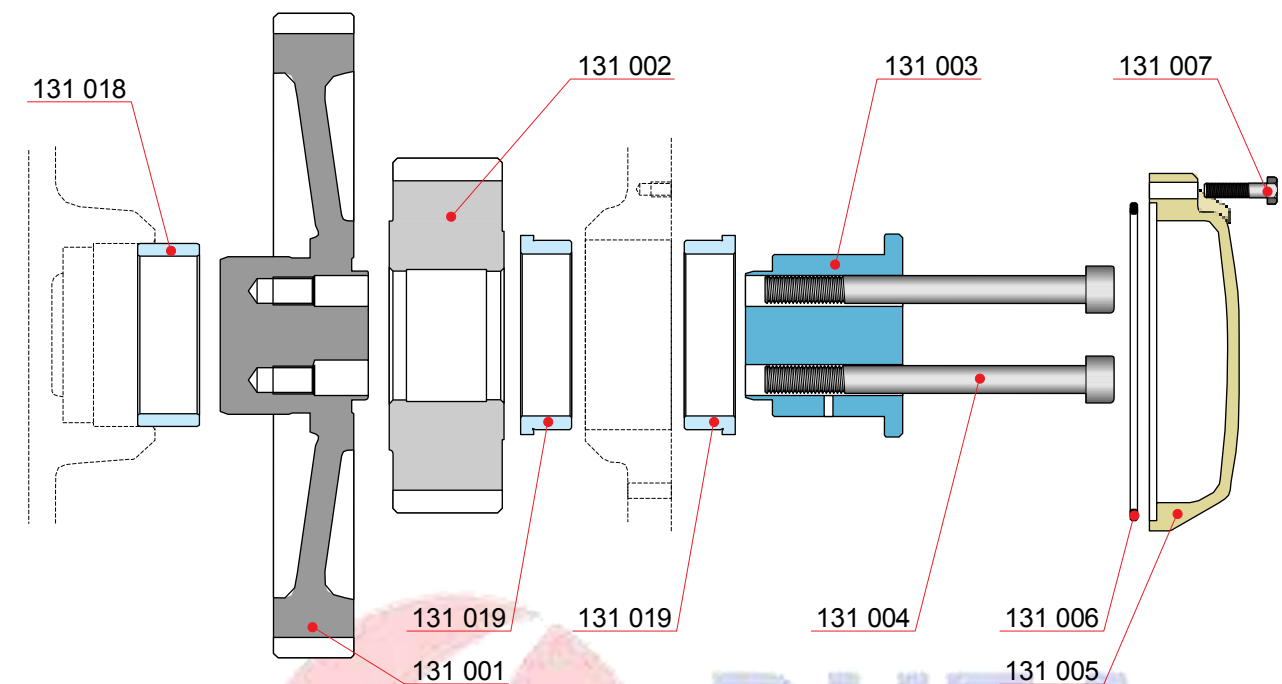
Hydraulic services with us

Intermediate gears for camshaft drive



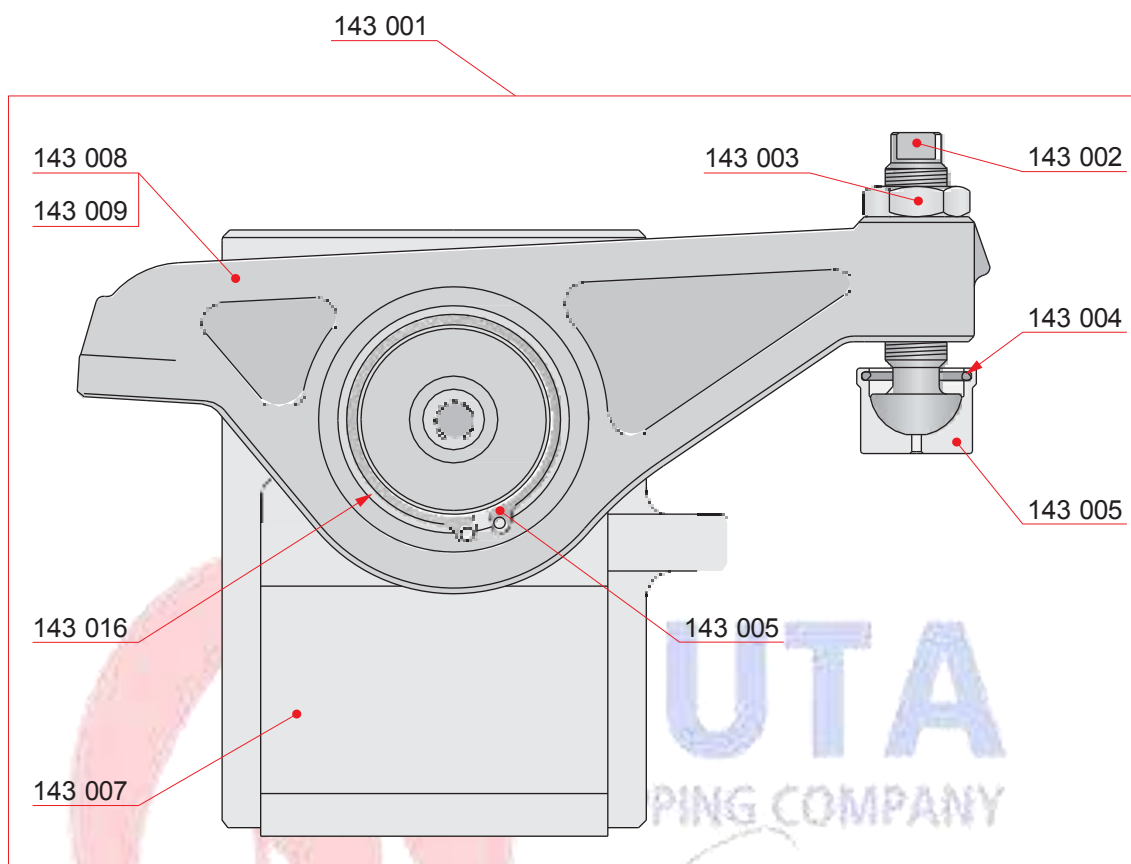
Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
131 001	Bigger intermediate gear	1	27.4				
131 002	Smaller intermediate gear	1	11.3				
131 003	Bearing piece	1	4.4				
131 004	Screw	6	0.5				
131 005	Cover for intermediate gear	1	1.0				
131 006	O-ring	1	-				
131 007	Screw	4	-				
131 018	Bearing bush	1	-				
131 019	Bearing bush	2	-				

Intermediate gears for camshaft drive



Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
131 001	Bigger intermediate gear	1	27.4	131 004	Screw	6	0.5
131 002	Smaller intermediate gear	1	11.3	131 005	Cover for intermediate gear	1	1.0
131 003	Bearing piece	1	4.4	131 006	O-ring	1	-
131 004	Screw	6	0.5	131 007	Screw	4	-
131 005	Cover for intermediate gear	1	1.0	131 018	Bearing bush	1	-
131 006	O-ring	1	-	131 019	Bearing bush	2	-
131 007	Screw	4	-				
131 018	Bearing bush	1	-				
131 019	Bearing bush	2	-				

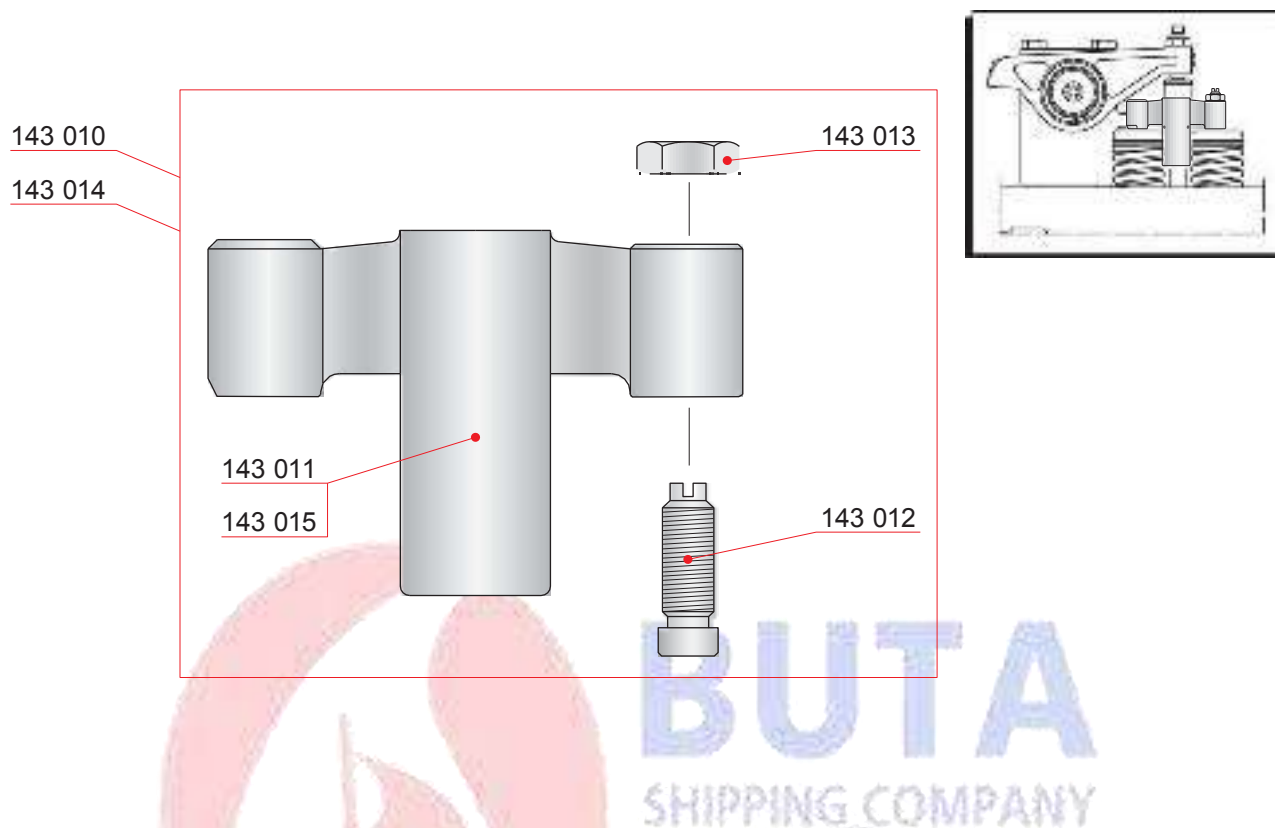
Rocker arms and bearing bracket



Part No.	Description	Qty [Pcs]	Wt. [Kg]
143 001	Rocker arms with bracket	1	9.8
143 002	Adjusting screw	2	-
143 003	Nut	2	-
143 004	Snap ring	2	-
143 005	Ball socket seat	2	-
143 006	Retainer ring	2	-
143 007	Bearing bracket	1	5.6
143 008	Rocker arm for exhaust valve	1	1.9
143 009	Rocker arm for inlet valve	1	1.8
143 016	Bearing bush	1	0.2

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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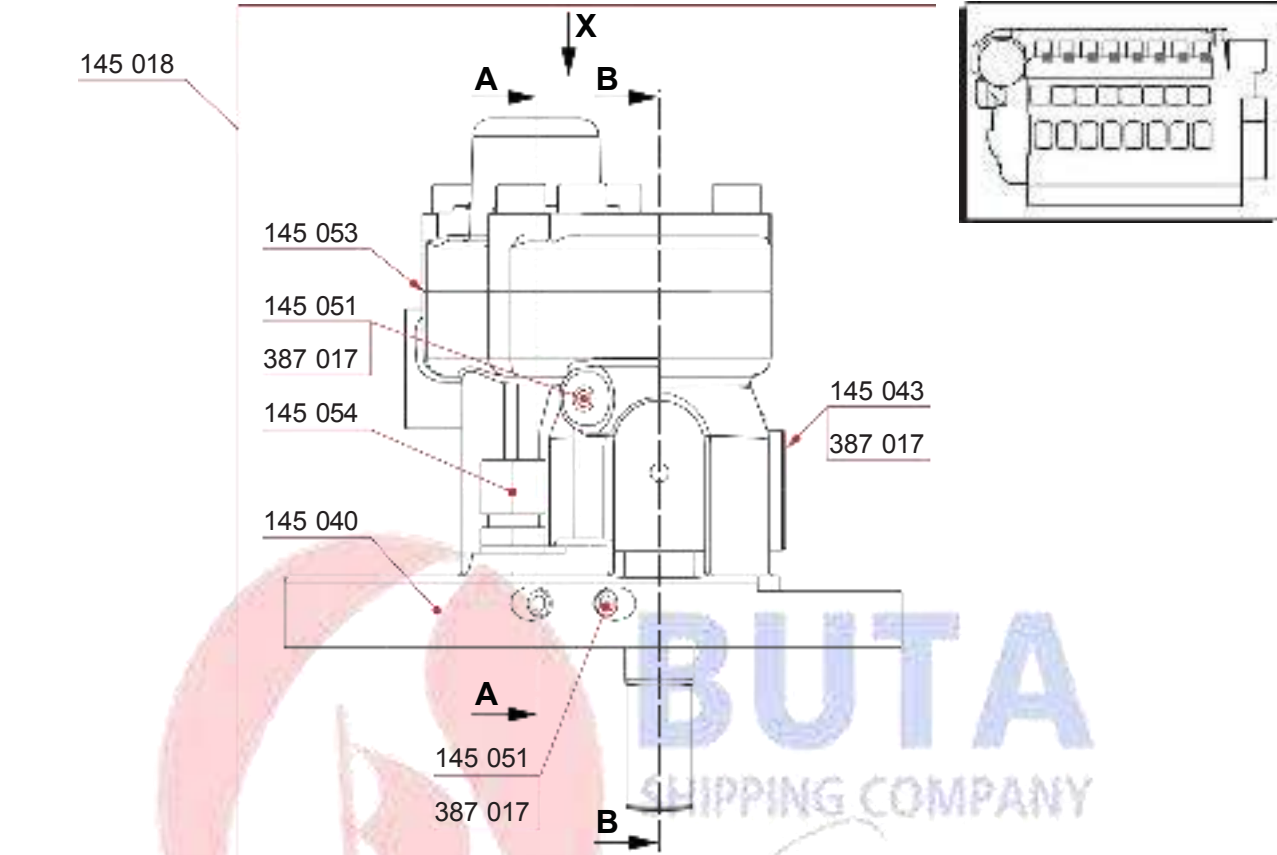
Yokes for inlet and exhaust valves



Part No.	Description	Qty [Pcs]	Wt. [Kg]
143 010	Yoke for exhaust valve, compl.	1	-
143 011	Yoke for exhaust valve	1	0.8
143 012	Adjustable pin	1	0.3
143 013	Nut	1	-
143 014	Yoke for inlet valve, compl.	1	-
143 012	Adjustable pin	1	0.3
143 013	Nut	1	-
143 015	Yoke for inlet valve	1	0.8

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Housing for VIC

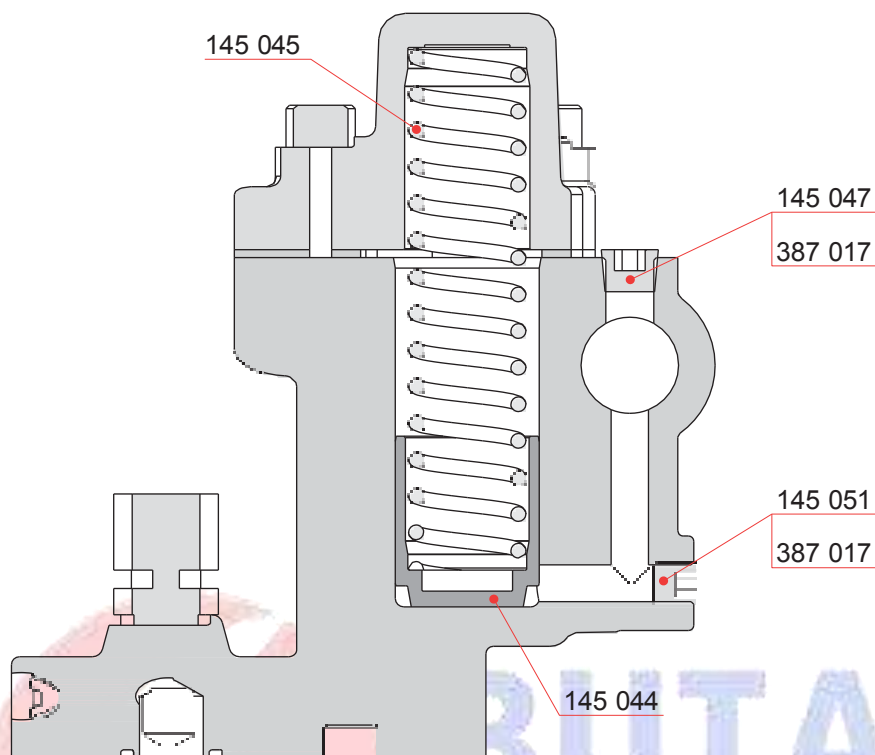


Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 018	Housing	1	5.5
145 040	Housing	1	4.0
145 043	Plug	1	-
145 051	Plug	5	-
145 053	Gasket	1	0.1
145 054	Pipe union	1	-
387 017	Glue compound	1	-

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Housing for VIC

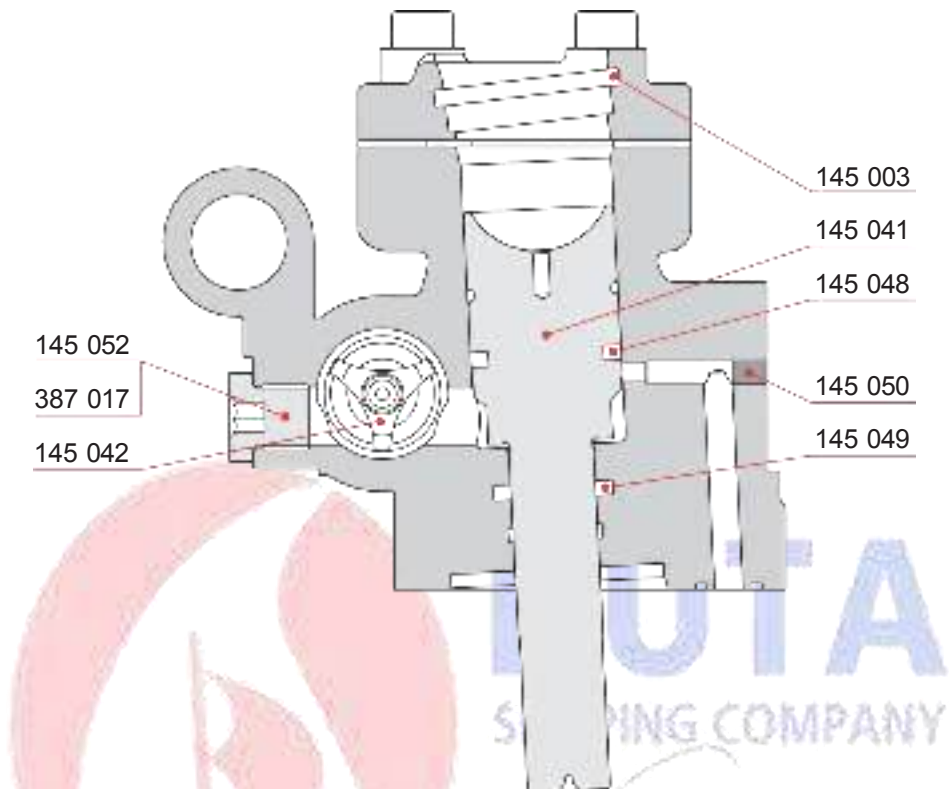
Section A-A



Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 044	Piston	1	-				
145 045	Spring	1	-				
145 047	Plug	1	-				
145 051	Plug	5	-				
387 017	Glue compound	1	-				

Housing for VIC

Section B-B

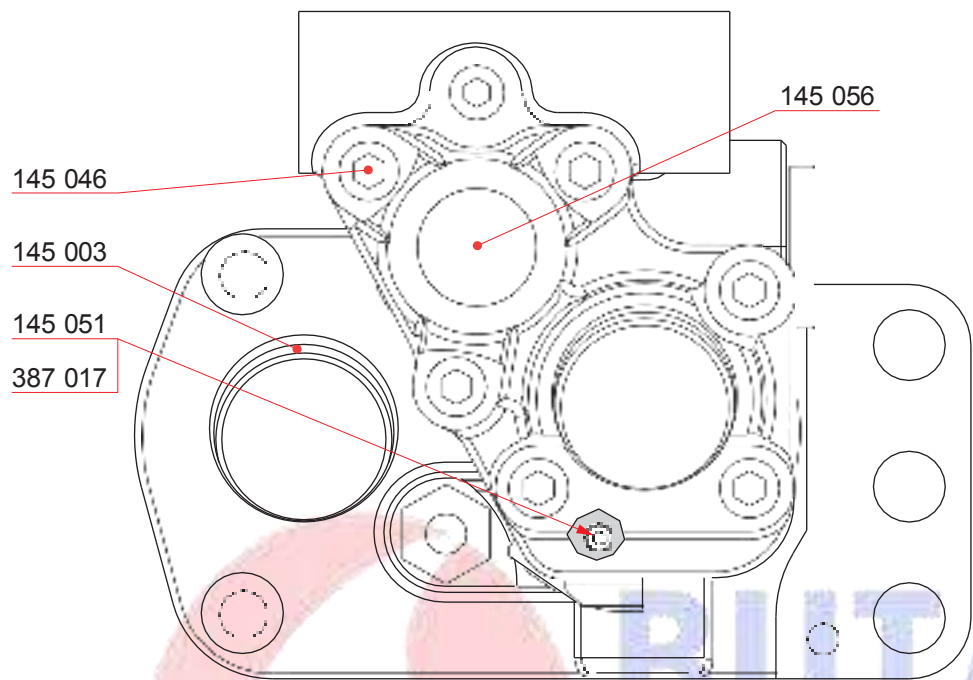


Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 003	O-ring	2	-
145 041	Piston	1	-
145 042	Non-return valve	1	0.1
145 048	Sealing ring	1	-
145 049	Sealing ring	1	-
145 050	Expander	1	-
145 052	Plug	1	-
387 017	Glue compound	1	-

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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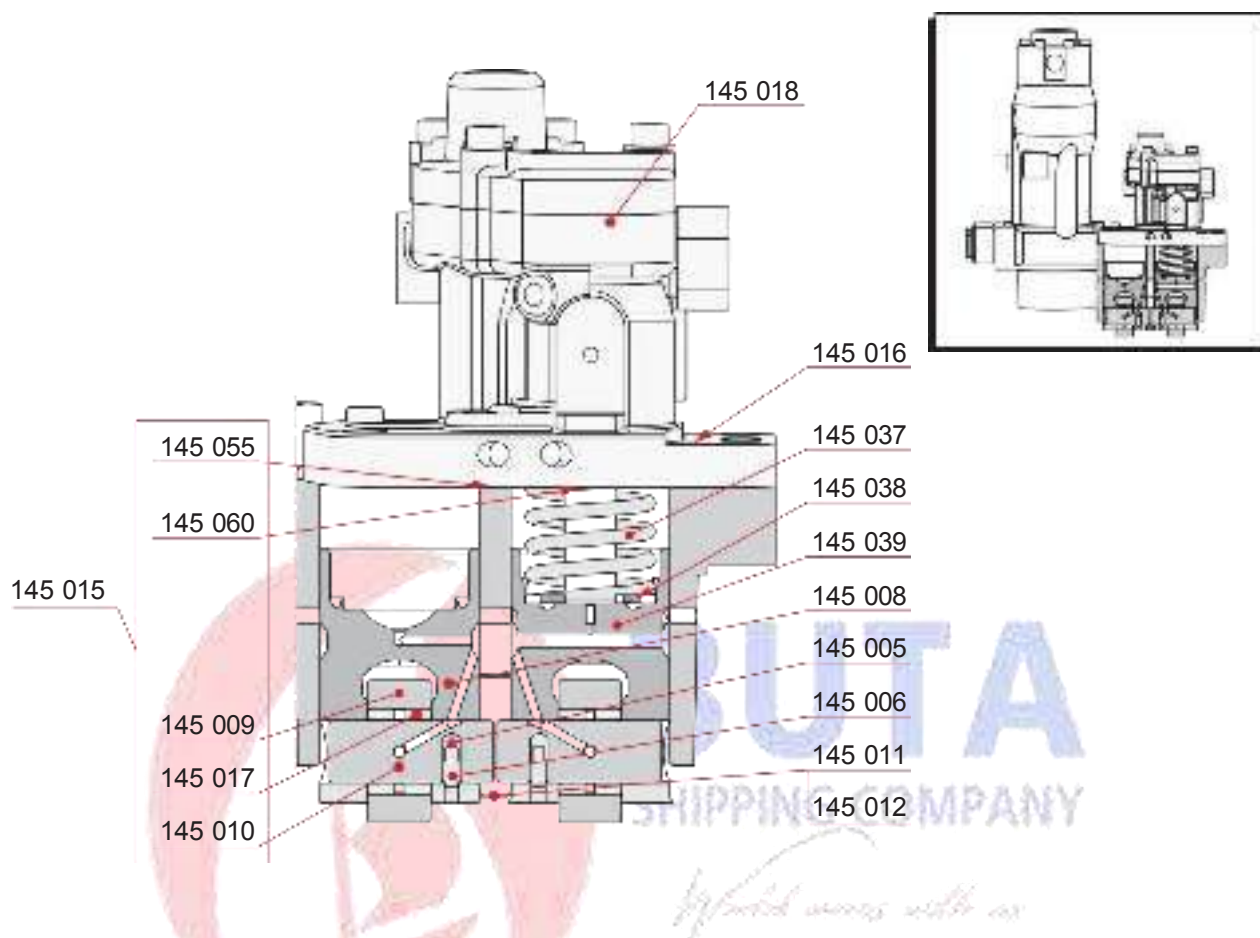
Housing for VIC

View X



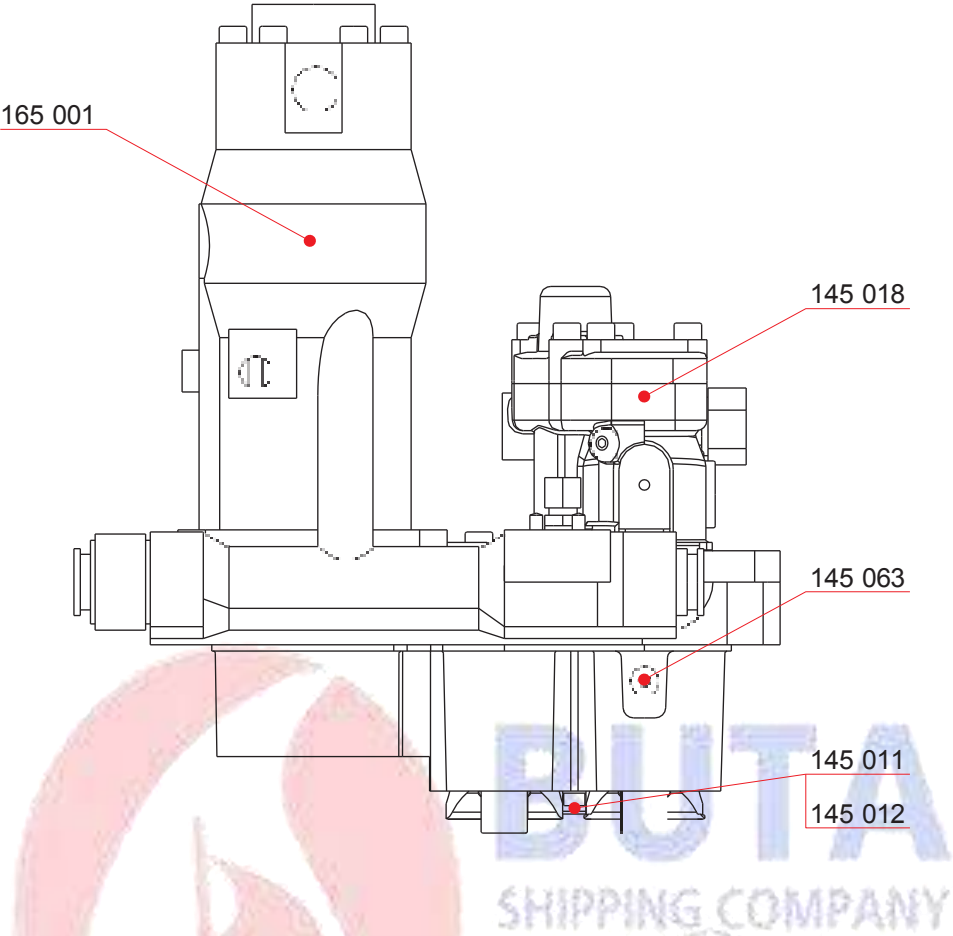
Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 003	O-ring	2	-				
145 046	Screw	6	-				
145 051	Plug	5	-				
145 056	Cover	1	0.6				
387 017	Glue compound	1	-				

Fuel oil system in Hot-box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 005	Spring	2	-
145 006	Pin	2	-
145 008	Valve tappet	1	0.6
145 009	Tappet roller (1)	2	-
145 010	Roller pin (1)	2	0.2
145 011	Securing plate	1	-
145 012	Screw	2	-
145 015	Valve tappet roller kit (2)	1	0.4
145 016	Pin	4	-
145 017	Bearing bush	2	-
145 018	Housing (3)	1	-
145 037	Spring	1	-
145 038	Washer	1	-
145 039	Valve tappet	1	0.6
145 055	O-ring	1	-
145 060	O-ring	1	-

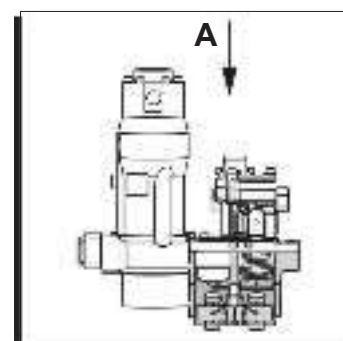
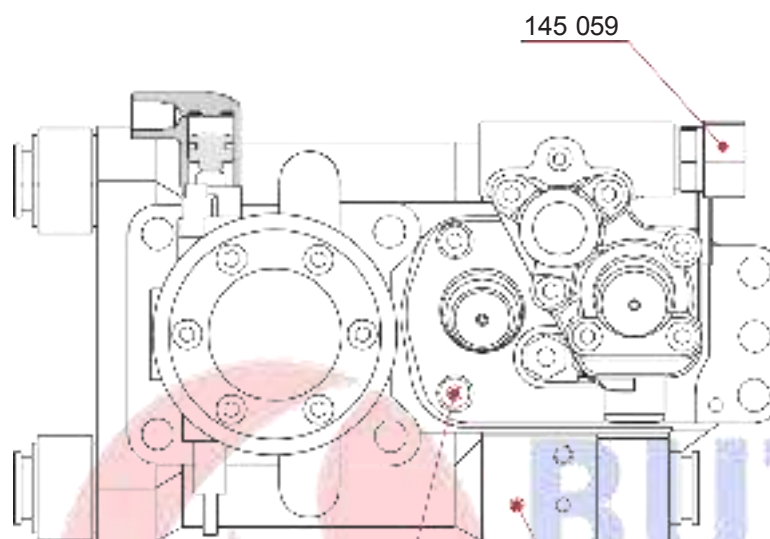
Fuel oil system in Hot-box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 011	Securing plate	1	-
145 012	Screw	2	-
145 018	Housing (3)	-	-
145 063	Expander	1	-
165 001	Injection pump	-	-

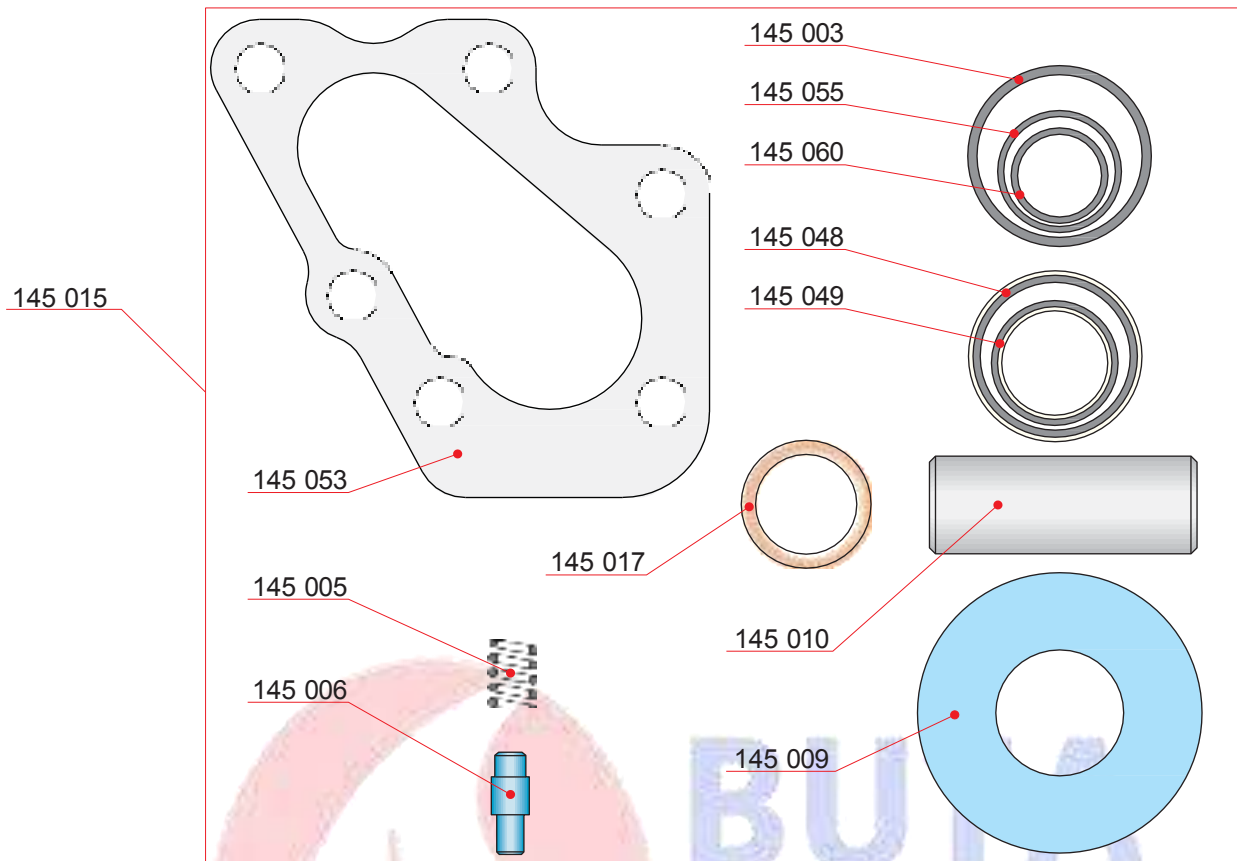
Fuel oil system in Hot-box

View A



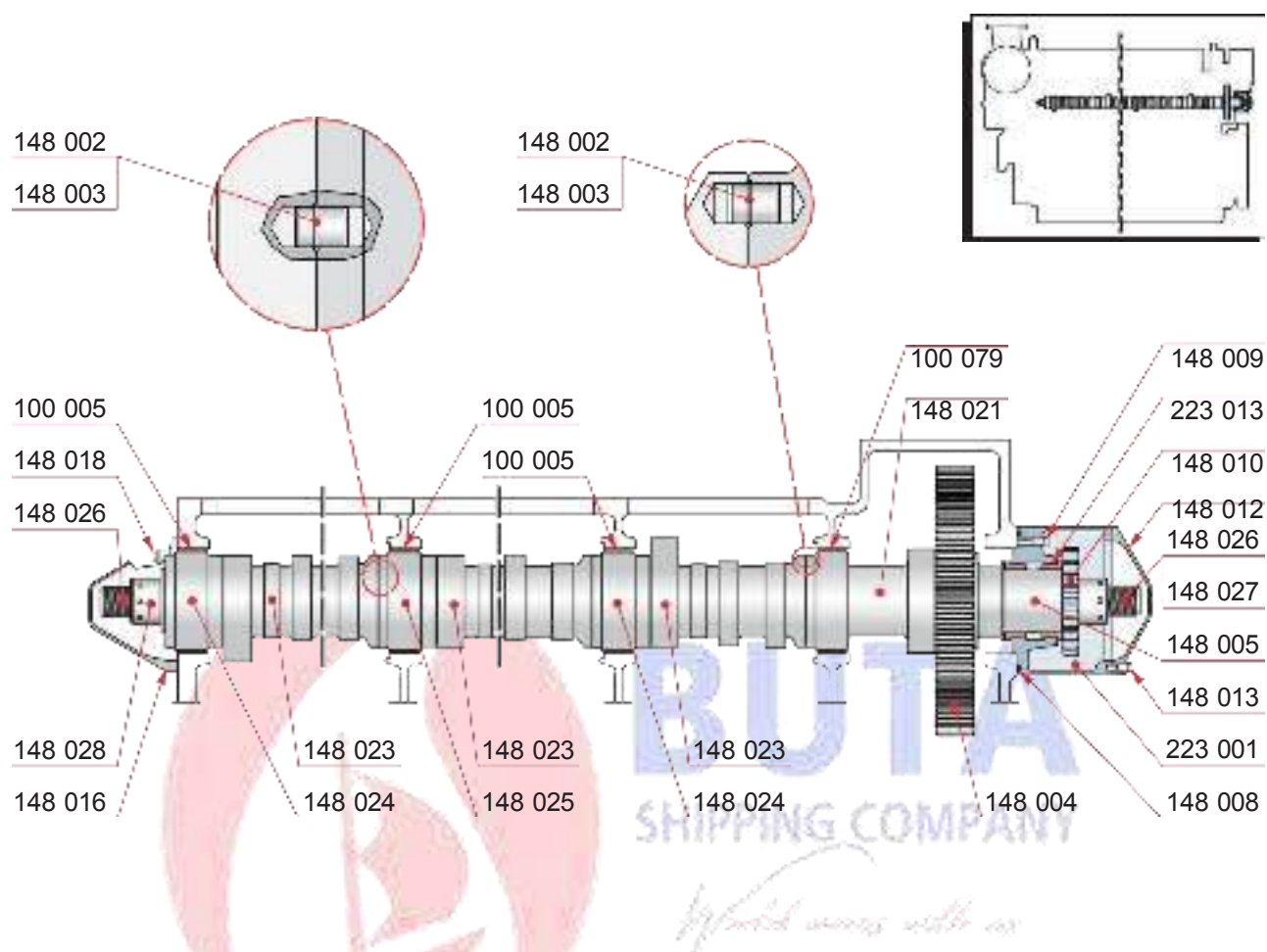
Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 013	Screw	2	-
145 016	Pin	4	-
145 059	Pipe union	1	0.1

Fuel oil system in Hot-box



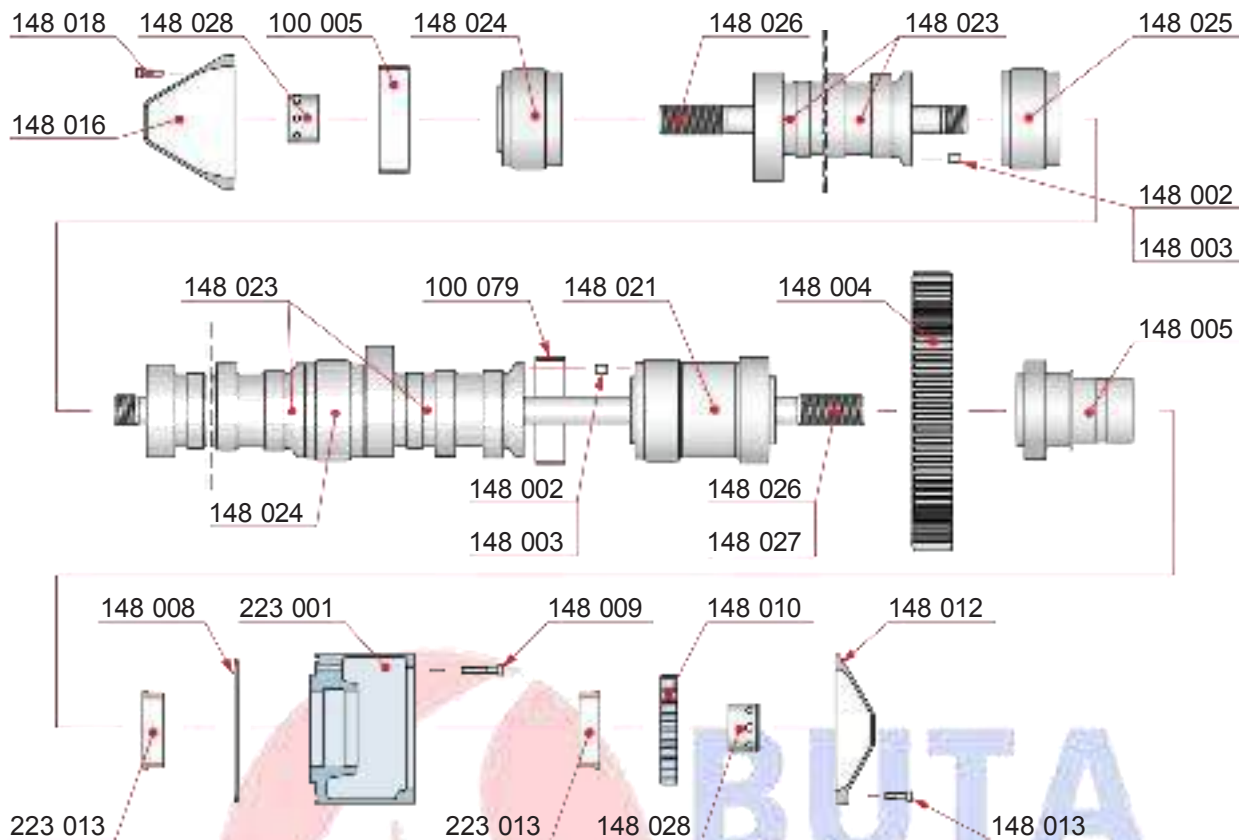
Part No.	Description	Qty [Pcs]	Wt. [Kg]
145 015	Valve tappet roller kit (2)	1	0.4
145 003	O-ring	2	-
145 005	Spring	2	-
145 006	Pin	2	-
145 009	Tappet roller (1)	2	-
145 010	Roller pin (1)	2	0.2
145 017	Bearing bush	2	-
145 048	Sealing ring	1	-
145 049	Sealing ring	1	-
145 053	Gasket	1	0.1
145 055	O-ring	1	-
145 060	O-ring	1	-

Camshaft



Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 005	Camshaft bearing bush	*	-
100 079	Camshaft bearing bush	1	-
148 002	Guide pin	*	-
148 003	Snap ring	*	-
148 004	Drive gear	1	25.4
148 005	End piece	1	26
148 008	O-ring	1	-
148 009	Screw	8	-
148 010	Gear	1	2.3
148 012	Cover	1	0.7
148 013	Screw	6	-
148 016	Cover	1	1.2
148 018	Screw	4	-
148 021	Extension piece	1	16
148 023	Camshaft piece	*	14.5
148 024	Bearing piece	*	8.7
148 025	Bearing piece	1	8.7
148 026	Screw	*	9.2
148 027	Screw	*	11.8
148 028	Round nut	2	0.7
223 001	Governor drive (1)	1	19.1

Camshaft



Part No.	Description	Qty [Pcs]	Wt. [Kg]
100 005	Camshaft bearing bush	*	-
100 079	Camshaft bearing bush	1	-
148 002	Guide pin	*	-
148 003	Snap ring	*	-
148 004	Drive gear	1	25.4
148 005	End piece	1	26
148 008	O-ring	1	-
148 009	Screw	8	-
148 010	Gear	1	2.3
148 012	Cover	1	0.7
148 013	Screw	6	-
148 016	Cover	1	1.2
148 018	Screw	4	-
148 021	Extension piece	1	16
148 023	Camshaft piece	*	14.5
148 024	Bearing piece	*	8.7
148 025	Bearing piece	1	8.7
148 026	Screw	*	9.2
148 027	Screw	*	11.8
148 028	Round nut	2	0.7
223 001	Governor drive (1)	1	19.1
223 013	Thrust bearing bush	2	0.5

Camshaft

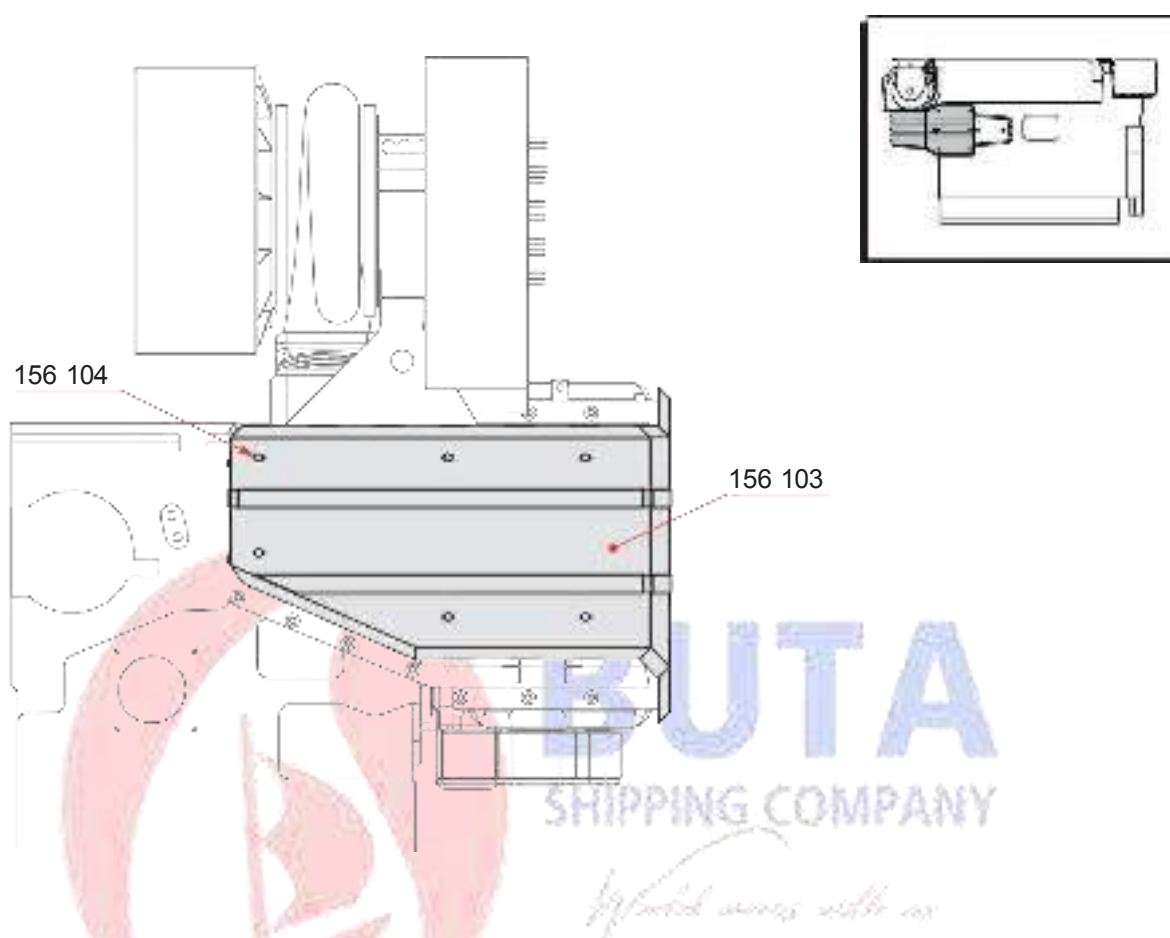
Quantity according to number of cylinders

Part No	Pieces			
	4L20	6L20	8L20	9L20
100 005	4	6	8	9
148 002	8	12	16	18
148 003	8	12	16	18
148 023	4	6	8	9
148 024	3	5	7	8
148 026	1	1	1	2
148 027	1	1	1	-

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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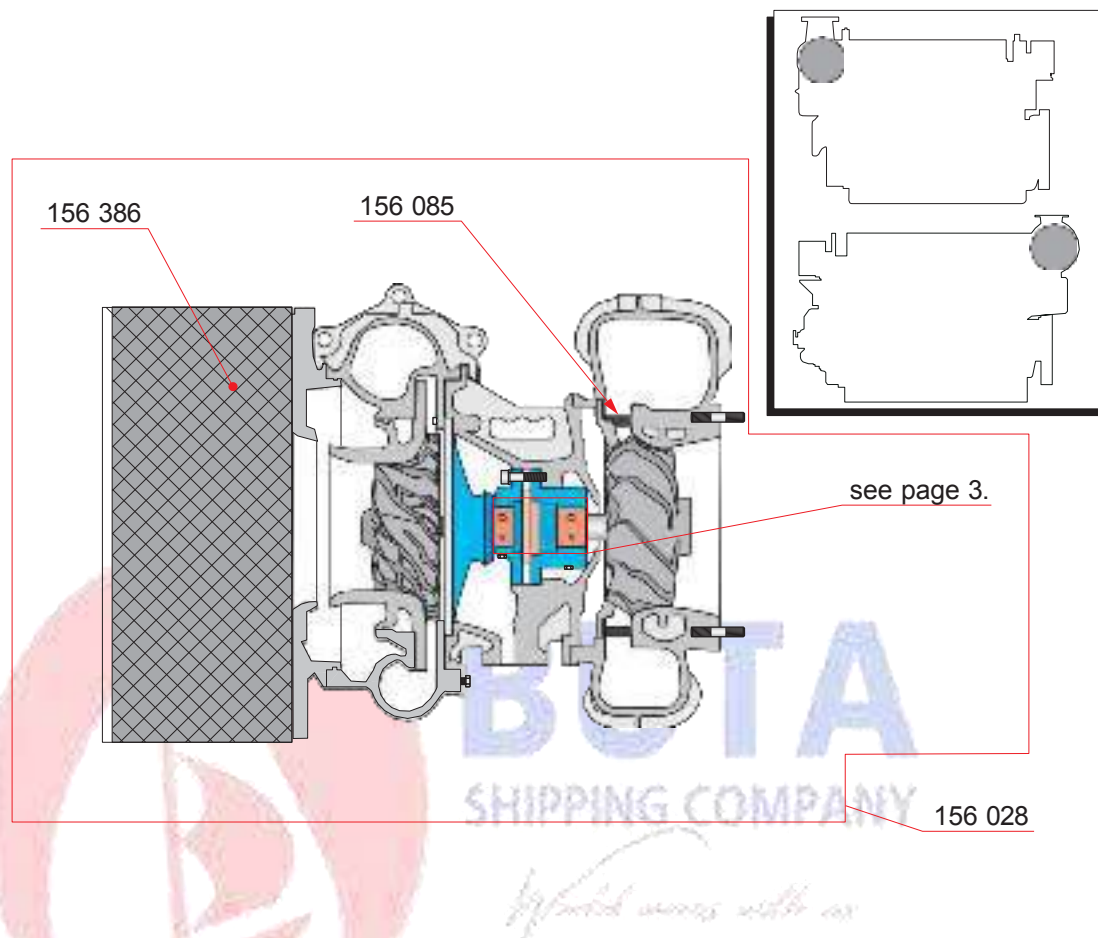
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Heat shield



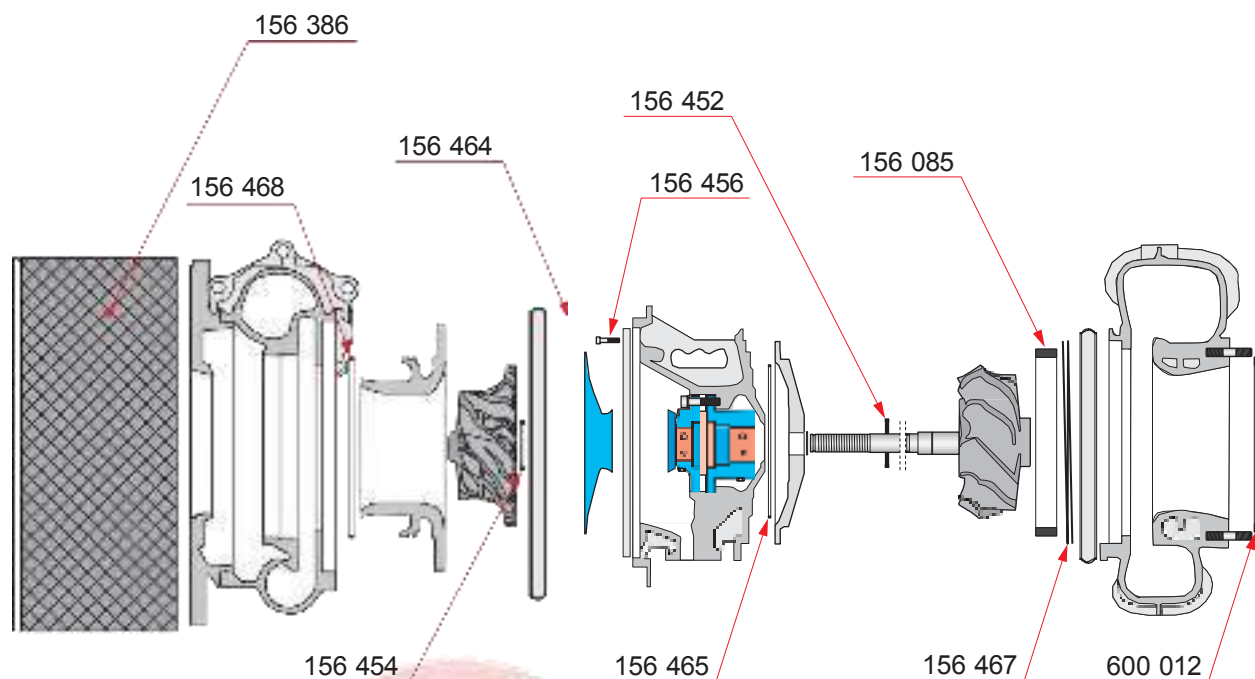
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 103	Shield plate	1	-
156 104	Screw	14	-

Turbocharger



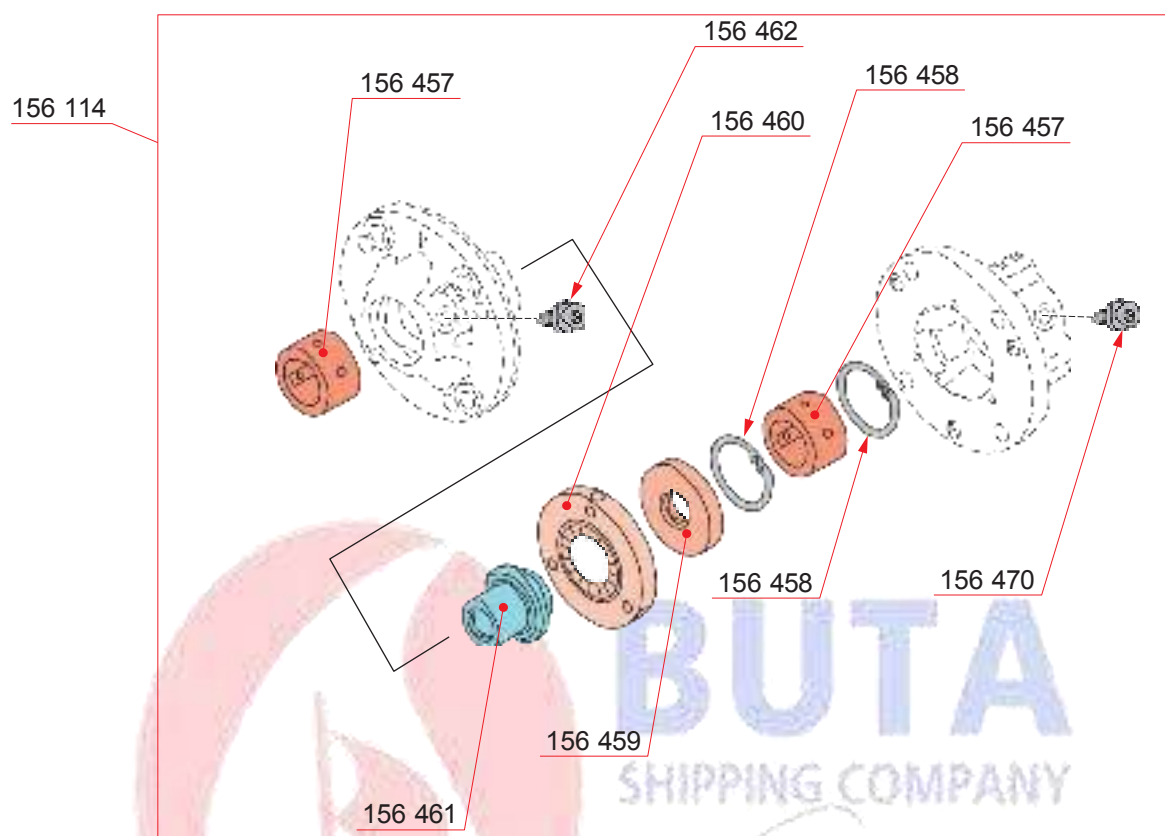
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 028	Turbocharger	1	217
156 085	Nozzle	1	3.2
156 386	Filter cartridge	1	0.1

Turbocharger



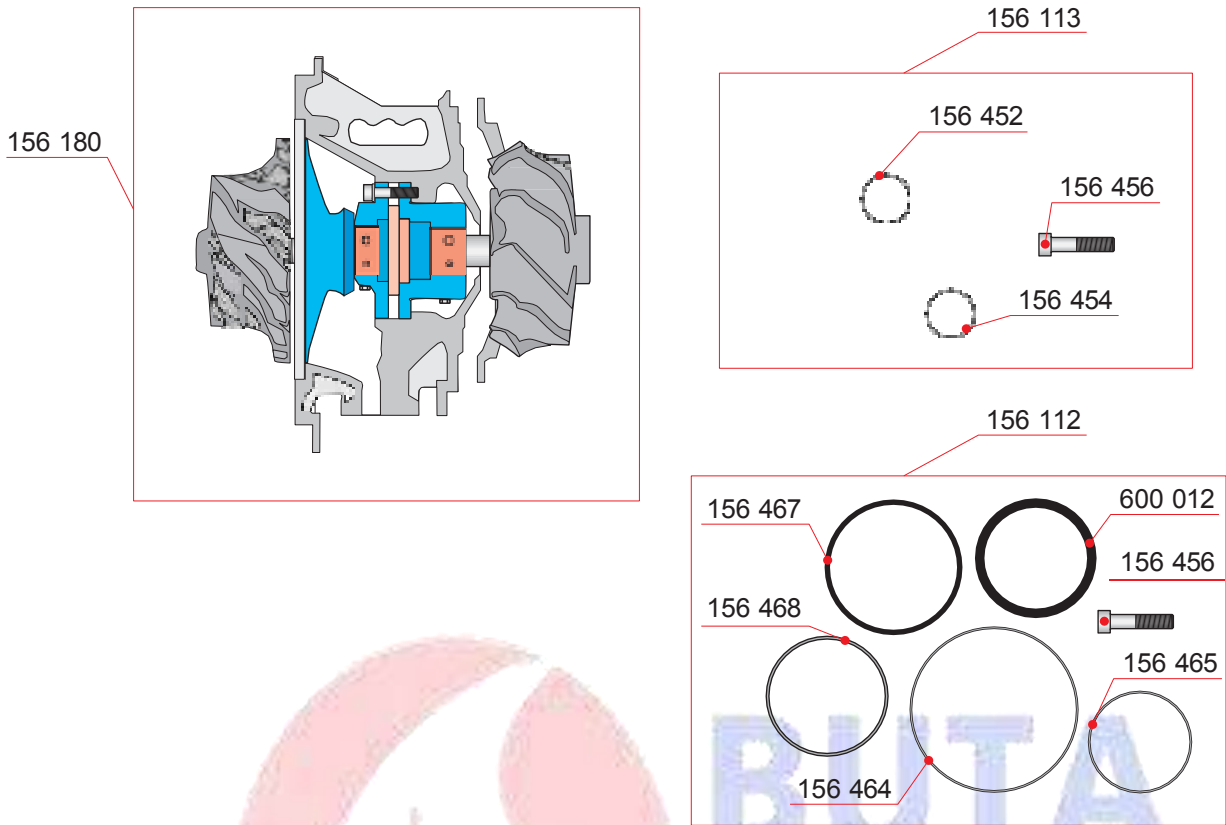
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 085	Nozzle	1	3.2
156 386	Filter cartridge	1	0.1
156 452	Piston ring (2)	1	-
156 454	Piston ring (2)	1	-
156 456	Screw (1) (2)	3	-
156 464	Packing ring (1)	1	-
156 465	Gasket (1)	1	-
156 467	Lamellar labyrinth seal (1)	1	-
156 468	Packing ring (1)	1	-
600 012	Sealing ring (1) (3)	1	-

Turbocharger

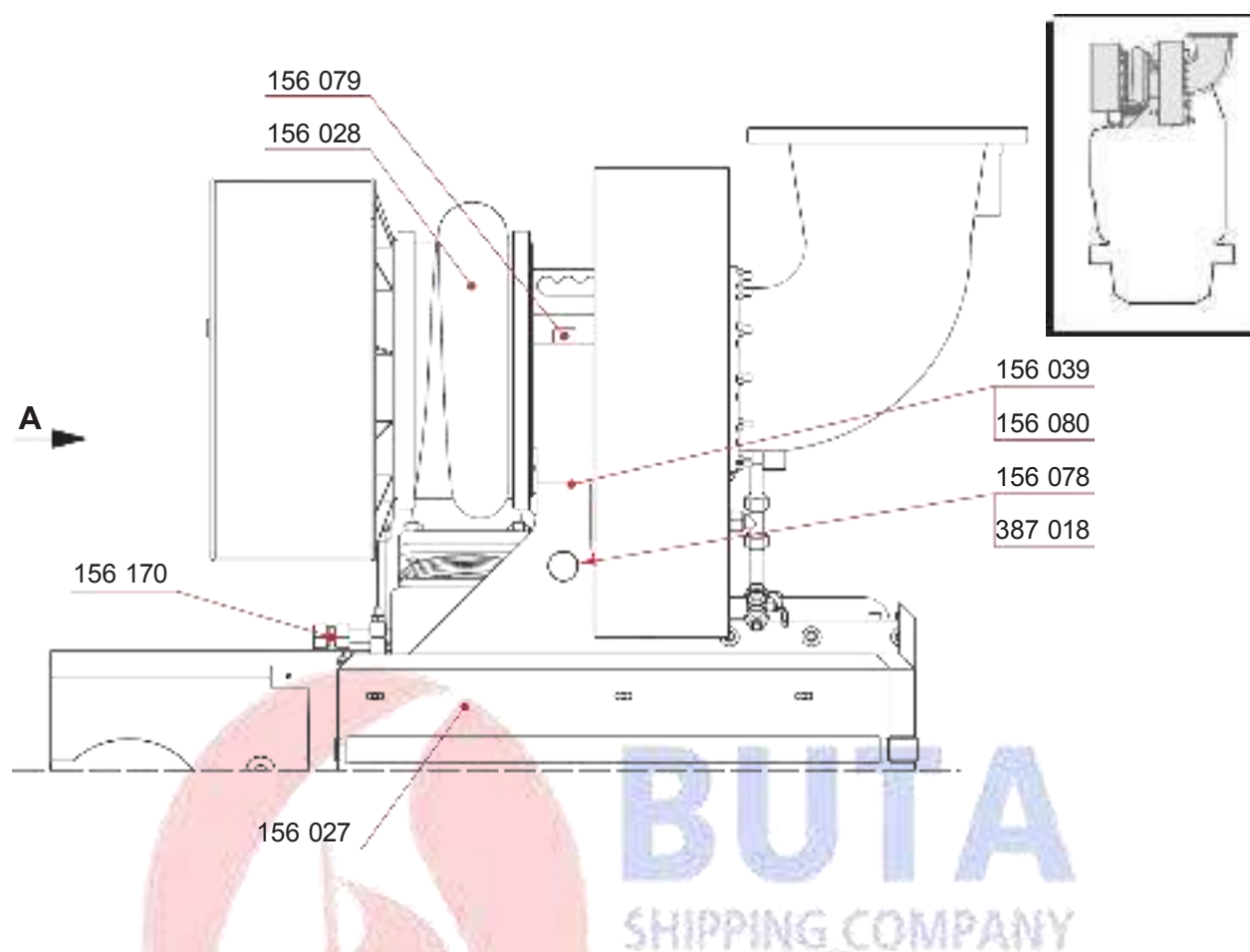


Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 114	Bearing part kit	1	1.2
156 457	Bearing (3)	2	-
156 458	Locking ring (3)	2	-
156 459	Thrust ring (3)	1	-
156 460	Thrust bearing (3)	1	-
156 461	Auxiliary bearing (3)	1	-
156 462	Screw (3)	3	-
156 470	Screw (3)	3	-

Turbocharger



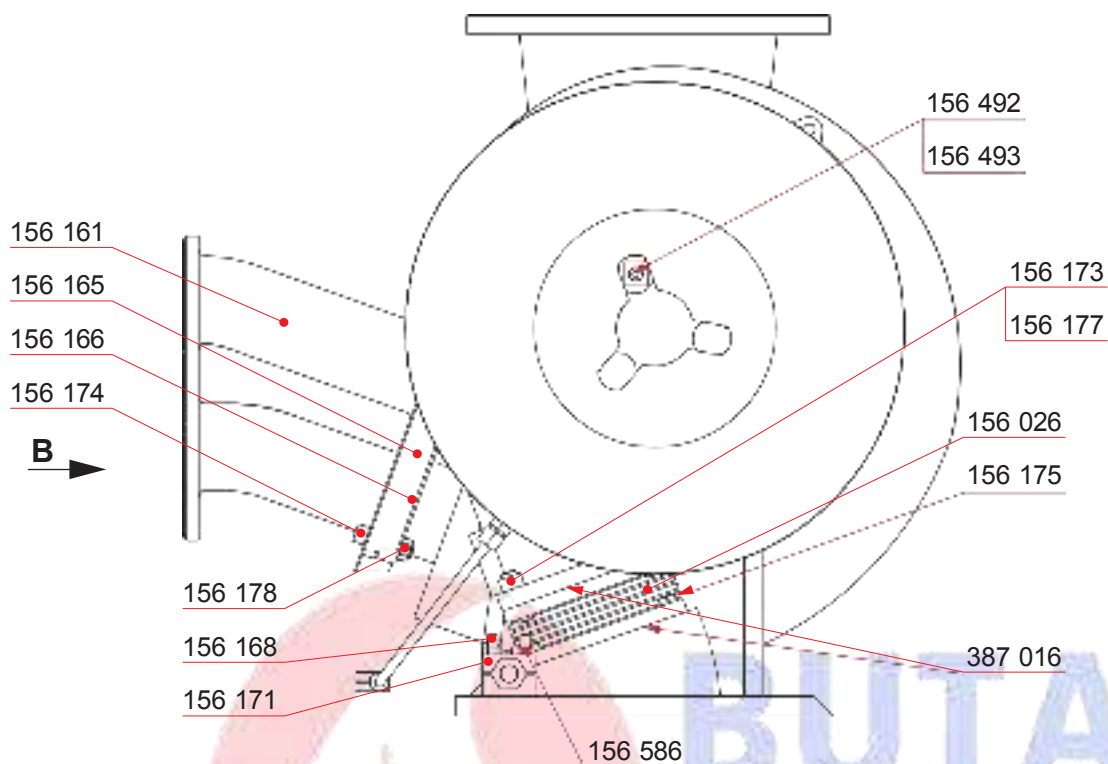
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 112	O-ring kit	1	0.4
156 464	Packing ring (1)	1	-
156 465	Gasket (1)	1	-
156 467	Lamellar labyrinth seal (1)	1	-
156 468	Packing ring (1)	1	-
600 012	Sealing ring (1) (3)	1	-
156 113	V-clamp kit	1	-
156 452	Piston ring (2)	1	-
156 454	Piston ring (2)	1	-
156 456	Screw (1) (2)	3	-
156 180	Cartridge	1	-



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 027	Bracket	1	-
156 028	Turbocharger	1	-
156 039	O-ring	1	-
156 078	Plug	1	-
156 079	Screw	2	-
156 080	O-ring	1	-
156 170	Pipe union	1	-
387 018	Glue compound	1	-

Turbocharger bracket assembly

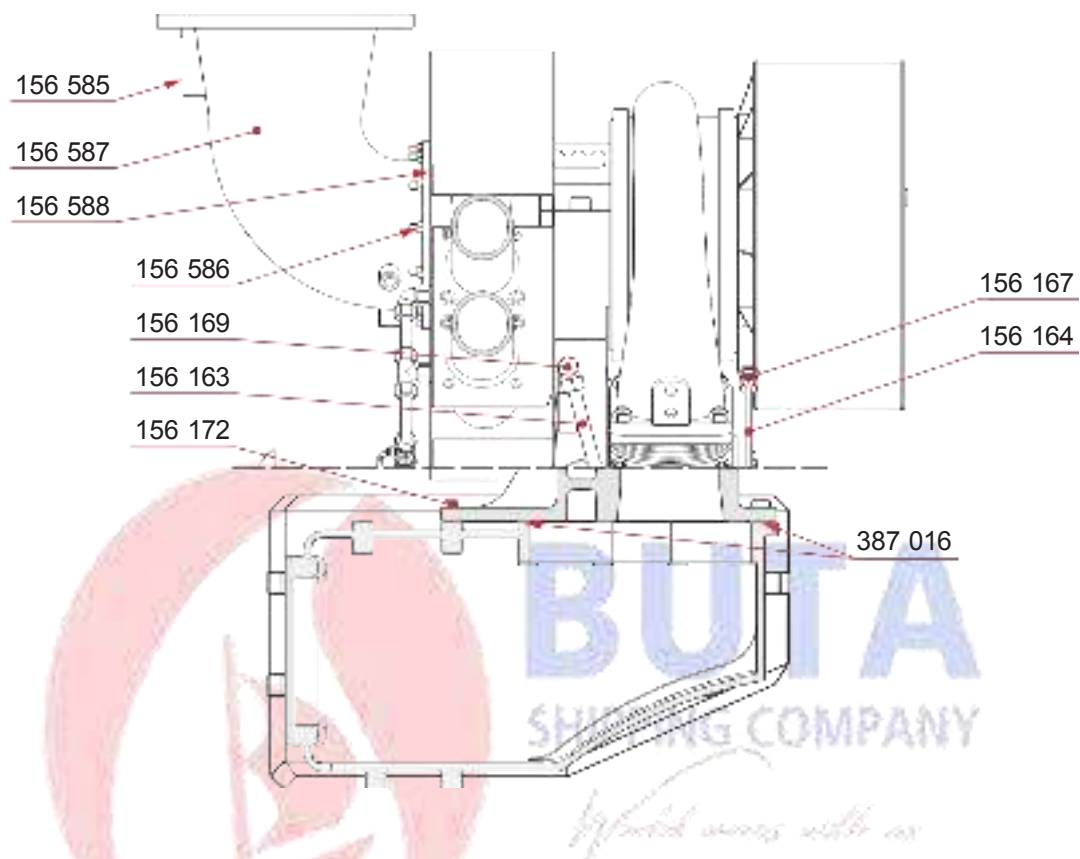
View A



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 026	Bellows	1	-
156 161	Exhaust pipe	2	-
156 165	End plate	1	-
156 166	Sealing ring	2	-
156 168	Screw	2	-
156 171	Pipe clamp	1	-
156 173	Screw	4	-
156 174	Screw	8	-
156 175	Screw	4	-
156 177	Nut	4	-
156 178	Locking nut	8	-
156 492	Bracket	1	-
156 493	Screw	1	-
156 586	Nut	14	-
387 016	Glue compound	1	-

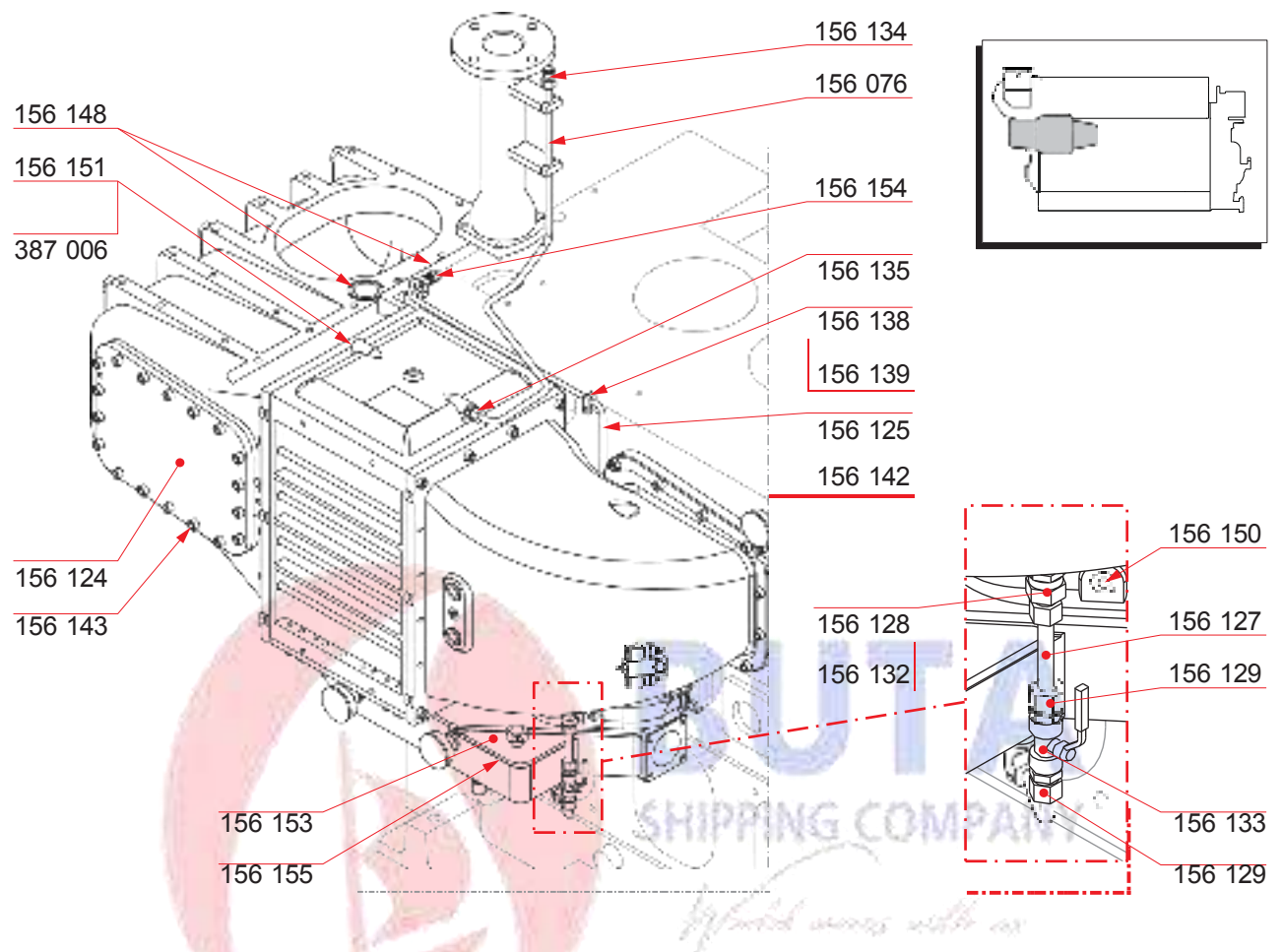
Turbocharger bracket assembly

View B



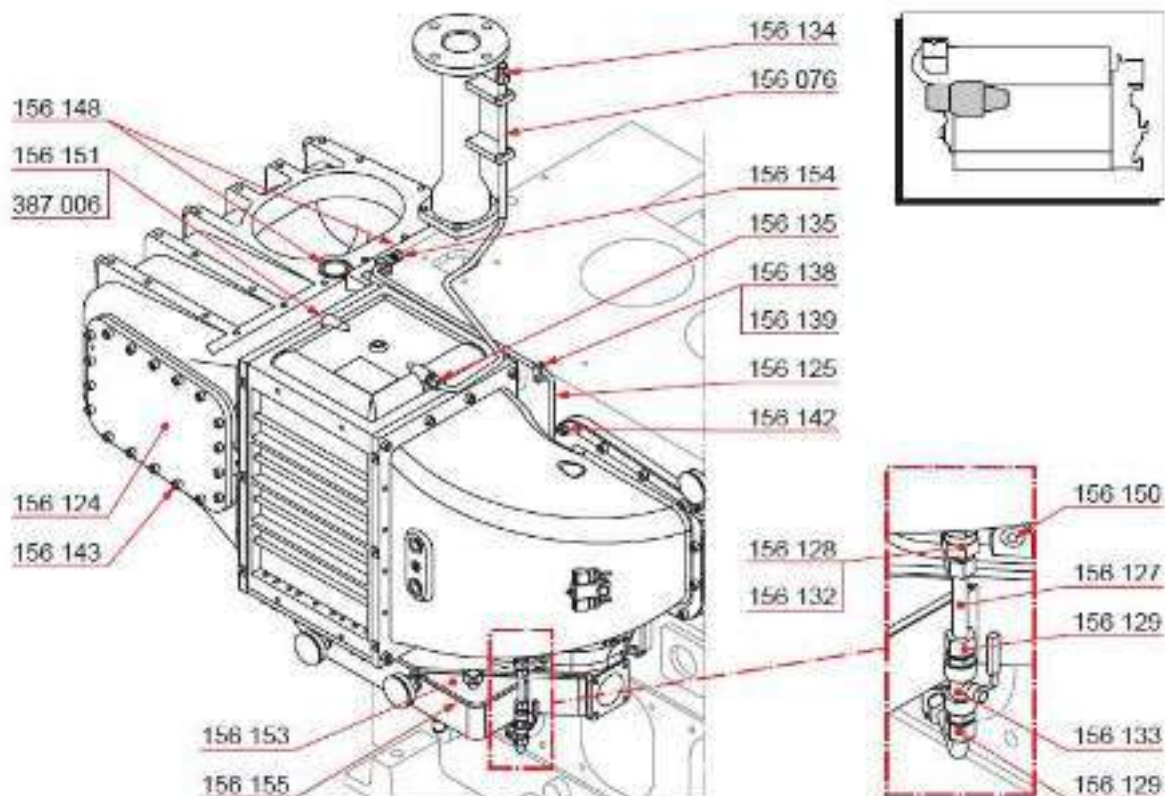
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 163	Pipe	1	-
156 164	Pipe	1	-
156 167	Pipe union	1	-
156 169	Pipe union	1	-
156 172	Screw	14	-
156 585	Plug	4	-
156 586	Nut	14	-
156 587	Exhaust pipe	1	-
156 588	Sealing ring	1	-
387 016	Glue compound	1	-

Charge air cooler



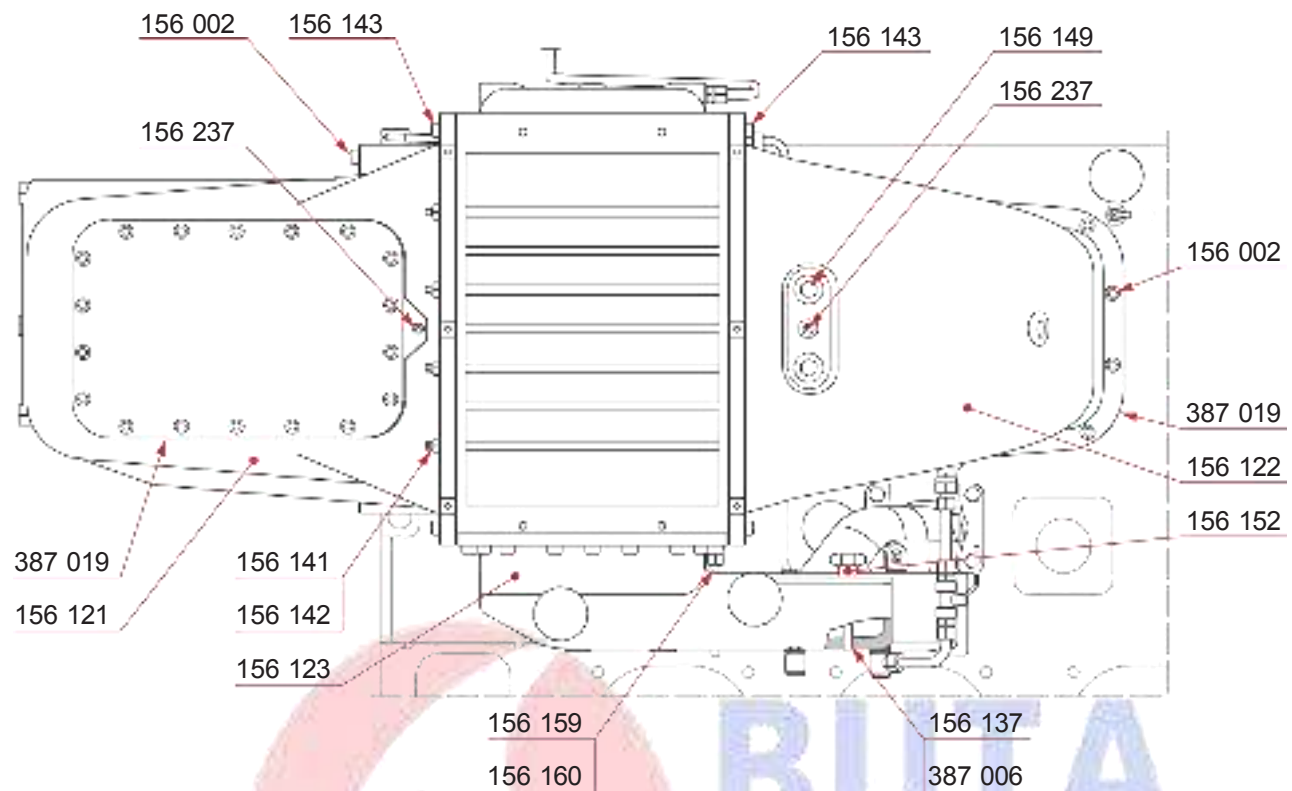
Part No.	Description	[Pcs]
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Charge air cooler



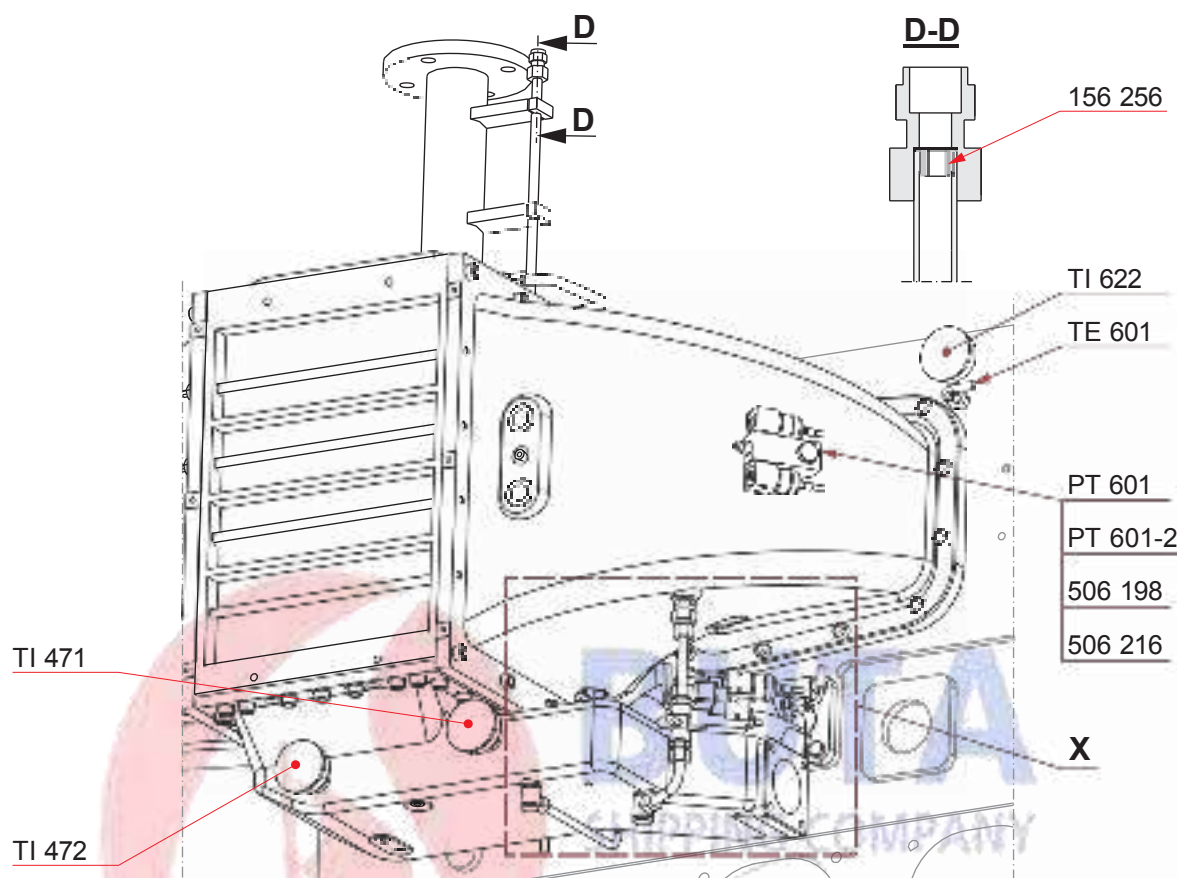
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 076	Pipe	1	-
156 124	Cover	1	4.6
156 125	Pipe	1	-
156 127	Pipe	1	-
156 128	Pipe union	1	-
156 129	Pipe union	2	-
156 132	Reduction union	1	0.1
156 133	Ball valve	1	0.1
156 134	Pipe union	1	-
156 135	Pipe union	1	-
156 138	Pipe clamp	2	-
156 139	Screw	2	-
156 142	Nut	10	-
156 143	Screw	26	-
156 148	O-ring	2	-
156 150	Plug	3	-
156 151	Plug	1	-
156 153	Cap	1	-
156 154	Pipe union	1	-
156 155	Gasket	1	-
387 006	Glue compound	1	-

Charge air cooler



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 002	Screw	21	-
156 121	Air box	1	149
156 122	Air inlet piece	1	68.7
156 123	Water connection	1	43.5
156 137	Screw	1	-
156 141	Screw	8	0.3
156 142	Nut	10	-
156 143	Screw	26	-
156 149	Plug	2	0.1
156 152	Hand wheel	1	-
156 159	Pipe union	1	-
156 160	Pipe	1	-
156 237	Plug	2	-
387 006	Glue compound	1	-
387 019	Glue compound	1	-

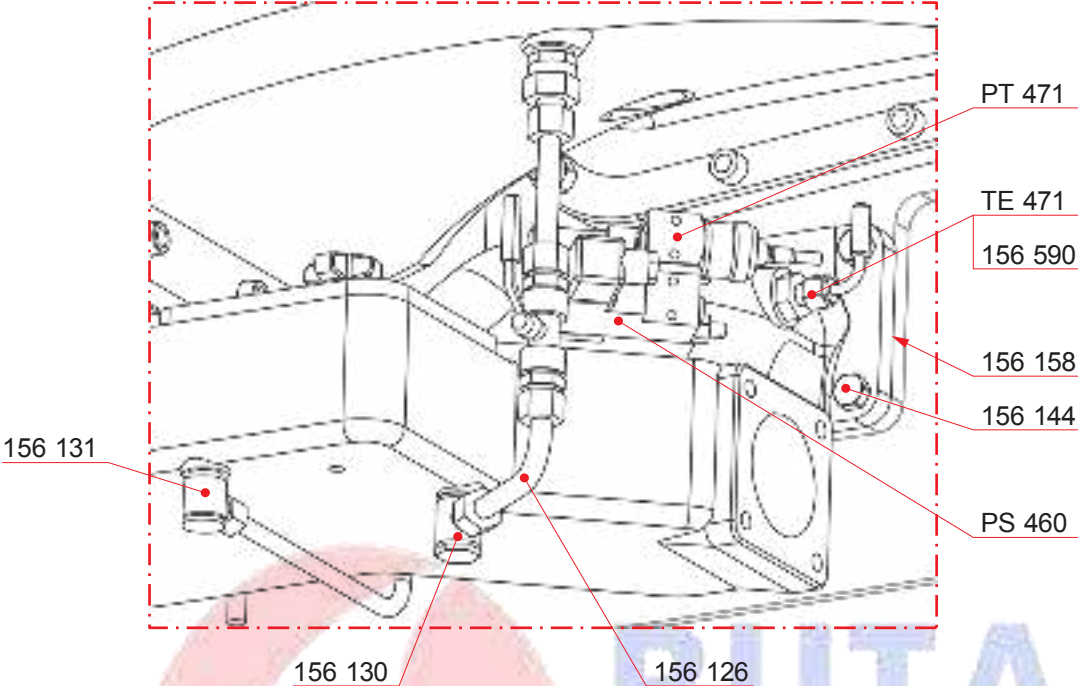
Charge air cooler



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 256	Orifice	1	-
506 198	Pressure gauge valve (1)	1	-
506 216	Pressure gauge valve (1)	1	-
PT601	Pressure transducer, charge air pressure	1	-
PT601-2	Pressure transducer (2)	1	-
TE601	Temperature sensor, charge air	1	-
TI471	Thermometer, LT water, before charge air cooler (2)	1	-
TI472	Thermometer, LT water, after charge air cooler (2)	1	-
TI622	Thermometer for charge air, after cooler (2)	1	-

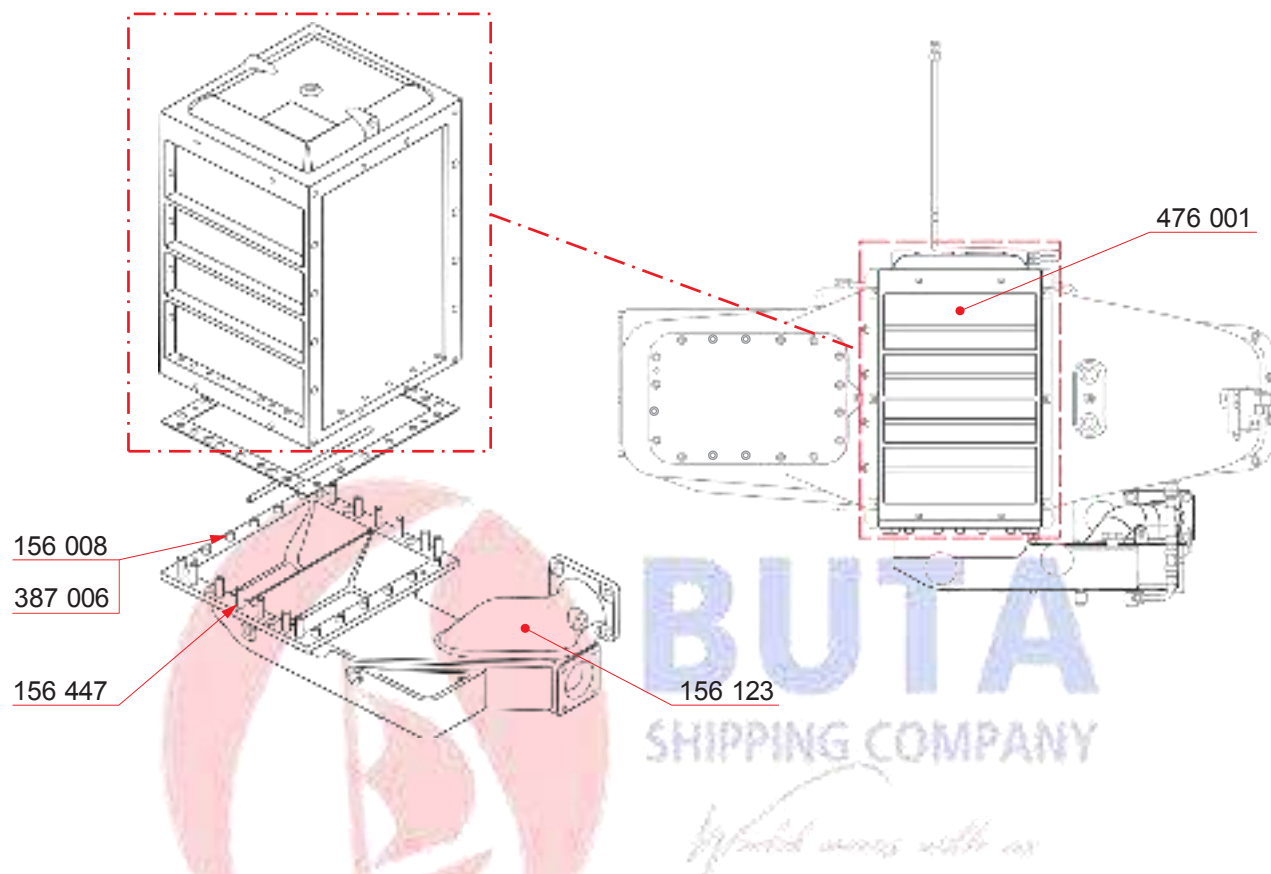
Charge air cooler

Detail X



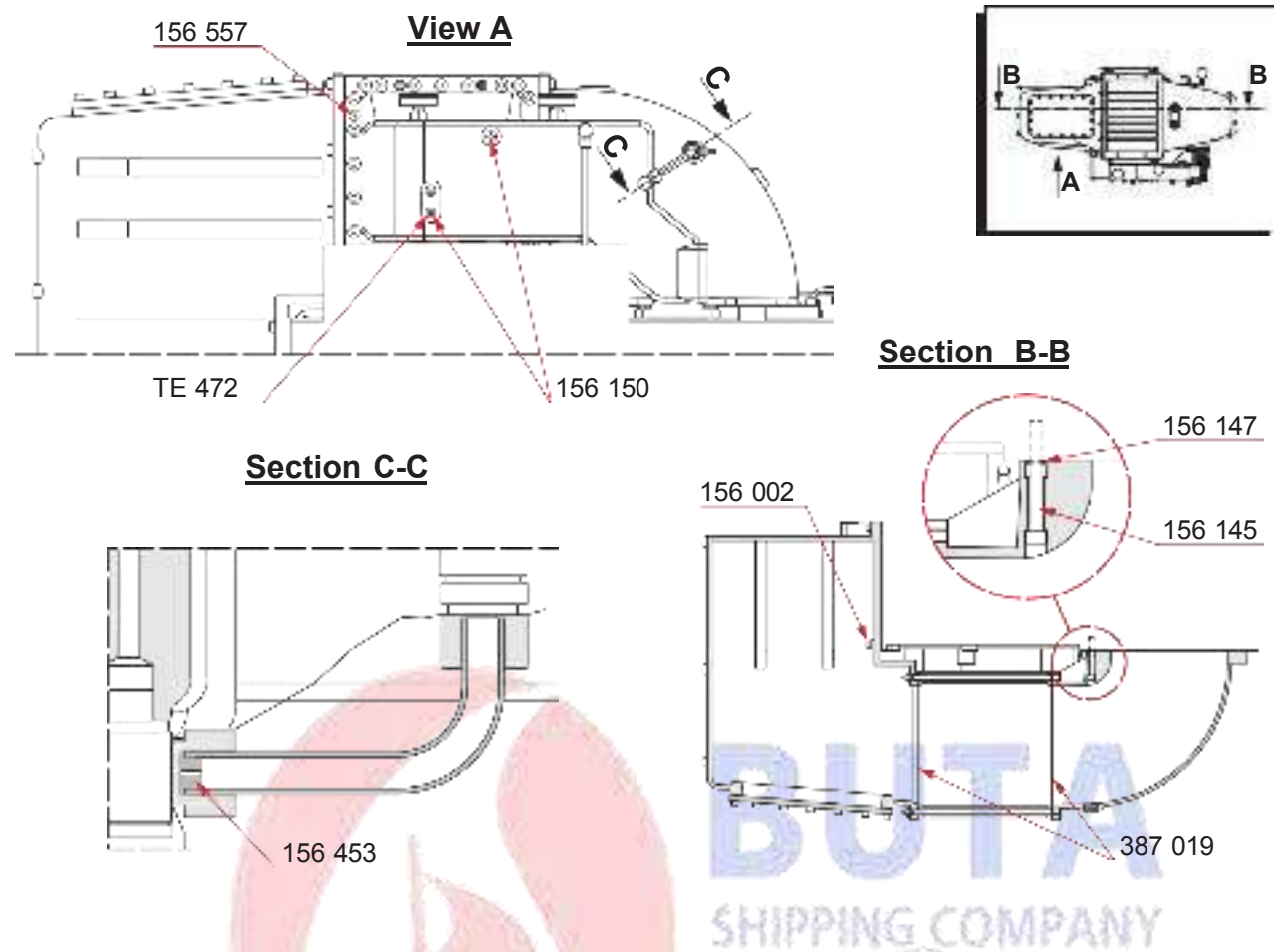
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 126	Pipe	1	-
156 130	Pipe union	1	-
156 131	Pipe union	1	-
156 144	Screw	4	-
156 158	O-ring	1	-
156 590	Protection well	1	-
PS460	Pressure switch, start LT-stand by pump (*)	1	-
PT471	Pressure transducer, LT water	1	-
TE471	Temperature sensor for LT water	1	-

Charge air cooler



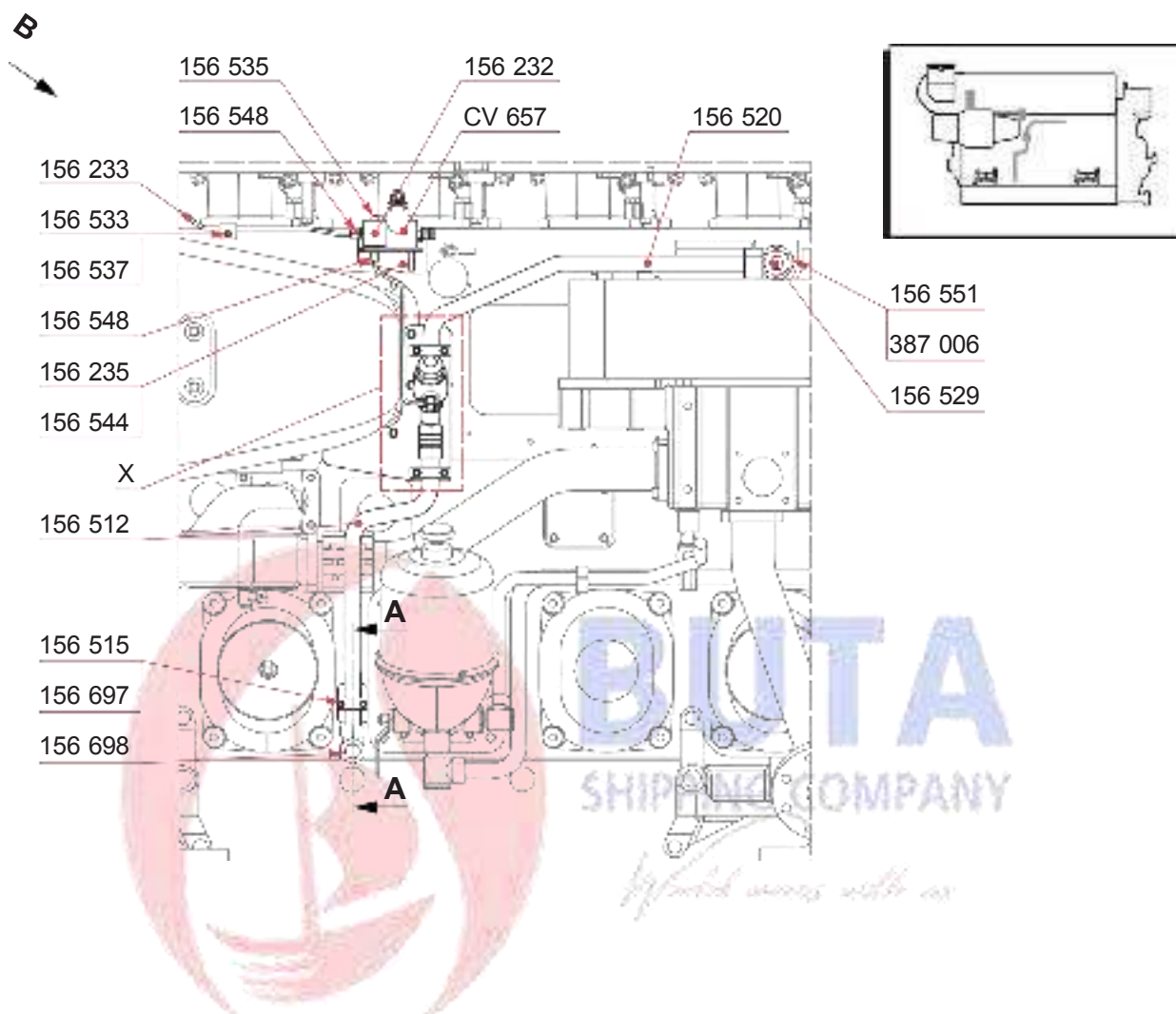
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 008	Screw	12	-
156 123	Water connection	1	43.5
156 447	Screw	14	-
387 006	Glue compound	1	-
476 001	Charge air cooler (1)	1	-

Charge air cooler



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 002	Screw	21	-
156 145	Screw	2	0.1
156 147	O-ring	2	-
156 150	Plug	3	-
156 453	Throttle ring	1	-
156 557	Plug	1	-
387 019	Glue compound	1	-
TE472	Temp. sensor, LT-water after charge air cooler (*)	1	-

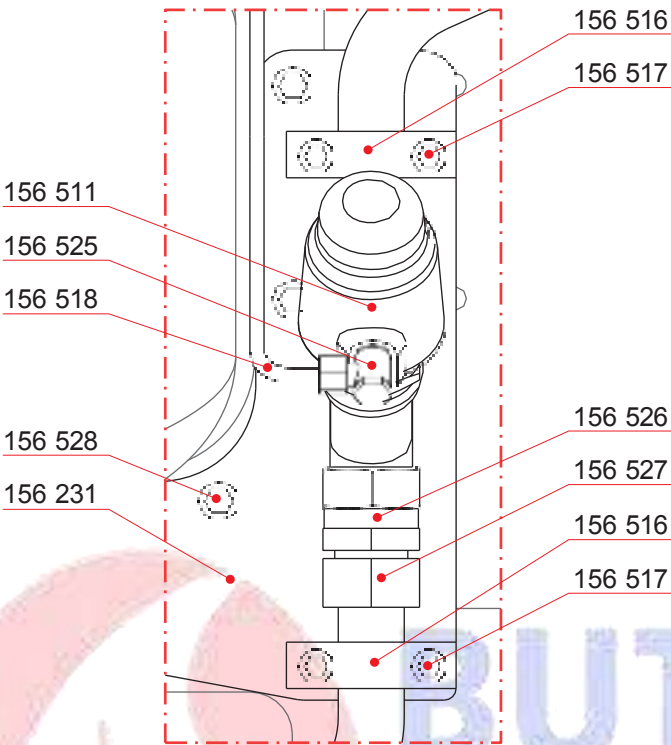
Wastegate for charge air



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 232	Valve body	1	0.4
156 233	Control air pipe	1	-
156 235	Screw	5	-
156 512	Air pipe	1	0.9
156 515	Screw	2	-
156 520	Air pipe	1	0.9
156 529	Angle union	1	2.5
156 533	Pipe clamp	6	-
156 535	Screw	3	-
156 537	Screw	5	-
156 544	Bracket	1	1.2
156 548	Male stud	1	-
156 551	Adapter	1	0.5
156 697	Pipe clamp	1	0.6
156 698	Pipe union	1	0.4
387 006	Glue compound	1	-
CV657	Solenoid valve	1	0.6

Wastegate for charge air

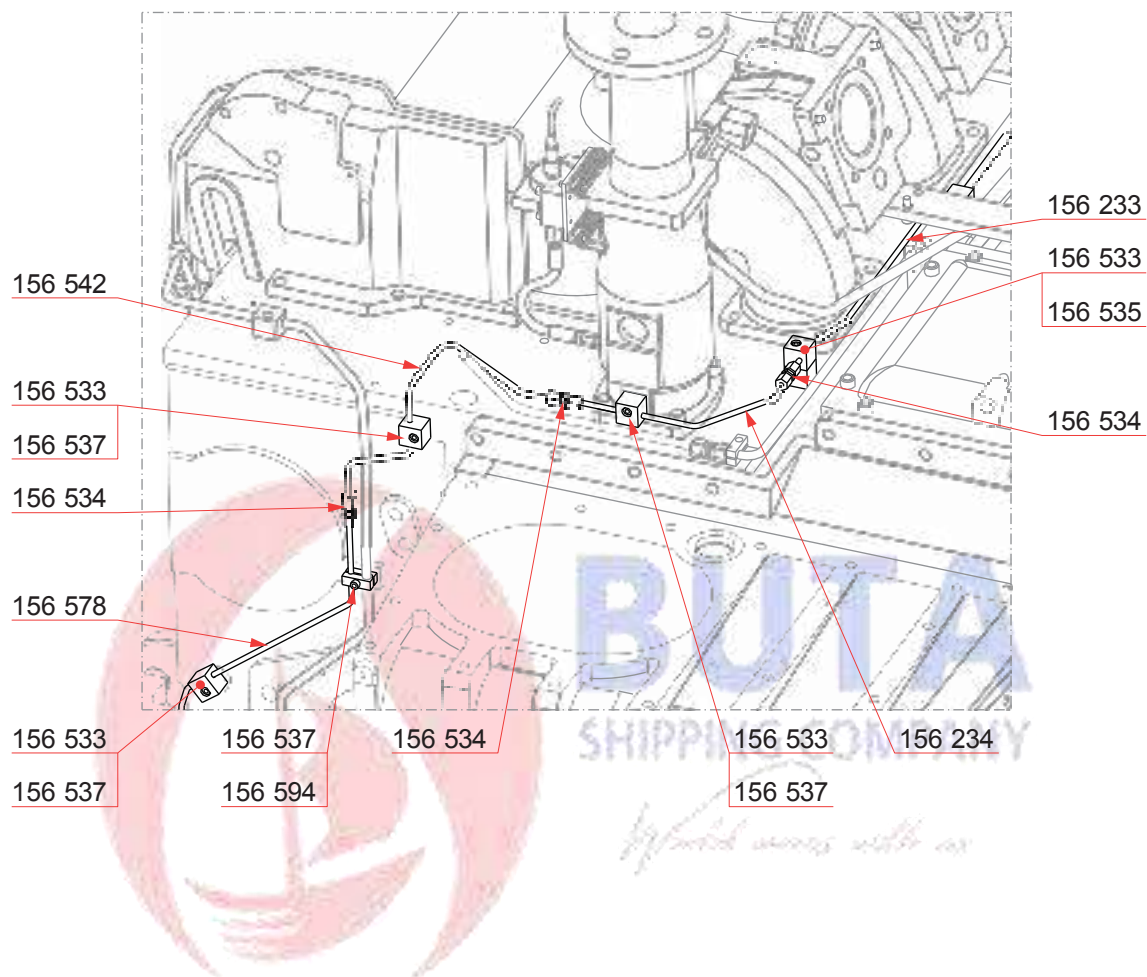
Detail X



Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 231	Bracket	1	2.2
156 511	Air valve	1	1.6
156 516	Pipe clamp	2	-
156 517	Screw	4	-
156 518	Control air pipe	1	-
156 525	Angle union	1	-
156 526	Distance ring	2	-
156 527	Male stud	2	0.3
156 528	Screw	4	-

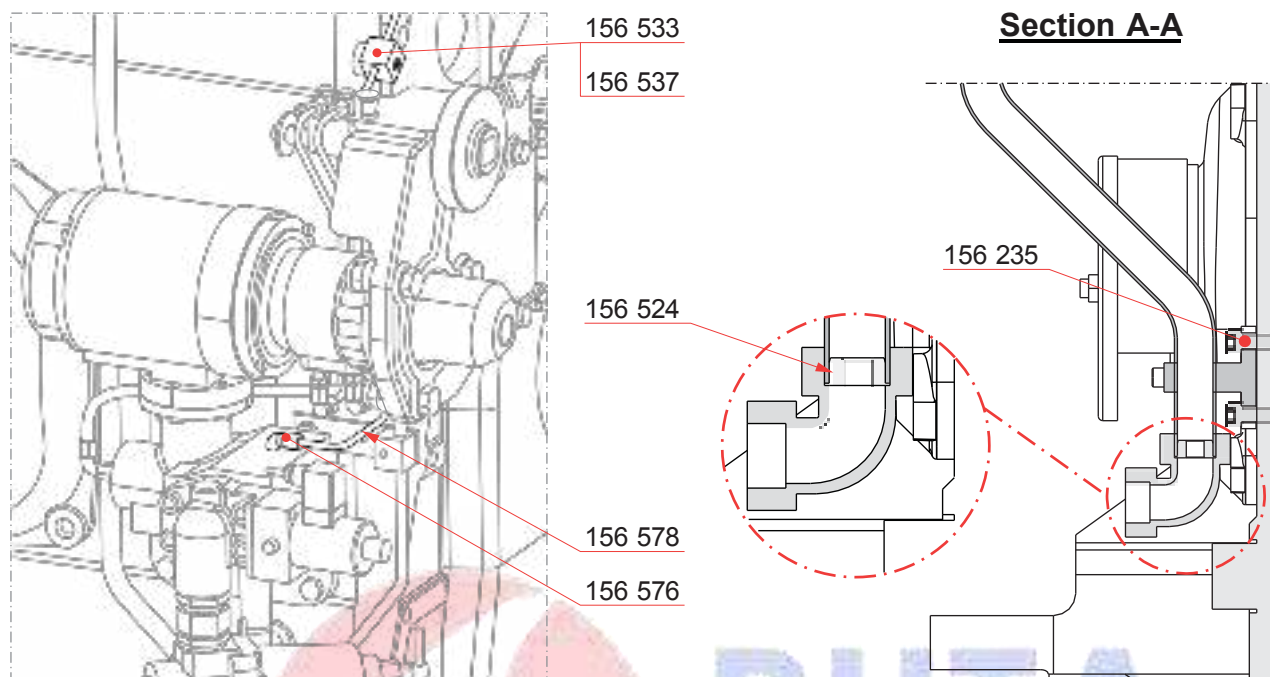
Wastegate for charge air

View B



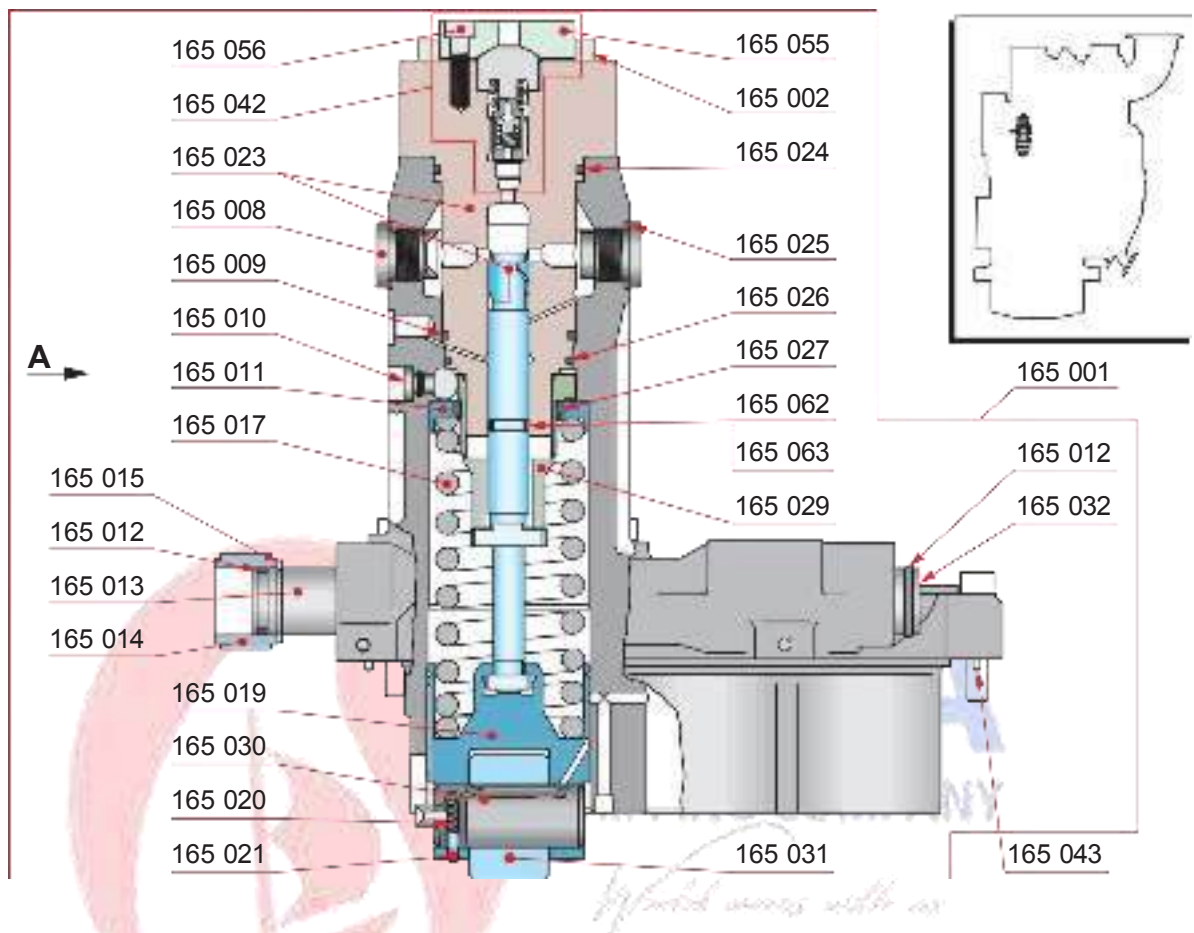
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 233	Control air pipe	1	-
156 234	Control air pipe	1	-
156 533	Pipe clamp	6	-
156 534	Straight union	3	-
156 535	Screw	3	-
156 537	Screw	5	-
156 542	Control air pipe	1	-
156 578	Control air pipe	1	0.1
156 594	Pipe clamp	1	-

Wastegate for charge air



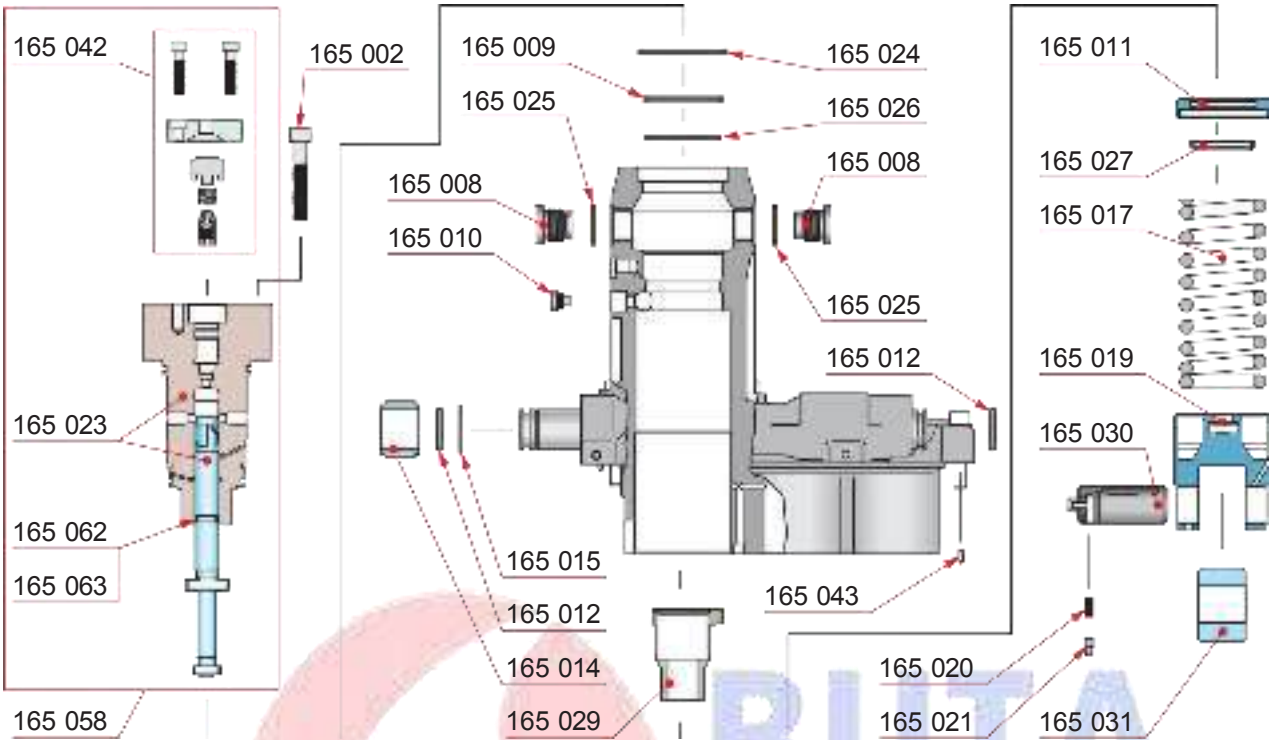
Part No.	Description	Qty [Pcs]	Wt. [Kg]
156 235	Screw	5	-
156 524	Throttle ring	1	-
156 533	Pipe clamp	6	-
156 537	Screw	5	-
156 576	Pipe union	1	-
156 578	Control air pipe	1	0.1

Injection pump



Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 001	Injection pump	1	27.1
165 002	Screw	7	-
165 008	Erosion plug	2	-
165 009	Sealing ring (2)	1	-
165 010	Plug	1	-
165 011	Spring plate	1	0.1
165 012	O-ring	4	-
165 013	Sleeve	2	0.2
165 014	Sleeve	1	0.2
165 015	Retainer ring	2	-
165 017	Spring	1	-
165 019	Tappet	1	0.8
165 020	Spring	1	-
165 021	Pin	1	-
165 023	Pump element (1)	1	-
165 062	Sealing ring (2)	1	-
165 063	O-ring (2)	1	-
165 024	Sealing ring (2)	1	-
165 025	Sealing ring	1	-

Injection pump

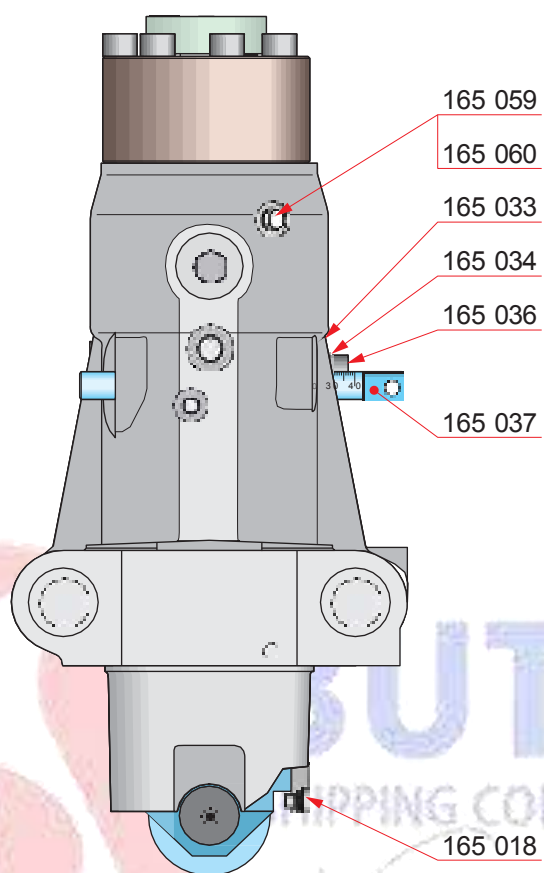


Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
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by noted arrows with the car

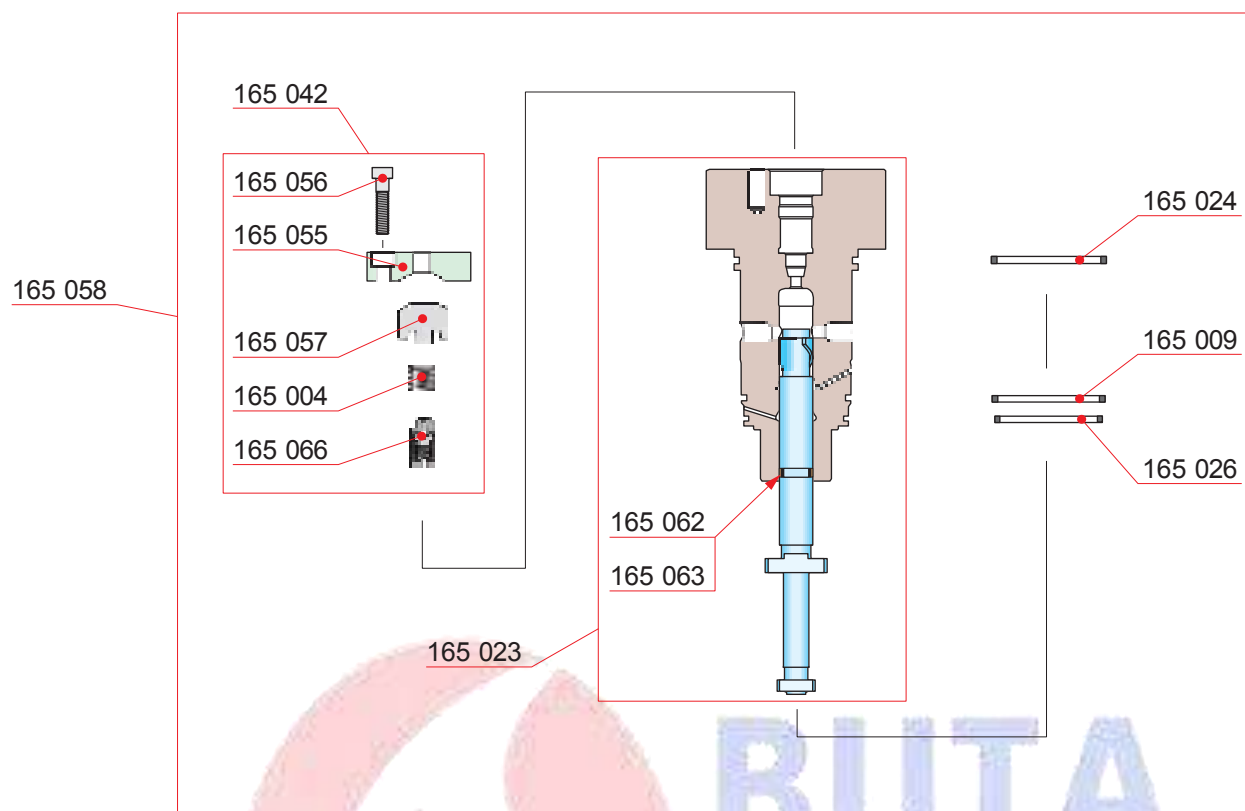
Injection pump

View A



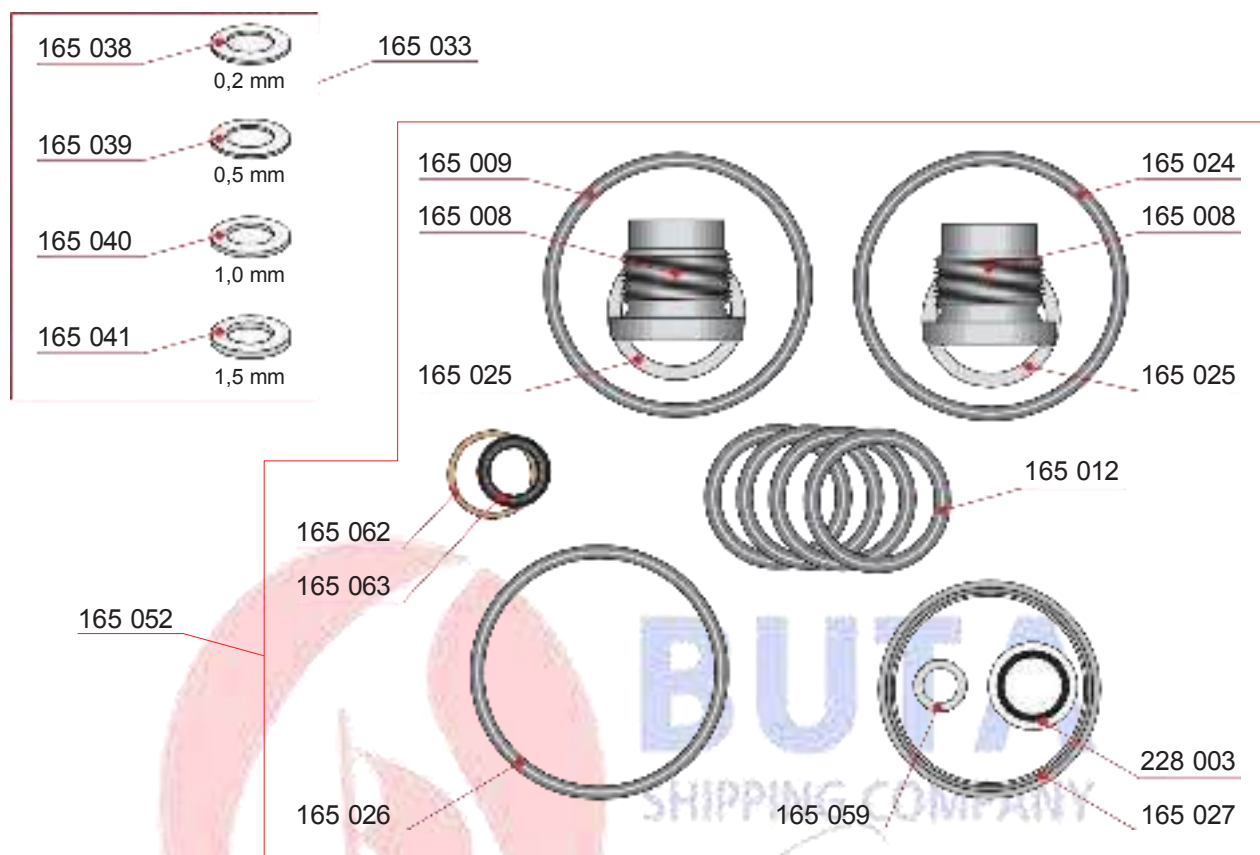
Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 018	Guide screw	1	-
165 033	Plate set	1	-
165 034	Indicator	1	-
165 036	Screw	1	-
165 037	Fuel rack	1	0.1
165 059	Sealing ring	1	-
165 060	Vent screw	1	-

Injection pump



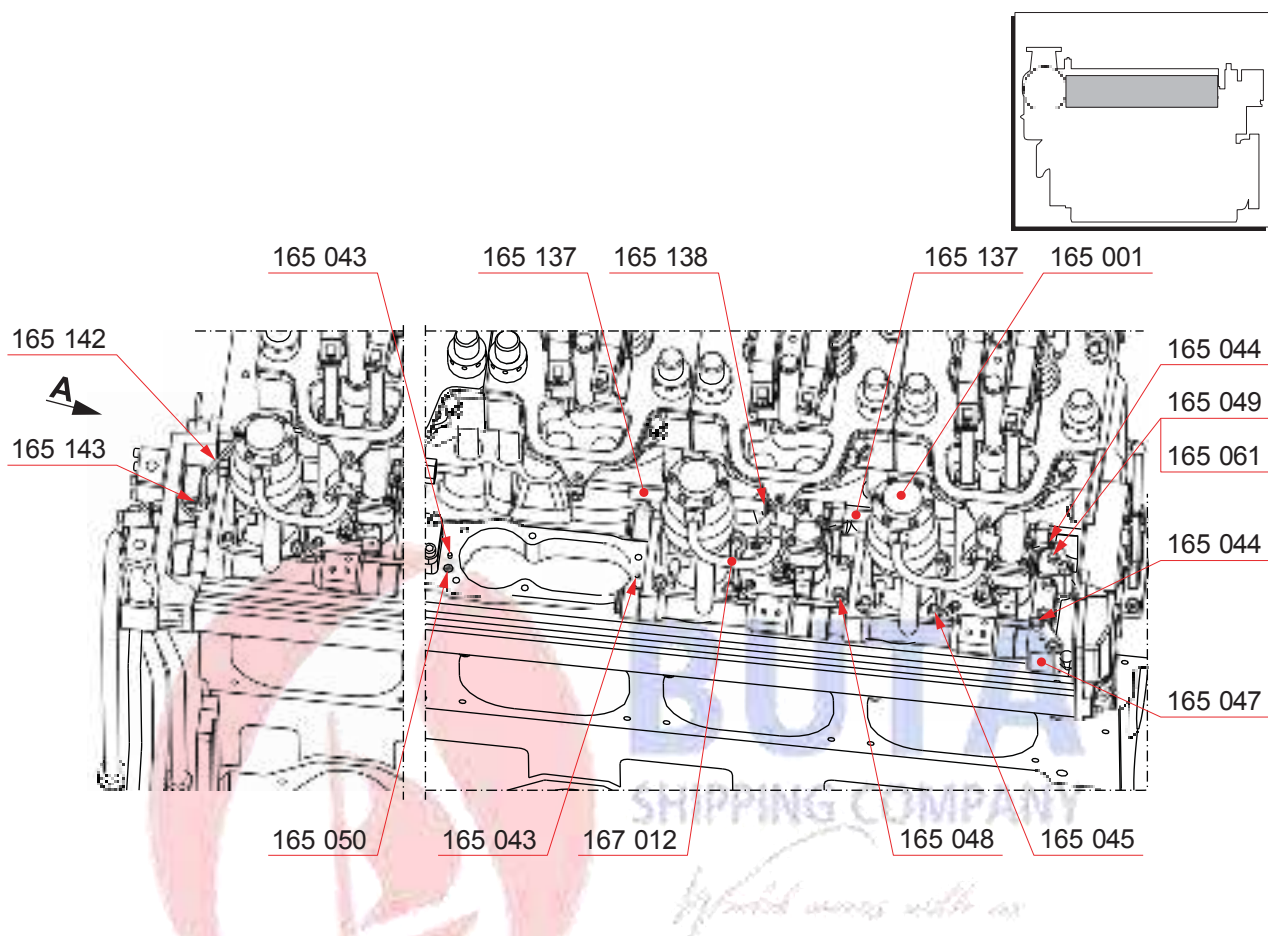
Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 058	Spare part kit	1	-
165 009	Sealing ring (2)	1	-
165 023	Pump element	1	-
165 062	Sealing ring (2)	1	-
165 063	O-ring (2)	1	-
165 024	Sealing ring (2)	1	-
165 026	O-ring (2)	1	-
165 042	Two way pressure valve, compl.	1	0.4
165 004	Spring (2)	1	-
165 055	Flange	1	0.3
165 056	Screw	4	-
165 057	Pressure piece (2)	1	-
165 066	Constant pressure valve (2)	1	-

Injection pump



165 033	Plate set	1	-
165 038	Plate 0.2 mm	1	-
165 039	Plate 0.5 mm	1	-
165 040	Plate 1.0 mm	1	-
165 041	Plate 1.5 mm	1	-
165 052	Sealing set for injection pump	1	0.2
165 008	Erosion plug	2	-
165 009	Sealing ring	1	-
165 012	O-ring	4	-
165 024	Sealing ring	1	-
165 025	Sealing ring	1	-
165 026	O-ring	1	-
165 027	Scraper ring	1	-
165 059	Sealing ring	1	-
165 062	Sealing ring	1	-
165 063	O-ring	1	-
228 003	Slide ring (3)	1	-

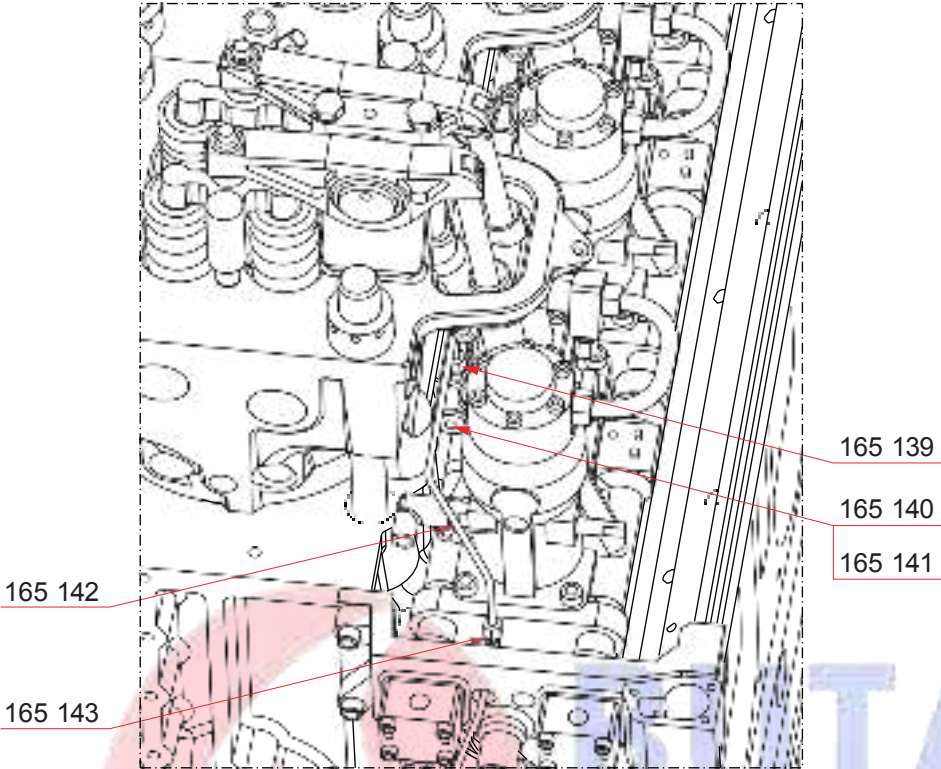
Fuel oil system in Hot-box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 001	Injection pump	*	27.1
165 043	Pin	8	-
165 044	Screw	4	-
165 045	Screw	*	-
165 047	End piece	2	0.6
165 048	Screw	*	-
165 049	Plug	1	-
165 050	O-ring	*	-
165 061	Sealing ring	1	-
165 137	Pipe	*	0.1
165 138	O-ring	*	-
165 142	Pipe	1	-
165 143	Pipe union	1	-
167 012	Injection pipe	*	-

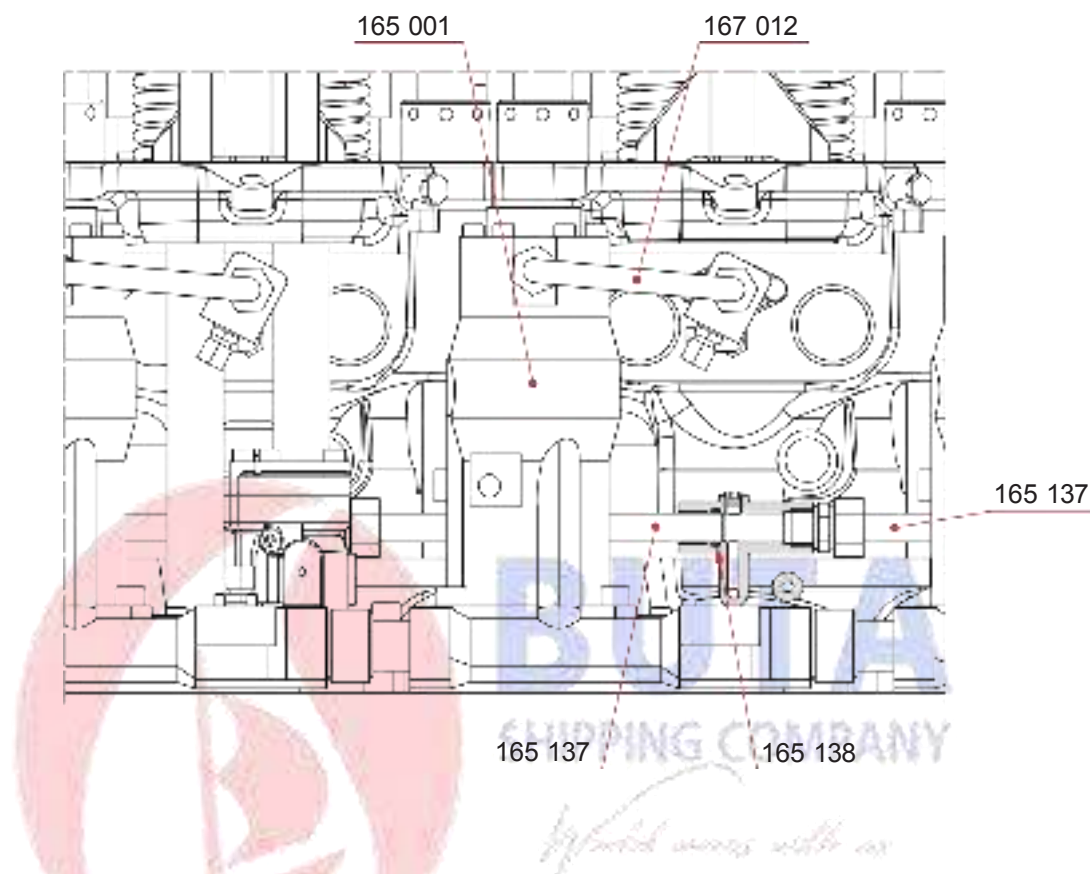
Fuel oil system in Hot-box

View A



Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 139	Pipe union	1	-
165 140	Sealing ring	1	-
165 141	Plug	1	-
165 142	Pipe	1	-
165 143	Pipe union	1	-

Fuel oil system in Hot-box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
165 001	Injection pump	*	27.1
165 137	Pipe	*	0.1
165 138	O-ring	*	-
167 012	Injection pipe	*	-

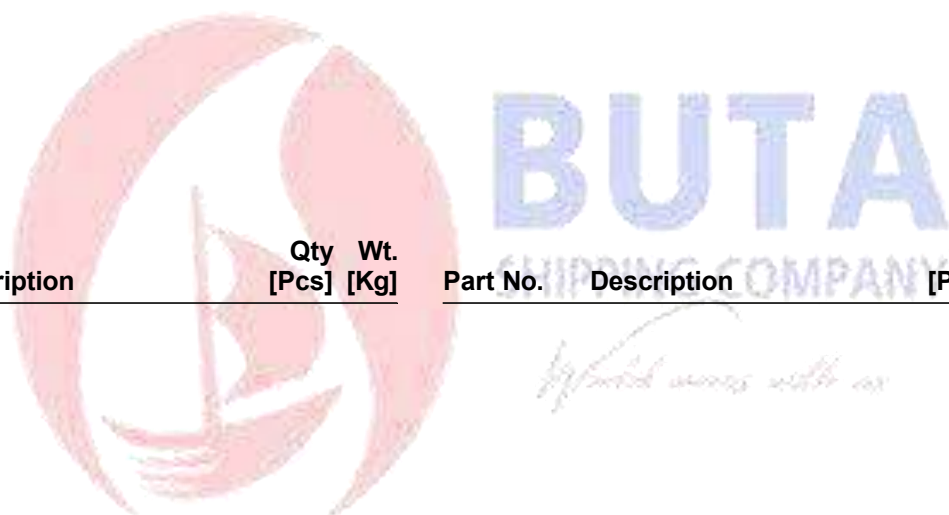
Fuel oil system in Hot-box

Quantity according to number of cylinders

Part No.	Quantity in pieces			
	4L	6L	8L	9L
165 001	4	6	8	9
165 043	8	12	16	18
165 045	16	24	32	36
165 048	8	12	16	18
165 050	4	6	8	9
165 137	3	5	7	8
165 138	3	5	7	8
167 012	4	6	8	9

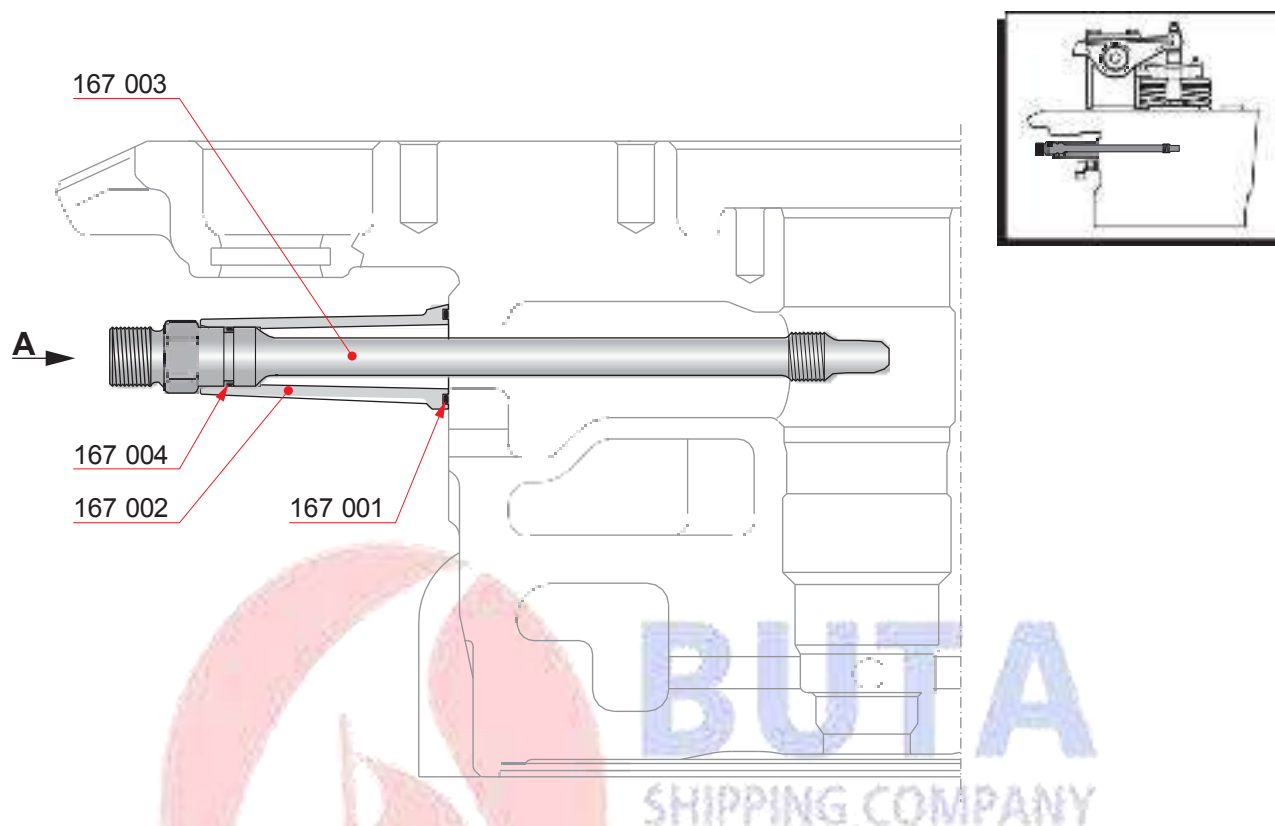
Part No. Description Qty Wt.
[Pcs] [Kg]

Part No. Description Qty Wt.
[Pcs] [Kg]



Hydraulic services with car

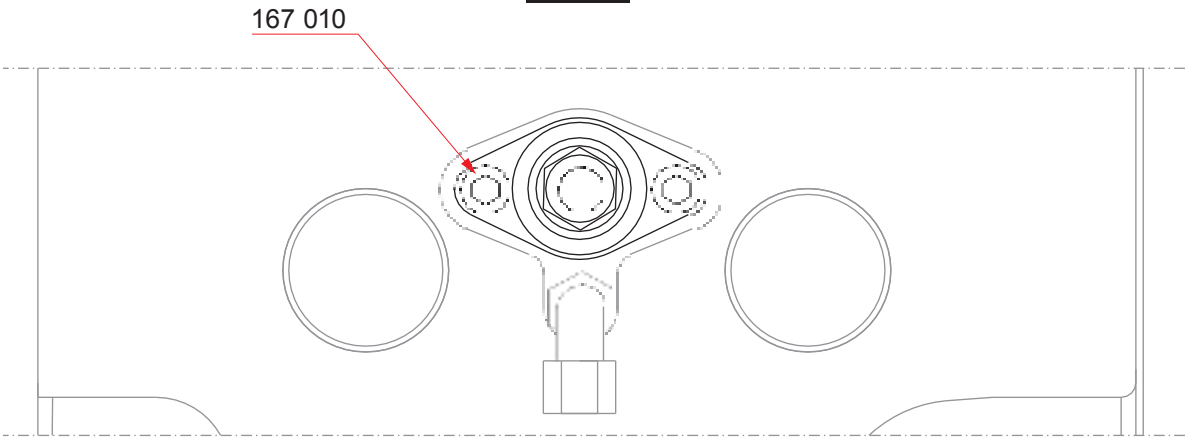
High pressure connection piece



Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 001	O-ring	1	-
167 002	Protecting sleeve	1	-
167 003	Connection piece	1	-
167 004	O-ring	1	-

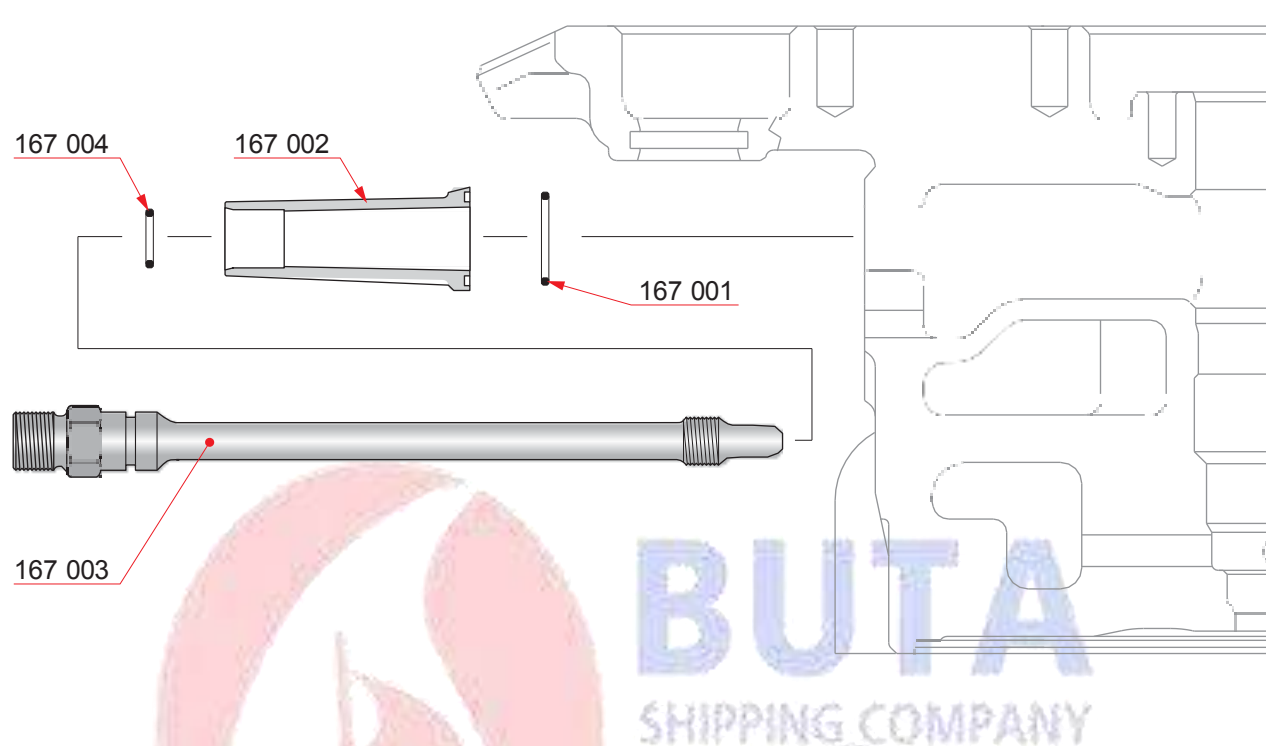
High pressure connection piece

View A



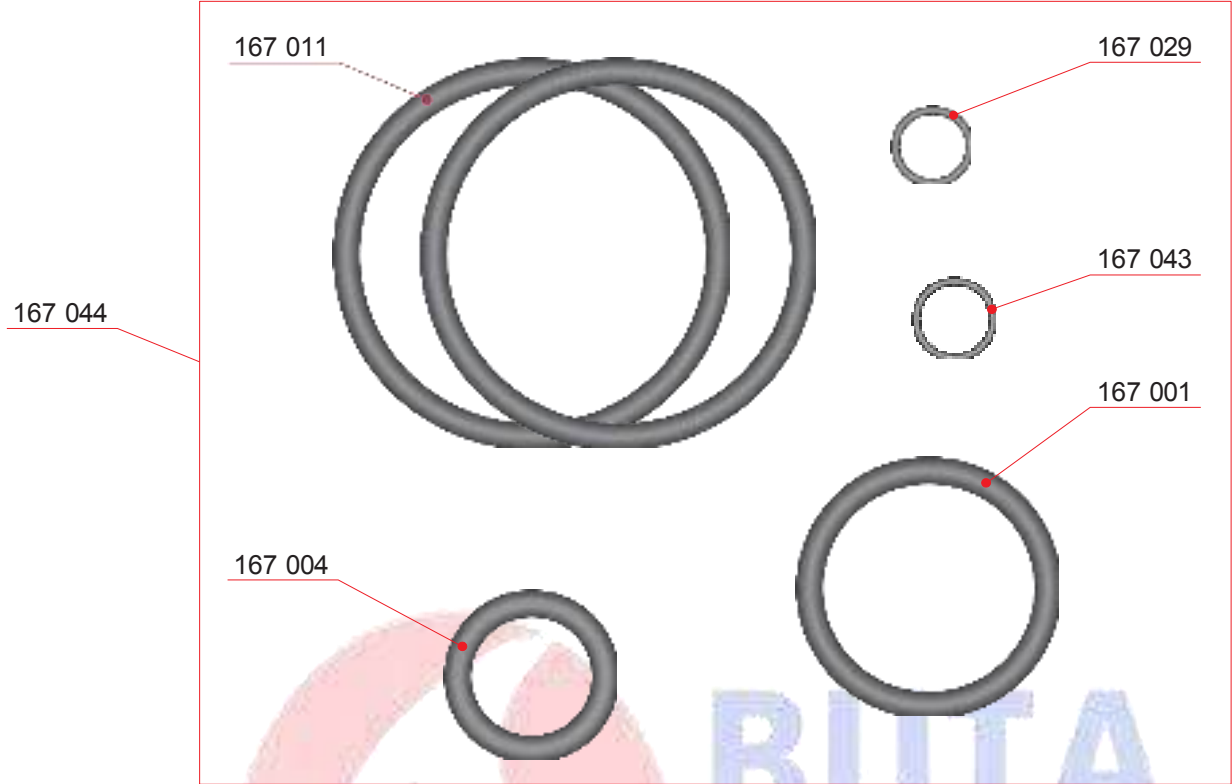
Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 010	Screw	2	-

High pressure connection piece



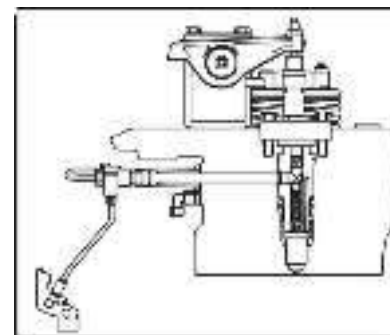
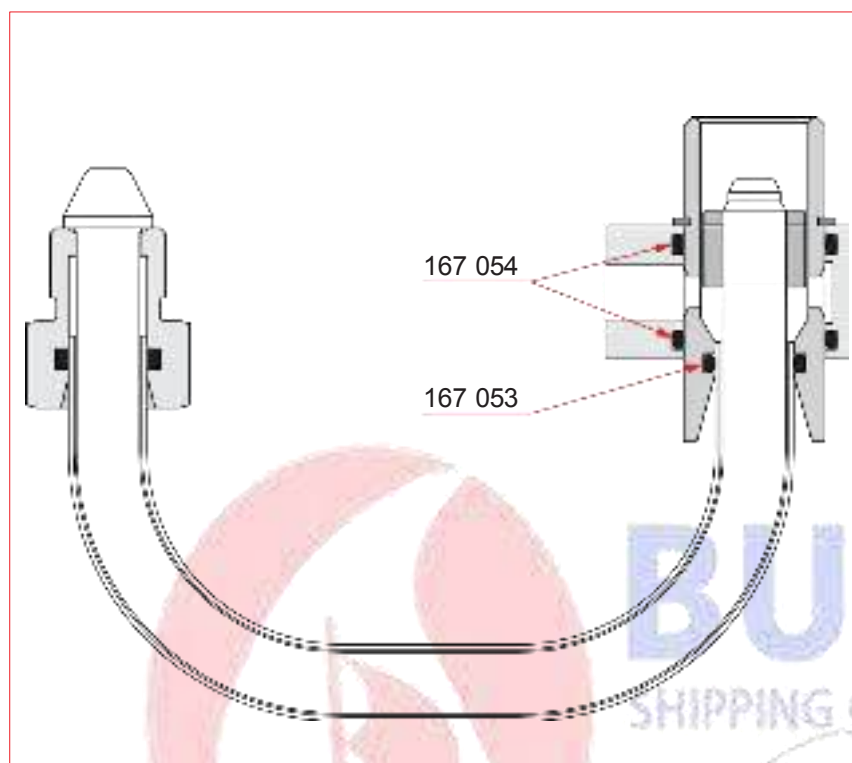
Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 001	O-ring	1	-
167 002	Protecting sleeve	1	-
167 003	Connection piece	1	-
167 004	O-ring	1	-

High pressure connection piece



Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 044	Sealing set for injection valve	1	-
167 001	O-ring	1	-
167 004	O-ring	1	-
167 011	O-ring	2	-
167 029	O-ring	1	-
167 043	O-ring	1	-

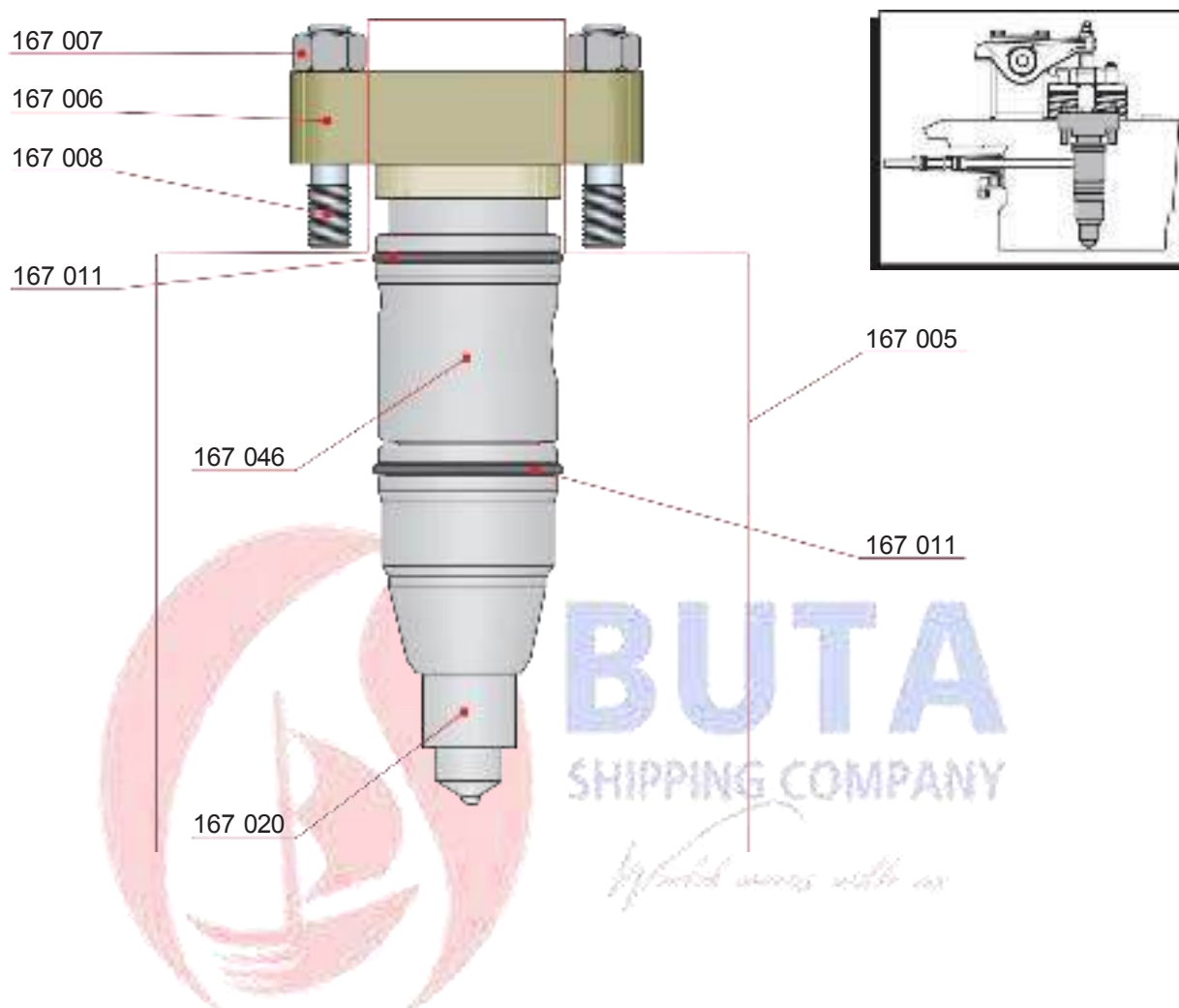
Injection pipe



Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 012	Injection pipe	1	0.7
167 053	O-ring	1	-
167 054	O-ring	2	-

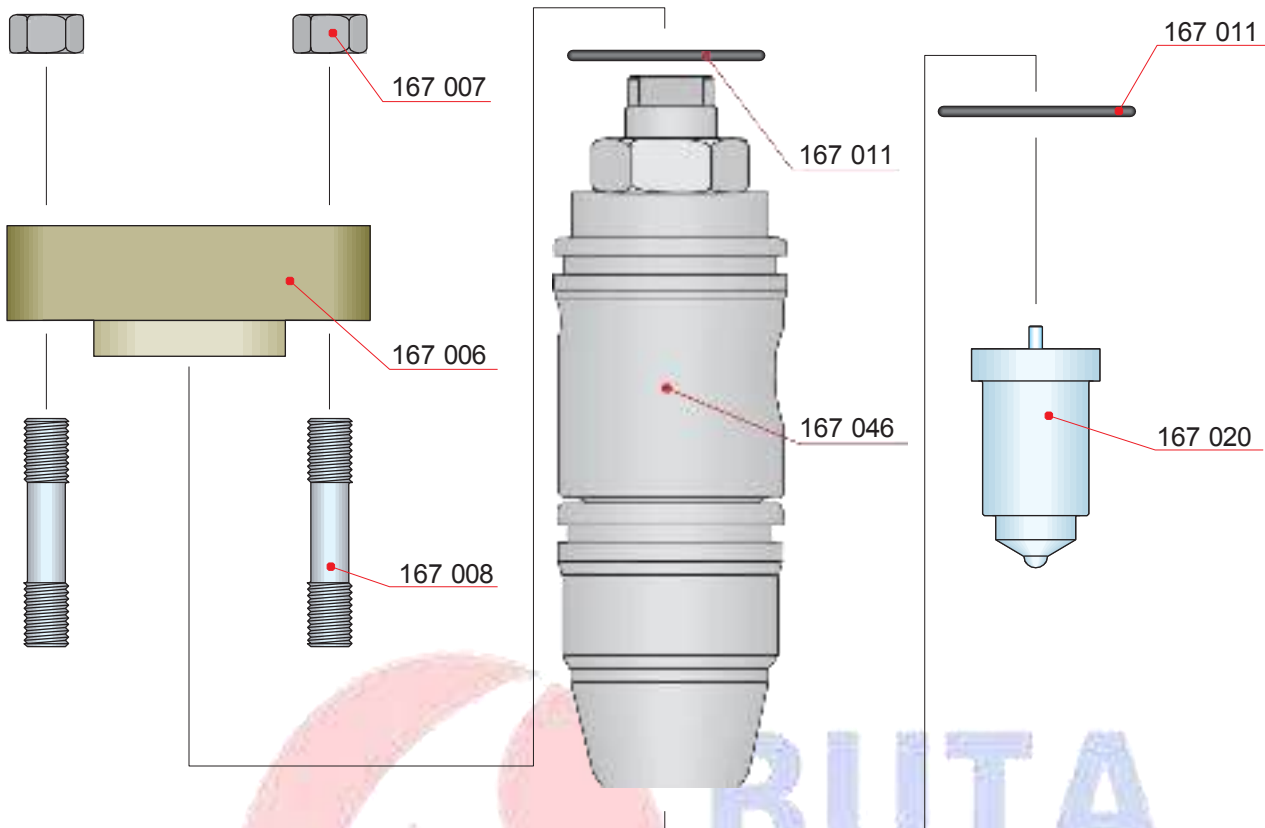
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Injection valve



Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 005	Injection valve	1	3
167 020	Nozzle	1	0.3
167 046	Nozzle holder	1	2.7
167 006	Yoke	1	-
167 007	Nut	2	-
167 008	Screw	2	-
167 011	O-ring	2	-

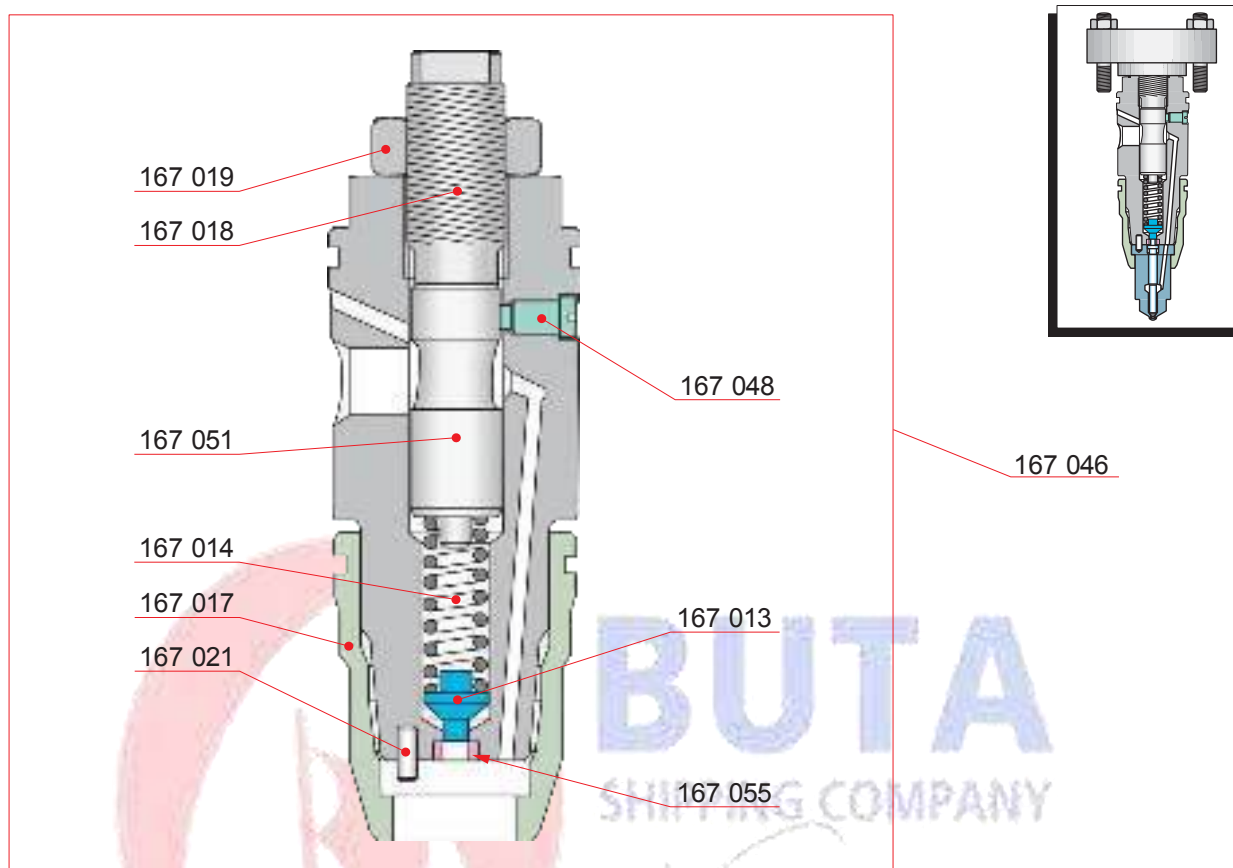
Injection valve



Part No.	Description	Qty		Wt.	Description	Qty		Wt.
		[Pcs]	[Kg]			[Pcs]	[Kg]	

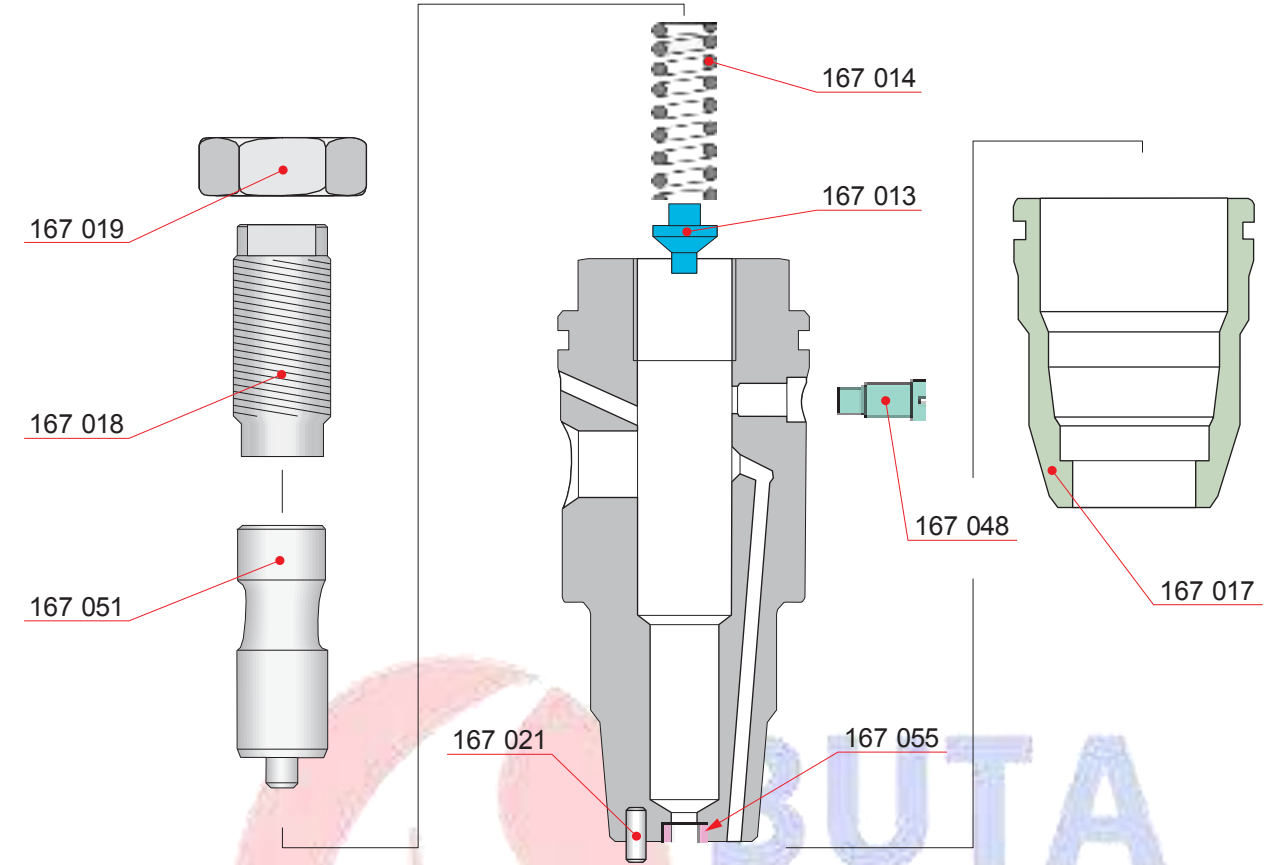
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Injection valve



Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 046	Nozzle holder	1	2.7
167 013	Push rod	1	-
167 014	Spring	1	-
167 017	Nozzle nut	1	0.4
167 018	Adjusting screw	1	-
167 019	Retainer screw	1	-
167 021	Pin	2	-
167 048	Guide screw (1)	1	-
167 051	Push rod	1	0.1
167 055	Impact bush	1	0.1

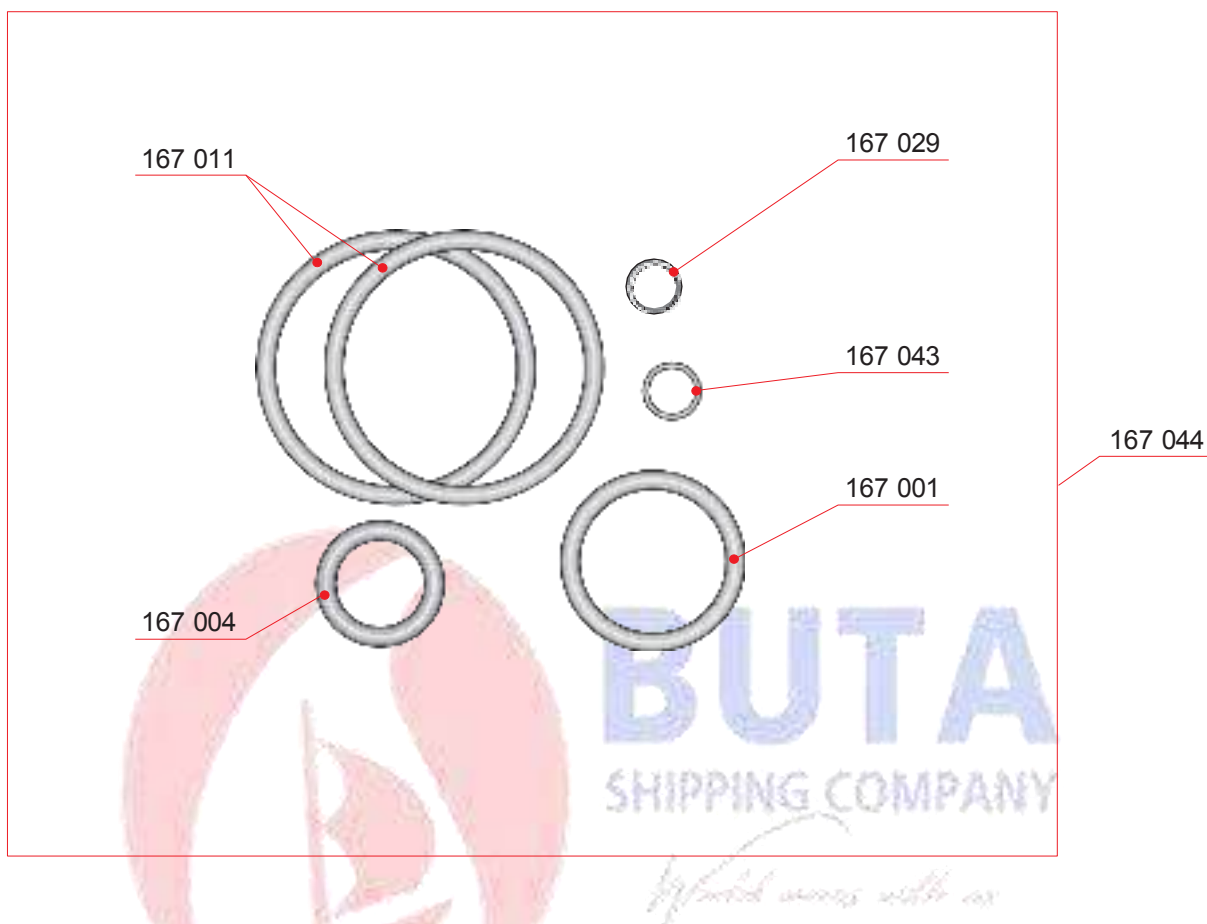
Injection valve



Part No.	Description	Qty		Part No.	Description	Qty	
		[Pcs]	Wt. [Kg]			[Pcs]	Wt. [Kg]

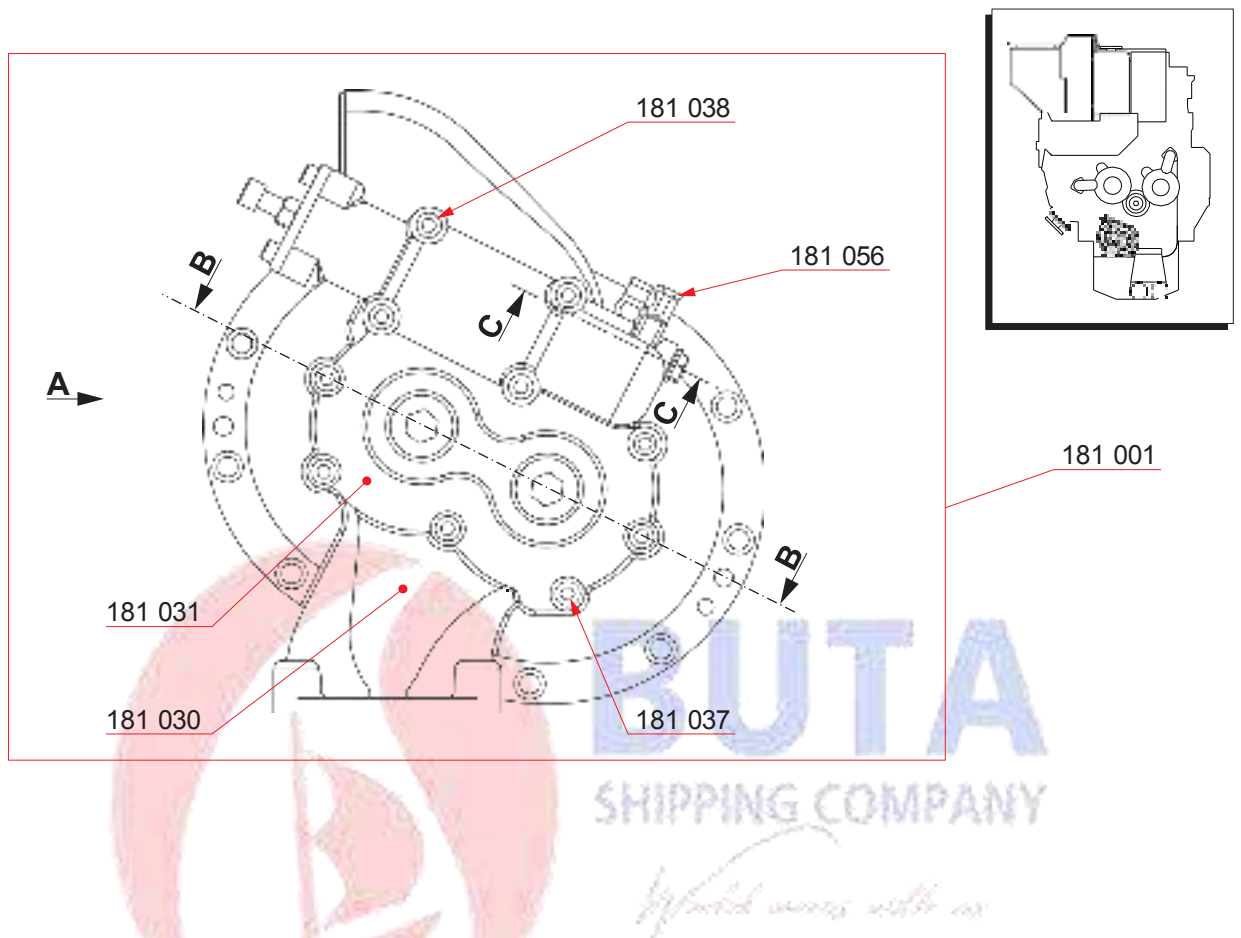
BUATA
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Injection valve



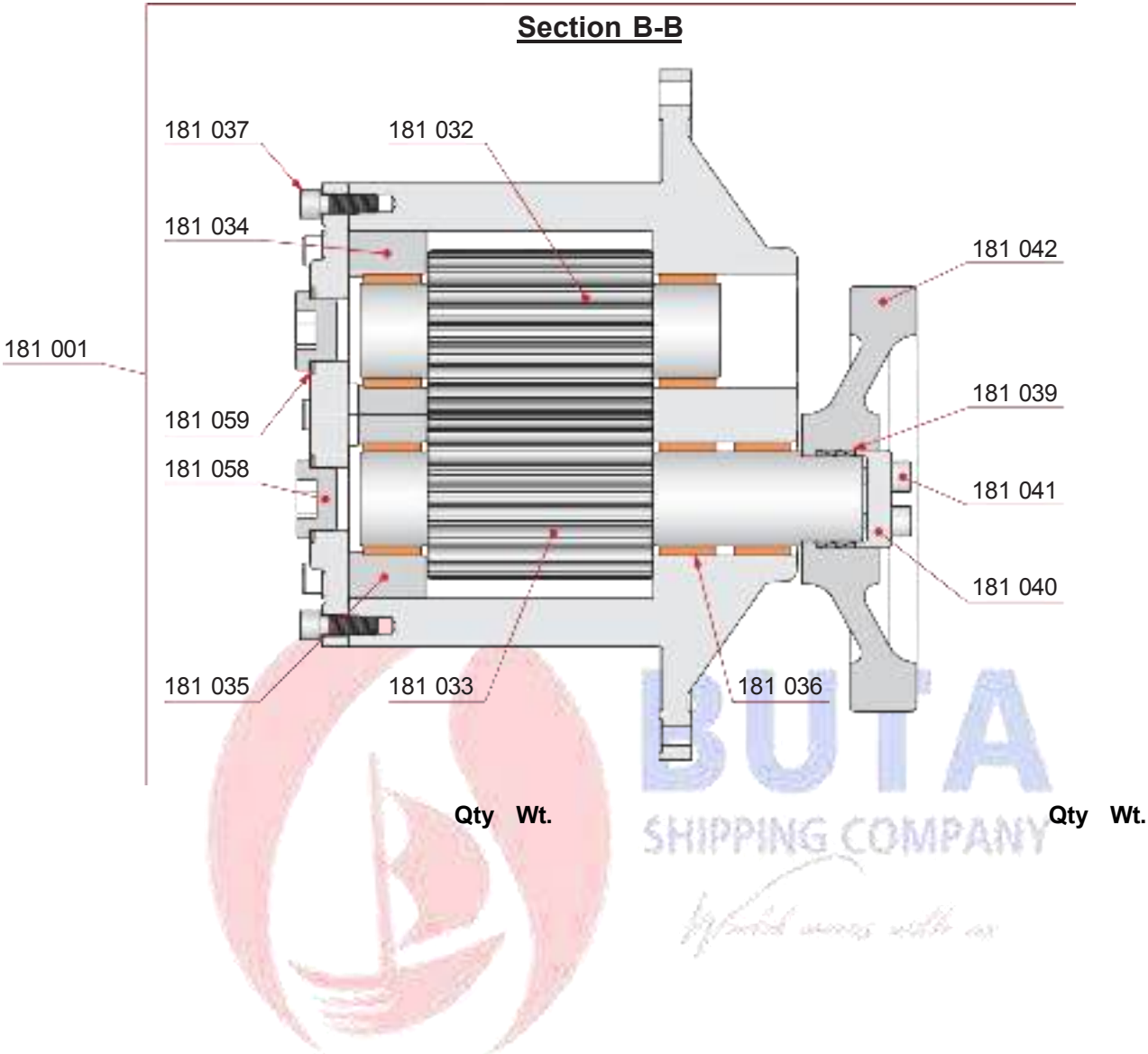
Part No.	Description	Qty [Pcs]	Wt. [Kg]
167 044	Sealing set for injection valve	1	-
167 001	O-ring	1	-
167 004	O-ring	1	-
167 011	O-ring	2	-
167 029	O-ring	1	-
167 043	O-ring	1	-

Lubricating oil pump



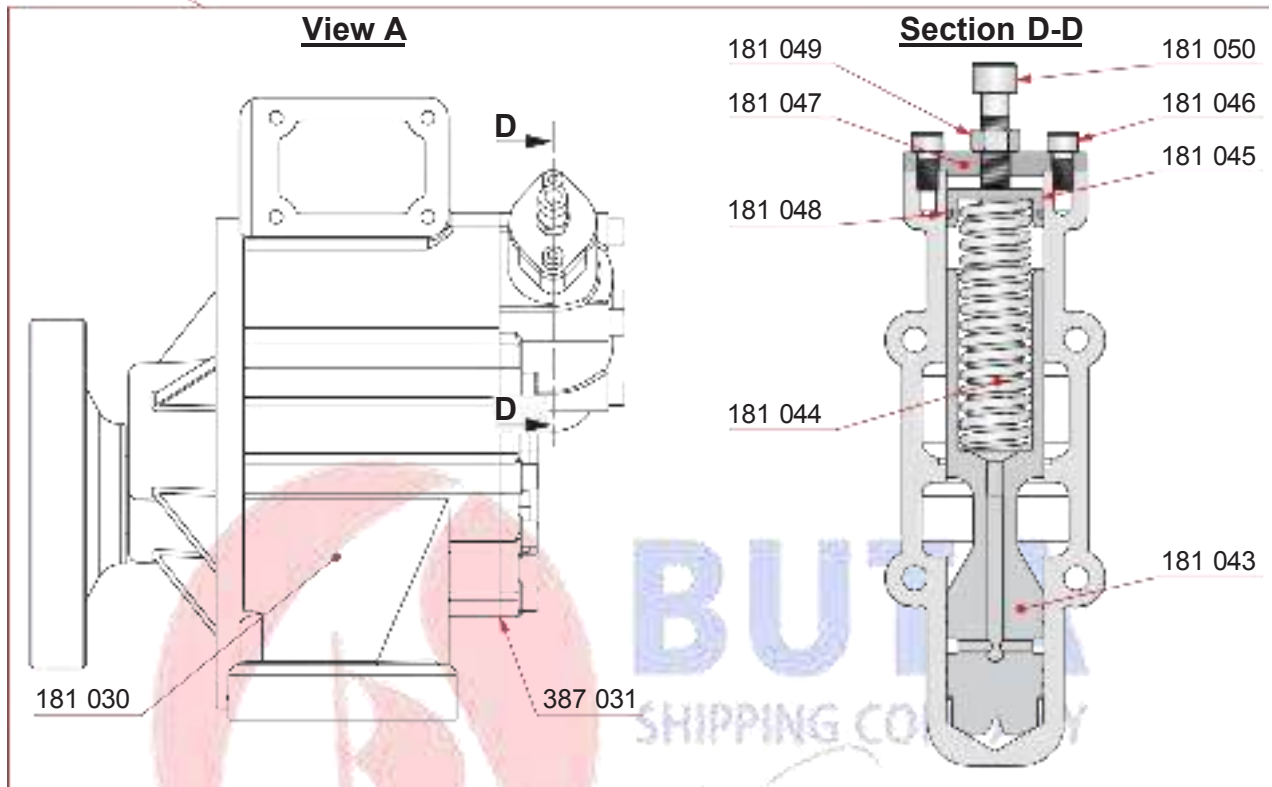
Part No.	Description	Qty [Pcs]	Wt. [Kg]
181 001	Lubricating oil pump	1	-
181 030	Housing	1	-
181 031	Cover	1	6.2
181 037	Screw	6	-
181 038	Screw	4	-
181 056	Pipe union	1	-

Lubricating oil pump



Lubricating oil pump

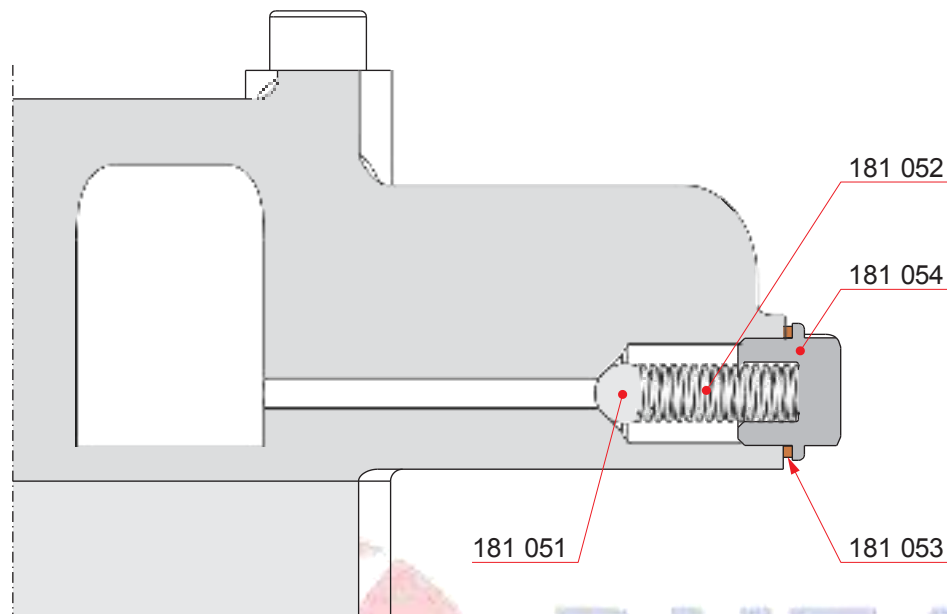
181 001



Part No.	Description	Qty [Pcs]	Wt. [Kg]
181 001	Lubricating oil pump	1	-
181 030	Housing	1	-
181 043	Piston	1	2
181 044	Compression ring	1	0.1
181 045	Spring holder	1	-
181 046	Screw	2	-
181 047	Cover	1	0.2
181 048	O-ring	1	-
181 049	Nut	1	-
181 050	Screw	1	-
387 031	Glue compound	1	-

Lubricating oil pump

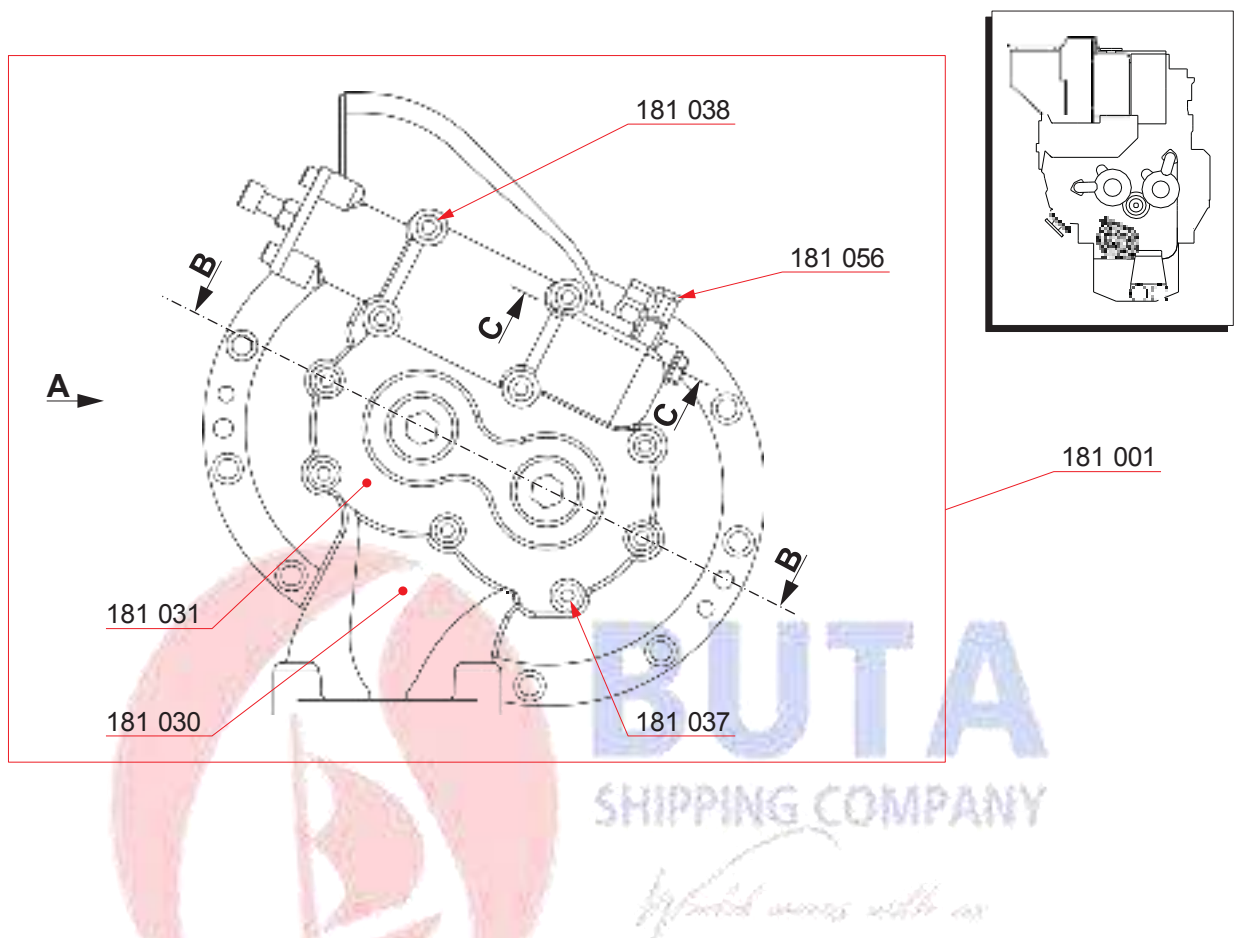
Section C-C



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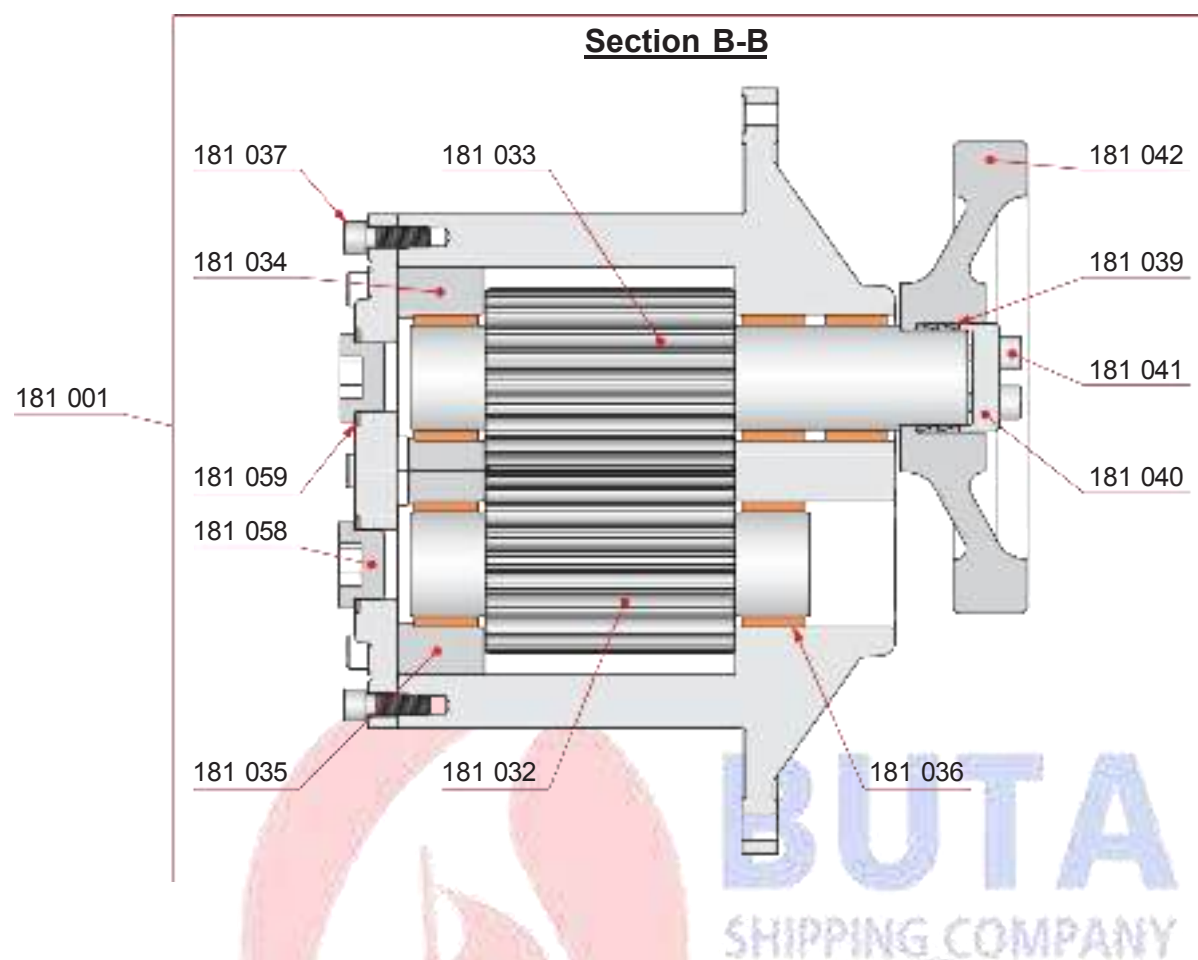
Part No.	Description	Qty [Pcs]	Wt. [Kg]
181 051	Bearing ball	1	-
181 052	Compression spring	1	-
181 053	Sealing ring	1	-
181 054	Plug	1	-

Lubricating oil pump



Part No.	Description	Qty [Pcs]	Wt. [Kg]
181 001	Lubricating oil pump	1	35
181 030	Housing	1	-
181 031	Cover	1	6.2
181 037	Screw	6	-
181 038	Screw	4	-
181 056	Pipe union	1	-

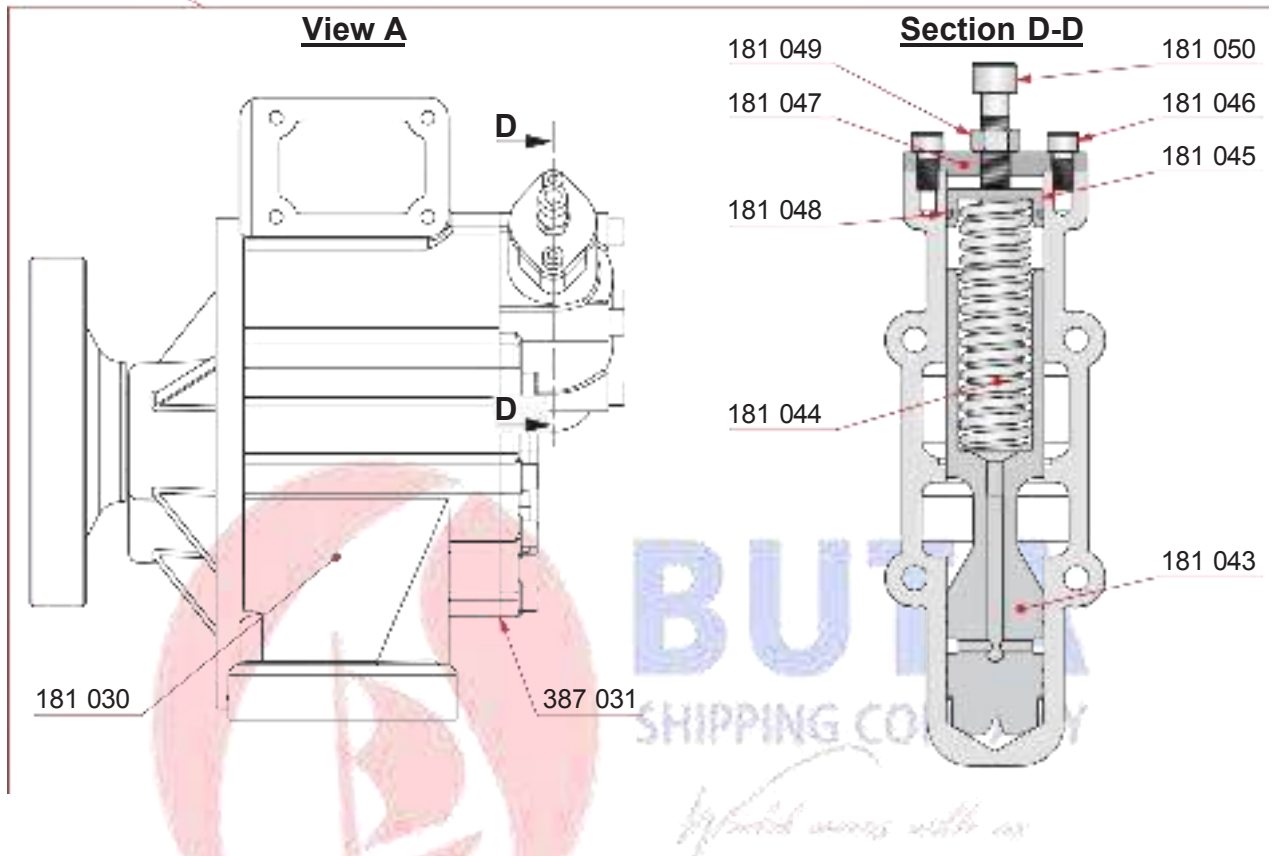
Lubricating oil pump



Part No.	Description	Qty [Pcs]	Wt. [Kg]
181 001	Lubricating oil pump	1	35
181 032	Drive gear	1	3.5
181 033	Drive gear	1	4
181 034	Sleeve	1	1.6
181 035	Sleeve	1	1.6
181 036	Bearing bush	5	0.2
181 037	Screw	6	-
181 039	Pair of friction rings	2	-
181 040	Pressure plate	1	0.2
181 041	Screw	4	-
181 042	Drive gear	1	7.6
181 058	Plug	2	0.1
181 059	Sealing ring	2	-

Lubricating oil pump

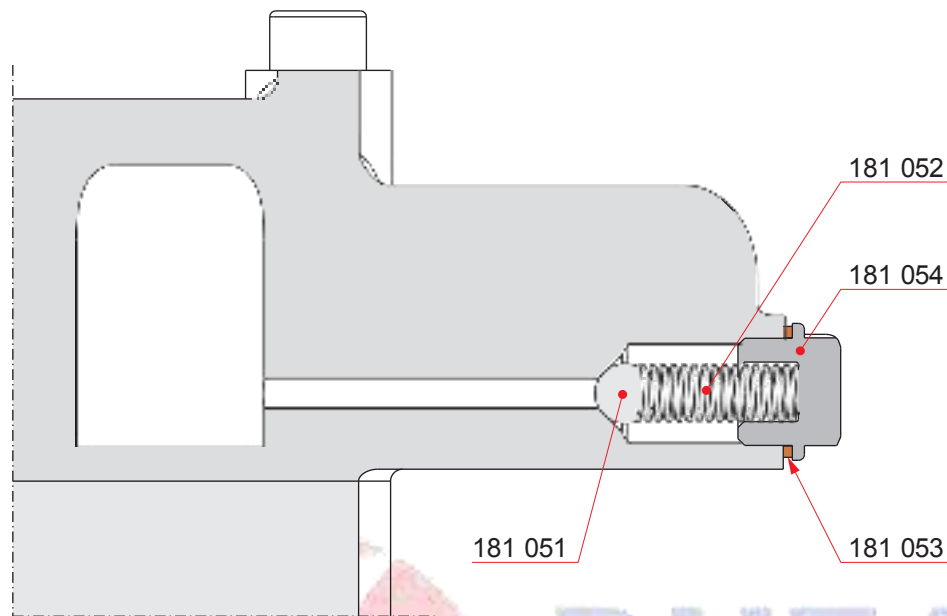
181 001



Part No.	Description	Qty [Pcs]	Wt [Kg]
181 001	Lubricating oil pump	1	35
181 030	Housing	1	-
181 043	Piston	1	2
181 044	Compression ring	1	0.1
181 045	Spring holder	1	-
181 046	Screw	2	-
181 047	Cover	1	0.2
181 048	O-ring	1	-
181 049	Nut	1	-
181 050	Screw	1	-
387 031	Glue compound	1	-

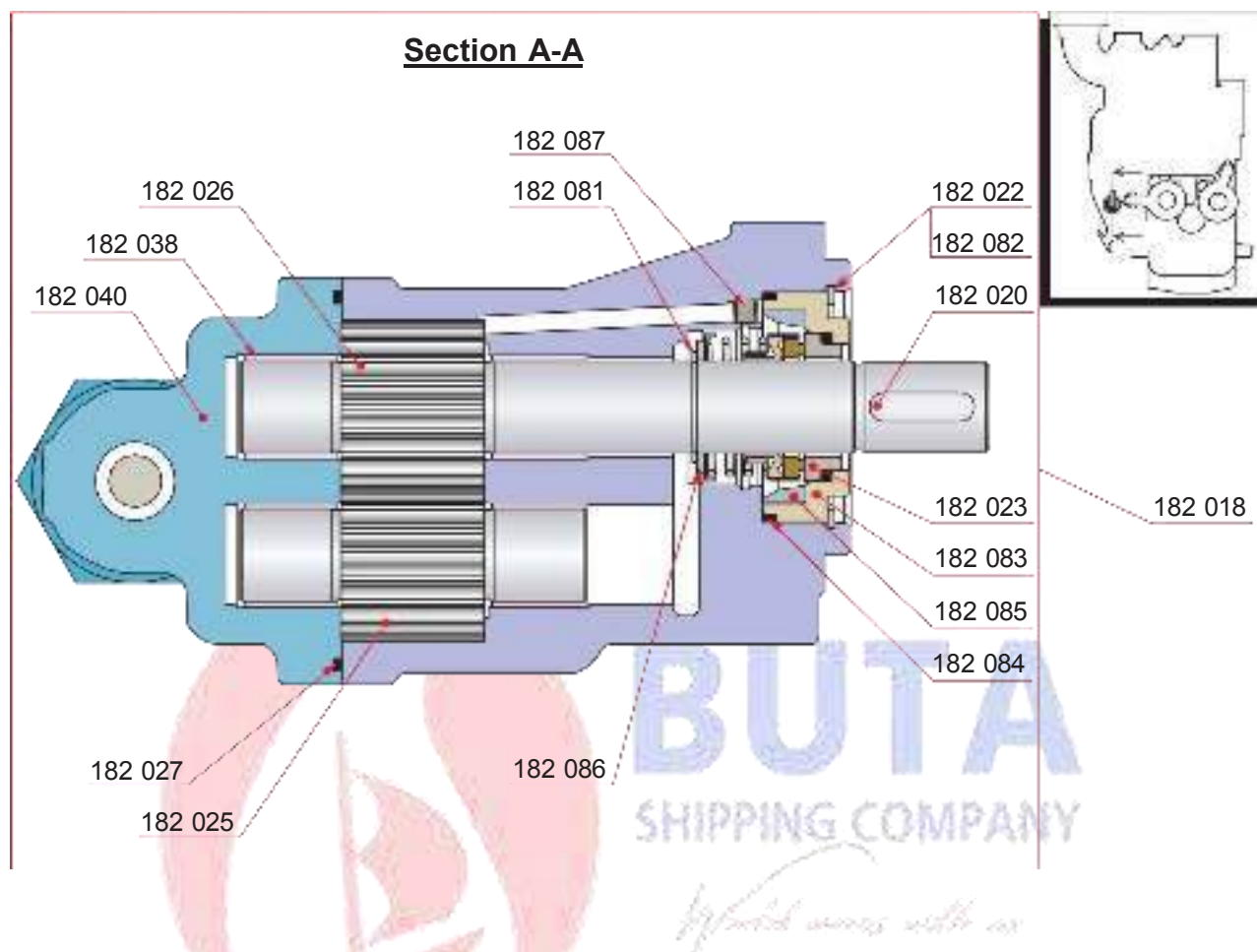
Lubricating oil pump

Section C-C



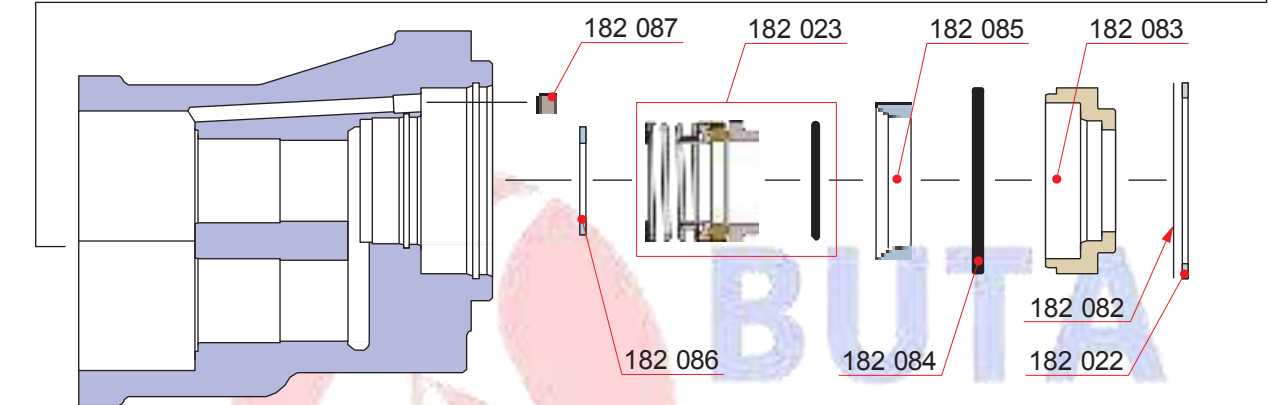
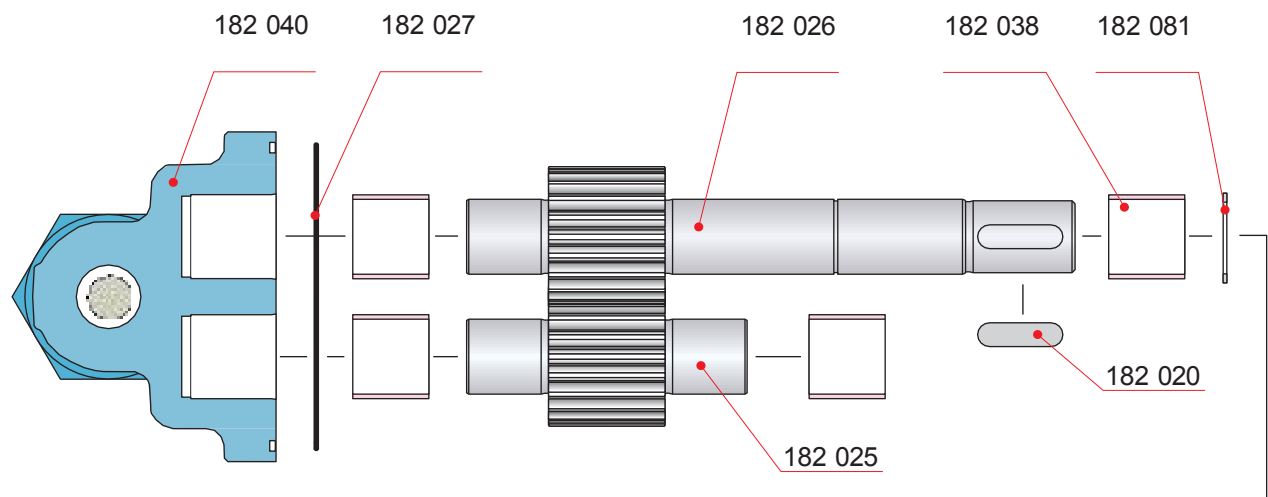
Part No.	Description	Qty [Pcs]	Wt [Kg]
181 051	Bearing ball	1	-
181 052	Compression spring	1	-
181 053	Sealing ring	1	-
181 054	Plug	1	-

Prelubricating oil pump



Part No.	Description	Qty [Pcs]	Wt [Kg]
182 018	Prelubricating oil pump	1	11
182 020	Key	1	-
182 022	Retainer ring	1	-
182 023	Seal (1)	1	-
182 025	Gear shaft	1	0.6
182 026	Drive gear shaft	1	1
182 027	O-ring (1)	1	-
182 038	Bearing bush	4	-
182 040	End cover	1	-
182 081	Retaining ring	1	-
182 082	Shim	2	-
182 083	Sleeve seal	1	0.2
182 084	O-ring (1)	1	-
182 085	Seal spacer	1	-
182 086	Support ring	1	-
182 087	Nozzle	1	-

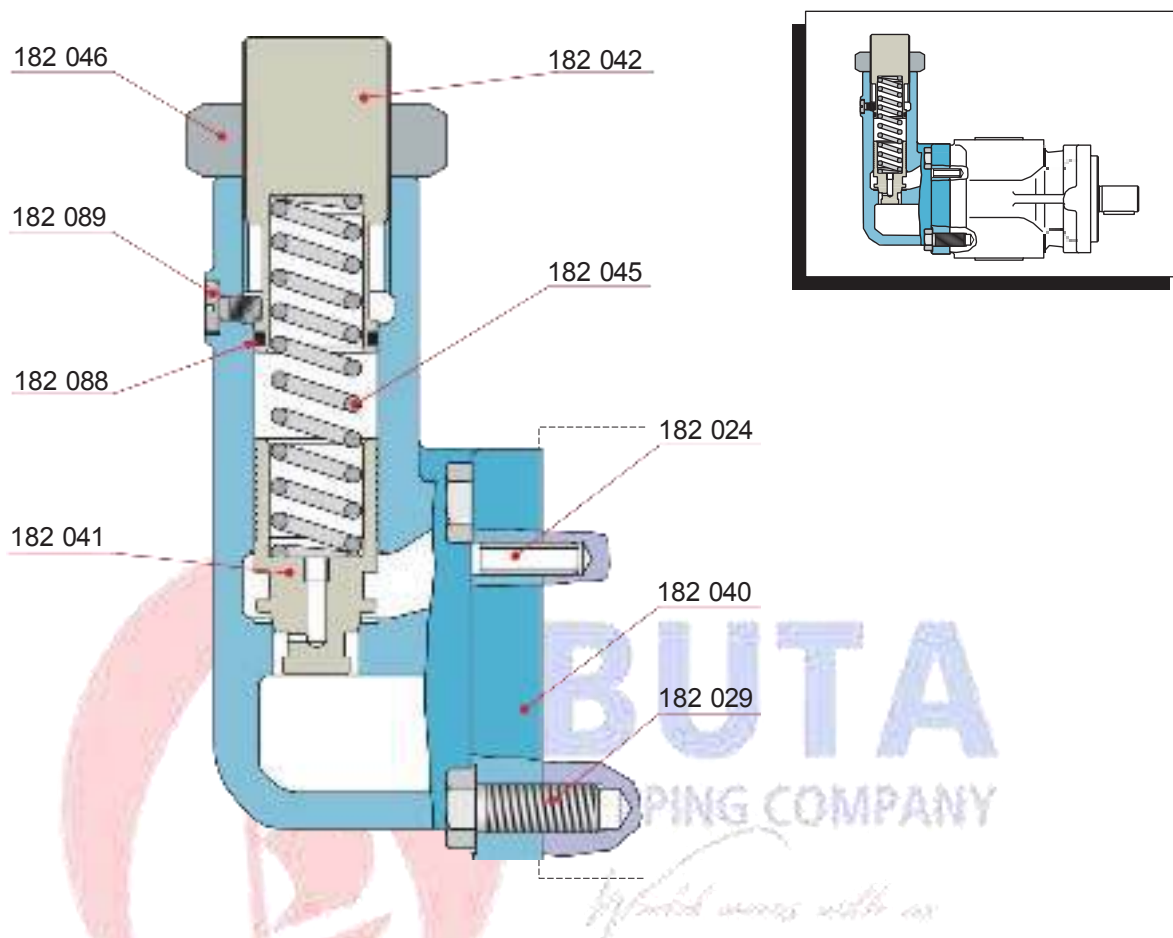
Prelubricating oil pump



Part No.	Description	Qty	Wt.	Part No.	Description	Qty	Wt.
		[Pcs]	[Kg]			[Pcs]	[Kg]

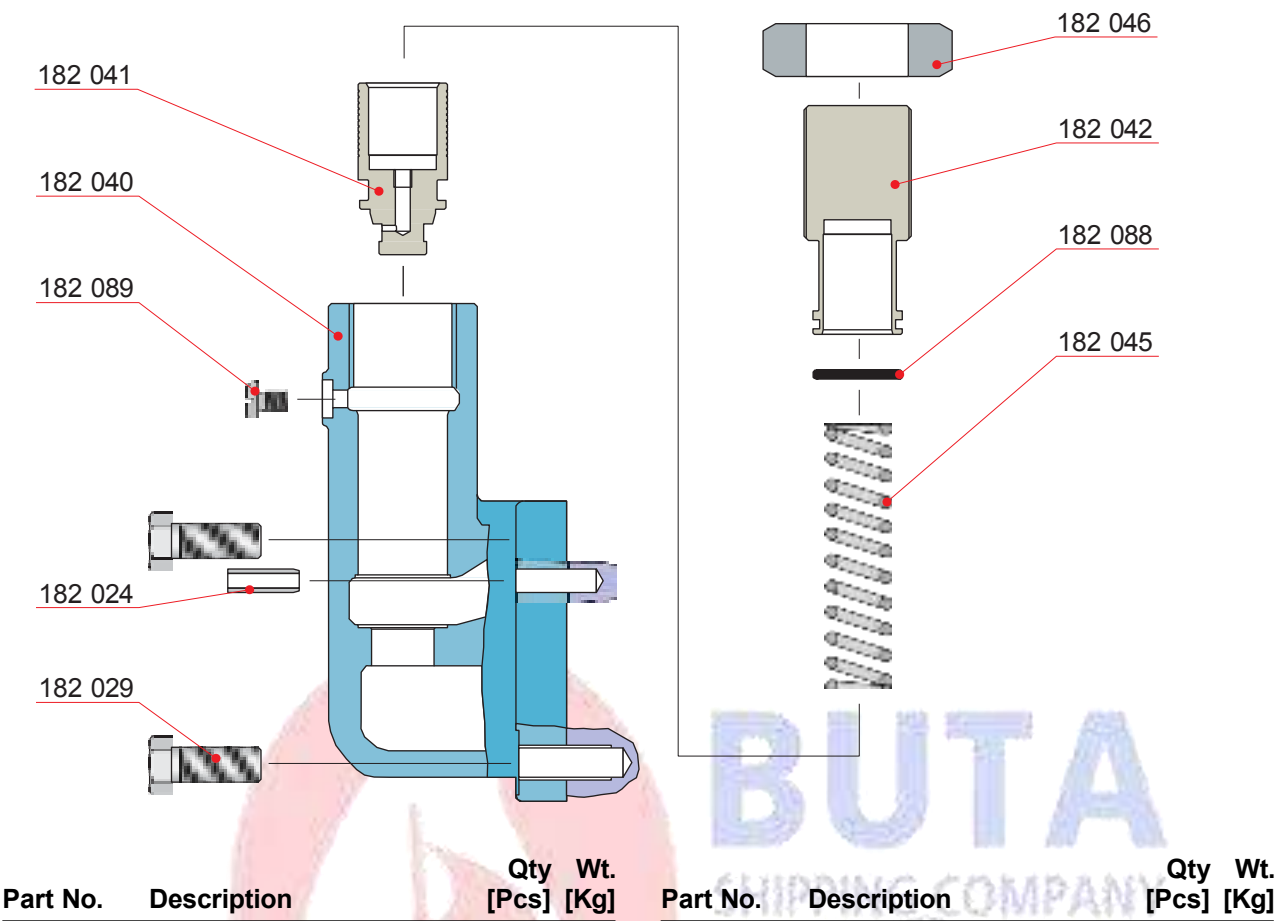
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Prelubricating oil pump



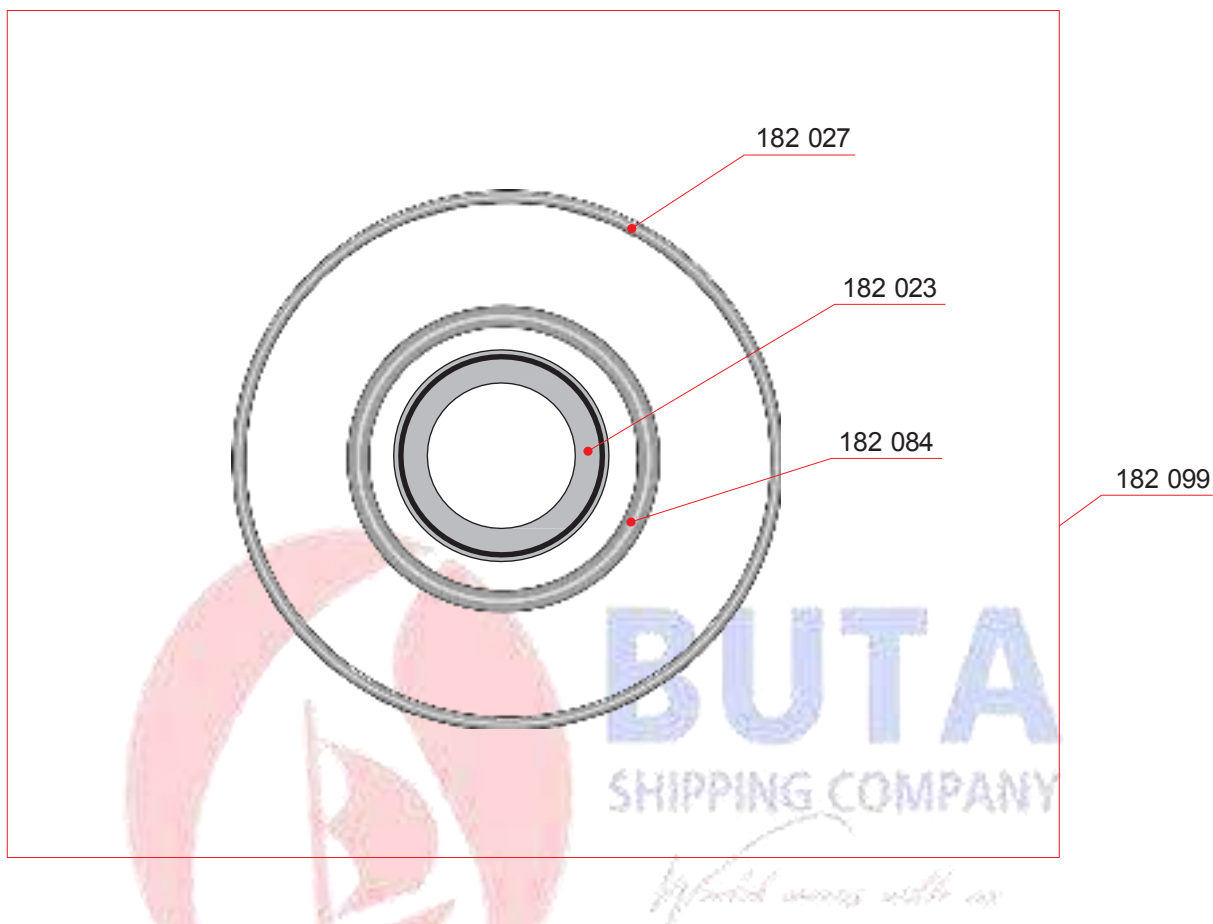
Part No.	Description	Qty [Pcs]	Wt [Kg]
182 024	Pin	2	-
182 029	Screw	4	-
182 040	End cover	1	-
182 041	Piston	1	-
182 042	Spindle	1	0.1
182 045	Spring	1	-
182 046	Nut	1	-
182 088	O-ring	1	-
182 089	Setting screw	1	-

Prelubricating oil pump



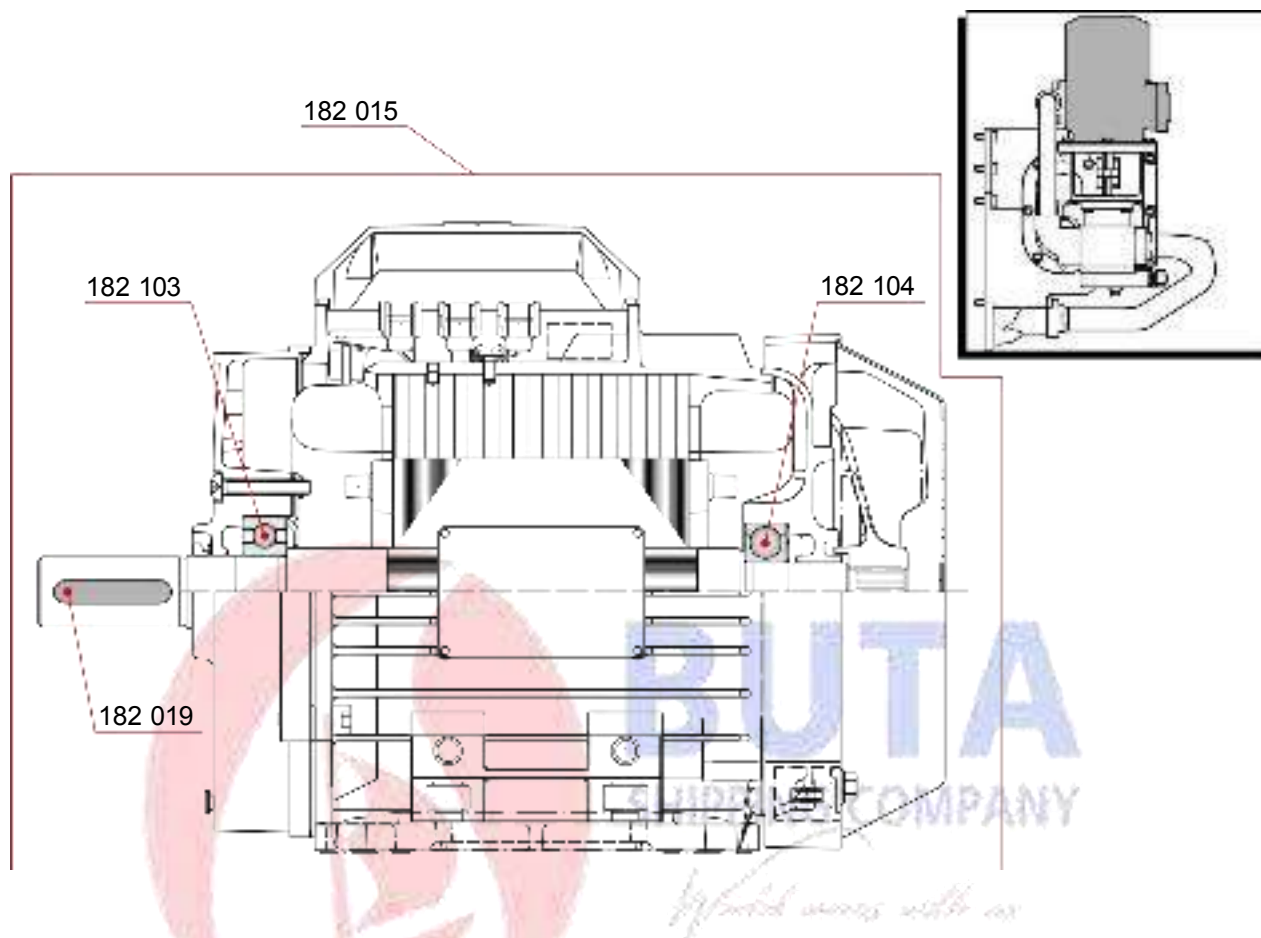
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Prelubricating oil pump



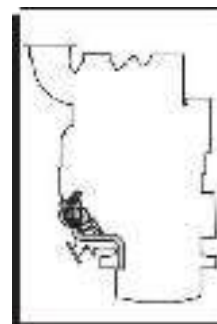
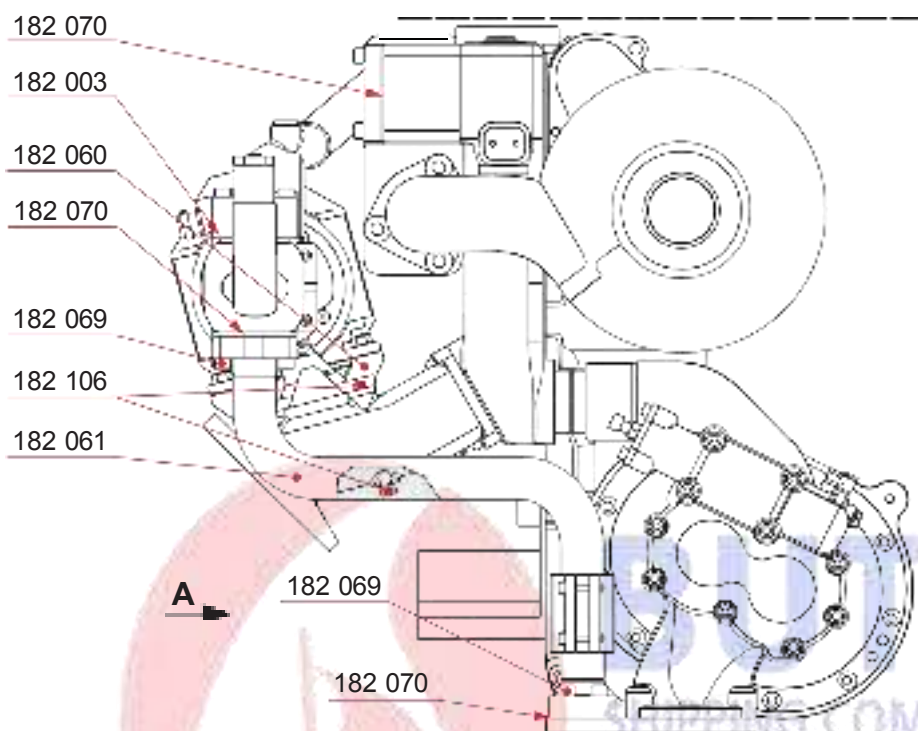
Part No.	Description	Qty [Pcs]	Wt [Kg]
182 099	Sealing set	1	0.1
182 023	Seal	1	-
182 027	O-ring	1	-
182 084	O-ring	1	-

Electric motor for prelubricating oil pump



Part No.	Description	Qty [Pcs]	Wt [Kg]
182 015	Electrical motor	1	21
182 019	Key	1	-
182 103	Ball bearing	1	0.4
182 104	Ball bearing	1	0.1

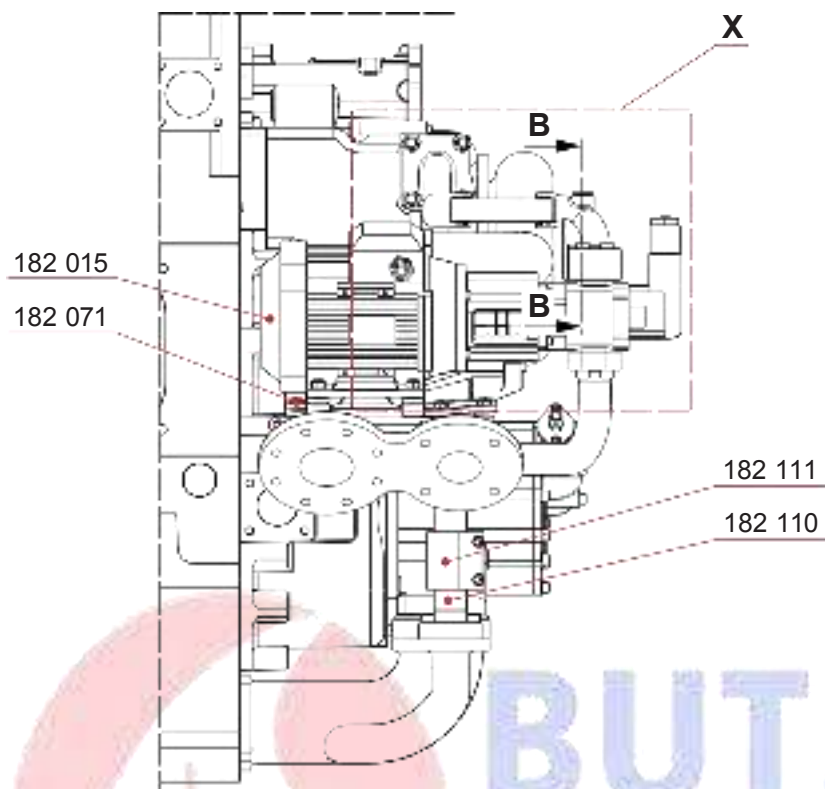
Prelubricating pump assembly



Part No.	Description	Qty [Pcs]	Wt [Kg]
182 003	O-ring	1	-
182 060	Bracket	1	6.2
182 061	Suction pipe	1	2.5
182 069	Screw	8	-
182 070	O-ring	3	-
182 106	Screw	7	0.1

Prelubricating pump assembly

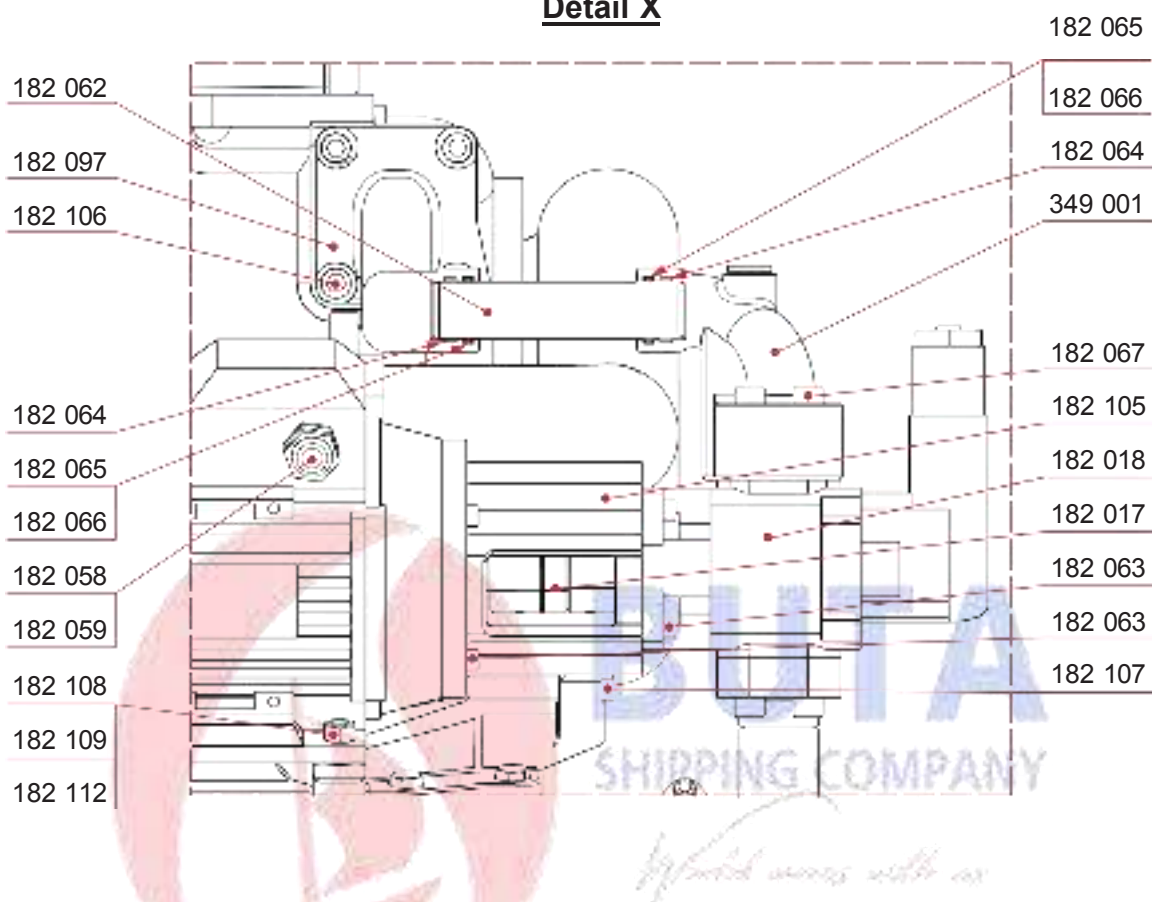
View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
182 015	Electrical motor	1	-
182 071	Screw	3	-
182 110	Pipe	1	1
182 111	Pipe	1	1

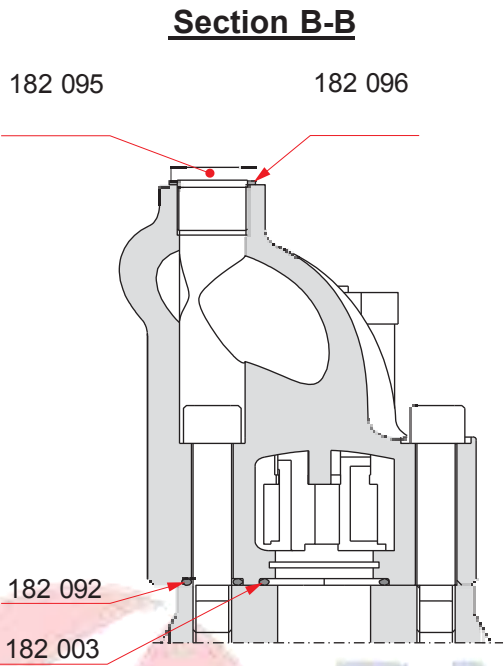
Prelubricating pump assembly

Detail X



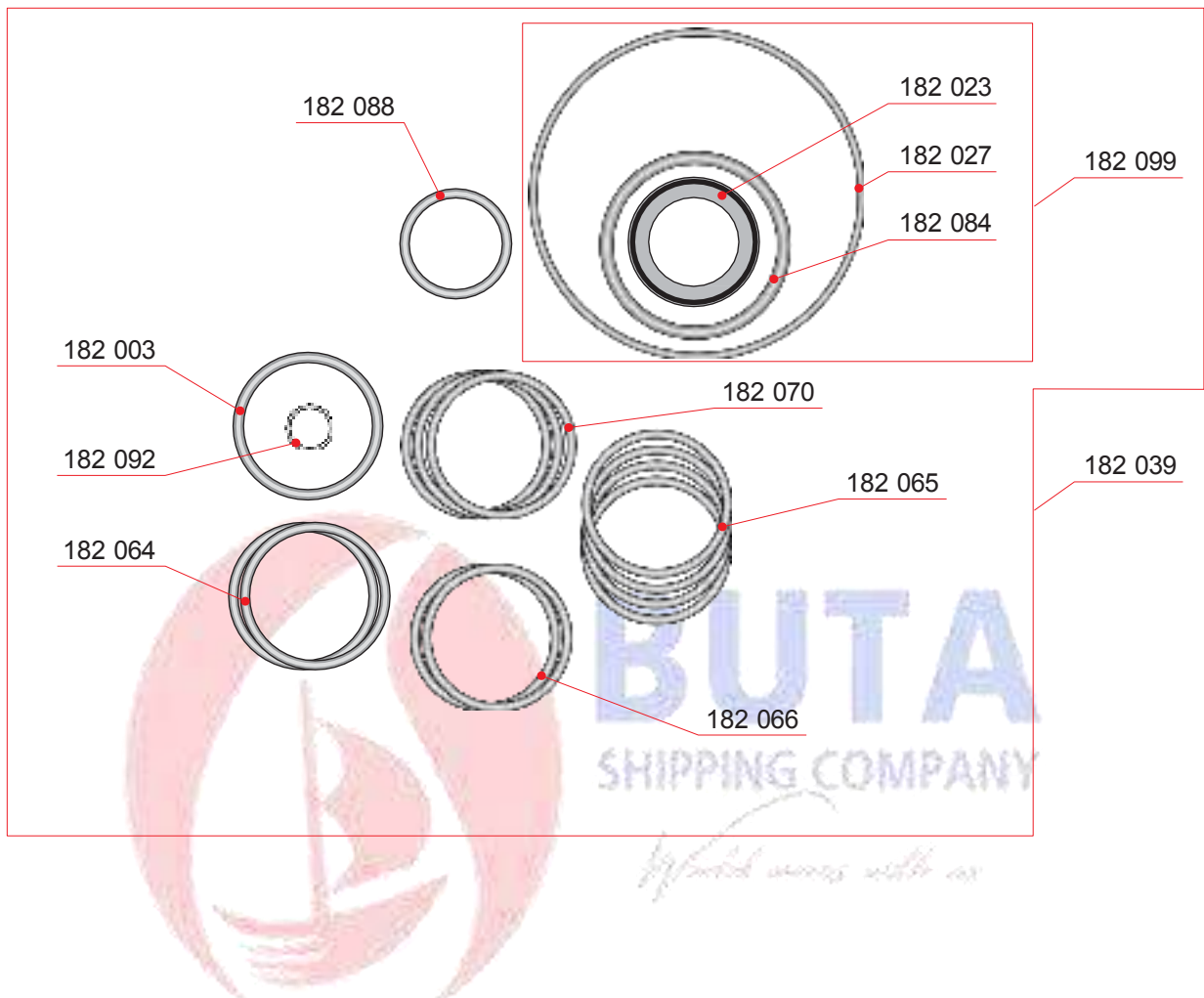
Part No.	Description	Qty [Pcs]	Wt [Kg]
182 017	Flexible coupling	1	0.3
182 018	Prelubricating oil pump	1	11
182 058	Cable gland	1	-
182 059	Nut	1	-
182 062	Pipe	1	-
182 063	Screw	8	-
182 064	O-ring	2	-
182 065	Back-up ring	4	-
182 066	O-ring	2	-
182 067	Screw	4	-
182 097	Bend	1	-
182 105	Bracket	1	-
182 106	Screw	7	0.1
182 107	Screw	2	-
182 108	Stud	4	-
182 109	Nut	2	-
182 112	Washer	4	-
349 001	Non-return valve	1	0.5

Prelubricating pump assembly



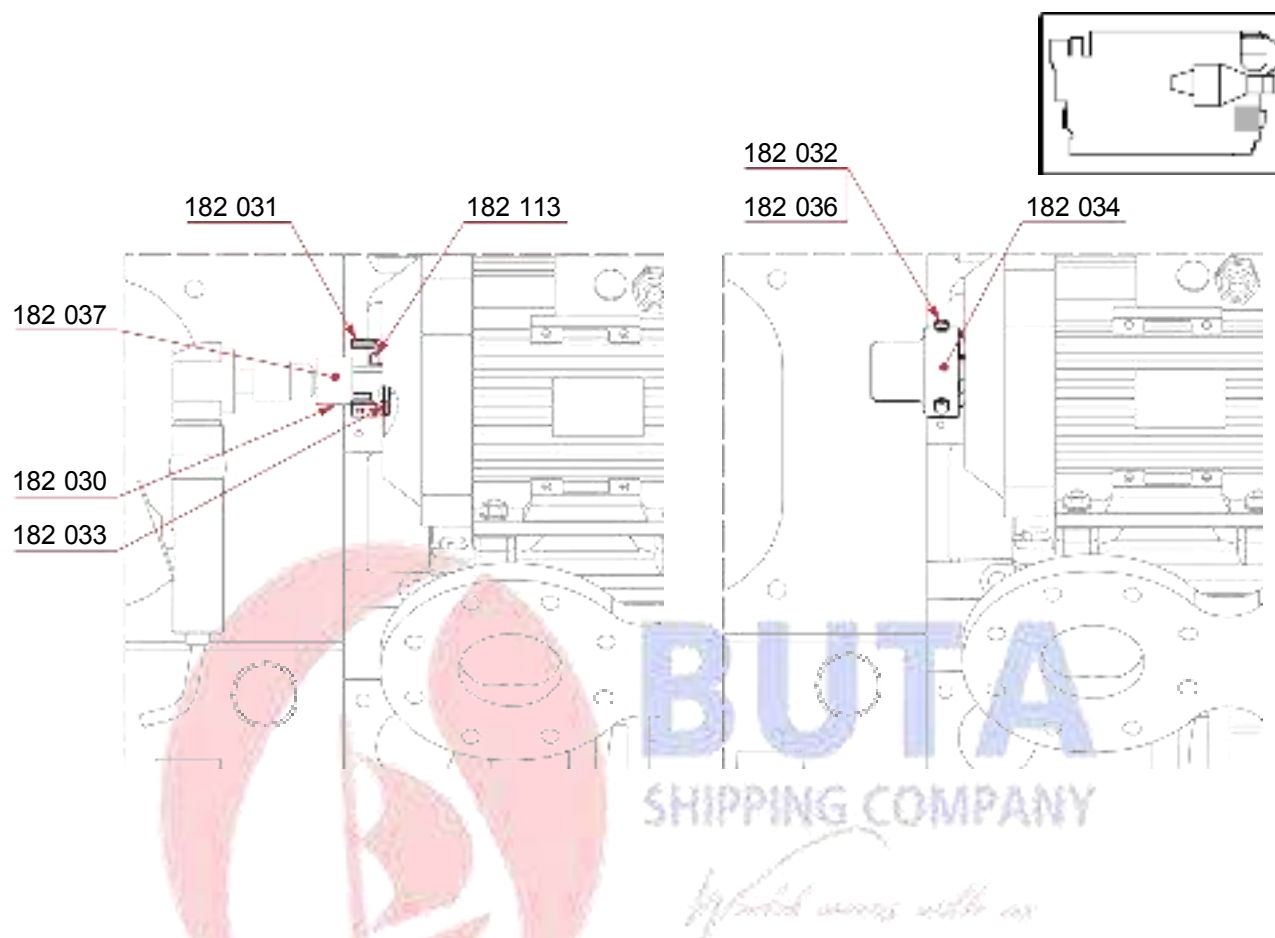
Part No.	Description	Qty [Pcs]	Wt [Kg]
182 003	O-ring	1	-
182 092	O-ring	1	-
182 095	Plug	1	-
182 096	Sealing ring	1	-

Prelubricating pump assembly



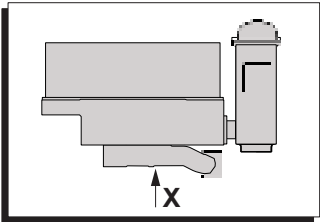
Part No.	Description	Qty [Pcs]	Wt [Kg]
182 003	O-ring	1	-
182 023	Seal	1	-
182 027	O-ring	1	-
182 039	Sealing set (1)	1	0.2
182 064	O-ring	2	-
182 065	Back-up ring	4	-
182 066	O-ring	2	-
182 070	O-ring	3	-
182 084	O-ring	1	-
182 088	O-ring	1	-
182 092	O-ring	1	-
182 099	Sealing set	1	0.1

Turning tool for prelubricating pump

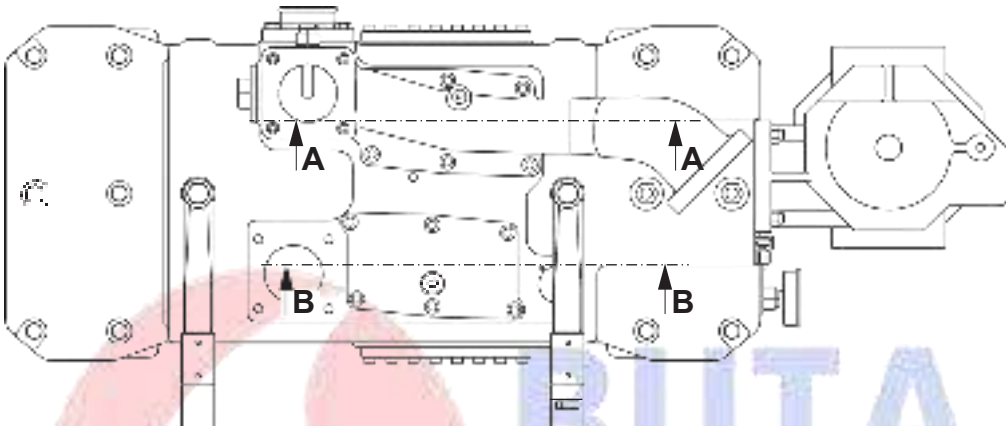


Part No.	Description	Qty [Pcs]	Wt [Kg]
182 030	Retainer screw	1	-
182 031	Screw	3	-
182 032	Screw	3	-
182 033	Support ring	1	-
182 034	Cover	1	-
182 036	Washer	3	-
182 037	Connecting piece	1	0.2
182 113	Screw	3	-

Thermostatic valve for lubricating oil



View X



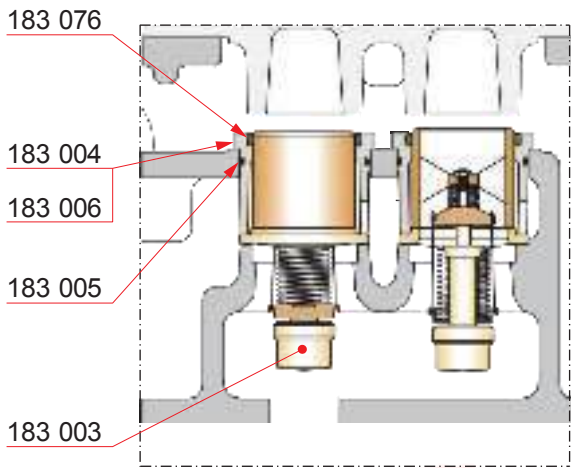
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Part No.	Description	Qty [Pcs]	Wt. [Kg]
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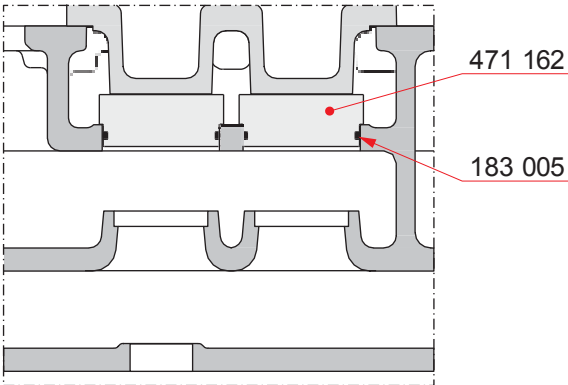
NOTE! See page 2.

Thermostatic valve for lubricating oil

Section A-A

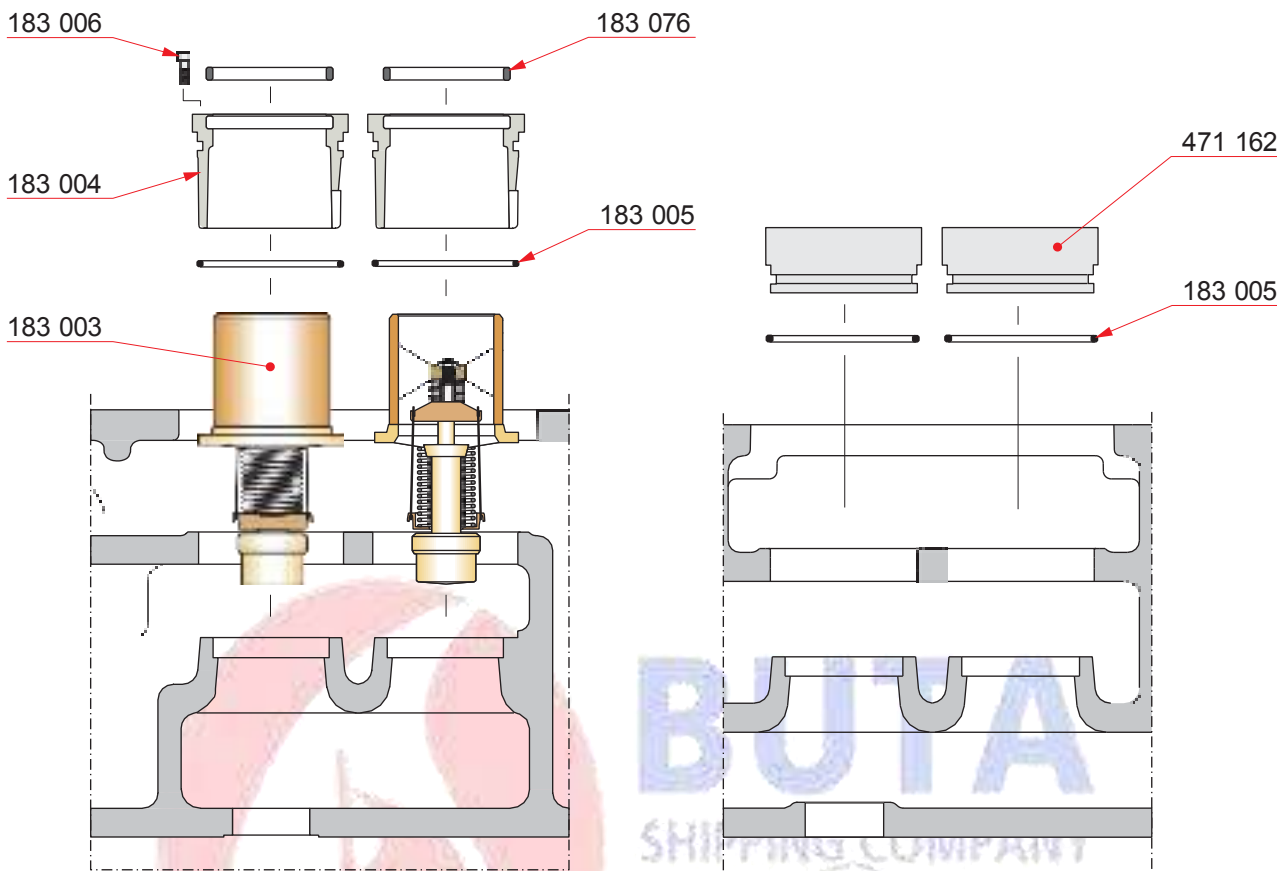


Section B-B



Part No.	Description	Qty [Pcs]	Wt [Kg]
183 003	Thermostatic element	2	-
183 004	Holder	2	-
183 005	O-ring	4	-
183 006	Screw	6	-
183 076	O-ring	2	-
471 162	Flange (1)	2	-

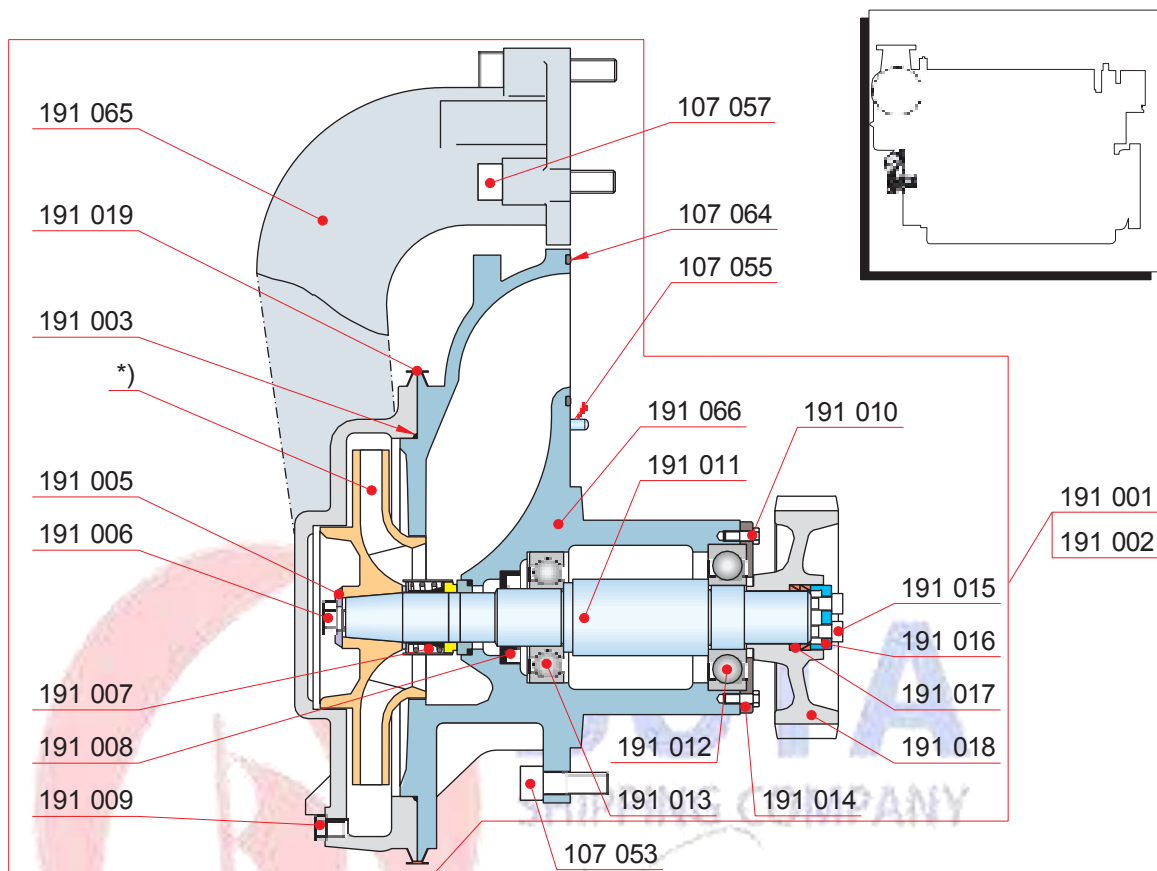
Thermostatic valve for lubricating oil



Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Water pump

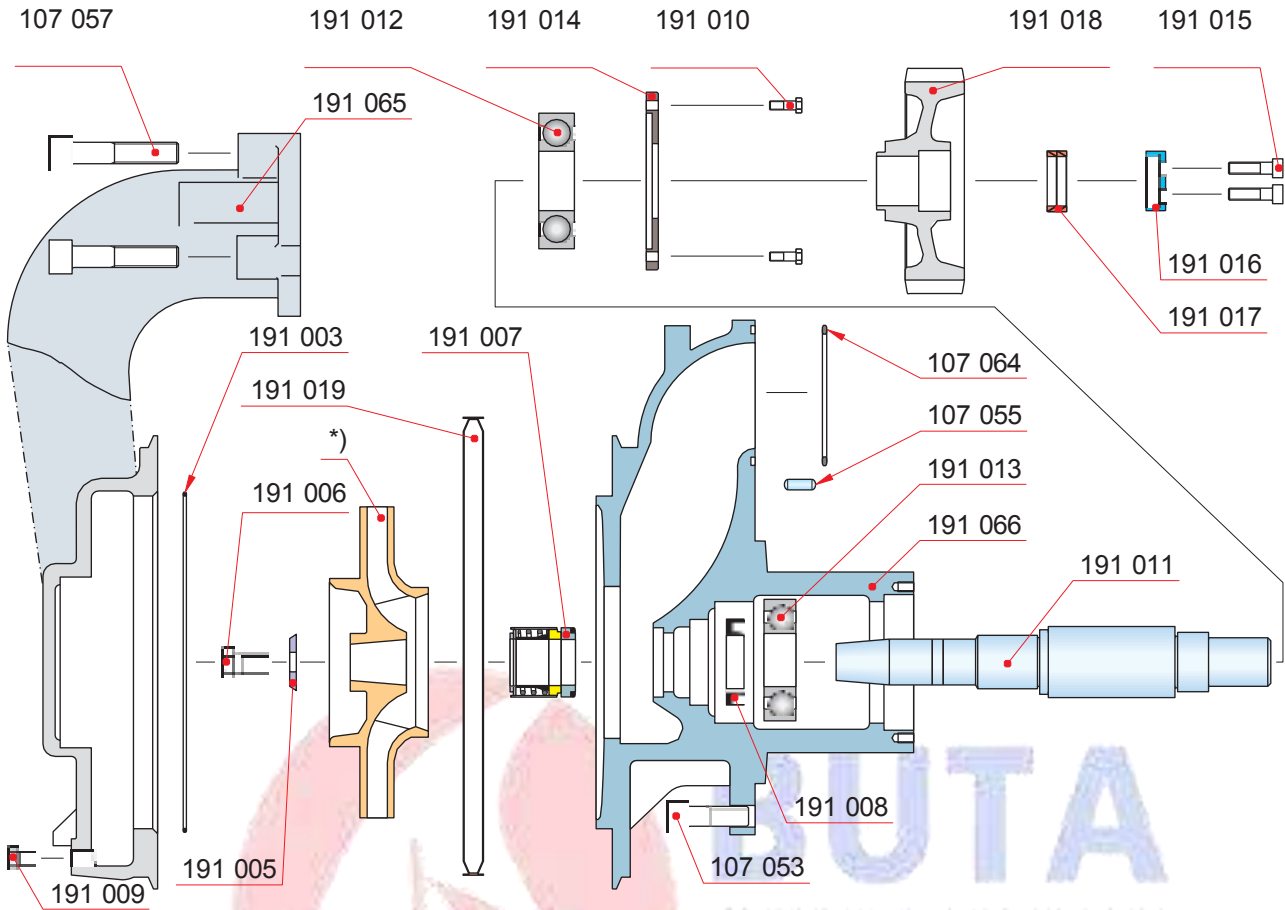


Part No.	Description	Qty [Pcs]	Wt [Kg]
191 001	HT water pump	1	-
191 002	LT water pump	1	-
191 003	O-ring (1)	1	-
191 005	Washer	1	-
191 006	Screw	1	-
191 007	Shaft seal (1)	1	-
191 008	Gamma ring (1)	1	-
191 009	Plug	3	-
191 010	Screw	4	-
191 011	Shaft	1	2.5
191 012	Bearing (1)	1	0.6
191 013	Bearing (1)	1	0.5
191 014	Bearing housing cover	1	0.4
191 015	Screw (1)	3	-
191 016	Pressure plate	1	-
191 017	Pair of friction rings	2	-
191 018	Drive gear wheel	1	-
191 019	Clamp ring	1	0.5

191 065	Volute casing	1	41
191 066	Bearing housing	1	41
107 053	Screw	5	-
107 055	Pin	2	-
107 057	Screw	3	-
107 064	O-ring (1)	2	-



Water pump



Part No.	Description	Qty		Wt.
		[Pcs]	[Kg]	
Part No.	Description	Qty		Wt.
		[Pcs]	[Kg]	

Hydraulic services with us

Water pump

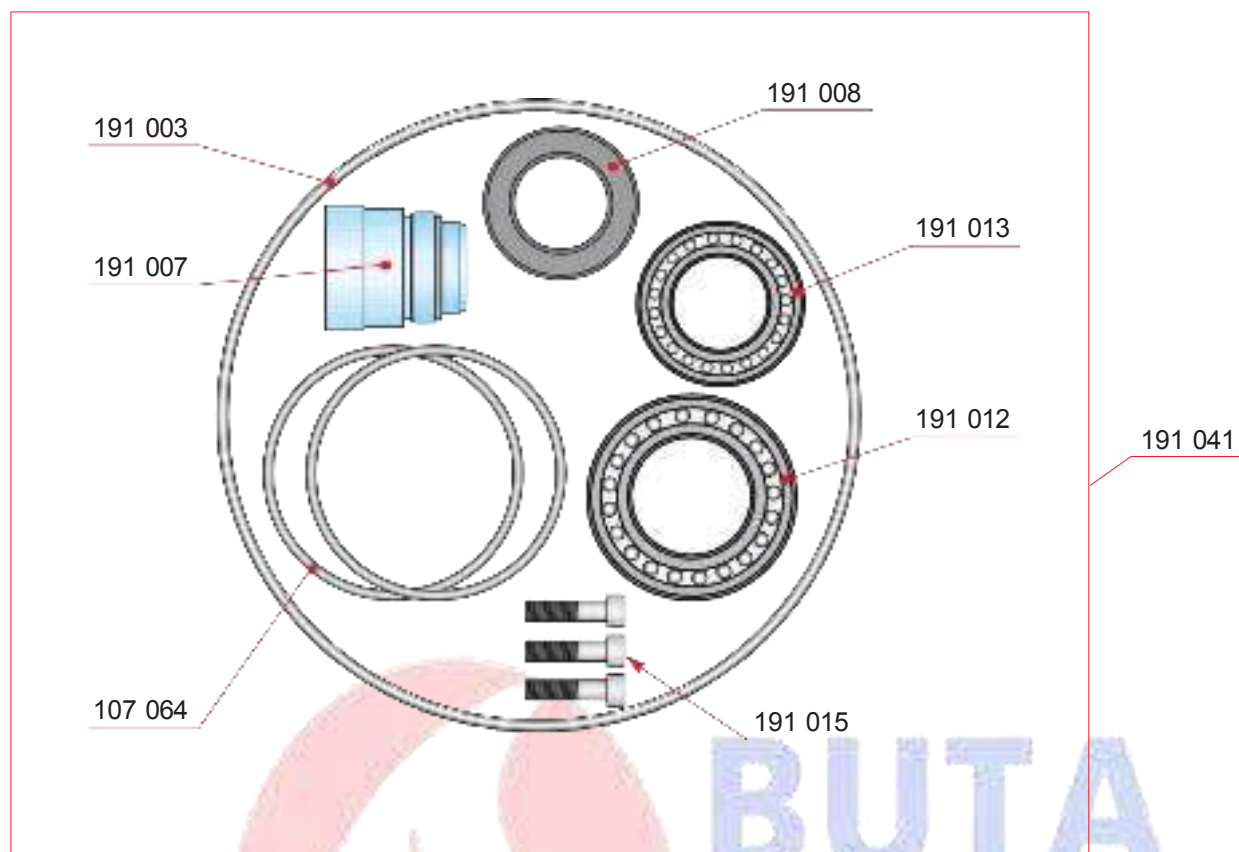
PART NUMBER SELECTION TABLE FOR IMPELLER

When ordering impeller, choose the right part number for the pump type (found from the type plate on the pump) according to the table below.

Part No	Pump type No	Ø/mm	Qty
191 022	WD-70L168A	168	1
191 023	WD-70L170A	170	1
191 024	WD-70L172A	172	1
191 025	WD-70L175A	175	1
191 026	WD-70L180A	180	1
191 027	WD-70L187A	187	1
191 028	WD-70L191A	191	1
191 029	WD-70L205B	205	1
191 030	WD-70R168A	168	1
191 031	WD-70R170A	170	1
191 032	WD-70R172A	172	1
191 033	WD-70R175A	175	1
191 034	WD-70R180A	180	1
191 035	WD-70R187A	187	1
191 036	WD-70R191A	191	1
191 037	WD-70R205B	205	1
191 039	WD-70R197B	197	1
191 040	WD-70L197B	197	1

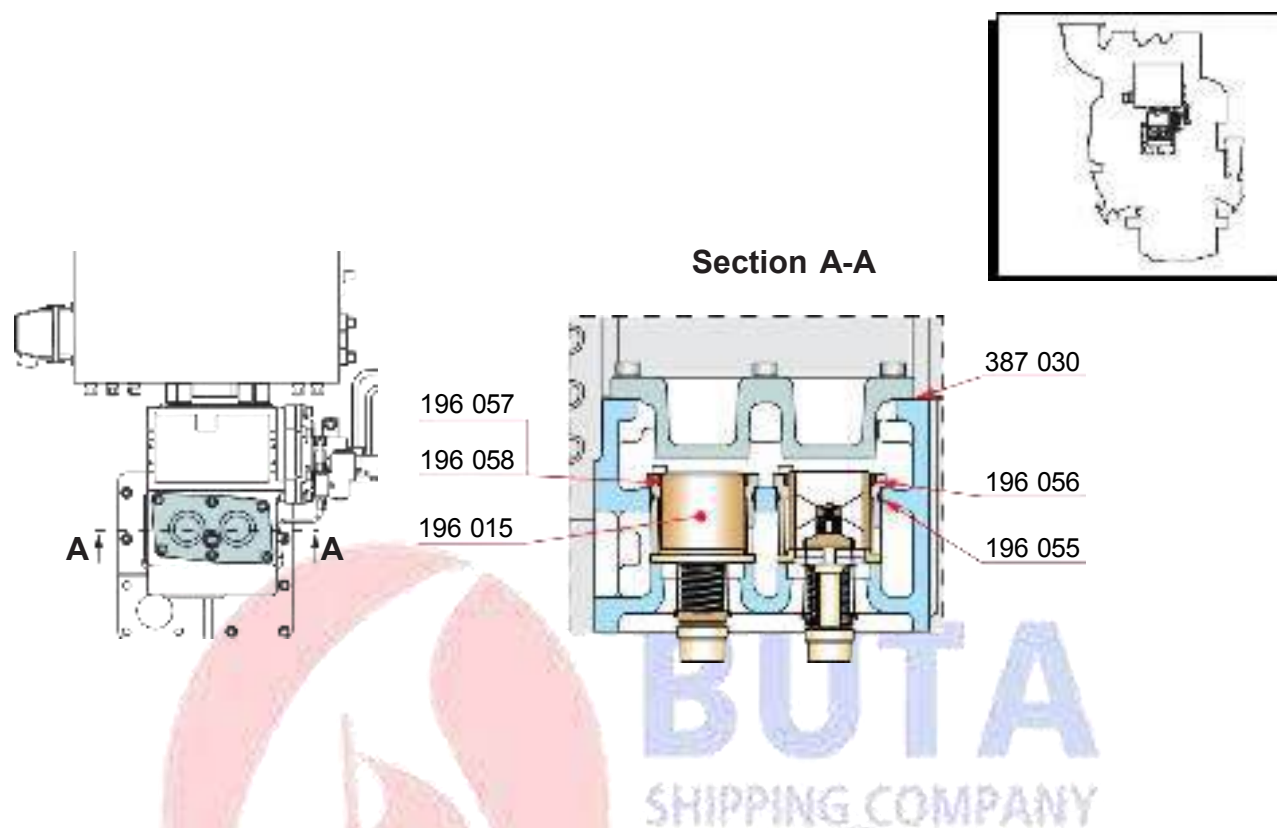
Part No.	Description	Qty Wt.		Part No.	Description	Qty Wt.	
		[Pcs]	[Kg]			[Pcs]	[Kg]

Water pump



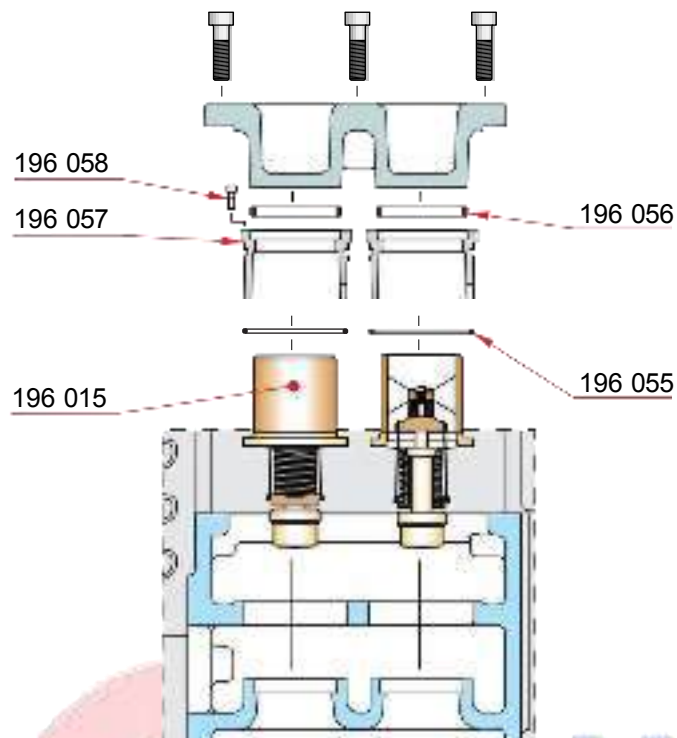
Part No.	Description	Qty [Pcs]	Wt [Kg]
191 041	Sealing set for LT/HT-water pump	1	0.2
107 064	O-ring	2	-
191 003	O-ring	1	-
191 007	Shaft seal	1	-
191 008	Gamma ring	1	-
191 012	Bearing	1	0.6
191 013	Bearing	1	0.5
191 015	Screw	3	-

Thermostatic valve for HT water



Part No.	Description	Qty [Pcs]	Wt [Kg]
196 015	Thermostatic element	2	-
196 055	O-ring	2	-
196 056	O-ring	2	-
196 057	Holder	2	-
196 058	Screw	4	-
387 030	Glue compound	1	-

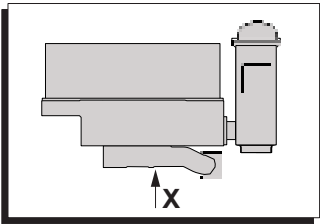
Thermostatic valve for HT water



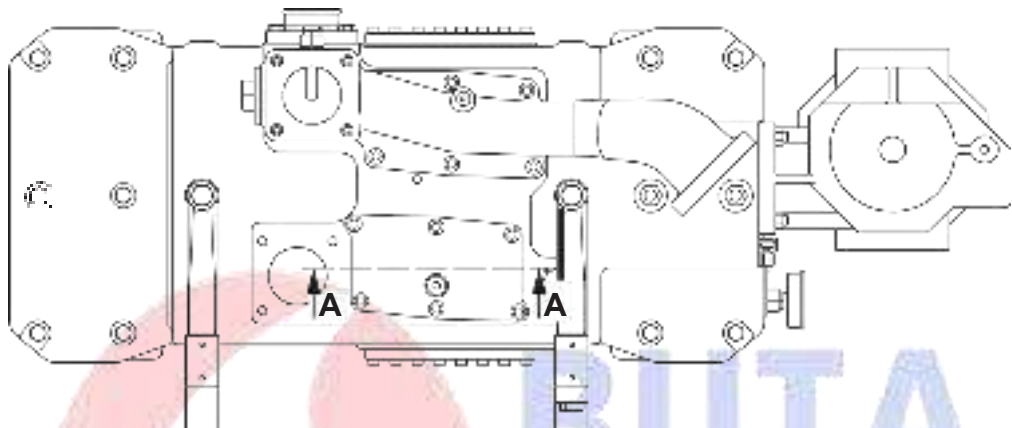
BUTA
SHIPPING COMPANY

Part No.	Description	Qty [Pcs]	Wt [Kg]
196 015	Thermostatic element	2	-
196 055	O-ring	2	-
196 056	O-ring	2	-
196 057	Holder	2	-
196 058	Screw	4	-

Thermostatic valve for LT-water



View X



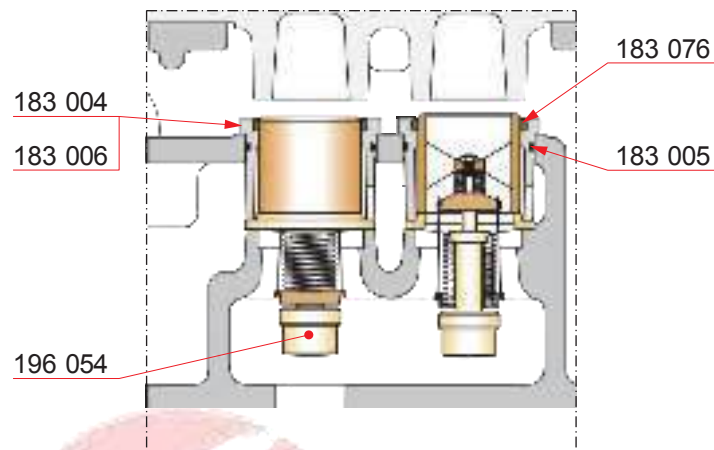
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Part No.	Description	Qty [Pcs]	Wt. [Kg]
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NOTE! See page 2.

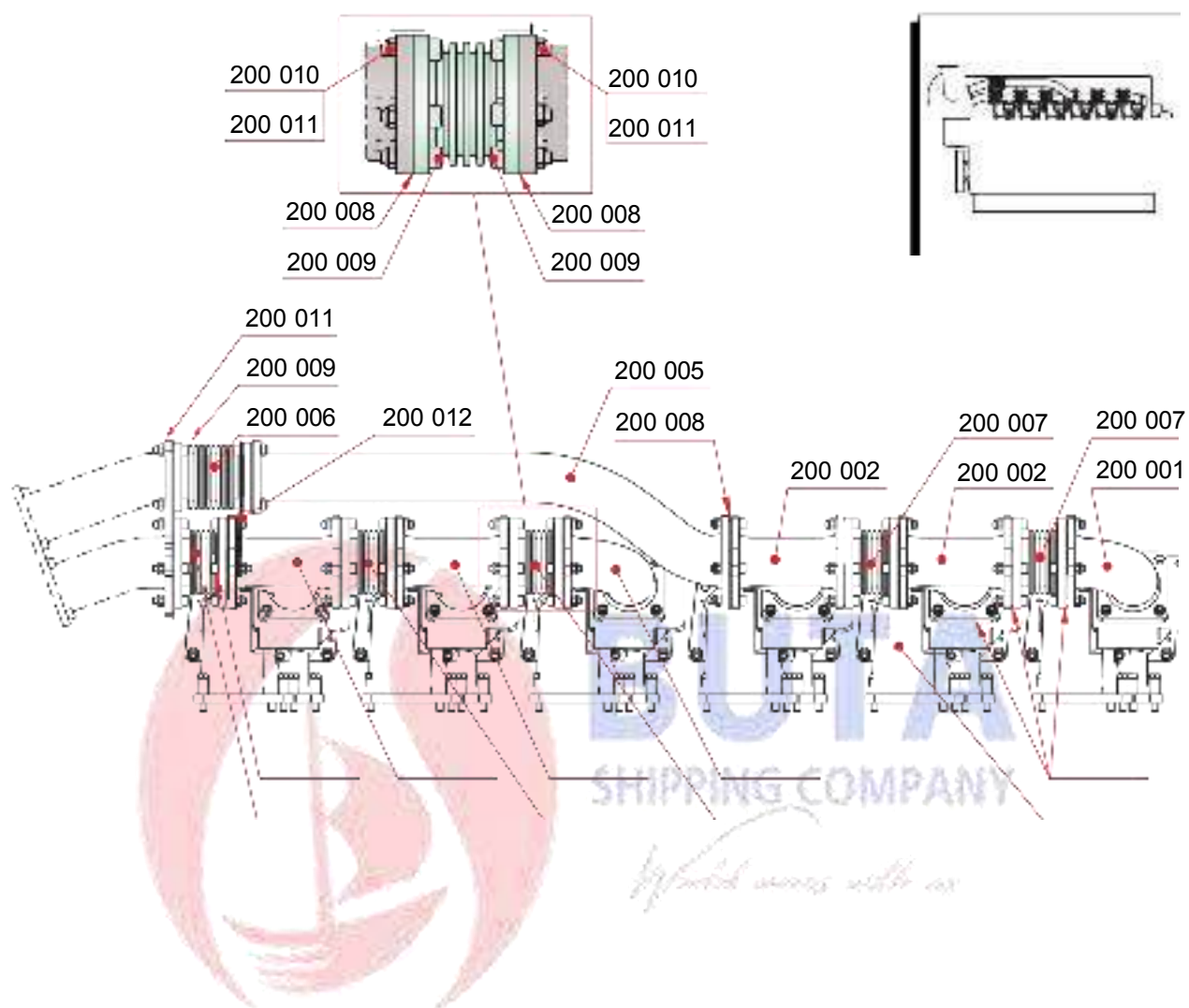
Thermostatic valve for LT-water

Section A-A



Part No.	Description	Qty [Pcs]	Wt [Kg]
183 004	Holder	4	-
183 005	O-ring	4	-
183 006	Screw	8	-
183 076	O-ring	4	-
196 054	Thermostatic element	2	-

Exhaust manifold 6L20



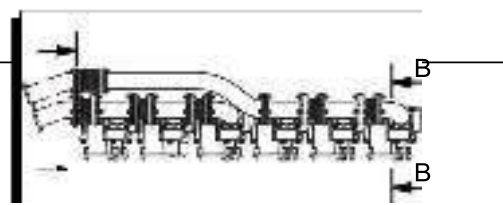


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Exhaust manifold 6L20

SECTION A-A



200 012

200 014 200 017

200 015 200 008

200 020

200 019

200 018

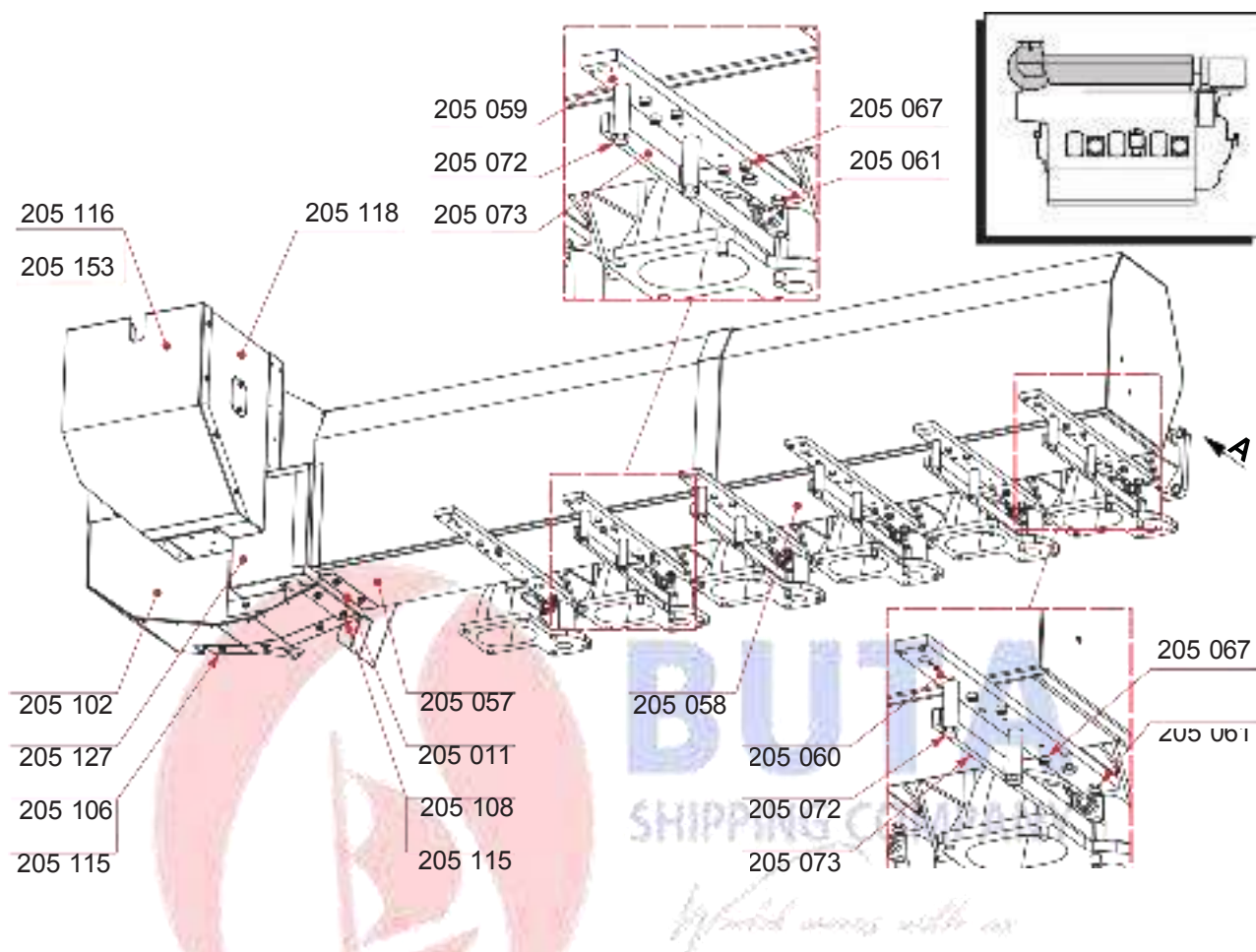
200 026

200 022

200 021

Part No.	Description	Qty [Pcs]	Wt [Kg]
200 008	Sealing ring	19	-
200 012	Support	8	0.2
200 013	Multiduct	6	45
200 014	Adapter	6	0.2
200 015	Sealing ring	6	-
200 017	Screw	24	-
200 018	Gasket	6	-
200 019	Screw	18	-
200 020	Distance piece	48	-
200 021	Distance piece	12	-
200 022	Screw	18	-
200 023	Screw	36	-
200 025	Gasket	6	0.2
200 026	Rivet	12	-
200 070	Sleeve	6	0.5

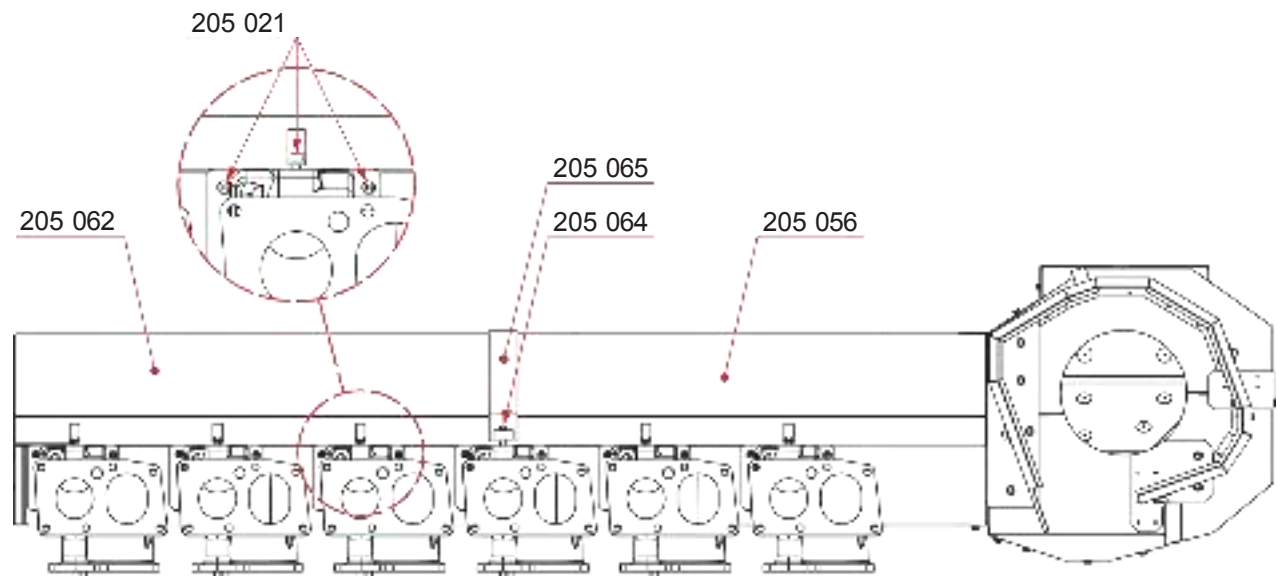
Insulation box for exhaust manifold



Part No.	Description	Qty [Pcs]	Wt [Kg]
205 011	Bracket	1	-
205 057	Lower protecting panel	1	-
205 058	Lower protecting panel	1	-
205 059	Bracket	3	2.6
205 060	Bracket	3	2.6
205 061	Screw	24	-
205 067	Screw	20	-
205 072	Screw	10	-
205 073	Bracket	5	3
205 102	Insulation	1	-
205 106	Screw	32	-
205 108	Screw	6	-
205 115	Washer	21	-
205 116	Insulation	1	-
205 153	Cover plate	1	-
205 118	Insulation	1	-
205 127	Cover	1	-

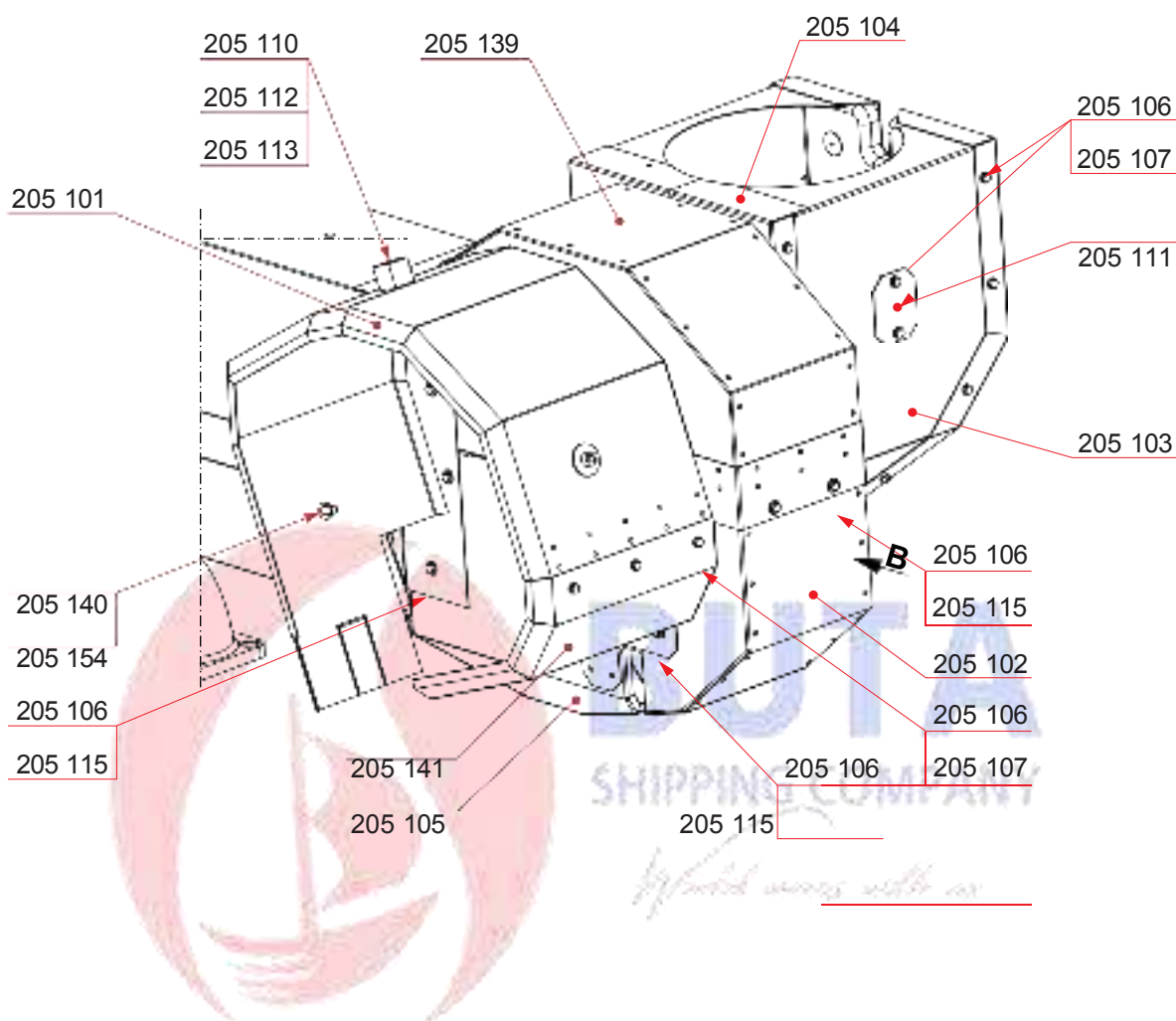
Insulation box for exhaust manifold

View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
205 021	Screw	17	-
205 056	Upper protecting panel	1	-
205 062	Upper protecting panel	1	-
205 064	Screw	2	-
205 065	Cover profile	1	-

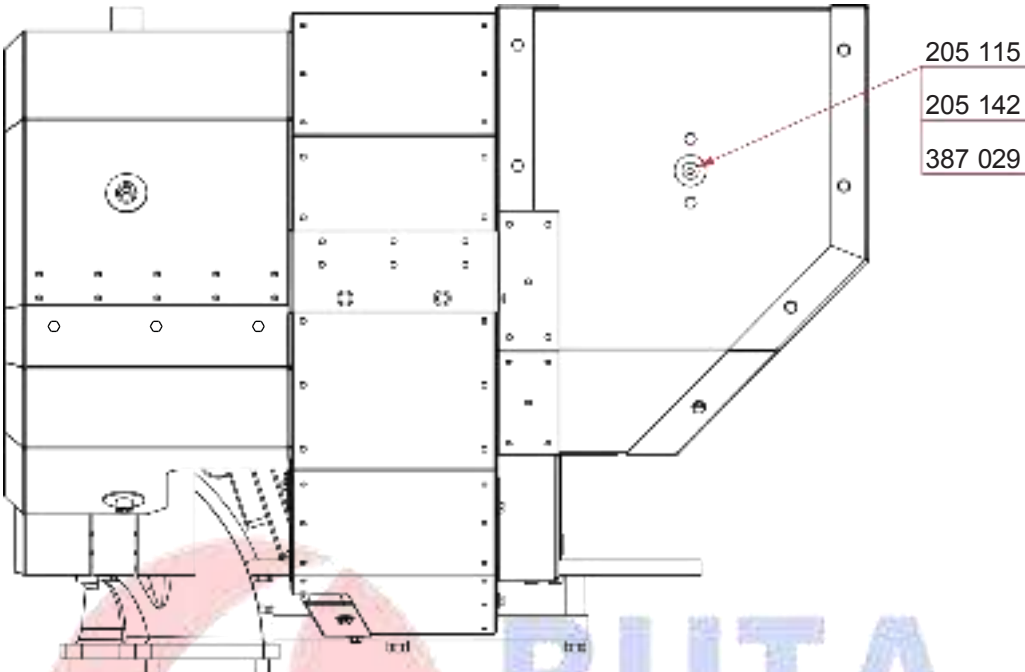
Insulation box for exhaust manifold



Part No.	Description	Qty [Pcs]	Wt [Kg]
205 101	Insulation	1	-
205 102	Insulation	1	-
205 103	Insulation	1	-
205 104	Insulation	1	-
205 105	Insulation	1	-
205 106	Screw	32	-
205 107	Washer	19	-
205 110	Bracket	1	-
205 111	Cover plate	2	0.6
205 112	Washer	1	-
205 113	Screw	1	-
205 115	Washer	21	-
205 139	Insulation	1	-
205 140	Screw	3	-
205 141	Insulation	1	-
205 154	Washer	3	-

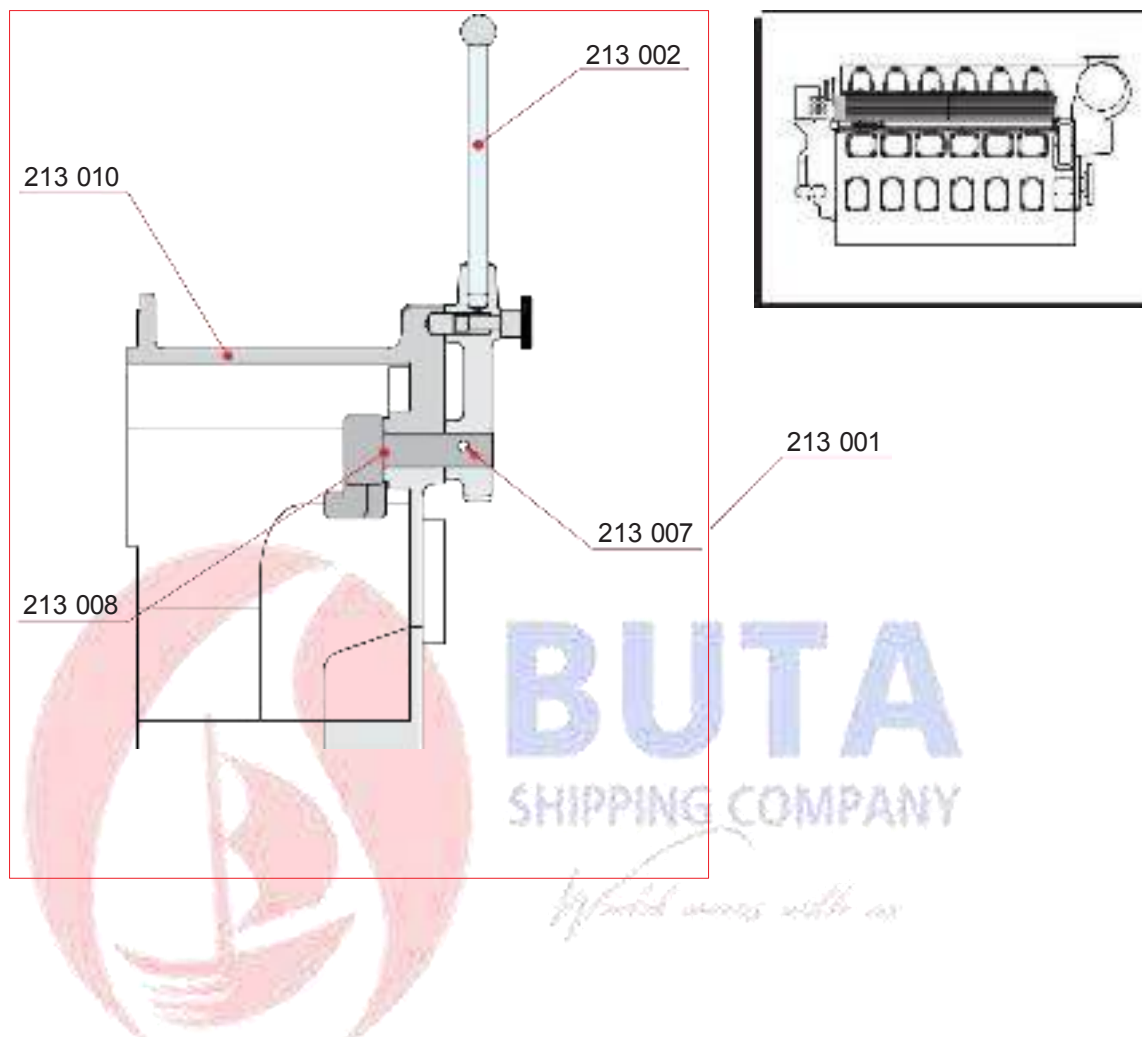
Insulation box for exhaust manifold

View B



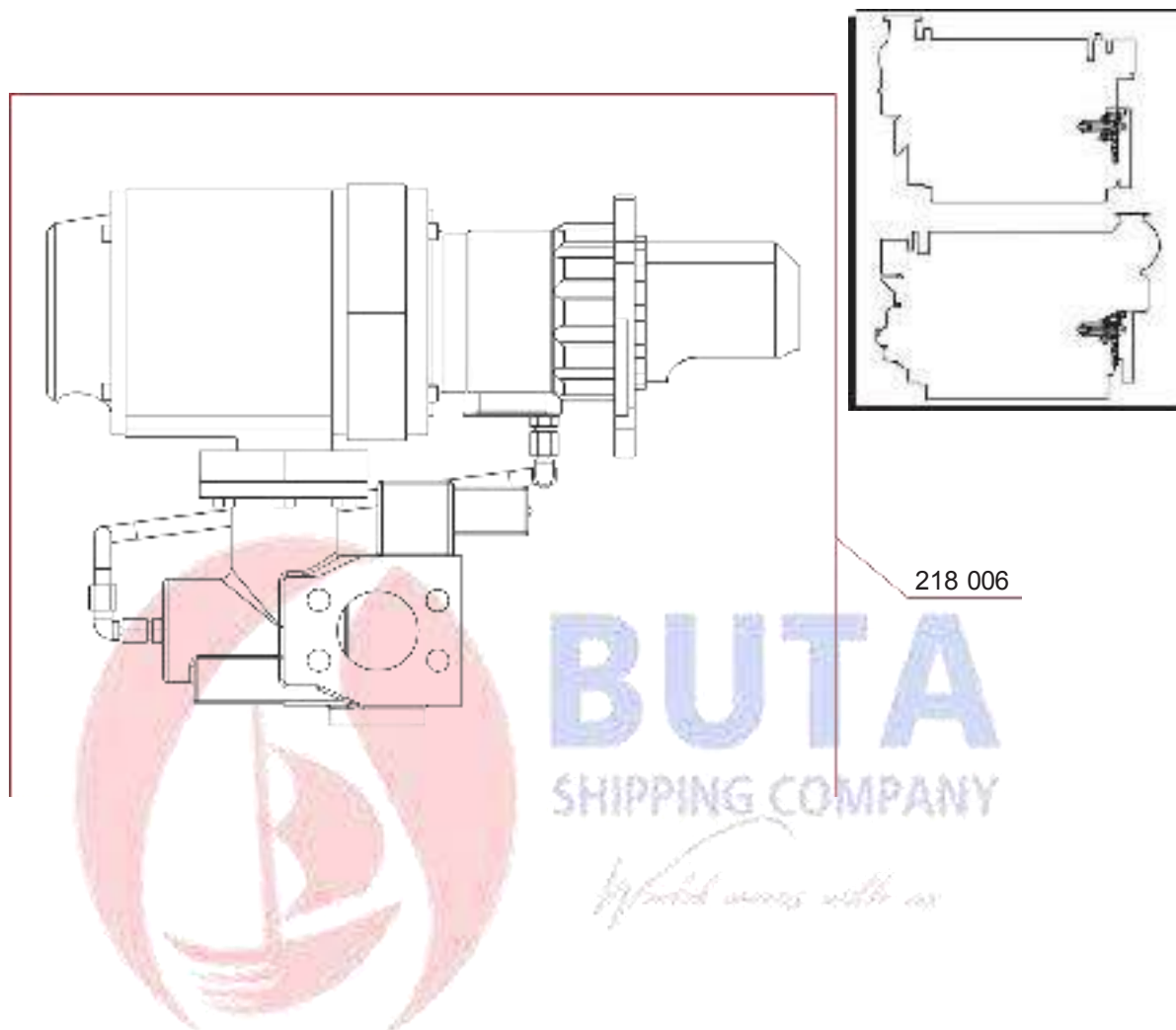
Part No.	Description	Qty [Pcs]	Wt [Kg]
205 115	Washer	21	-
205 142	Screw	2	-
387 029	Lubricant	1	-

Stop lever and end cover



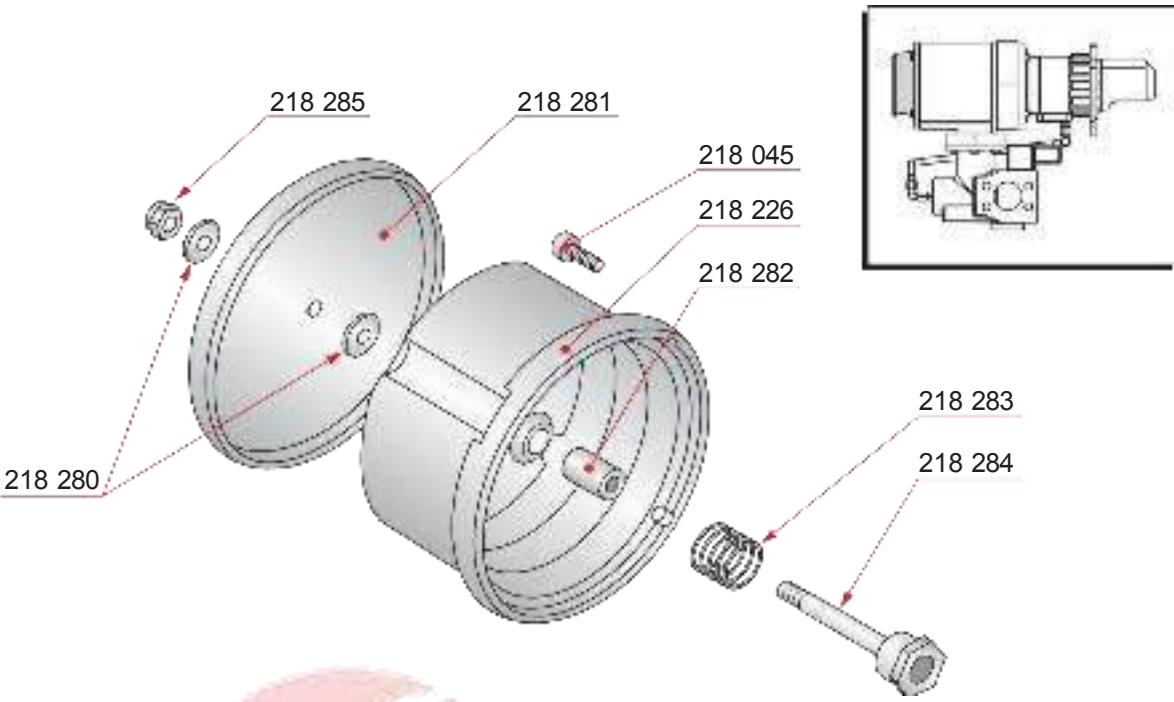
Part No.	Description	Qty [Pcs]	Wt [Kg]
213 001	Stop lever and end cover	1	-
213 002	Stop lever	1	-
213 007	Pin	1	-
213 008	Lever	1	0.5
213 010	End cover	1	17.5

Air starter



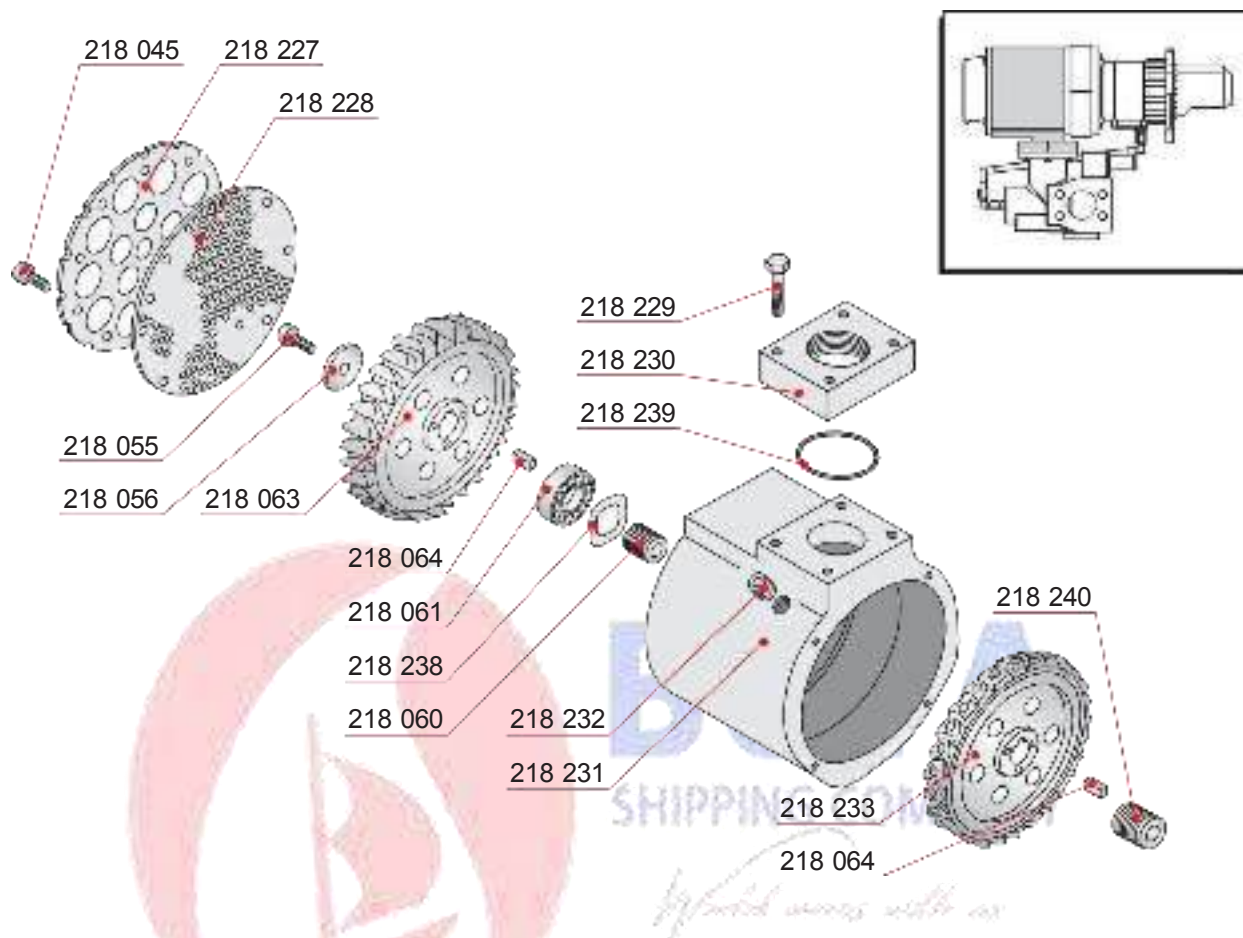
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 006	Starting motor	1	21.2

Air starter



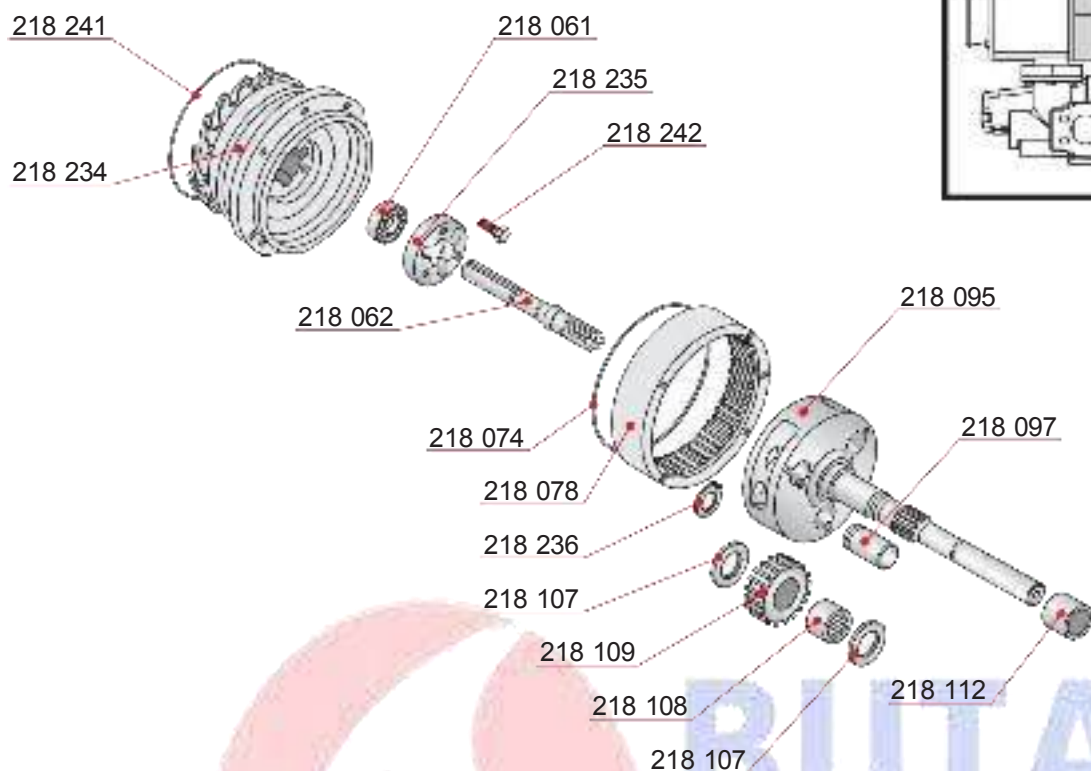
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 045	Screw (1)	4	-
218 226	Exhaust deflector	1	-
218 280	Washer	2	-
218 281	Plate	1	-
218 282	Bushing	1	-
218 283	Spring	1	-
218 284	Screw	1	-
218 285	Nut (1)	1	-

Air starter



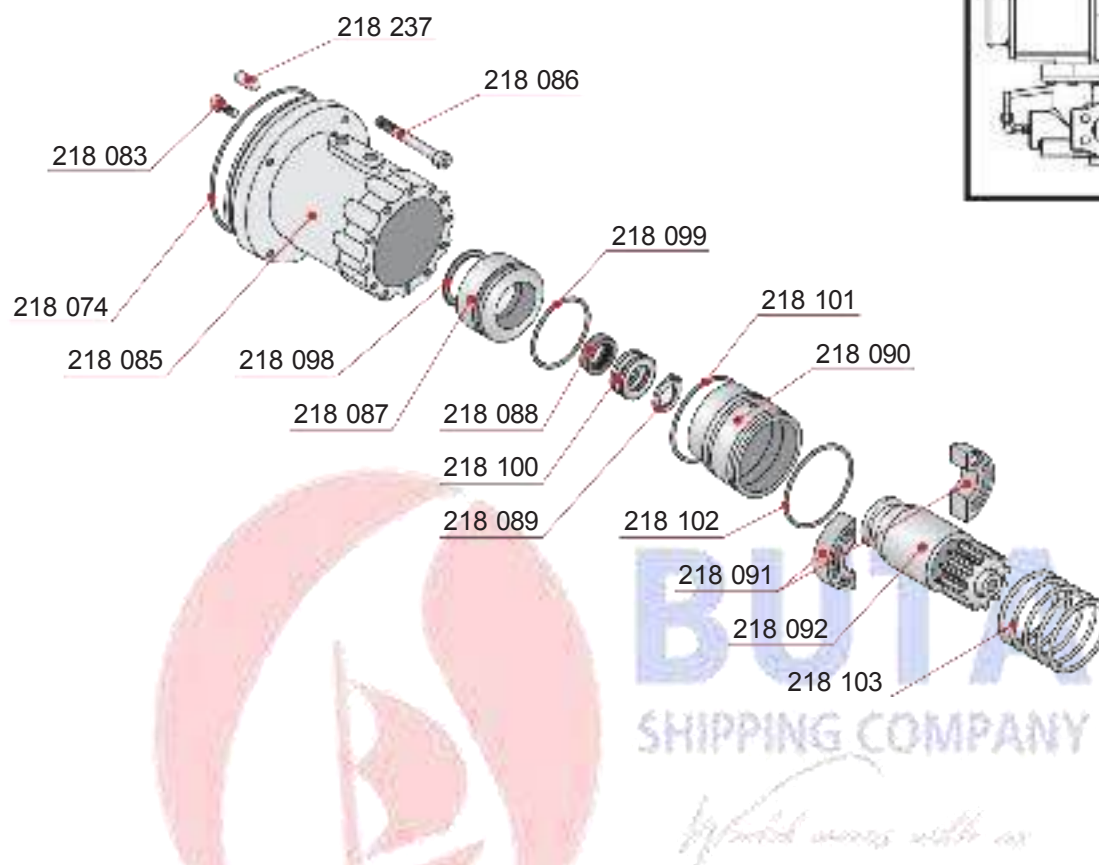
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 045	Screw (1)	4	-
218 055	Screw (1)	1	-
218 056	Rotor washer	1	-
218 060	Bearing spacer (1)	1	-
218 061	Bearing (1)	2	-
218 063	Turbine rotor	1	-
218 064	Key	2	-
218 227	Exhaust support	1	-
218 228	Exhaust guard	1	0.5
218 229	Screw	4	-
218 230	Adapter	1	0.2
218 231	Containment	1	-
218 232	Plug	1	-
218 233	Turbine rotor	1	0.9
218 238	Bearing pre-load spring (1)	2	-
218 239	O-ring (1)	1	-
218 240	Spacer (1)	1	-

Air starter



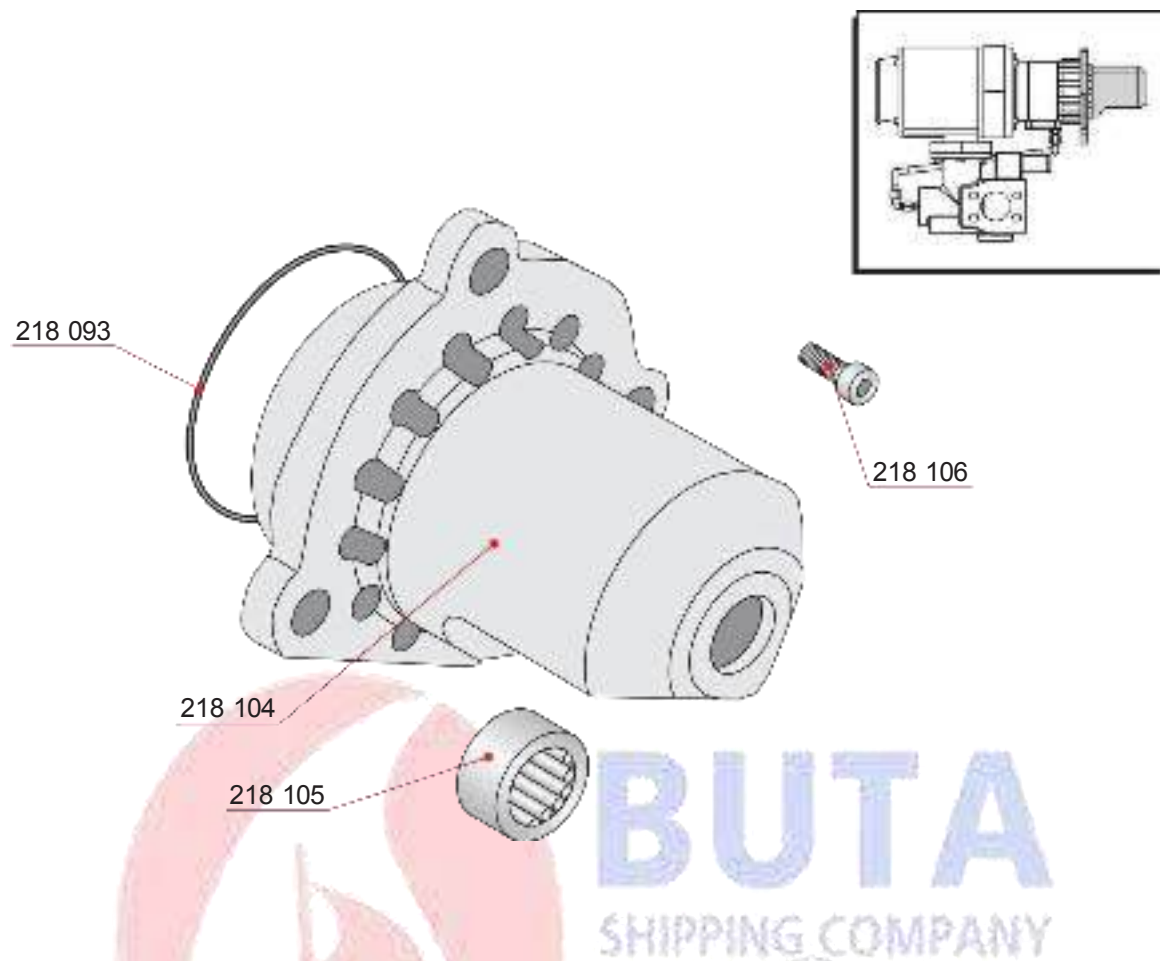
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 061	Bearing (1)	2	-
218 062	Turbine shaft	1	0.2
218 074	O-ring (1) (2)	2	-
218 078	Ring gear	1	2.2
218 095	Carrier/Output shaft	1	1.5
218 097	Planet gear shaft	3	1.5
218 107	Gear spacer (1)	6	-
218 108	Needle bearing (1)	3	-
218 109	Planet gear	3	0.5
218 112	Oil impregnated bearing (1)	1	-
218 234	Turbine housing	1	0.8
218 235	Bearing retainer	1	-
218 236	Retainer ring	3	-
218 241	O-ring (1)	1	-
218 242	Screw (1)	3	-

Air starter



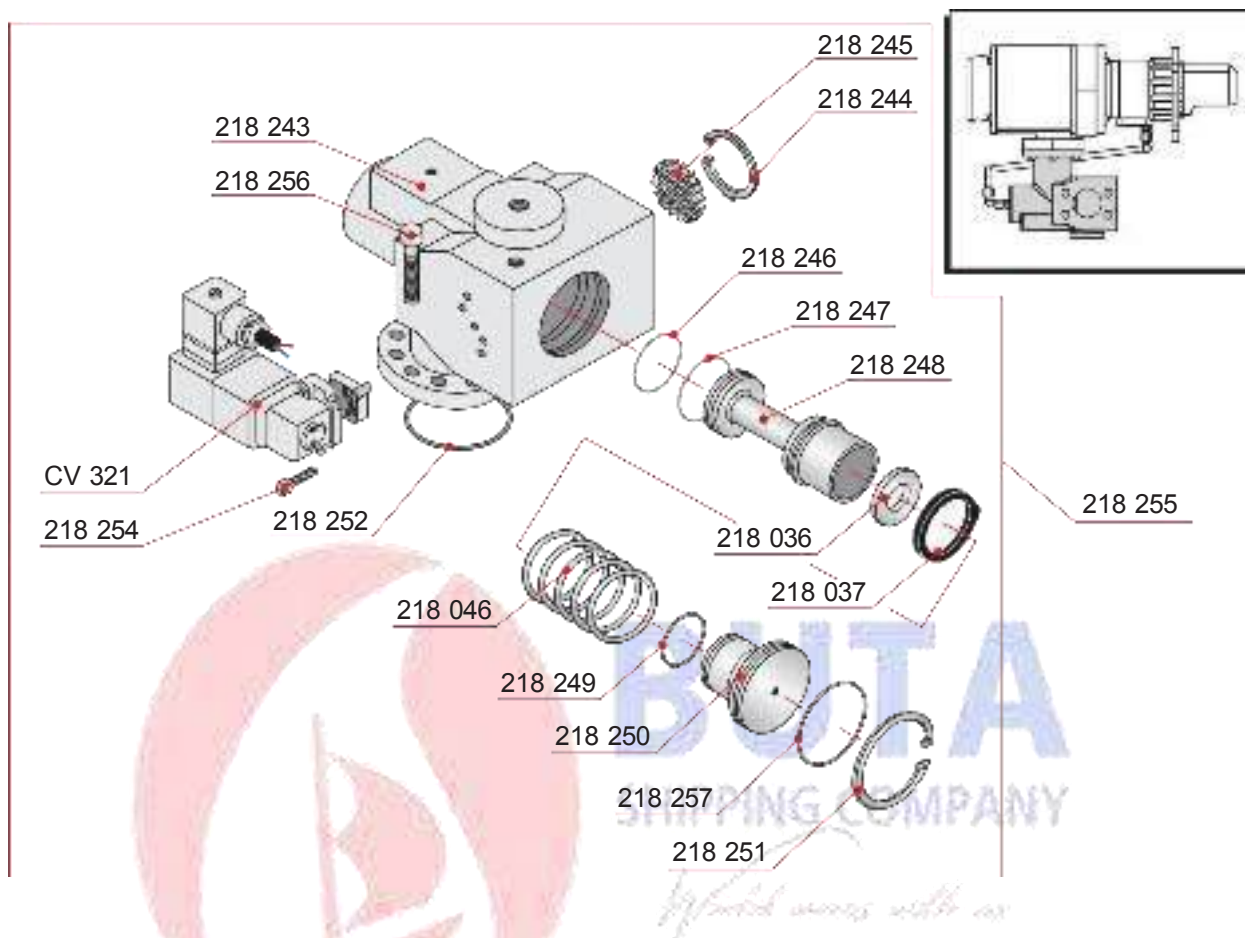
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 074	O-ring (1) (2)	2	-
218 083	Screw (1)	4	-
218 085	Gearbox housing	1	-
218 086	Screw (1)	4	-
218 087	Bearing hub	1	0.2
218 088	Lip seal (1)	1	-
218 089	Retainer ring (1)	1	-
218 090	Pre-engage piston	1	0.2
218 091	Split ring (1)	2	-
218 092	Starter drive	1	1.3
218 098	O-ring (1)	1	-
218 099	O-ring (1)	1	-
218 100	Thrust washer (1)	2	-
218 101	O-ring (1)	1	-
218 102	O-ring (1)	1	-
218 103	Compression ring	1	0.1
218 237	Dowel pin	1	-

Air starter



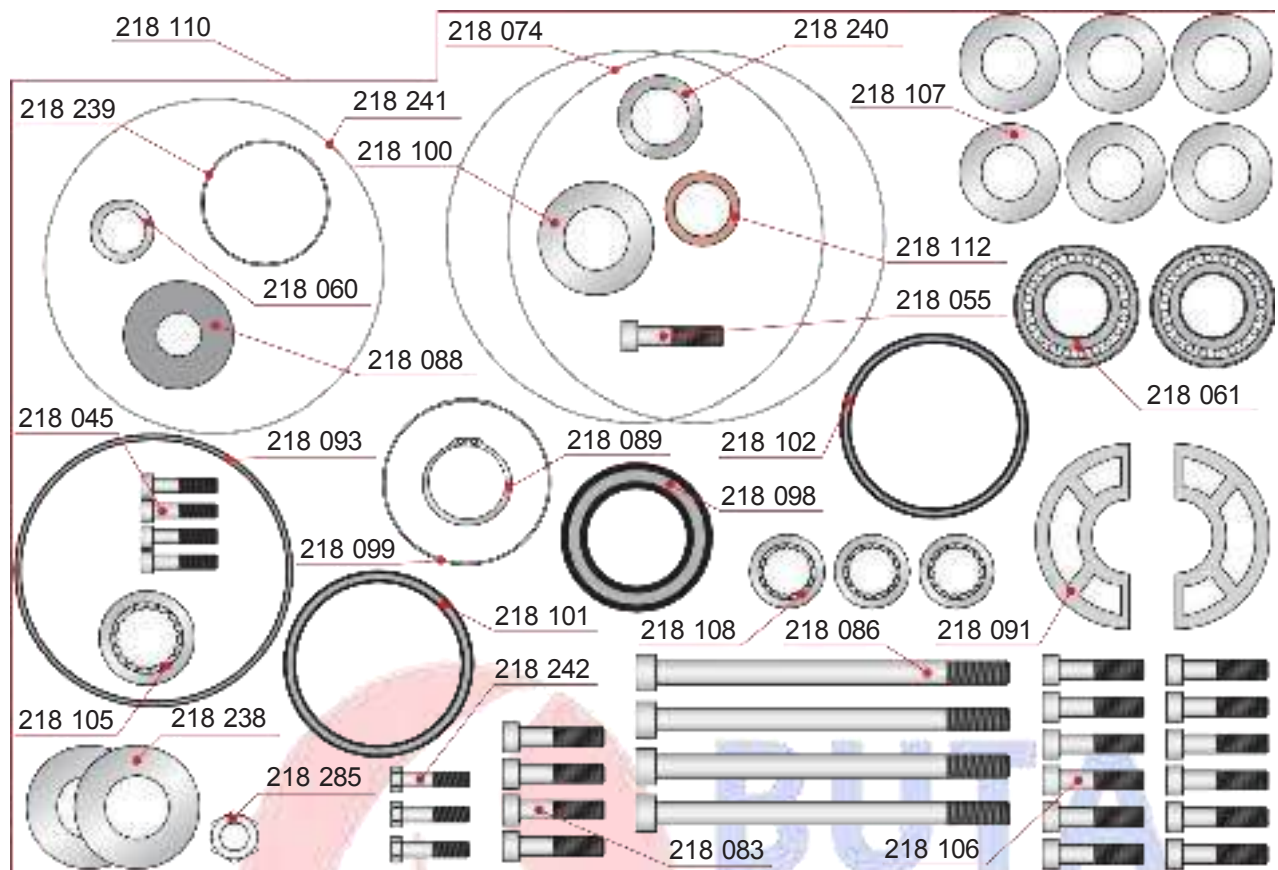
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 093	O-ring (1) (2)	1	-
218 104	Drive housing	1	-
218 105	Roller bearing (1)	1	-
218 106	Screw (1)	12	-

Air starter

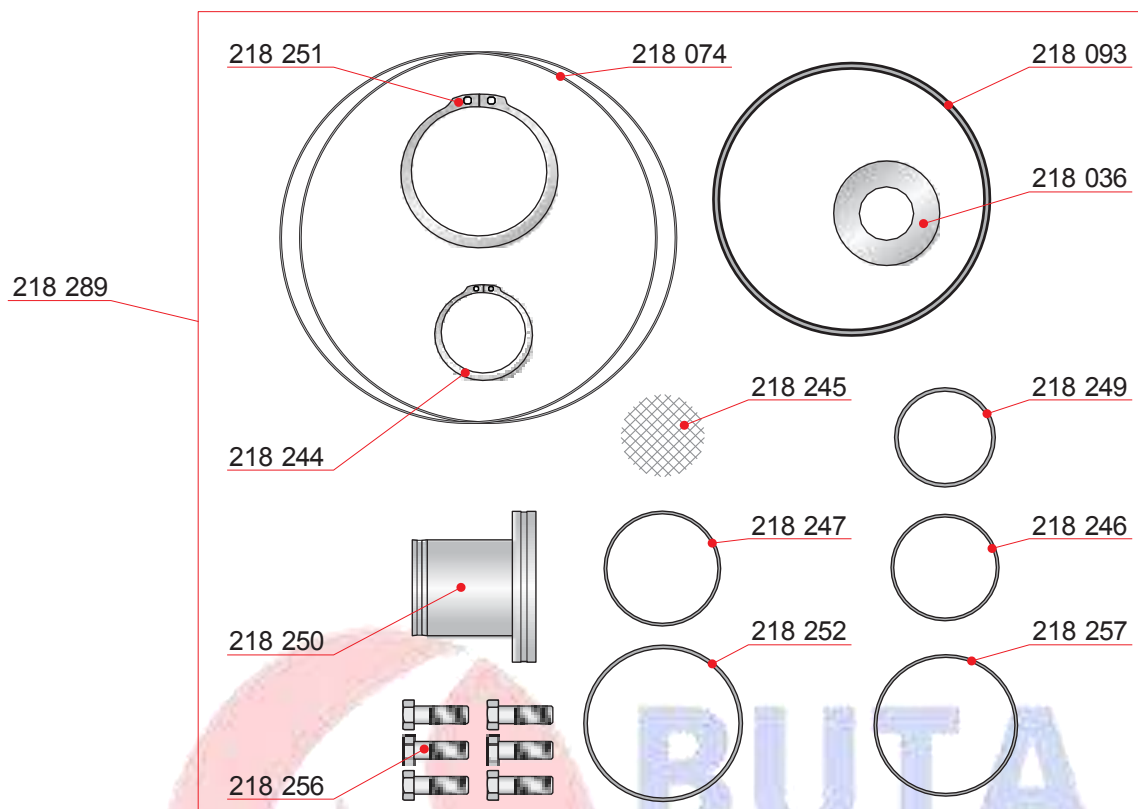


Part No.	Description	Qty [Pcs]	Wt [Kg]
218 255	Relay valve	1	-
218 036	Shock dampener (2)	1	-
218 037	O-ring cap	1	-
218 046	Compression ring	1	-
218 243	Housing	1	-
218 244	Retainer ring (2)	1	-
218 245	Screen plate (2)	1	-
218 246	O-ring (2)	1	-
218 247	O-ring (2)	1	-
218 248	Piston	1	-
218 249	O-ring (2)	1	-
218 250	End cap (2)	1	-
218 251	Retainer ring (2)	1	-
218 252	O-ring (2)	1	-
218 254	Screw	2	-
218 256	Screw (2)	6	-
218 257	O-ring (2)	1	-
CV321	Solenoid valve, starting air	1	-

Air starter

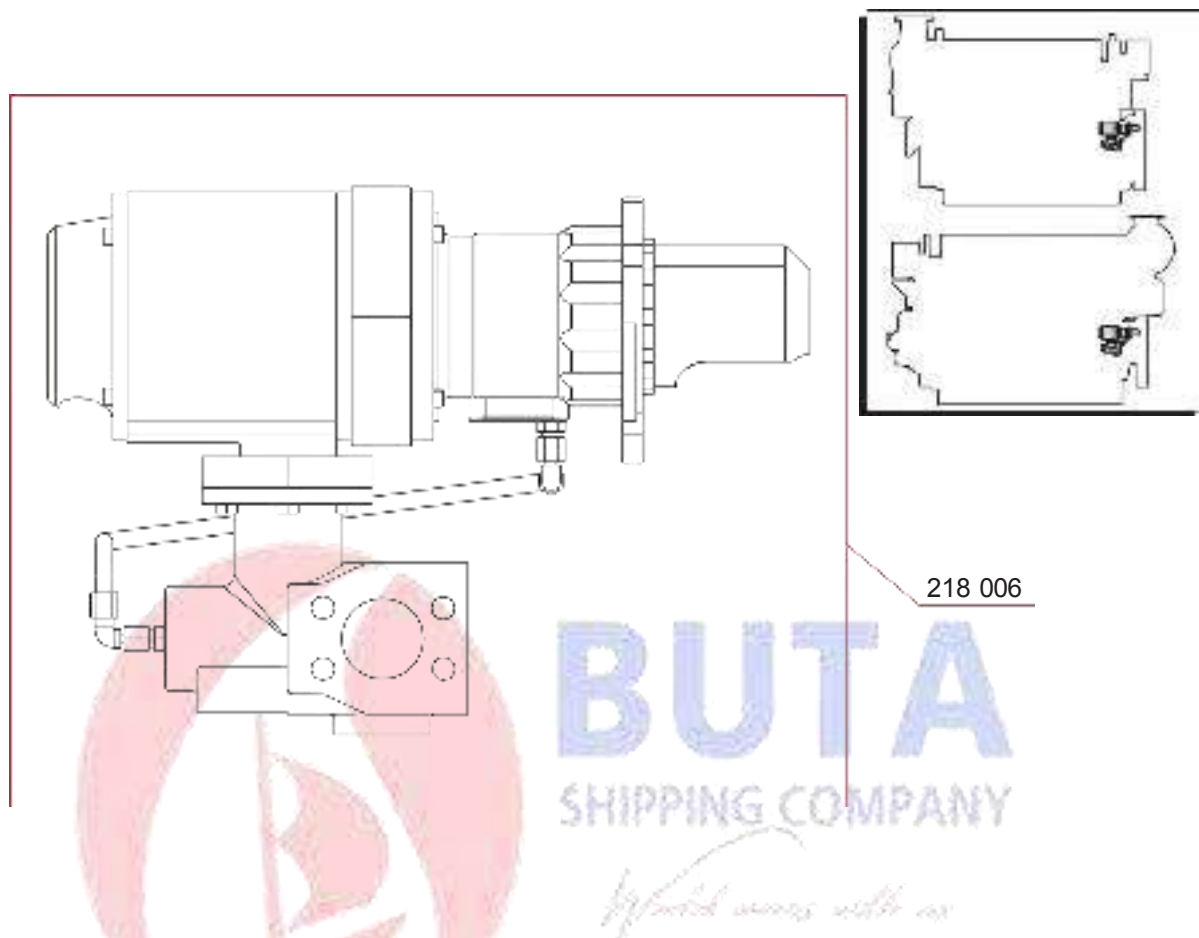


Air starter



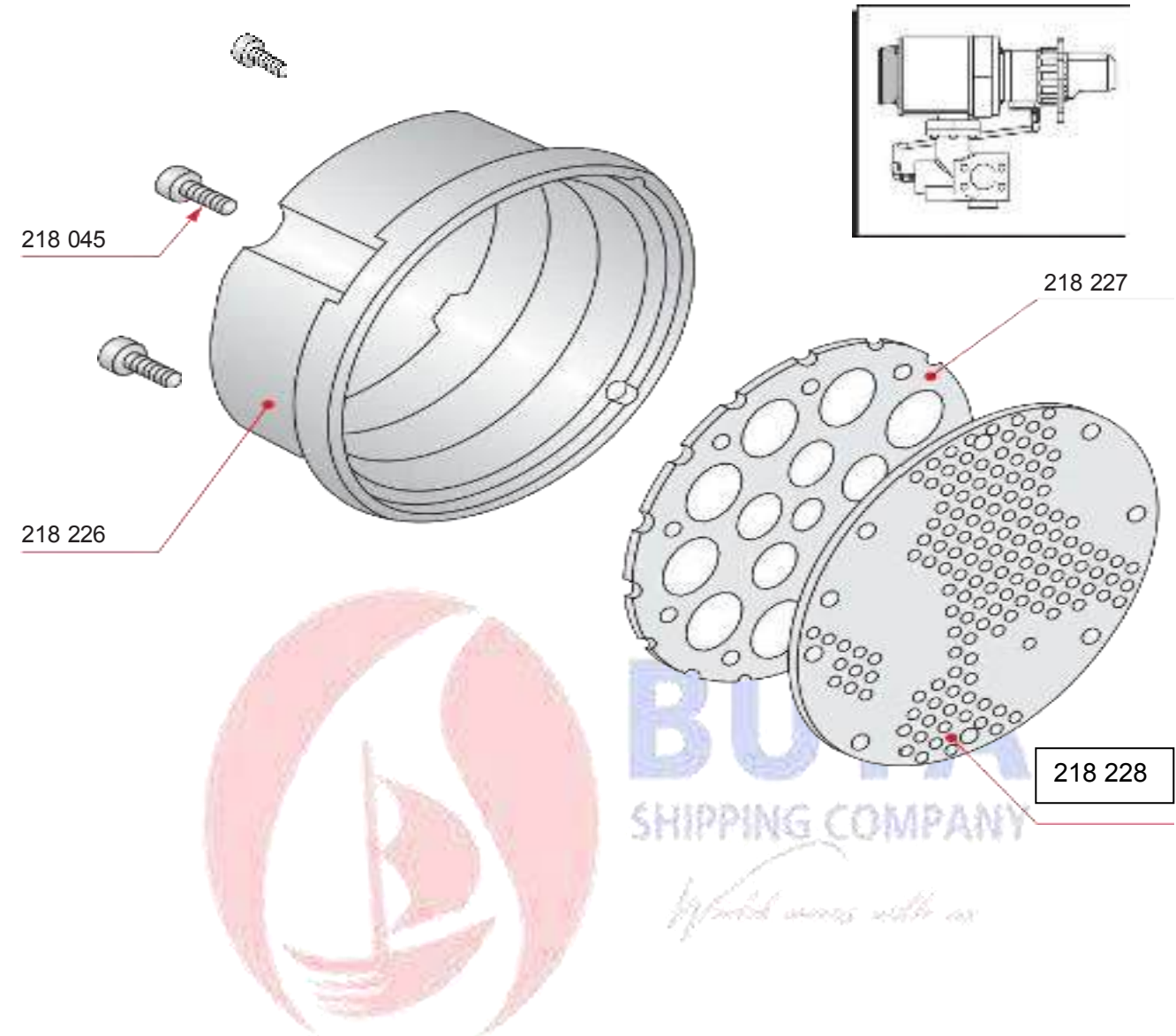
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 289	Kit for relay valve	1	-
218 036	Shock dampener	1	-
218 074	O-ring	2	-
218 093	O-ring	1	-
218 244	Retainer ring	1	-
218 245	Screen plate	1	-
218 246	O-ring	1	-
218 247	O-ring	1	-
218 249	O-ring	1	-
218 250	End cap	1	-
218 251	Retainer ring	1	-
218 252	O-ring	1	-
218 256	Screw	6	-
218 257	O-ring	1	-

Air starter



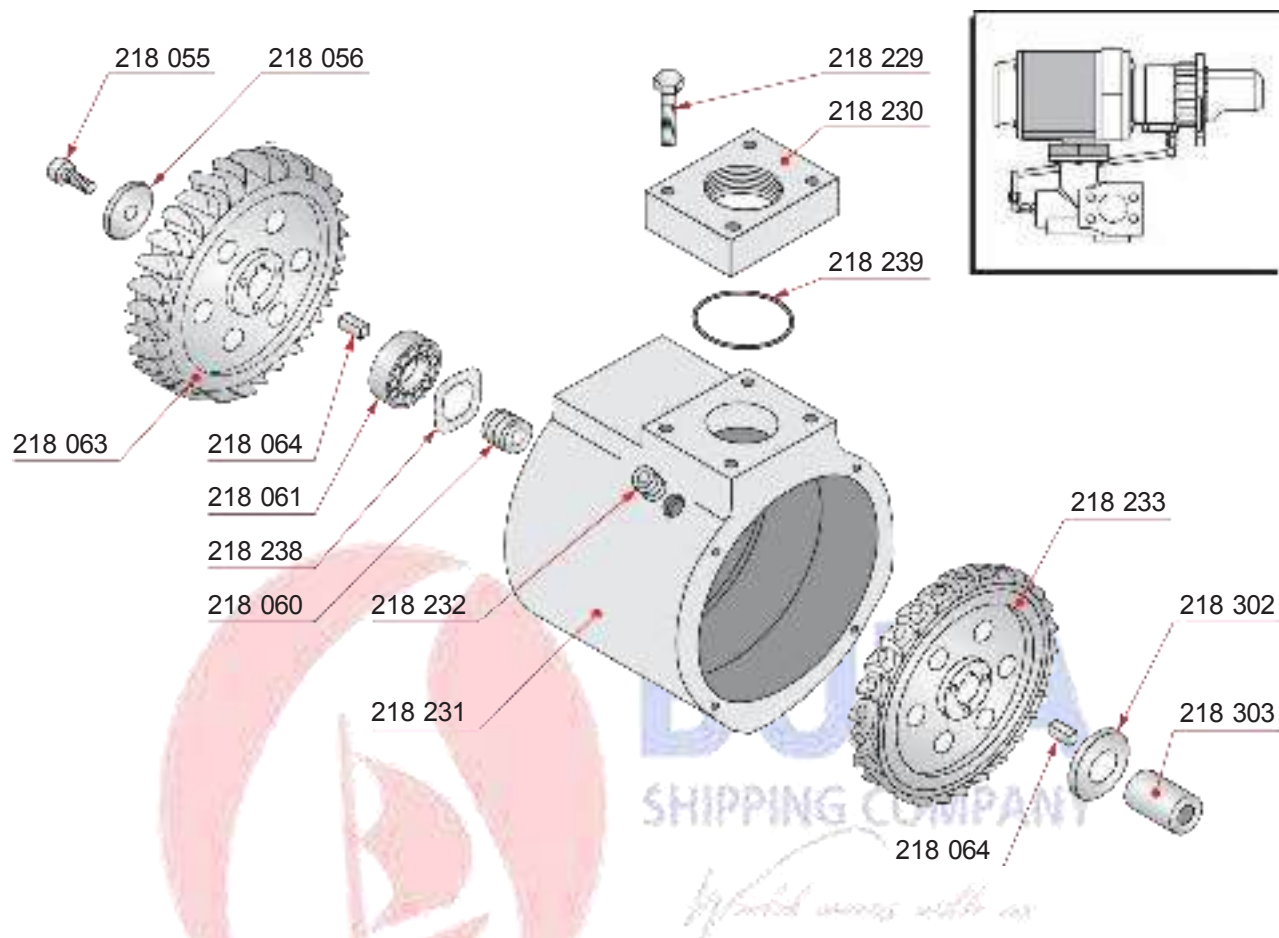
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 006	Starting motor	1	-

Air starter



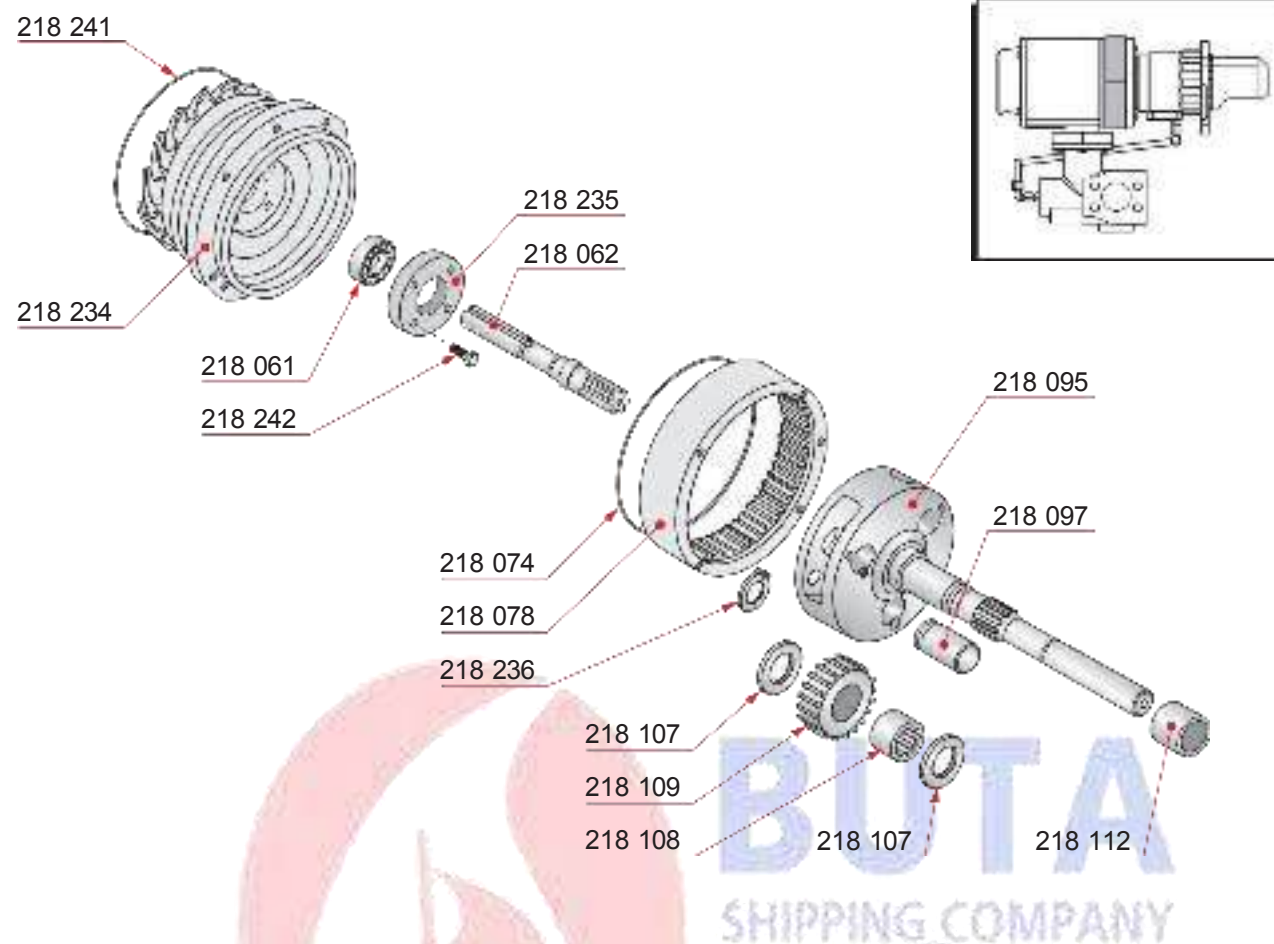
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 045	Screw (1)	4	-
218 226	Exhaust deflector	1	2
218 227	Exhaust support	1	0.5
218 228	Exhaust guard	1	0.5

Air starter



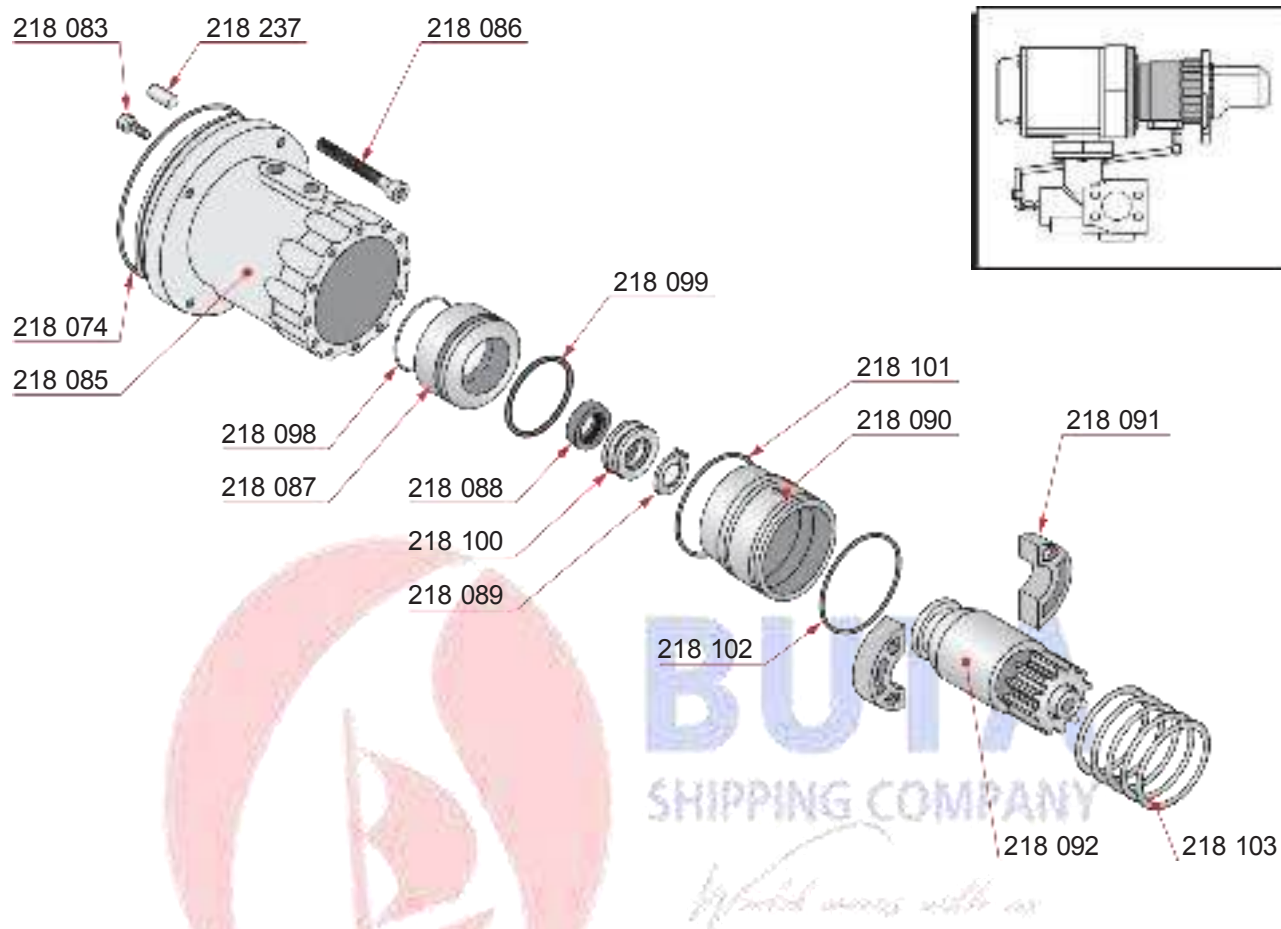
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 055	Screw (1)	1	-
218 056	Rotor washer	1	-
218 060	Bearing spacer (1)	1	-
218 061	Bearing (1)	2	-
218 063	Turbine rotor	1	0.9
218 064	Key (1)	2	-
218 229	Screw	4	-
218 230	Adapter	1	0.2
218 231	Containment	1	2.3
218 232	Plug	1	-
218 233	Turbine rotor	1	0.9
218 238	Bearing pre-load spring (1)	2	-
218 239	O-ring (1)	1	-
218 302	Lip seal (1)	1	-
218 303	Bearing spacer (1)	1	-

Air starter



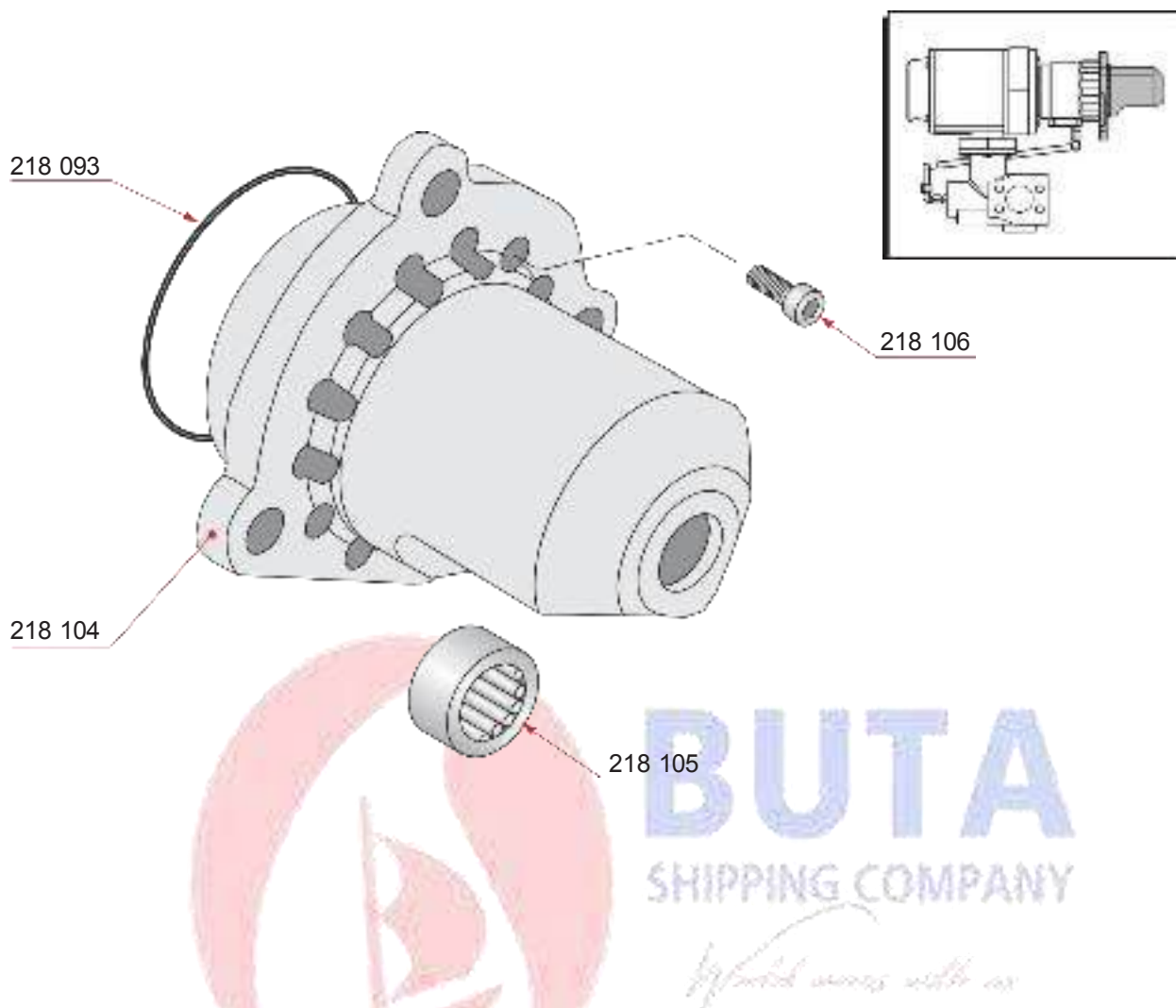
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 061	Bearing (1)	2	-
218 062	Turbine shaft	1	0.2
218 074	O-ring (1)	2	-
218 078	Ring gear	1	2.2
218 095	Carrier/Output shaft	1	1.5
218 097	Planet gear shaft	3	1.5
218 107	Gear spacer (1)	6	-
218 108	Needle bearing (1)	3	-
218 109	Planet gear	3	0.5
218 112	Oil impregnated bearing (1)	1	-
218 234	Turbine housing	1	0.8
218 235	Bearing retainer	1	-
218 236	Retainer ring	3	-
218 241	O-ring (1)	1	-
218 242	Screw (1)	4	-

Air starter



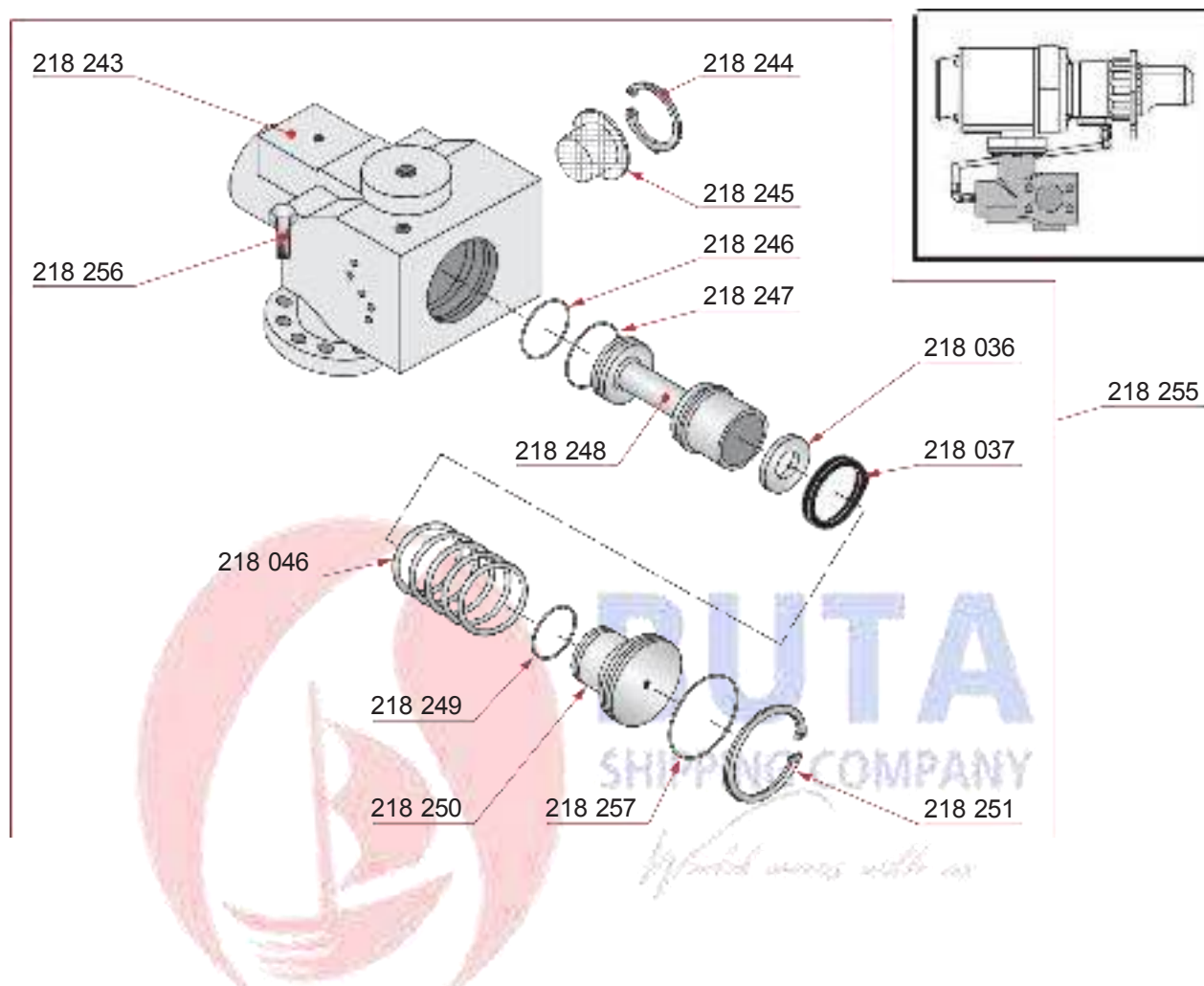
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 074	O-ring (1)	2	-
218 083	Screw (1)	4	-
218 085	Gearbox housing	1	2.3
218 086	Screw (1)	4	-
218 087	Bearing hub	1	0.2
218 088	Lip seal (1)	1	-
218 089	Retainer ring (1)	1	-
218 090	Pre-engage piston	1	0.2
218 091	Split ring (1)	2	-
218 092	Starter drive	1	1.3
218 098	O-ring (1)	1	-
218 099	O-ring (1)	1	-
218 100	Thrust washer (1)	2	-
218 101	O-ring (1)	1	-
218 102	O-ring (1)	1	-
218 103	Compression ring	1	0.1
218 237	Dowel pin	1	0.5

Air starter



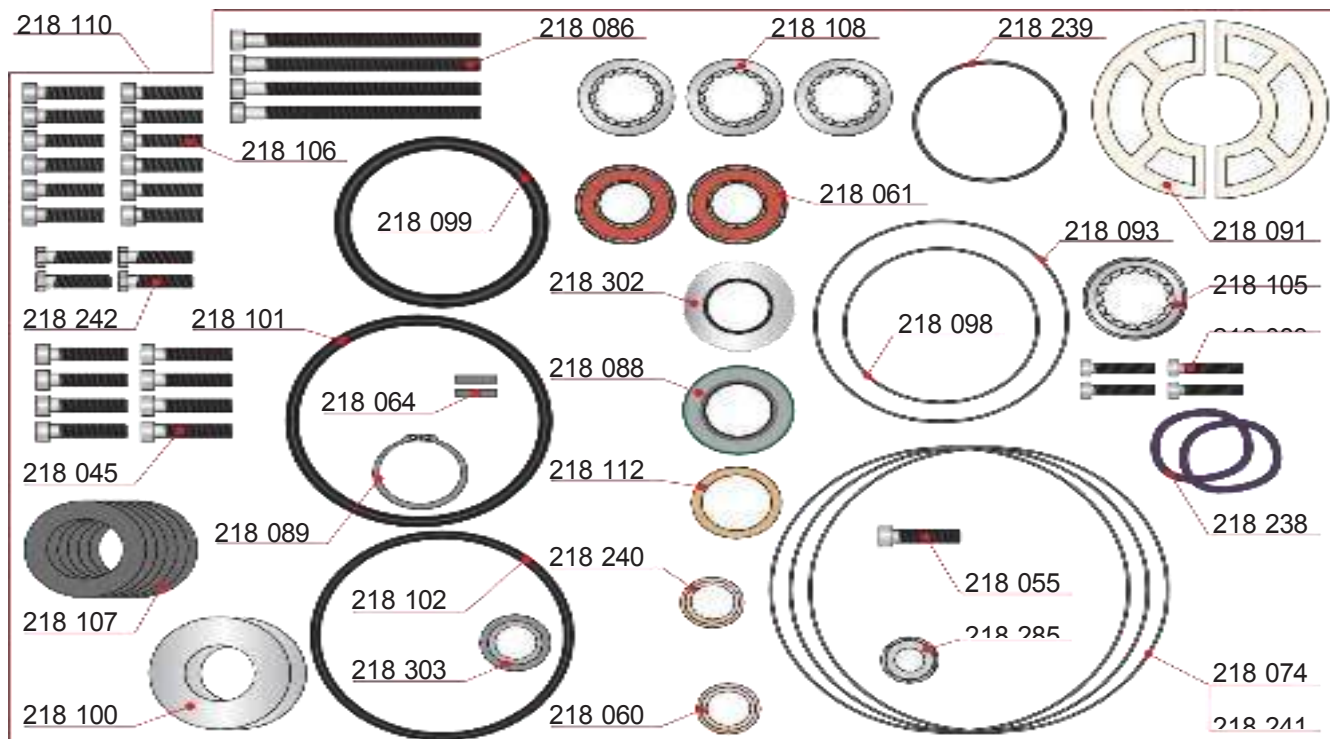
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 093	O-ring (1)	1	-
218 104	Drive housing	1	2.3
218 105	Roller bearing (1)	1	-
218 106	Screw (1)	12	-

Air starter



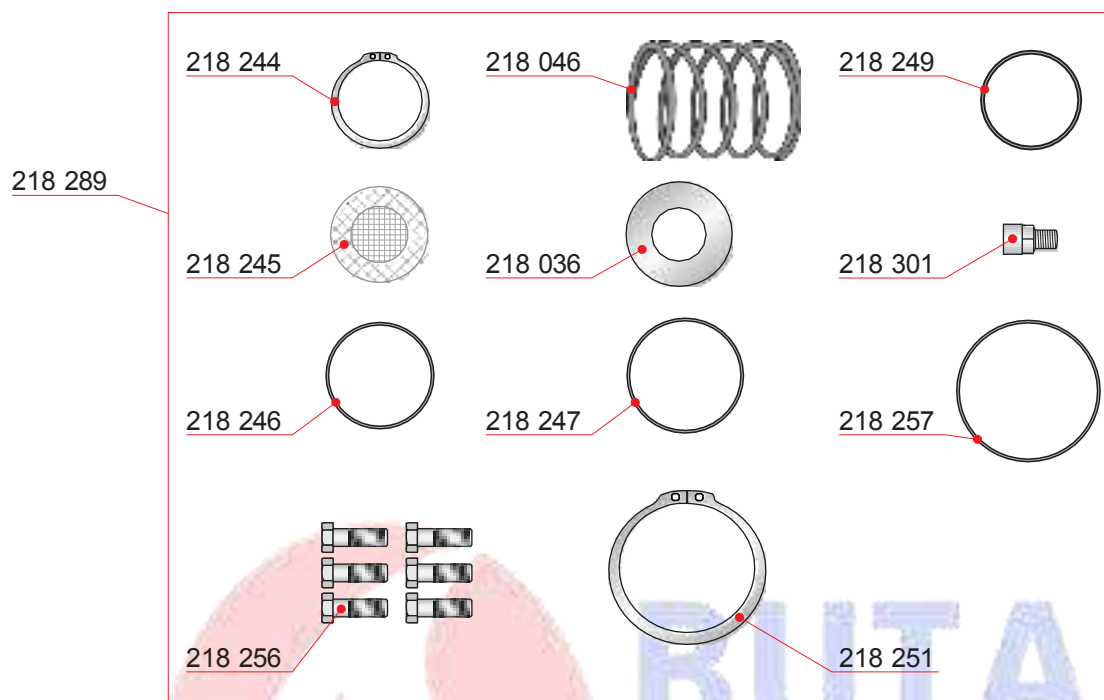
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 255	Relay valve	1	3.8
218 036	Shock dampener (2)	1	-
218 037	O-ring cap	1	-
218 046	Compression ring (2)	1	-
218 243	Housing	1	1.8
218 244	Retainer ring (2)	1	-
218 245	Screen plate (2)	1	-
218 246	O-ring (2)	1	-
218 247	O-ring (2)	1	-
218 248	Piston	1	0.3
218 249	O-ring (2)	1	-
218 250	End cap	1	-
218 251	Retainer ring (2)	1	-
218 256	Screw (2)	6	-
218 257	O-ring (2)	1	-

Air starter



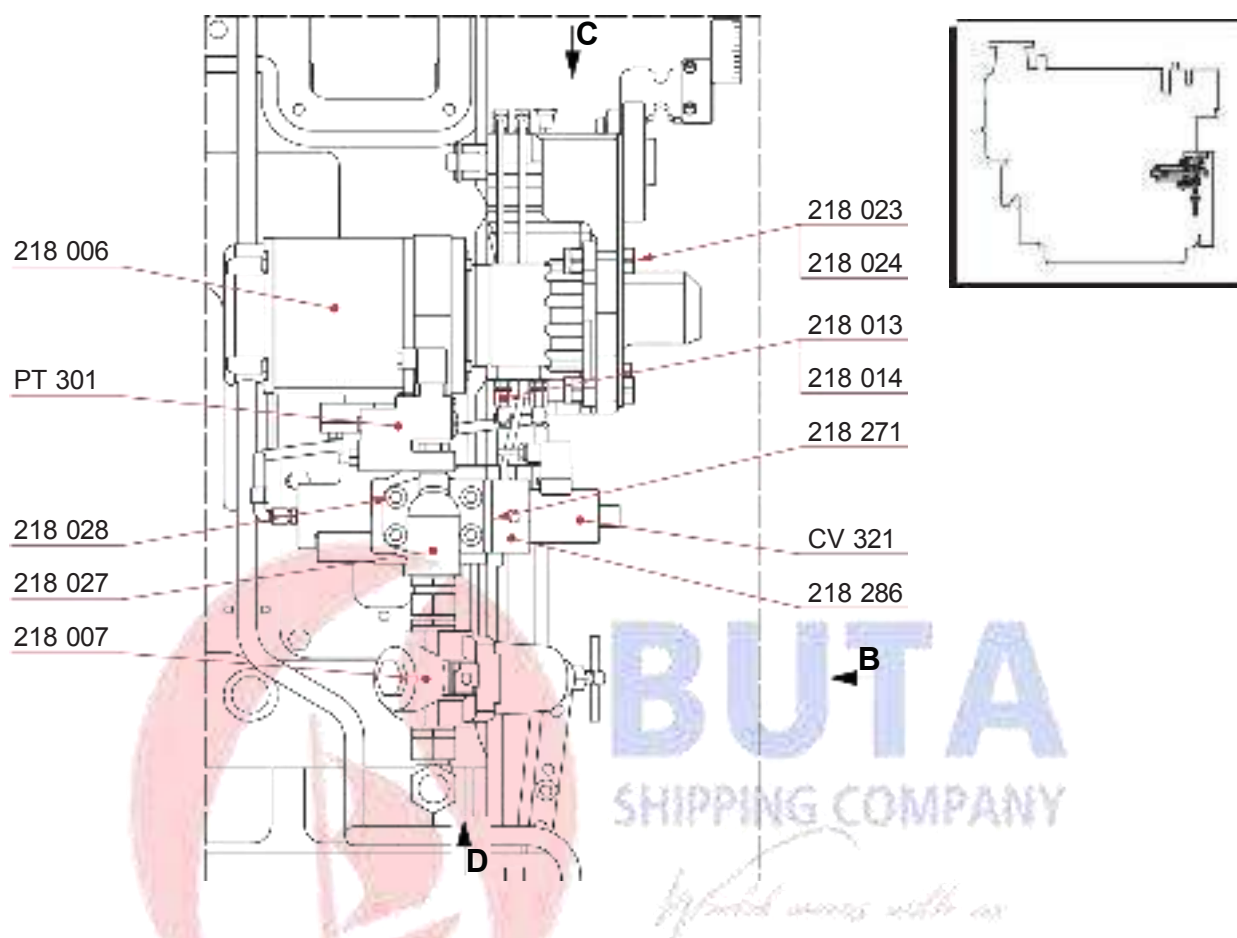
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 110	Overhaul kit	1	1.8
218 045	Screw	8	-
218 055	Screw	1	-
218 060	Bearing spacer	1	-
218 061	Bearing	2	-
218 064	Key	2	-
218 074	O-ring	2	-
218 083	Screw	4	-
218 086	Screw	4	-
218 088	Lip seal	1	-
218 089	Retainer ring	1	-
218 091	Split ring	2	-
218 093	O-ring	1	-
218 098	O-ring	1	-
218 099	O-ring	1	-
218 100	Thrust washer	2	-
218 101	O-ring	1	-
218 102	O-ring	1	-
218 105	Roller bearing	1	-
218 106	Screw	12	-
218 107	Gear spacer	6	-
218 108	Needle bearing	3	-
218 112	Oil impregnated bearing	1	-
218 238	Bearing pre-load spring	2	-
218 239	O-ring	1	-
218 240	Spacer (1)	1	-
218 241	O-ring	1	-
218 242	Screw	4	-
218 285	Nut	1	-
218 302	Lip seal	1	-
218 303	Bearing spacer	1	-

Air starter



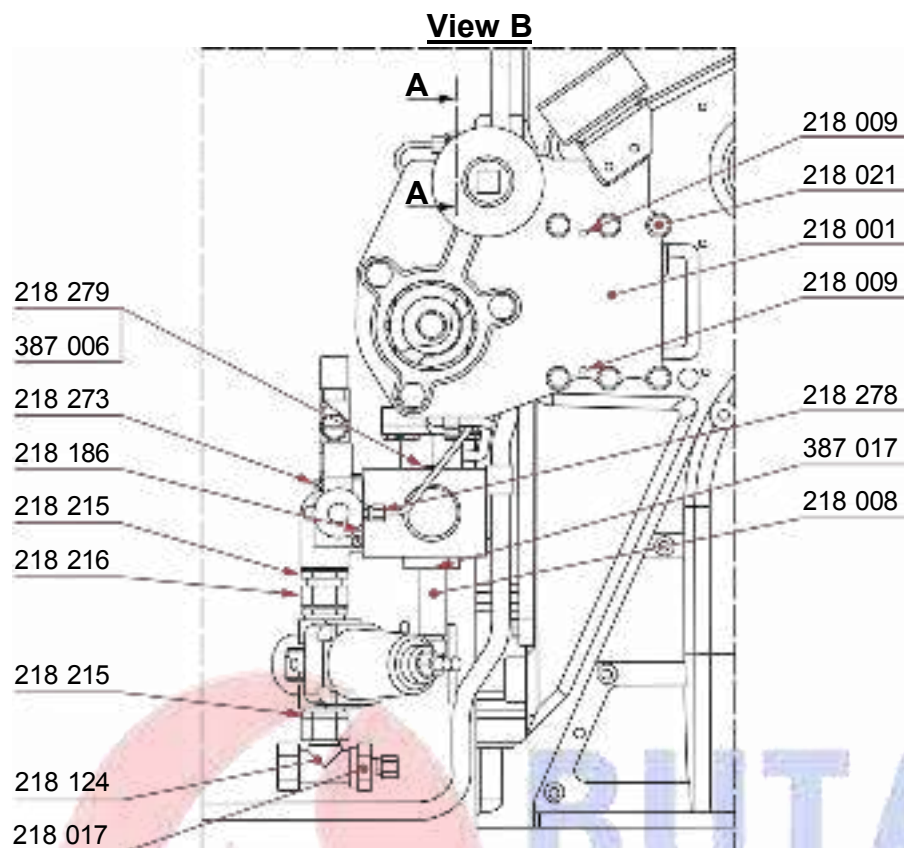
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 289	Kit for relay valve	1	0.3
218 036	Shock dampener	1	-
218 046	Compression ring	1	-
218 244	Retainer ring	1	-
218 245	Screen plate	1	-
218 246	O-ring	1	-
218 247	O-ring	1	-
218 249	O-ring	1	-
218 251	Retainer ring	1	-
218 256	Screw	6	-
218 257	O-ring	1	-
218 301	Vent plug	1	-

Starting air system



Part No.	Description	Qty	
		[Pcs]	Wt [Kg]
218 006	Starting motor	1	21.2
218 007	Pressure regulating valve	1	2.1
218 013	Pipe union	1	-
218 014	Pipe union	1	-
218 023	Screw	3	0.1
218 024	Nut	3	-
218 027	Pipe union	1	1.8
218 028	Screw	4	-
218 271	O-ring	1	-
218 286	Valve body	1	0.4
CV321	Solenoid valve, starting air	1	2
PT301	Pressure transducer, starting air	1	-

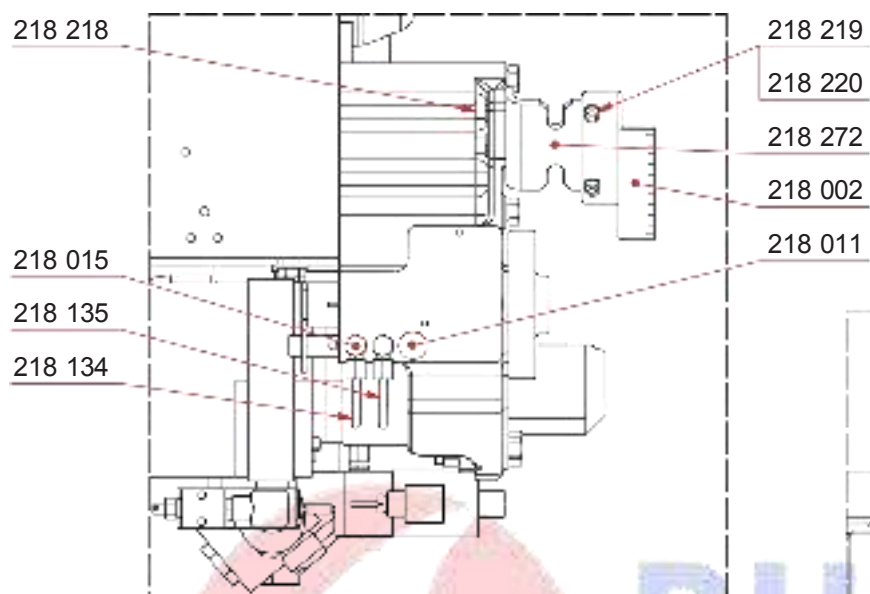
Starting air system



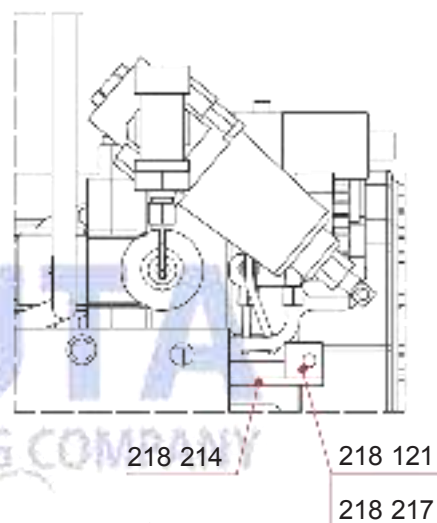
Part No.	Description	Qty [Pcs]	Wt [Kg]
218 001	Bracket	1	18.8
218 008	Relief valve	1	0.4
218 009	Pin	2	-
218 017	Pipe union	1	0.2
218 021	Screw	6	0.1
218 124	Pipe union	1	-
218 186	O-ring	1	-
218 215	Pipe union	2	0.1
218 216	Pipe union	1	0.3
218 273	Screw	2	-
218 278	Pipe union	1	-
218 279	Plug	1	-
387 006	Glue compound	1	-
387 017	Glue compound	1	-

Starting air system

View C



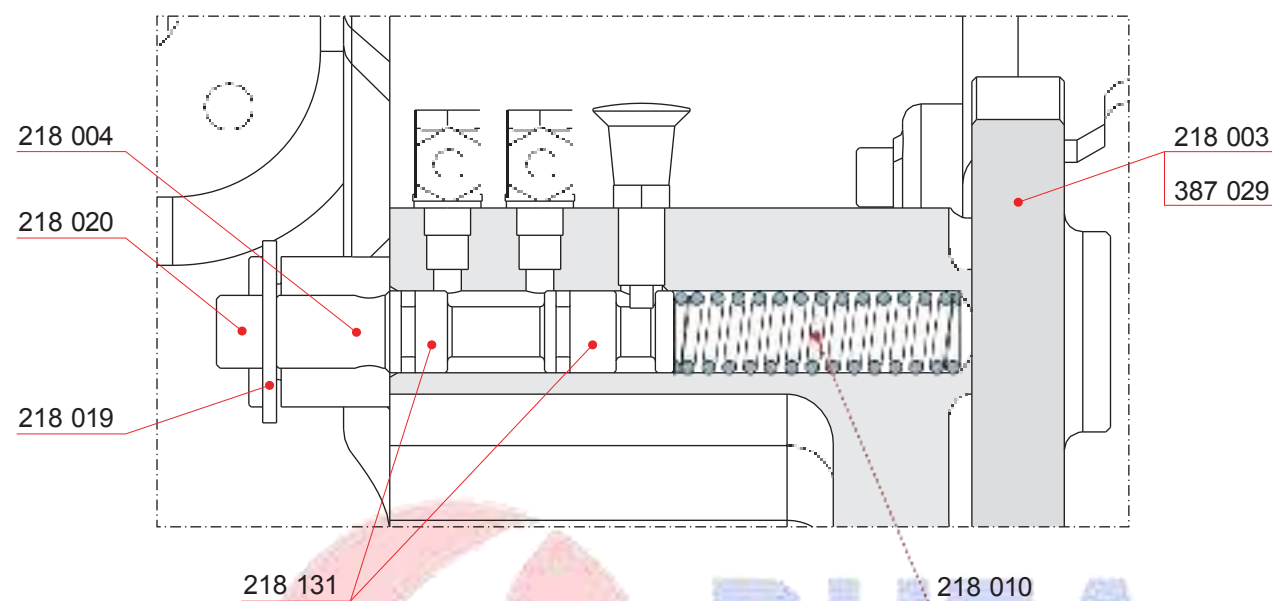
View D



Part No.	Description	Qty [Pcs]	Wt [Kg]
218 002	Indicating device	1	-
218 011	Pin	1	-
218 015	Pipe union	2	-
218 121	Screw	1	-
218 134	Pipe	1	-
218 135	Pipe	1	0.1
218 214	Supporting plate	1	-
218 217	Pipe clamp	1	-
218 218	Screw	2	-
218 219	Screw	2	0.3
218 220	Washer	2	-
218 272	Bracket	1	0.4

Starting air system

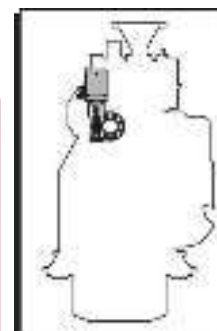
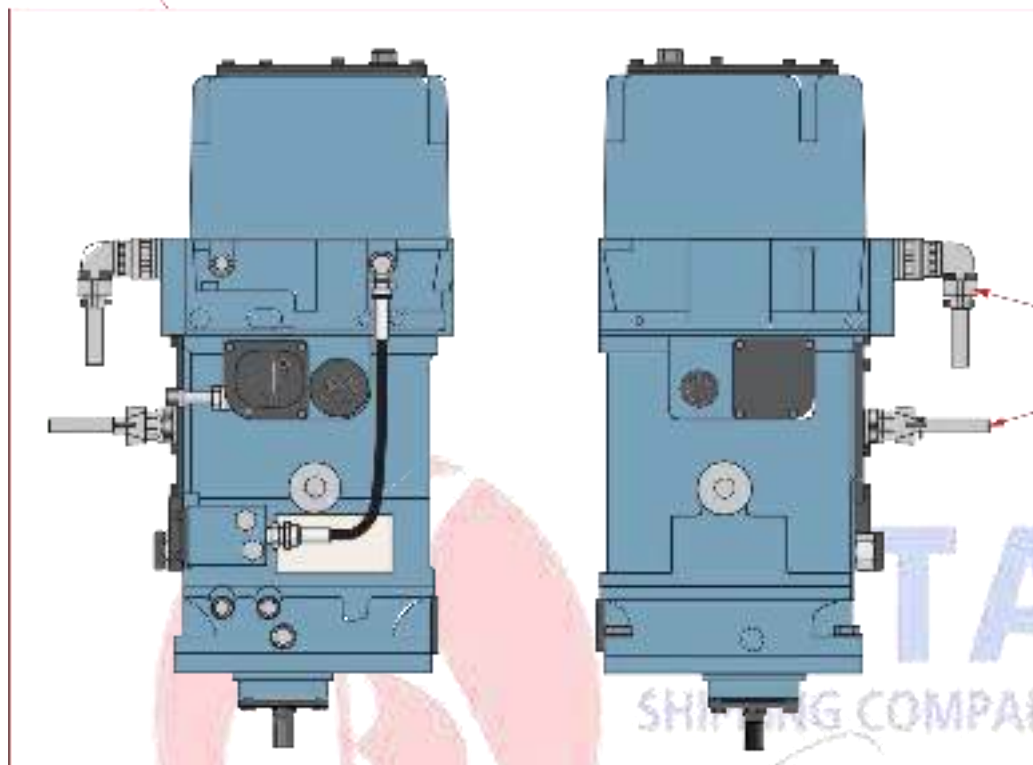
Section D-D



Part No.	Description	Qty [Pcs]	Wt [Kg]
218 003	Rotating gear	1	2.5
218 004	Spindle	1	0.1
218 010	Spring	1	-
218 019	Washer	1	-
218 020	Screw	1	-
218 131	O-ring	2	-
387 029	Lubricant	1	-

Governor

220 001



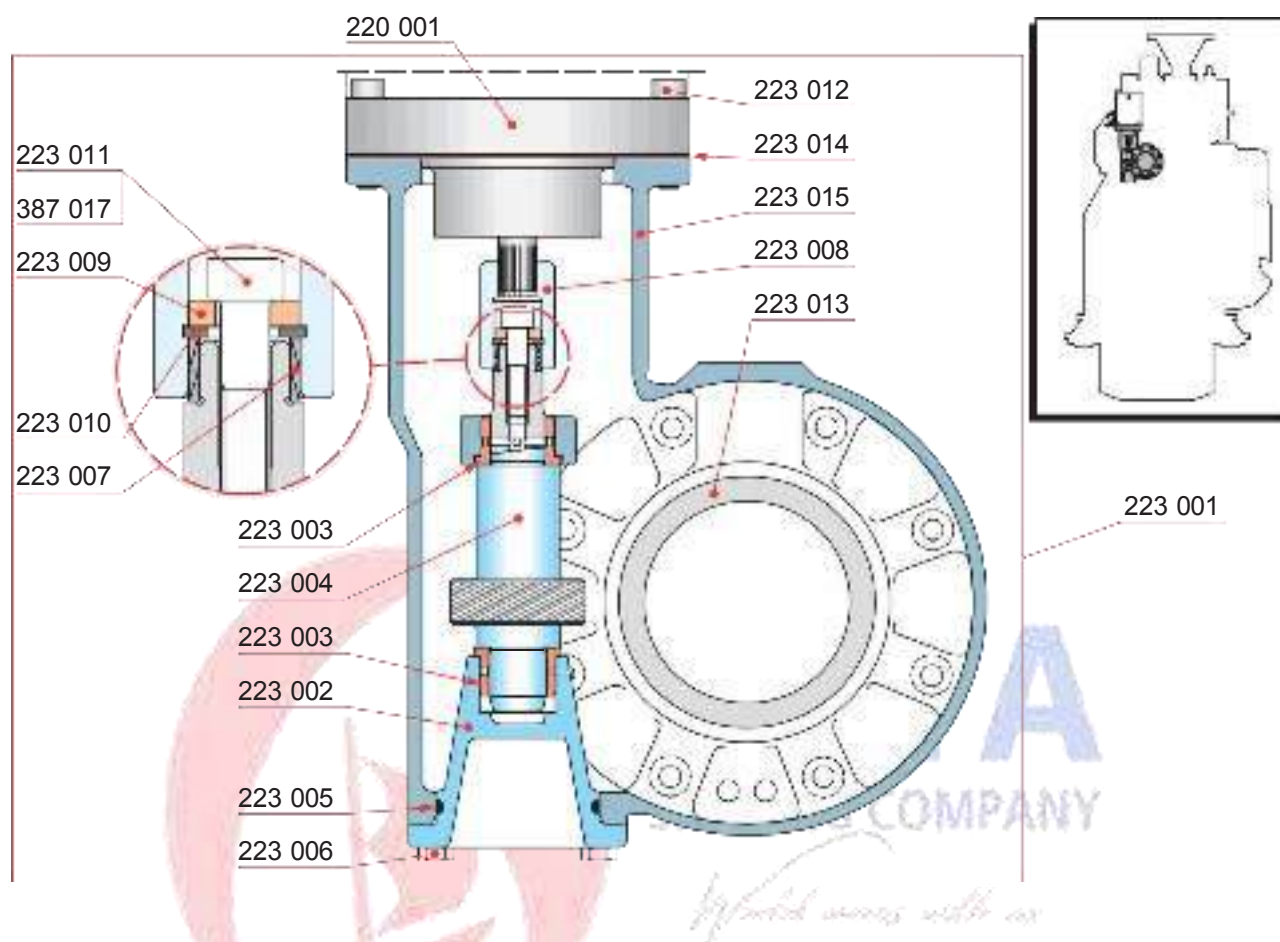
220 059

220 060

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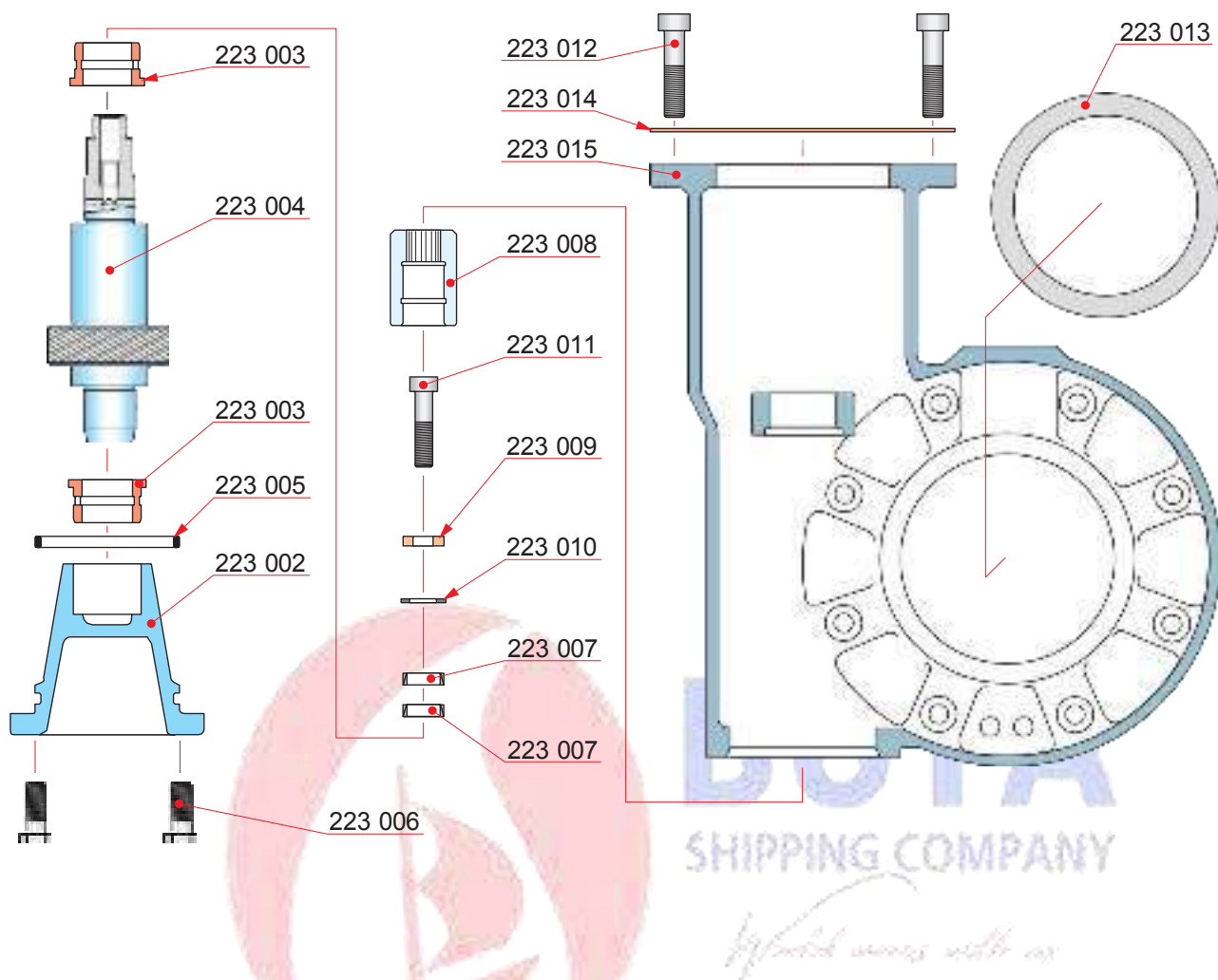
Part No.	Description	Qty [Pcs]	Wt [Kg]
220 001	Governor	1	24
220 059	Cable set	1	-
220 060	Cable set	1	-

Governor drive



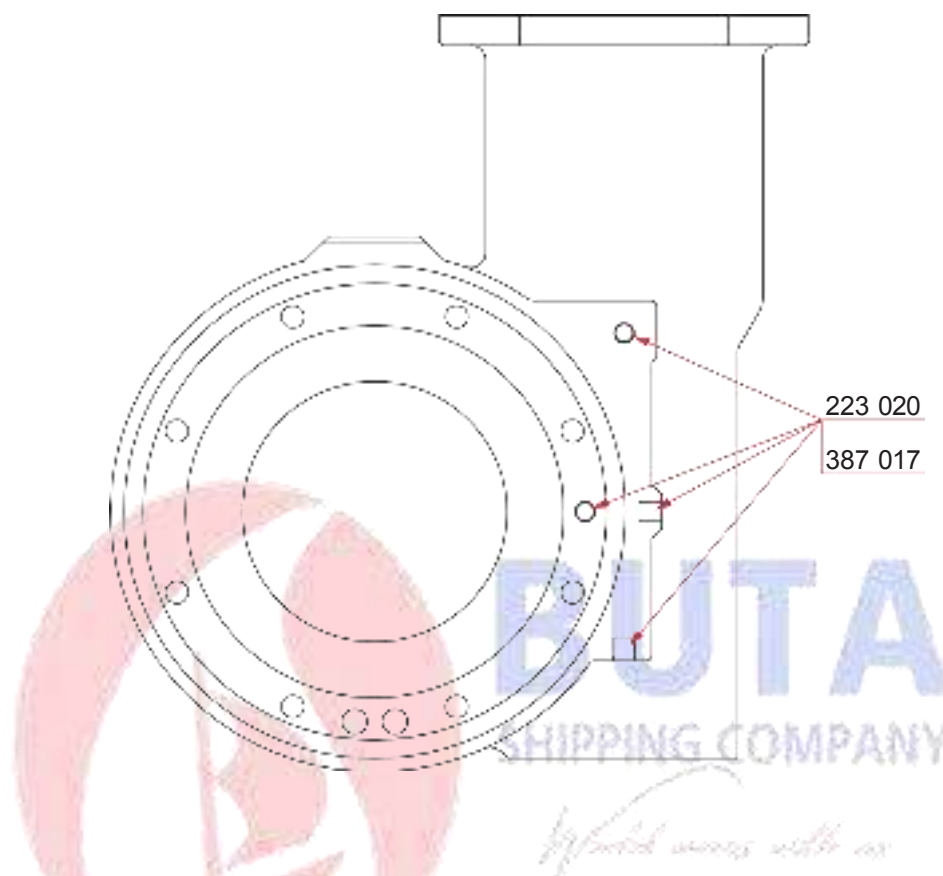
Part No.	Description	Qty [Pcs]	Wt [Kg]
223 001	Governor drive	1	19.1
223 002	Bearing housing	1	1.4
223 003	Bearing bush	2	-
223 004	Shaft	1	0.9
223 005	O-ring	1	-
223 006	Screw	4	-
223 007	Pair of friction rings	2	0.2
223 008	Coupling	1	0.2
223 009	Washer	1	-
223 010	Retainer ring	1	-
223 011	Screw	1	-
223 012	Screw	4	-
223 013	Thrust bearing bush	2	0.5
223 014	Gasket	1	-
223 015	Bracket	1	-
387 017	Glue compound	1	-

Governor drive



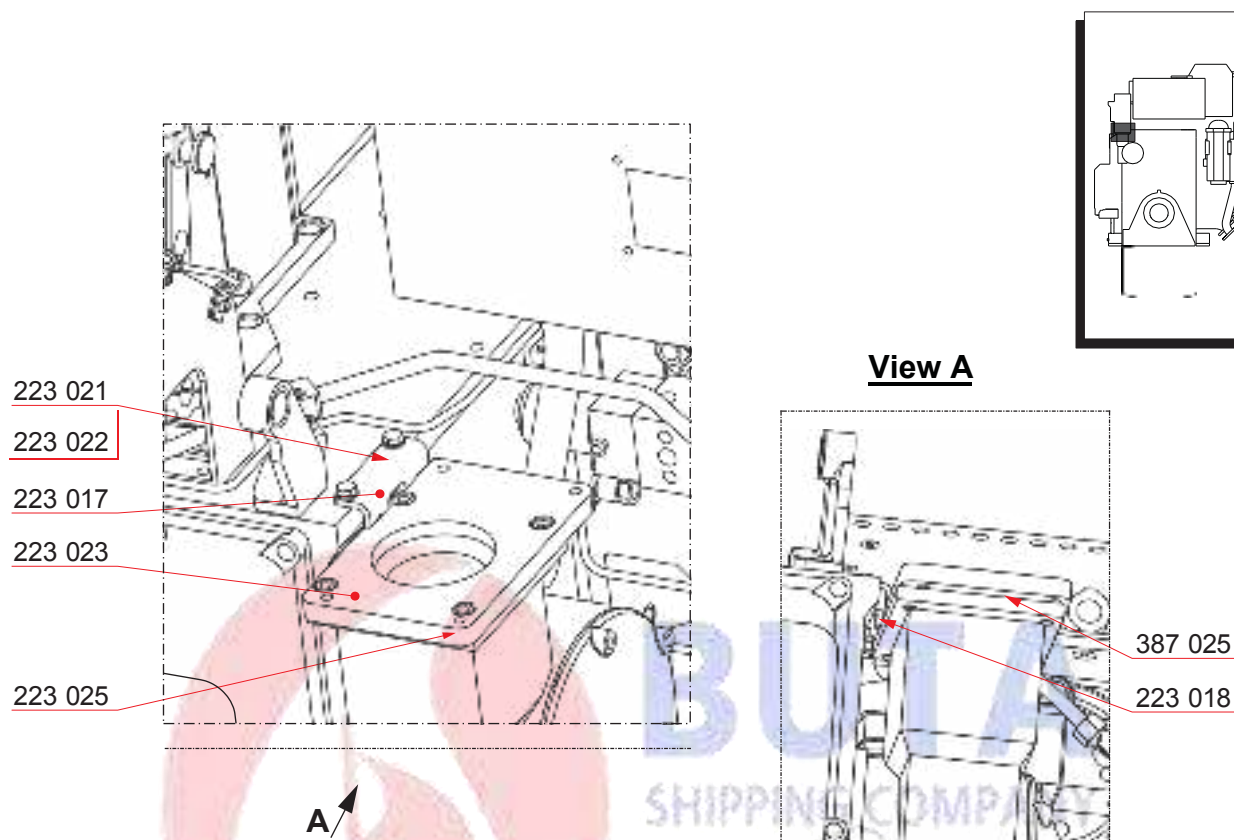
Part No.	Description	Qty [Pcs]	Wt [Kg]
223 002	Bearing housing	1	1.4
223 003	Bearing bush	2	-
223 004	Shaft	1	0.9
223 005	O-ring	1	-
223 006	Screw	4	-
223 007	Pair of friction rings	2	-
223 008	Coupling	1	0.2
223 009	Washer	1	-
223 010	Retainer ring	1	-
223 011	Screw	1	-
223 012	Screw	4	-
223 013	Thrust bearing bush	2	0.5
223 014	Gasket	1	-
223 015	Bracket	1	-

Governor drive



Part No.	Description	Qty [Pcs]	Wt [Kg]
223 020	Hexagon socket set screw	4	-
387 017	Glue compound	1	-

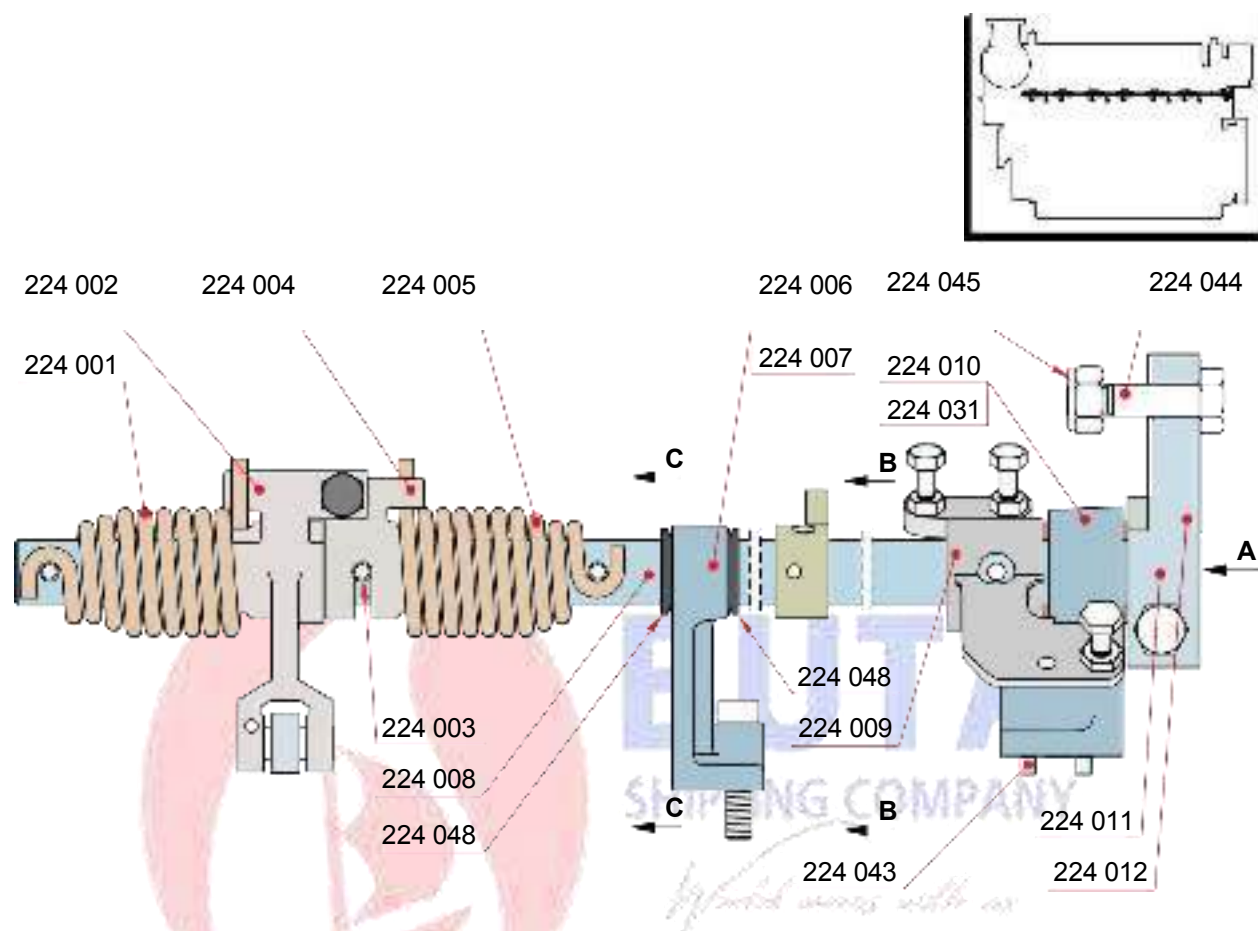
Bracket for actuator



Part No.	Description	[Pcs]	[Kg]
223 017	Bracket	1	0.2
223 018	Screw	2	-
223 021	Screw	2	-
223 022	Washer	2	-
223 023	Flange	1	3.5
223 025	Screw	4	-
387 025	Glue compound	1	-

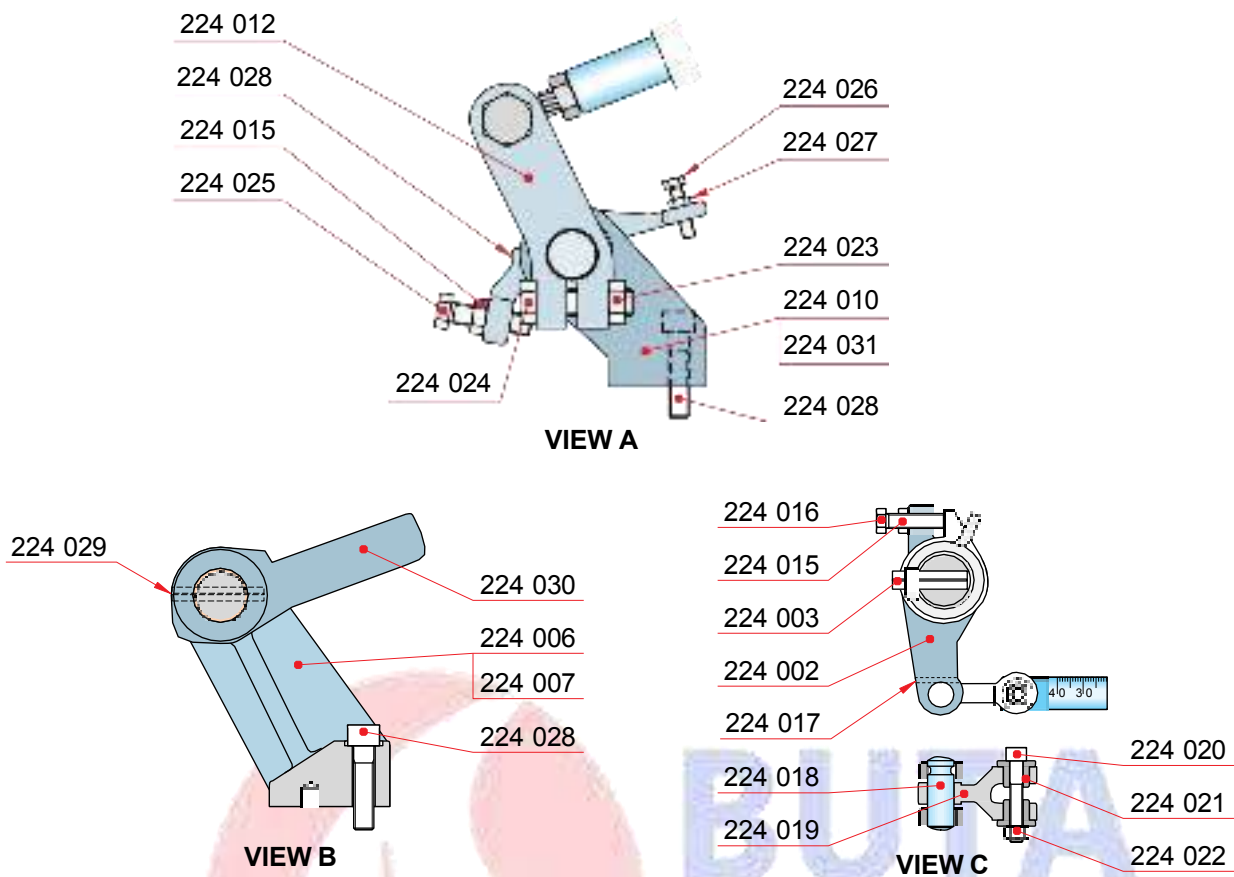
Hydraulic cylinder with air

Control shaft



Part No.	Description	Qty [Pcs]	Wt [Kg]
224 001	Torsional spring	*	0.2
224 002	Lever	*	-
224 003	Pin	*	-
224 004	Follower	*	0.2
224 005	Torsional spring	*	-
224 006	Bearing housing	*	0.8
224 007	Bearing bush	*	-
224 008	Control shaft	1	-
224 009	Load limiter	1	-
224 010	Bearing housing	1	0.7
224 031	Bearing bush	1	-
224 011	Pin	1	-
224 012	Lever	1	-
224 043	Pin	2	-
224 044	Screw	1	-
224 045	Nut	1	-
224 048	V-ring	*	-

Control shaft



Part No.	Description	Qty [Pcs]	Wt [Kg]
224 002	Lever	*	-
224 003	Pin	*	-
224 006	Bearing housing	*	0.8
224 007	Bearing bush	*	-
224 010	Bearing housing	1	0.7
224 031	Bearing bush	1	-
224 012	Lever	1	-
224 015	Nut	*	-
224 016	Screw	*	-
224 017	Pin	*	-
224 018	Shaft for lever	*	-
224 019	Lever	*	-
224 020	Screw	*	-
224 021	Sleeve for injection pump	*	-
224 022	Nut	*	-
224 023	Nut	1	-
224 024	Screw	1	-
224 025	Screw	1	-
224 026	Screw	2	-
224 027	Nut	2	-
224 028	Screw	*	-
224 029	Pin	2	-
224 030	Lever arm	1	1

Control shaft

Quantity according to number of cylinders

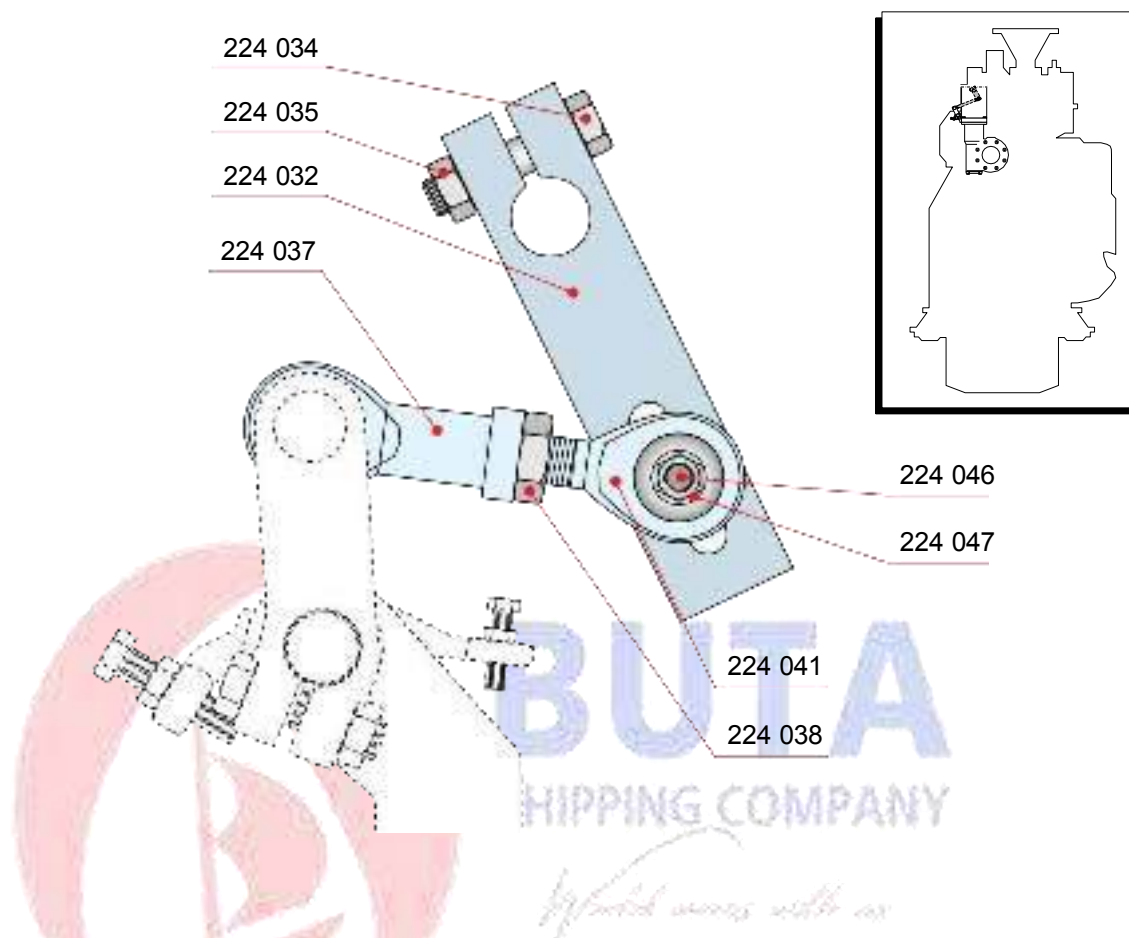
Part No	Pieces					Part No	Pieces				
	4L20	5L20	6L20	8L20	9L20		4L20	5L20	6L20	8L20	9L20
224 001	4	5	6	8	9	224 017	4	5	6	8	9
224 002	4	5	6	8	9	224 018	4	5	6	8	9
224 003	12	15	18	24	27	224 019	4	5	6	8	9
224 004	4	5	6	8	9	224 020	4	5	6	8	9
224 005	4	5	6	8	9	224 021	8	10	12	16	18
224 006	3	3	4	5	5	224 022	4	5	6	8	9
224 007	3	-	4	5	5	224 028	4	4	5	6	6
224 015	5	6	7	9	10	224 048	6	6	8	10	10
224 016	4	5	6	8	9						

Part No. Description Qty Wt.
[Pcs] [Kg]

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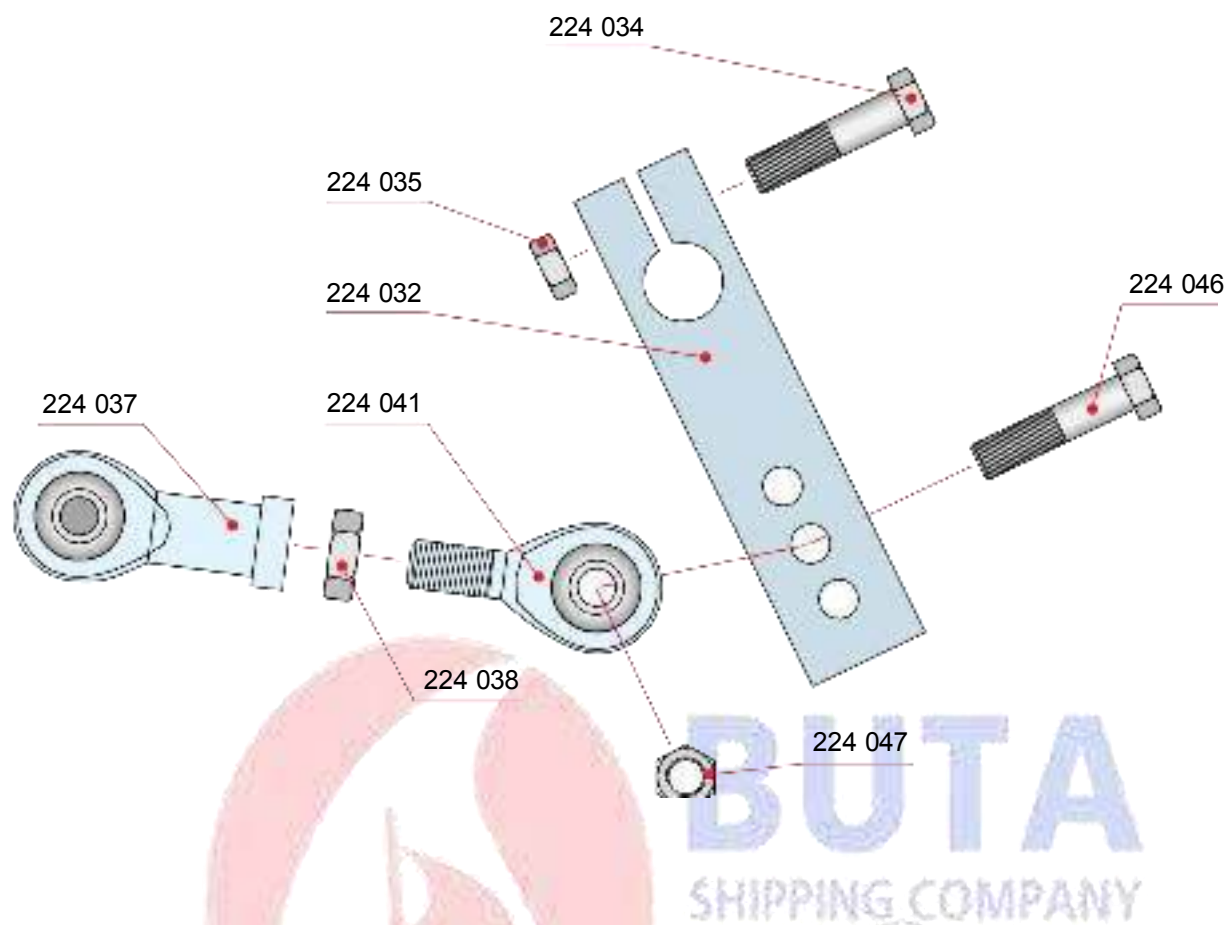
Part No. Description Qty Wt.
[Pcs] [Kg]

Adjustable link rod



Part No.	Description	Qty [Pcs]	Wt [Kg]
224 032	Lever	1	-
224 034	Screw	1	-
224 035	Nut	1	-
224 037	Ball joint, right	1	-
224 038	Nut, right-hand	1	-
224 041	Ball joint, left	1	-
224 046	Screw	1	-
224 047	Nut	1	-

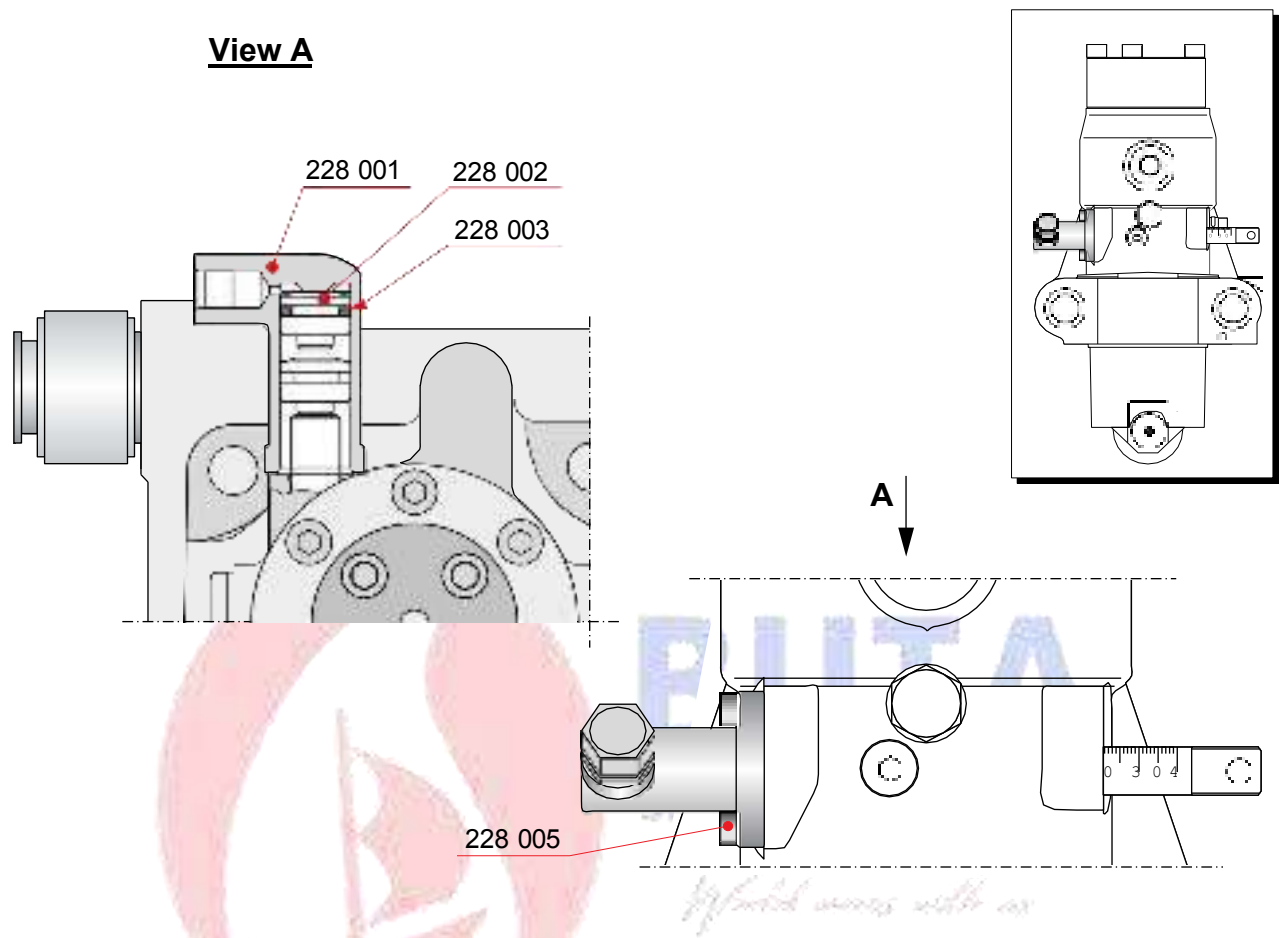
Adjustable link rod



Part No.	Description	Qty [Pcs]	Wt [Kg]
224 032	Lever	1	-
224 034	Screw	1	-
224 035	Nut	1	-
224 037	Ball joint, right	1	-
224 038	Nut, right-hand	1	-
224 041	Ball joint, left	1	-
224 046	Screw	1	-
224 047	Nut	1	-

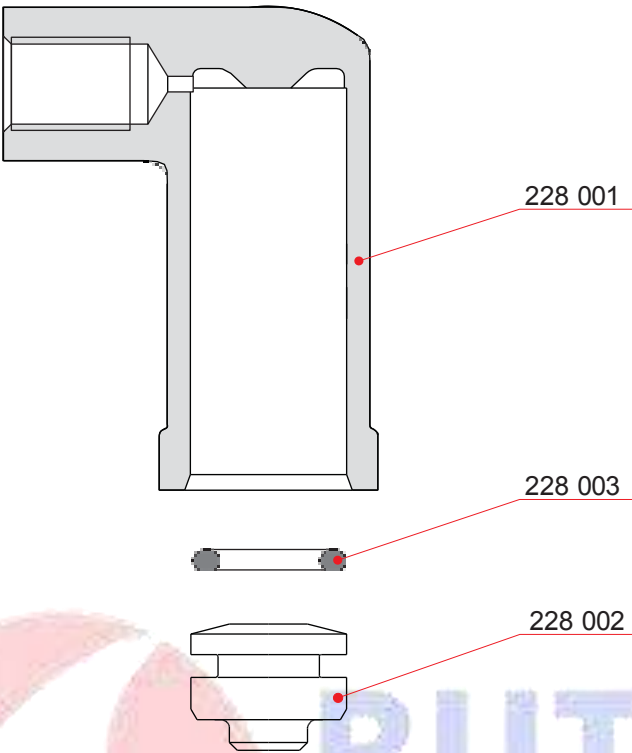
Pneumatic overspeed trip device

View A



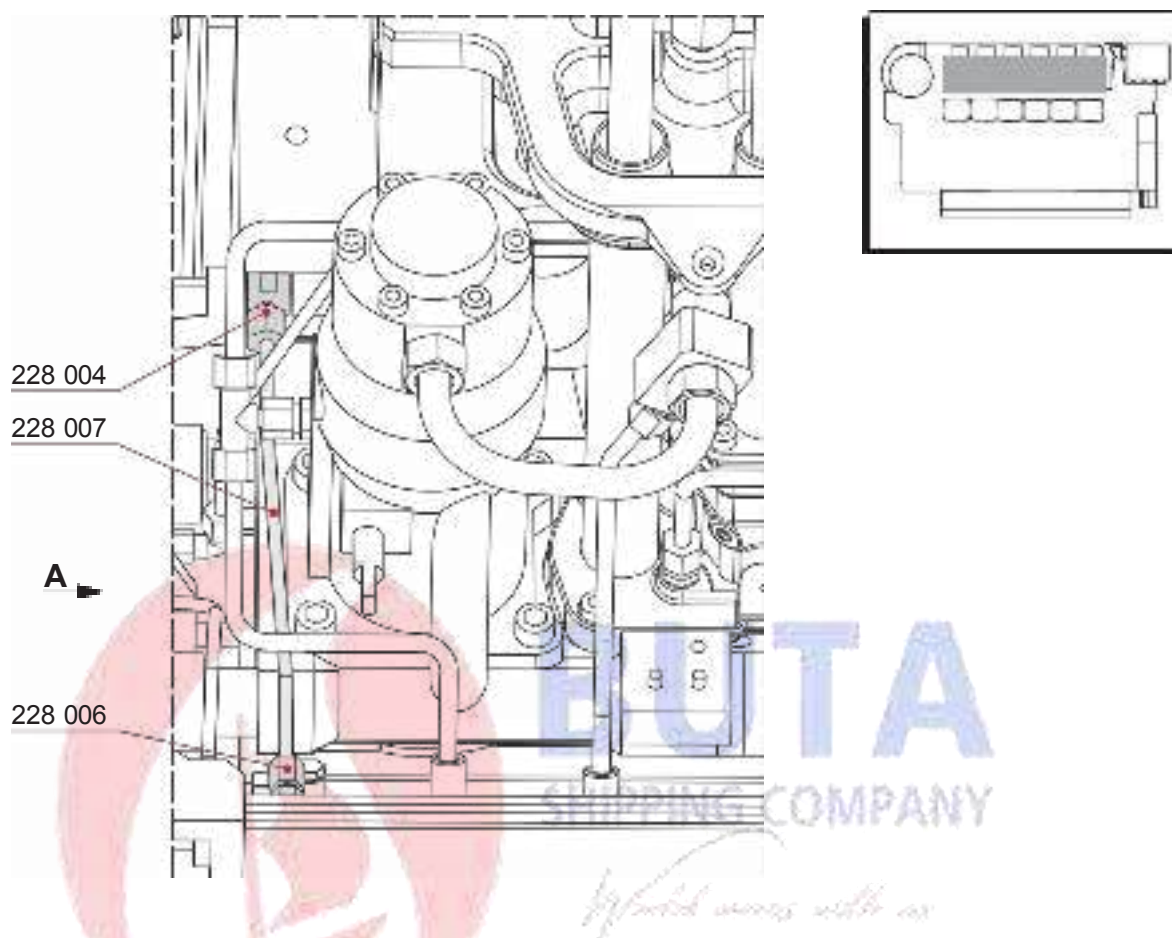
Part No.	Description	Qty [Pcs]	Wt [Kg]
228 001	Housing	1	-
228 002	Piston	1	-
228 003	Slide ring	1	-
228 005	Screw	2	-

Pneumatic overspeed trip device



Part No.	Description	Qty [Pcs]	Wt [Kg]
228 001	Housing	1	-
228 002	Piston	1	-
228 003	Slide ring	1	-

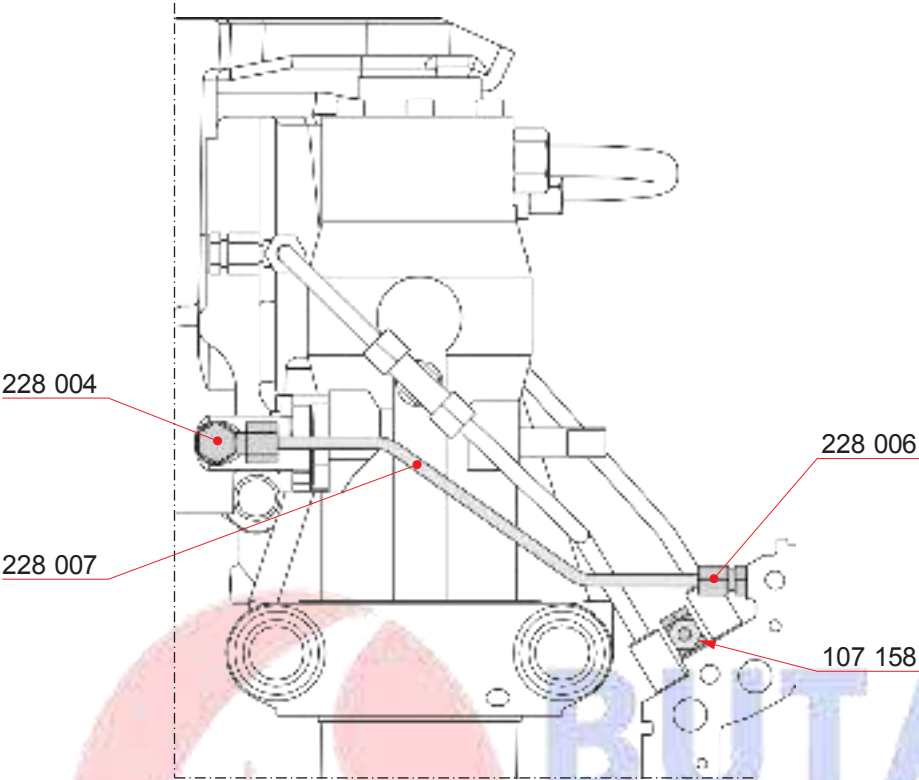
Piping for pneumatic overspeed trip device



Part No.	Description	Qty [Pcs]	Wt [Kg]
228 004	Pipe union	*	-
228 006	Pipe union	*	-
228 007	Pipe	*	-

Piping for pneumatic overspeed trip device

View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
107 158	Pipe union	2	-
228 004	Pipe union	*	-
228 006	Pipe union	*	-
228 007	Pipe	*	-

Piping for pneumatic overspeed trip device

Quantity according to number of cylinders

Part No.	Pieces			
	4L	6L	8L	9L
228 004	4	6	8	9
228 006	4	6	8	9
228 007	4	6	8	9

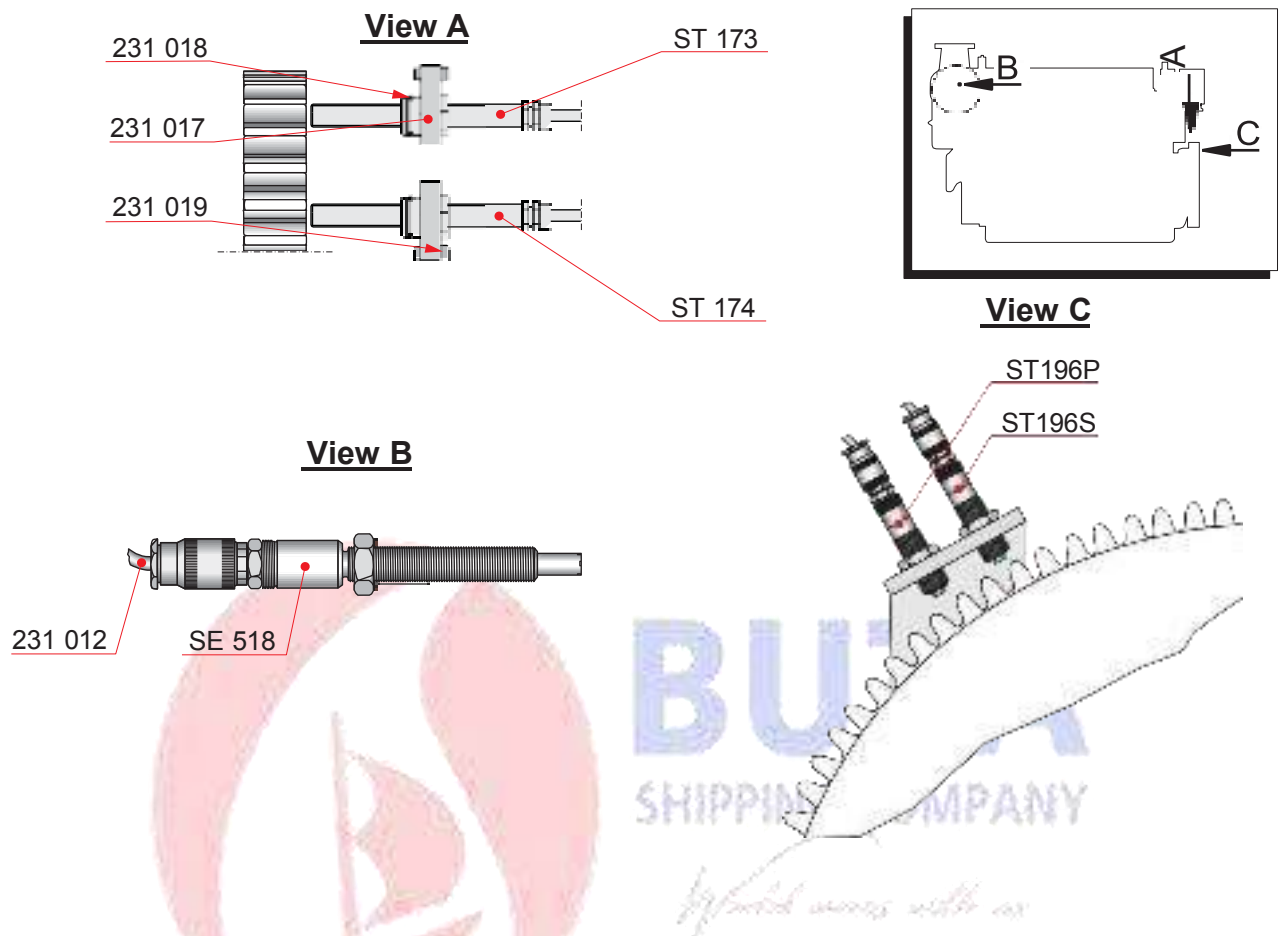
Part No. Description Qty Wt.
[Pcs] [Kg]

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Approved owner with us
Part No. Description

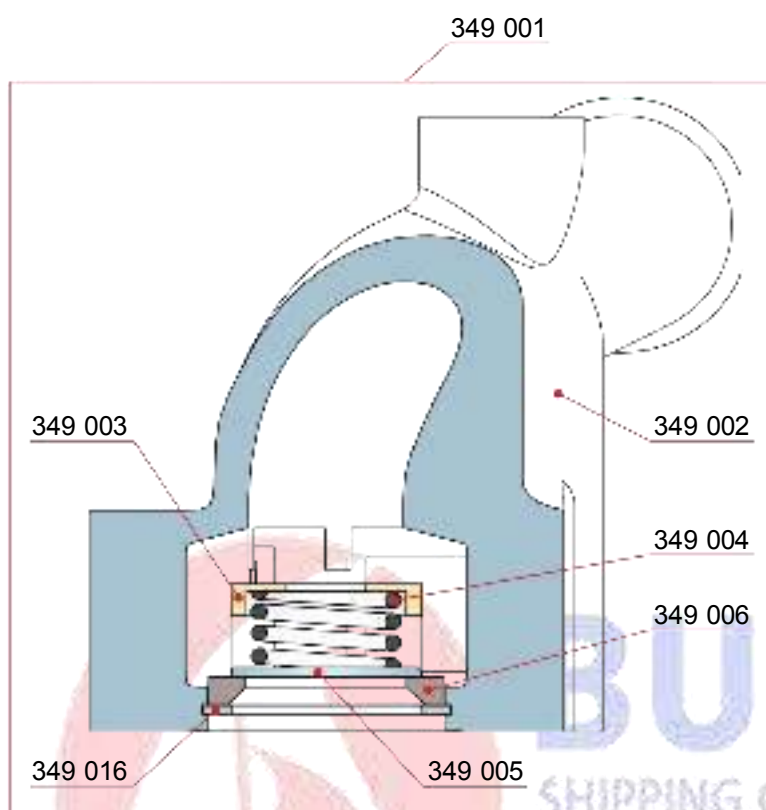
Qty Wt.
[Pcs] [Kg]

Speed pick-ups



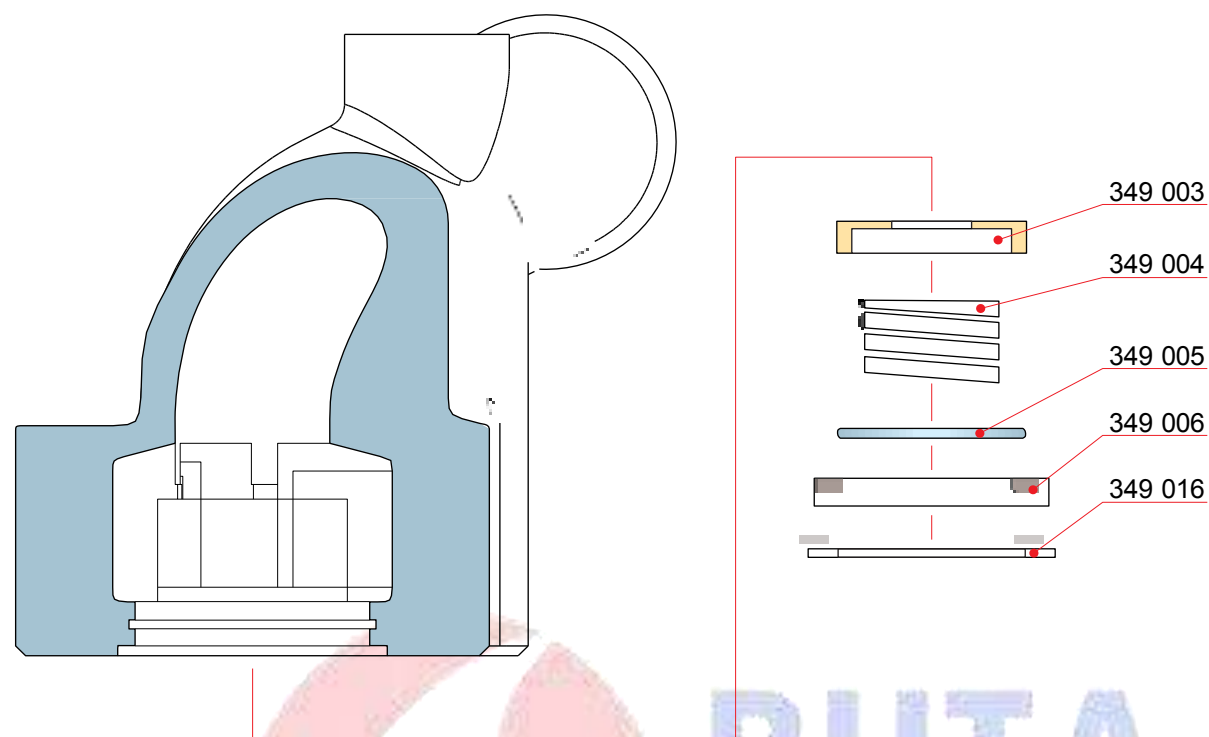
Part No.	Description	Qty [Pcs]	Wt [Kg]
ST196P	Speed sensor (1) (3)	1	0.4
ST196S	Speed sensor (1) (3)	1	0.4
ST173	Speed pick-up (1)	1	0.9
ST174	Speed pick-up (1)	1	0.9
SE518	Speed pick-up for TC	1	-
231 012	Cable (2)	1	-
231 017	Bracket	2	0.1
231 018	O-ring	2	-
231 019	Screw	2	-

Non-return valve for pre-lubricating oil pump



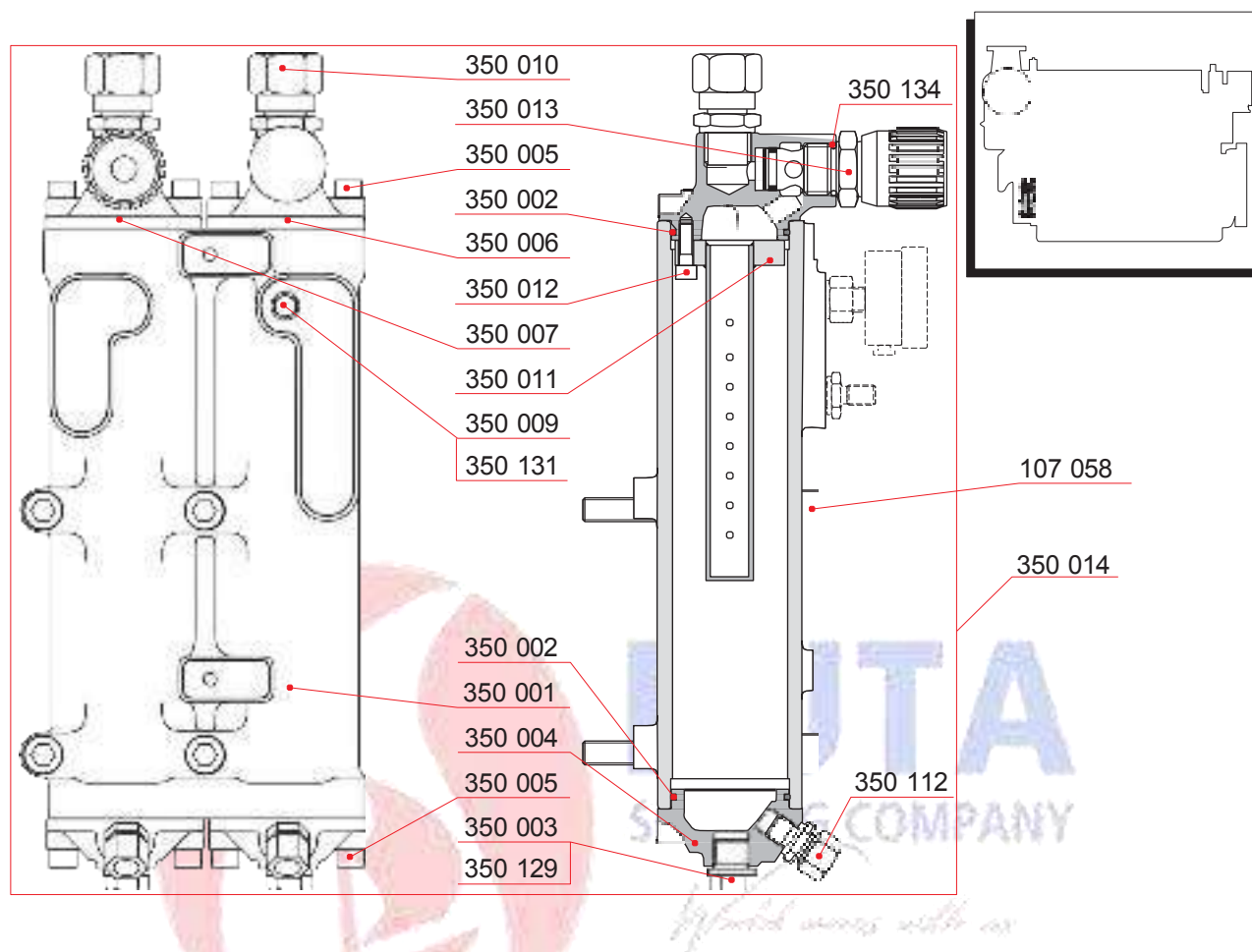
Part No.	Description	Qty [Pcs]	Wt [Kg]
349 001	Non-return valve	1	0.5
349 002	Housing	1	2.8
349 003	Spring retainer	1	-
349 004	Spring	1	-
349 005	Valve disc	1	-
349 006	Seal ring	1	-
349 016	Retainer ring	1	-

Non-return valve for pre-lubricating oil pump



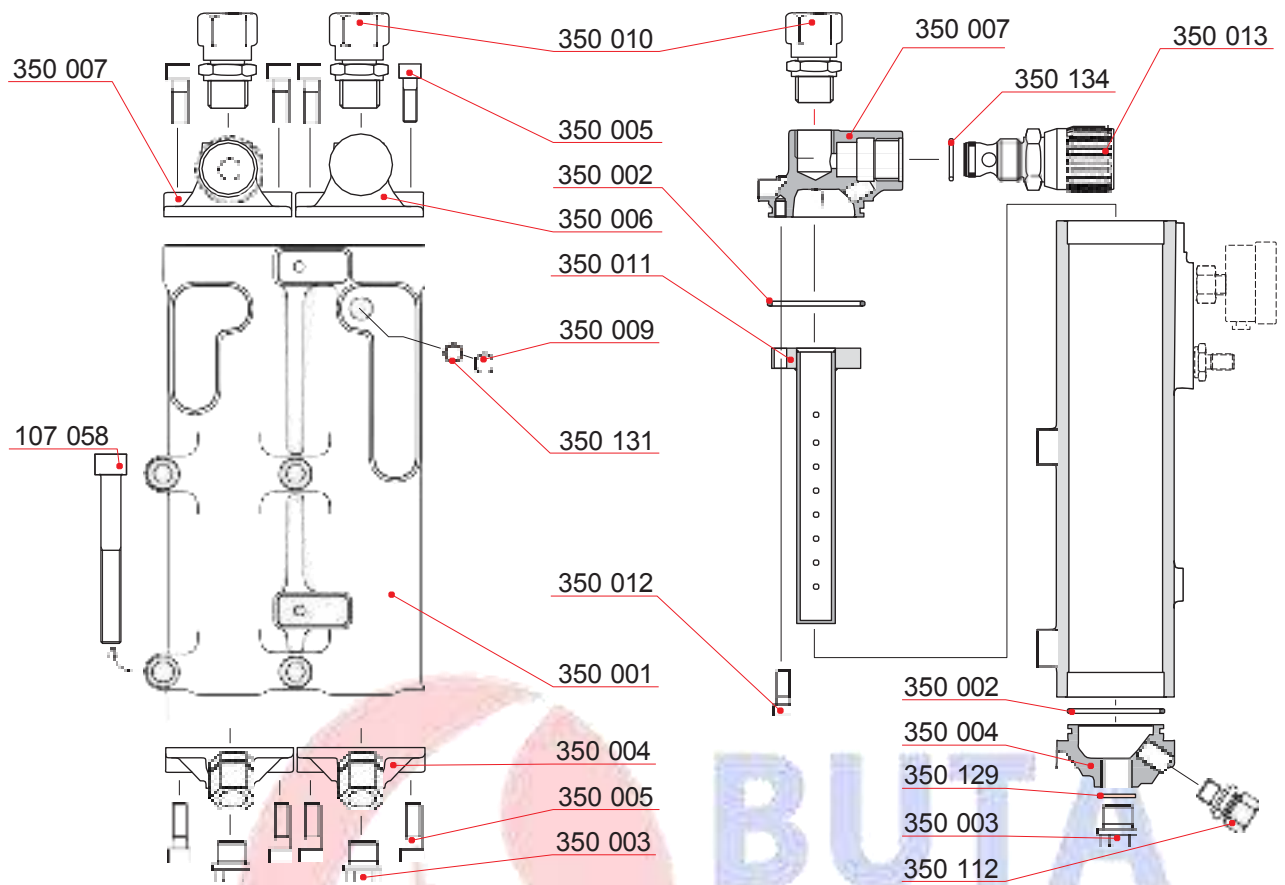
Part No.	Description	Qty [Pcs]	Wt [Kg]
349 003	Spring retainer	1	-
349 004	Spring	1	-
349 005	Valve disc	1	-
349 006	Seal ring	1	-
349 016	Retainer ring	1	-

Pulse damper for fuel oil



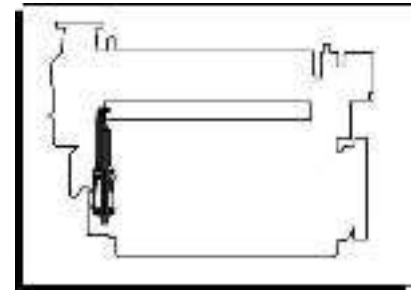
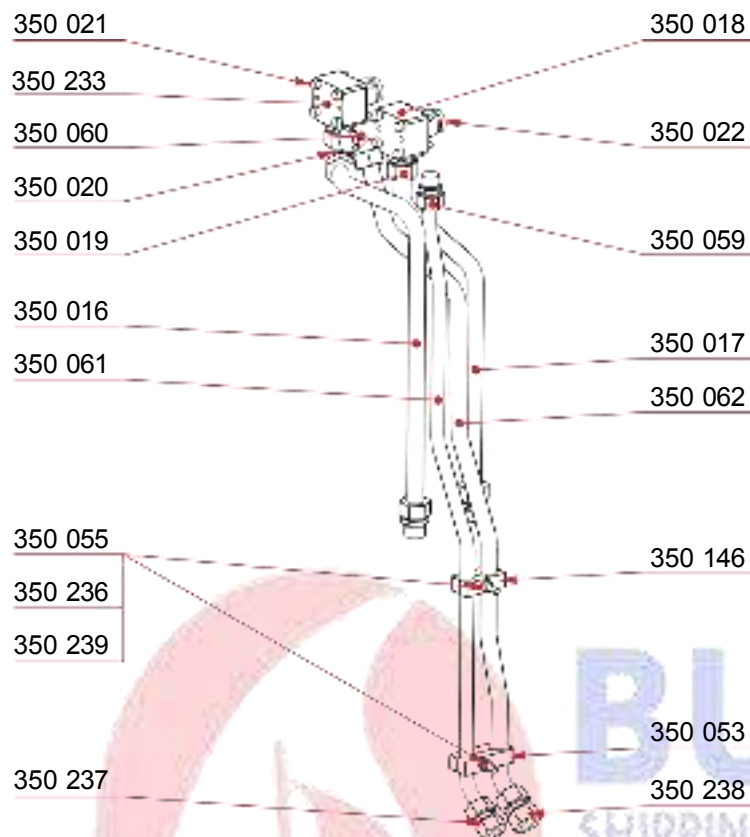
Part No.	Description	Qty [Pcs]	Wt [Kg]
350 014	Pulse damper	1	20.3
350 001	Housing	1	13.1
350 002	O-ring	4	-
350 003	Plug	1	-
350 004	Flange	2	0.6
350 005	Screw	16	-
350 006	Flange	1	-
350 007	Flange	1	-
350 009	Plug	1	-
350 010	Pipe union	2	0.2
350 011	Pipe	2	0.7
350 012	Screw	6	-
350 013	Control valve	1	0.6
350 112	Pipe union	2	0.1
350 129	Sealing ring	2	-
350 131	Sealing ring	1	-
350 134	O-ring	1	-
107 058	Screw	4	-

Pulse damper for fuel oil



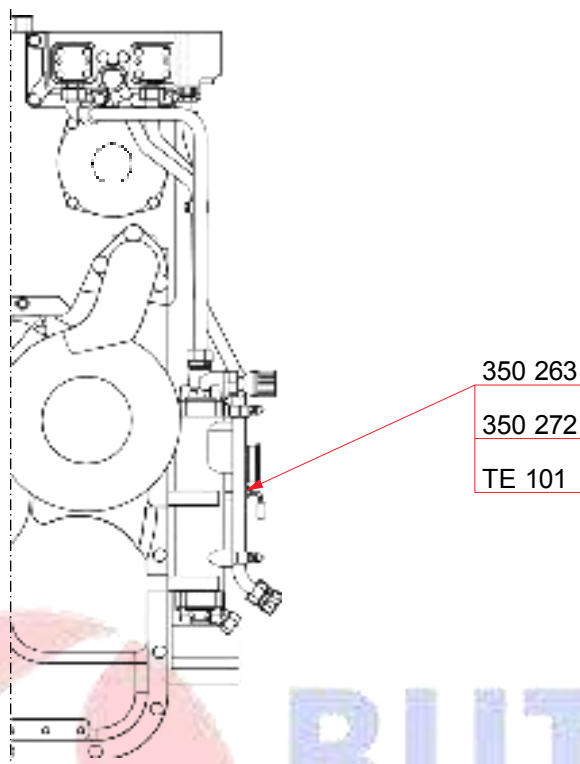
Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Fuel pipes



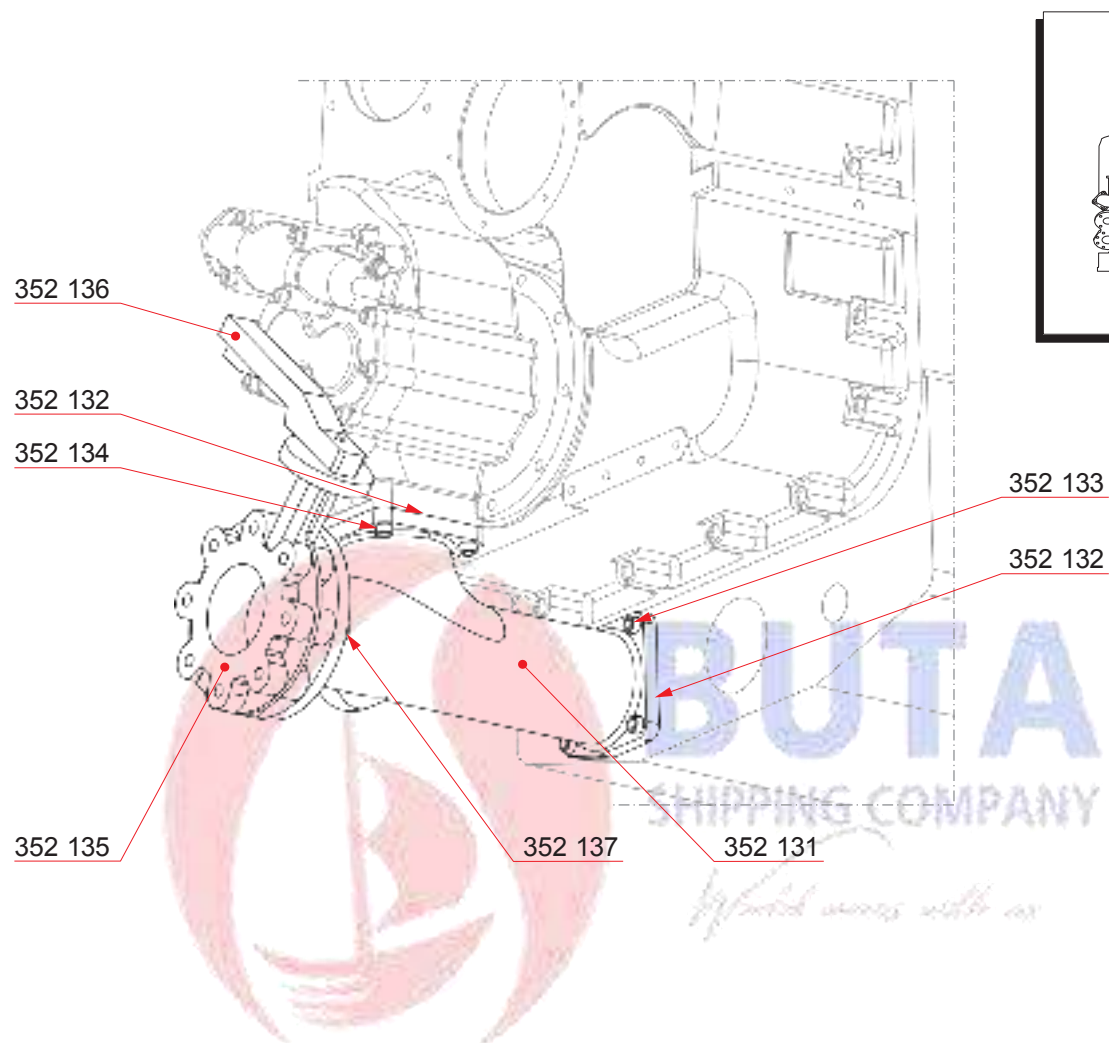
Part No.	Description	Qty [Pcs]	Wt [Kg]
350 016	Pipe	1	0.6
350 017	Pipe	1	0.5
350 018	Flange	1	1
350 019	Pipe union	1	0.2
350 020	Pipe union	1	0.4
350 021	Screw	8	-
350 022	O-ring	2	0.1
350 053	Pipe clamp	1	-
350 055	Screw	2	-
350 059	Pipe union	1	0.1
350 060	Pipe union	1	0.4
350 061	Pipe	1	0.6
350 062	Pipe	1	-
350 146	Pipe clamp	1	-
350 233	Flange	1	1
350 236	Nut	2	-
350 237	Pipe union	1	0.2
350 238	Pipe union	1	0.3
350 239	Washer	4	-

Fuel pipes



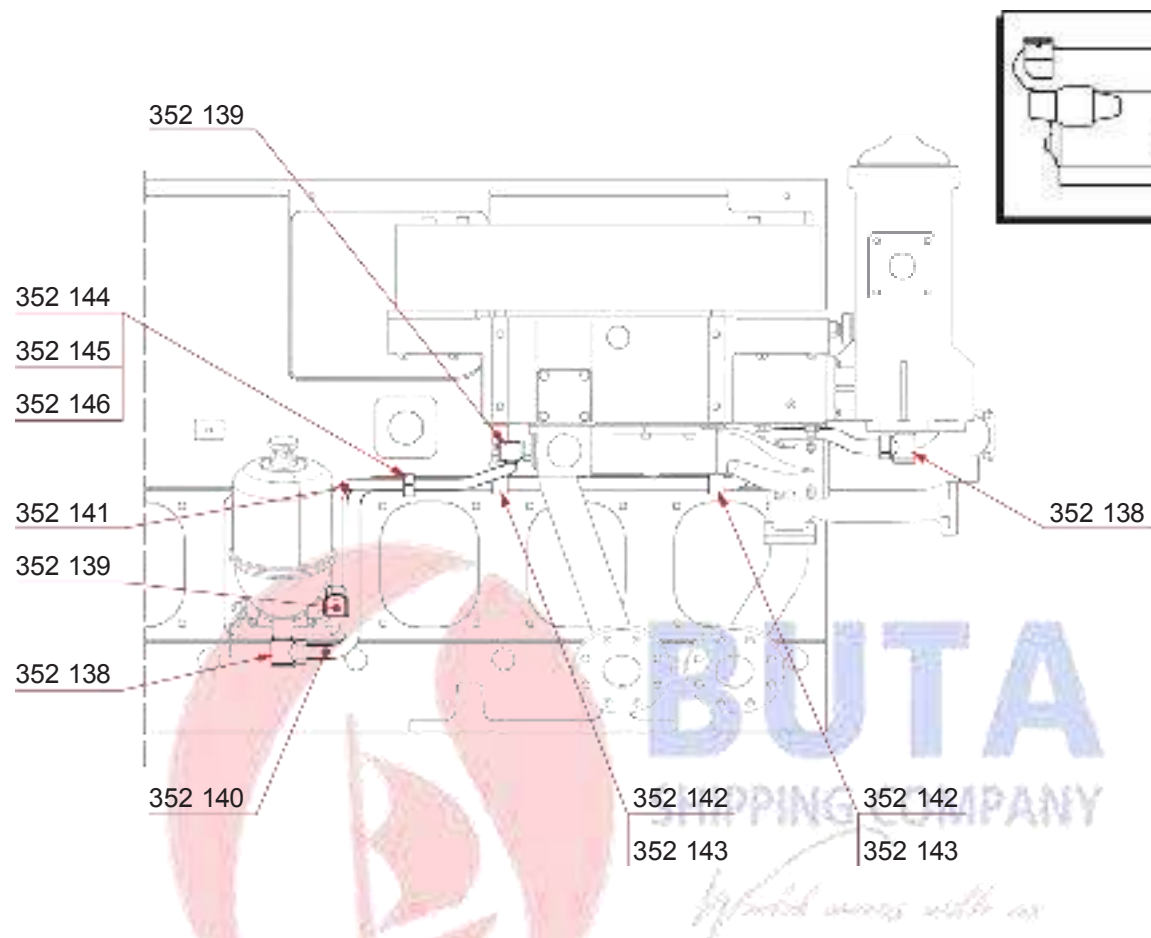
Part No.	Description	Qty [Pcs]	Wt [Kg]
350 263	Protecting well (1)	1	0.1
350 272	Sealing ring (1)	1	-
TE101	Temperature sensor, fuel oil temperature (1)	1	-

Suction pipe for oil pump



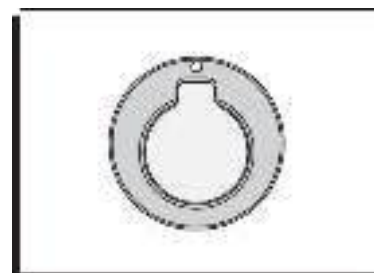
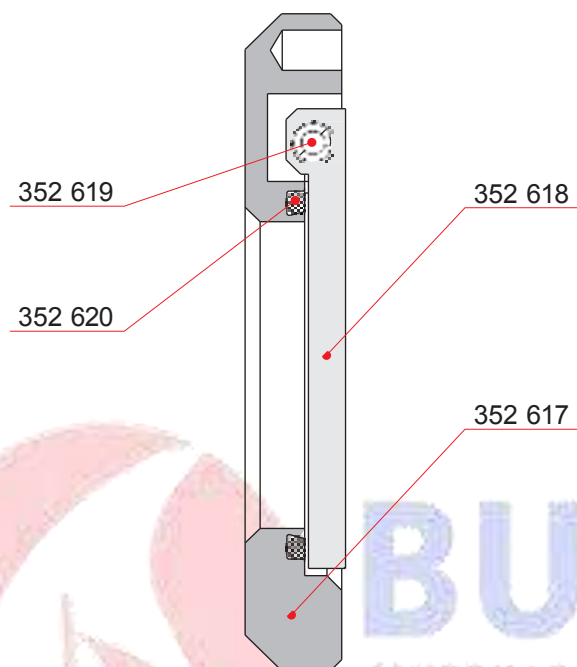
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 131	Suction pipe	1	17.6
352 132	O-ring	2	-
352 133	Screw	4	-
352 134	Screw	4	-
352 135	Valve	1	6.9
352 136	Lever arm	1	-
352 137	Screw	8	-

Lube oil pipes for centrifugal filter



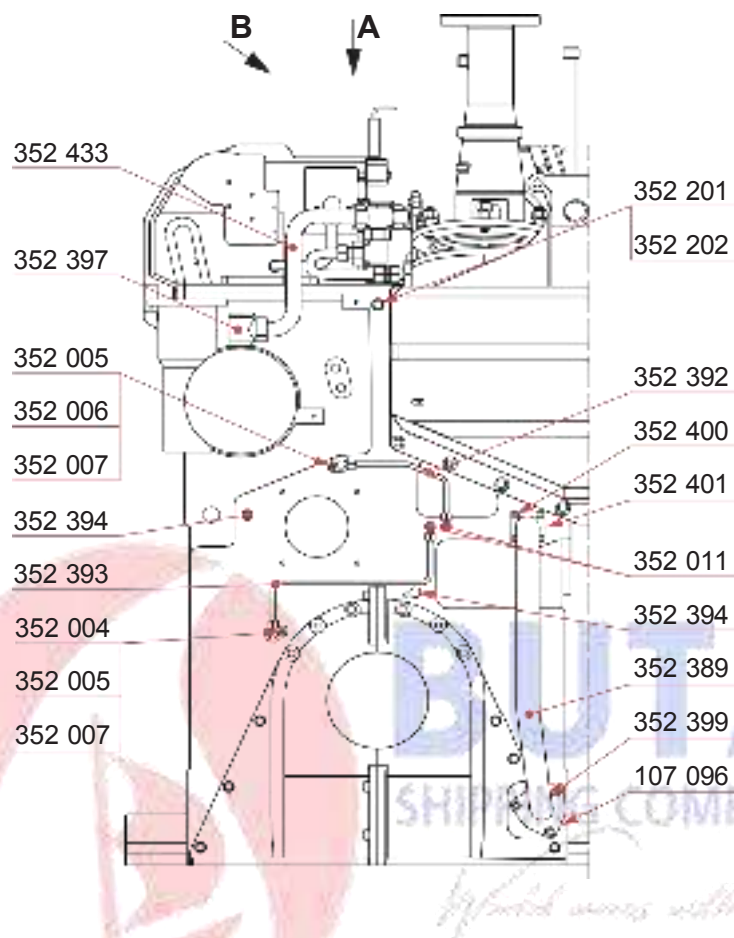
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 138	Pipe union	2	2.5
352 139	Pipe union	2	0.4
352 140	Pipe	1	2.2
352 141	Pipe	1	0.8
352 142	Pipe clamp	2	-
352 143	Screw	4	-
352 144	Pipe clamp	1	0.3
352 145	Screw	1	-
352 146	Nut	1	-

Non-return valve



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 617	Flange	1	0.4
352 618	Flap	1	-
352 619	Spring pin	1	-
352 620	O-ring	1	-

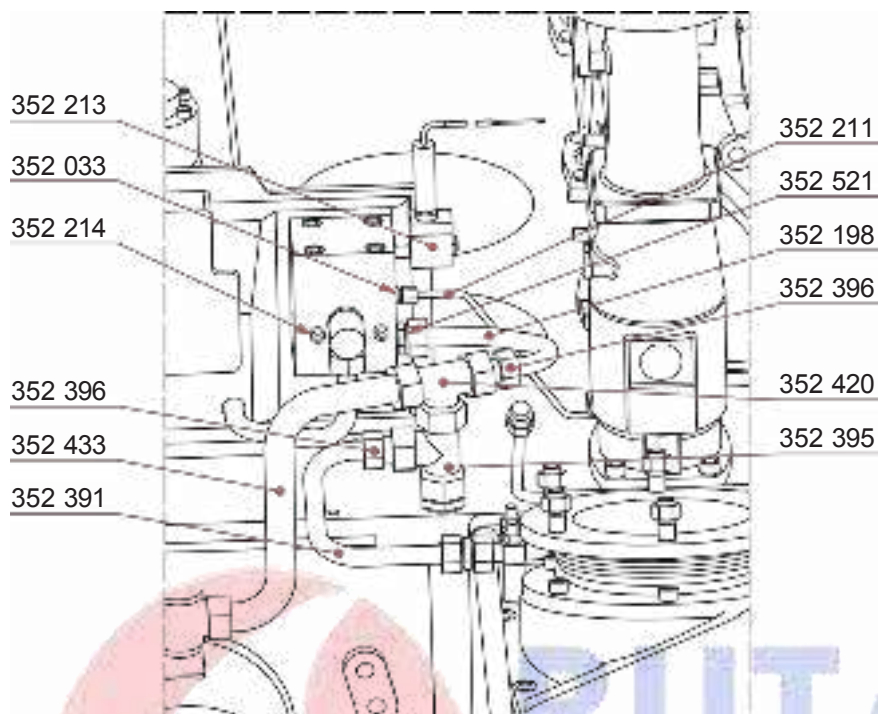
Lubricating oil pipes, flywheel end



Part No.	Description	Qty [Pcs]	Wt [Kg]
107 096	O-ring	1	-
352 004	Oil nozzle	1	-
352 005	O-ring	2	-
352 006	Oil nozzle	1	-
352 007	Screw	2	-
352 011	Pipe union	4	-
352 201	Sealing ring	1	-
352 202	Plug	1	-
352 389	Pipe	1	-
352 392	Pipe	1	-
352 393	Pipe	1	-
352 394	Cap	2	-
352 397	Union	1	2.5
352 399	Screw	3	-
352 400	Screw	4	-
352 401	O-ring	1	-
352 433	Pipe	1	1

Lubricating oil pipes, flywheel end

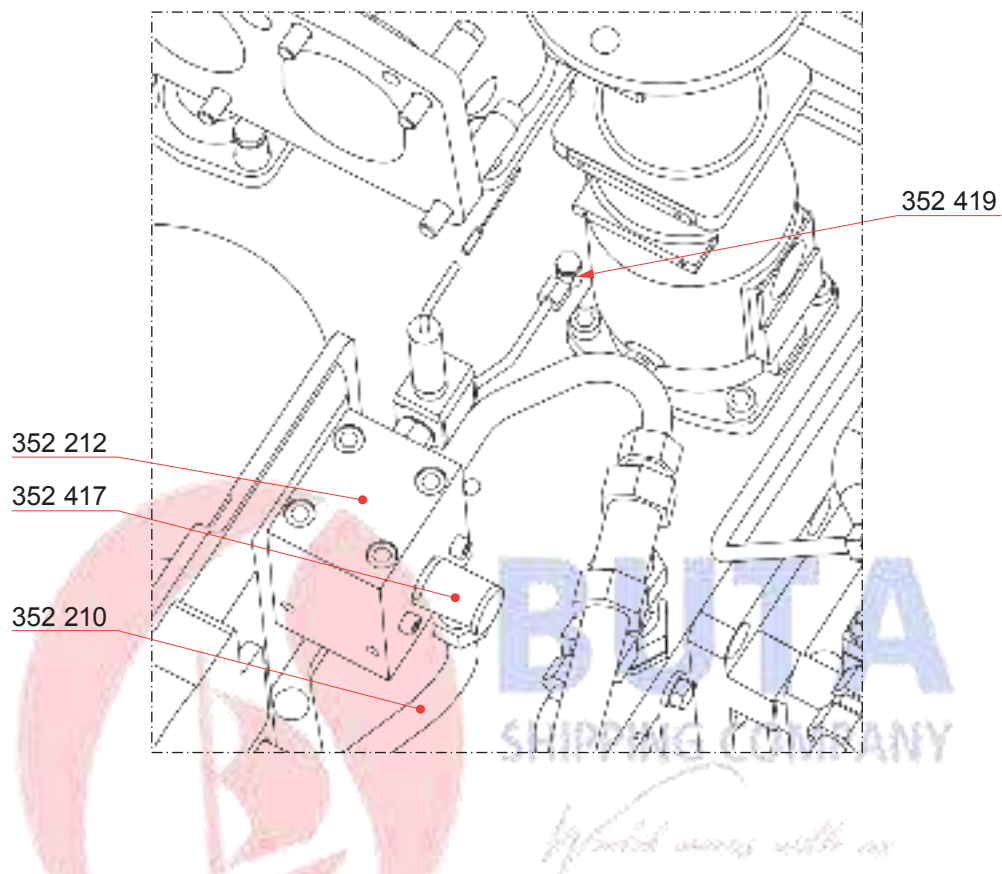
View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 033	Pipe union	1	-
352 198	Pipe	1	0.1
352 211	Pipe	1	-
352 213	Solenoid	1	0.6
352 214	Screw	2	-
352 391	Pipe	1	-
352 395	Union	1	0.8
352 396	Union	1	0.2
352 420	Pipe union	1	0.6
352 433	Pipe	1	1
352 521	Pipe union	1	0.1

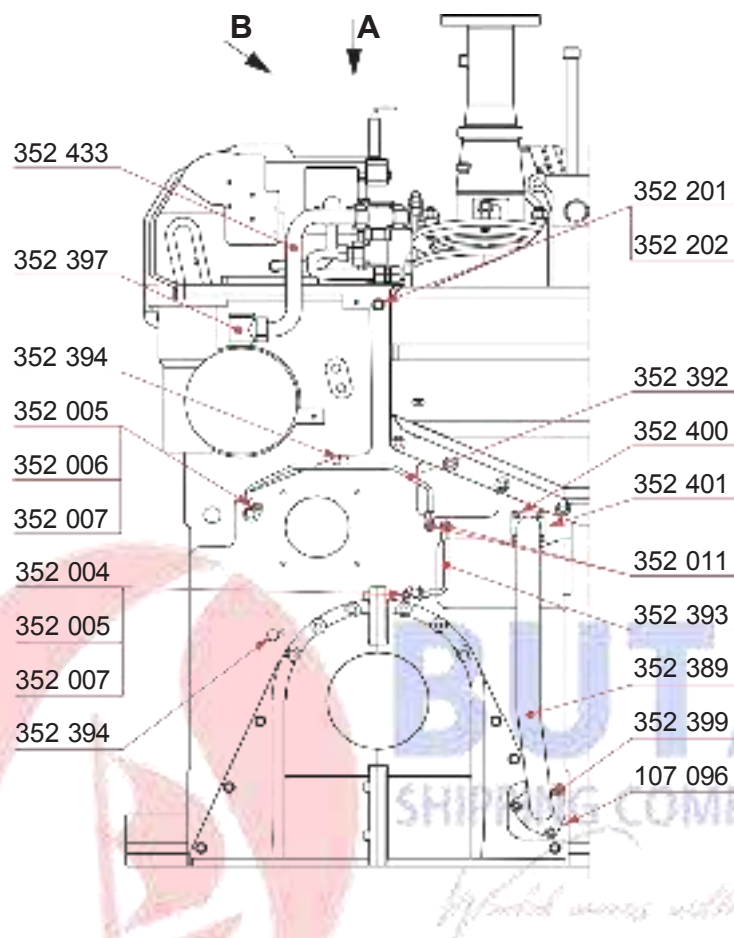
Lubricating oil pipes, flywheel end

View B



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 210	Pipe	1	0.2
352 212	Control valve	1	4.5
352 417	Pipe union	1	0.3
352 419	Pipe union	1	-

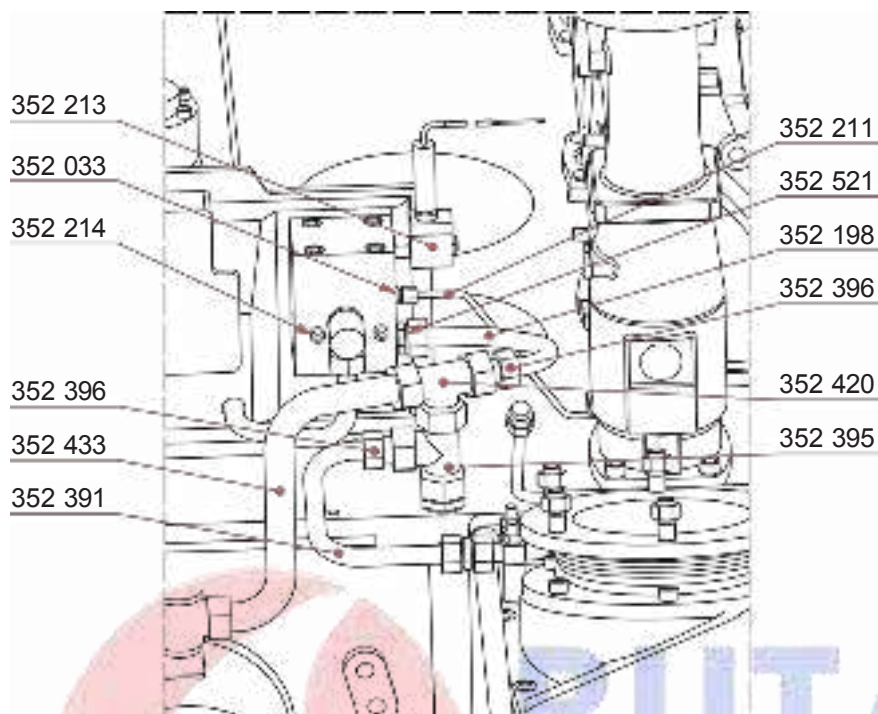
Lubricating oil pipes, flywheel end



Part No.	Description	Qty [Pcs]	Wt [Kg]
107 096	O-ring	1	-
352 004	Oil nozzle	1	-
352 005	O-ring	2	-
352 006	Oil nozzle	1	-
352 007	Screw	2	-
352 011	Pipe union	4	-
352 201	Sealing ring	1	-
352 202	Plug	1	-
352 389	Pipe	1	-
352 392	Pipe	1	-
352 393	Pipe	1	-
352 394	Cap	2	-
352 397	Union	1	2.5
352 399	Screw	3	-
352 400	Screw	4	-
352 401	O-ring	1	-
352 433	Pipe	1	1

Lubricating oil pipes, flywheel end

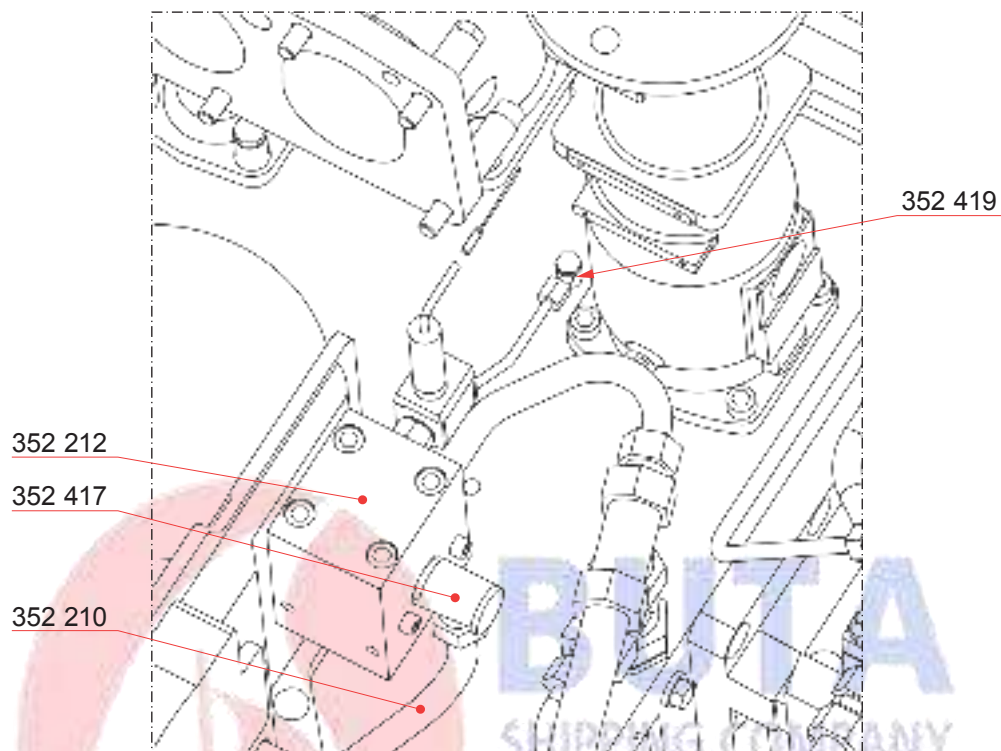
View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 033	Pipe union	1	-
352 198	Pipe	1	0.1
352 211	Pipe	1	-
352 213	Solenoid	1	0.6
352 214	Screw	2	-
352 391	Pipe	1	-
352 395	Union	1	0.8
352 396	Union	2	0.2
352 420	Pipe union	1	0.6
352 433	Pipe	1	1
352 521	Pipe union	1	0.1

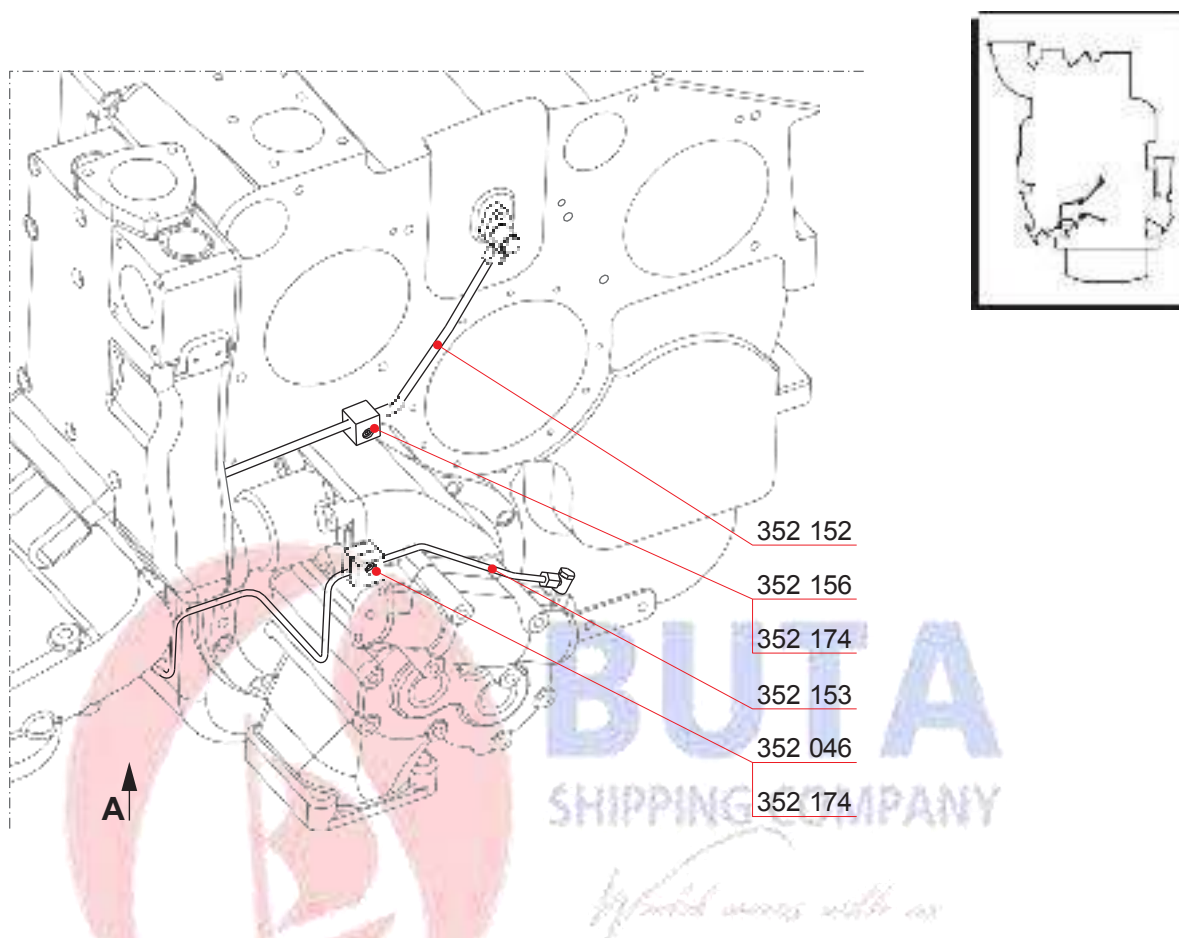
Lubricating oil pipes, flywheel end

View B



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 210	Pipe	1	0.2
352 212	Control valve	1	4.5
352 417	Pipe union	1	0.3
352 419	Pipe union	1	-

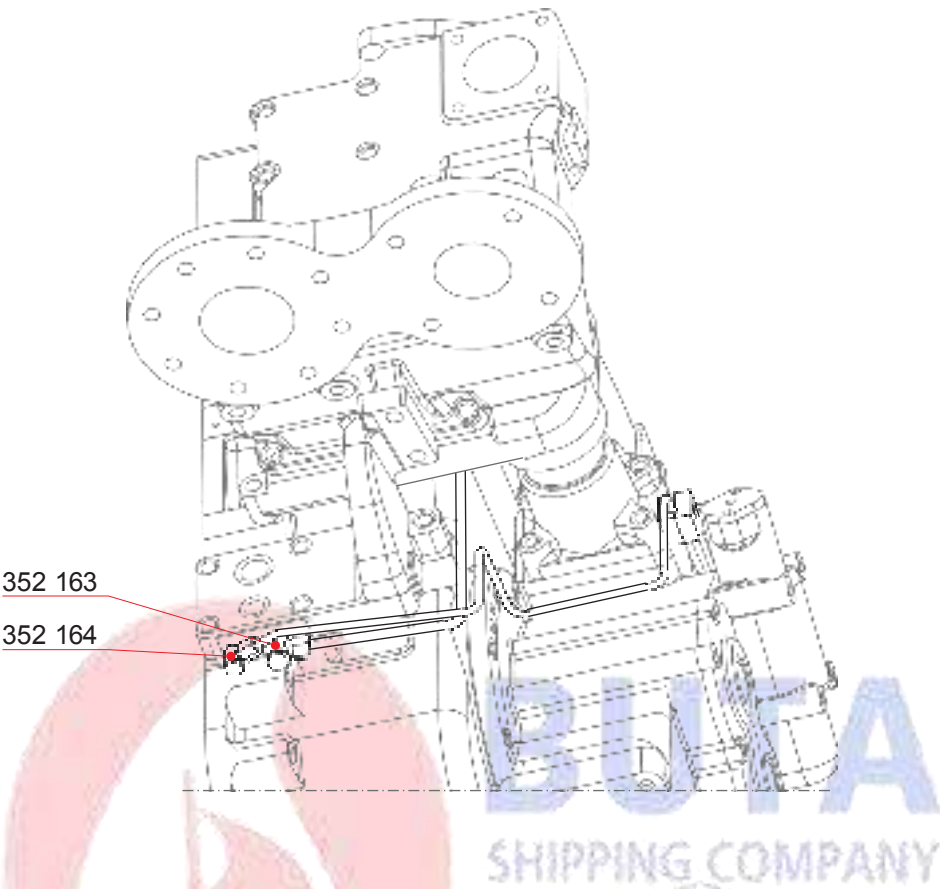
Lubricating oil pipes at free end



Part No.	Description	Qty [Pcs]	Wt [Kg]
352 046	Pipe clamp	1	-
352 152	Pipe	1	0.1
352 153	Pipe	1	0.1
352 156	Pipe clamp	1	-
352 174	Screw	2	-

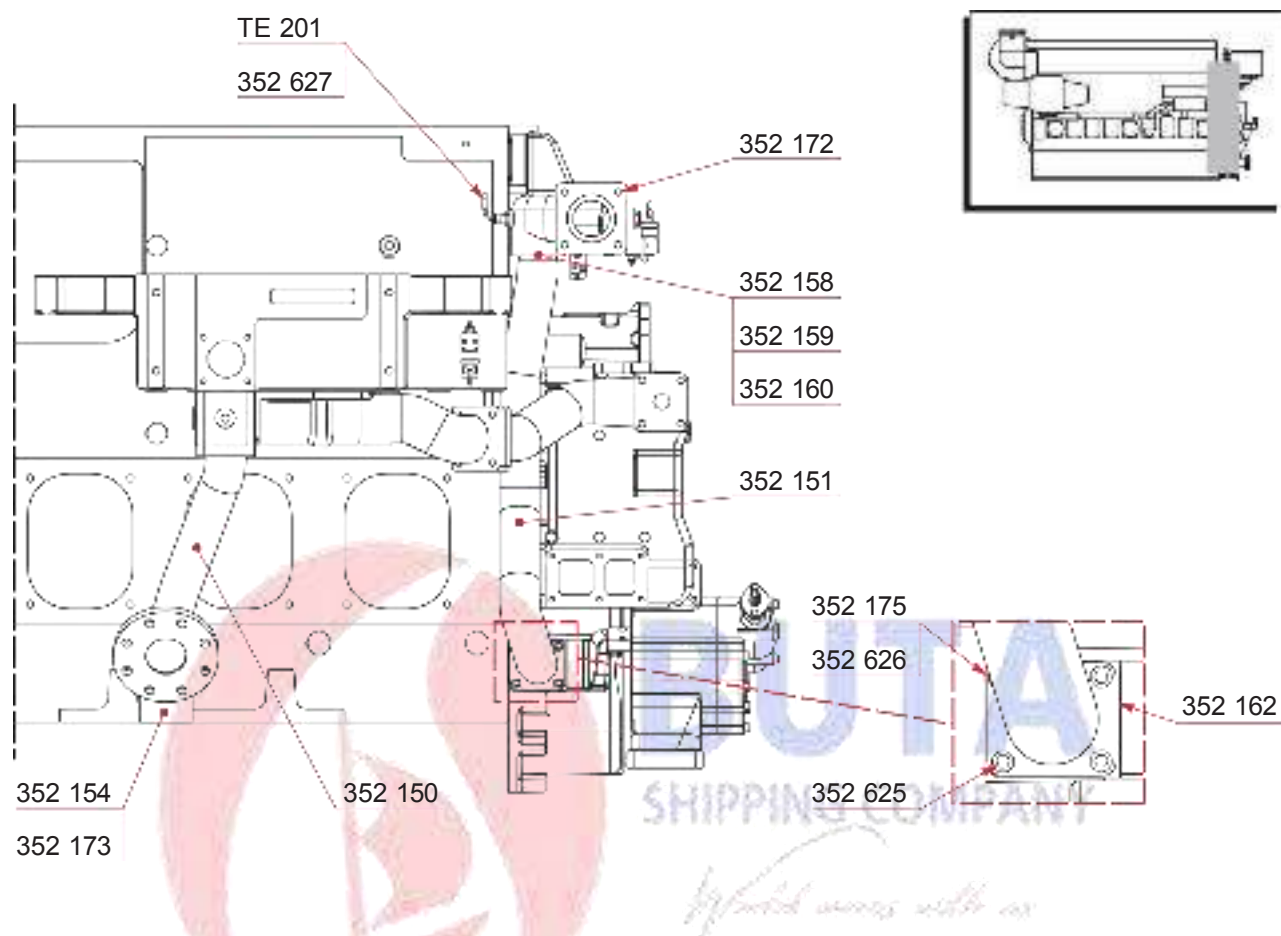
Lubricating oil pipes at free end

View A



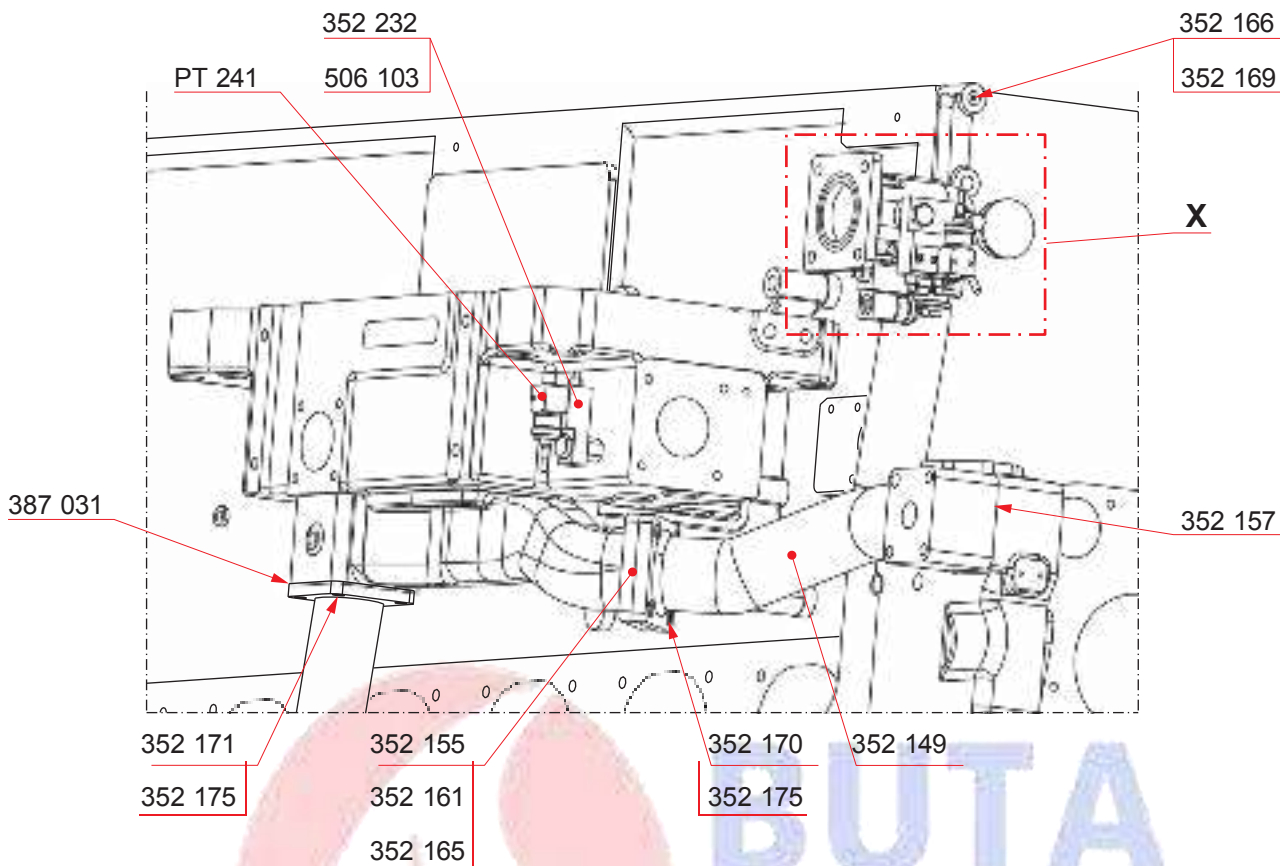
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 163	Pipe union	1 <i>to be changed with as</i>	-
352 164	Pipe union	1	-

Lubricating oil pipes at free end



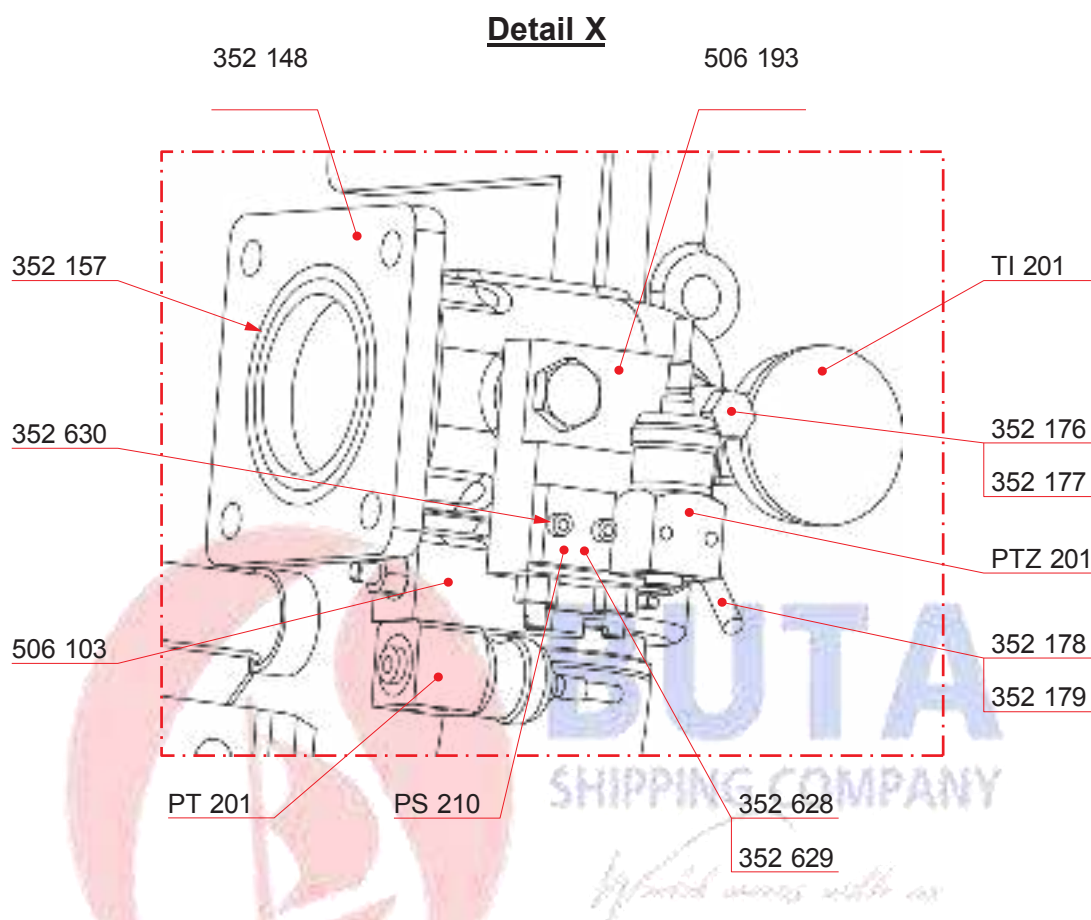
Part No.	Description	Qty	
		[Pcs]	Wt [Kg]
352 150	Pipe	1	2.3
352 151	Pipe	1	6
352 154	Bracket	1	0.6
352 158	Guide ring	1	-
352 159	O-ring	1	-
352 160	Support ring	2	-
352 162	O-ring	1	-
352 172	Screw	4	-
352 173	Screw	2	-
352 175	Nut	9	-
352 625	Screw	3	-
352 626	Washer	1	-
352 627	Protection well	1	0.1
TE201	Temperature sensor, lubricating oil temperature	1	-

Lubricating oil pipes at free end



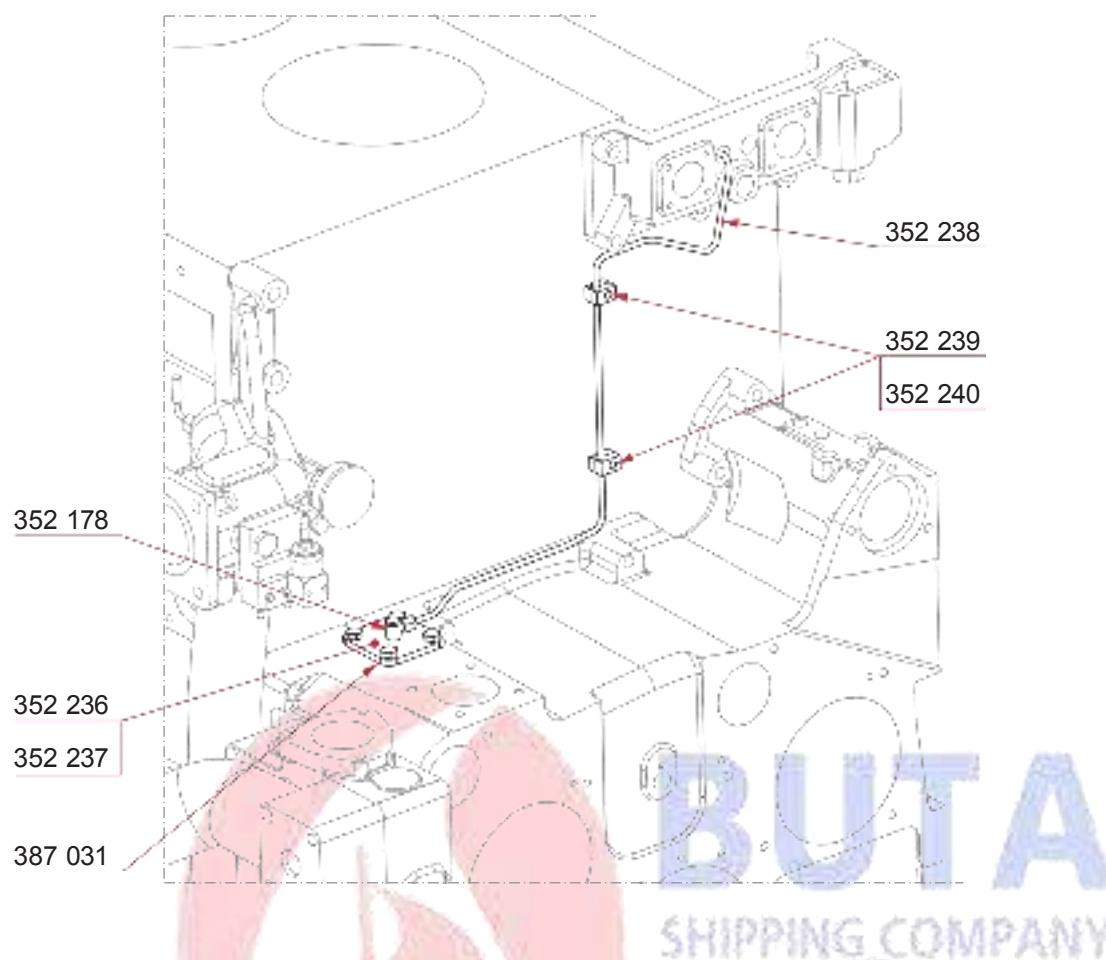
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 149	Pipe	1	-
352 155	Non-return valve	1	0.5
352 157	O-ring	2	-
352 161	O-ring	1	-
352 165	Spring pin	1	-
352 166	Washer	2	-
352 169	Screw	2	-
352 170	Screw	4	-
352 171	Screw	4	0.1
352 175	Nut	9	-
352 232	Adapter	1	-
387 031	Glue compound	1	-
506 103	Pressure gauge valve	2	0.3
PT241	Pressure transducer, lube oil	1	-

Lubricating oil pipes at free end



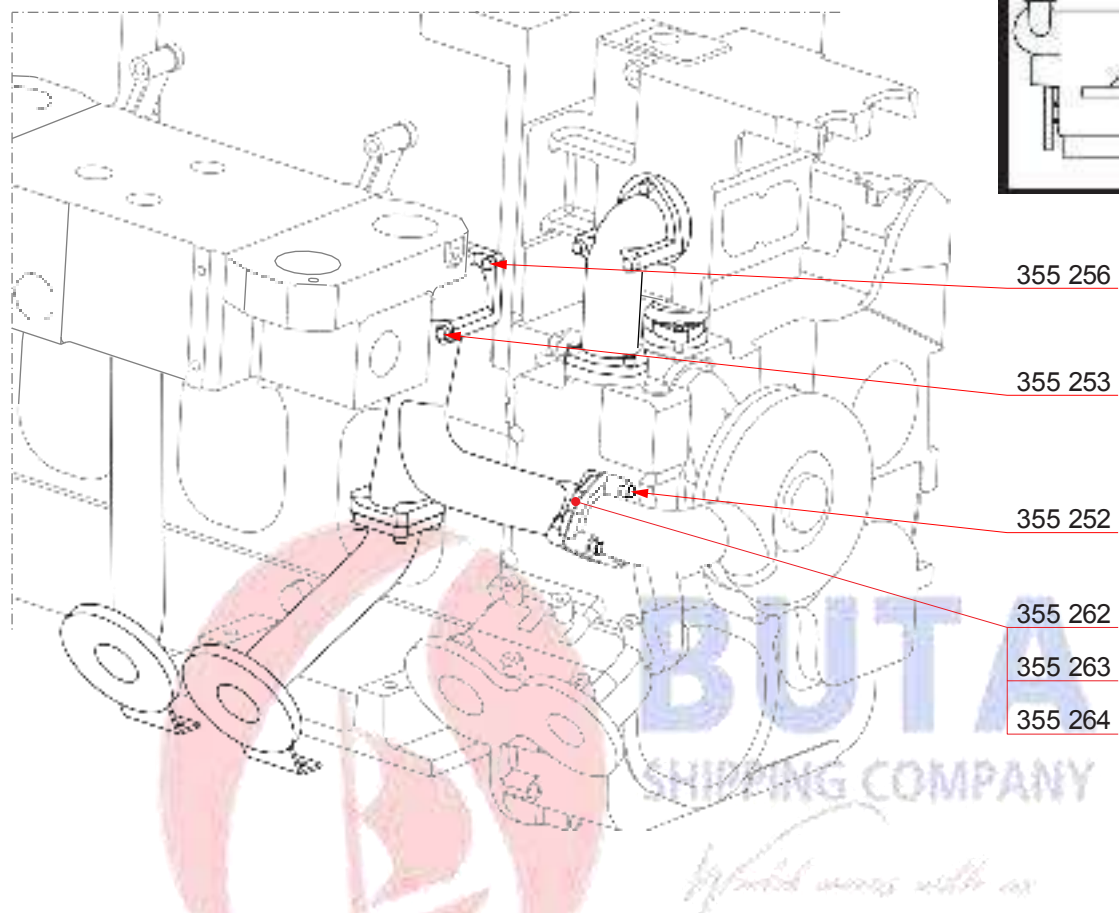
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 148	Pipe	1	10.5
352 157	O-ring	2	-
352 176	Spindle	1	-
352 177	Nut	1	-
352 178	Pipe union	2	-
352 179	Pipe	1	-
352 628	O-ring	1	-
352 629	End piece	2	-
352 630	Screw	2	-
506 103	Pressure gauge valve	2	0.3
506 193	Pressure gauge valve	1	2
PS210	Pressure switch, start of lube oil stand by pump (*)	1	-
PT201	Pressure transducer, lube oil	1	-
PT2201	Pressure transducer, lube oil press. engine inlet	1	-
TI201	Thermometer for lubricating oil, before engine (1)	1	-

Lubricating oil pipes at free end



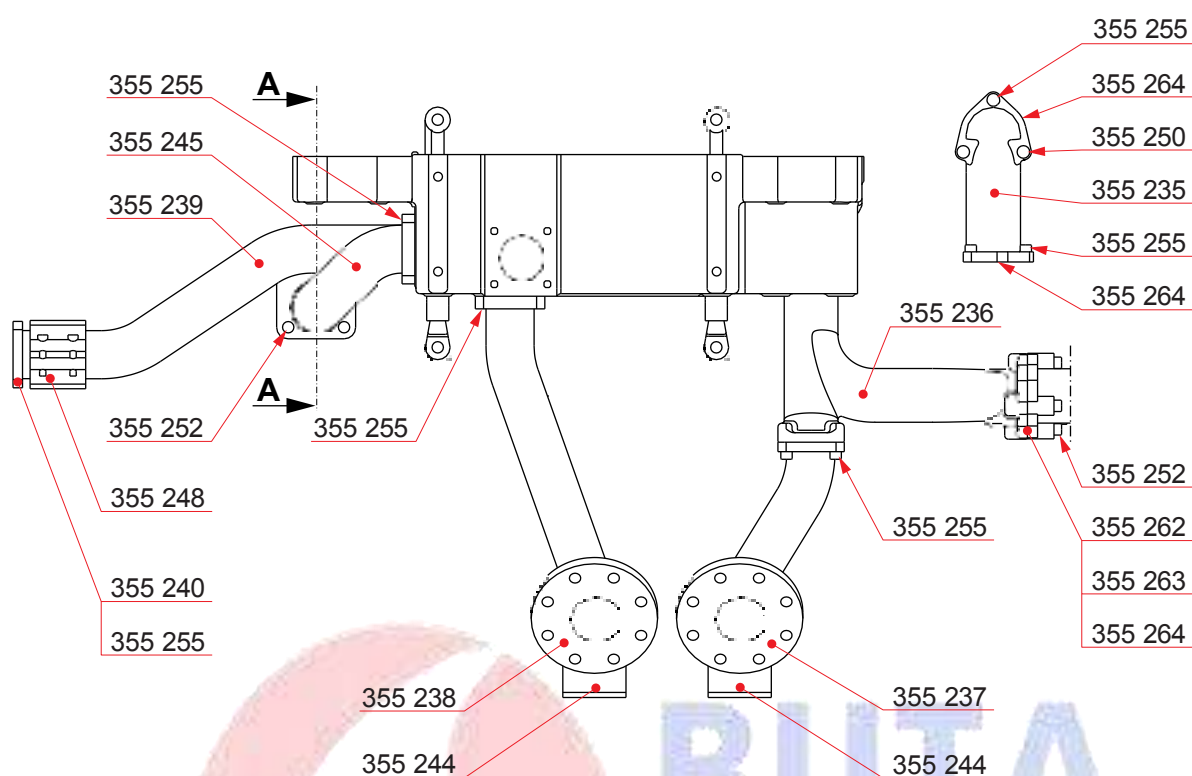
Part No.	Description	Qty [Pcs]	Wt [Kg]
352 178	Pipe union	2	-
352 236	Flange	1	0.3
352 237	Screw	4	-
352 238	Pipe	1	0.1
352 239	Pipe clamp	4	-
352 240	Screw	2	-
387 031	Glue compound	1	-

Water pipes



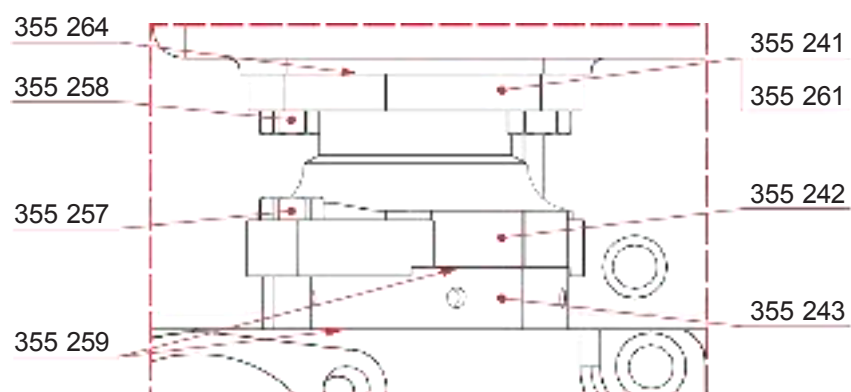
Part No.	Description	Qty [Pcs]	Wt [Kg]
355 236	Bend	1	-
355 248	Flexible coupling	1	0.8
355 250	Screw	2	0.1
355 252	Screw	7	-
355 253	Screw	2	0.1
355 255	Screw	24	-
355 256	Screw	6	-
355 262	Non-return valve	1	0.5
355 263	Spring pin	1	-
355 264	O-ring	4	-

Water pipes

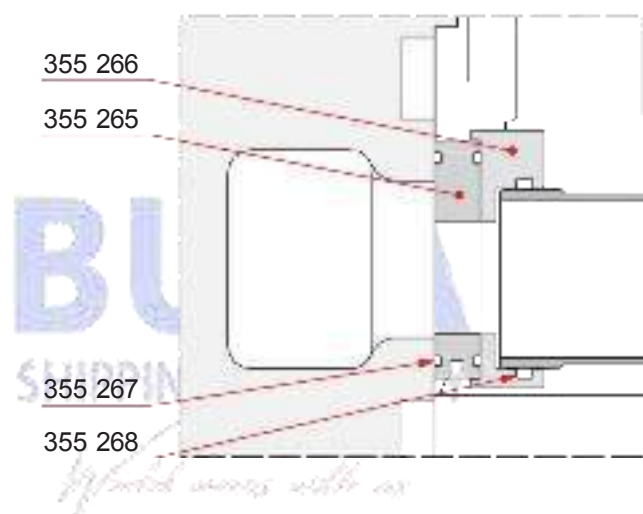
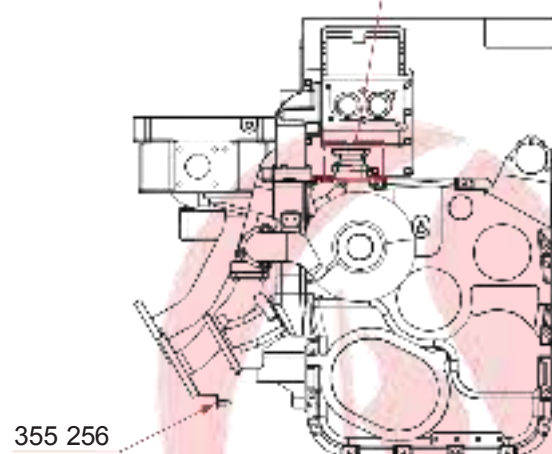


Part No.	Description	Qty [Pcs]	Wt [Kg]
355 235	Bend	1	5.2
355 236	Bend	1	-
355 237	Pipe	1	-
355 238	Pipe	1	-
355 239	Pipe	1	-
355 240	Pipe	1	-
355 244	Bracket	2	0.6
355 245	Bend	1	-
355 248	Flexible coupling	1	0.8
355 250	Screw	2	0.1
355 252	Screw	7	-
355 255	Screw	24	-
355 262	Non-return valve	1	0.5
355 263	Spring pin	1	-
355 264	O-ring	4	-

Water pipes

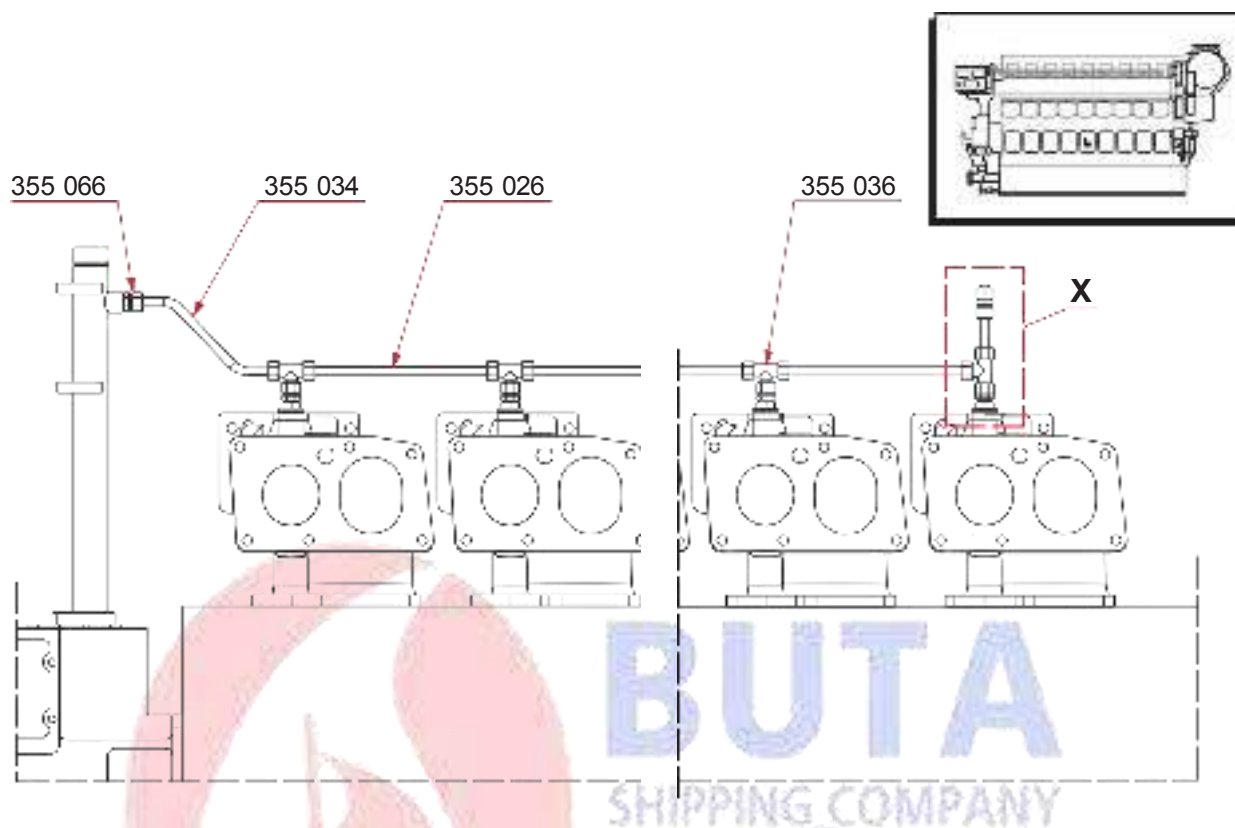


Section A-A



Part No.	Description	Qty [Pcs]	Wt [Kg]
355 241	Flange	1	0.5
355 242	Pipe	1	1.3
355 243	Throttle flange	1	0.8
355 256	Screw	6	-
355 257	Screw	2	-
355 258	Screw	2	-
355 259	O-ring	2	-
355 261	O-ring	1	-
355 264	O-ring	4	-
355 265	Throttle flange	1	-
355 266	Throttle flange	1	-
355 267	O-ring	2	-
355 268	O-ring	1	-

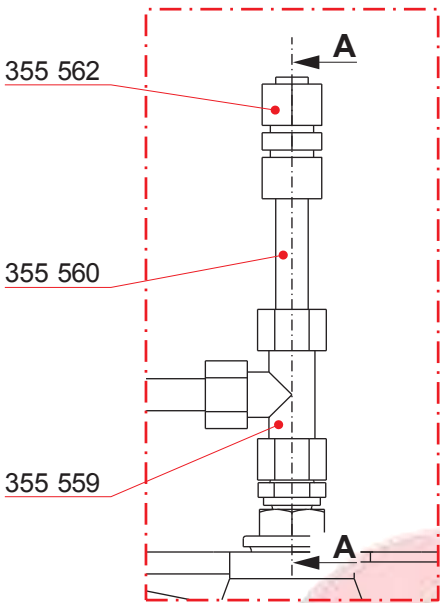
Vent piping from multiducts



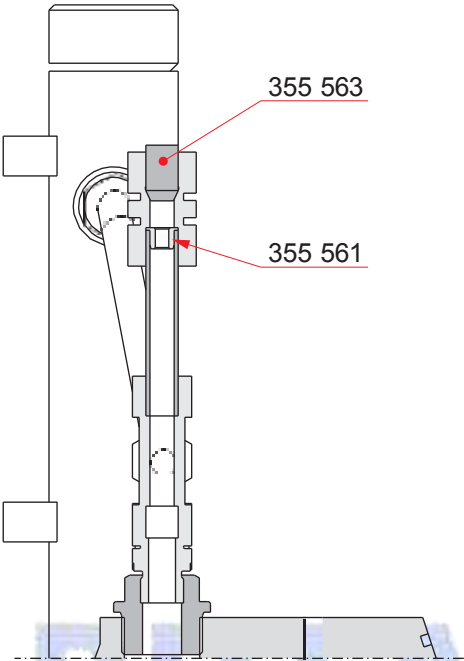
Part No.	Description	Qty [Pcs]	Wt [Kg]
355 026	Pipe	*	0.1
355 034	Pipe	1	-
355 036	Pipe union	*	0.2
355 066	Pipe union	1	-

Vent piping from multiducts

Detail X



A - A



Part No.	Description	Qty [Pcs]	Wt [Kg]
355 559	Pipe union	1	-
355 560	Pipe	1	-
355 561	Orifice	1	-
355 562	Pipe union	1	-
355 563	Plug	1	-

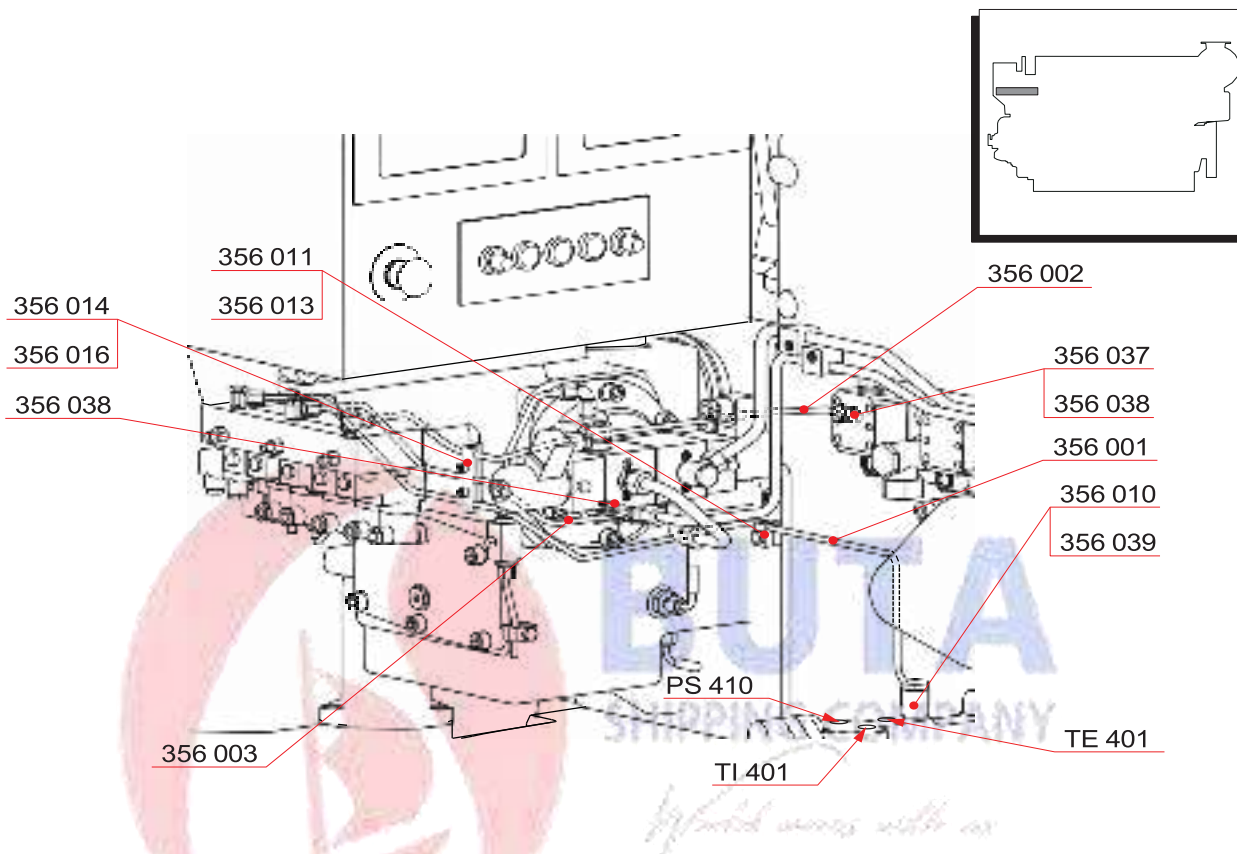
Vent piping from multiducts

Quantity according to number of cylinders

Part No. and Description	Quantity in pieces		
	6L	8L	9L
355 026 Pipe	5	7	8
355 036 Pipe union	5	7	8

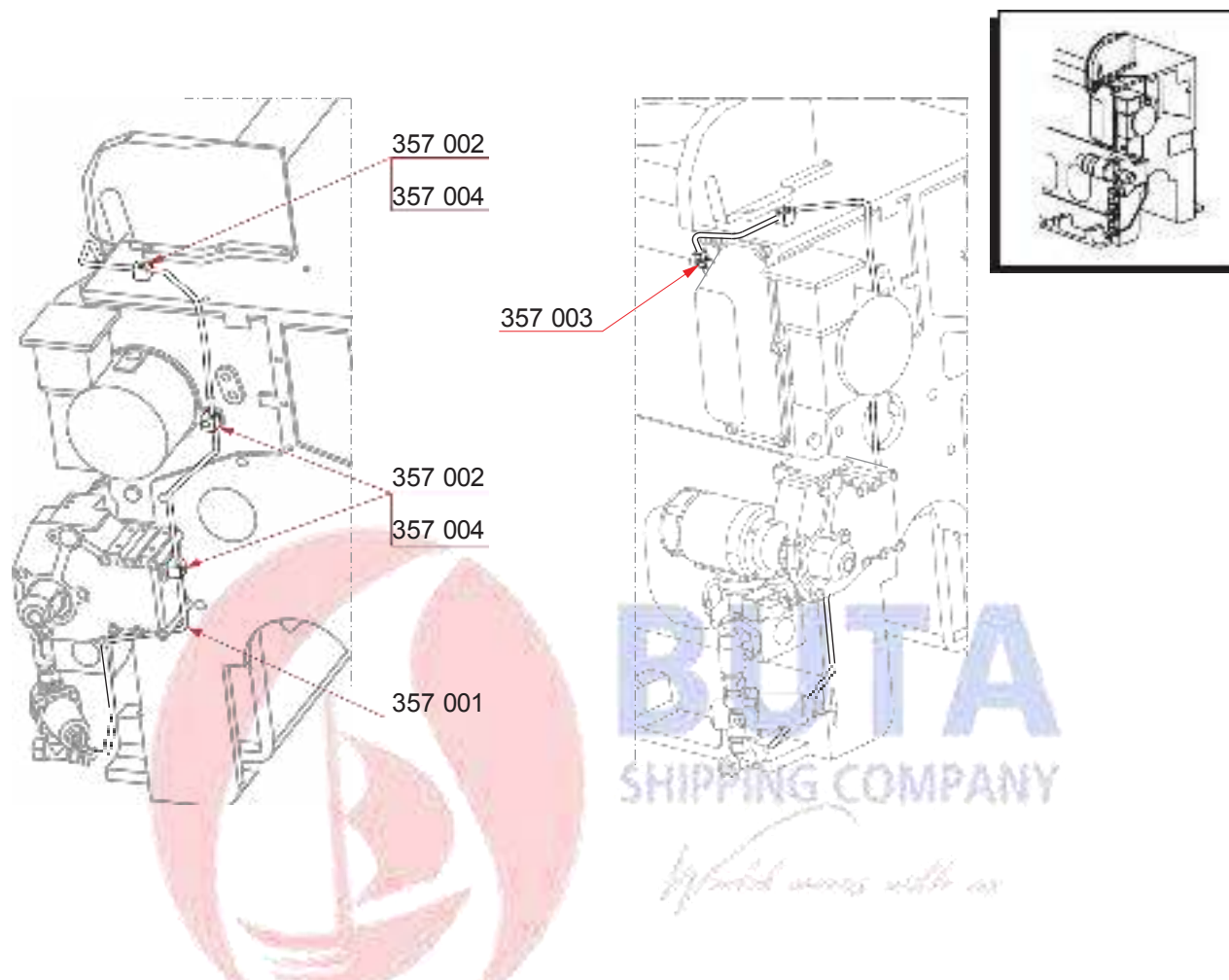


Pipes for pressure sensors



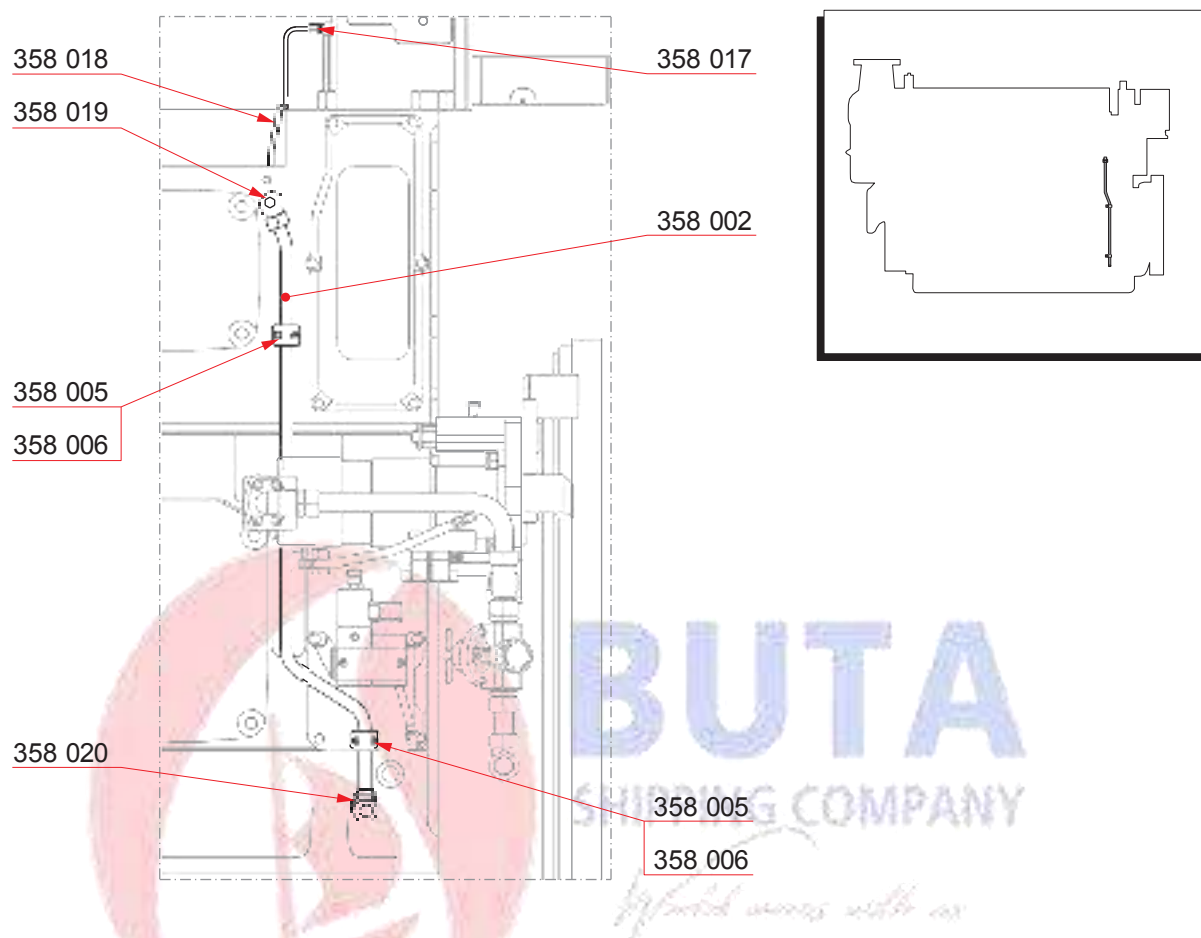
Part No.	Description	Qty [Pcs]	Wt [Kg]
356 001	Pipe	1	-
356 002	Pipe	1	-
356 003	Pipe	1	-
356 010	Pipe union	1	0.2
356 011	Pipe clamp	2	-
356 013	Screw	1	-
356 014	Pipe clamp	2	-
356 016	Screw	2	-
356 037	Throttle ring	1	-
356 038	Pipe union	2	-
356 039	Pipe union	1	-
PS410	Pressure switch, start HT-stand by pump	1	-
TE401	Temperature sensor, HT water, before engine	1	-
TI401	Thermometer, HT water, before engine	1	-

Air supply pipe for air tank



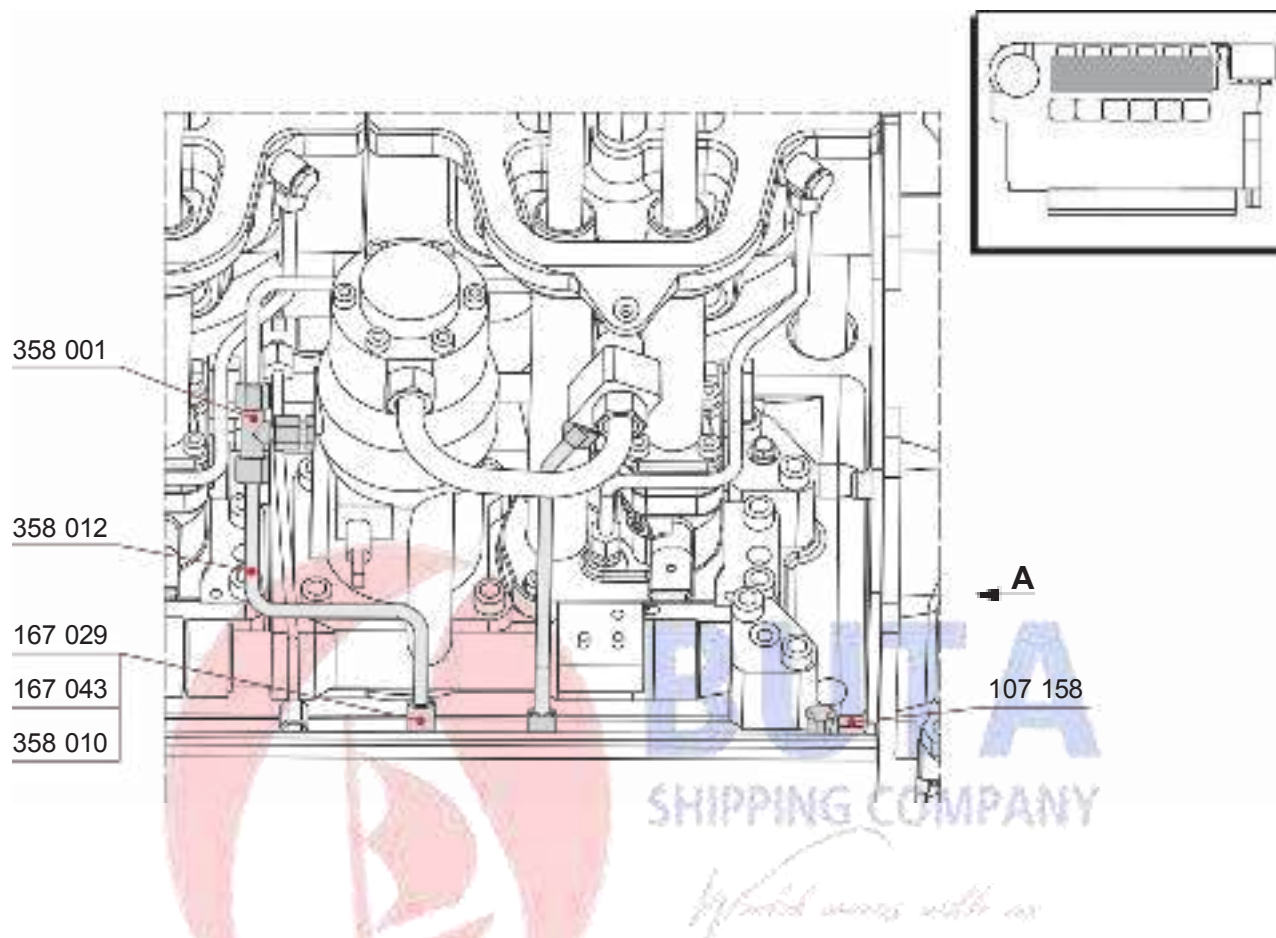
Part No.	Description	Qty [Pcs]	Wt [Kg]
357 001	Pipe	1	0.3
357 002	Pipe clamp	3	-
357 003	Union	1	-
357 004	Screw	3	-

Leak oil pipe, dirty, flywheel end



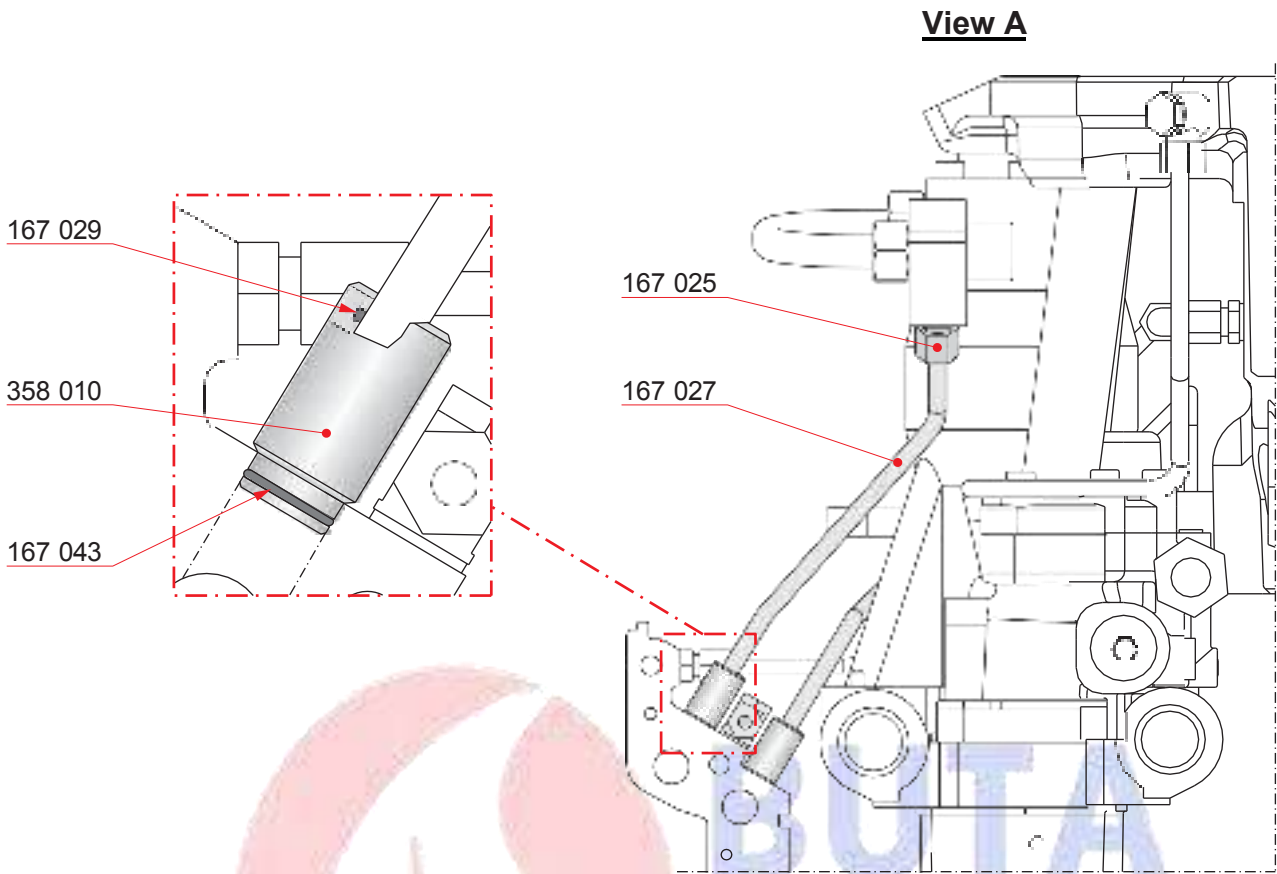
Part No.	Description	Qty [Pcs]	Wt [Kg]
358 002	Leak oil pipe	1	0.6
358 005	Pipe clamp	2	-
358 006	Screw	4	-
358 017	Pipe union	1	-
358 018	Leak oil pipe	1	-
358 019	Pipe union	1	0.3
358 020	Pipe union	1	0.2

Leak oil pipes



Part No.	Description	Qty [Pcs]	Wt [Kg]
107 158	Pipe union	2	-
167 029	O-ring	*	-
167 043	O-ring	*	-
358 001	Pipe union	*	-
358 010	Connection piece	*	-
358 012	Leak oil pipe	*	-

Leak oil pipes



Part No.	Description	Qty [Pcs]	Wt [Kg]
167 025	Pipe union	*	-
167 027	Leak oil pipe	*	-
167 029	O-ring	*	-
167 043	O-ring	*	-
358 010	Connection piece	*	-

Leak oil pipes

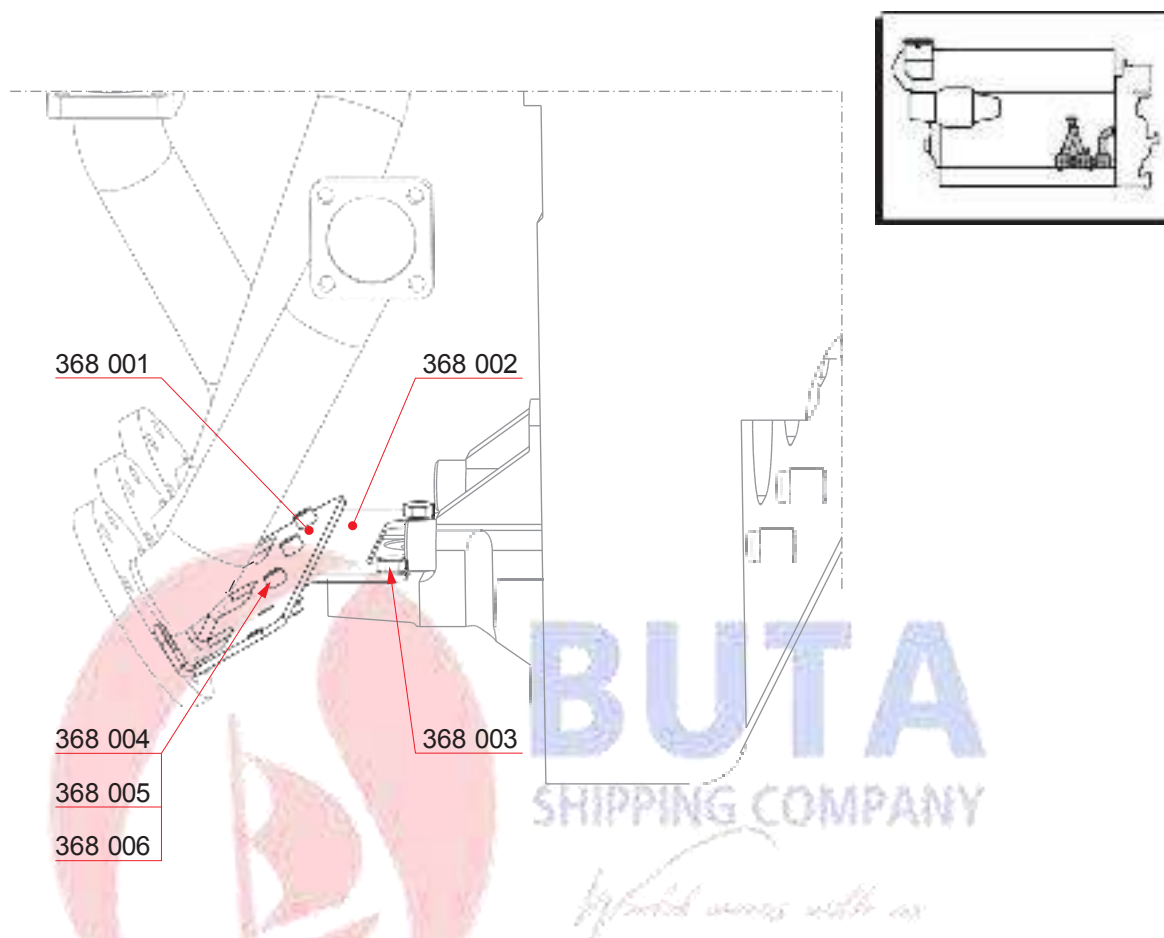
Quantity according to number of cylinders

Part No.	Pieces			
	4L	6L	8L	9L
167 025	4	6	8	9
167 027	4	6	8	9
167 029	8	12	16	18
167 043	8	12	16	18
358 001	4	6	8	9
358 010	8	12	16	18
358 012	4	6	8	9

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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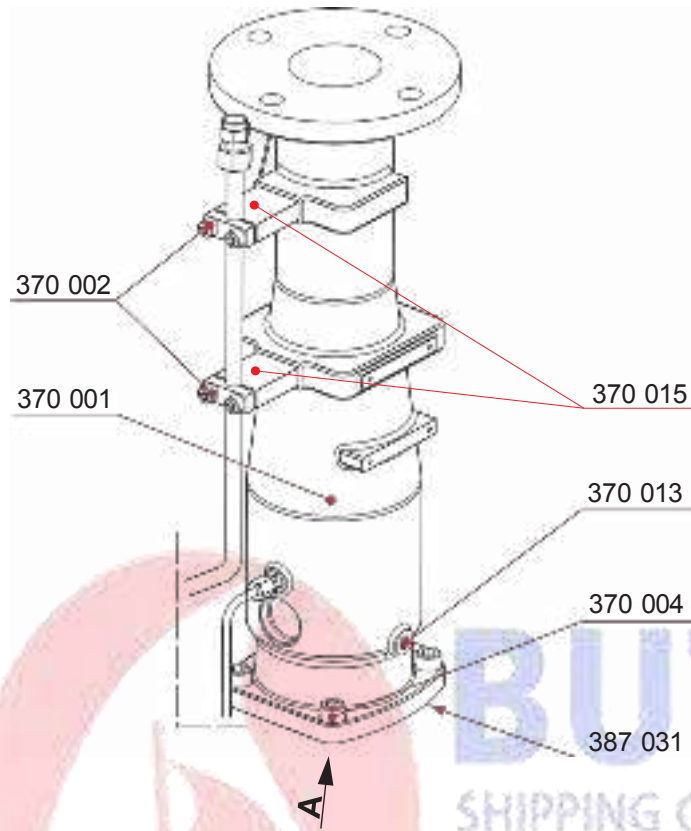
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Bracket for water and oil pipes



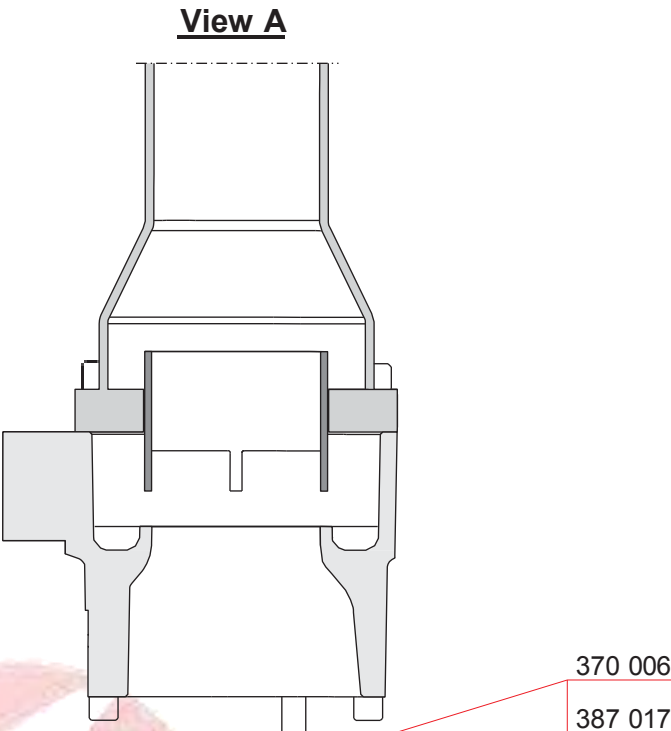
Part No.	Description	Qty [Pcs]	Wt [Kg]
368 001	Bracket	1	-
368 002	Bracket	1	-
368 003	Screw	2	-
368 004	Screw	3	-
368 005	Washer	3	-
368 006	Nut	3	-

Vent pipe assembly



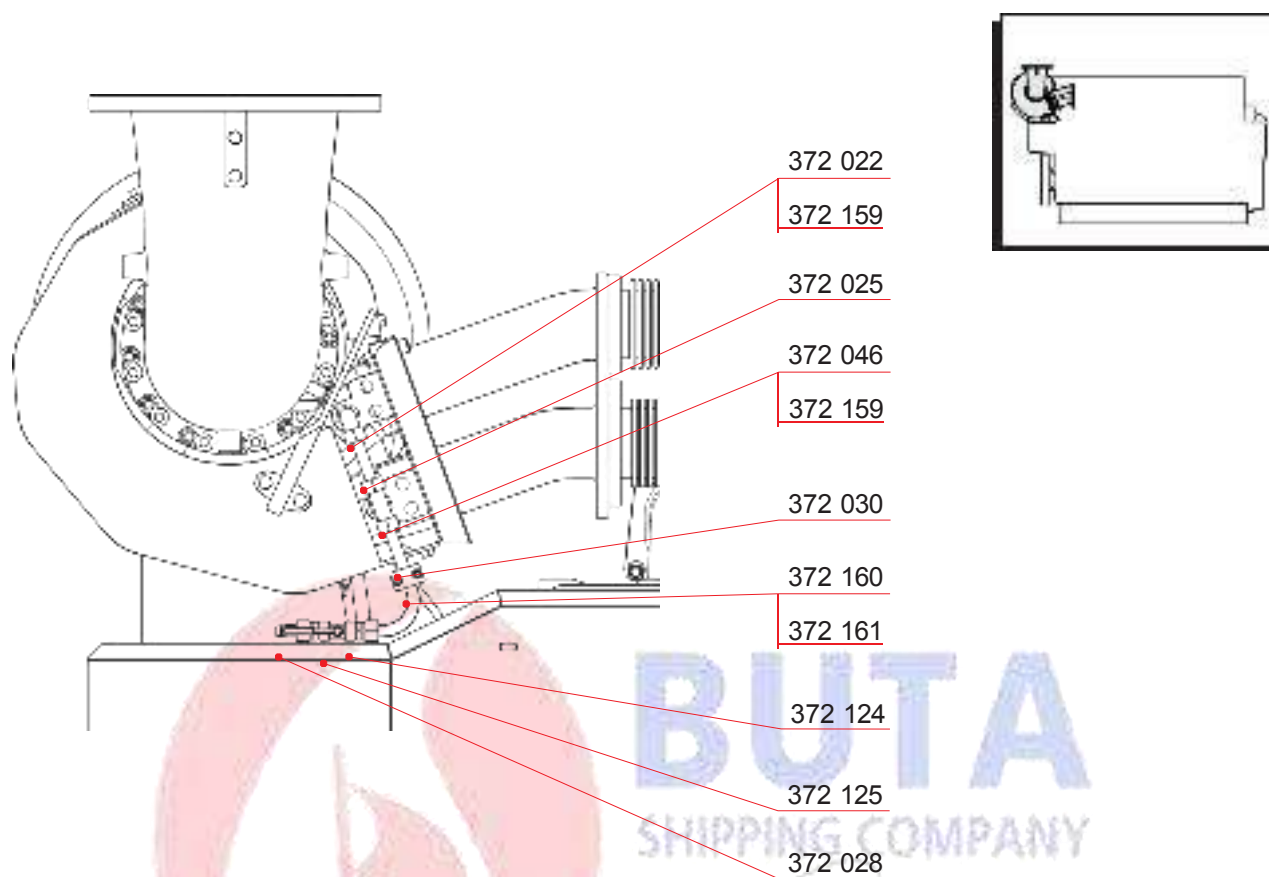
Part No.	Description	Qty [Pcs]	Wt [Kg]
370 001	Ventilation pipe	1	-
370 002	Screw	4	-
370 004	Screw	4	-
370 013	Plug	1	-
370 015	Clamp	2	-
387 031	Glue compound	1	-

Vent pipe assembly



Part No.	Description	Qty [Pcs]	Wt [Kg]
370 006	Oil lock	1	-
387 017	Glue compound	1	-

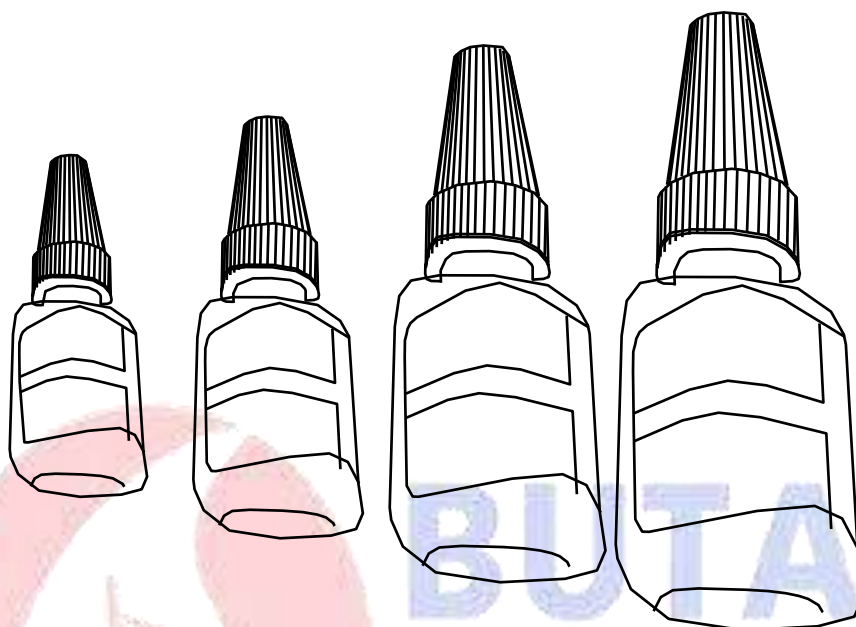
Cleaning device piping for turbine



Part No.	Description	Qty [Pcs]	Wt. [Kg]
372 022	Pipe union	1	-
372 025	Pipe	1	-
372 028	Adapter	1	-
372 030	Pipe	1	-
372 046	Pipe union	1	0.2
372 124	Ball valve	1	0.2
372 125	Pipe union	2	0.1
372 159	Pipe union	2	-
372 160	Pipe clamp	1	-
372 161	Screw	2	-

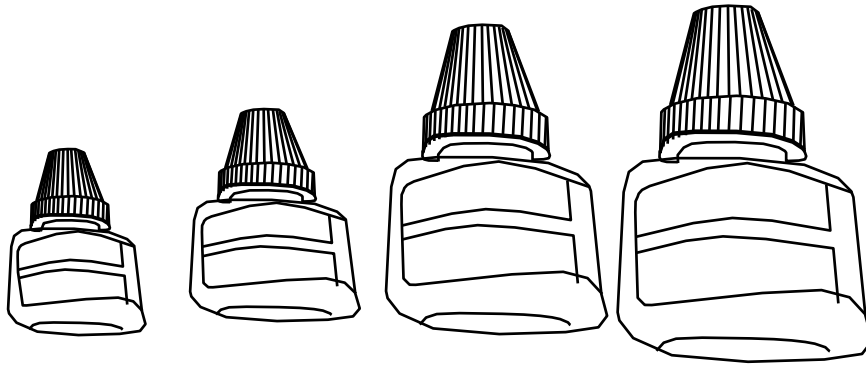
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Chemicals



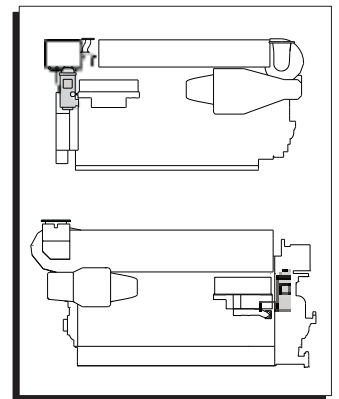
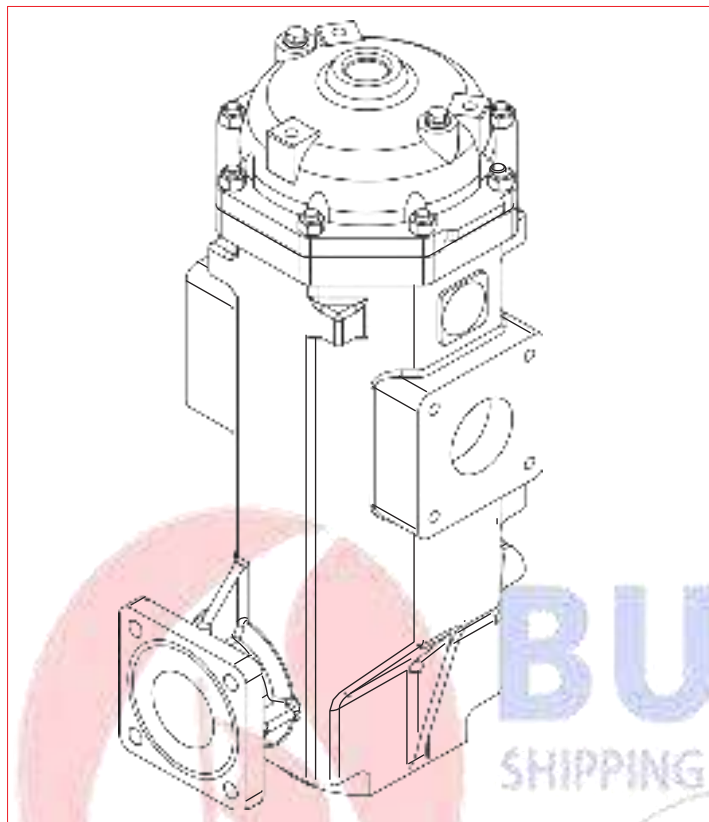
Part No.	Description	Qty [Pcs]	Wt [Kg]
387 001	Glue compound	1	-
387 002	Glue compound	1	-
387 003	Glue compound	1	-
387 004	Glue compound	1	-
387 005	Glue compound	1	-
387 006	Glue compound	1	-
387 007	Glue compound	1	-
387 008	Glue compound	1	-
387 009	Glue compound	1	-
387 010	Glue compound	1	-
387 011	Glue compound	1	-
387 012	Glue compound	1	-
387 013	Glue compound	1	-
387 014	Glue compound	1	-
387 015	Glue compound	1	-
387 016	Glue compound	1	-
387 017	Glue compound	1	-
387 018	Glue compound	1	-
387 019	Glue compound	1	-
387 020	Glue compound	1	-

Chemicals



Part No.	Description	Qty [Pcs]	Wt [Kg]
387 021	Contact lubrication	1	-
387 022	Contact lubrication	1	-
387 023	Contact lubrication	1	-
387 024	Glue compound	1	-
387 025	Glue compound	1	-
387 026	Glue compound	1	-
387 027	Glue compound	1	-
387 029	Lubricant	1	-
387 030	Glue compound	1	-
387 031	Glue compound	1	-
387 032	Glue compound	1	-
387 033	Glue compound	1	-
387 034	Glue compound	1	-
387 035	Glue compound	1	-
387 036	Glue compound	1	-
387 037	Glue compound	1	-
387 038	Contact lubrication	1	-
387 039	Contact lubrication	1	-
387 040	Glue compound	1	-
387 041	Contact lubrication	1	-
387 042	Glue compound	1	-
387 043	Grease	1	-
387 044	Glue compound	1	-
387 046	Glue compound	1	-
387 048	Corrosion protection	1	-
387 049	Cleaner	1	-
387 050	Glue compound	1	-
387 051	Glue compound	1	-
387 052	Activator	1	-
387 053	Grease	1	-
387 054	Contact lubrication	1	-
387 055	Lubricant	1	-
387 056	Grease	1	-
387 057	Contact lubrication	1	-
387 058	Contact lubrication	1	-
387 059	Glue compound	1	-
387 060	Sealant	1	-
387 061	Glue compound	1	-

Lubricating oil filter

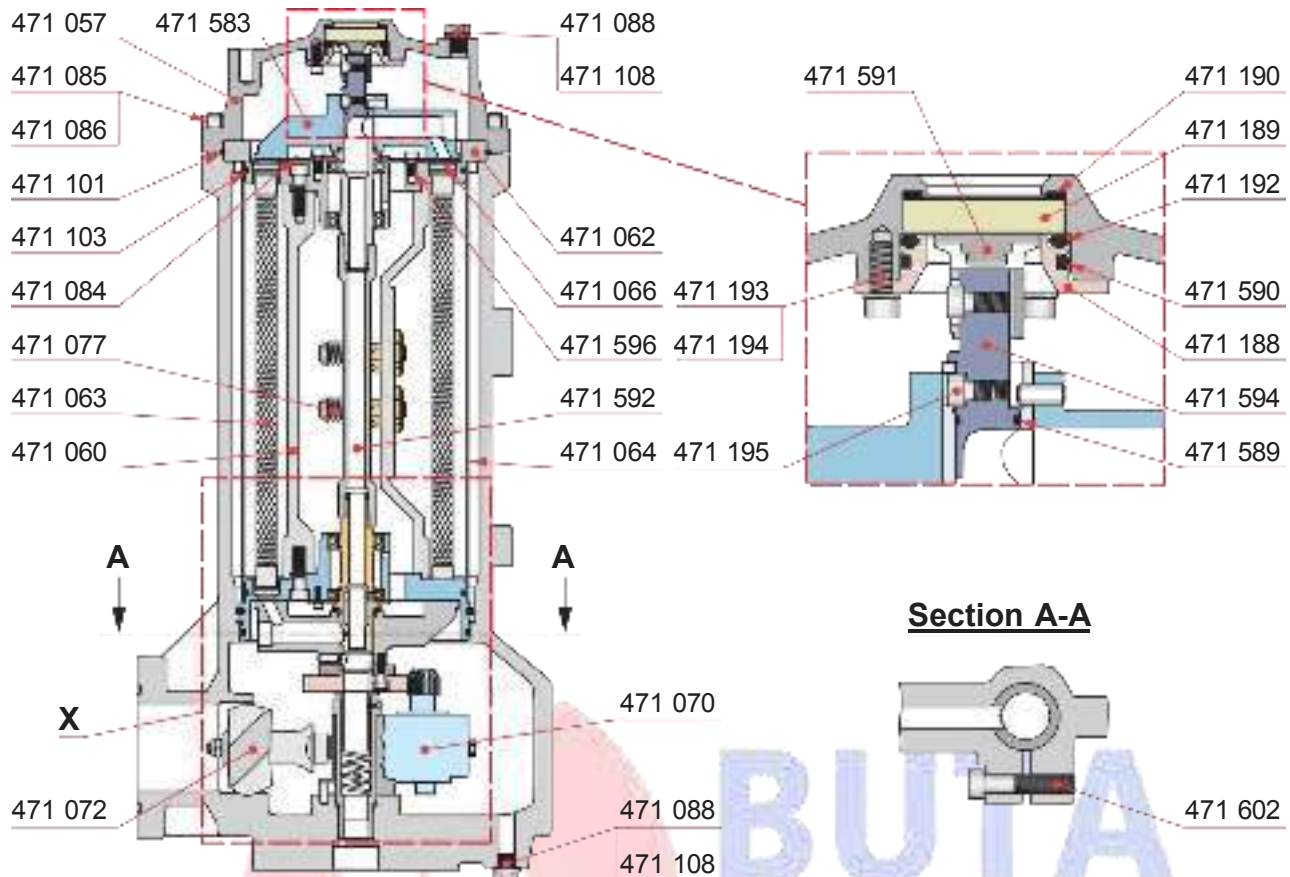


471 056

BUTA
SHIPPING COMPANY

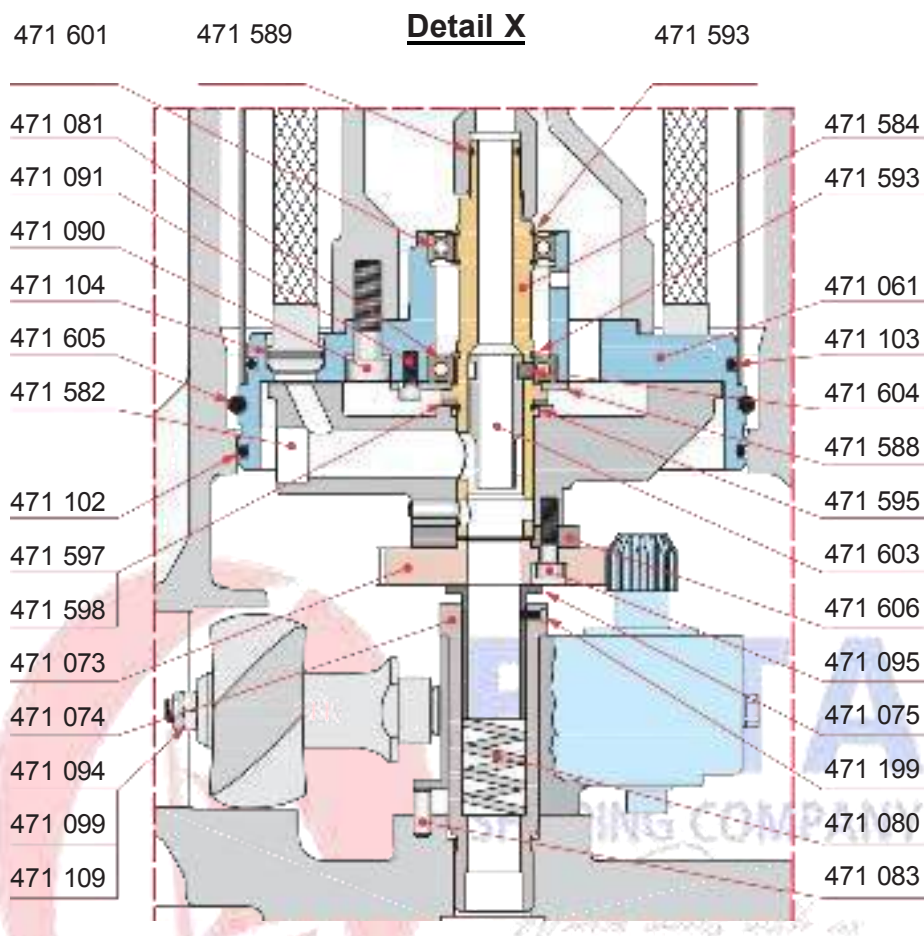
Hydraulic services with us

Lubricating oil filter



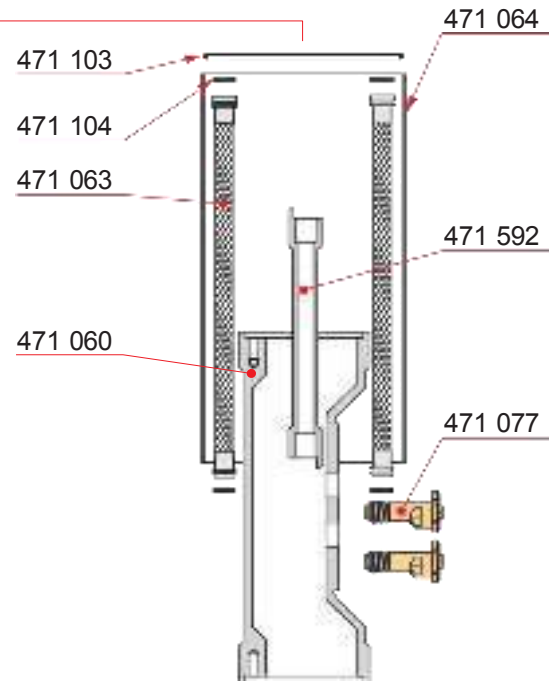
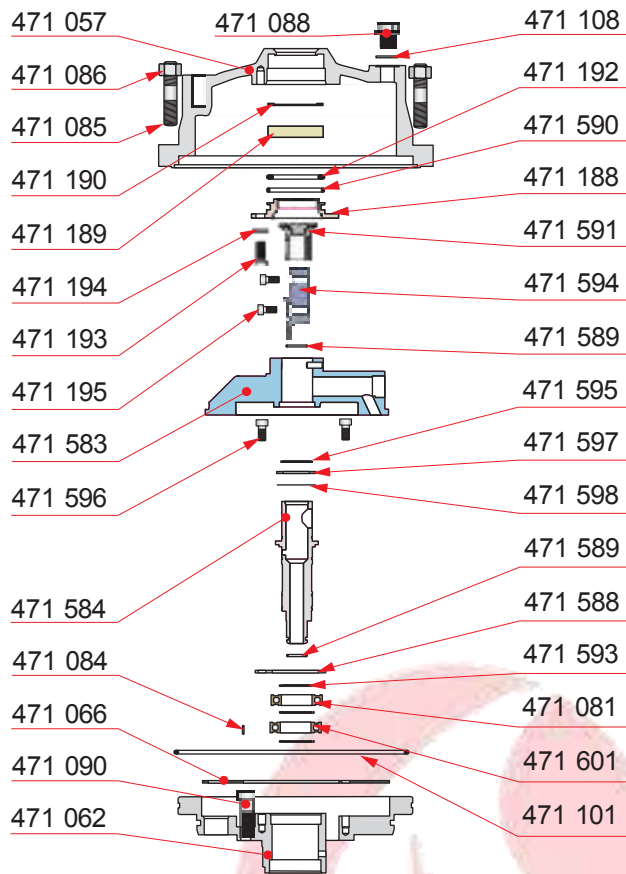
Part No.	Description	Qty [Pcs]	Wt. [Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
471 057	Cover	1	-	471 195	Screw	2	-
471 060	Joining tube	1	2.3	471 583	Flushing arm	1	0.3
471 062	Plate	1	3.1	471 589	O-ring	3	-
471 063	Filter element	19	-	471 590	O-ring	1	-
471 064	Filter	1	1.2	471 591	Safety device	1	1.0
471 066	Plate	1	1.0	471 592	Coupling pipe	1	0.5
471 070	Gearbox housing	1	-	471 594	Plug	1	-
471 072	Turbine wing	1	-	471 596	Screw	3	-
471 077	Valve	4	-	471 602	Screw	4	-
471 084	Pin	1	-				
471 085	Screw	8	-				
471 086	Nut	8	-				
471 088	Screw	3	-				
471 101	O-ring	1	-				
471 103	O-ring	2	-				
471 108	Gasket	3	-				
471 188	Tension ring	1	-				
471 189	Inspection glas	1	-				
471 190	Gasket	1	-				
471 192	O-ring	1	-				
471 193	Screw	3	-				
471 194	Washer	3	-				

Lubricating oil filter



Part No.	Description	Qty [Pcs]	Wt [Kg]
471 061	Plate	1	3.1
471 073	Gear wheel	1	0.4
471 074	Bush	1	0.3
471 075	Bush	1	0.1
471 080	Spring	1	-
471 081	Ball bearing	2	0.3
471 083	Pin	1	-
471 090	Screw	6	-
471 091	Screw	6	-
471 094	Screw	1	-
471 095	Screw	2	-
471 099	Washer	1	-
471 102	O-ring	1	-
471 103	O-ring	2	-
471 104	O-ring	38	-
471 109	Nut	1	-
471 199	Screw	1	-
471 582	Flushing arm	1	0.3
471 584	Flushing canal shaft	2	0.3
471 588	Mounting bracket	2	-
471 589	O-ring	3	-
471 593	Locking ring	6	-
471 595	O-ring	2	-
471 597	Washer	2	-
471 598	Support disc	2	-
471 601	Ball bearing	2	0.3

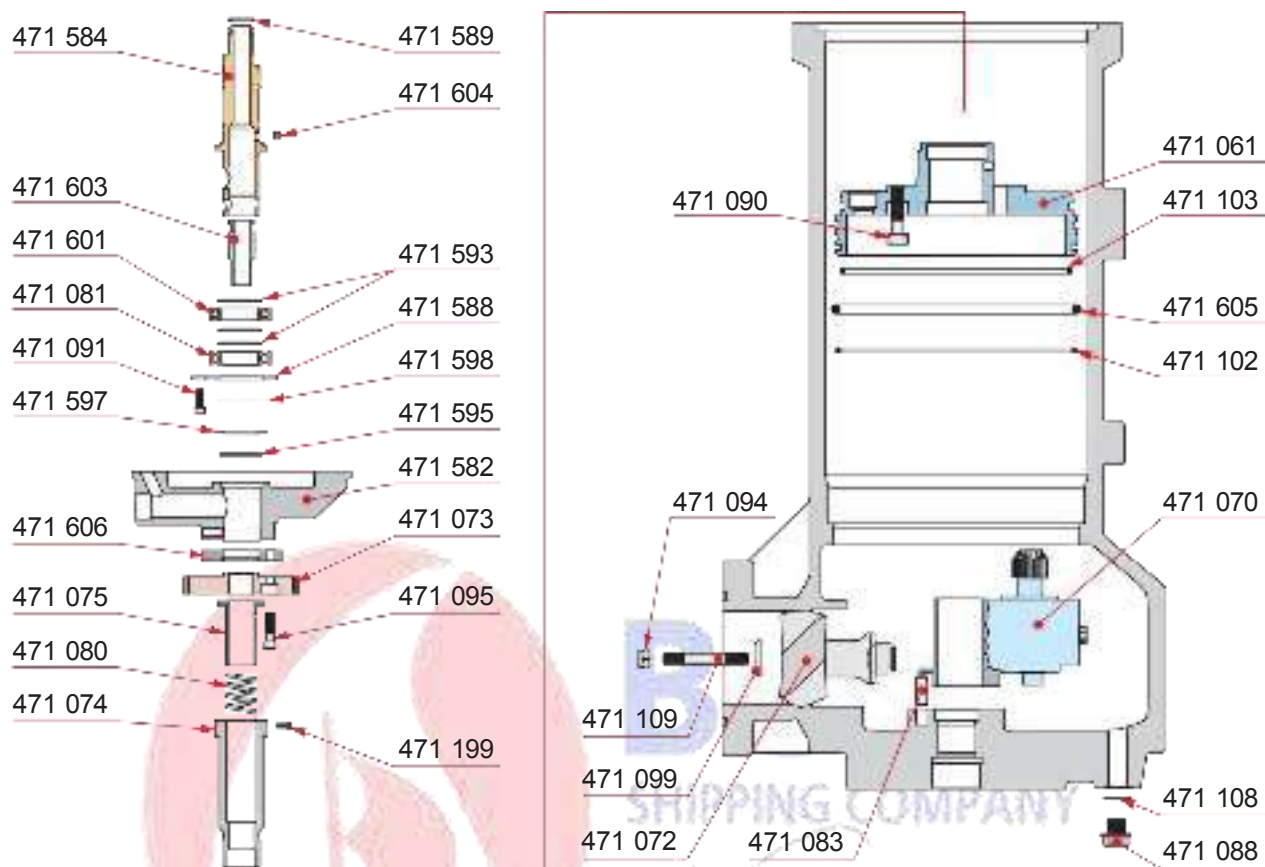
Lubricating oil filter



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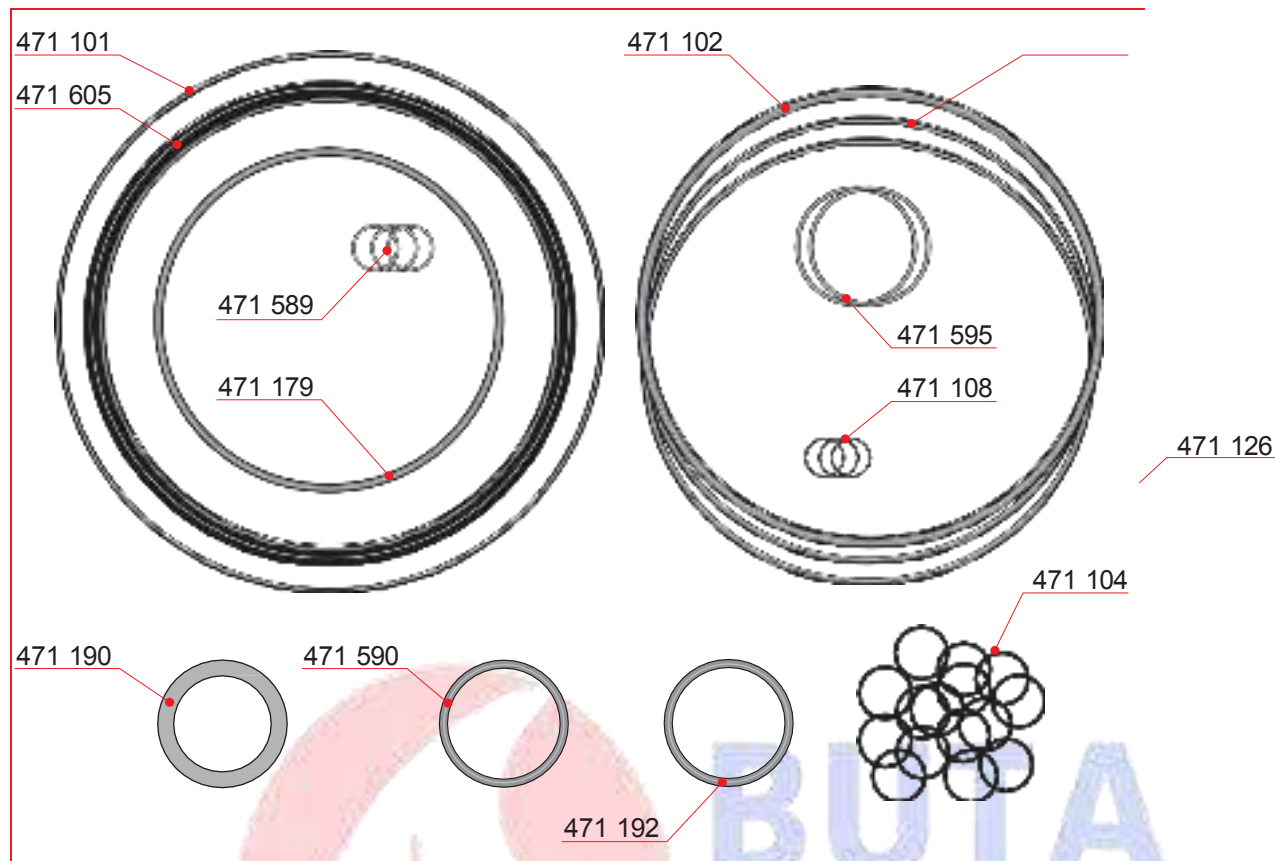
Part No.	Description	Qty [Pcs]	Wt [Kg]
471 057	Cover	1	-
471 060	Joining tube	1	2.3
471 062	Plate	1	3.1
471 063	Filter element	19	-
471 064	Filter	1	1.2
471 066	Plate	1	1
471 077	Valve	4	-
471 081	Ball bearing	2	0.3
471 084	Pin	1	-
471 085	Screw	8	-
471 086	Nut	8	-
471 088	Screw	3	-
471 090	Screw	6	-
471 101	O-ring	1	-
471 103	O-ring	2	-
471 104	O-ring	38	-
471 108	Gasket	3	-
471 188	Tension ring	1	-
471 189	Inspection glass	1	-
471 190	Gasket	1	-
471 192	O-ring	1	-
471 193	Screw	3	-
471 194	Washer	3	-
471 195	Screw	2	-
471 583	Flushing arm	1	0.3
471 584	Flushing canal shaft	2	0.3
471 588	Mounting bracket	2	-
471 589	O-ring	3	-
471 590	O-ring	1	-
471 591	Safety device	1	1
471 592	Coupling pipe	1	0.5

Lubricating oil filter



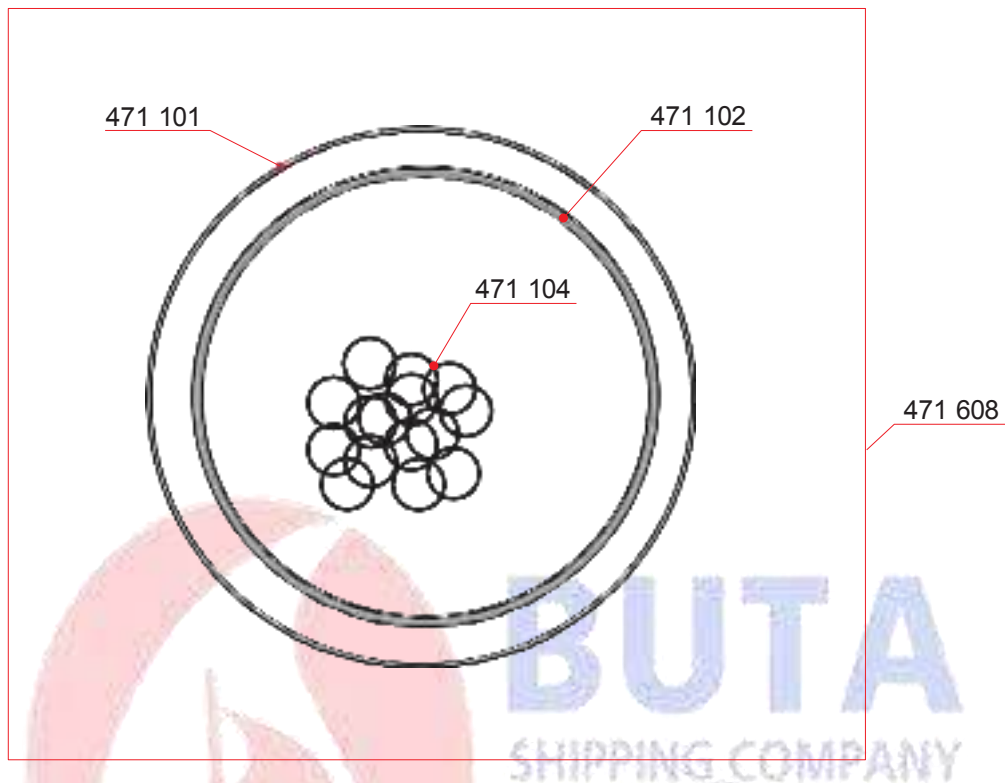
Part No.	Description	Qty [Pcs]	Wt [Kg]
471 061	Plate	1	3.1
471 070	Gearbox housing	1	-
471 072	Turbine wing	1	-
471 073	Gear wheel	1	0.4
471 074	Bush	1	0.3
471 075	Bush	1	0.1
471 080	Spring	1	-
471 081	Ball bearing	2	0.3
471 083	Pin	1	-
471 088	Screw	3	-
471 090	Screw	6	-
471 091	Screw	6	-
471 094	Screw	1	-
471 095	Screw	2	-
471 099	Washer	1	-
471 102	O-ring	1	-
471 103	O-ring	2	-
471 108	Gasket	3	-
471 109	Nut	1	-
471 199	Screw	1	-
471 582	Flushing arm	1	0.3
471 584	Flushing canal shaft	2	0.3
471 588	Mounting bracket	2	-
471 589	O-ring	3	-
471 593	Locking ring	6	-
471 595	O-ring	2	-
471 597	Washer	2	-
471 598	Support disc	2	-
471 601	Ball bearing	2	0.3

Lubricating oil filter



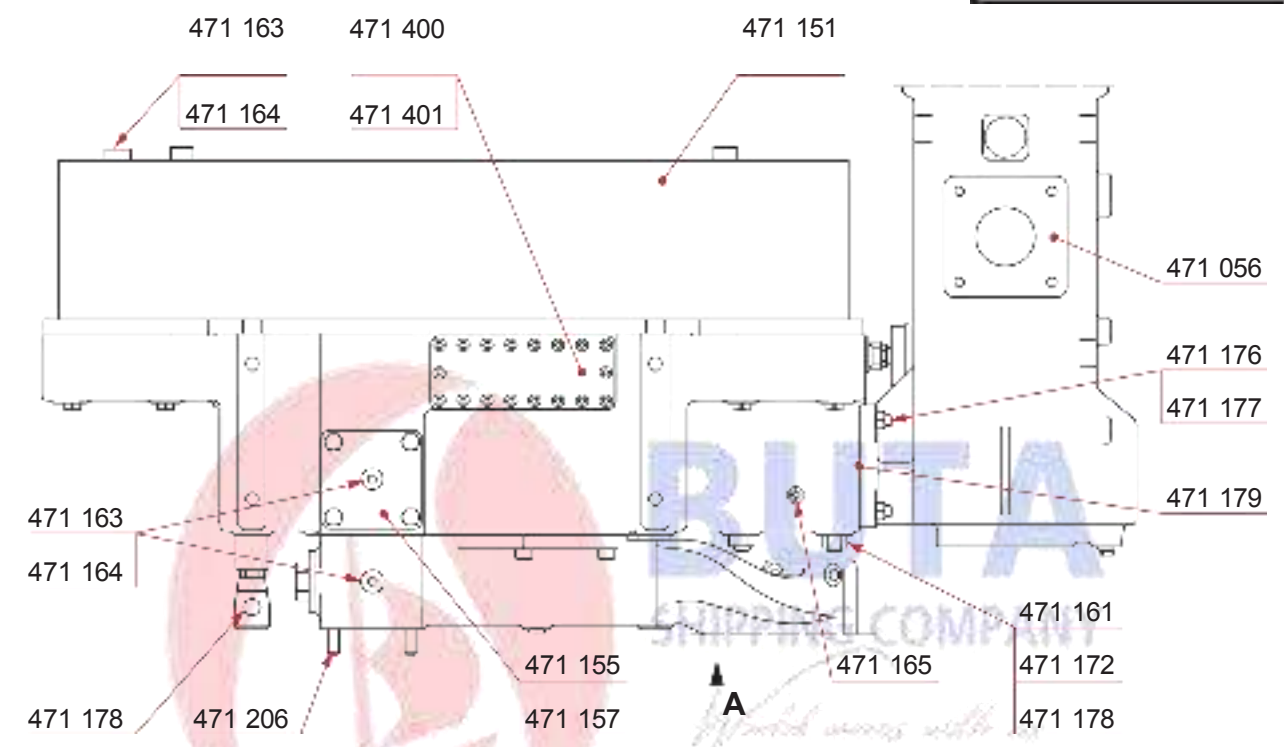
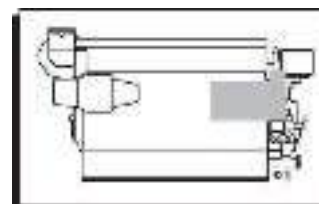
Part No.	Description	Qty [Pcs]	Wt [Kg]
471 126	Sealing set	1	0.3
471 101	O-ring	1	-
471 102	O-ring	1	-
471 103	O-ring	2	-
471 104	O-ring	38	-
471 108	Gasket	3	-
471 179	O-ring	1	-
471 190	Gasket	1	-
471 192	O-ring	1	-
471 589	O-ring	3	-
471 590	O-ring	1	-
471 595	O-ring	2	-
471 605	Guide ring	1	-

Lubricating oil filter



Part No.	Description	Qty [Pcs]	Wt [Kg]
471 608	Sealing set	1	-
471 101	O-ring	1	-
471 102	O-ring	1	-
471 104	O-ring	38	-

Lube oil module

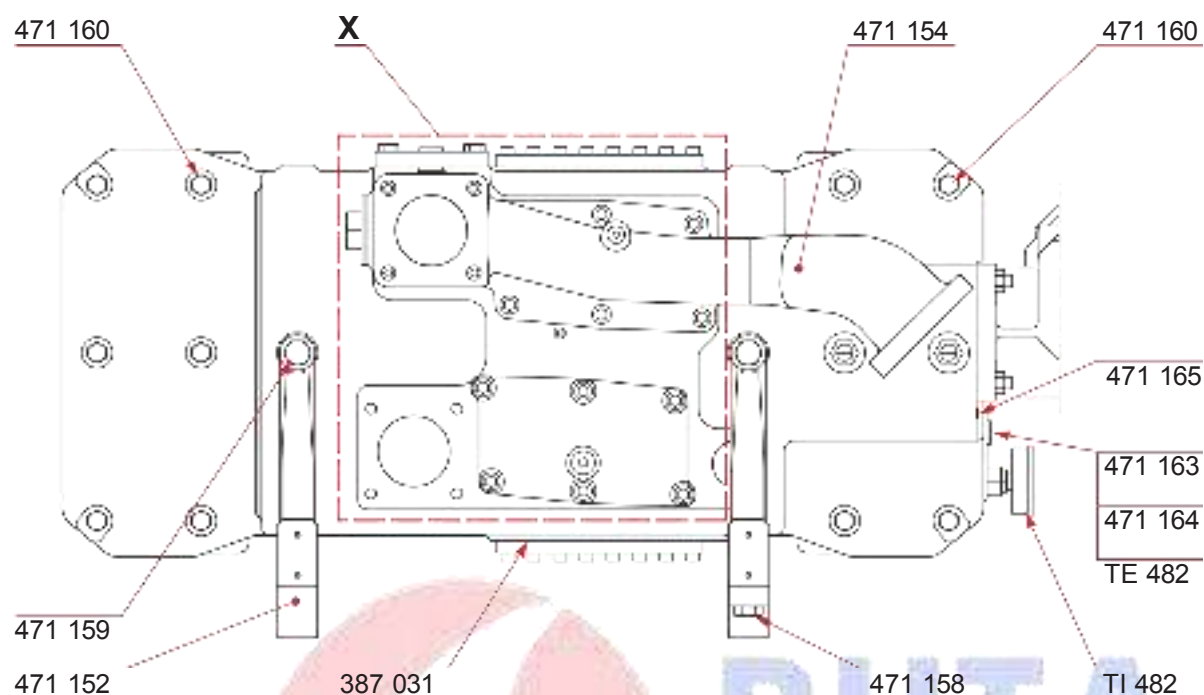


Part No.	Description	Qty [Pcs]	Wt. [Kg]
471 056	Lubricating oil filter	1	56.0
471 151	Plate heat exchanger	1	-
471 155	Flange	1	-
471 157	Screw	4	-
471 161	Screw	2	0.2
471 163	Plug	5	-
471 164	Sealing ring	5	-
471 165	Plug	3	-
471 172	O-ring	2	-
471 176	Screw	4	-
471 177	Nut	4	-
471 178	Nut	6	-
471 179	O-ring	5	-
471 206	Screw	4	0.1
471 400	Screw	36	-
471 401	Flange	2	0.4

Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Lube oil module

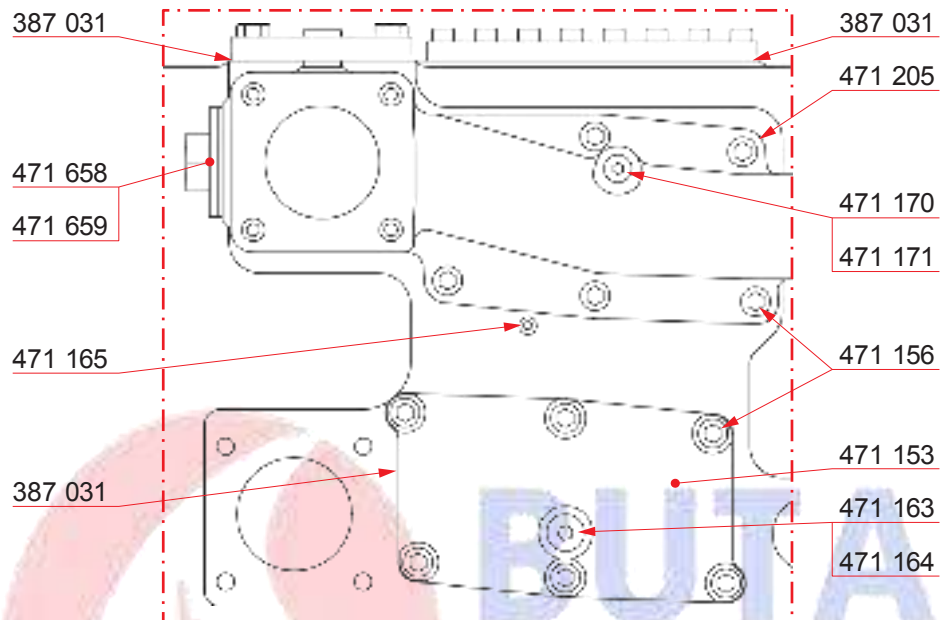
View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
471 152	Bracket	2	-
471 154	Oil pipe	1	17.4
471 158	Screw	4	0.2
471 159	Screw	2	0.1
471 160	Screw	10	-
471 163	Plug	5	-
471 164	Sealing ring	5	-
471 165	Plug	3	-
TE482	Temp. sensor, LT-thermostatic control, LT-water (1)	1	-
TI482	Thermometer, LT water, after LO-cooler (2)	1	-
387 031	Glue compound	1	-

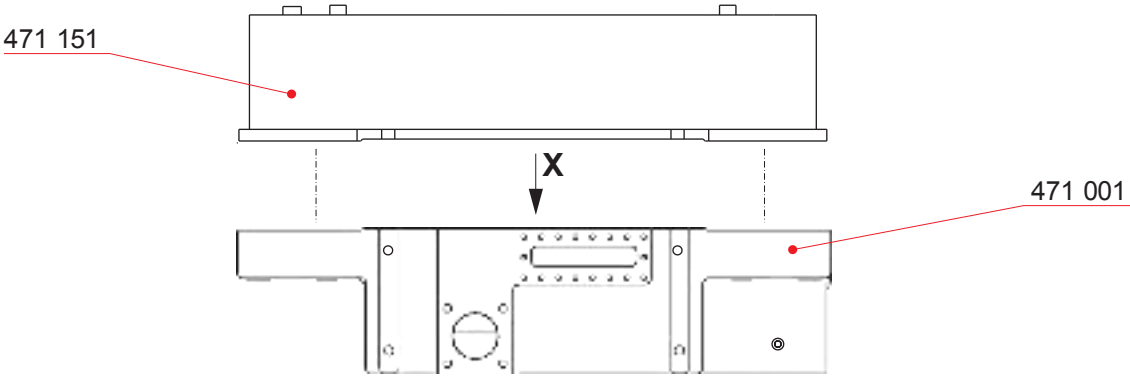
Lube oil module

Detail X

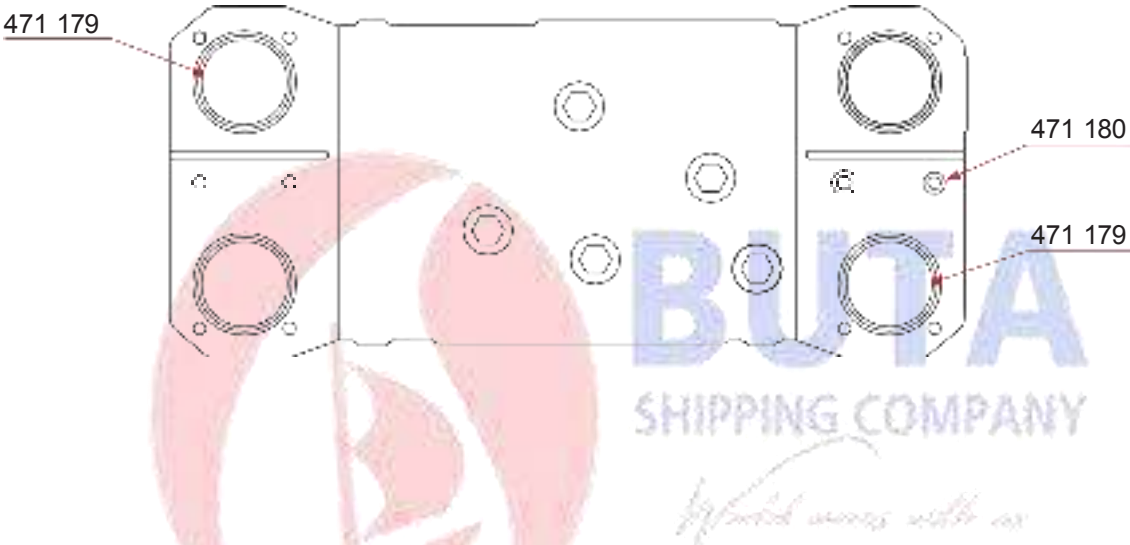


Part No.	Description	Qty [Pcs]	Wt [Kg]
471 153	Cover	1	3.7
471 156	Screw	11	-
471 163	Plug	5	-
471 164	Sealing ring	5	-
471 165	Plug	3	-
471 170	Plug	1	-
471 171	Sealing ring	1	-
471 205	Gasket	1	-
471 658	Sealing ring	1	-
471 659	Plug	1	0.6
387 031	Glue compound	1	-

Lube oil module

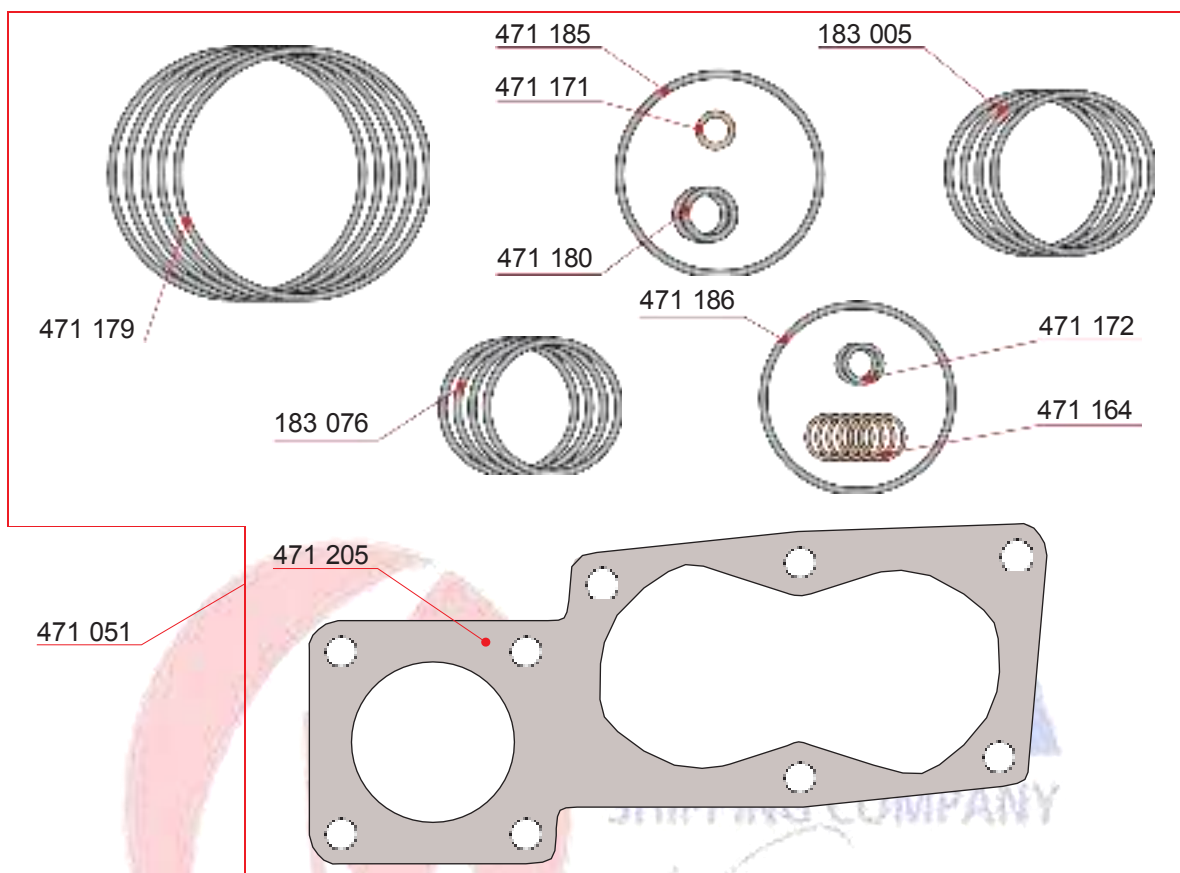


View X



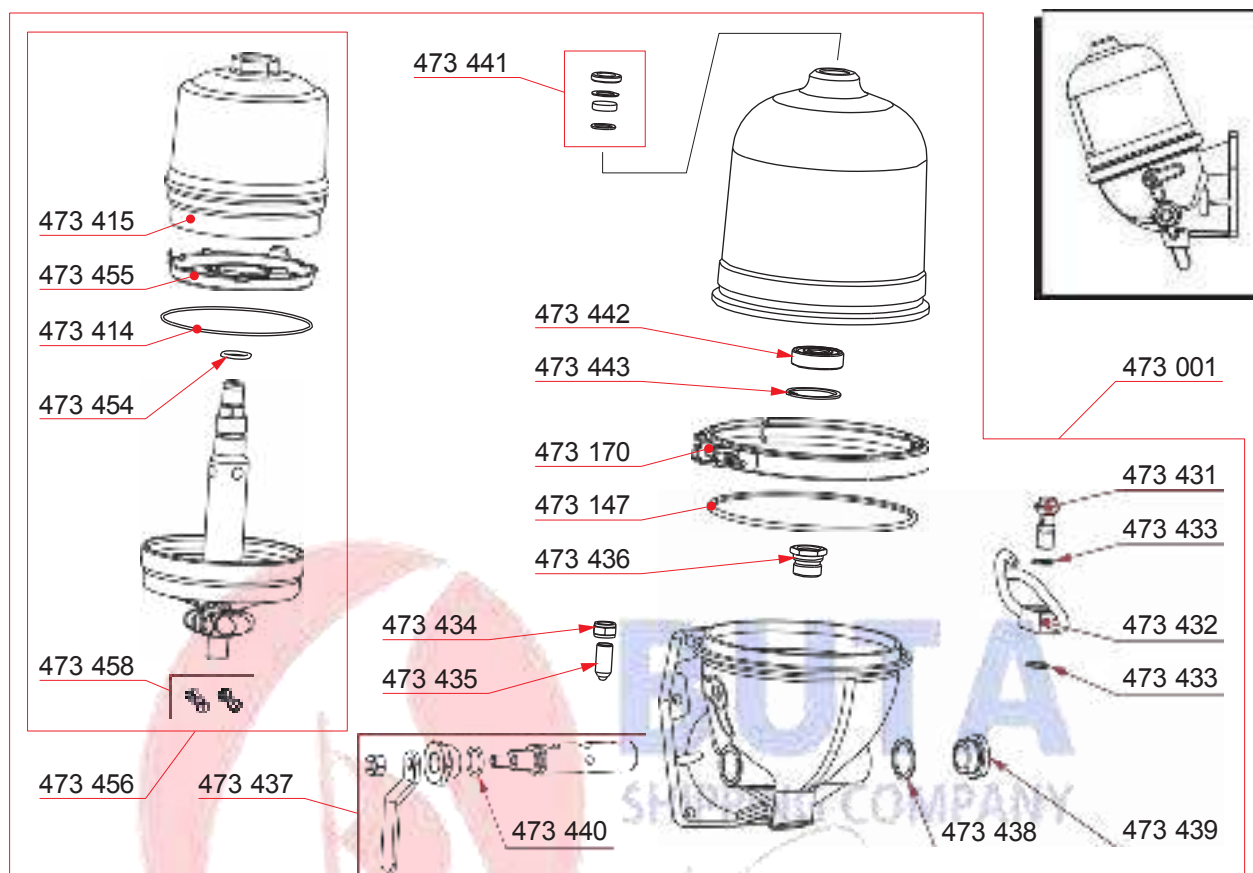
Part No.	Description	Qty [Pcs]	Wt [Kg]
471 001	Housing	1	151
471 151	Plate heat exchanger	1	-
471 179	O-ring	5	-
471 180	O-ring	2	-

Lube oil module



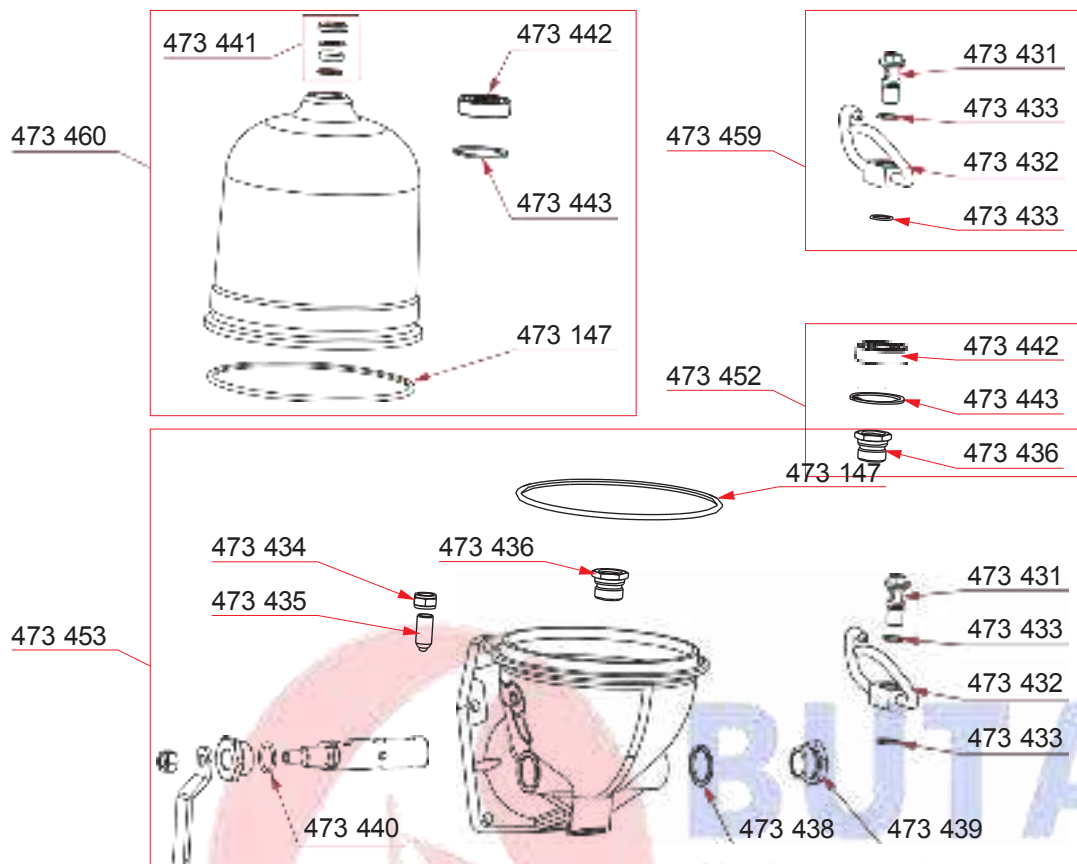
Part No.	Description	Qty [Pcs]	Wt [Kg]
471 051	Sealing set for lubricating oil module	1	0.2
183 005	O-ring	4	-
183 076	O-ring	4	-
471 164	Sealing ring	6	-
471 171	Sealing ring	1	-
471 172	O-ring	2	-
471 179	O-ring	5	-
471 180	O-ring	2	-
471 185	O-ring (1)	1	-
471 186	O-ring (1)	1	-
471 205	Gasket	1	-

Centrifugal filter



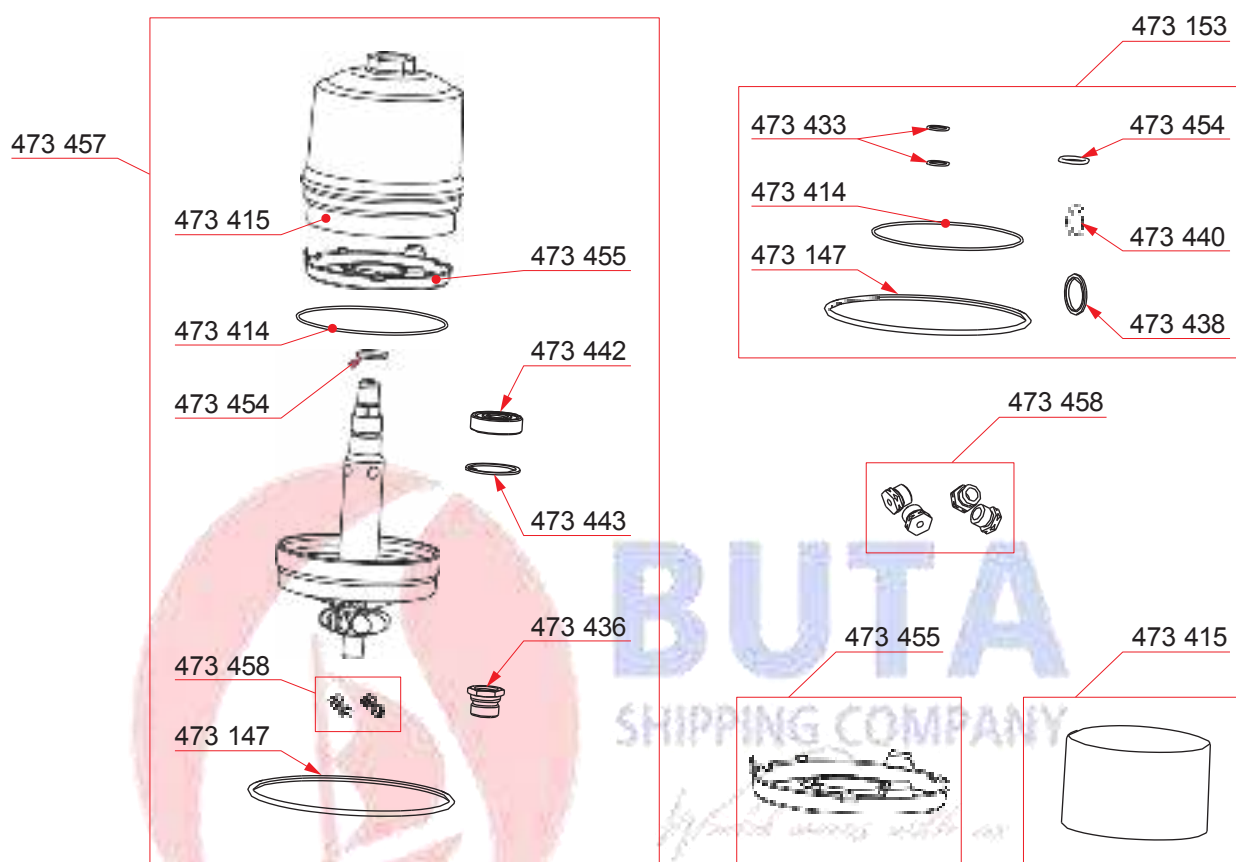
Part No.	Description	Qty [Pcs]	Wt [Kg]
473 001	Centrifugal filter	1	12
473 147	O-ring (1)	1	-
473 170	Cover clamp ring	1	0.5
473 431	Banjo bolt (1)	1	-
473 432	Drive tube (1)	1	-
473 433	O-ring (1)	2	-
473 434	Collar (1)	1	-
473 435	Plunger (1)	1	-
473 436	Bearing (1)	1	-
473 437	Valve assembly	1	1
473 440	O-ring (1)	1	-
473 438	Seal (1)	1	-
473 439	Supply port (1)	1	-
473 441	Sight glass kit	1	0.1
473 442	Cover bearing (1)	1	-
473 443	Circlip (1)	1	-
473 456	Rotor assembly kit	1	7
473 414	O-ring (1)	1	-
473 415	Paper insert (2)	1	0.1
473 454	O-ring (1)	1	-
473 455	Separation cone kit	1	3
473 458	Rotor nozzle kit	1	0.2

Centrifugal filter



Part No.	Description	Qty [Pcs]	Wt [Kg]
473 452	Bearing kit	1	0.3
473 436	Bearing (1)	1	-
473 442	Cover bearing (1)	1	-
473 443	Circlip (1)	1	-
473 453	Body assembly	1	8
473 147	O-ring (1)	1	-
473 431	Banjo bolt (1)	1	-
473 432	Drive tube (1)	1	-
473 433	O-ring (1)	2	-
473 434	Collar (1)	1	-
473 435	Plunger (1)	1	-
473 436	Bearing (1)	1	-
473 438	Seal (1)	1	-
473 439	Supply port (1)	1	-
473 440	O-ring (1)	1	-
473 459	Tube assembly kit	1	0.5
473 431	Banjo bolt (1)	1	-
473 432	Drive tube (1)	1	-
473 433	O-ring (1)	2	-
473 460	Cover assembly kit	1	4
473 147	O-ring (1)	1	-
473 441	Sight glass kit	1	0.1
473 442	Cover bearing (1)	1	-
473 443	Circlip (1)	1	-

Centrifugal filter

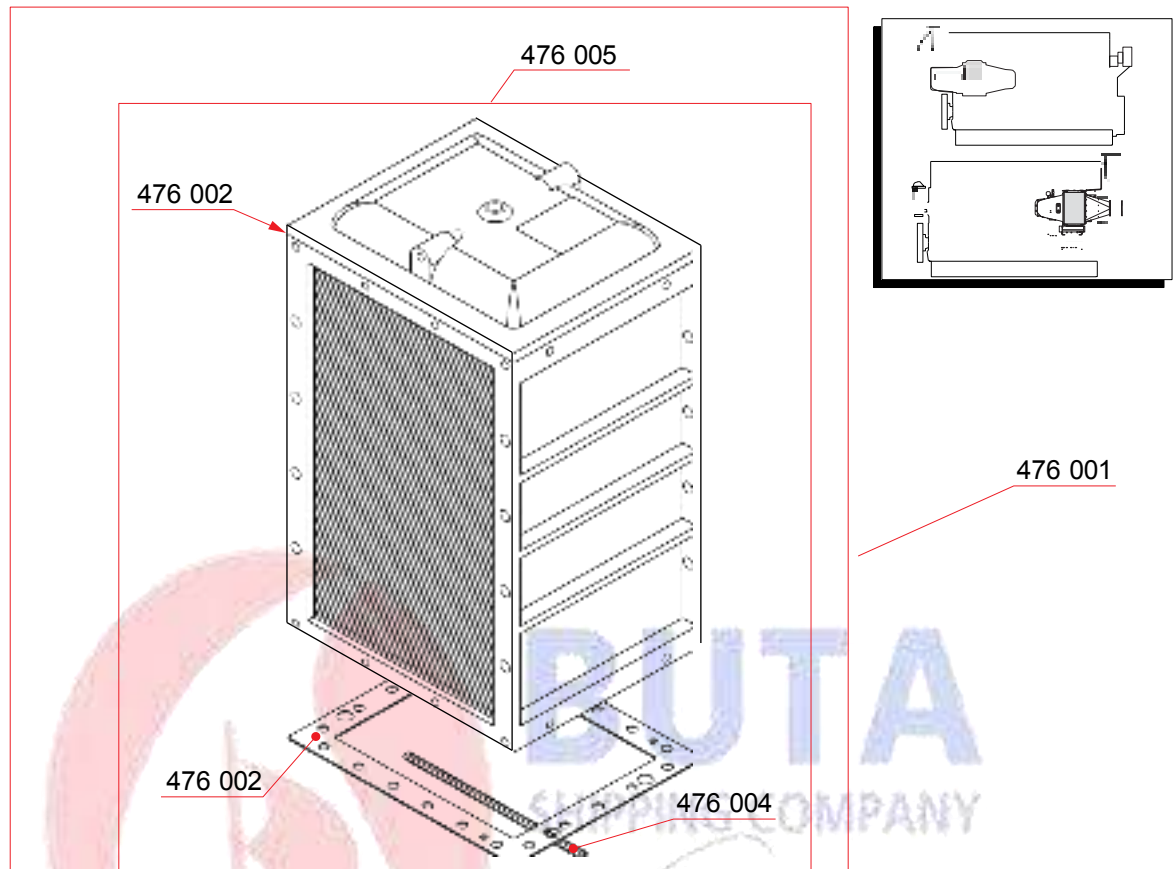


Part No.	Description	Qty [Pcs]	Wt [Kg]
473 153	Sealing set	1	0.1
473 147	O-ring (1)	1	-
473 414	O-ring (1)	1	-
473 433	O-ring (1)	2	-
473 438	Seal (1)	1	-
473 440	O-ring (1)	1	-
473 454	O-ring (1)	1	-
473 415	Paper insert (2)	1	0.1
473 455	Separation cone kit	1	3
473 457	Rotor upgrade kit	1	8.5
473 147	O-ring (1)	1	-
473 414	O-ring (1)	1	-
473 415	Paper insert (2)	1	0.1
473 436	Bearing (1)	1	-
473 442	Cover bearing (1)	1	-
473 443	Circlip (1)	1	-
473 454	O-ring (1)	1	-
473 455	Separation cone kit	1	3

473 458	Rotor nozzle kit	1	0.2
473 458	Rotor nozzle kit	1	0.2

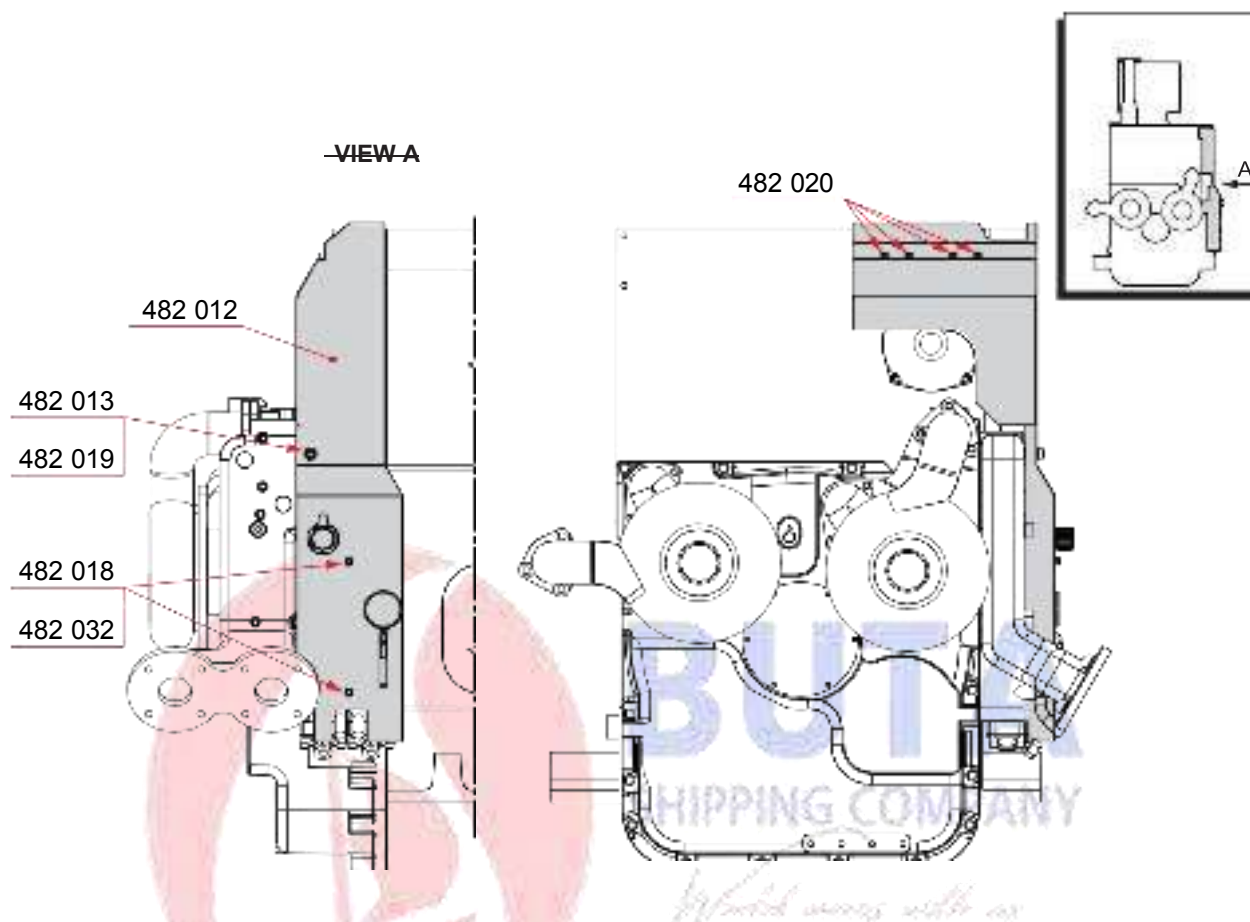


Air cooler



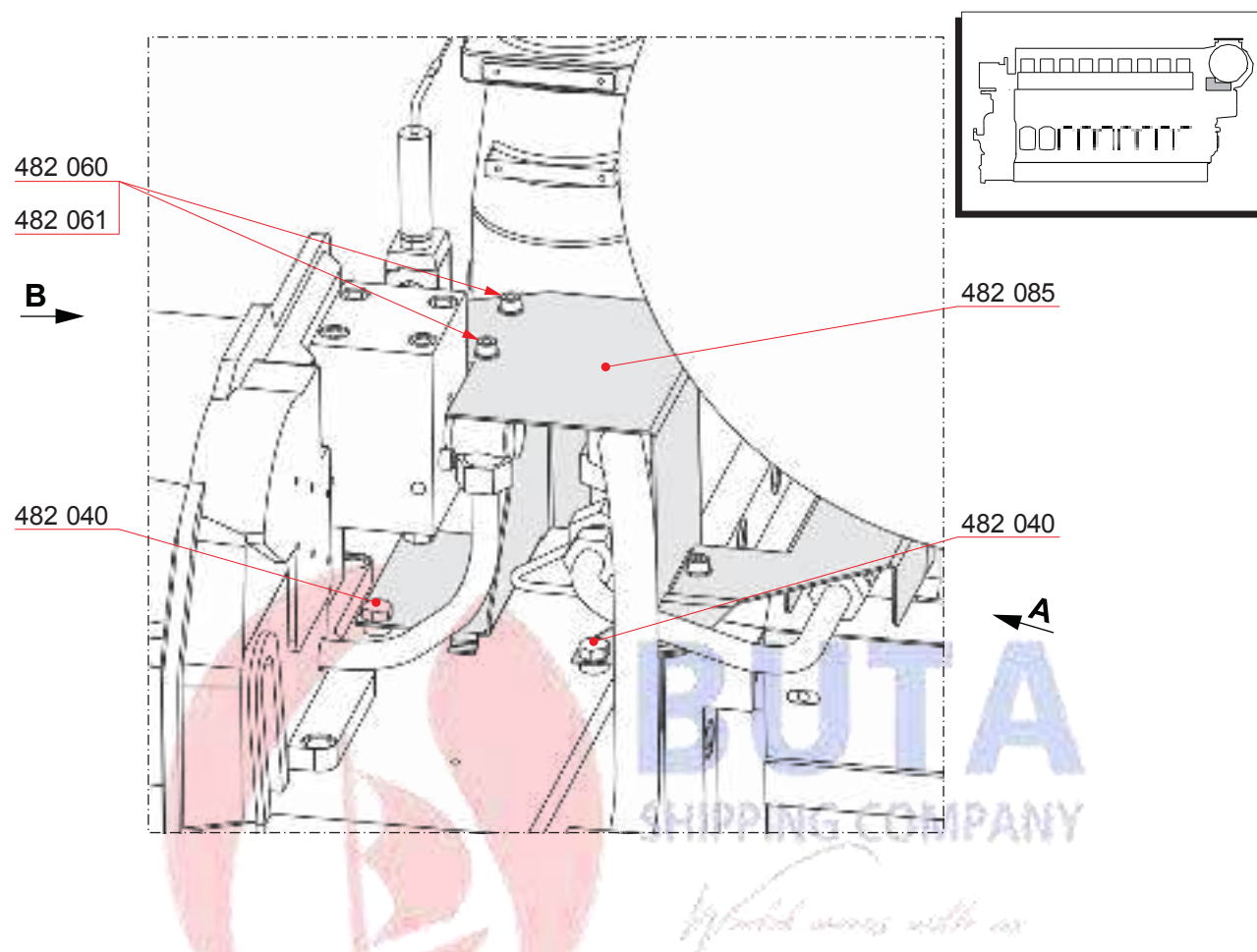
Part No.	Description	Qty [Pcs]	Wt [Kg]
476 001	Charge air cooler	1	159
476 005	Gasket set (1)	1	1
476 002	Gasket (2)	2	-
476 004	Profile gasket (2)	1	-

Splash guard for fuel oil pipes



Part No.	Description	Qty [Pcs]	Wt [Kg]
482 012	Splash guard	1	-
482 013	Screw	1	-
482 018	Washer	2	-
482 019	Washer	1	-
482 020	Screw	4	-
482 032	Nut	2	-

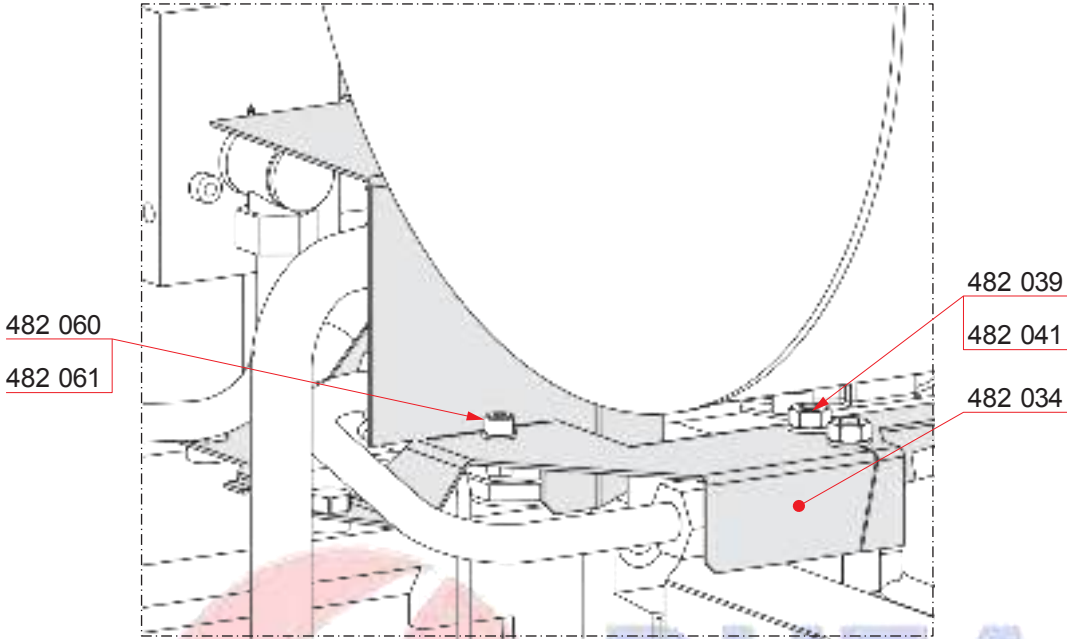
Splash guards for TC oil supply pipe



Part No.	Description	Qty [Pcs]	Wt [Kg]
482 040	Screw	3	-
482 060	Screw	6	-
482 061	Washer	6	-
482 085	Splash guard	1	1.1

Splash guards for TC oil supply pipe

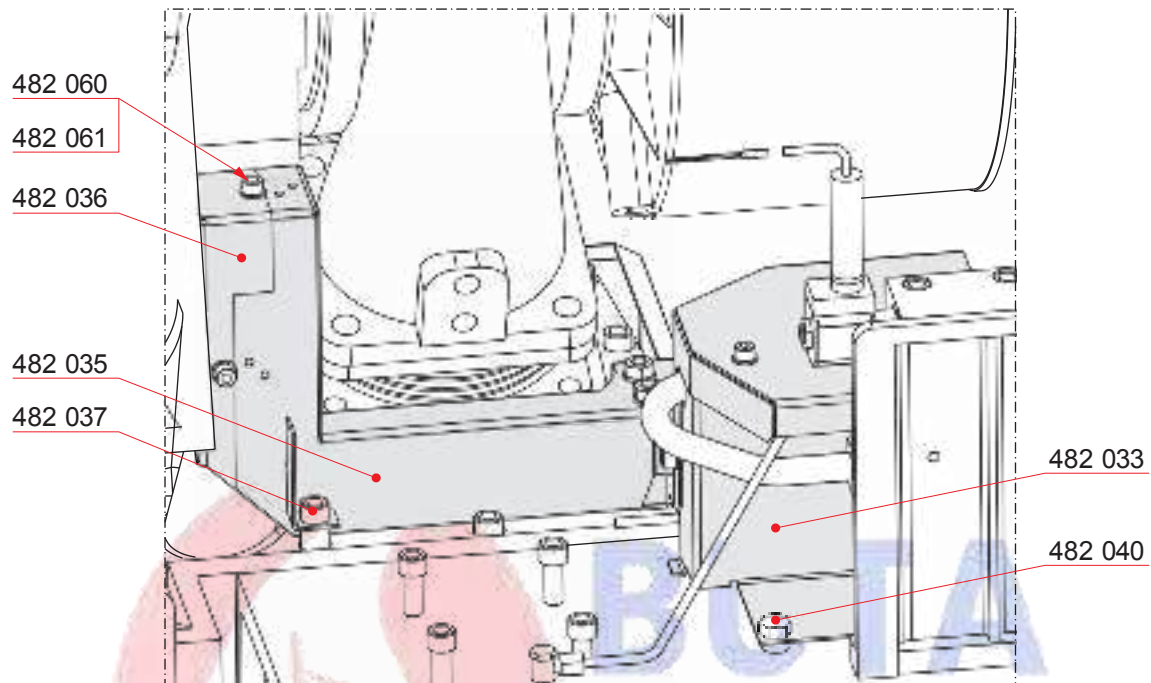
View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
482 034	Splash guard	1	-
482 039	Nut	2	-
482 041	Washer	2	-
482 060	Screw	6	-
482 061	Washer	6	-

Splash guards for TC oil supply pipe

View B

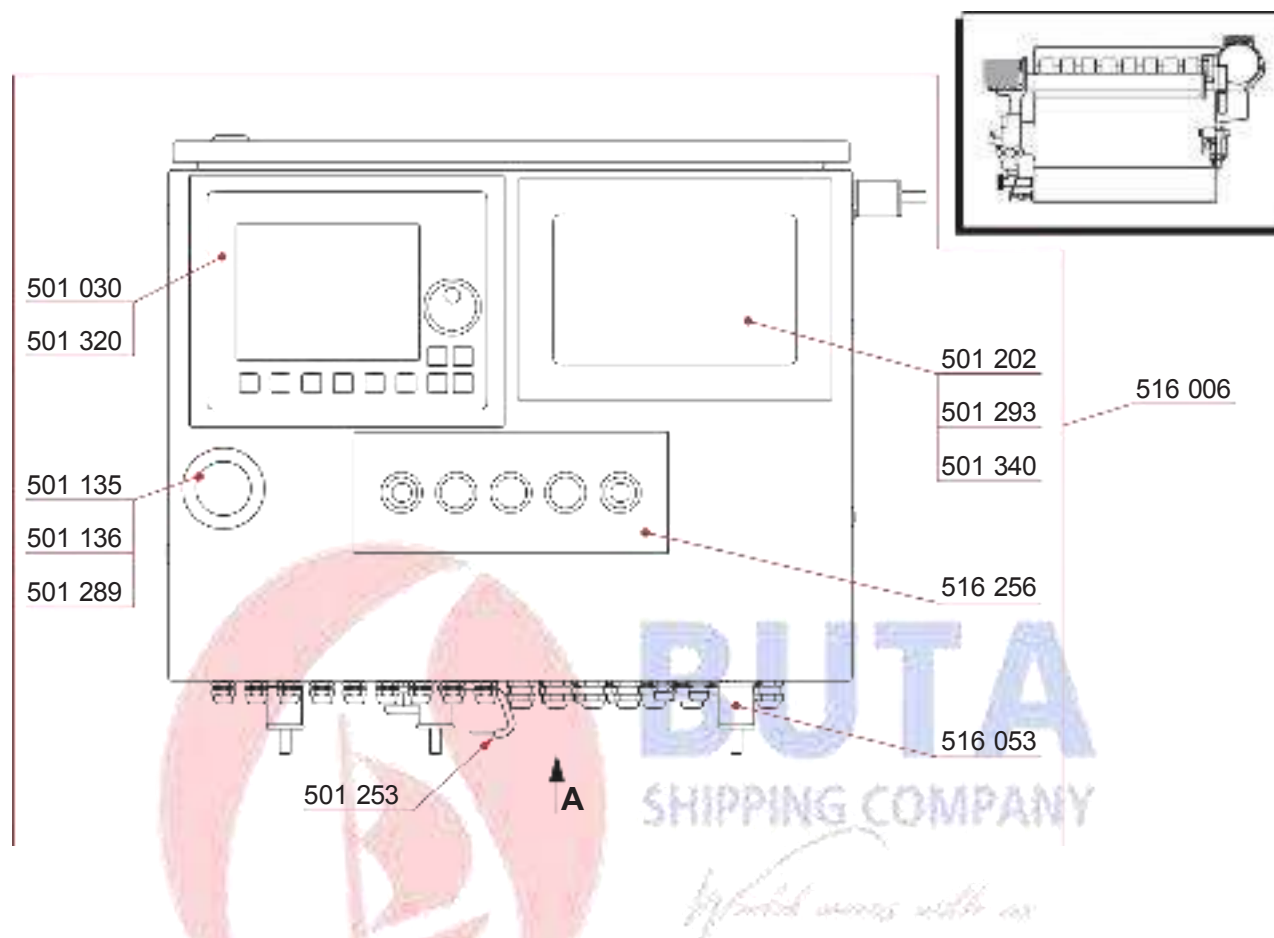


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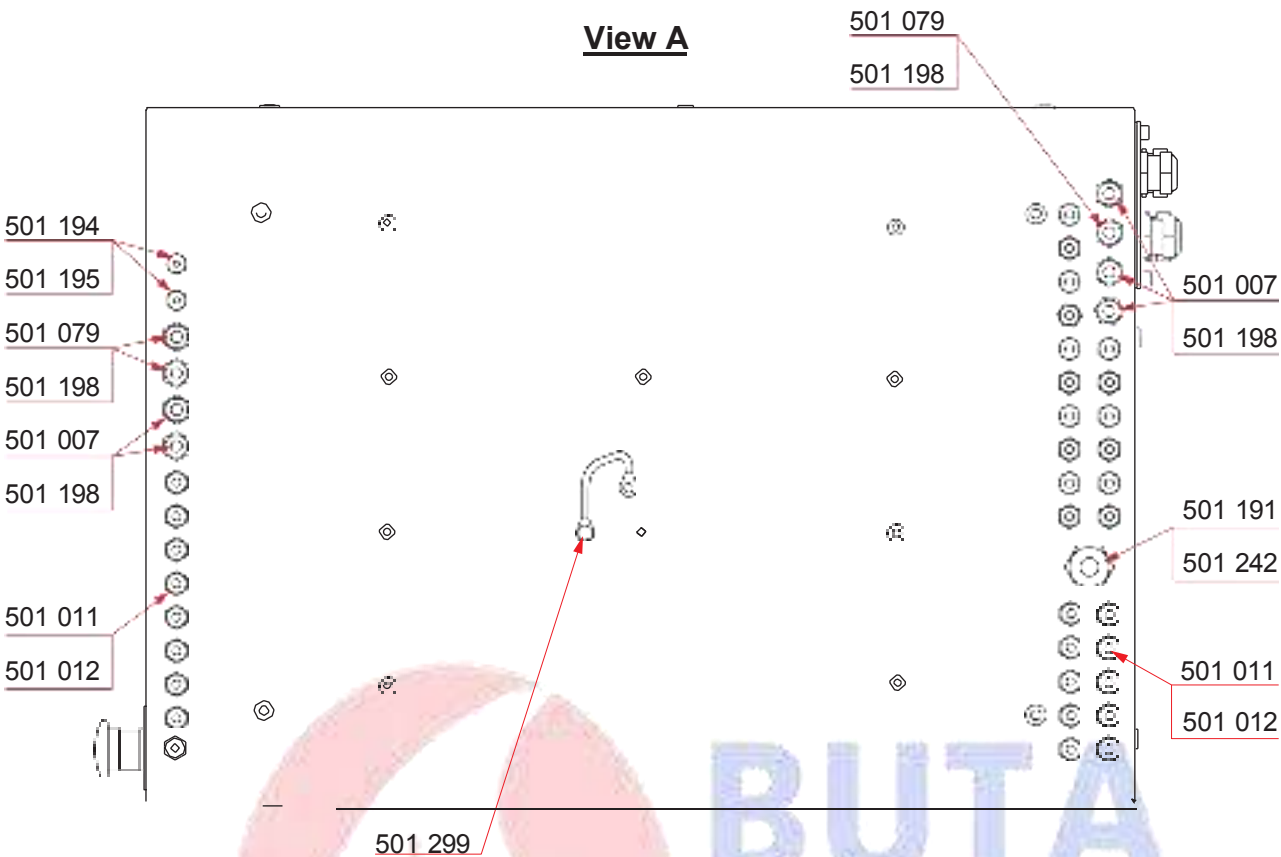
Part No.	Description	Qty [Pcs]	Wt [Kg]
482 033	Splash guard	1	0.7
482 035	Splash guard	1	-
482 036	Splash guard	1	-
482 037	Screw	1	-
482 040	Screw	3	-
482 060	Screw	6	-
482 061	Washer	6	-

Connecting box



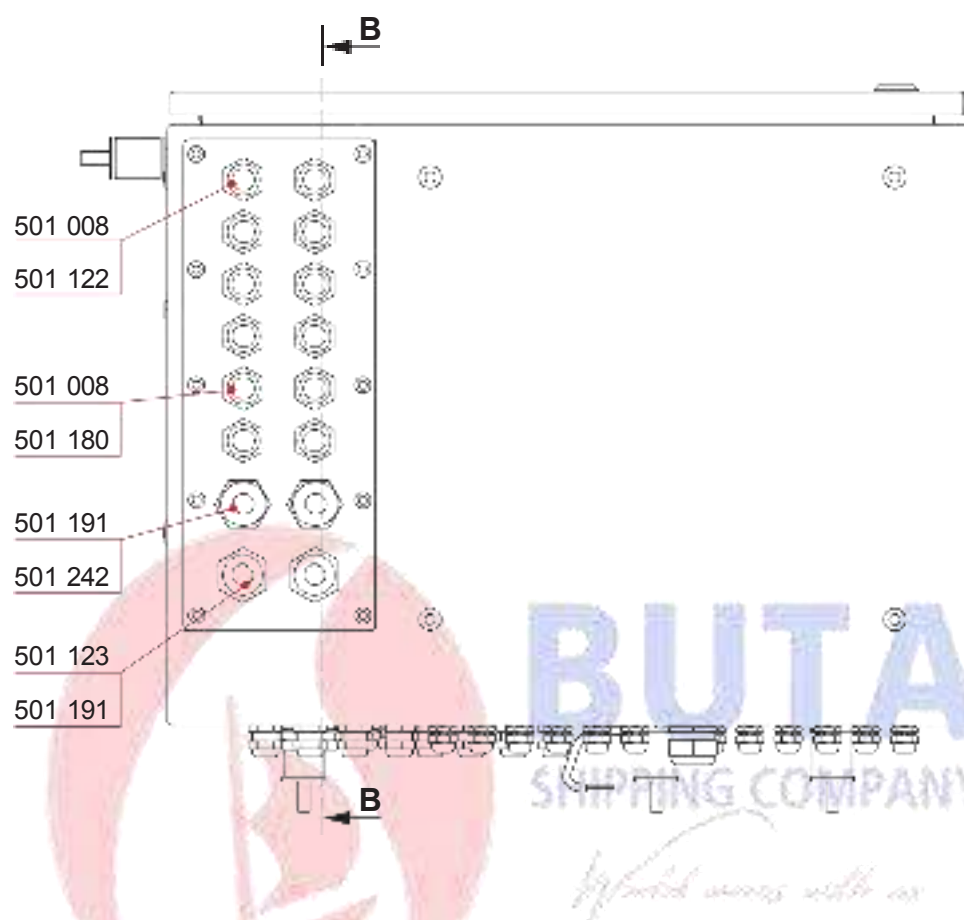
Part No.	Description	Qty [Pcs]	Wt [Kg]
516 006	Connecting box	1	-
501 030	Display unit	1	2.1
501 135	Push button	1	0.1
501 136	Protective collar	1	-
501 202	Control panel	1	2
501 253	Earthing strap	1	-
501 289	Text plate	1	-
501 293	Plug 8-pin, double wire entry	28	-
501 320	Resistor	2	-
501 340	Plug 8-pin	18	-
516 053	Vibration damper	6	-
516 256	Control panel	1	1.4

Connecting box



Part No.	Description	[Pcs]	[Kg]	Part No.	Description	Qty [Pcs]	Wt. [Kg]
501 007	Cable gland	5	-				
501 011	Cable gland	35	-				
501 012	Flat nut	35	-				
501 079	Cable gland	3	-				
501 191	Nut	5	-				
501 194	Cable gland	2	-				
501 195	Locking nut	2	-				
501 198	Locking nut	8	-				
501 242	Cable gland	3	-				
501 299	Screw	1	-				

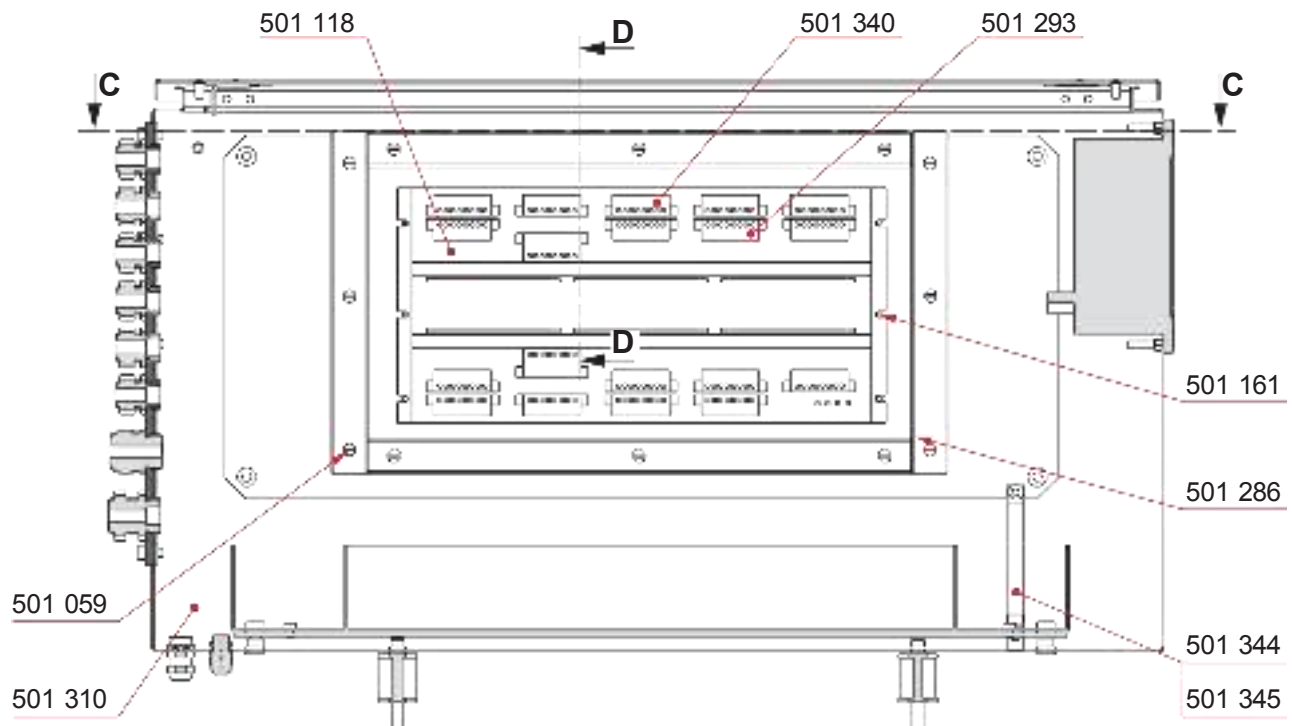
Connecting box



Part No.	Description	Qty [Pcs]	Wt [Kg]
501 008	Flat nut	12	-
501 122	Cable gland	8	-
501 123	Cable gland	2	-
501 180	Cable gland	4	-
501 191	Nut	5	-
501 242	Cable gland	3	-

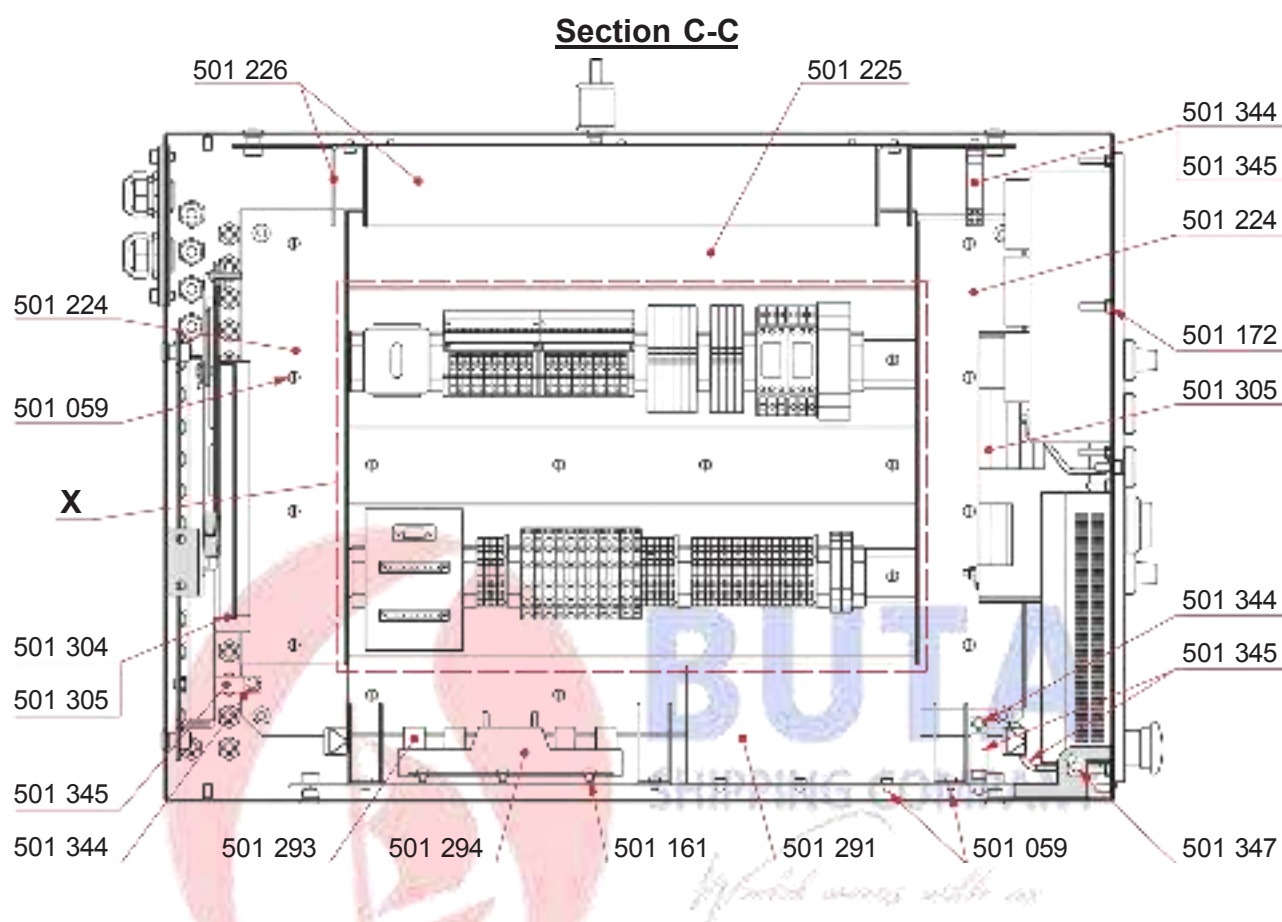
Connecting box

Section B-B



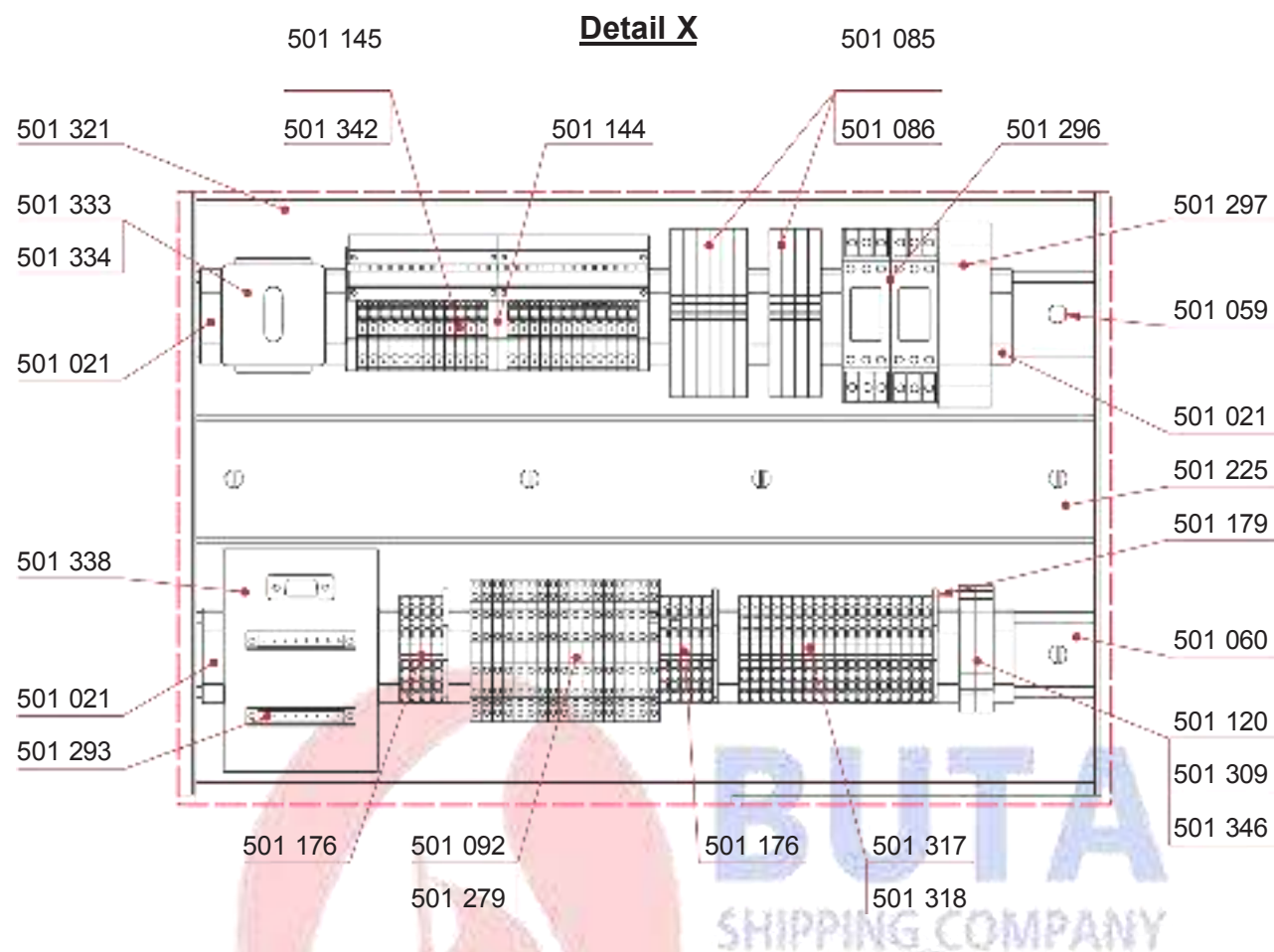
Part No.	Description	Qty [Pcs]	Wt [Kg]
501 059	Screw	58	-
501 118	Control unit	1	1.8
501 161	Screw	12	-
501 286	Cable (1)	1	0.4
501 293	Plug 8-pin, double wire	28	-
501 310	Corrosion protection	1	0.3
501 340	Plug 8-pin	18	-
501 344	Screw	6	0.3
501 345	Earthing strap	4	-

Connecting box



Part No.	Description	Qty [Pcs]	Wt [Kg]
501 059	Screw	58	-
501 161	Screw	12	-
501 172	Nut	18	-
501 224	Cable tray (1)	1	-
501 225	Cable tray (2)	1	0.1
501 226	Cable tray (3)	1	0.2
501 291	Electronic unit	1	3.6
501 293	Plug 8-pin, double wire entry	28	-
501 294	Electronic unit	1	1.7
501 304	Resistor 470 ohm *	1	-
501 305	Resistor 22 kohm *	1	-
501 344	Screw	6	0.3
501 345	Earthing strap	4	-
501 347	Nut	1	-

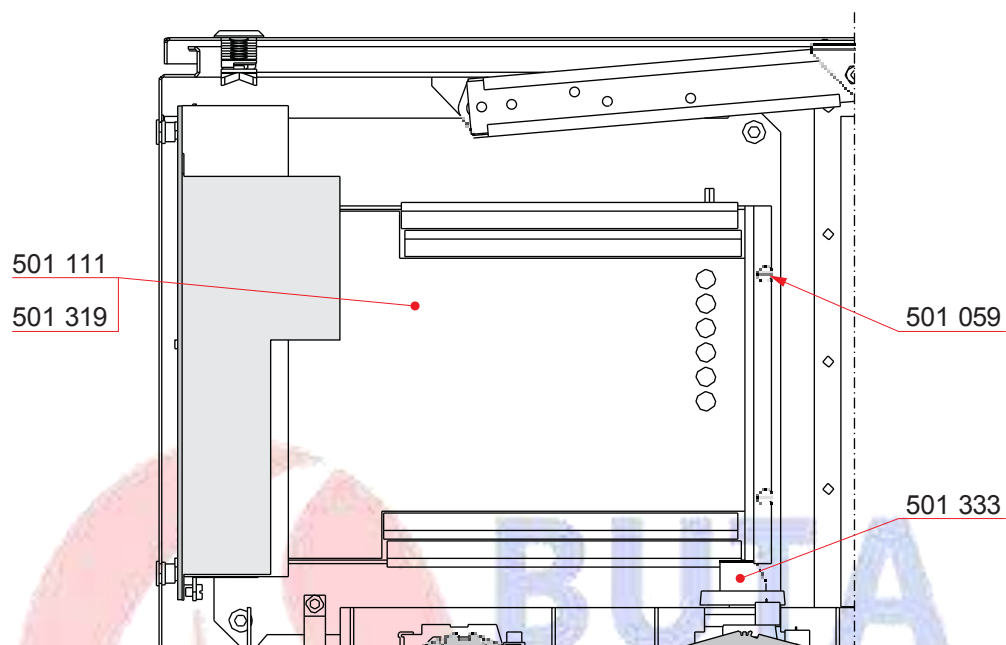
Connecting box



Part No.	Description	Qty [Pcs]	Wt [Kg]
501 021	End stopper	12	-
501 059	Screw	58	-
501 060	Terminal strip rail	1	0.2
501 085	Relay	5	-
501 086	Relay	5	-
501 092	End plate	1	-
501 120	Fuse terminal	2	-
501 144	Terminal strip	4	-
501 145	Terminal strip	24	-
501 176	Terminal strip	9	-
501 179	End plate	3	-
501 225	Cable tray (2)	1	0.1
501 279	Terminal strip	17	-
501 293	Plug 8-pin, double wire entry	28	-
501 296	Converter	2	-
501 297	Amplifier *	1	-
501 309	Fuse	2	-
501 317	Terminal strip	10	-
501 318	Terminal strip	8	-
501 321	Cable, data bus (1)	1	0.2
501 333	Switch	1	0.1
501 334	PE terminal	1	-
501 338	Electronic unit	1	0.2
501 342	Plug 12-pin	4	-

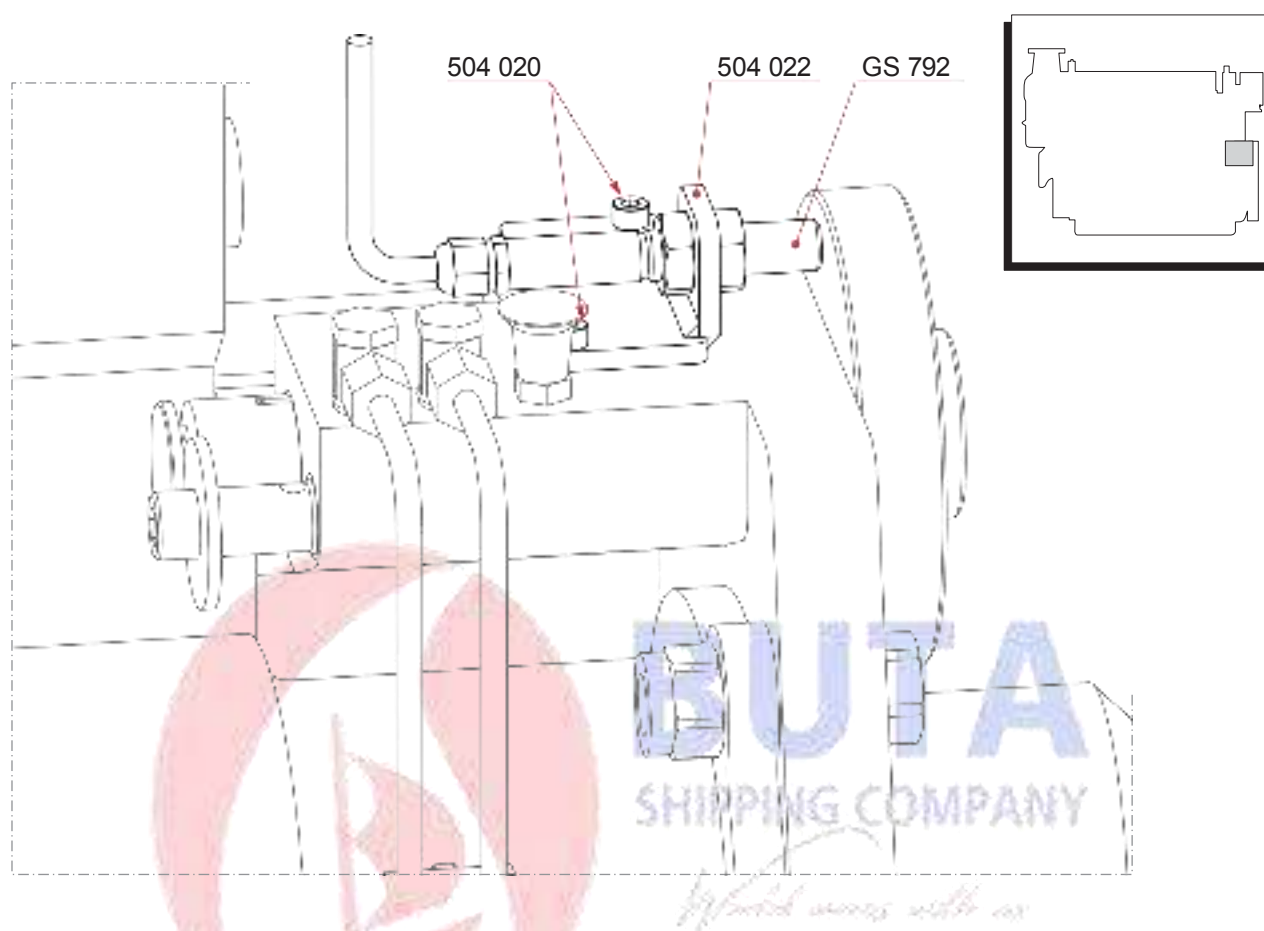
Connecting box

Section D-D



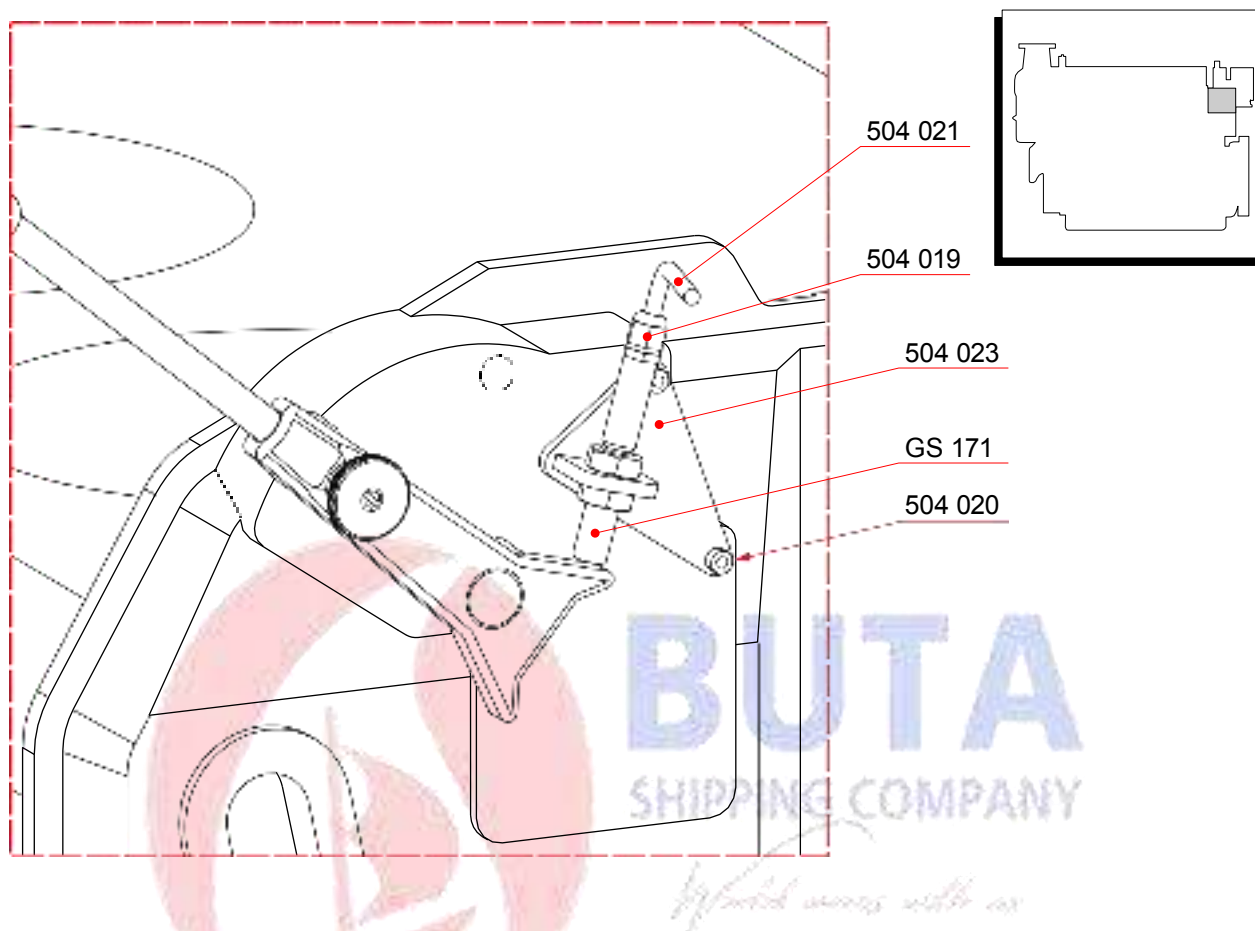
Part No.	Description	Qty [Pcs]	Wt [Kg]
501 059	Screw	58	-
501 111	Electronic unit	1	2.1
501 319	Connector set for ESM	1	0.3
501 333	Switch	1	0.1

Limit switch for turning gear



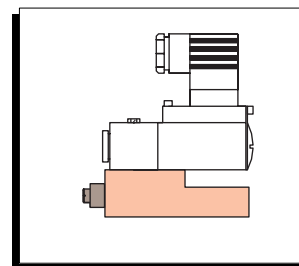
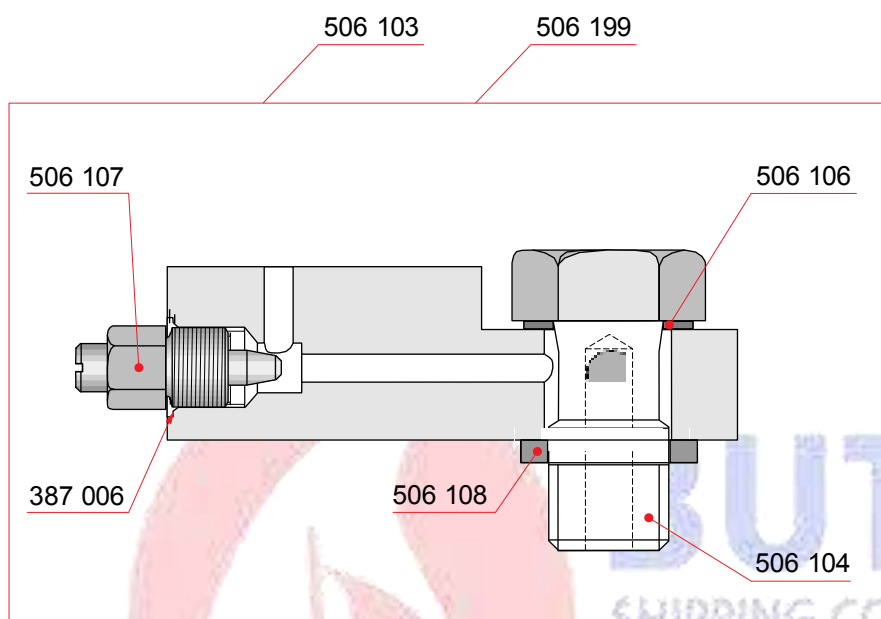
Part No.	Description	Qty [Pcs]	Wt [Kg]
GS792	Limit switch (1)	1	0.5
504 020	Screw	2	-
504 022	Bracket	1	0.1

Limit switch for stop lever



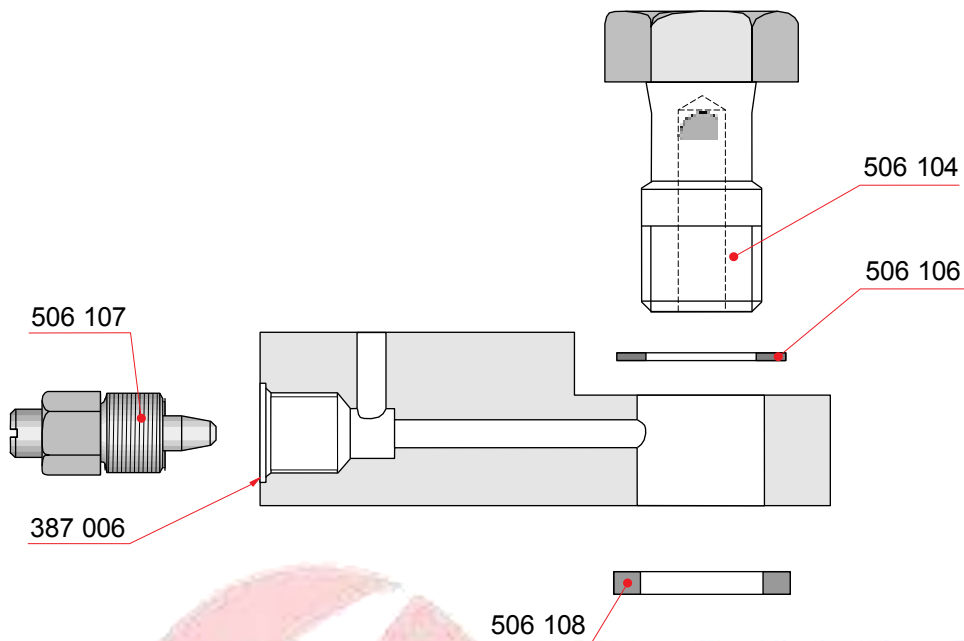
Part No.	Description	Qty [Pcs]	Wt [Kg]
504 019	Connector (2)	1	-
504 020	Screw	2	-
504 021	Instrument cable (1)(2)	1	-
504 023	Bracket	1	0.1
GS171	Limit switch	1	0.5

Pressure gauge valve



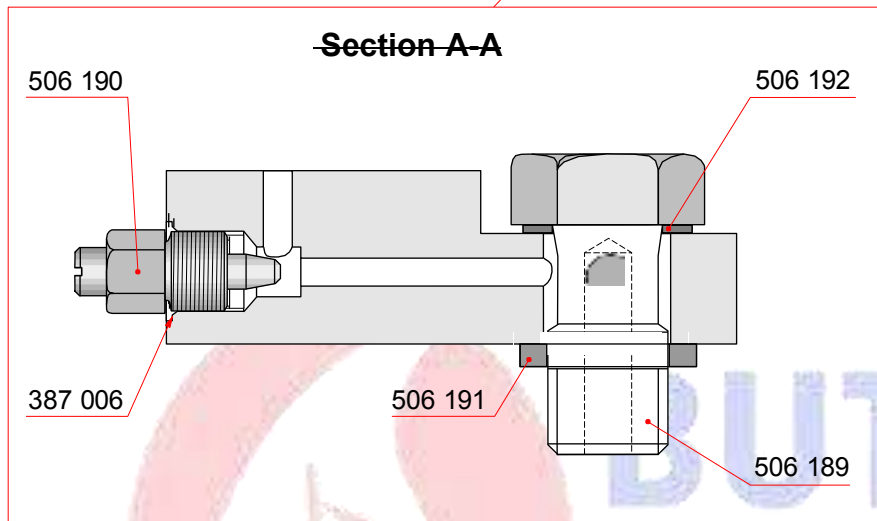
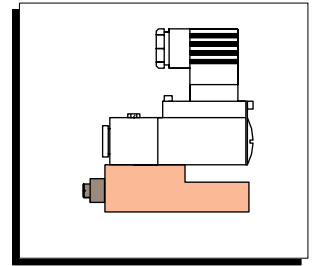
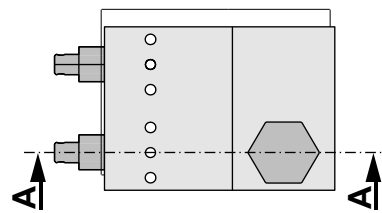
Part No.	Description	Qty [Pcs]	Wt [Kg]
506 103	Pressure gauge valve (2)	1	0.3
506 199	Pressure gauge valve (1)	1	-
506 104	Screw	1	-
506 106	Sealing ring	1	-
506 107	Throttle valve	1	-
506 108	Distance ring	1	-
387 006	Glue compound	1	-

Pressure gauge valve



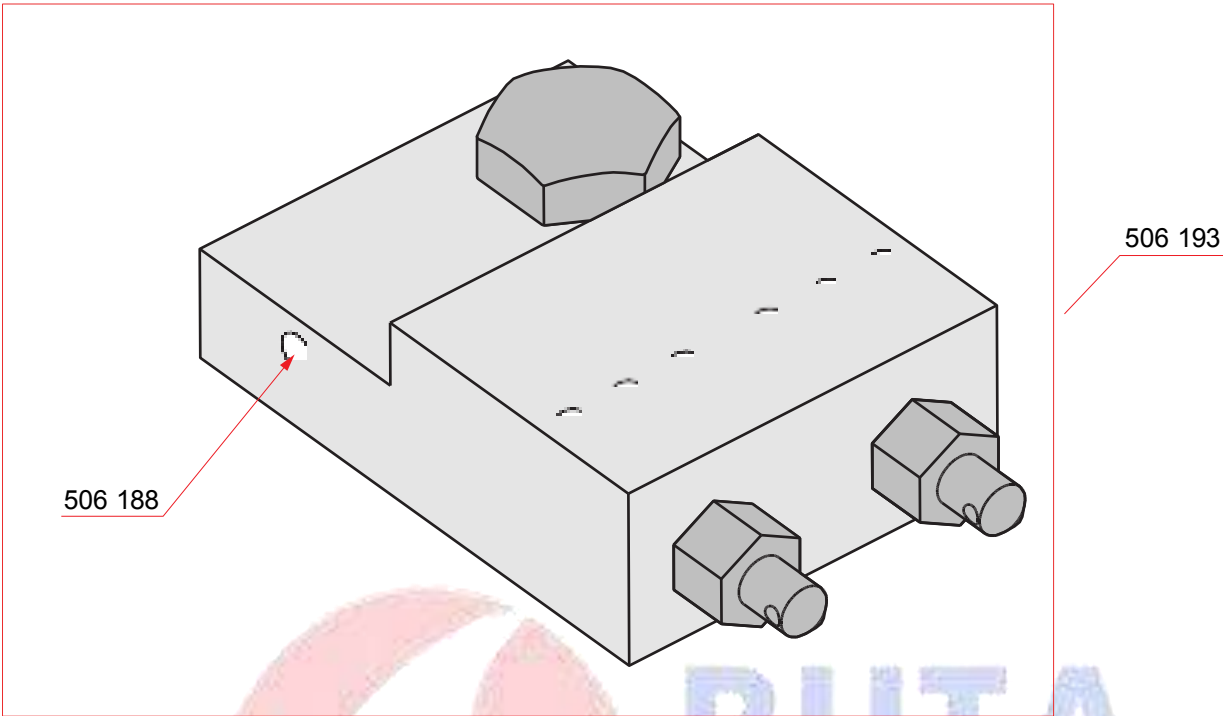
Part No.	Description	Qty [Pcs]	Wt [Kg]
506 104	Screw	1	-
506 106	Sealing ring	1	-
506 107	Throttle valve	1	-
506 108	Distance ring	1	-
387 006	Glue compound	1	-

Pressure gauge valve



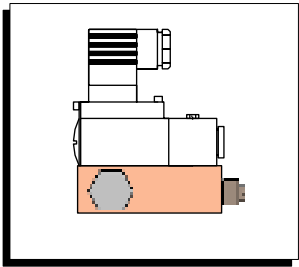
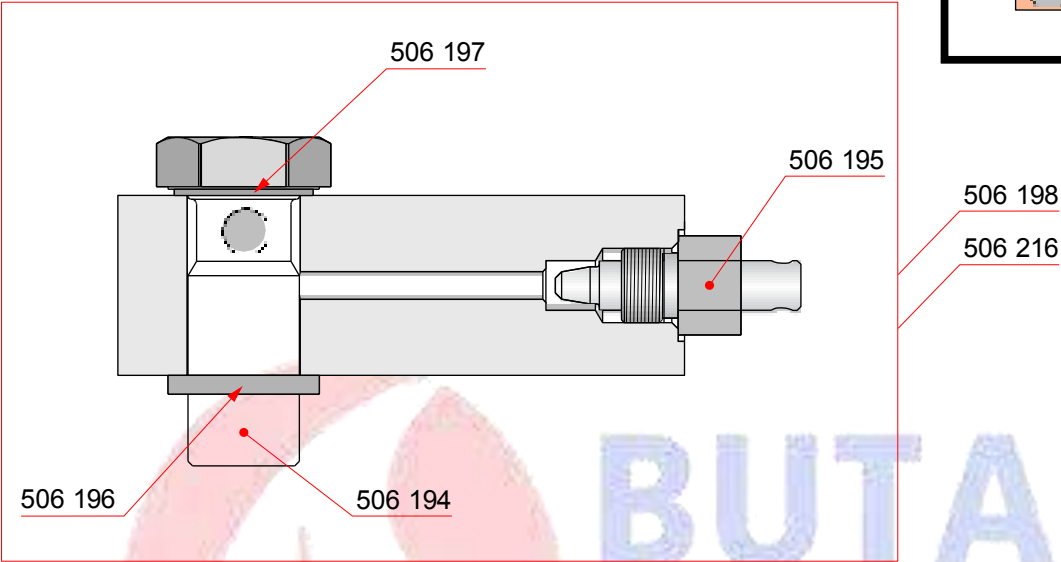
Part No.	Description	Qty [Pcs]	Wt [Kg]
506 193	Pressure gauge valve	1	2
506 189	Screw	1	-
506 190	Valve	1	-
506 191	Distance ring	1	-
506 192	Sealing ring	1	-
387 006	Glue compound	1	-

Pressure gauge valve



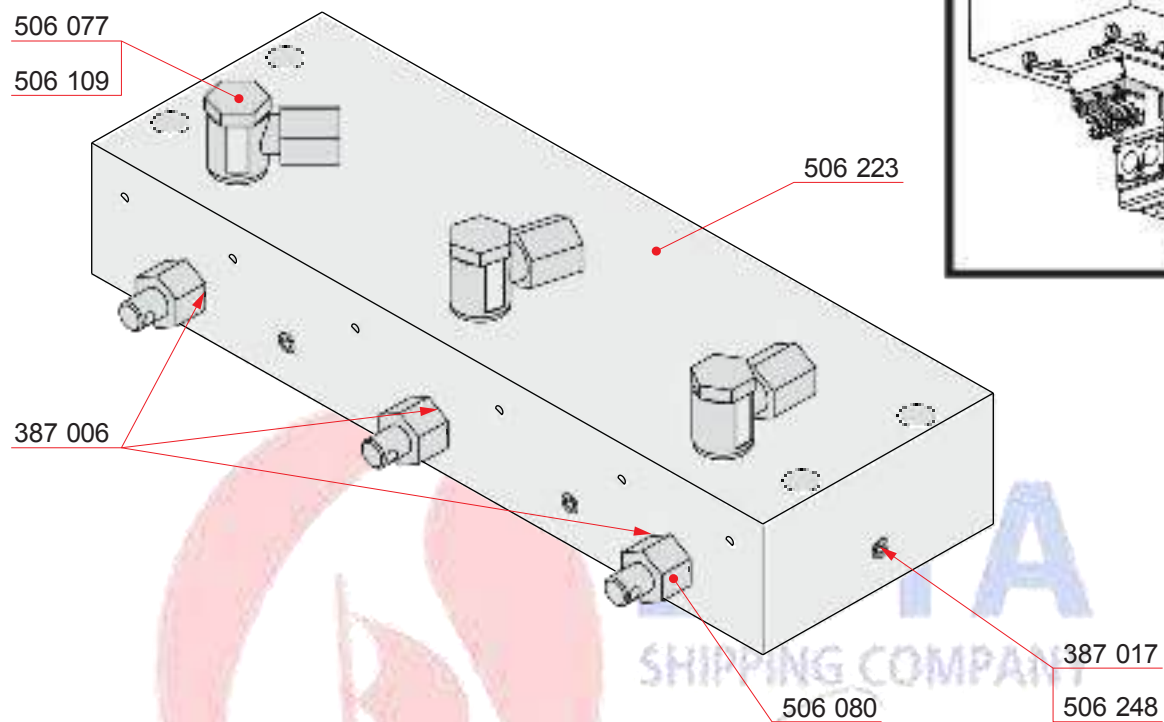
Part No.	Description	Qty [Pcs]	Wt [Kg]
506 193	Pressure gauge valve	1	2
506 188	Expander	1	-

Pressure gauge valve



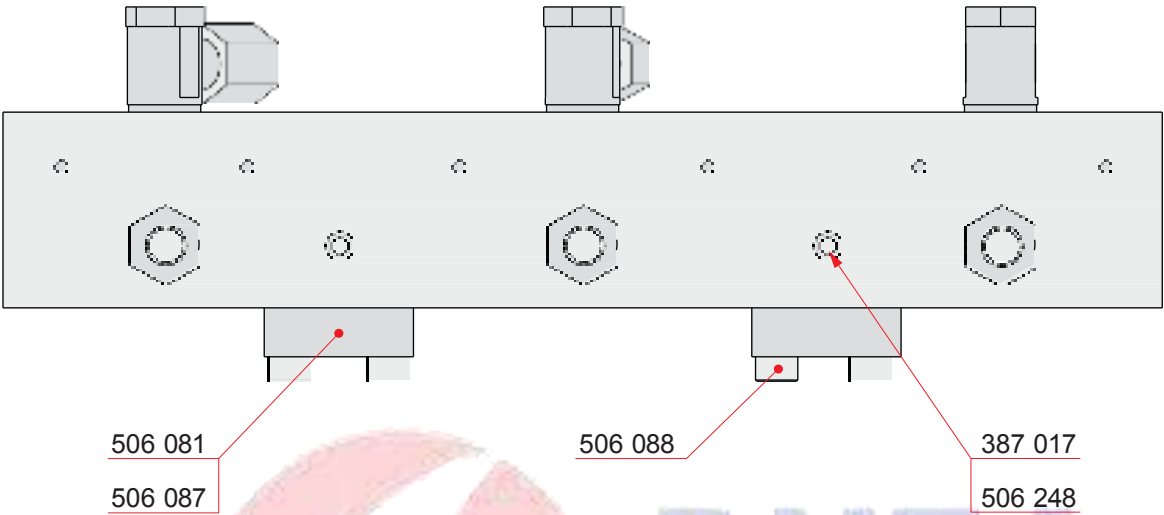
Part No.	Description	Qty [Pcs]	Wt [Kg]
506 198	Pressure gauge valve (1)	1	0.6
506 216	Pressure gauge valve (2)	1	0.4
506 194	Screw	1	0.1
506 195	Valve	1	-
506 196	Distance ring	1	-
506 197	Sealing ring	1	-

Adapter for pressure sensors



Part No.	Description	Qty [Pcs]	Wt [Kg]
506 077	Pipe union	3	-
506 080	Throttle valve	3	-
506 109	Seal ring	3	-
506 223	Adapter	1	5
506 248	Set screw	4	-
387 006	Glue compound	1	-
387 017	Glue compound	1	-

Adapter for pressure sensors



Part No.	Description	Qty [Pcs]	Wt [Kg]
506 081	End piece	2	-
506 087	O-ring	2	-
506 088	Screw	4	-
506 248	Set screw	4	-
387 017	Glue compound	1	-

Cable clamp

507 138

507 999

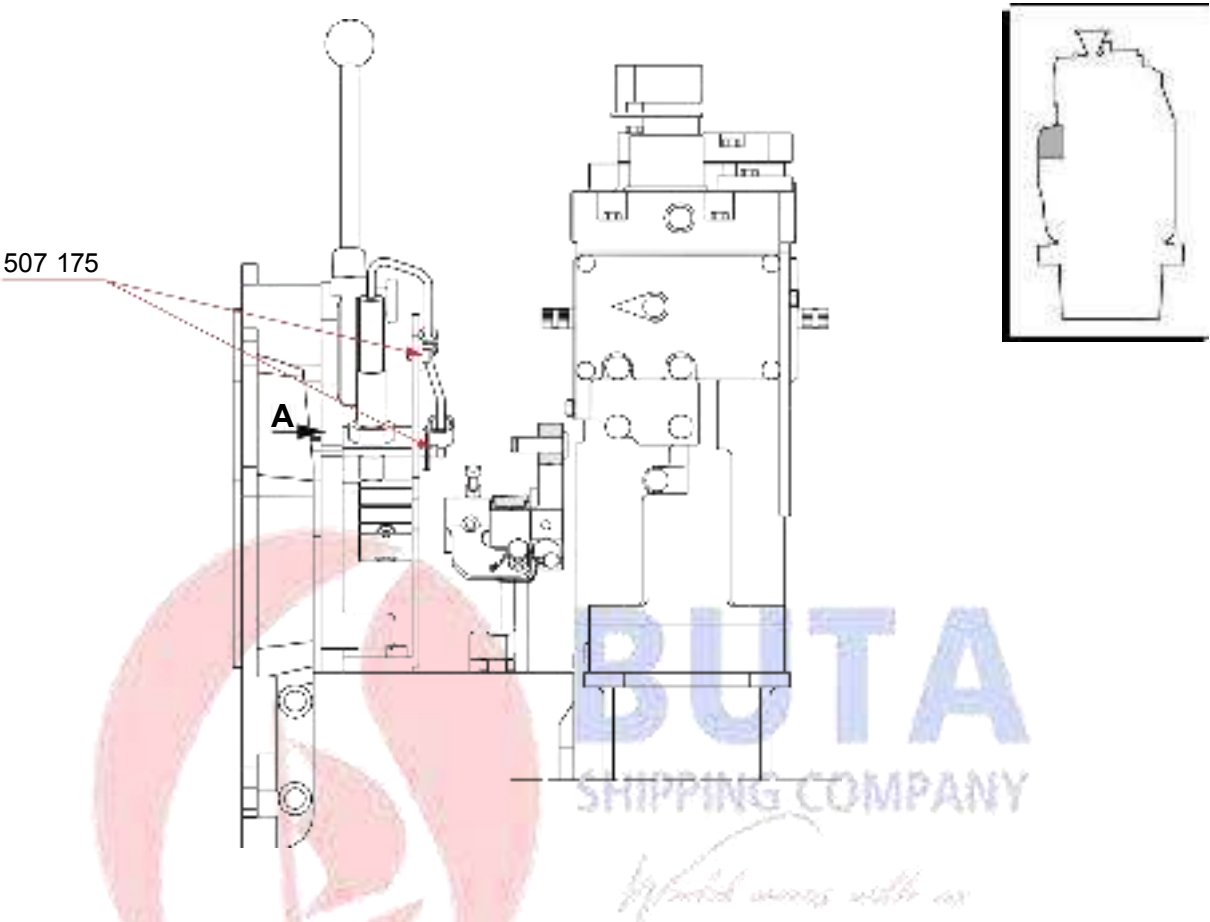
507 140

507 139

507 998

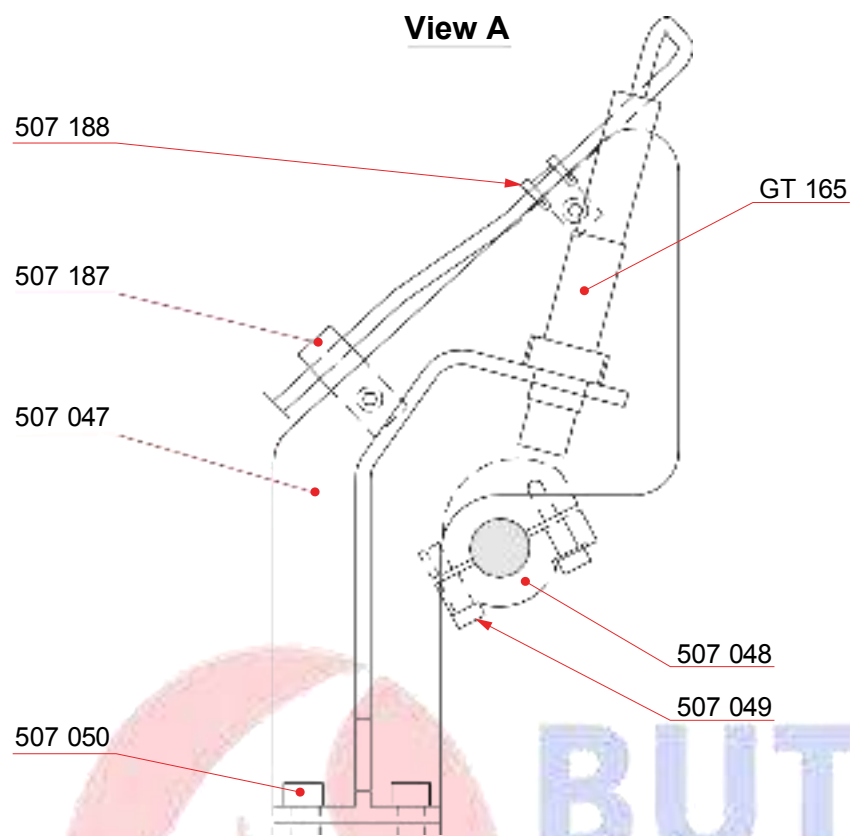
Part No.	Description	Qty [Pcs]	Wt [Kg]
507 138	Screw	2	-
507 139	Nut	2	-
507 140	Washer	2	-
507 998	Clamp	2	-
507 999	Bracket	2	-

Load sensor



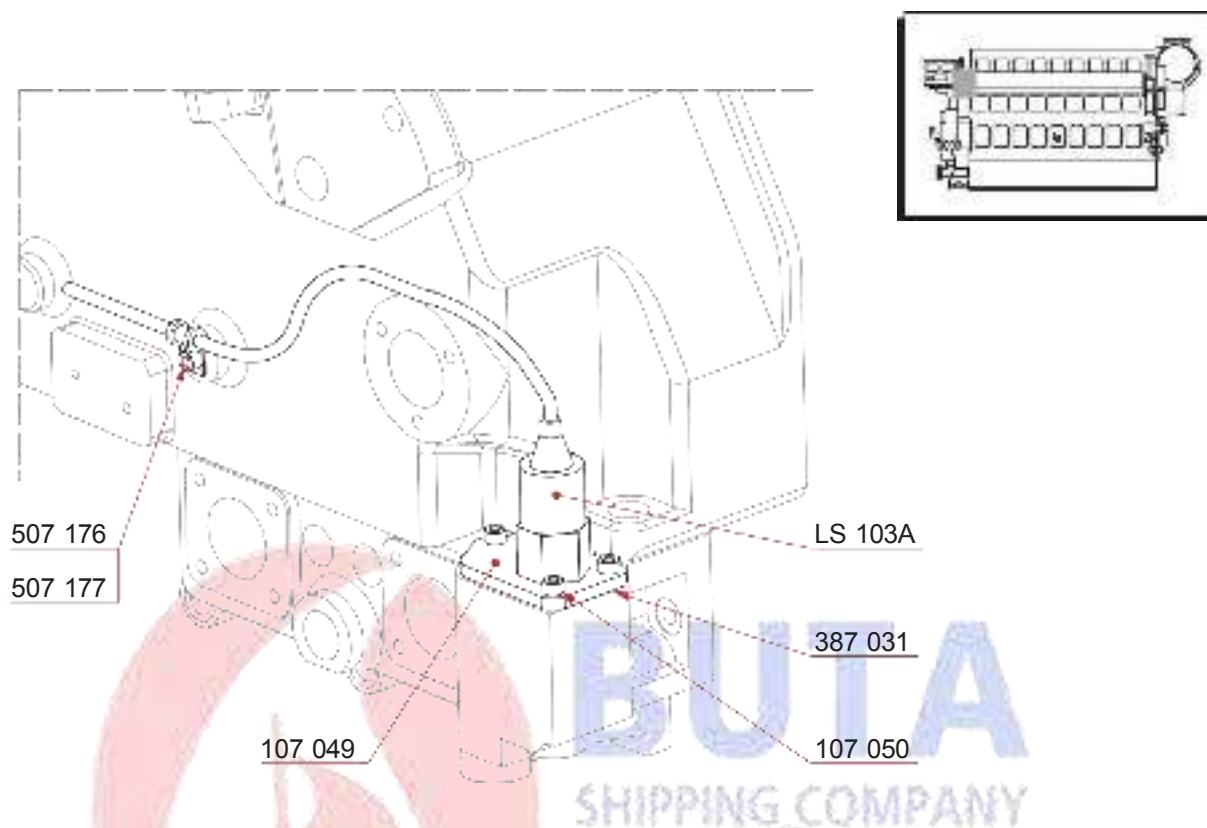
Part No.	Description	Qty [Pcs]	Wt [Kg]
507 175	Screw	2	-

Load sensor



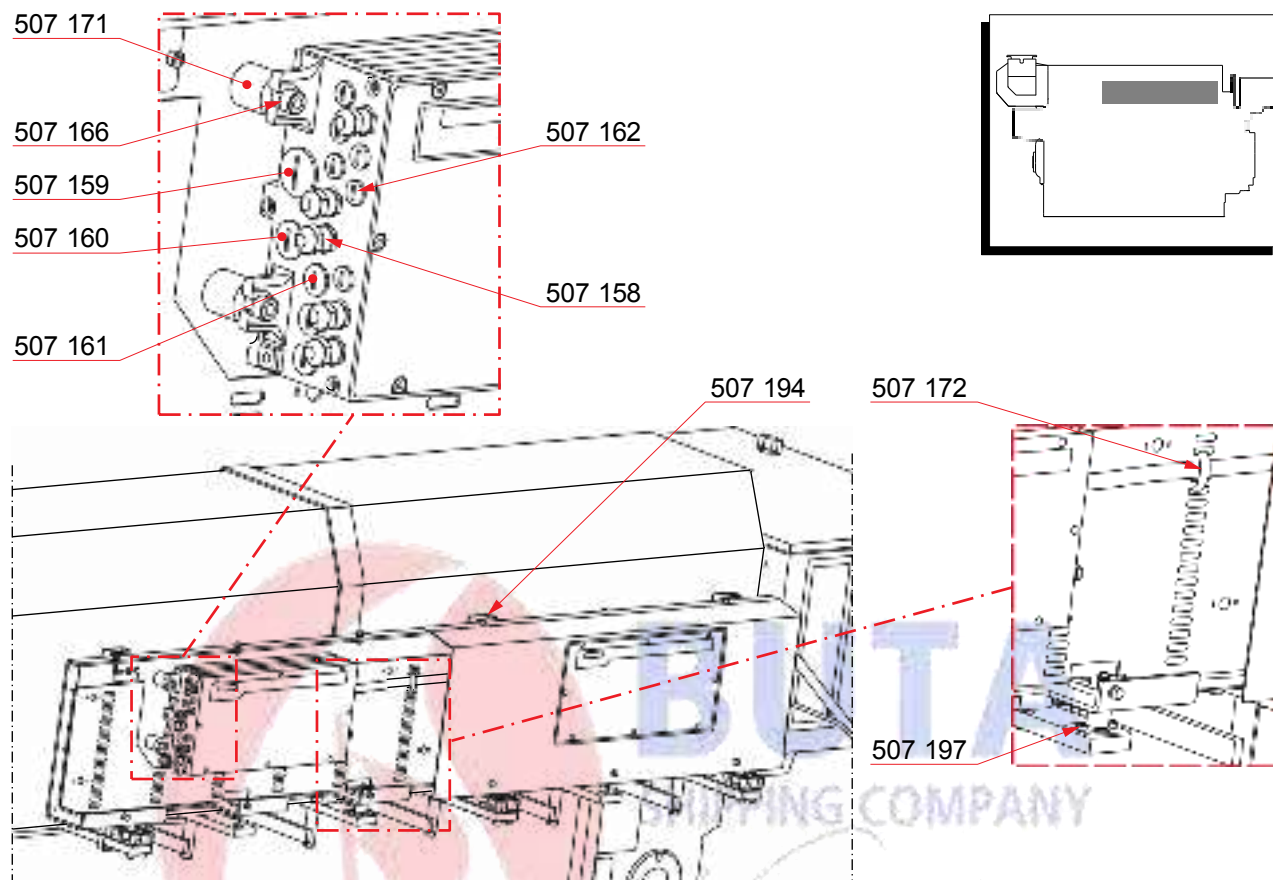
Part No.	Description	Qty [Pcs]	Wt [Kg]
507 047	Bracket	1	1.7
507 048	Eccentric	1	0.4
507 049	Screw	2	-
507 050	Screw	2	-
507 187	Fastener	1	-
507 188	Fastener	1	-
GT165	Fuel rack position transducer	1	-

Level switch for fuel pipe block/leakage



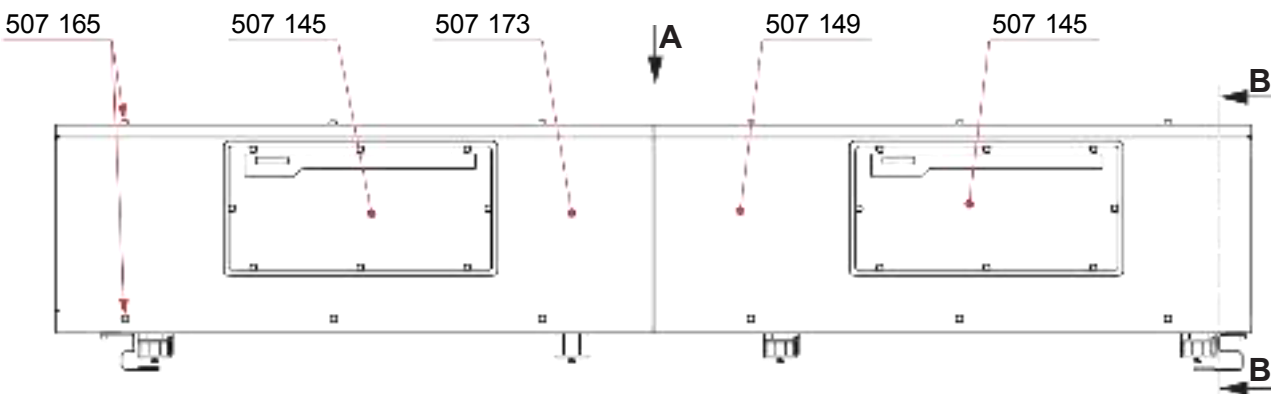
Part No.	Description	Qty [Pcs]	Wt [Kg]
LS103A	Level switch, fuel pipe block/leakage (1)	1	0.6
107 049	Cover	1	0.4
107 050	Screw	3	0.3
507 176	Cable clip	1	-
507 177	Screw	1	-
387 031	Glue compound	1	-

Control modules and electrical equipment

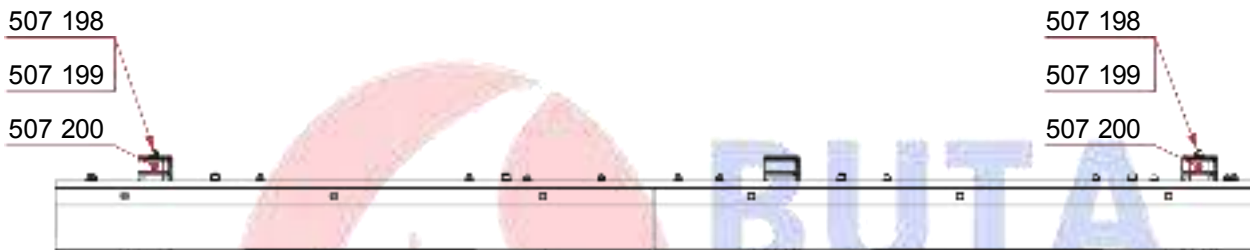


Part No.	Description	Qty [Pcs]	Wt [Kg]
507 158	Cable gland	20	-
507 159	Plug	1	-
507 160	Plug	4	-
507 161	Plug	12	-
507 162	Plug	20	-
507 166	Screw	8	-
507 171	Distance ring	8	0.1
507 172	Cable clamp	18	-
507 194	Bracket	3	1.5
507 197	Screw	20	-

Control modules and electrical equipment

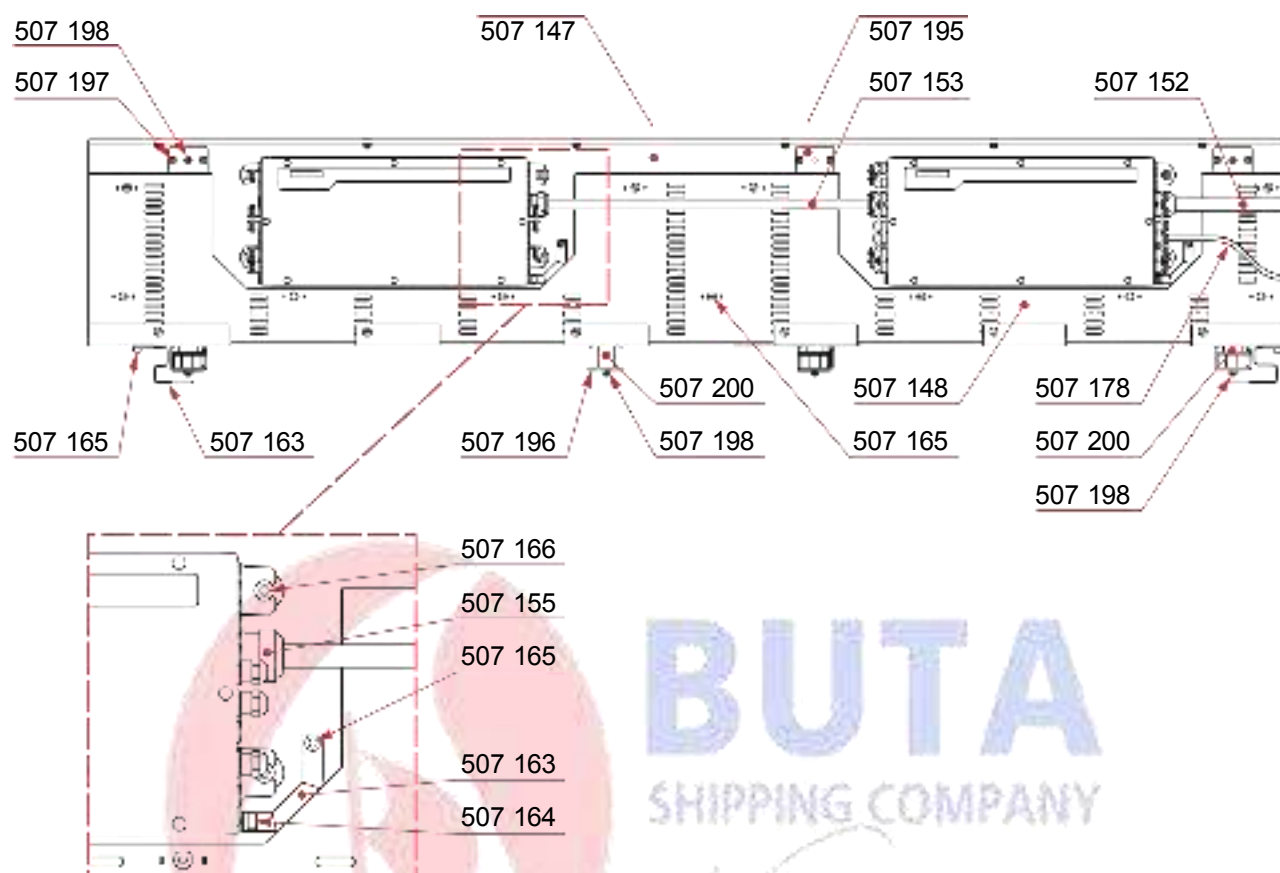


View A



Part No.	Description	Qty [Pcs]	Wt [Kg]
507 145	Electronic unit	2	5.1
507 149	Cover	1	4
507 165	Screw	27	-
507 173	Cover	1	4
507 198	Nut	13	-
507 199	Washer	2	-
507 200	Vibration damper	6	0.1

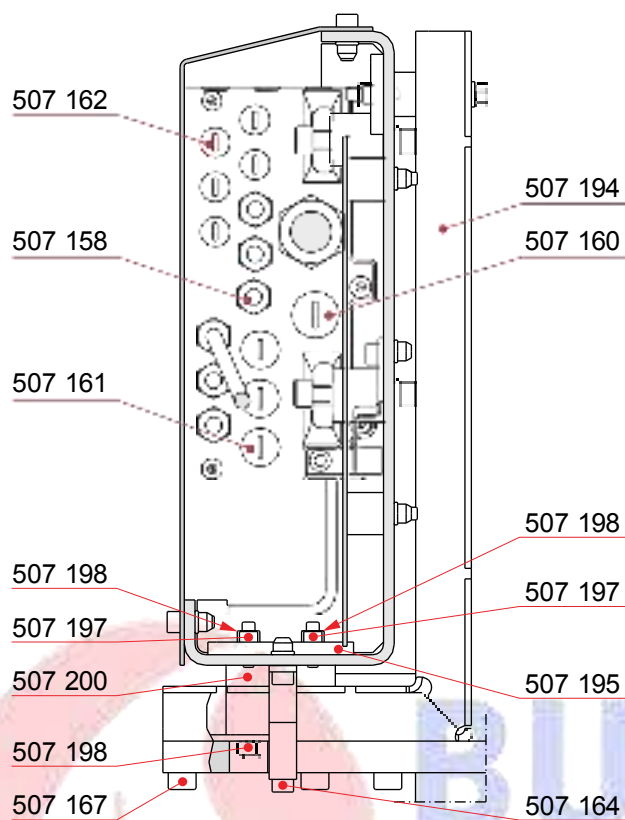
Control modules and electrical equipment



Part No.	Description	Qty [Pcs]	Wt [Kg]
507 147	Bracket	1	26
507 148	Cable rail	1	4
507 152	Cable (1)	1	0.2
507 153	Cable (2)	1	0.2
507 155	Cable gland	3	-
507 163	Earthing strap	4	-
507 164	Screw	4	-
507 165	Screw	27	-
507 166	Screw	8	-
507 178	Cable (3)	1	0.2
507 195	Fastener	7	-
507 196	Fastener	1	-
507 197	Screw	20	-
507 198	Nut	13	-
507 200	Vibration damper	6	0.1

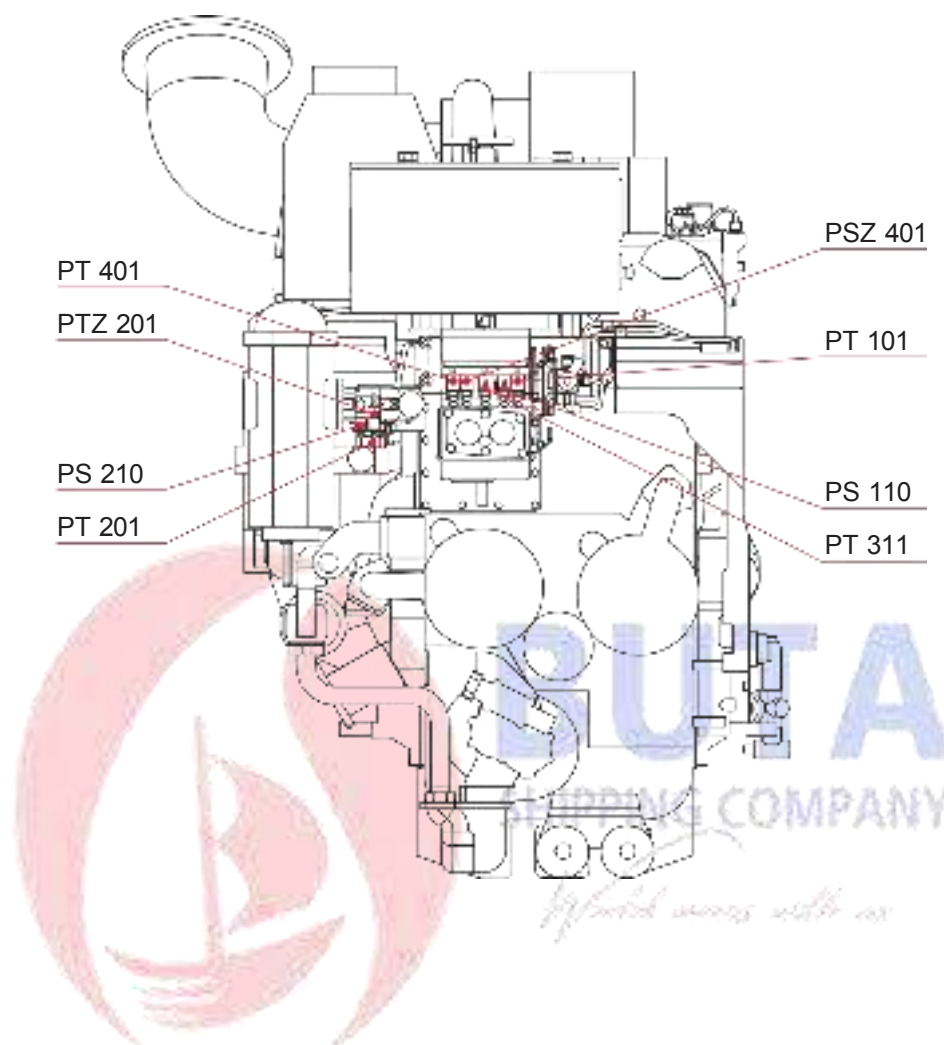
Control modules and electrical equipment

Section B-B



Part No.	Description	Qty [Pcs]	Wt [Kg]
507 158	Cable gland	20	-
507 160	Plug	4	-
507 161	Plug	12	-
507 162	Plug	20	-
507 164	Screw	4	-
507 167	Screw	12	-
507 194	Bracket	3	1.5
507 195	Fastener	7	-
507 197	Screw	20	-
507 198	Nut	13	-
507 200	Vibration damper	6	0.1

Sensor locations

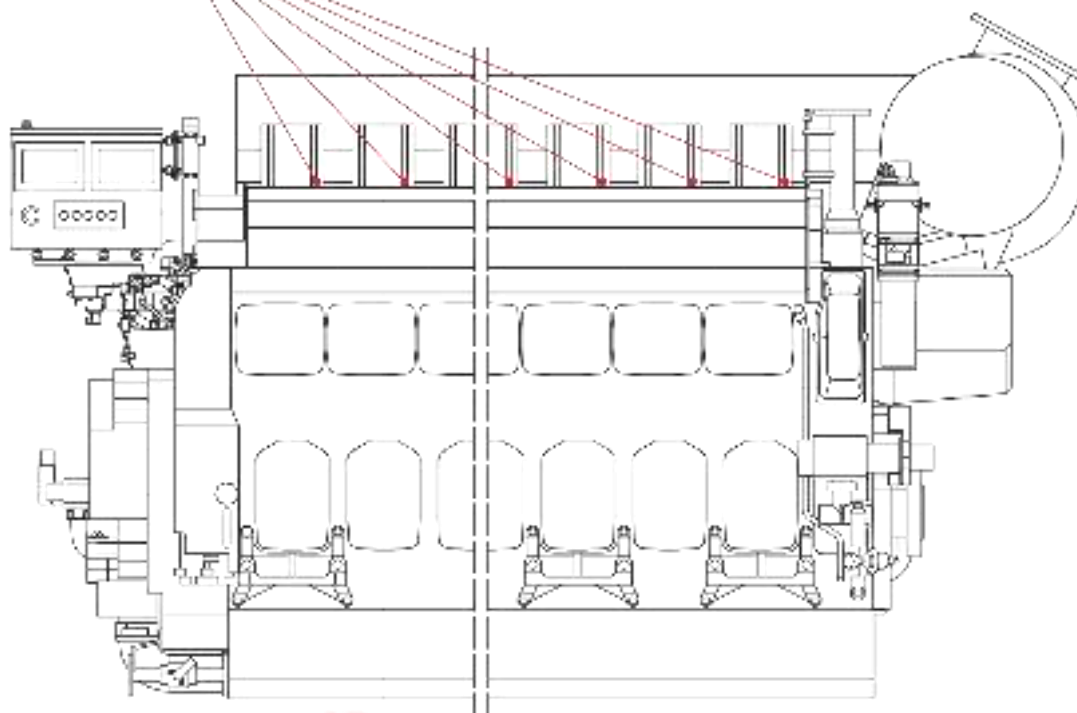


Part No.	Description	Qty [Pcs]	Wt [Kg]
PS110	Pressure switch, start of fuel oil stand by pump (#)	1	-
PS210	Pressure switch, start of lube oil stand by pump (#)	1	-
PSZ401	Pressure switch (6)	1	-
PT101	Pressure transducer, fuel oil	1	-
PT201	Pressure transducer, lube oil	1	-
PT311	Pressure transducer	1	-
PT401	Pressure transducer, HT water	1	-
PTZ201	Pressure transducer, lube oil press. engine inlet	1	-

Sensor locations

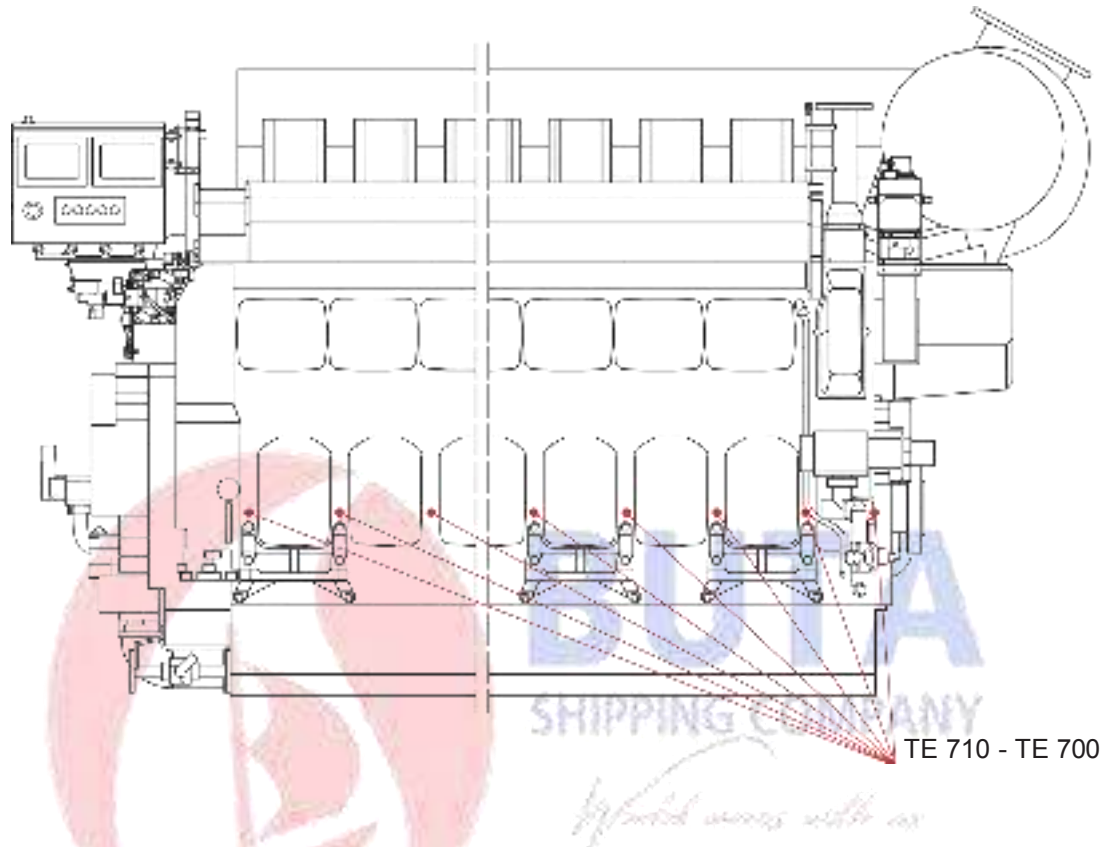
TE 5011A - TE 5091A

200 091



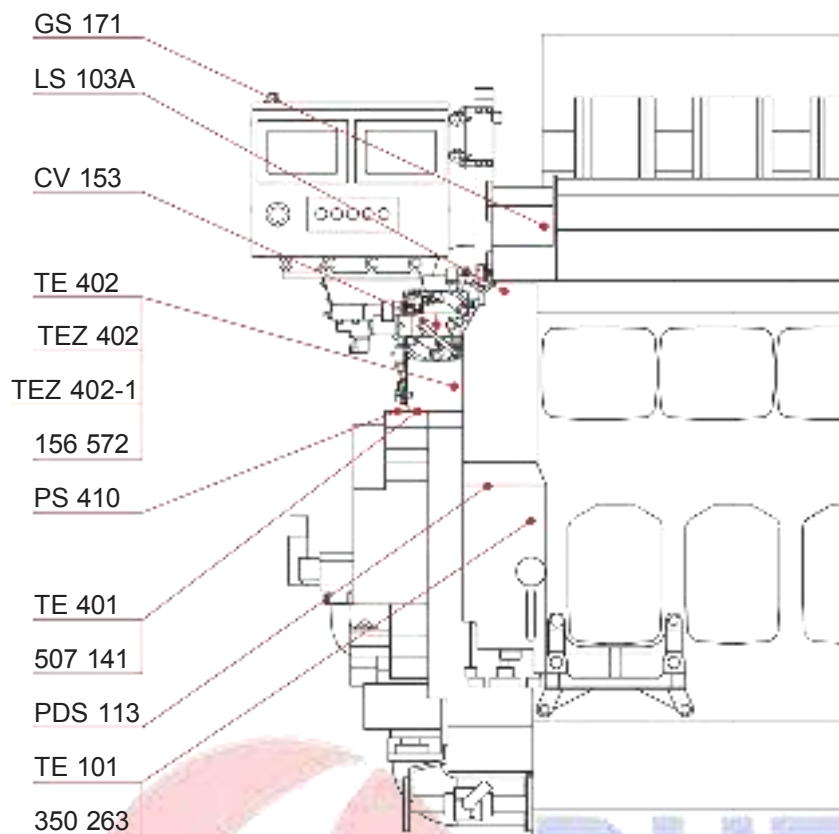
Part No.	Description	Qty [Pcs]	Wt [Kg]
TE5011A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5021A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5031A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5041A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5051A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5061A	Temperature sensor, exh. gas temp., after cyl	*	0.5
TE5071A	Temperature sensor, exh. gas temp., after cyl	*	-
TE5081A	Temperature sensor, exh. gas temp., after cyl	*	-
TE5091A	Temperature sensor, exh. gas temp., after cyl	*	-
200 091	Protecting well (5)	1	0.5

Sensor locations



Part No.	Description	Qty [Pcs]	Wt. [Kg]
TE700	Temperature sensor, main bearing 0 (#)	*	-
TE701	Temperature sensor, main bearing 1 (#)	*	-
TE702	Temperature sensor, main bearing 2 (#)	*	-
TE703	Temperature sensor, main bearing 3 (#)	*	-
TE704	Temperature sensor, main bearing 4 (#)	*	-
TE705	Temperature sensor, main bearing 5 (#)	*	-
TE706	Temperature sensor, main bearing 6 (#)	*	-
TE707	Temperature sensor, main bearing 7 (#)	*	-
TE708	Temperature sensor, main bearing 8 (#)	*	-
TE709	Temperature sensor, main bearing 9 (#)	*	-
TE710	Temperature sensor, main bearing 10 (#)	*	-

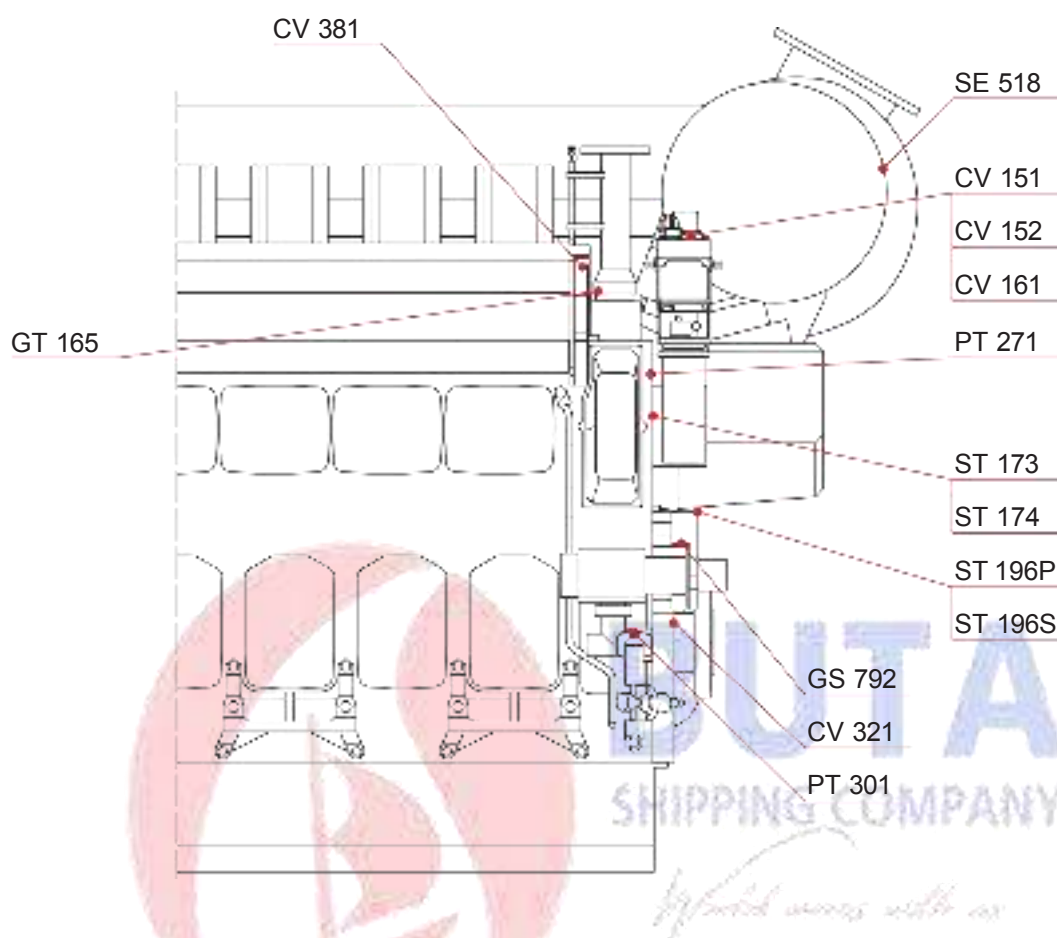
Sensor locations



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SHIPPING COMPANY

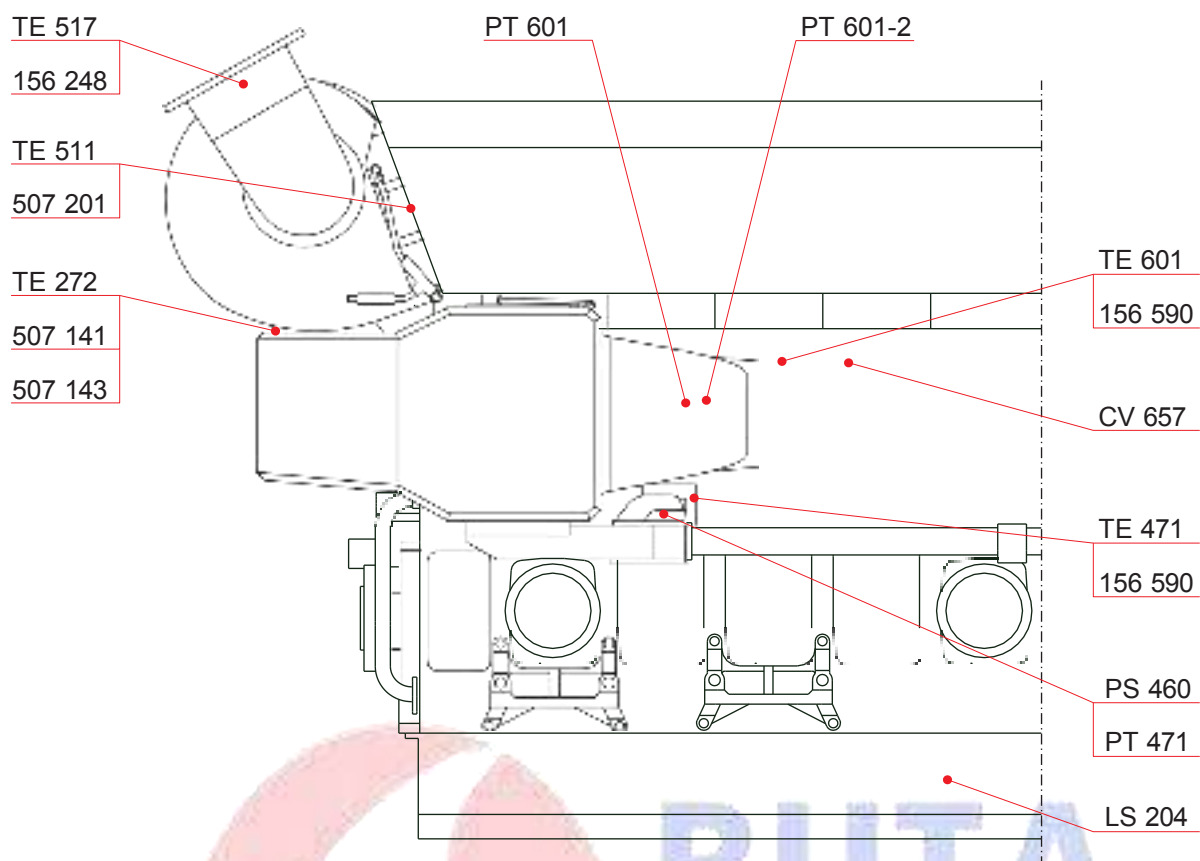
Part No.	Description	Qty [Pcs]	Wt. [Kg]
CV153	Solenoid valve	2	-
GS171	Limit switch	1	-
LS103A	Level switch, fuel pipe block/leakage	1	0.6
PDS113	Pressure switch, fuel filter high diff. pressure (#)	1	-
PS410	Pressure switch, start HT-stand by pump (#)	1	-
TE101	Temperature sensor, fuel oil temperature	1	-
TE401	Temperature sensor, HT water, before engine	1	-
TE402	Temperature sensor, HT water, after engine	1	-
TEZ402	Temperature sensor for HT water	1	-
TEZ402-1	Temperature sensor for HT water	1	-
156 572	Protection well	1	-
350 263	Protecting well	1	-
507 141	Protecting well (5)	1	0.1

Sensor locations



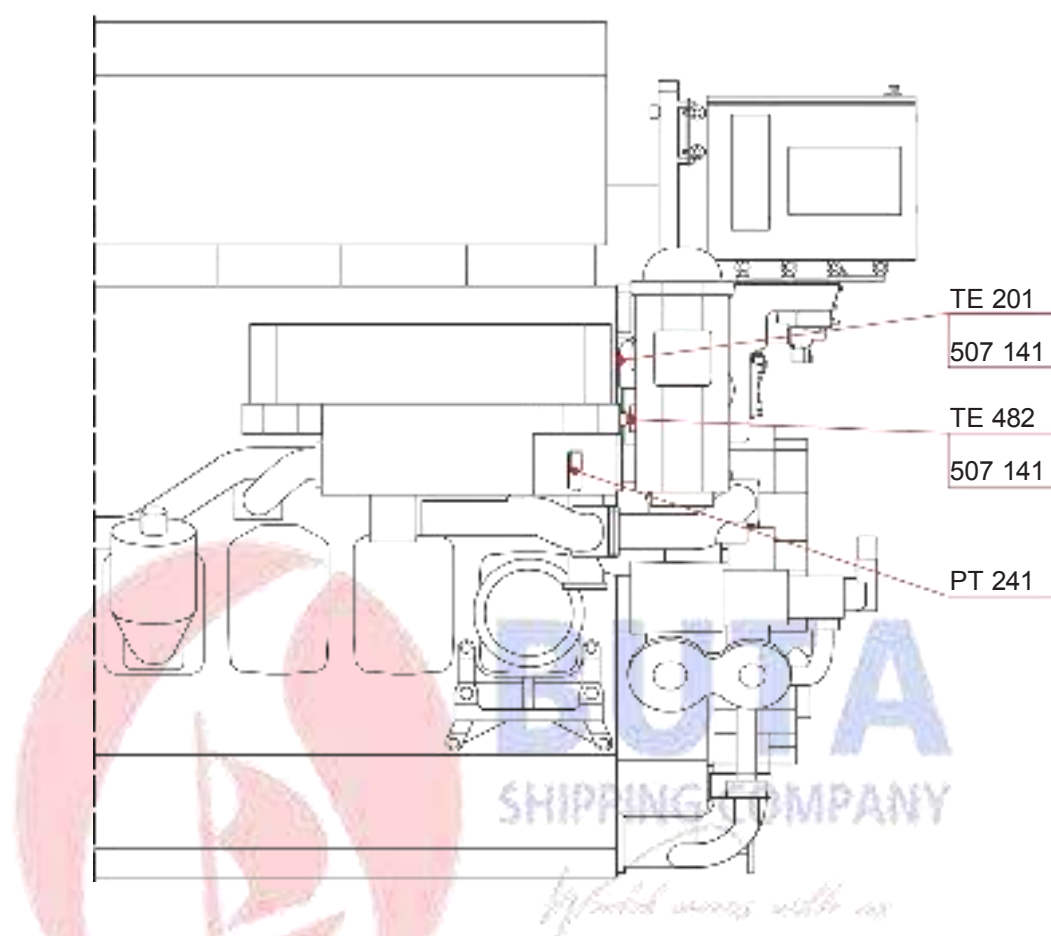
Part No.	Description	Qty [Pcs]	Wt. [Kg]
CV151	Solenoid valve (1)	1	-
CV152	Solenoid valve (1)	1	-
CV161	Solenoid valve, actuator control	1	-
CV321	Solenoid valve, starting air	1	-
CV381	Control valve (3)	1	-
GS792	Limit switch	1	-
GT165	Fuel rack position transducer	1	-
PT271	Pressure transducer, lube oil pressure TC inlet (6)	1	-
PT301	Pressure transducer, starting air	1	-
SE518	Speed pick-up for TC	1	-
ST196P	Speed sensor	1	-
ST196S	Speed sensor	1	-
ST173	Speed pick-up	1	-
ST174	Speed pick-up	1	-

Sensor locations



Part No.	Description	Qty [Pcs]	Wt. [Kg]
CV657	Solenoid valve (2)	1	-
LS204	Level switch, lubricating oil level low	1	-
PS460	Pressure switch, start LT-stand by pump (#)	1	-
PT471	Pressure transducer, LT water	1	-
PT601	Pressure transducer, charge air pressure	1	-
PT601-2	Pressure transducer	1	-
TE272	Temperature sensor, lube oil temperature TC outlet (6)	1	-
TE471	Temperature sensor for LT water	1	-
TE511	Temperature sensor, exh. gas temp., before TC	1	0.5
TE517	Temperature sensor, exh. gas temp., after TC	1	0.5
TE601	Temperature sensor, charge air	1	-
156 248	Protecting well	1	0.5
156 590	Protection well (5)	1	-
507 141	Protecting well (5)	1	0.1
507 143	Sealing ring	1	-
507 201	Protecting well	1	0.5

Sensor locations



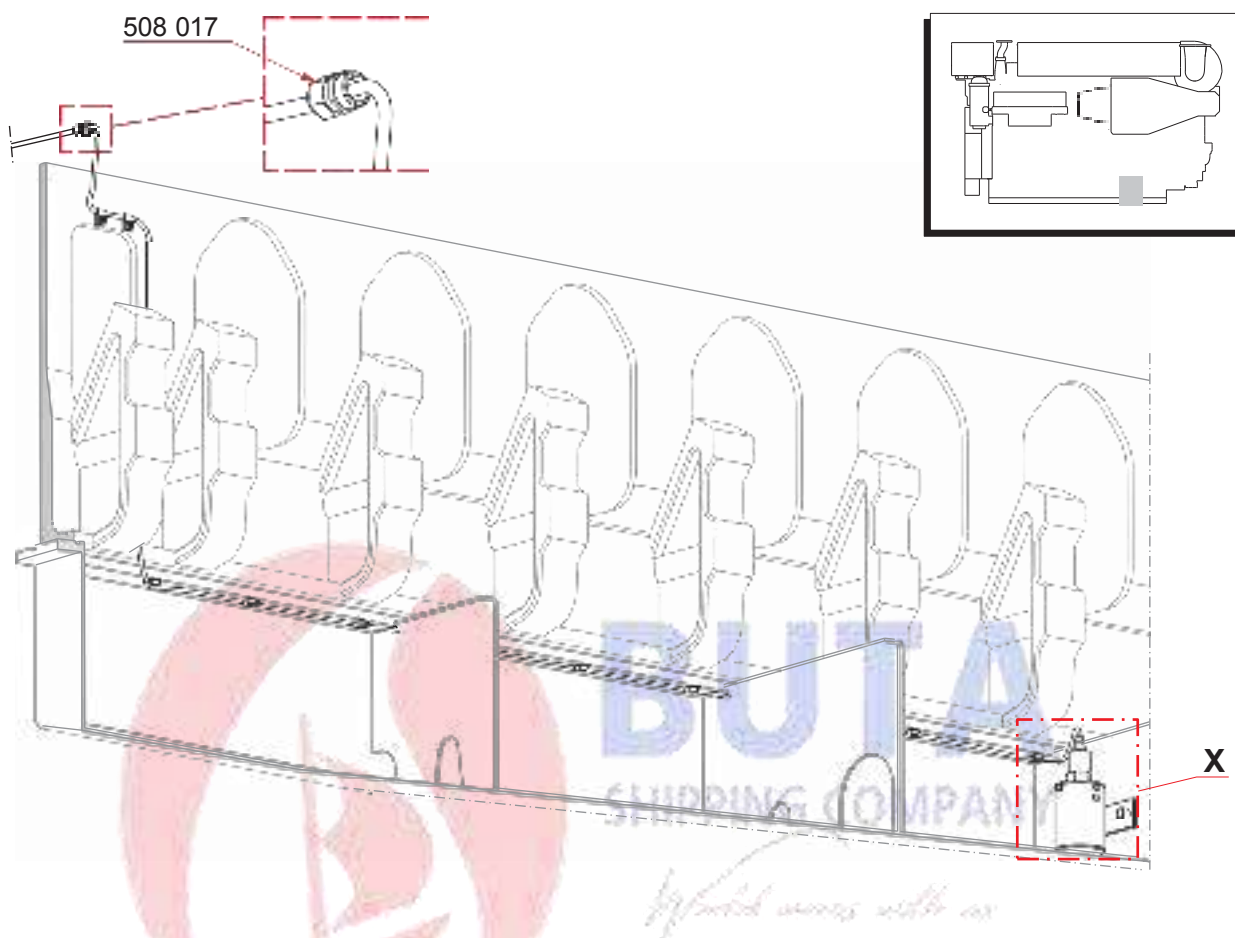
Part No.	Description	Qty [Pcs]	Wt. [Kg]
PT241	Pressure transducer, lube oil	1	-
TE201	Temperature sensor, lubricating oil temperature	1	-
TE482	Temp. sensor, LT-thermostatic control, LT-water	1	-
507 141	Protecting well (5)	1	0.1

Sensor locations

Quantity according to number of cylinders

Part No. and Description	Quantity in pieces			
	4L	6L	8L	9L
TE5 011A Temperature sensor, exh. gas temp., after cyl.	1	1	1	1
TE5 021A Temperature sensor, exh. gas temp., after cyl.	1	1	1	1
TE5 031A Temperature sensor, exh. gas temp., after cyl.	1	1	1	1
TE5 041A Temperature sensor, exh. gas temp., after cyl.	1	1	1	1
TE5 051A Temperature sensor, exh. gas temp., after cyl.	-	1	1	1
TE5 061A Temperature sensor, exh. gas temp., after cyl.	-	1	1	1
TE5 071A Temperature sensor, exh. gas temp., after cyl.	-	-	1	1
TE5 081A Temperature sensor, exh. gas temp., after cyl.	-	-	1	1
TE5 091A Temperature sensor, exh. gas temp., after cyl.	-	-	-	1
TE7 00 Temperature sensor, main bearing 0	1	1	1	1
TE7 01 Temperature sensor, main bearing 1	1	1	1	1
TE7 02 Temperature sensor, main bearing 2	1	1	1	1
TE7 03 Temperature sensor, main bearing 3	1	1	1	1
TE7 04 Temperature sensor, main bearing 4	1	1	1	1
TE7 05 Temperature sensor, main bearing 5	1	1	1	1
TE7 06 Temperature sensor, main bearing 6	-	1	1	1
TE7 07 Temperature sensor, main bearing 7	-	1	1	1
TE7 08 Temperature sensor, main bearing 8	-	-	1	1
TE7 09 Temperature sensor, main bearing 9	-	-	1	1
TE7 10 Temperature sensor, main bearing 10	-	-	-	1

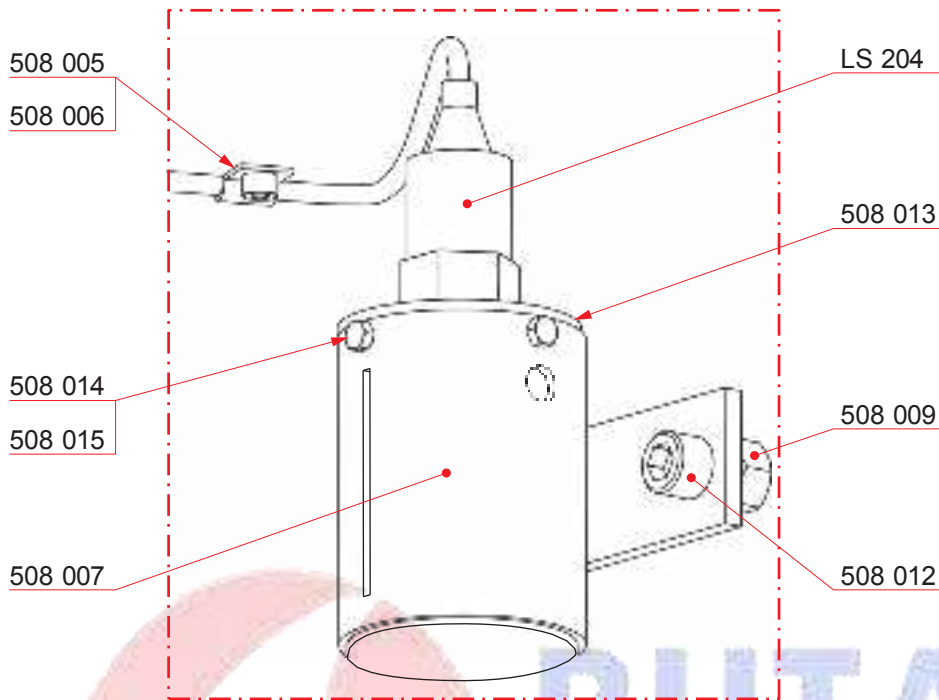
Lubricating oil level alarm switch



Part No.	Description	Qty [Pcs]	Wt. [Kg]
508 017	Cable gland	1	-

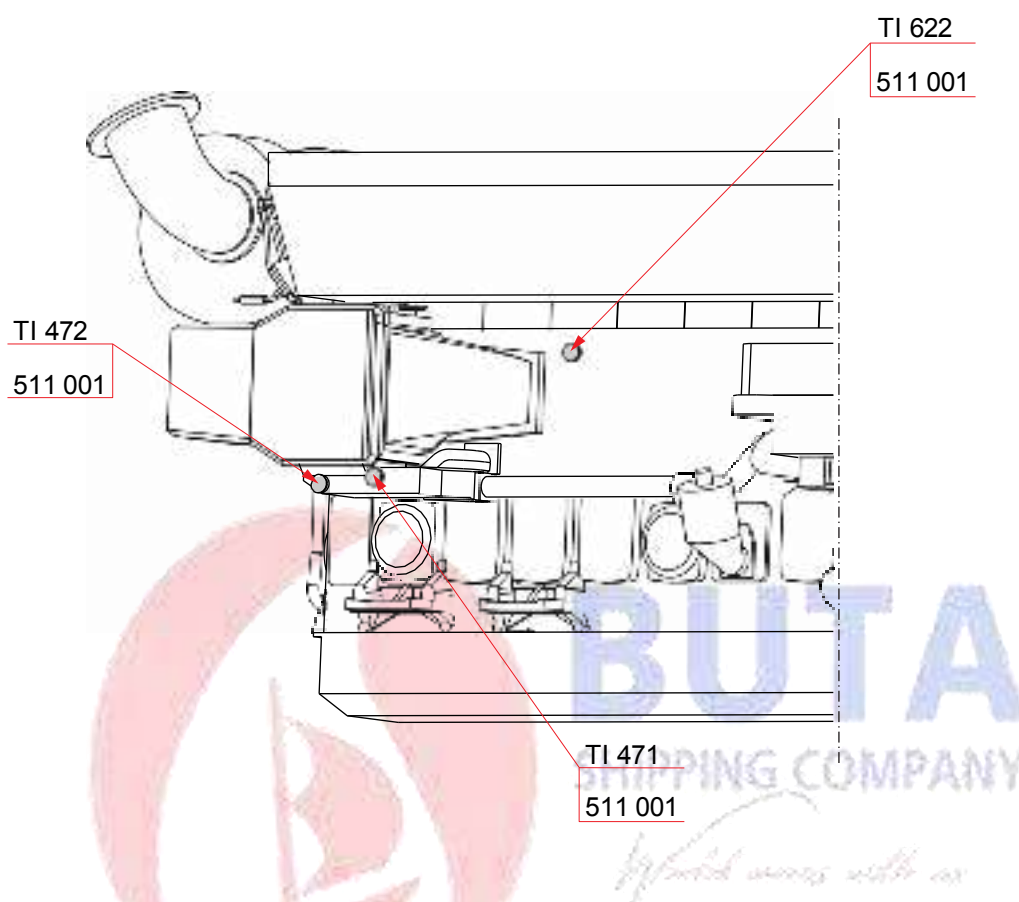
Lubricating oil level alarm switch

Detail X



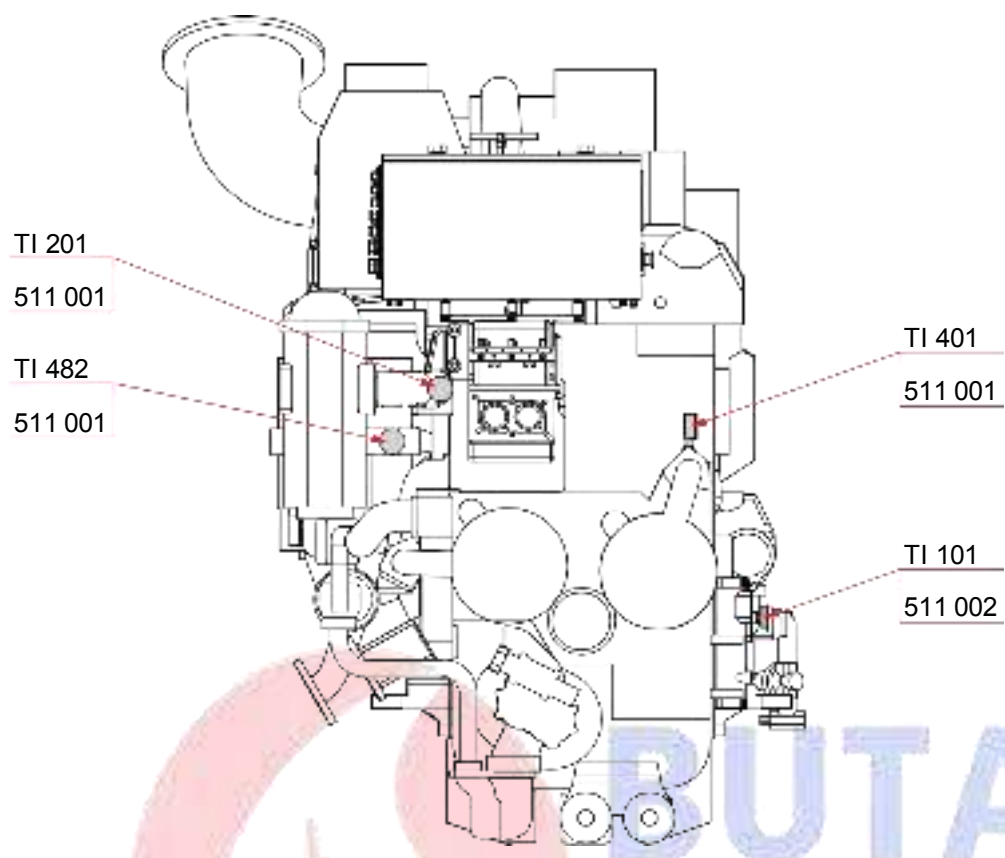
Part No.	Description	Qty [Pcs]	Wt. [Kg]
508 005	Cable clamp	12	-
508 006	Screw	12	-
508 007	Tank for alarm device	1	1.3
508 009	Nut	2	-
508 012	Screw	2	-
508 013	Cover	1	0.2
508 014	Screw	3	-
508 015	Locking plate	3	-
LS204	Level switch, lubricating oil level low	1	1

Thermometers



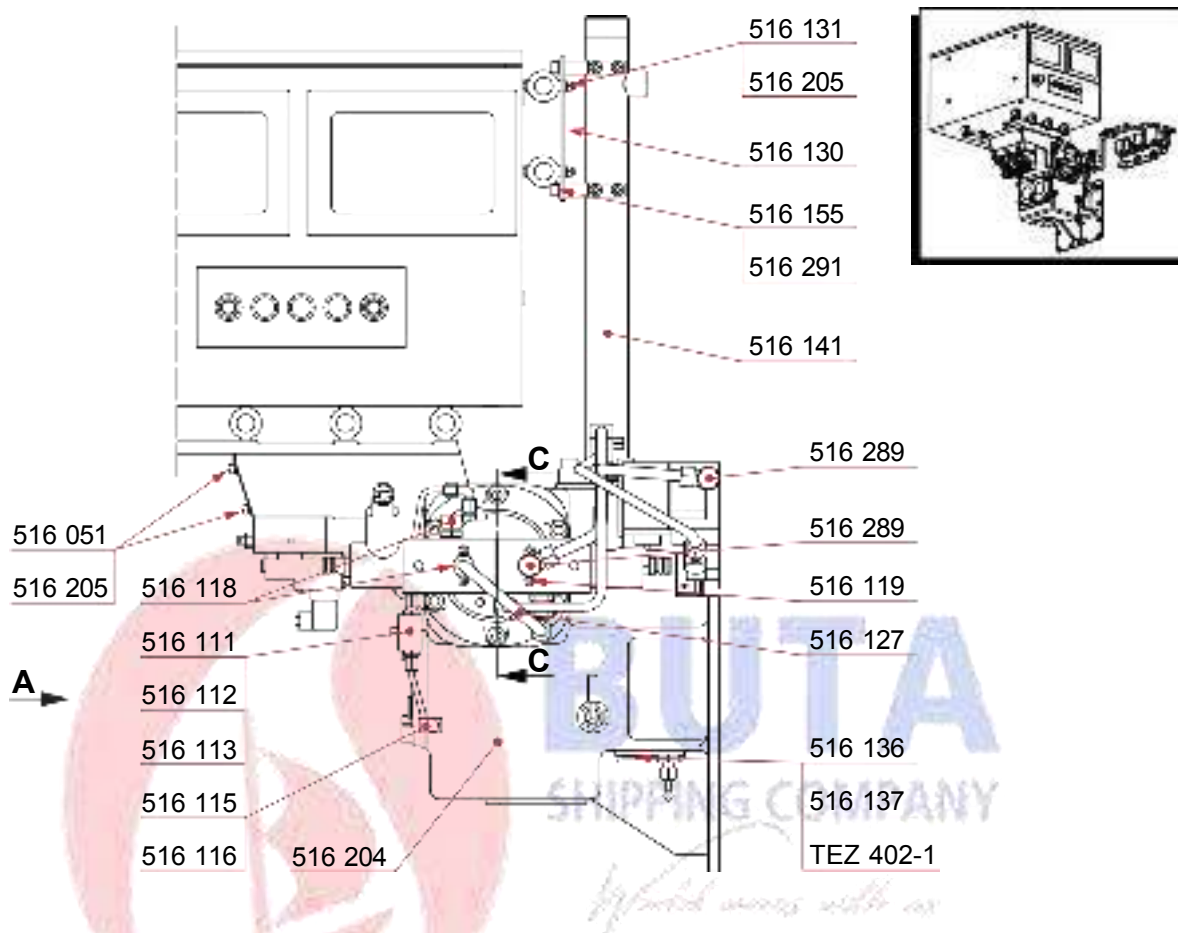
Part No.	Description	Qty [Pcs]	Wt. [Kg]
TI471	Thermometer, LT water, before charge air cooler	1	0.2
TI472	Thermometer, LT water, after charge air cooler	1	0.2
TI622	Thermometer for charge air, after cooler	1	0.2
511 001	Sealing ring	6	-

Thermometers



Part No.	Description	Qty [Pcs]	Wt. [Kg]
TI101	Thermometer, fuel oil, engine inlet	1	0.2
TI201	Thermometer for lubricating oil, before engine	1	0.2
TI401	Thermometer, HT water, before engine	1	0.3
TI482	Thermometer, LT water, after LO-cooler	1	0.2
511 001	Sealing ring	6	-
511 002	Sealing ring	1	-

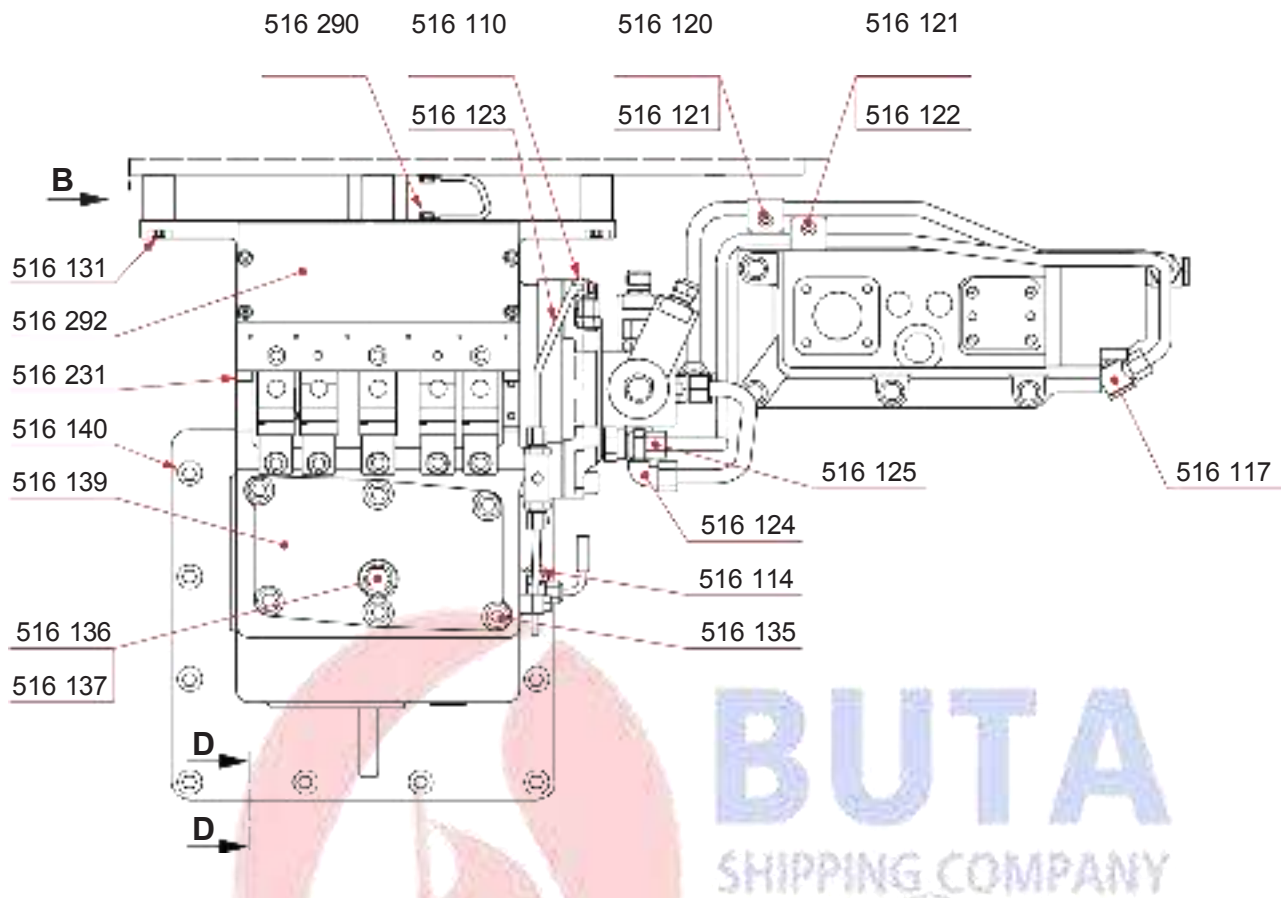
Bracket for connecting box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
516 051	Screw	4	-
516 111	Cutting ring	2	-
516 112	Union nut	2	-
516 113	Ball valve	1	0.2
516 115	Pipe clamp	2	-
516 116	Screw	1	-
516 118	Pipe union	2	-
516 119	Screw	4	-
516 127	Pipe	1	-
516 130	Bracket	1	0.6
516 131	Nut	7	-
516 136	Sealing ring	1	-
516 137	Plug	1	-
516 141	Pipe	1	1
516 155	Screw	4	-
516 204	Bracket	1	76.5
516 205	Washer	4	-
516 289	Pipe union	2	-
516 291	Washer	6	-
TEZ402-1	Temperature sensor for HT water (1)	1	-

Bracket for connecting box

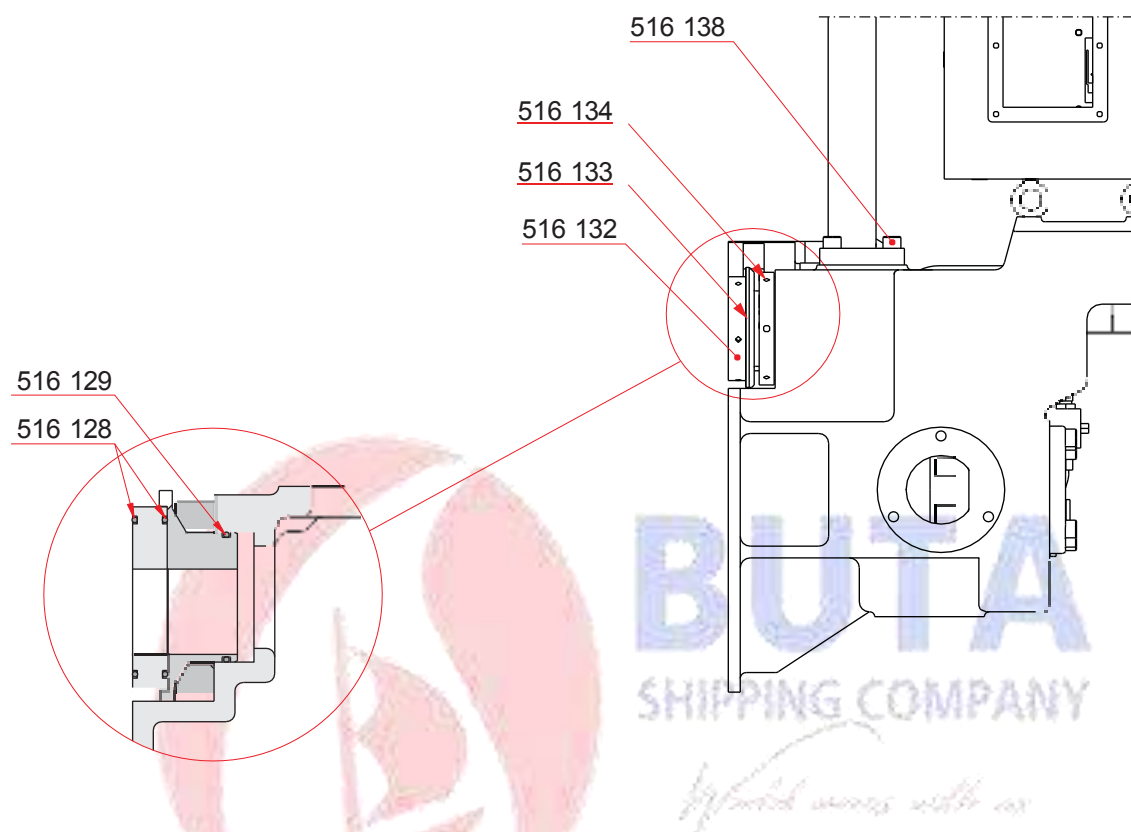
View A



Part No.	Description	Qty [Pcs]	Wt. [Kg]
516 110	Pipe union	1	-
516 114	Pipe	1	-
516 117	Pipe union	1	-
516 120	Pipe clamp	1	-
516 121	Screw	2	-
516 122	Pipe clamp	1	-
516 123	Pipe	1	-
516 124	Pipe union	1	0.1
516 125	Non-return valve	1	0.1
516 131	Nut	7	-
516 135	Screw	6	-
516 136	Sealing ring	1	-
516 137	Plug	1	-
516 139	Cover (1)	1	3.7
516 140	Screw	12	-
516 231	Screw	4	-
516 290	Screw	1	-
516 292	Splash guard	1	0.3

Bracket for connecting box

View B

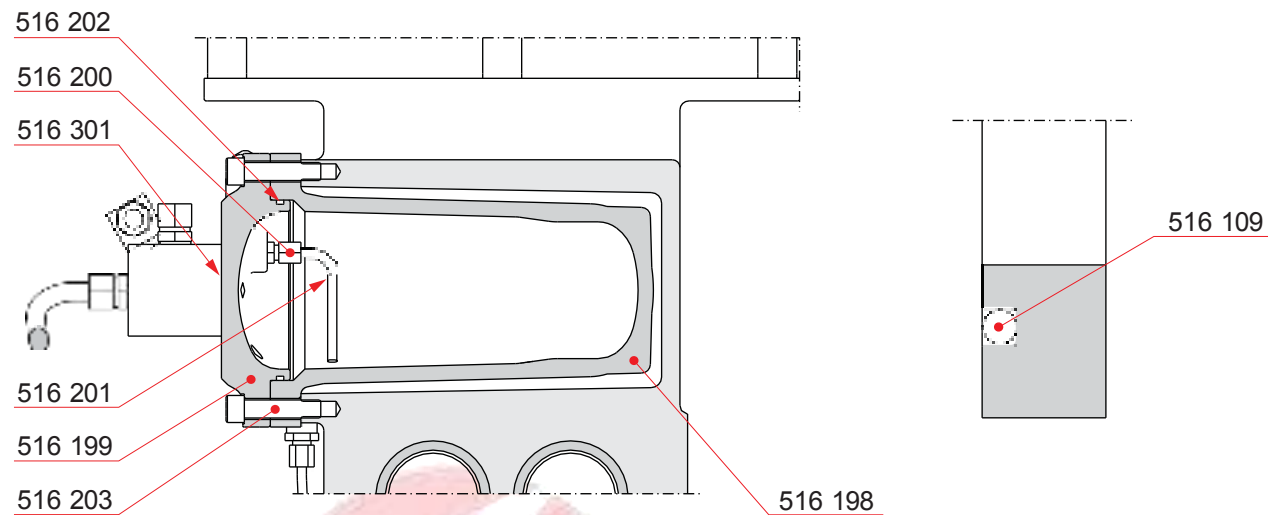


Part No.	Description	Qty [Pcs]	Wt. [Kg]
516 128	O-ring	2	-
516 129	O-ring	1	-
516 132	Throttle flange	1	-
516 133	Throttle flange	1	1.2
516 134	Compression ring	1	1.4
516 138	Screw	3	-

Bracket for connecting box

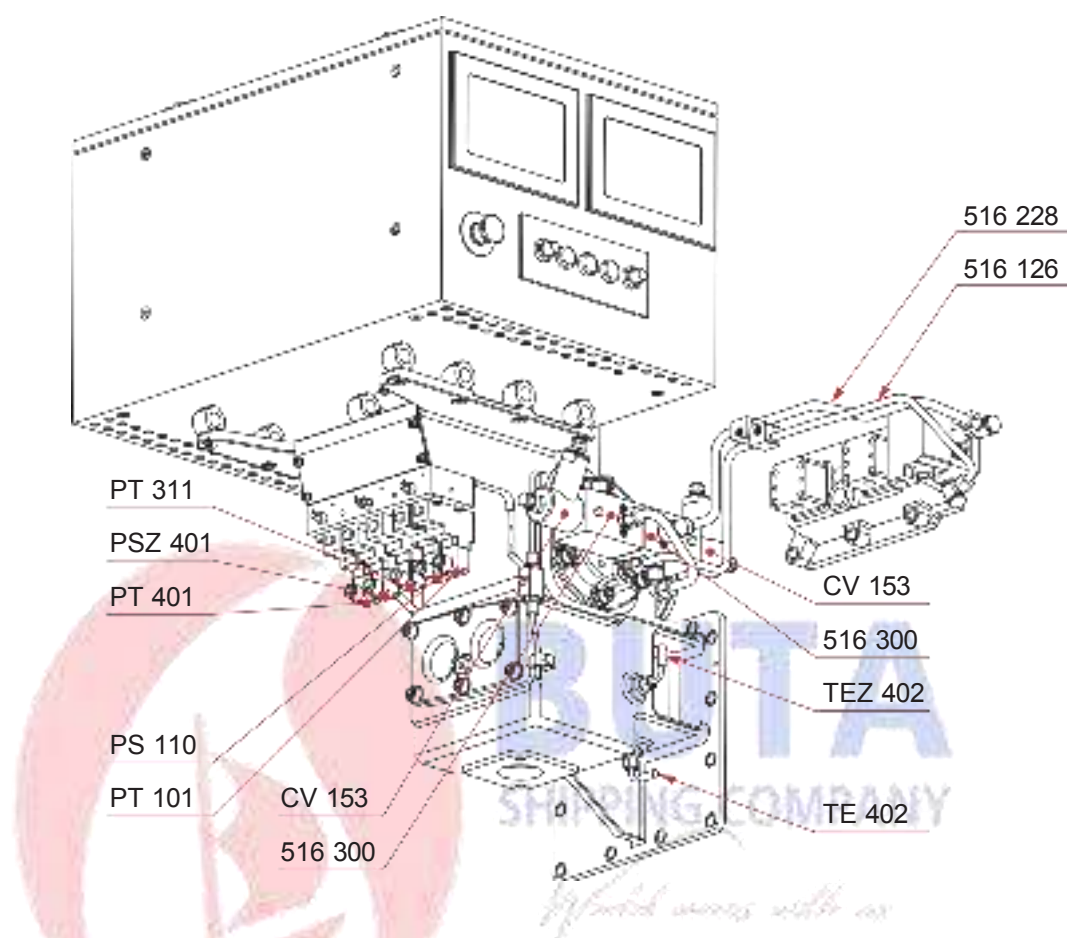
Section C-C

Section D-D



Part No.	Description	Qty [Pcs]	Wt. [Kg]
516 109	O-ring	1	-
516 198	Air tank	1	8
516 199	Cover	1	3.5
516 200	Pipe union	1	-
516 201	Pipe	1	-
516 202	O-ring	1	-
516 203	Screw	6	-
516 301	O-ring	2	-

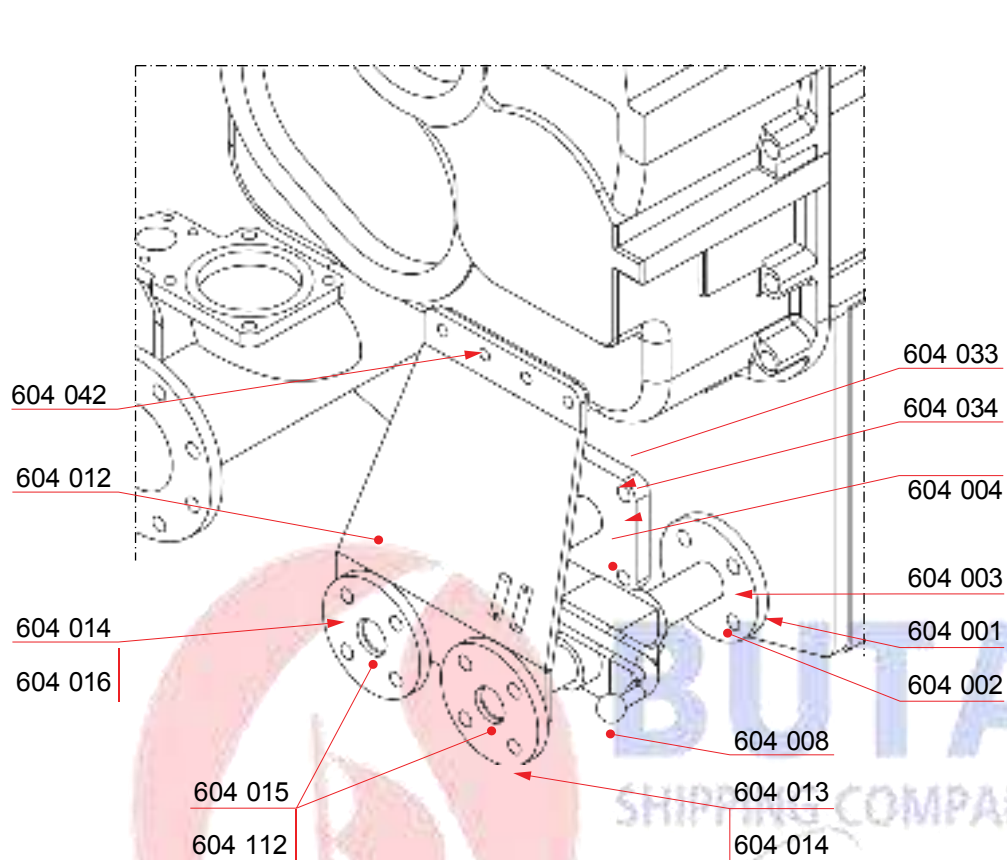
Bracket for connecting box



Part No.	Description	Qty [Pcs]	Wt. [Kg]
516 126	Pipe	1	0.2
516 228	Pipe	1	0.4
516 300	Valve body	2	0.5
CV153	Solenoid valve	2	0.6
PS110	Pressure switch, start of fuel oil stand by pump (1)	1	-
PSZ401	Pressure switch (1)	1	-
PT101	Pressure transducer, fuel oil	1	-
PT311	Pressure transducer	1	-
PT401	Pressure transducer, HT water	1	-
TE402	Temperature sensor, HT water, after engine	1	-
TEZ402	Temperature sensor for HT water	1	-



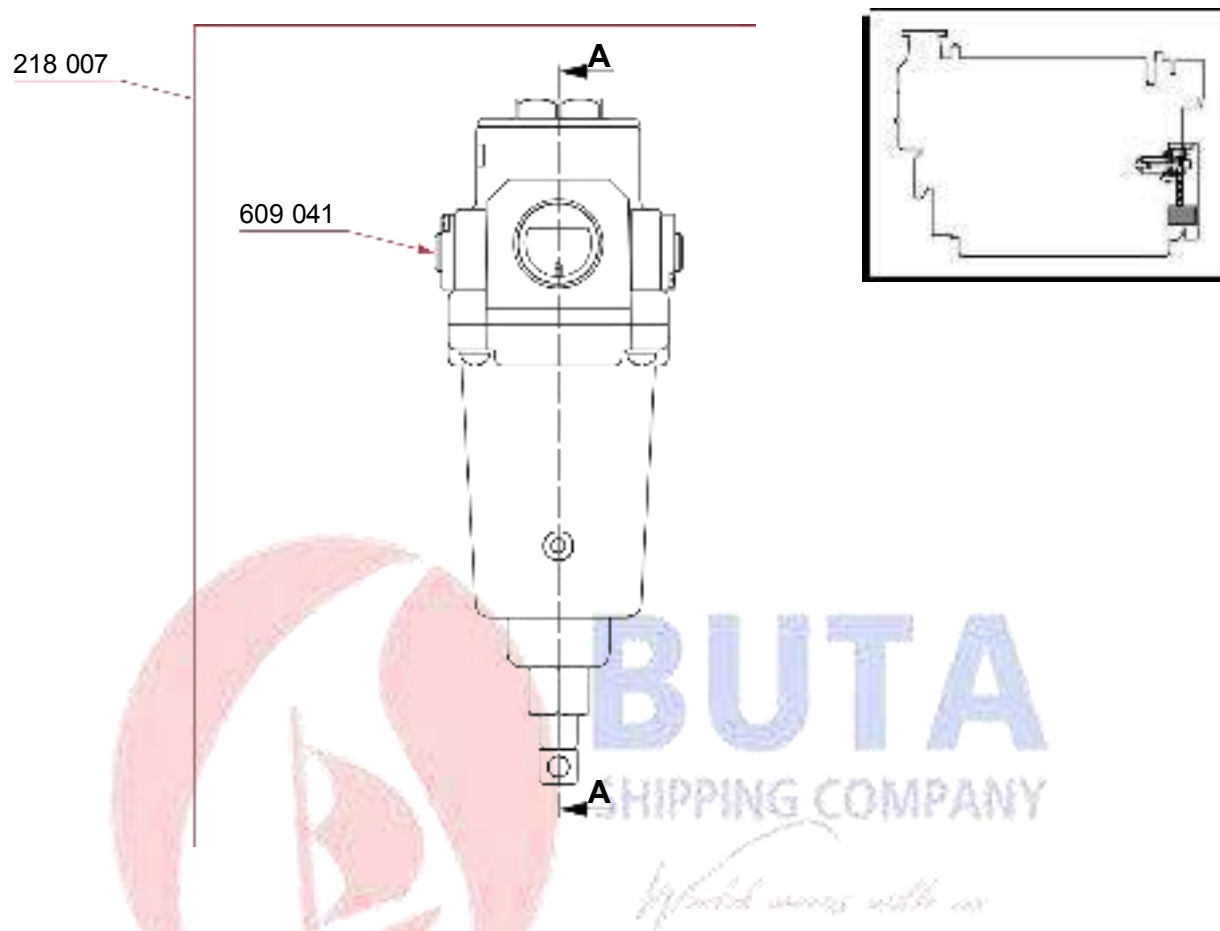
Piping for separator



Part No.	Description	Qty [Pcs]	Wt. [Kg]
604 001	O-ring	1	-
604 002	Pipe	1	8.3
604 003	Screw	4	-
604 004	Pipe	1	9.4
604 008	Lever	1	0.9
604 012	Bracket	1	-
604 013	Screw	4	0.1
604 014	Nut	8	-
604 015	Gasket	2	-
604 016	Screw	4	0.1
604 033	O-ring	1	-
604 034	Screw	4	-
604 042	Screw	4	-
604 112	Flange	2	1.8

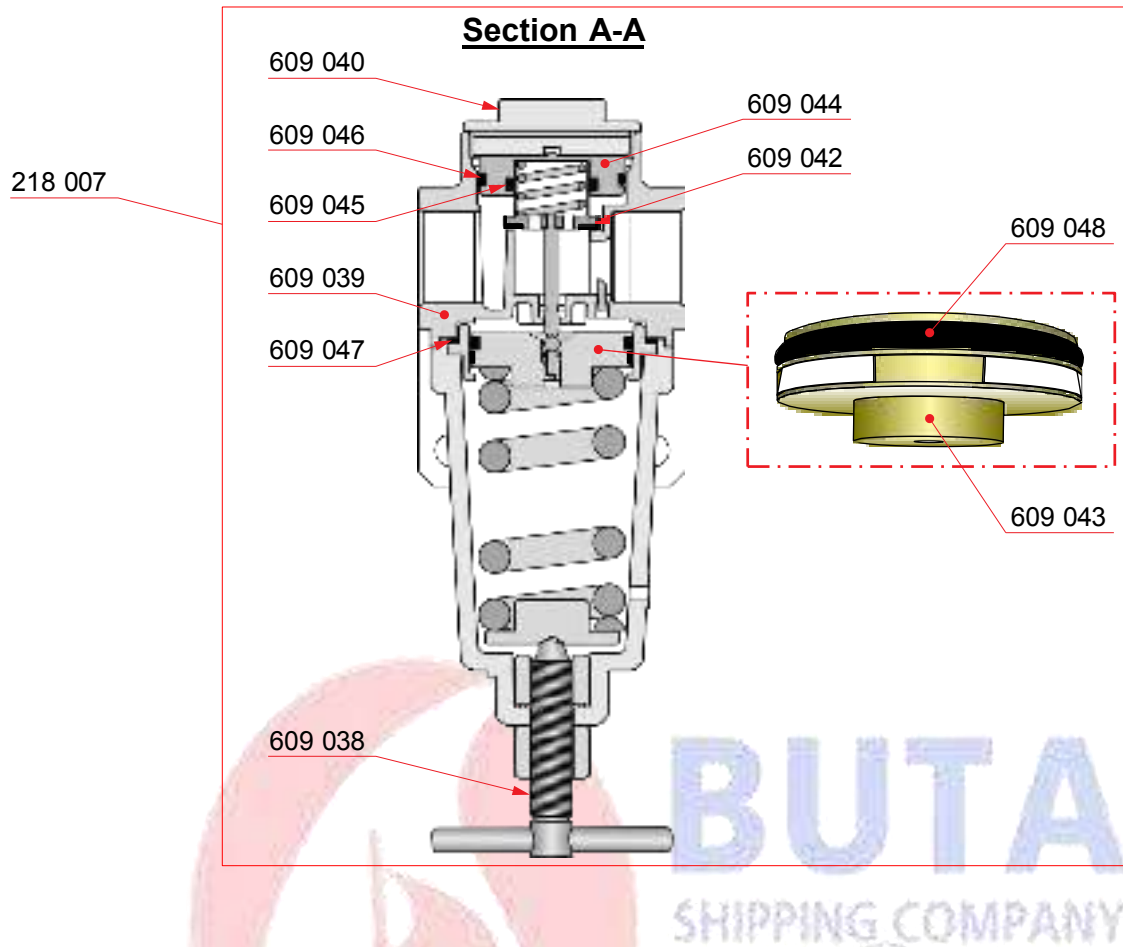
Part No.	Description	Qty [Pcs]	Wt. [Kg]
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Pressure regulating valve



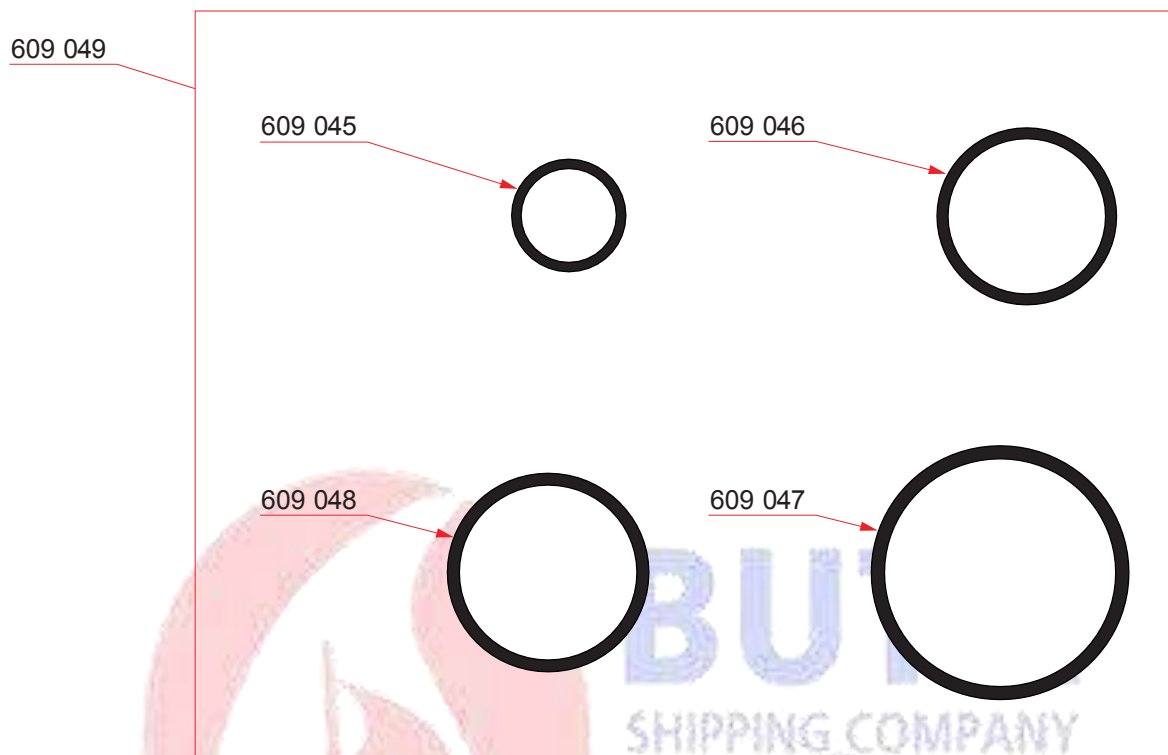
Part No.	Description	Qty [Pcs]	Wt. [Kg]
218 007	Pressure regulating valve	1	2.1
609 041	Plug	2	0.2

Pressure regulating valve



Part No.	Description	Qty [Pcs]	Wt. [Kg]
218 007	Pressure regulating valve	1	2.1
609 038	Handle	1	0.1
609 039	Body	1	1.5
609 040	Cap	1	0.2
609 042	Valve seat	1	0.1
609 043	Piston	1	0.1
609 044	Valve guide	1	0.1
609 045	O-ring	1	0.1
609 046	O-ring (*)	1	-
609 047	O-ring (*)	1	-
609 048	O-ring (*)	1	-

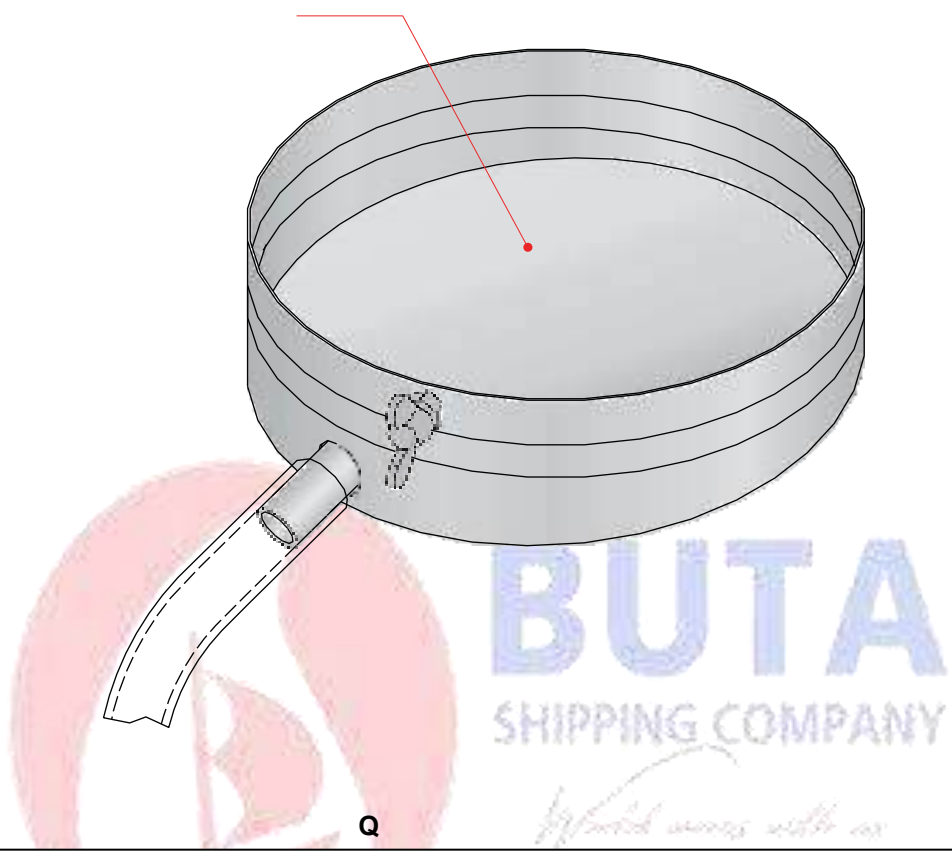
Pressure regulating valve



Part No.	Description	Qty [Pcs]	Wt. [Kg]
609 049	Sealing set for pressure regulating valve	1	0.1
609 045	O-ring	1	0.1
609 046	O-ring (*)	1	-
609 047	O-ring (*)	1	-
609 048	O-ring (*)	1	-

Optional tools for cylinder liner

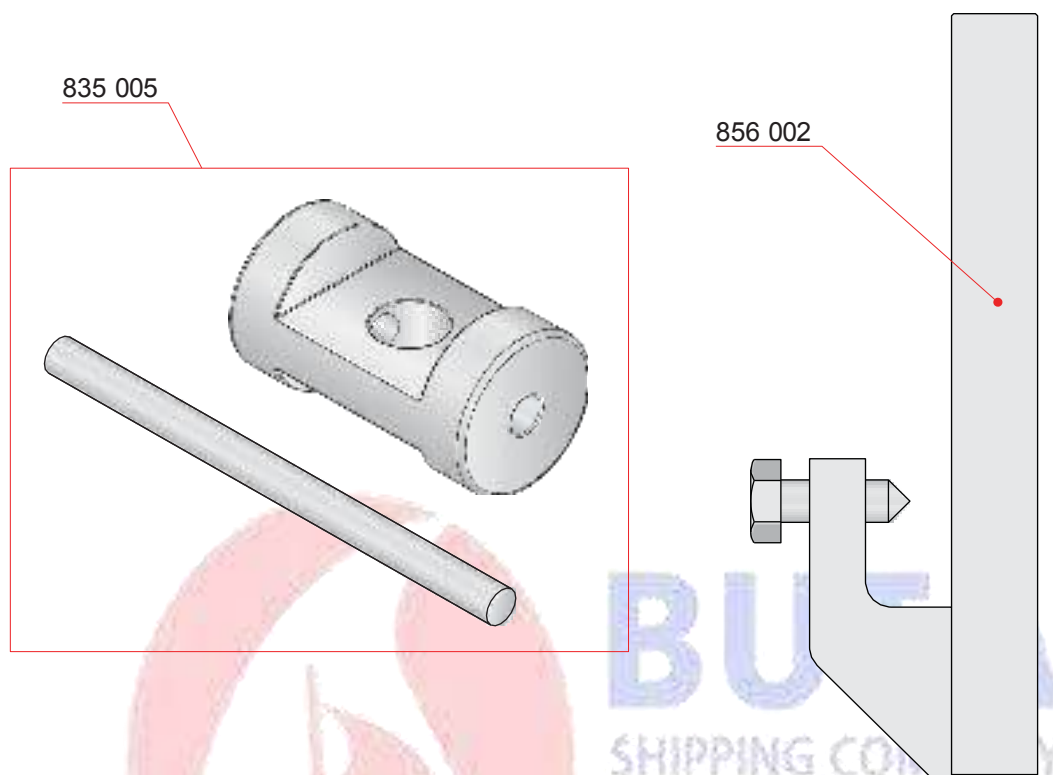
842 001



Part No.	Description	Qty [Pcs]	Wt. [Kg]
842 001	Protecting pot for dirty honing oil	1	1.3

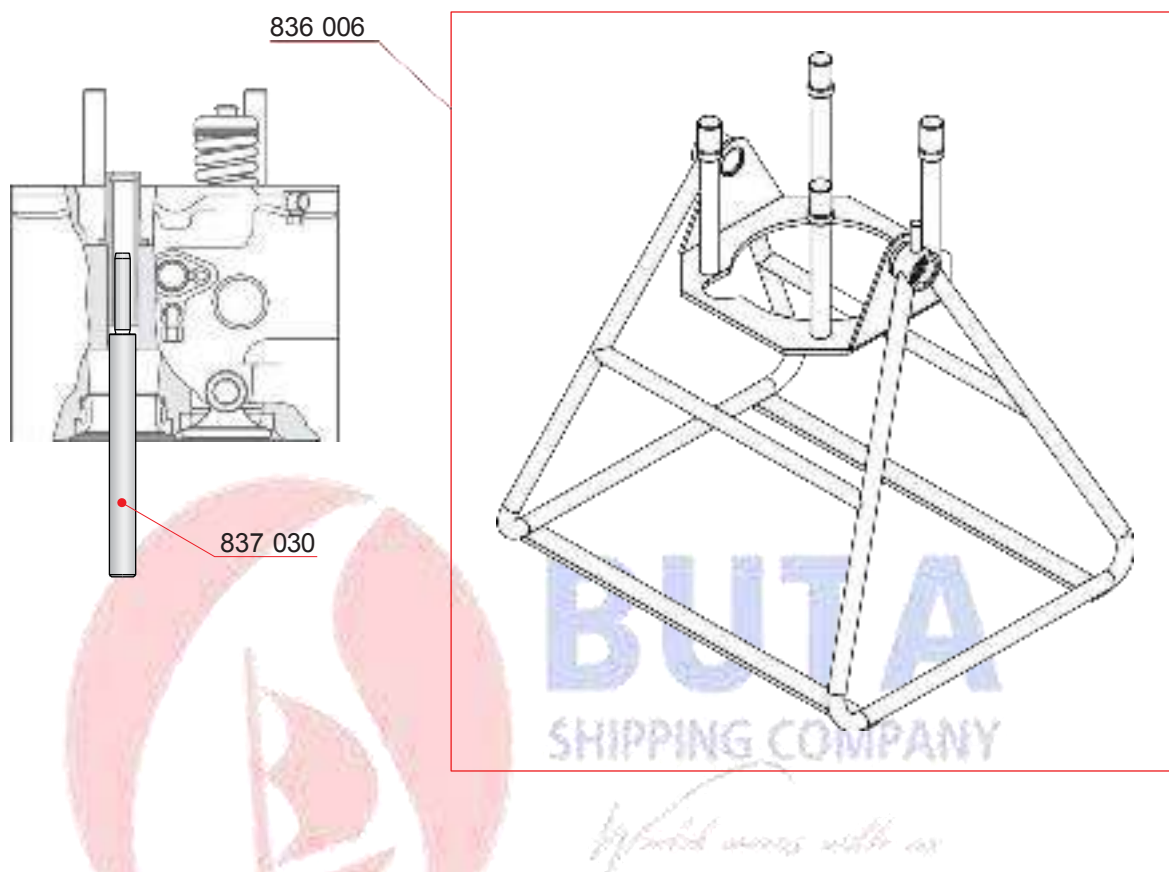
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Optional tools for piston



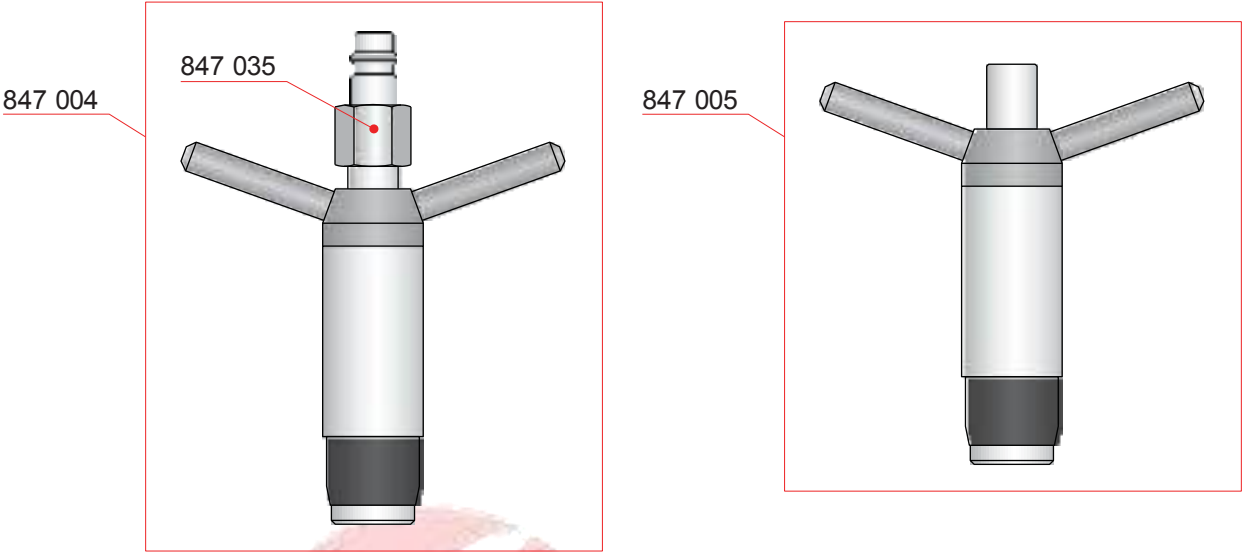
Part No.	Description	Qty [Pcs]	Wt. [Kg]
835 005	Mounting tool for piston crown	1	5
856 002	Piston holder	1	0.7

Optional tools for cylinder head



Part No.	Description	Qty [Pcs]	Wt. [Kg]
836 006	Service trestle for cylinder head	1	25
837 030	Dismantling tool for valve guides	1	1

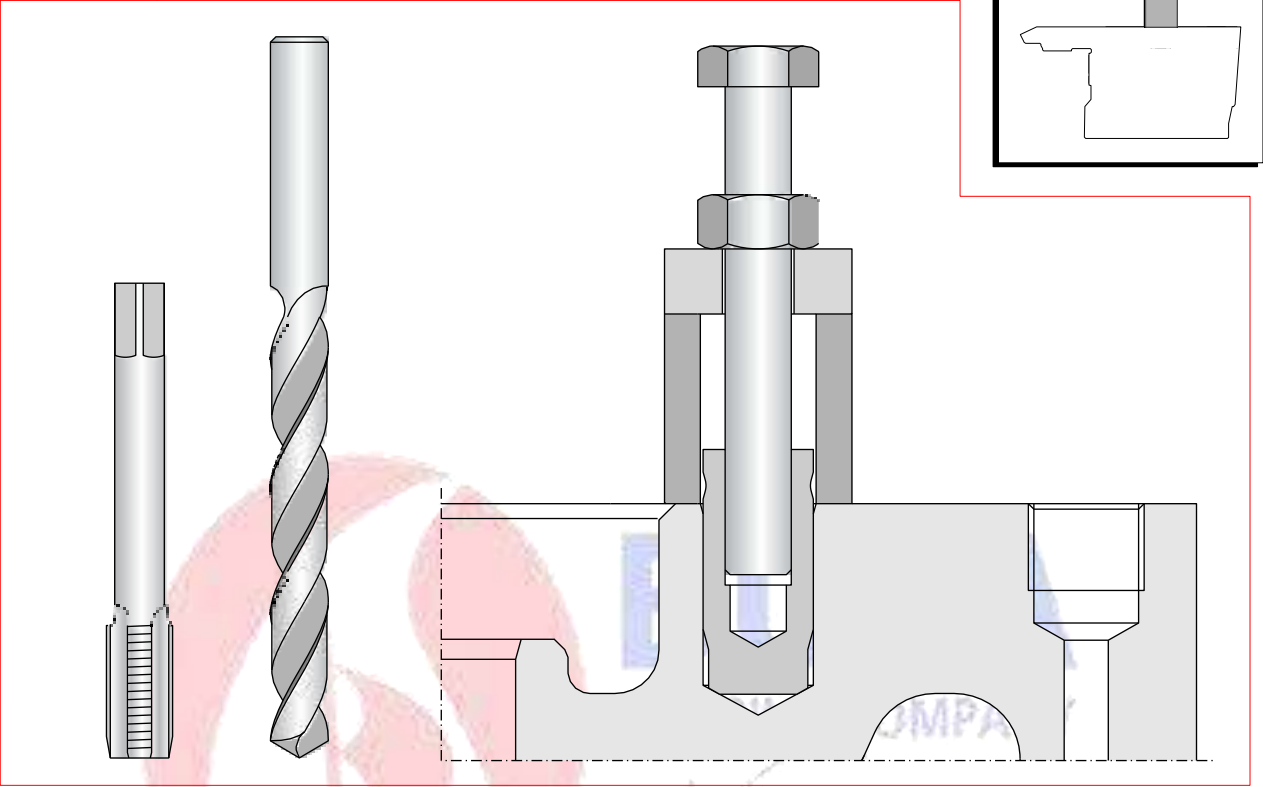
Optional tools for cylinder head



Part No.	Description	Qty [Pcs]	Wt. [Kg]
847 004	Pressure test tool for cylinder head with nipple	1	0.3
847 035	Nipple	1	-
847 005	Pressure test tool for cylinder head	1	0.3

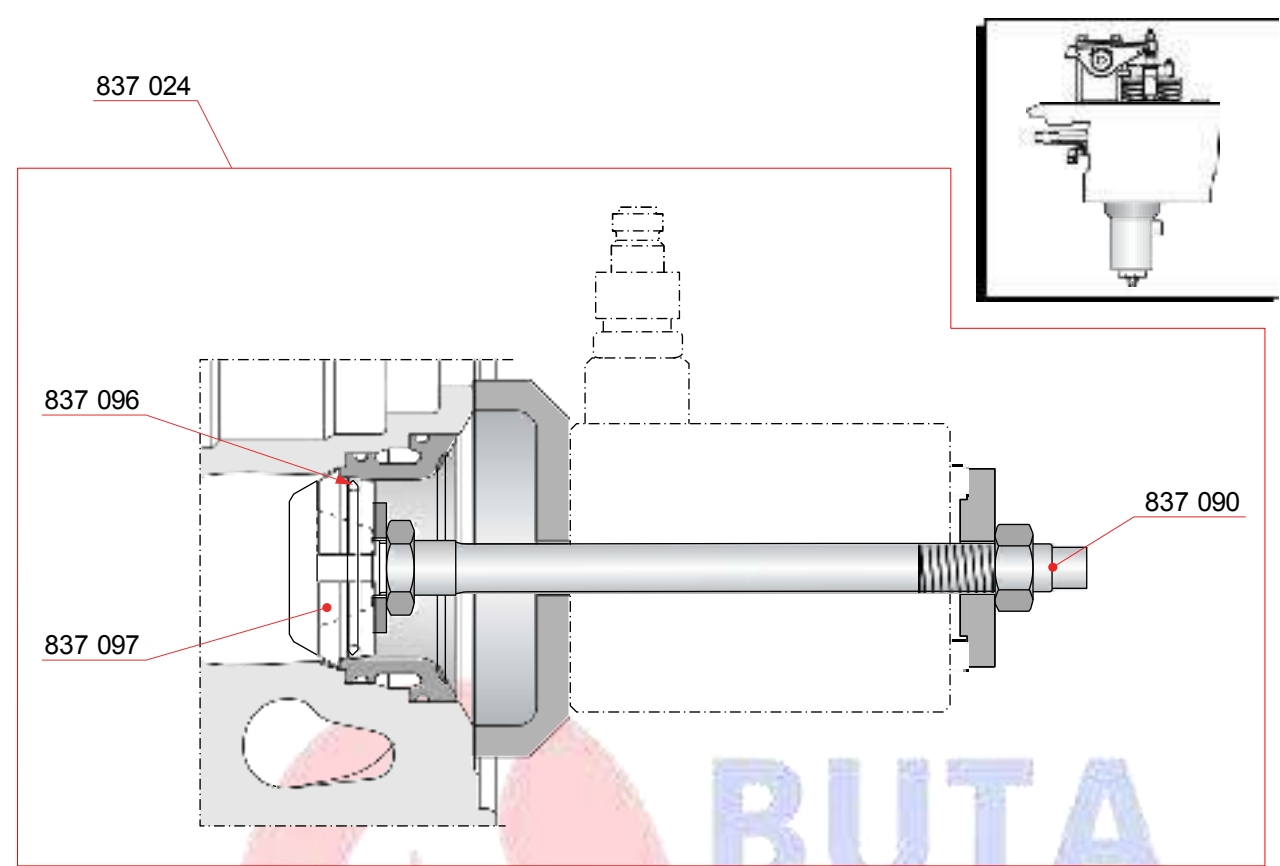
Optional tools for cylinder head

837 031



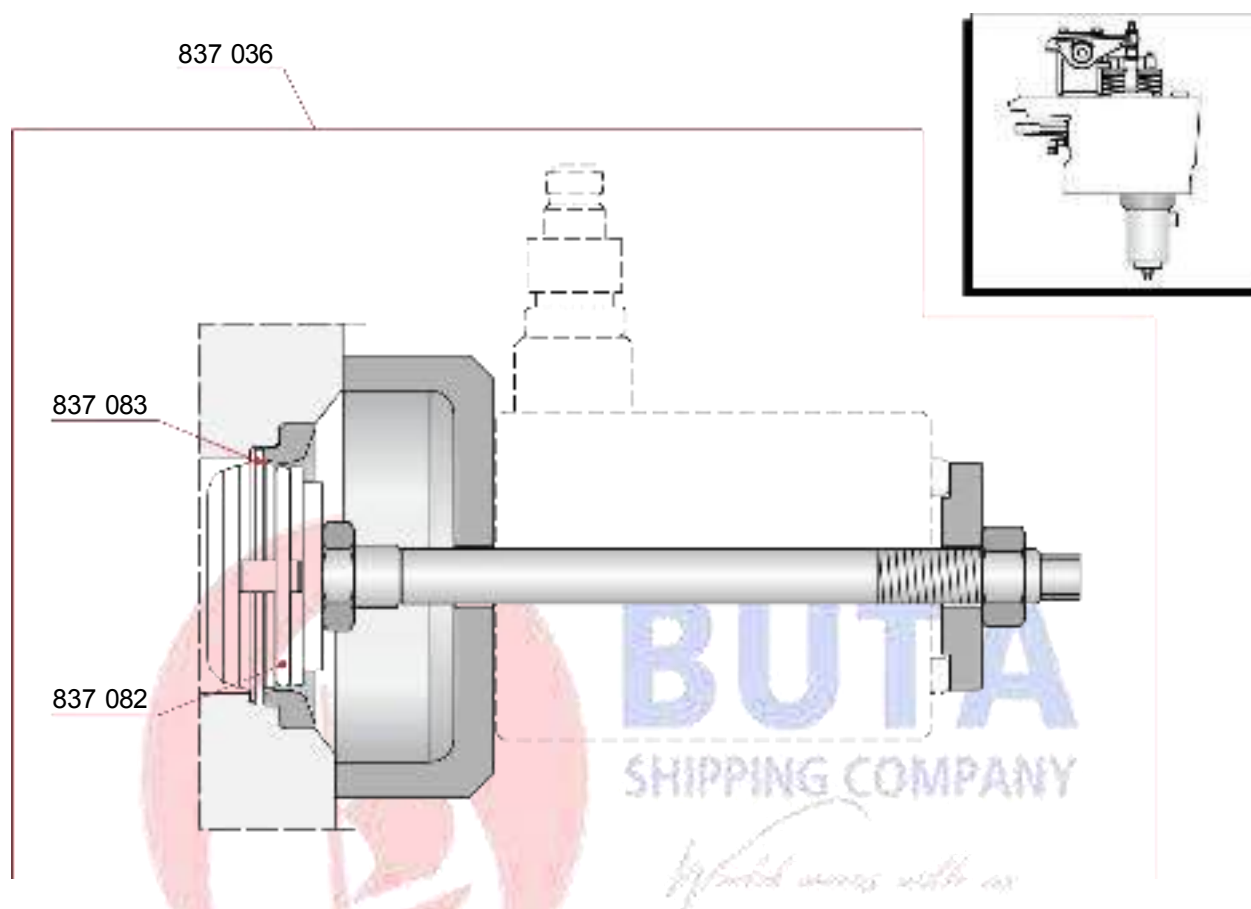
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 031	Extractor tool for yoke pin	1	0.4

Optional tools for cylinder head



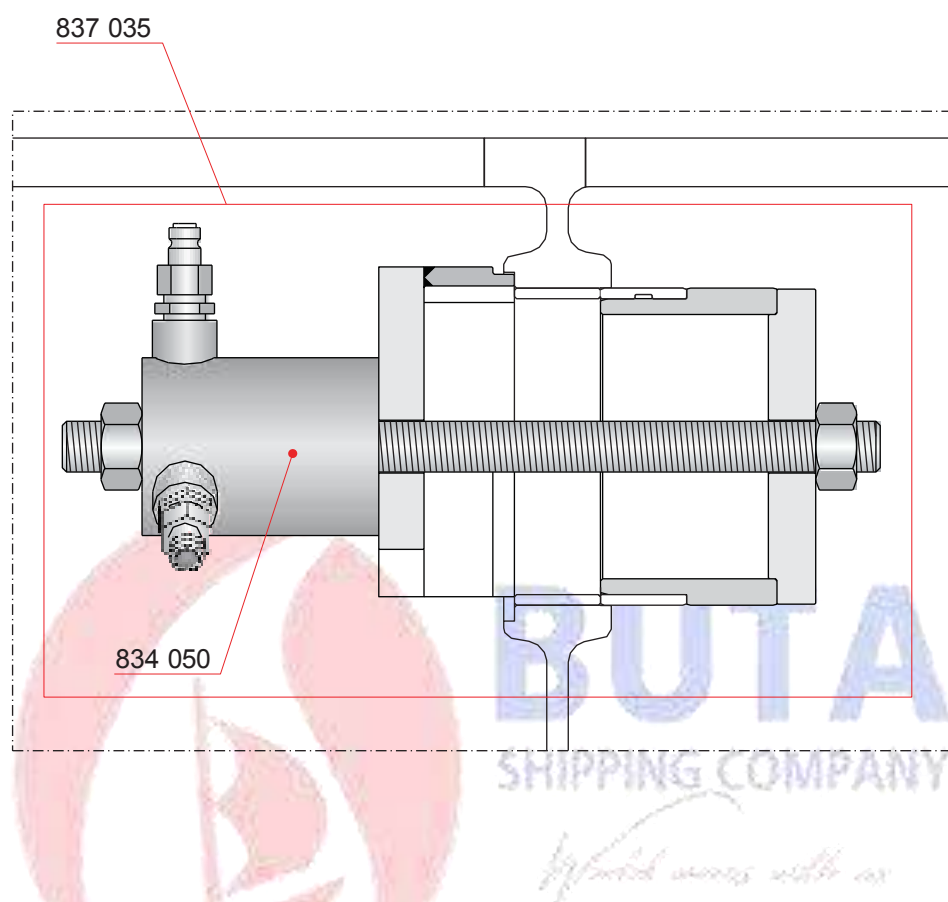
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 024	Extractor tool for exhaust seat insert	1	1.8
837 090	Spindle	1	-
837 096	O-ring	1	-
837 097	Claw	4	0.1

Optional tools for cylinder head



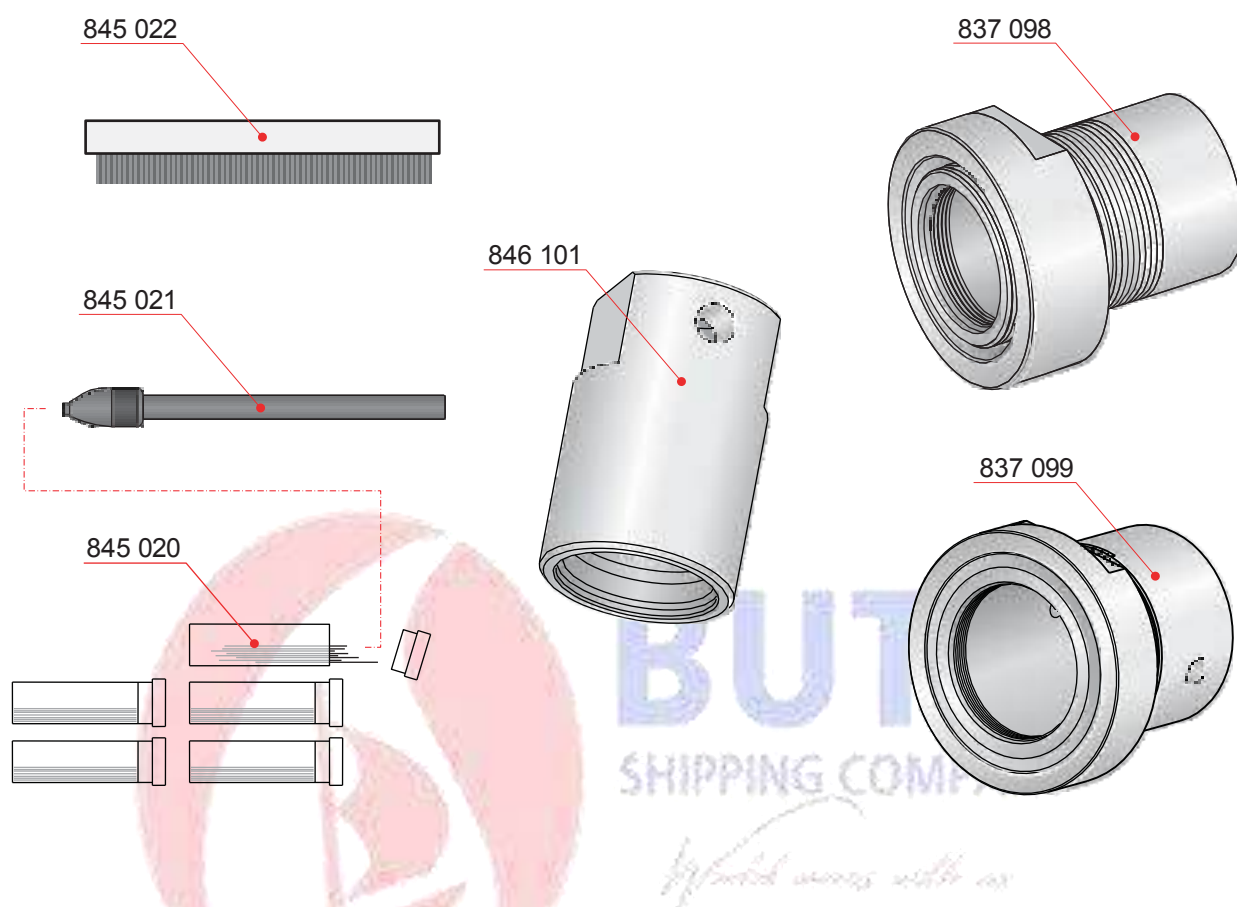
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 036	Extractor tool for inlet seat insert	1	1.3
837 082	O-ring	1	-
837 083	Claw	4	0.3

Optional tools for camshaft



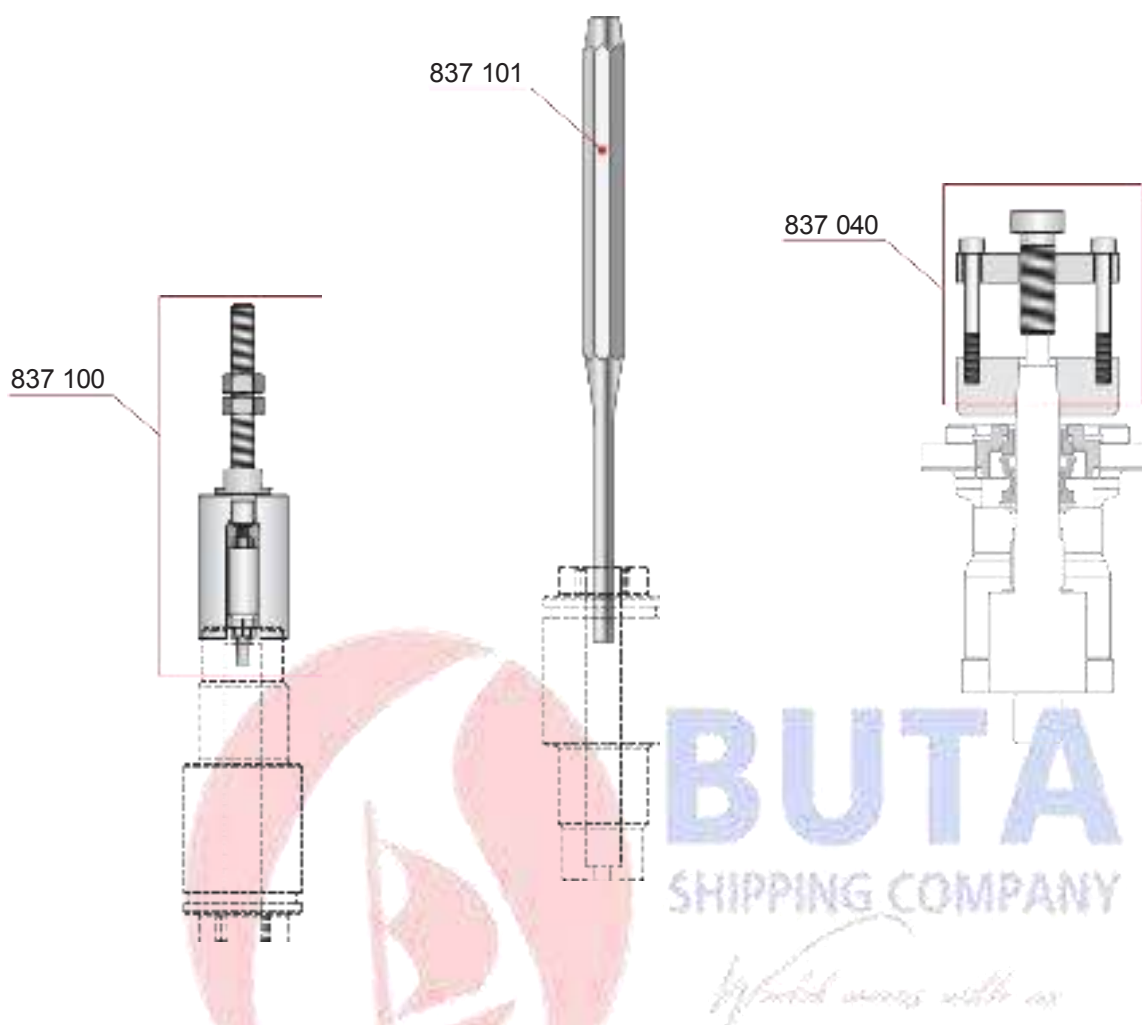
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 035	Mounting tool for camshaft bearings	1	12
834 050	Hydraulic extractor (*)	1	4.5

Optional tools for injection equipment



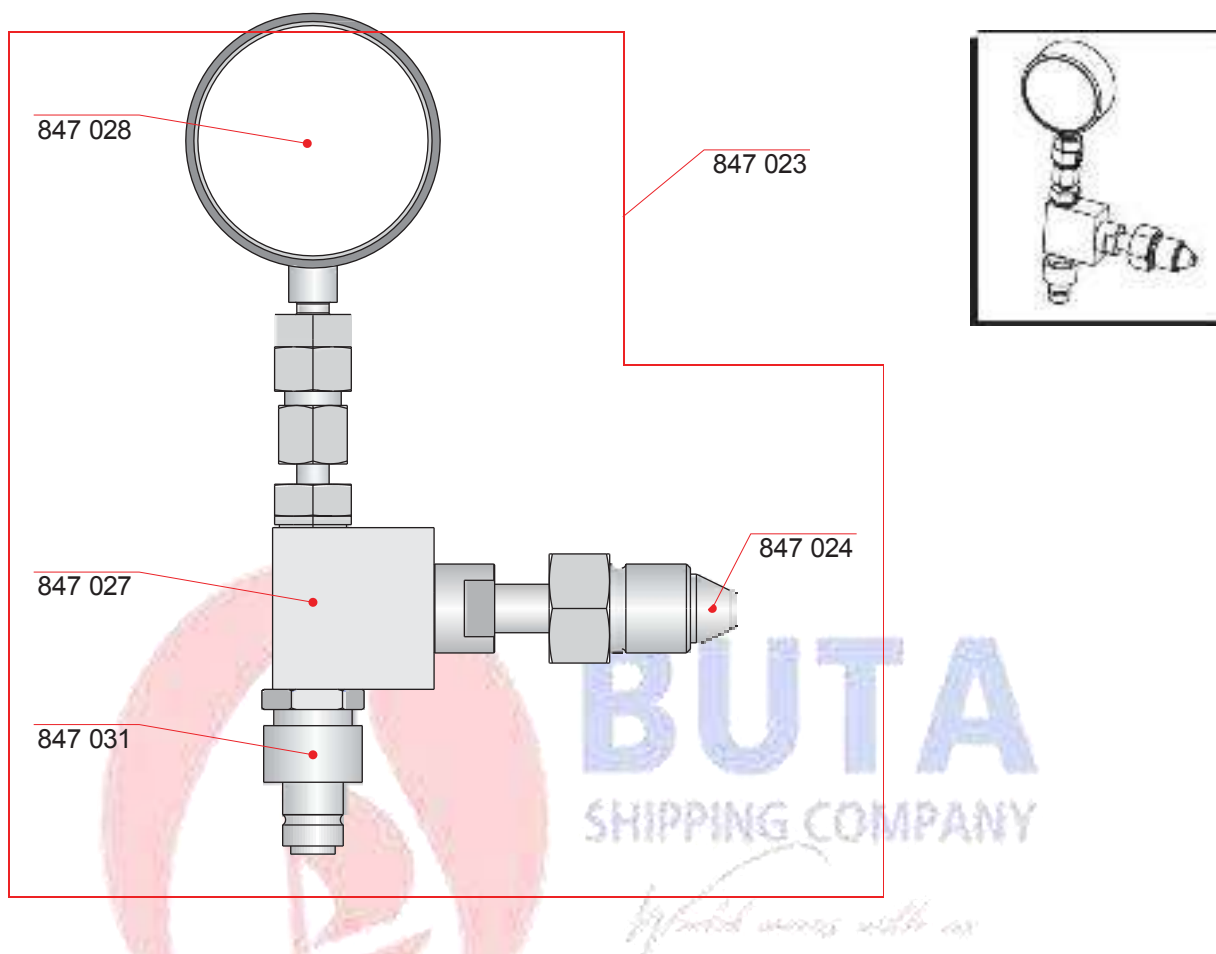
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837098	Extractor tool for fuel oil pump nut, size 4-25	1	0.4
837099	Extractor tool for pre lube oil pump nut, 32-80	1	0.9
845020	Cleaning needles for nozzles, 50 pack	1	-
845021	Shaft for nozzle cleaning needles	1	-
845022	Brass wire brush	1	-
846101	Mounting tool for Kracht fuel oil pump, size 4-25	1	0.3

Optional tools for injection equipment



Part No.	Description	Qty [Pcs]	Wt. [Kg]
837040	Extractor for fuel oil pump coupling removal	1	0.1
837100	Extractor tool for injection valve impact bush	1	0.6
837101	Pin punch	1	-

Optional tools for injection equipment

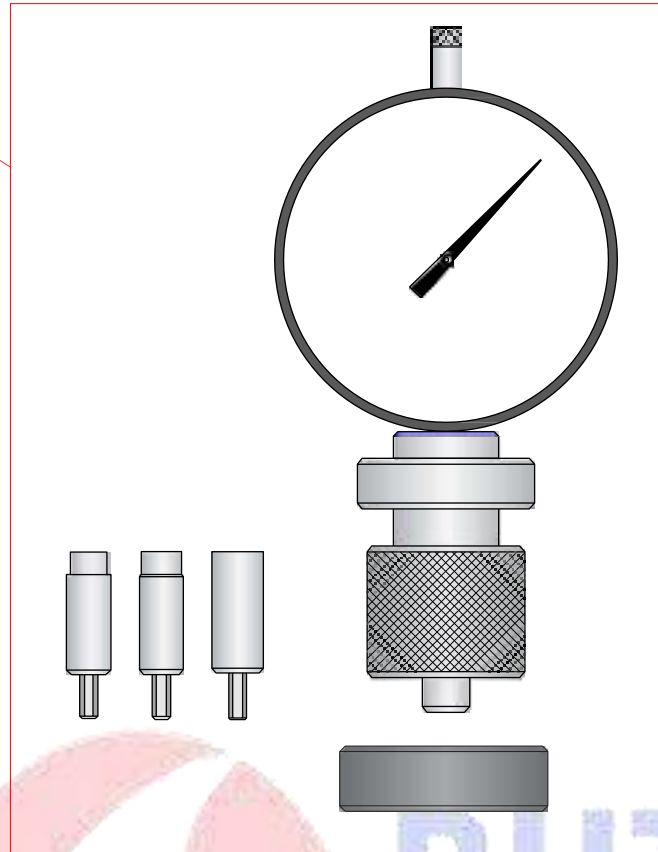


Part No.	Description	Qty [Pcs]	Wt. [Kg]
847023	Pressure test device for fuel pump	1	0.5
847024	Adapter	1	0.2
847027	Connection piece	1	0.2
847028	Pressure gauge	1	-
847031	Coupling	1	-

Optional tools for injection equipment

1 0.2

848 051

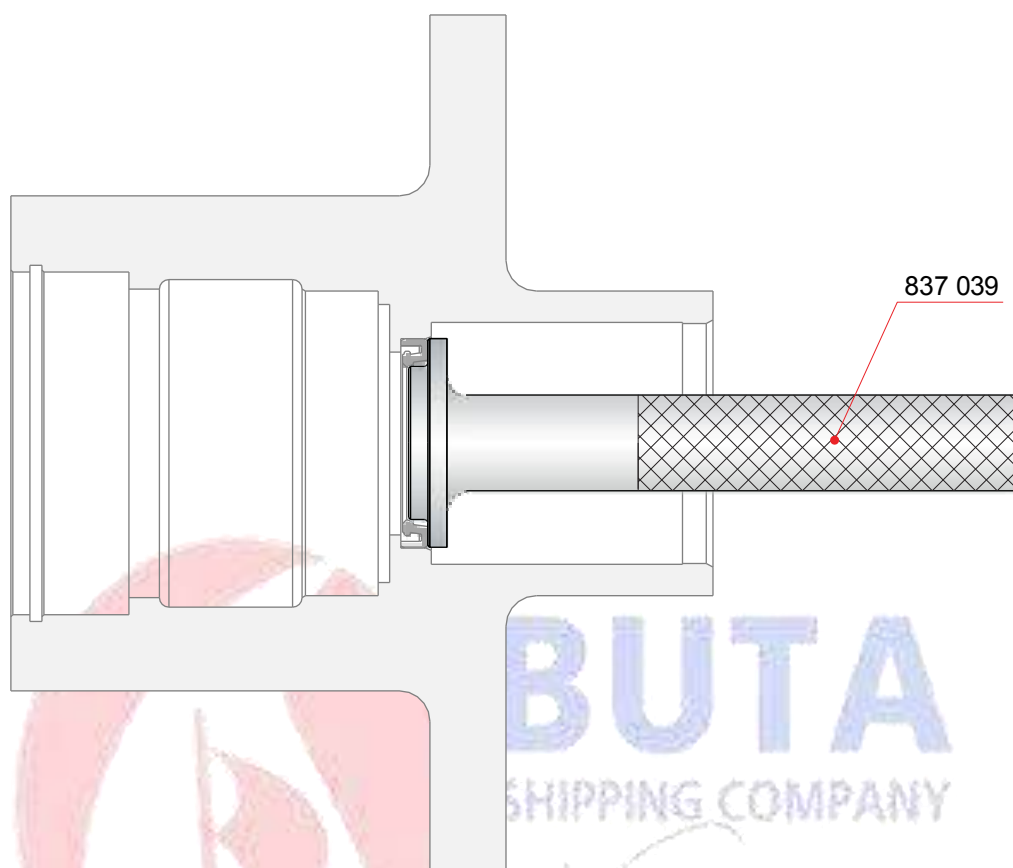


Part No.	Description	Qty [Pcs]	Wt. [Kg]
848051	Measuring device for injection nozzle needle lift	1	0.2

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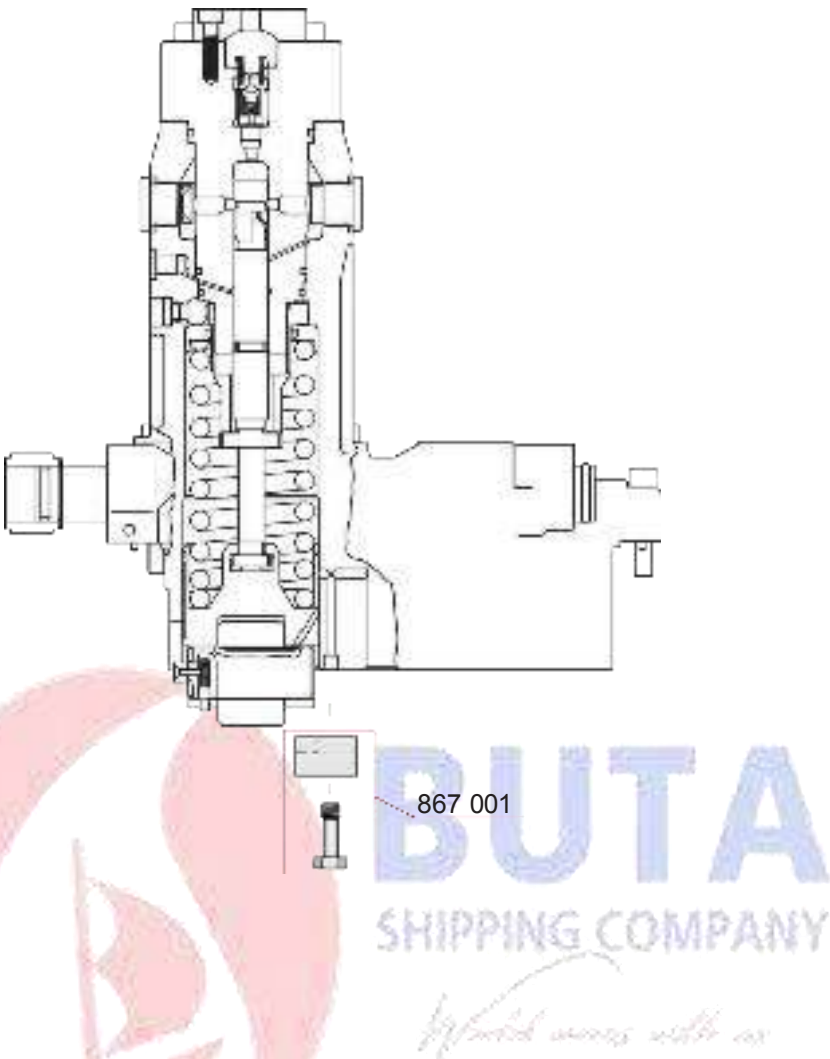
Hydraulic services with car

Optional tools for injection equipment



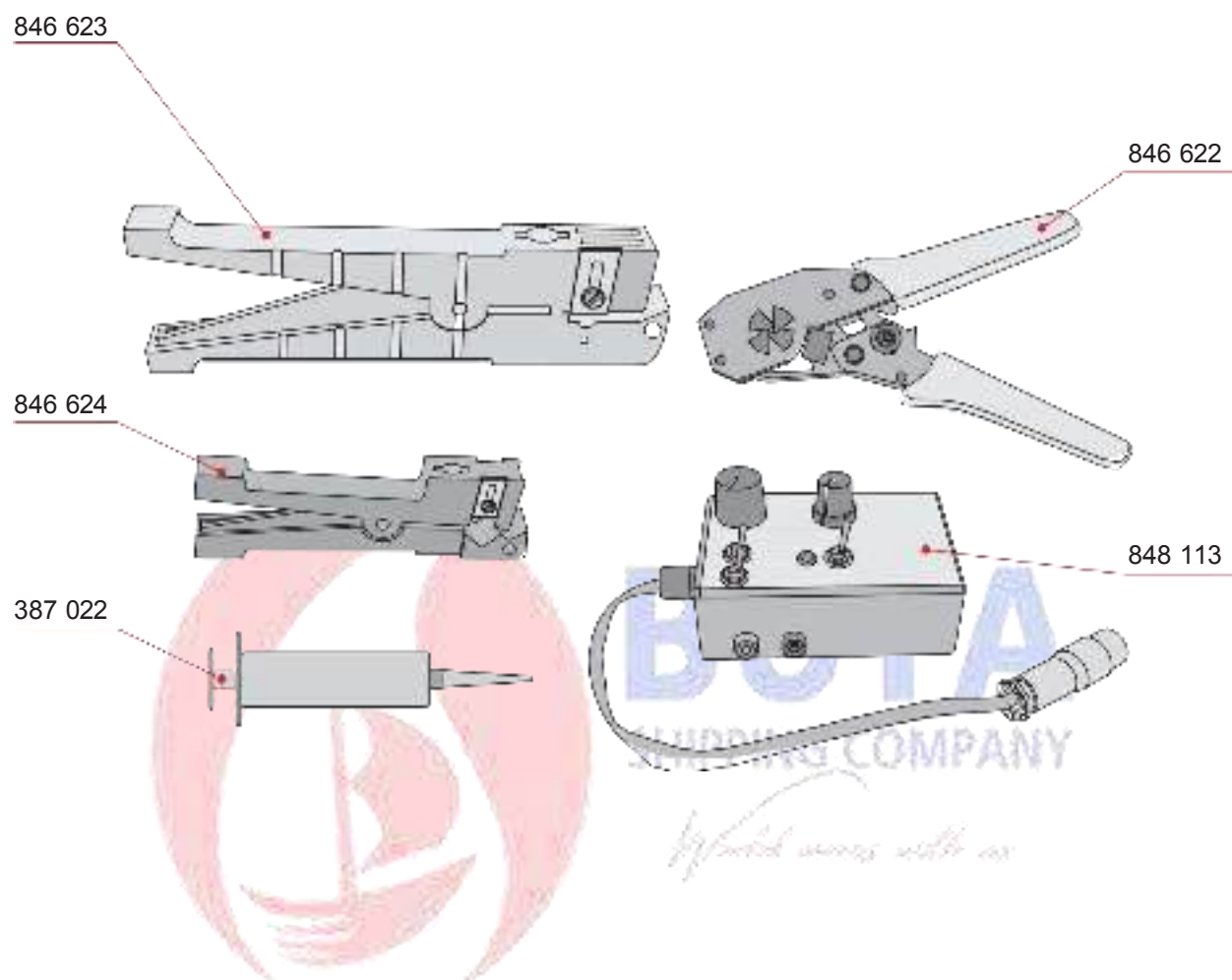
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837039	Mounting tool for oil seal of fuel oil pump	1	-

Optional tools for injection equipment



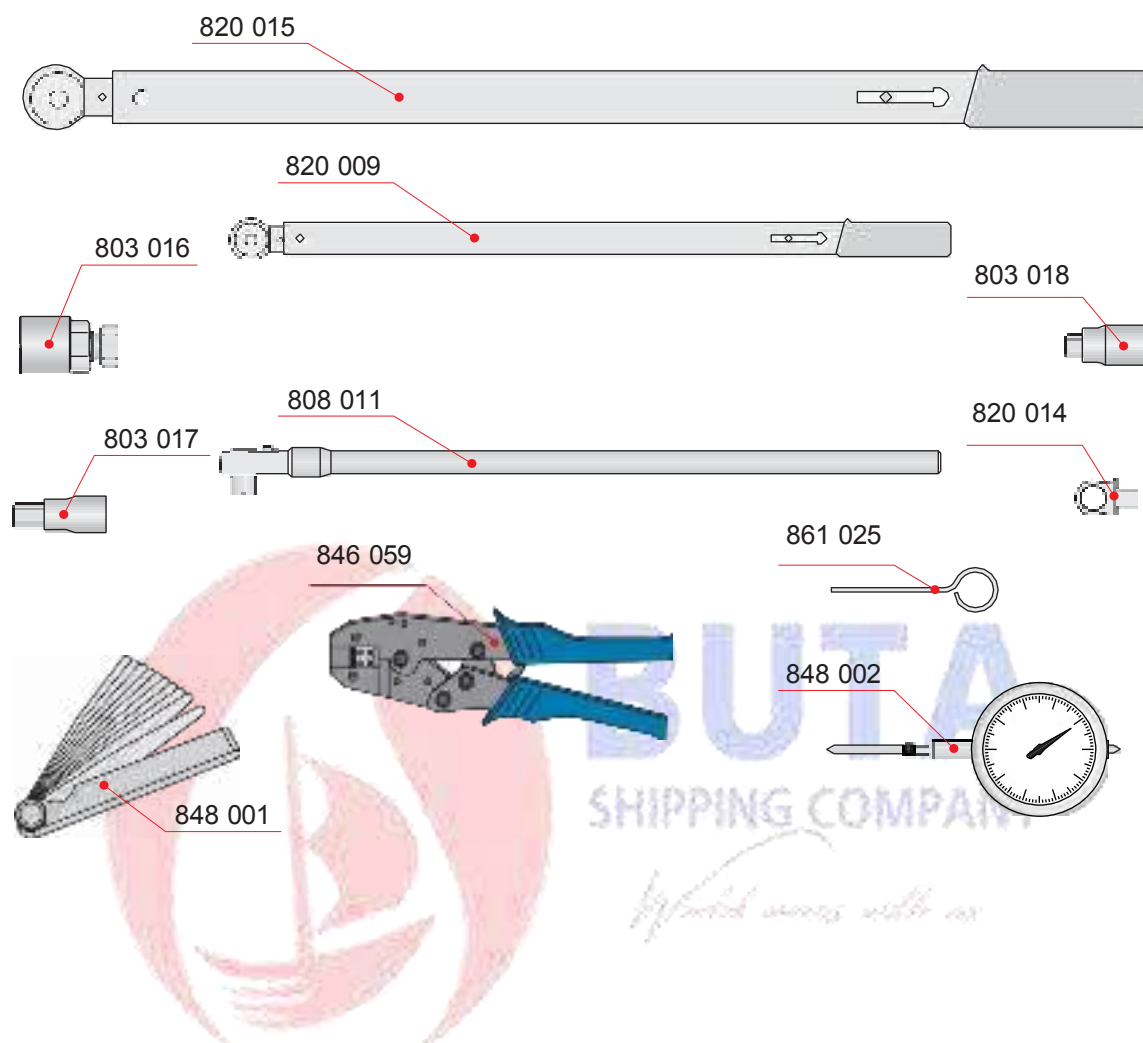
Part No.	Description	Qty [Pcs]	Wt. [Kg]
867001	Locking tool for injection pump tappet roller	1	-

Automation tools



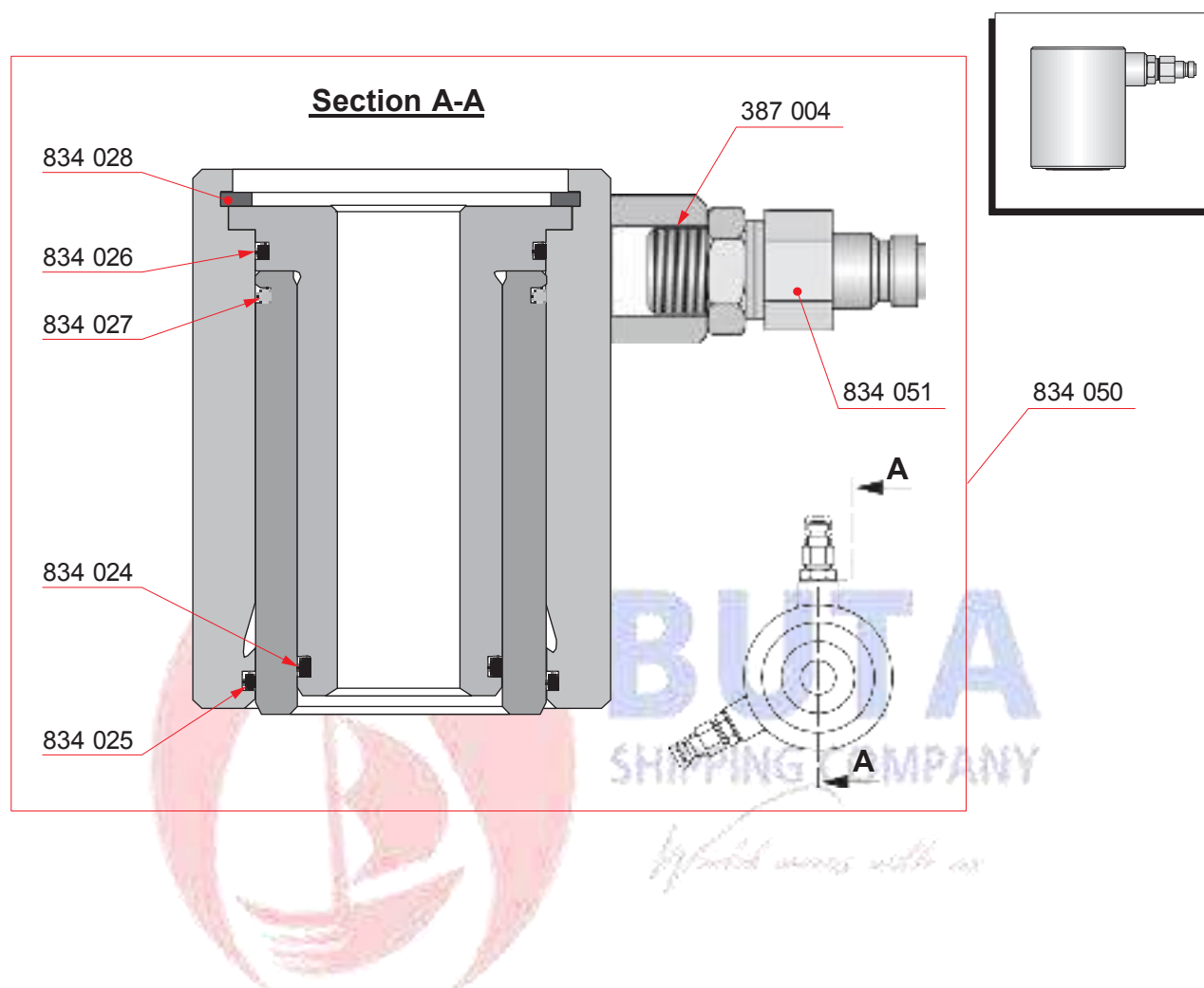
Part No.	Description	Qty [Pcs]	Wt. [Kg]
846 622	Crimping tool	1	0.4
846 623	Cable stripping tool 6–14 mm	1	-
846 624	Cable stripping tool 4–8 mm	1	-
848 113	Speed simulator	1	0.3
387 022	Contact lubrication	1	-

Miscellaneous tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
803 016	Stud remover M36	1	0.5
803 017	Hexagon socket wrench 19 1" square drive	1	0.4
803 018	Bit 17 for hexagon socket screw 3/4" square drive	1	0.3
808 011	Ratchet with torque arm 3/4" square	1	2.9
820 009	Torque wrench 75–400 Nm (*)	1	2.3
820 014	Ring insert wrench 19	1	0.1
820 015	Torque wrench 150–800 Nm (*)	1	5.4
846 059	Hand crimping tool (1)	1	-
848 001	Feeler gauge set	1	-
848 002	Measure gauge for crankshaft deflection (*)	1	0.6
861 025	Pin for tightening of nuts Ø6mm	2	-

Optional miscellaneous tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
834 050	Hydraulic extractor (1)	1	4.5
834 024	O-ring *	1	-
834 025	O-ring *	1	-
834 026	O-ring *	1	-
834 027	Snap ring	1	-
834 028	Retaining ring	1	-
834 051	Quick coupling, male	2	-
834 065	Sealing set for hydraulic extractor	1	-

Optional miscellaneous tools

848 033

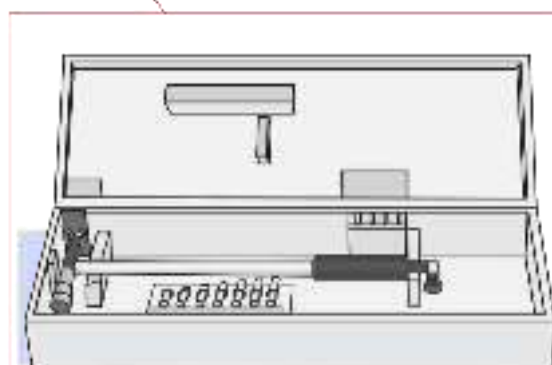
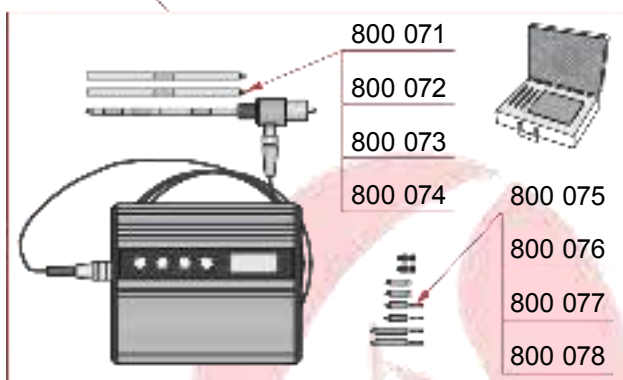


800 065

848 041



848 040

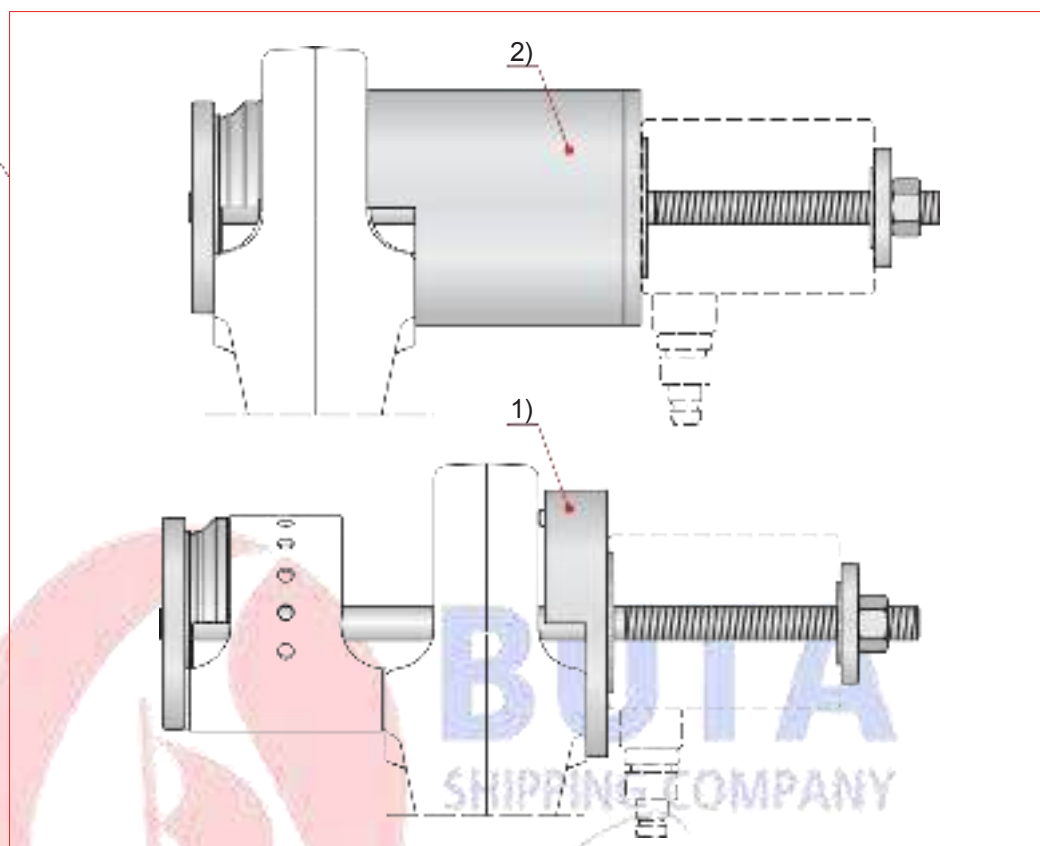


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Part No.	Description	Qty [Pcs]	Wt. [Kg]
834 050	Hydraulic extractor (1)	1	4.5
834 024	O-ring *	1	-
834 025	O-ring *	1	-
834 026	O-ring *	1	-
834 027	Snap ring	1	-
834 028	Retaining ring	1	-
834 051	Quick coupling, male	2	-
834 065	Sealing set for hydraulic extractor	1	-
387 004	Glue compound	1	-

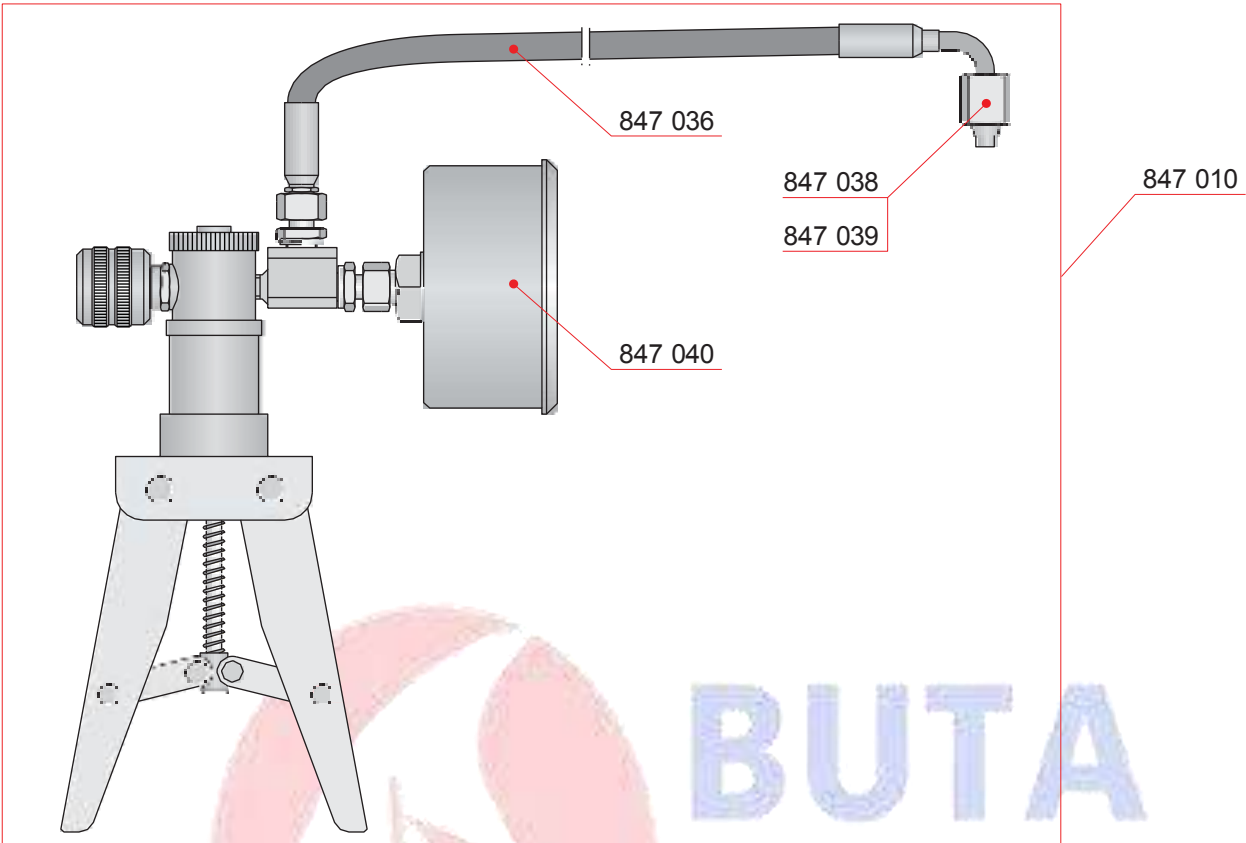
Optional miscellaneous tools

837 042



Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 042	Tool for gudgeon pin bearing bush	1	5

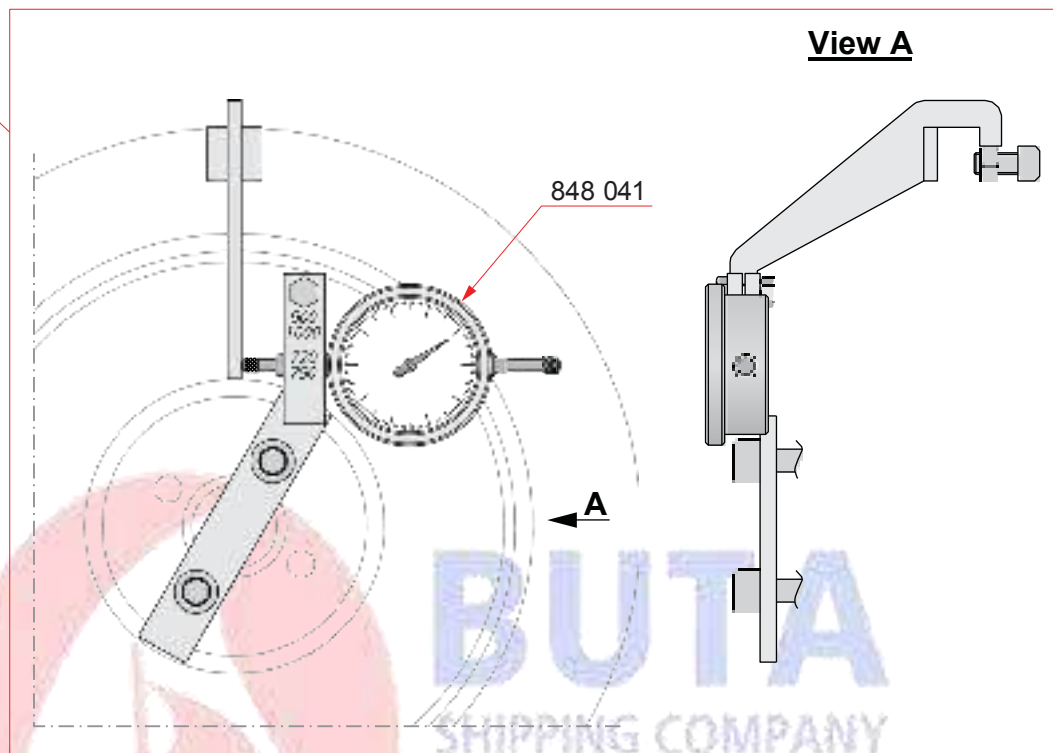
Optional miscellaneous tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
847 010	Pressure switch tester (1)	1	0.9
847 036	Hose	-	-
847 038	Union nut	1	-
847 039	Cutting ring	1	-
847 040	Manometer	1	0.3

Optional miscellaneous tools

848 005



View A

848 041

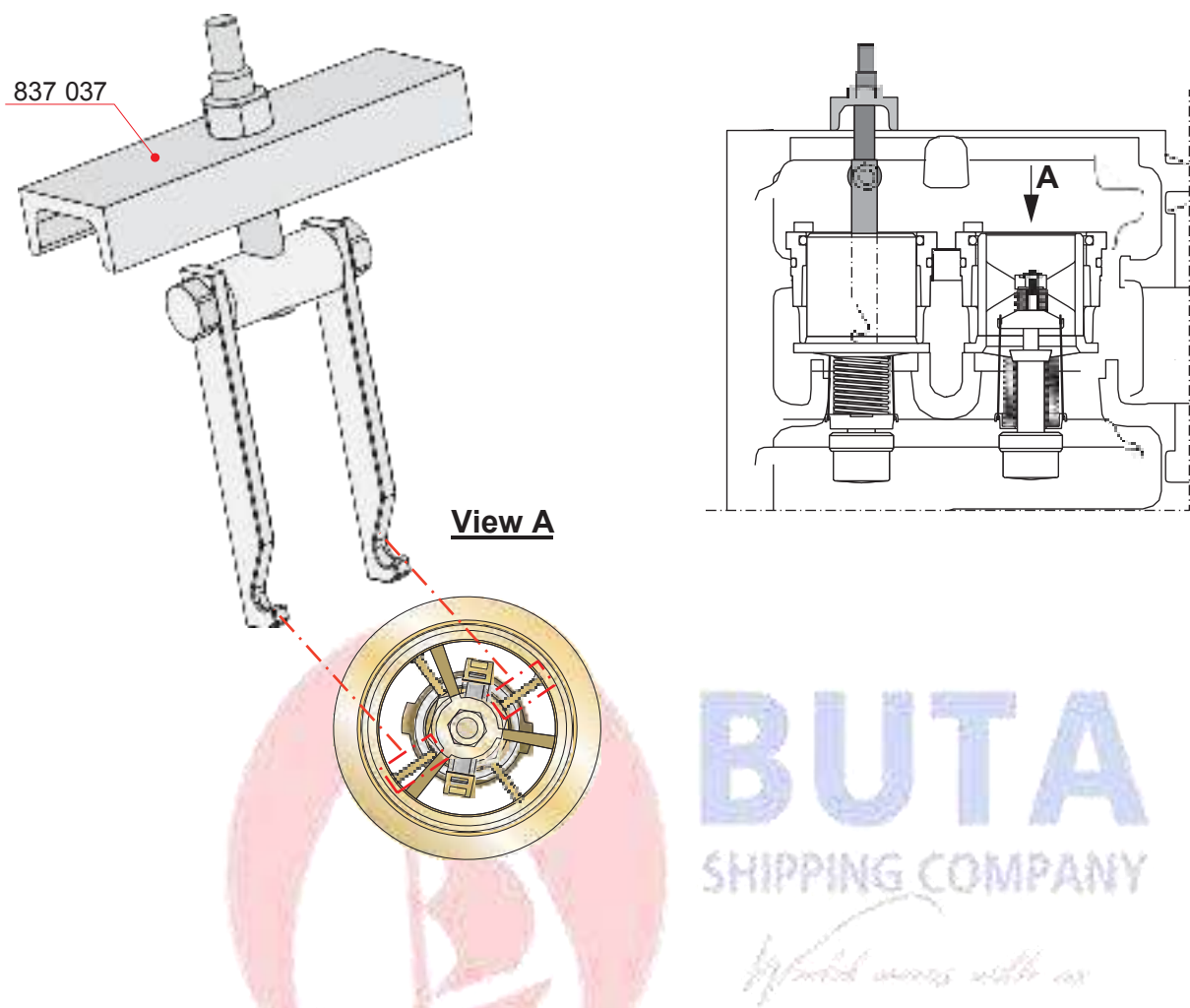
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by noted screws with the car

Part No.	Description	Qty [Pcs]	Wt. [Kg]
848 005	Tool for inspection of backlash on water pump	1	0.5
848 041	Dial indicator	1	0.2

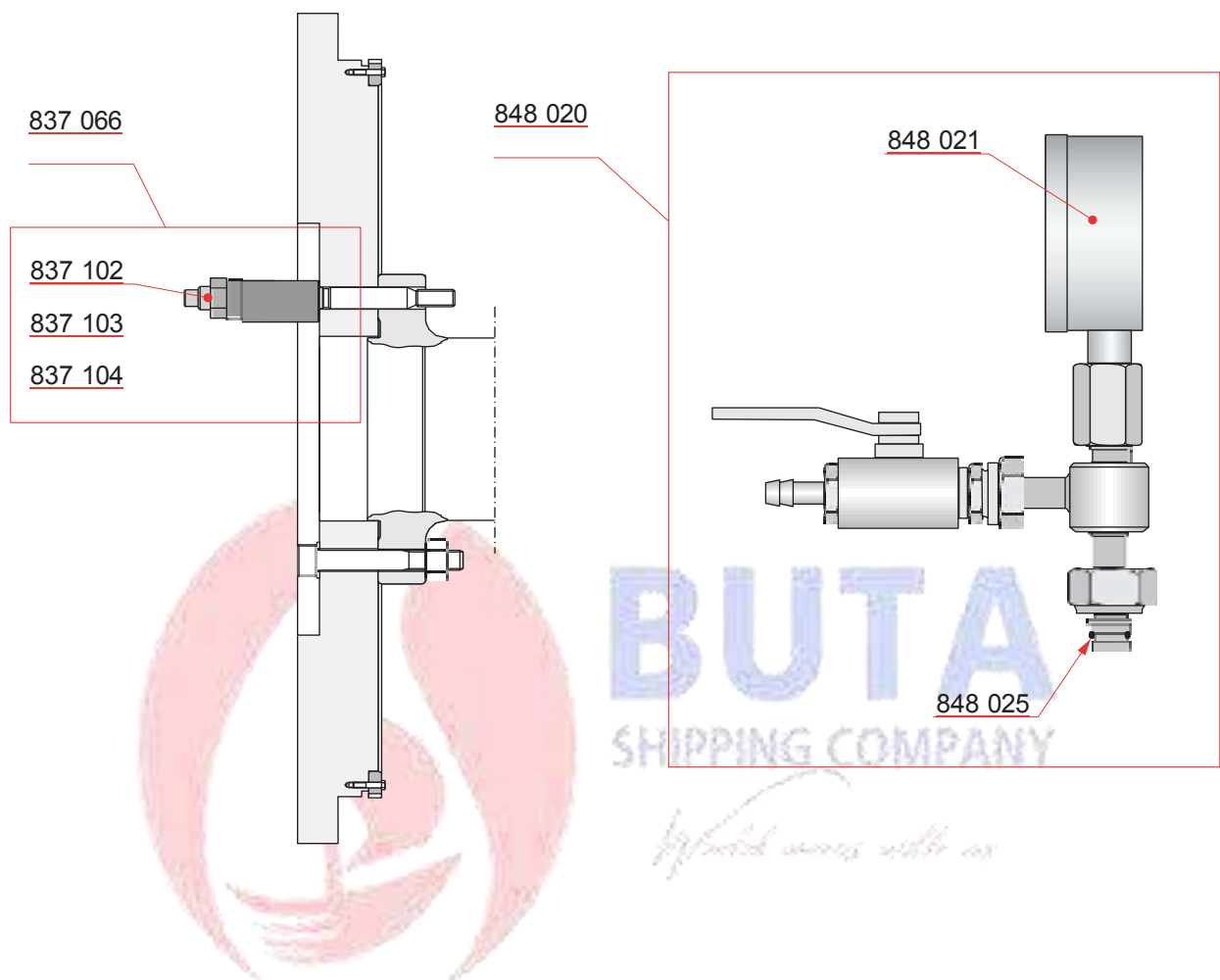
Optional miscellaneous tools



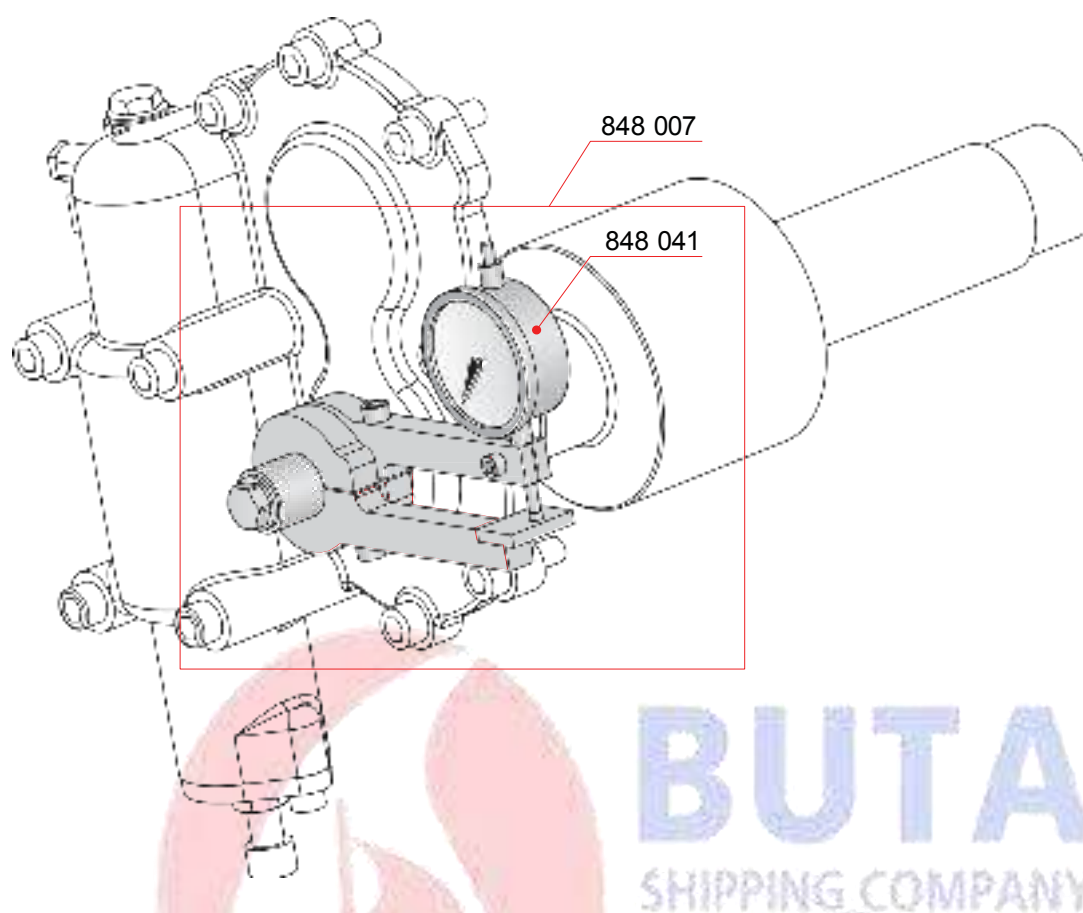
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Hydraulic services with care

Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 037	Extractor tool for thermostatic valve	1	0.7

Optional miscellaneous tools

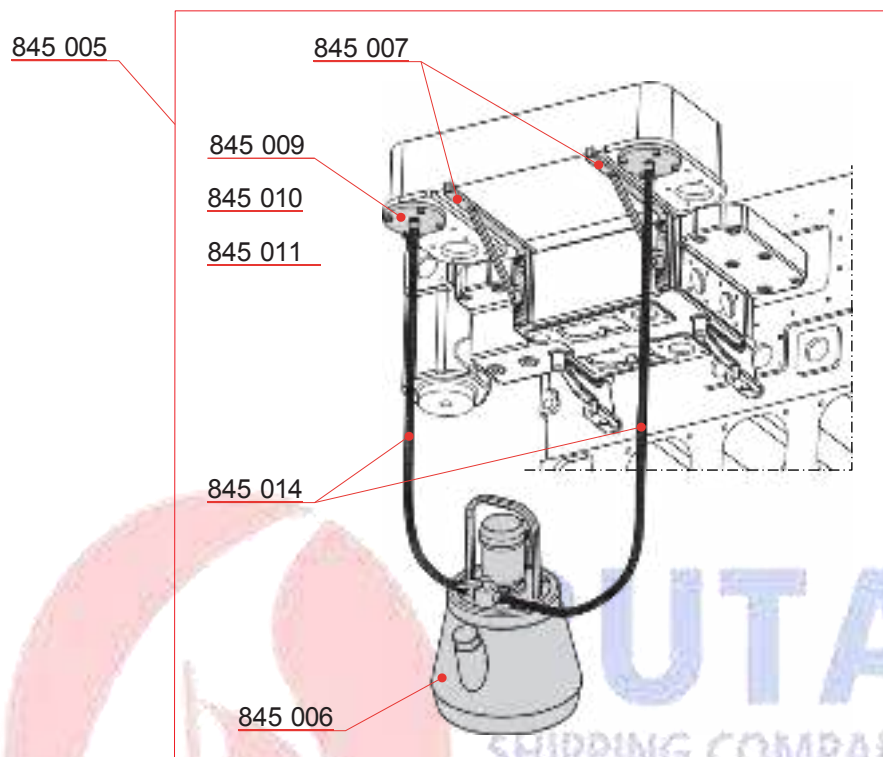


Optional miscellaneous tools



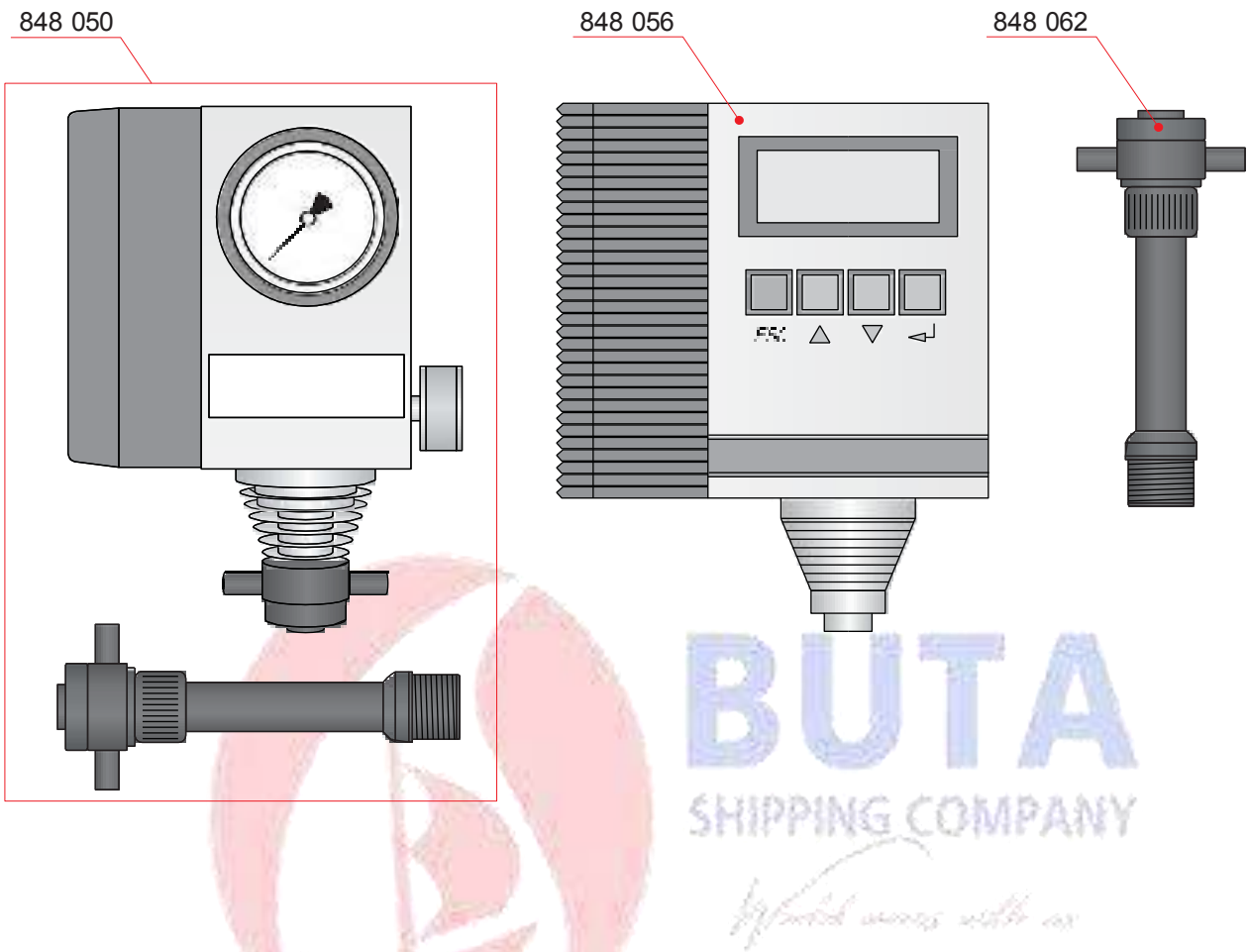
Part No.	Description	Qty [Pcs]	Wt. [Kg]
848 007	Backlash measuring device for oil pump	1	1.4
848 041	Dial indicator	1	0.2

Optional miscellaneous tools



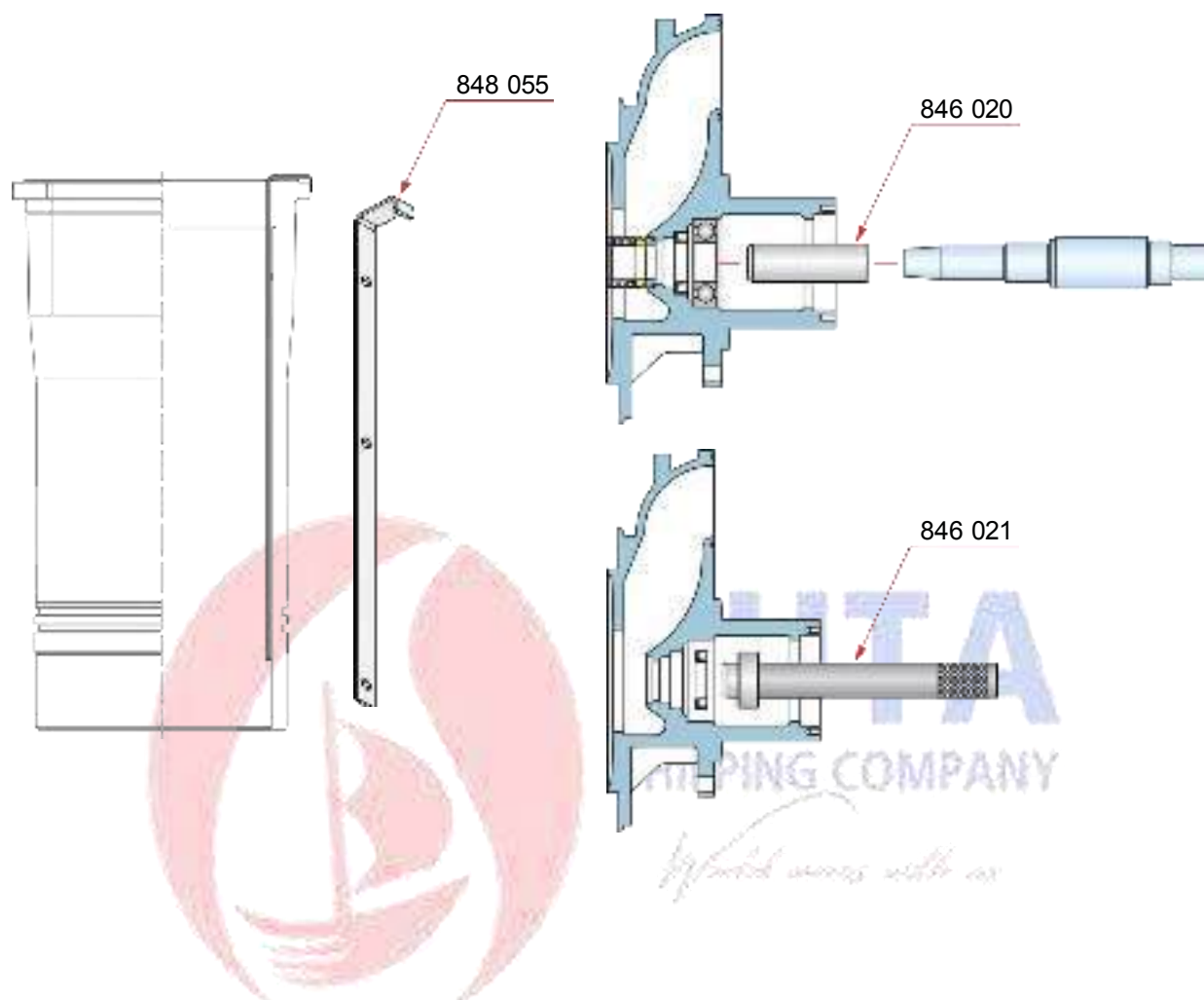
Part No.	Description	Qty [Pcs]	Wt. [Kg]
845 005	Cleaning device for plate heat exchanger	1	10
845 006	Flushing unit	1	-
845 007	Lifting bracket	2	6.1
845 009	Joint flange	2	2.2
845 010	O-ring	2	-
845 011	Screw	8	-
845 014	Hose set	1	0.5

Optional miscellaneous tools



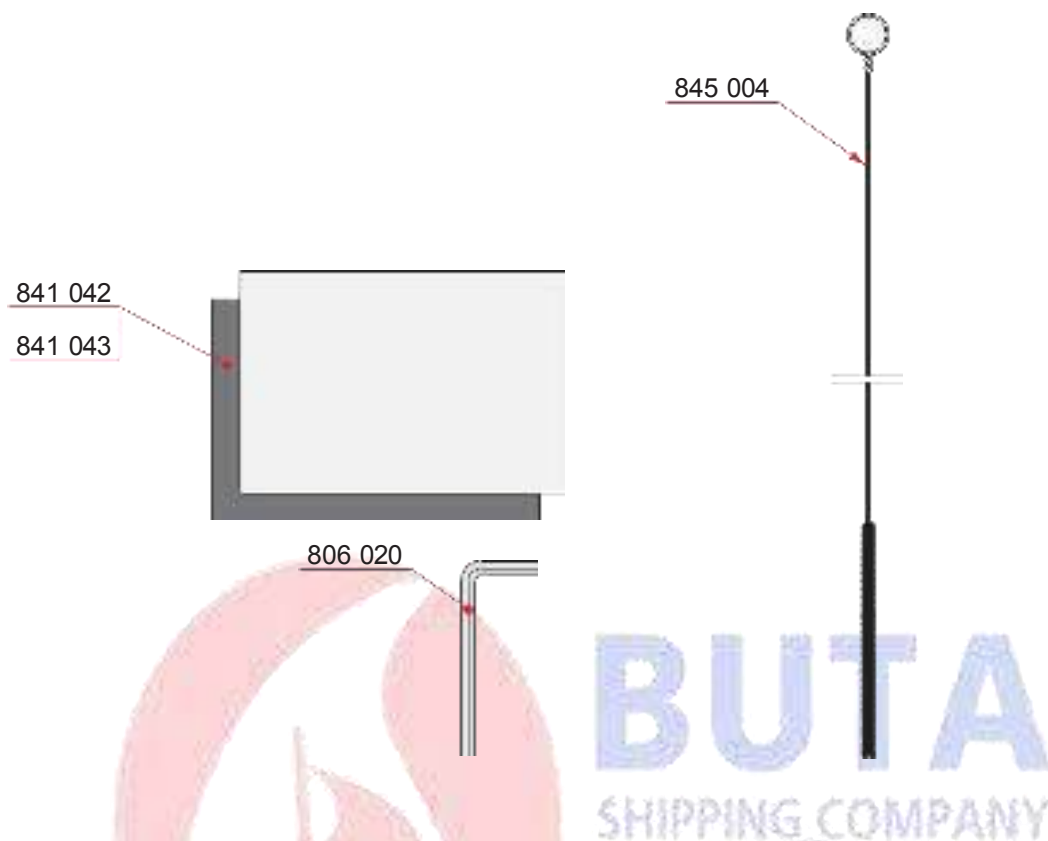
Part No.	Description	Qty [Pcs]	Wt. [Kg]
848 050	Pressure indicator LS-220 bar including extension (1)	1	4.3
848 056	Peak pressure indicator, electronic 0-250 bar (1)	1	8.7
848 062	Extension piece	1	0.5

Optional miscellaneous tools



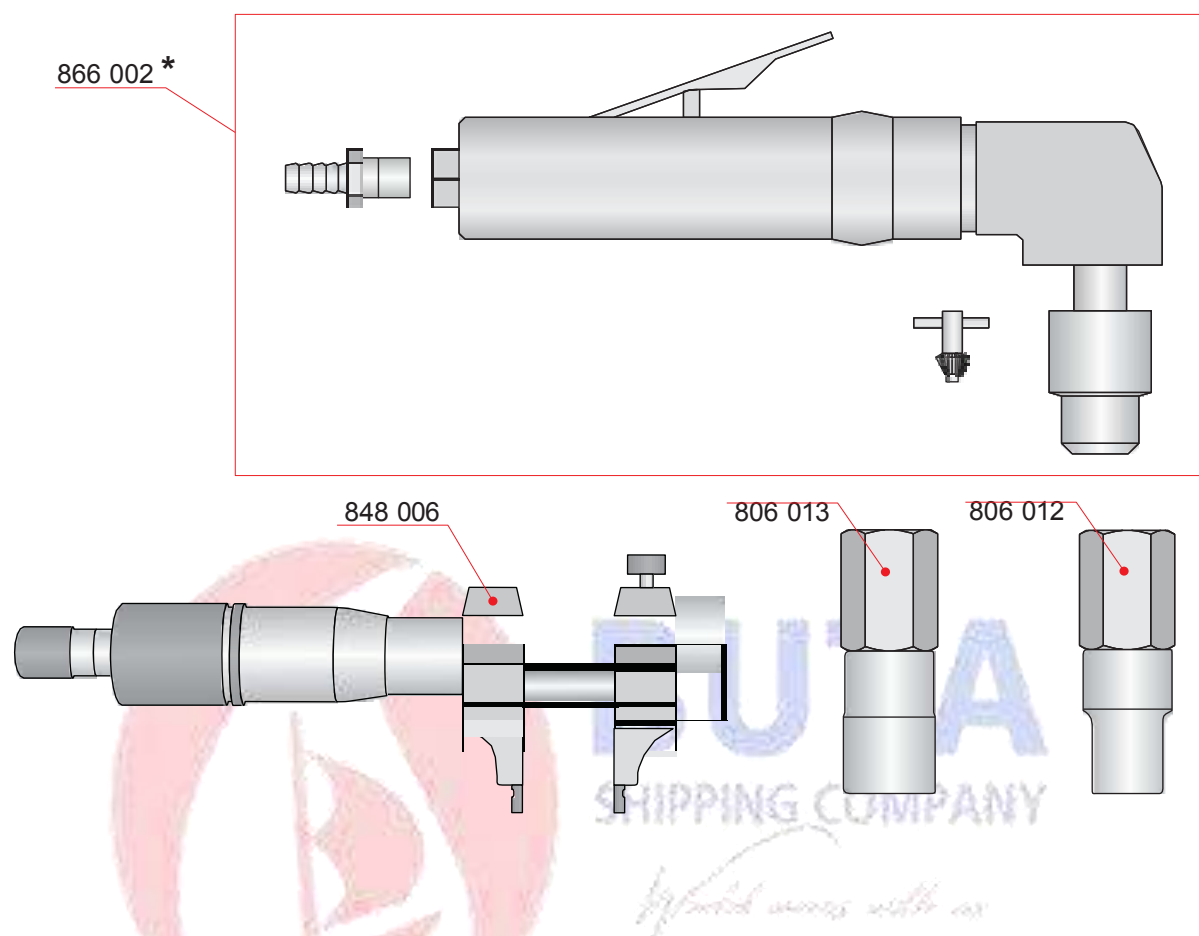
Part No.	Description	Qty [Pcs]	Wt. [Kg]
846 020	Guiding mandrel for shaft of water pump	1	0.3
846 021	Mounting tool for oil seal of water pump	1	0.8
848 055	Measuring rail for cylinder liner	1	-

Optional miscellaneous tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
806 020	Allen key 3/8" for air starter strainer housing <i>different sizes with cap</i>	1	0.1
841 042	Rubber stone for polishing, grit 120	1	0.1
841 043	Rubber stone for polishing, grit 240	1	0.1
845 004	Brush for cleaning oil & circulation water cooler (1)	1	-

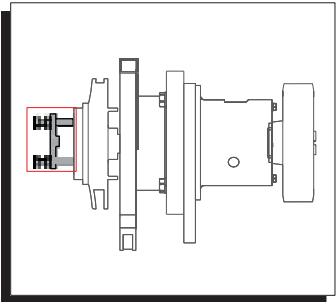
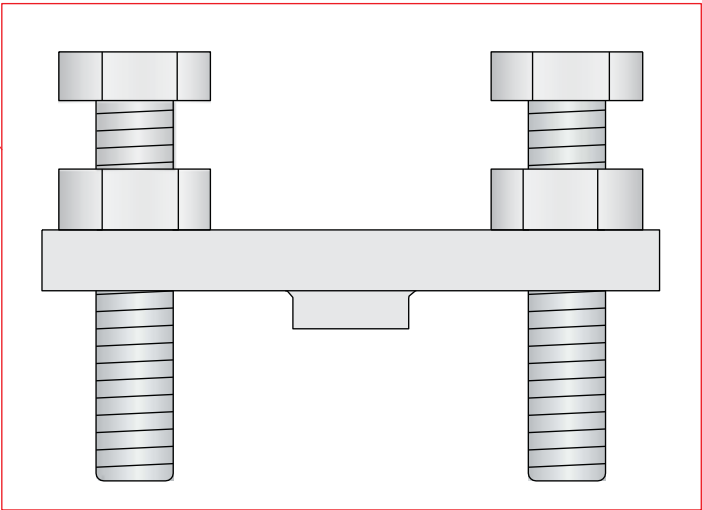
Optional miscellaneous tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
806 012	Torsion pin for reamer	1	1
806 013	Torsion pin for reamer	1	1
848 006	Measurement tool for piston ring grooves	1	0.2
866 002	Pneumatic turning device *	1	1.4

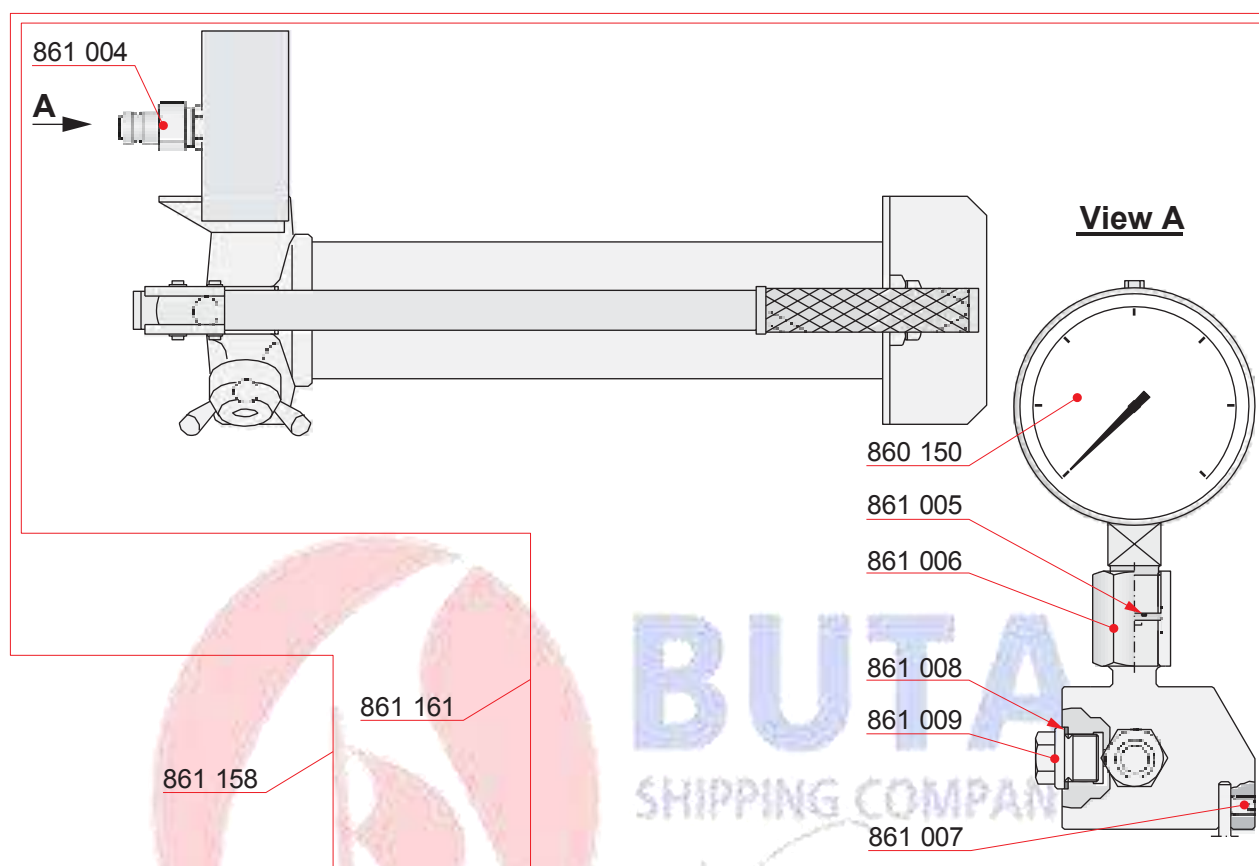
Optional miscellaneous tools

837 026



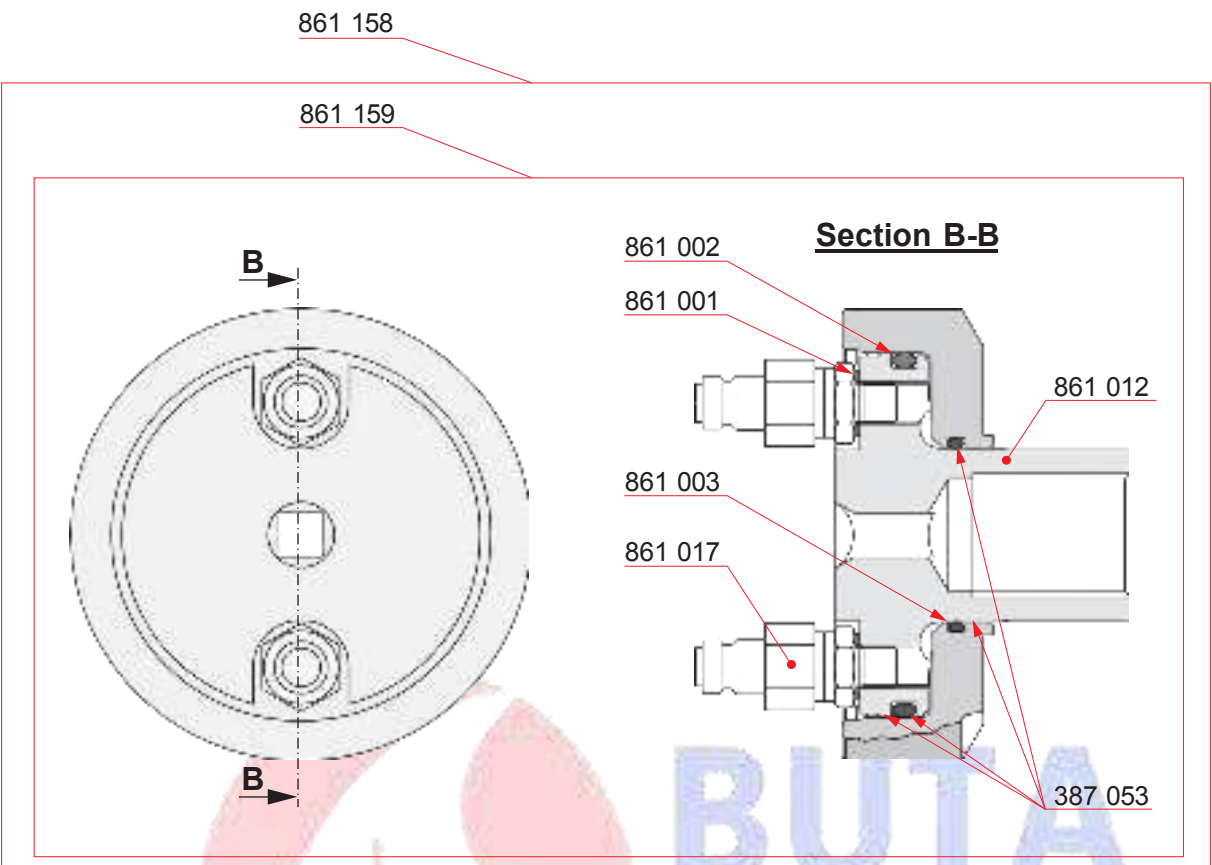
Part No.	Description	Qty [Pcs]	Wt. [Kg]
837 026	Extractor for impeller of water pump	1	0.4

Hydraulic tightening tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
861 158	Hydraulic tightening tool, complete (#)	1	35
861 161	High pressure pump (1000 bar) (#)(*)	1	5.6
860 150	Manometer	1	1.1
861 004	Quick coupling, male	1	-
861 005	Sealing ring	1	-
861 006	Nut	1	0.4
861 007	Screw	2	-
861 008	Sealing ring	1	-
861 009	Plug	1	-

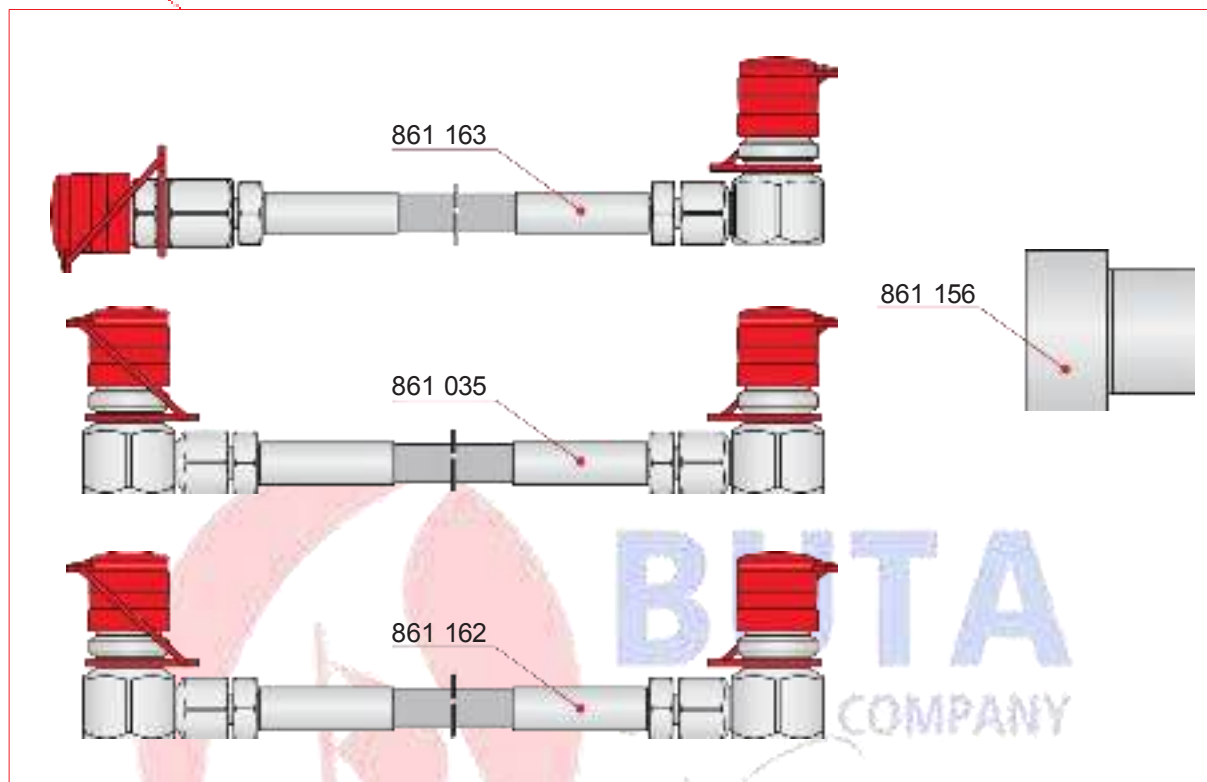
Hydraulic tightening tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
861 158	Hydraulic tightening tool, complete (#)	1	35
861 159	Hydraulic cylinder (#)	4	4.3
861 001	Sealing ring (1)	2	-
861 002	O-ring (1)	1	-
861 003	O-ring (1)	1	-
861 012	Piston	1	-
861 017	Quick coupling, male	2	-
387 053	Grease	1	-

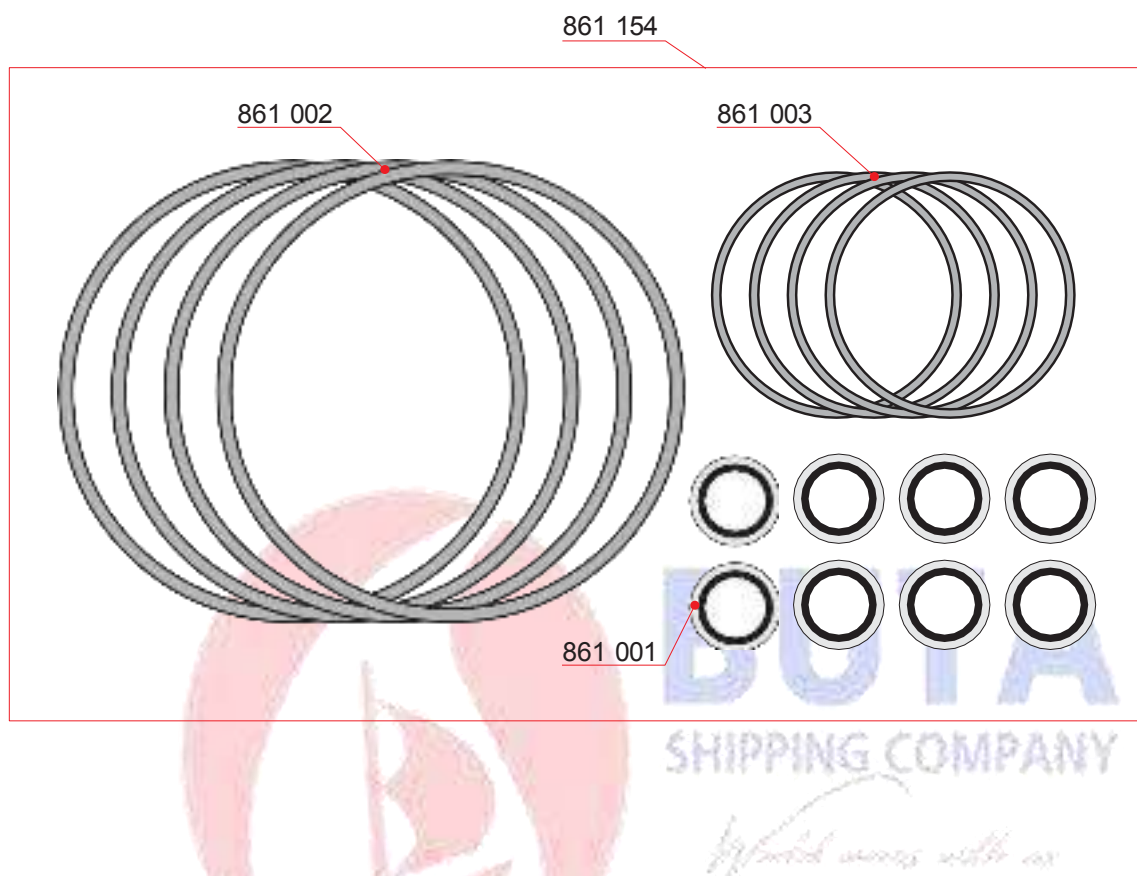
Hydraulic tightening tools

861 158



Part No.	Description	Qty [Pcs]	Wt. [Kg]
861 158	Hydraulic tightening tool, complete (#)	1	35
861 035	Flexible hose 820mm	1	0.9
861 156	Distance sleeve	4	1.8
861 162	Flexible hose 360mm	2	0.9
861 163	Flexible hose 3000mm	2	1.1

Hydraulic tightening tools



Part No.	Description	Qty [Pcs]	Wt. [Kg]
861 154	Sealing set for hydraulic tightening tools	1	-
861 001	Sealing ring	8	-
861 002	O-ring	4	-
861 003	O-ring	4	-