



**DD-4045 EarthPro
Directional Drill
Parts Catalog
AU119349**

K10A



3238 Dec UP 052C

This unit first became available March, 2009.

LOCATION OF ENGINE SERIAL AND PRODUCT IDENTIFICATION NUMBERS

Please use the horizontal lines provided below to record these important serial and product identification numbers. These numbers can be used to identify your machine.



DD4045_PIN

PRODUCT IDENTIFICATION NUMBER (P.I.N.)

(Plate is located on the frame under the operators seat.)



DD4045_ENG

ENGINE SERIAL NUMBER

(Plate is located on top of engine.)

	Cummins, Inc. Columbus, Indiana 47202-3609 Assembled in U.S.A.	C15/L 275 / 4.5 CPL 8765	Engine Serial No. 73103481	FEL	EPA
	Family ACENL025AAG #11171474-000				

DD4045_ENG

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GENERAL INFORMATION

Indexes

Section 1 of this catalog contains a serial number (SN) and product identification number (P.I.N.) location guide and an alphabetical index. An alphabetical index also appears at the beginning of each section. Section 10 is the Numerical Index which lists all part numbers in alpha/numeric order with their page location and reference number.

Illustrations

The arrangement of this parts catalog is for easy identification of parts. All parts are illustrated in “exploded views” in proper relation to each other. Reference numbers used in the illustrations refer to those on the text pages. The text pages list reference number, part number, part description and the quantity required.

Abbreviations

P.I.N. = “Product Identification Number”

SN = “Serial Number”

NSS = “Not Serviced Separately” in the part number column indicates this part is not available for service.

REF = “Reference” in the part number column indicates this part has special service information. The page where this information can be found is given in the part description column.

UAR = “Use As Required” in the quantity required column indicates the number of parts used is determined by service needs.

Right-Hand and Left-Hand Identification

The reference to right-hand and left-hand in this catalog is identified by the operator standing at the rear of the basic unit, looking toward the front of the machine (in normal forward travel). For pages covering any machine attachments, right-hand and left-hand are defined by the operator sitting in the position for proper operation of the attachment.

Catalog Revisions and Supplements

Continuing product improvements make it necessary to publish revisions of this catalog occasionally. The issue date appears on the front cover and on each diagrams partslist page. The machine shown in this manual may differ slightly from your machine, but will be similar enough to help you understand the components. Always refer to your Astec Dealer for the latest information prior to ordering parts for your machine.

Parts Orders

Orders must specify product model, all necessary serial numbers, correct part number, complete description, quantity required, method of shipment, and shipping address.

Text Format Explanation

An assembly may contain service items. The component parts of an assembly or subassembly may be indented. The quantity required column lists the number of assemblies required for a completed machine, and the number of components required in a complete assembly or subassembly.

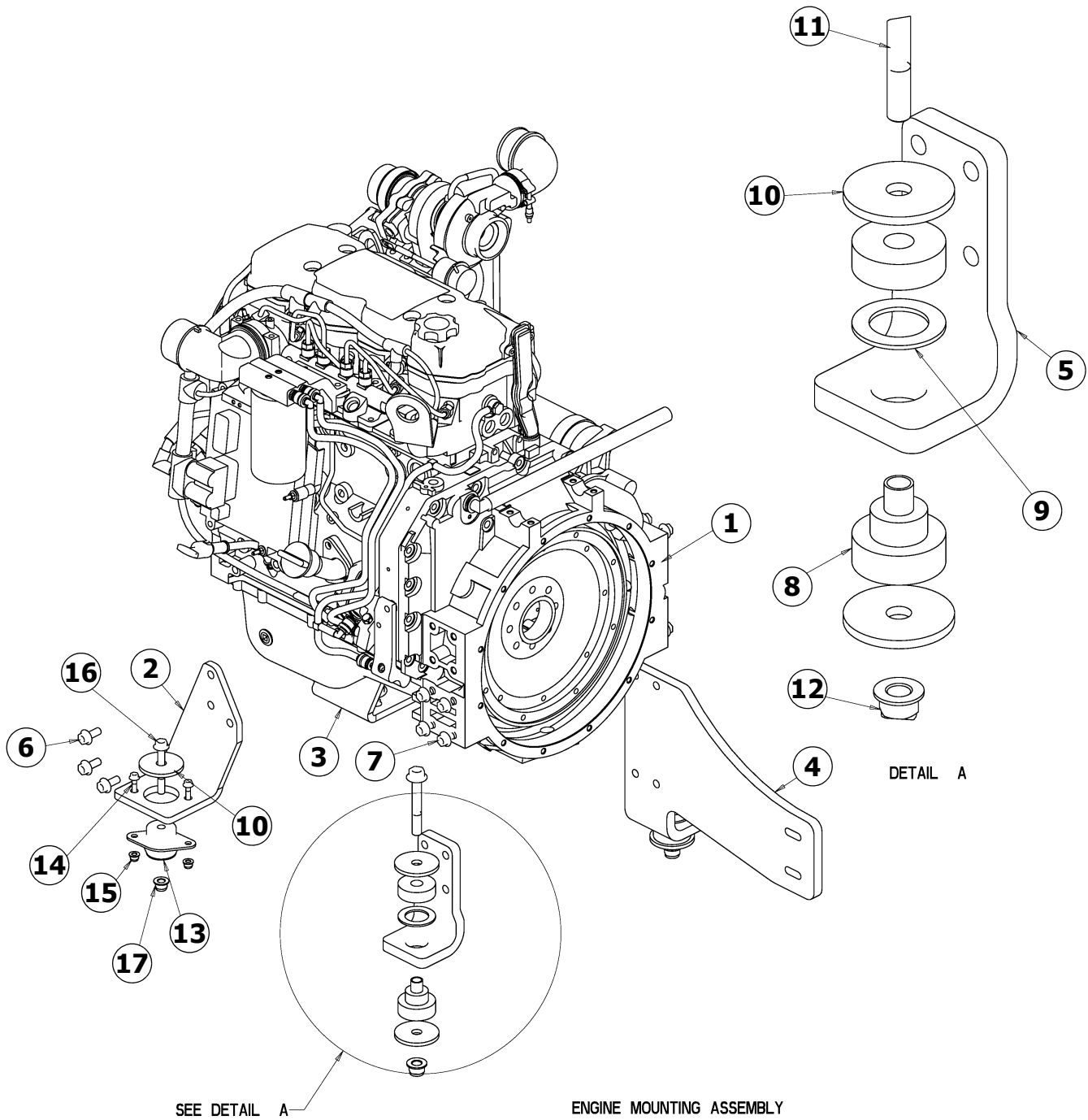
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DD4045 Directional Drill
ALPHABETICAL INDEX

**ALPHABETICAL INDEX
ENGINE**

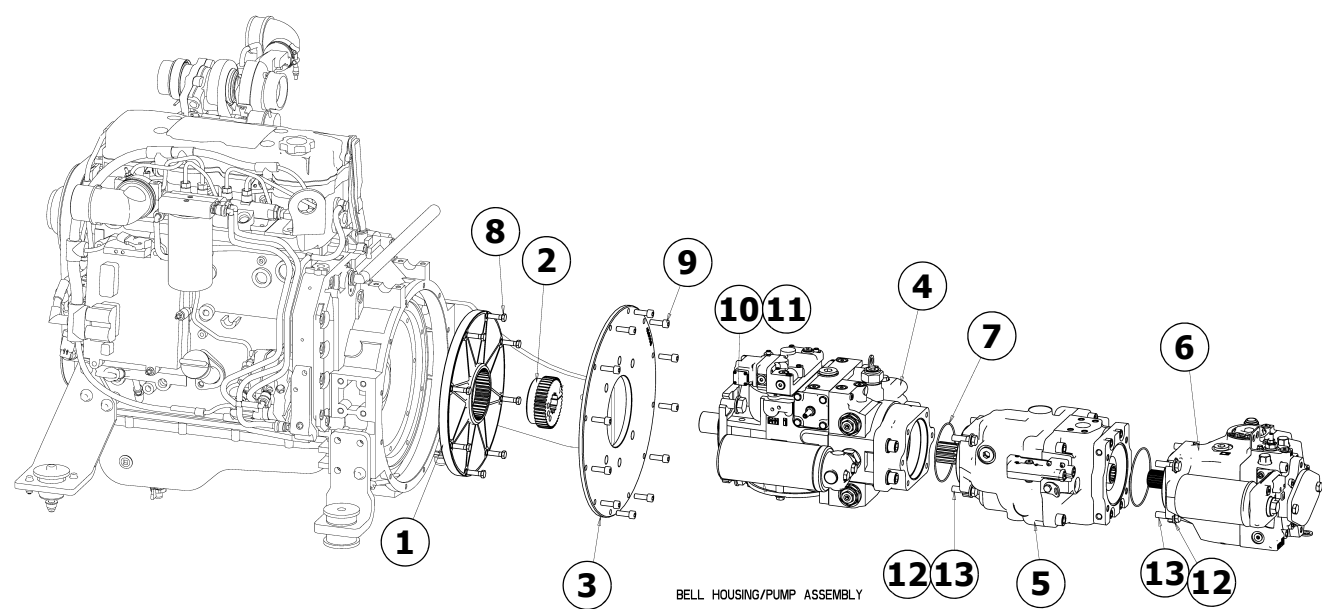
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DD4045 Directional Drill
ENGINE ASSEMBLY
Engine Mounting

2-3

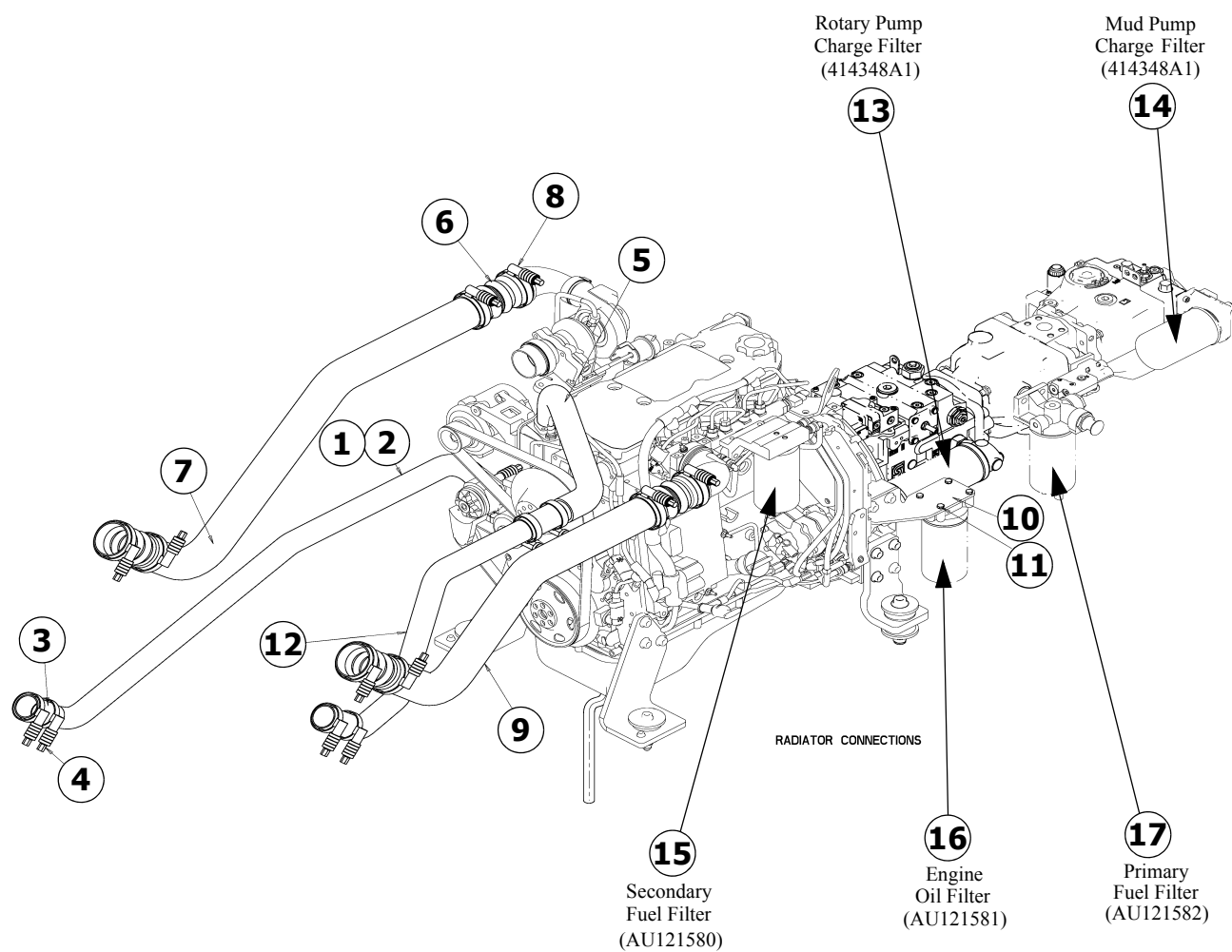
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116048	ASSEMBLY - Engine Cummins 148 HP	1
1	AU115953	ENGINE - Cummins 148 HP	1
2	AU116257	MOUNT - Engine, Front Left	1
3	AU116265	MOUNT - Engine, Front Right	1
4	AU117688	MOUNT - Engine, Rear Right	1
5	AU116259	MOUNT - Engine, Rear Left	1
6	AU101477	SCREW, METRIC FLANGE w/BODY - M12 x 30	6
7	AU100347	SCREW, METRIC FLANGE w/BODY - M12 x 45	8
8	AU117690	ISOLATOR - Universal Mount	2
9	AU117984	SPACER - Isolator	2
10	AU119802	WASHER - Engine Mount - 3" O.D.	6
11	AU100368	SCREW, METRIC FLANGE w/BODY - M16 x 110	2
12	AU100529	NUT, METRIC FLANGE PREVAILING - M16, Zinc.	2
13	AU117985	ISOLATOR MOUNT - Front.	2
14	AU100398	SCREW, METRIC FLANGE FULL - M8 x 30	4
15	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	4
16	AU100354	SCREW, METRIC FLANGE w/BODY - M12 x 90	2
17	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	2



DD4045 Directional Drill
ENGINE ASSEMBLY
Bell Housing / Pump Assembly

2-5

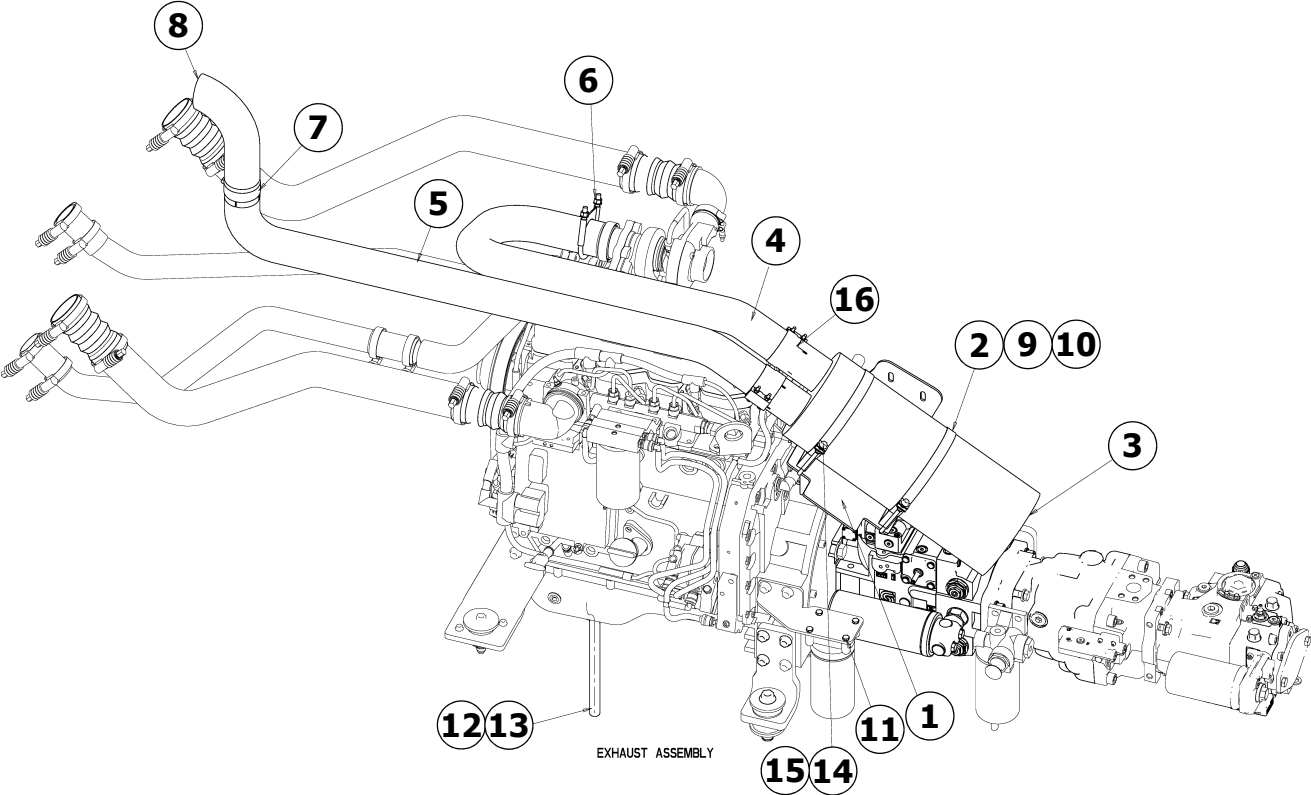
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116048	ASSEMBLY - Engine Cummins 148 HP	1
1	8PD92006	FLANGE COUPLER - BOWEX T65/FLE-PA/SAE11.5"	1
2	8PD92007	COUPLER HUB - BOWEX T65/13T/.875/SAE/CC/45L	1
3	AU116050	PLATE - Pump Mount, SAE3/ST/SAED/2-4/9.5	1
4	AU116307	PUMP - Rotary.	1
5	AU116306	PUMP - Load Sense, Open Circuit	1
6	AU116314	PUMP - Hydrostat	1
7	70-9004104-1580	O-RING - 0.103 Dia x 4.737 ID x 4.943 OD.	2
8	426-620	BOLT - Hex Hd, 0.375 x 1.25 GR8 ZND	8
9	862-10030	SCREW - Soc Hd, M10 x 30 Class 12.9 ZND	12
10	496-11081	WASHER - 0.812 x 1.500 x 0.134 in HDN ZND	4
11	426-1224	BOLT - Hex Hd, 0.75 x 1.50 GR8 ZND	4
12	496-21053	WASHER - 0.531 x 1.500 x 0.134 in HDN ZND	8
13	426-828	BOLT - Hex Hd, 0.500 x 1.75 GR8 ZND	8



DD4045 Directional Drill
ENGINE ASSEMBLY
Radiator Connections

2-7

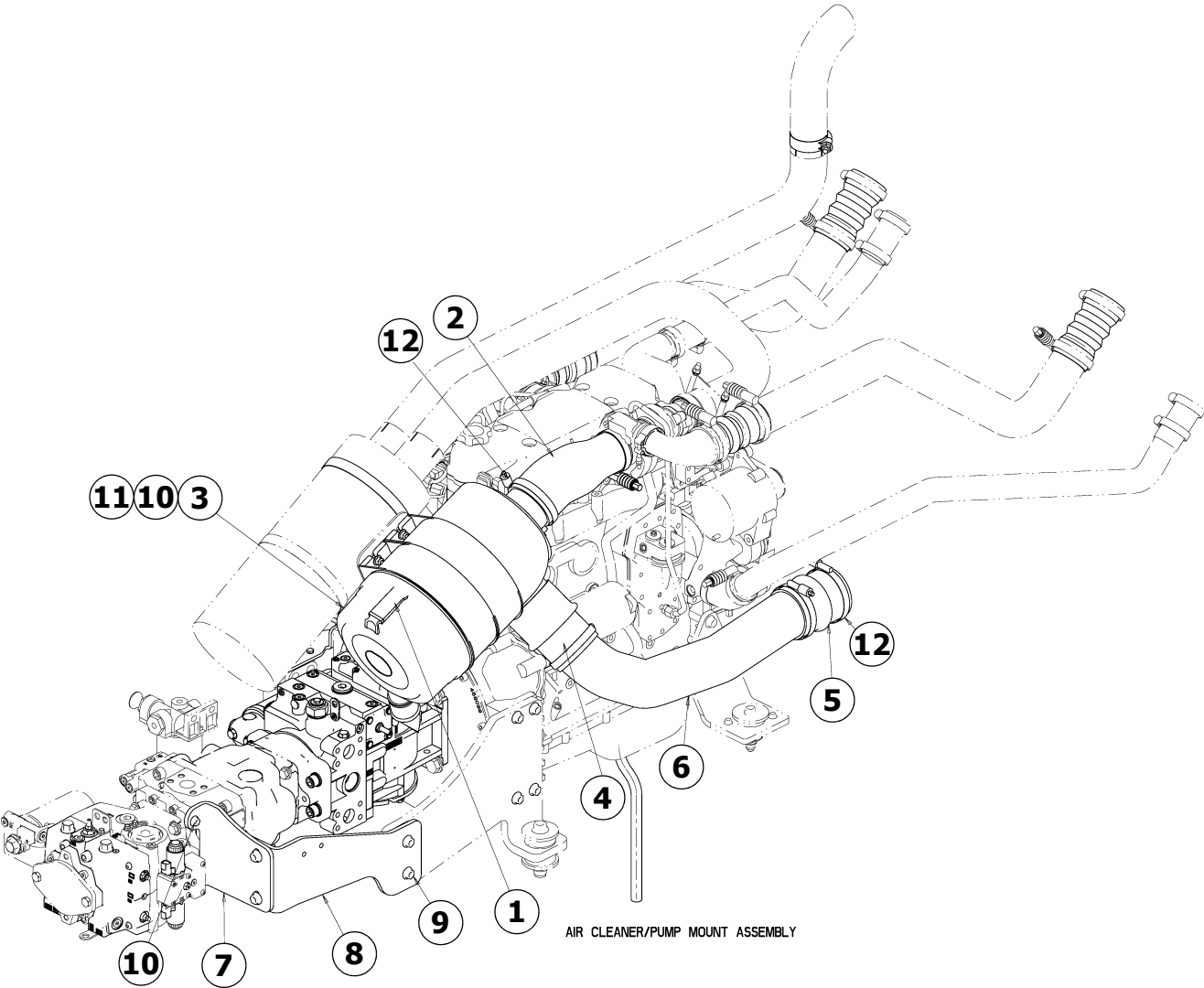
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116048	ASSEMBLY - Engine Cummins 148 HP	1
1	AU121092	ELBOW - 45 Deg Rubber, Purosil 45L20	1
2	AU117209	HOSE - Radiator Out, Moulded	1
3	AU119806	HOSE - Connector.	3
4	AU110569	CLAMP - Constant Torque, 1.75" Min, 2.63" Max	8
5	AU117210	HOSE - Radiator in, Molded	1
6	AU122225	HOSE - 3" CAC Connection	4
7	AU116329	TUBE - In, Charge Air	1
8	21001153	CLAMP - Constant Torque, 2.75" Min, 3.63" Max	8
9	AU117208	TUBE - Out, Charge Air.	1
10	AU120225	PLATE - Filter Mount	1
11	426-524	BOLT - Hex Hd, 0.312 x 1.50 GR8 ZND	4
12	AU120226	TUBE - Radiator	1
13	414348A1	FILTER - Rotary Pump Charge	1
14	414348A1	FILTER - Mud Pump Charge.	1
15	AU121580	FILTER - Inline Fuel.	1
16	AU121581	FILTER - Engine Oil.	1
17	AU121582	FILTER - Fuel, Water Separator	1



DD4045 Directional Drill
ENGINE ASSEMBLY
Exhaust Assembly

2-9

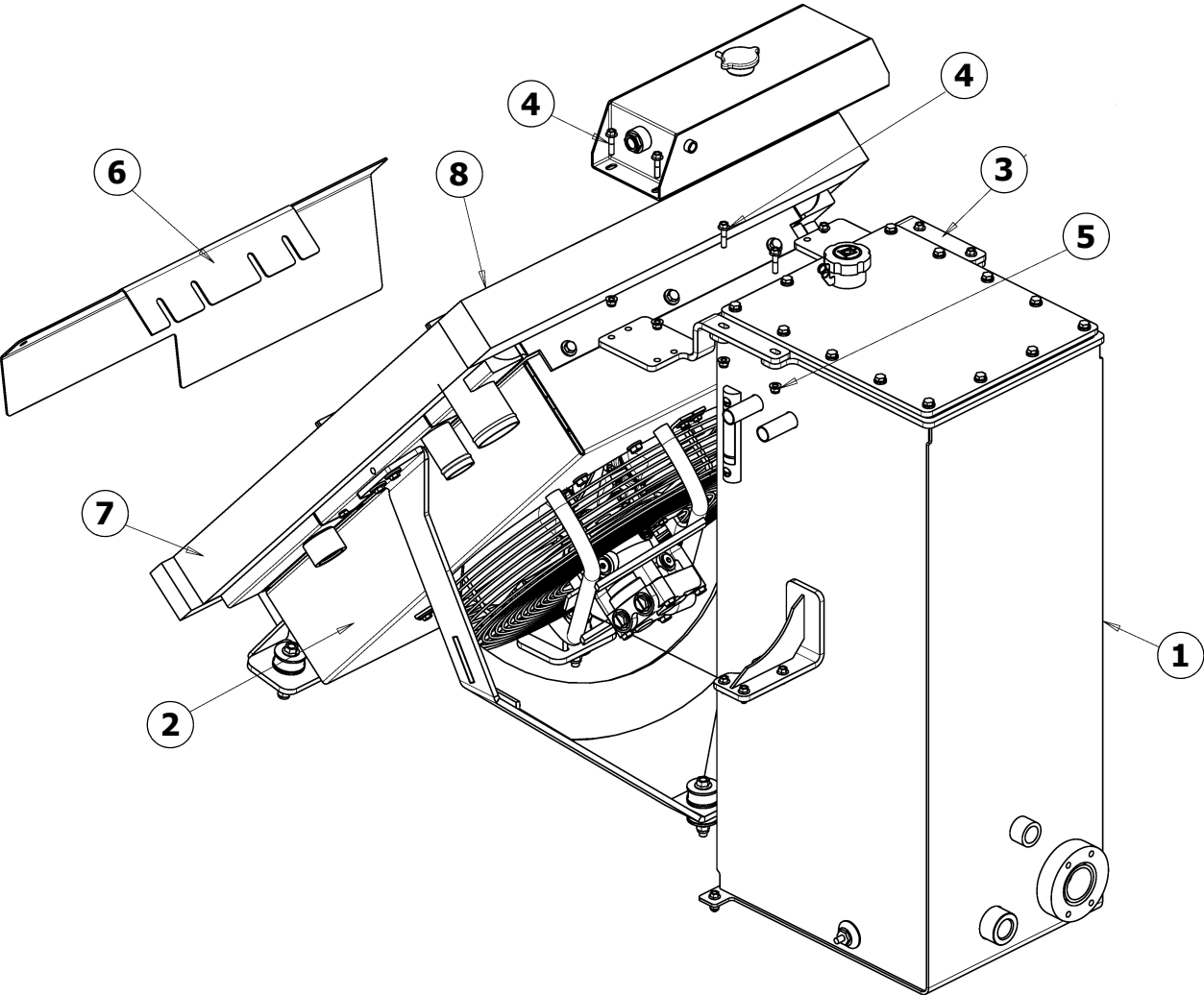
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116048	ASSEMBLY - Engine, Cummins 148 HP.	1
1	AU117213	BRACKET - Mounting, Muffler / Air Filter	1
2	AU117217	BAND - Muffler Mounting, Round, 8.5" Dia	2
3	AU116316	ASSEMBLY - Muffler w/Insulation Blanket	1
4	AU116317	TUBE - Exhaust, In	1
5	AU116318	TUBE - Exhaust, Out	1
6	8NG28118	CLAMP - Guillotine	1
7	AU106185	CLAMP - Muffler 3"	1
8	P206302	TUBE - Exhaust, Angle	1
9	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	4
10	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	4
11	426-524	BOLT - Hex Hd, 0.312 x 1.50 GR8 ZND	4
12	AU122422	HOSE - Oil Drain	1
13	214-1408	CLAMP - Hose Type F \$08	1
14	AU100329	SCREW, METRIC FLANGE w/BODY - M8 x 110	2
15	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	2
16	AU110244	CLAMP - Torc Tite 3"	2



DD4045 Directional Drill
ENGINE ASSEMBLY
Air Cleaner / Pump Mount Assembly

2-11

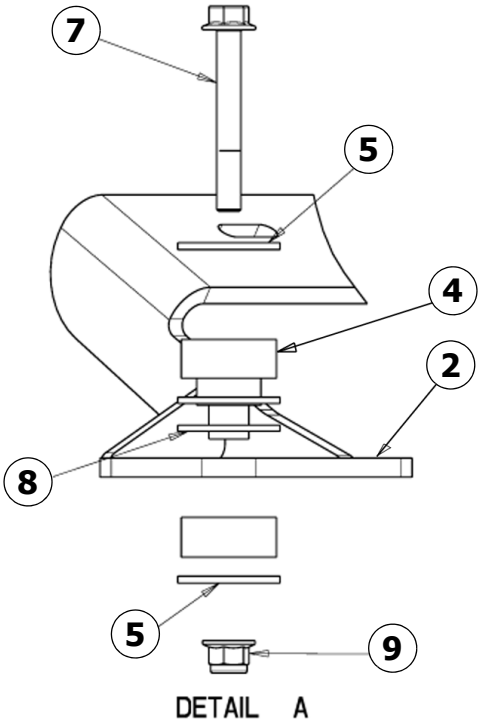
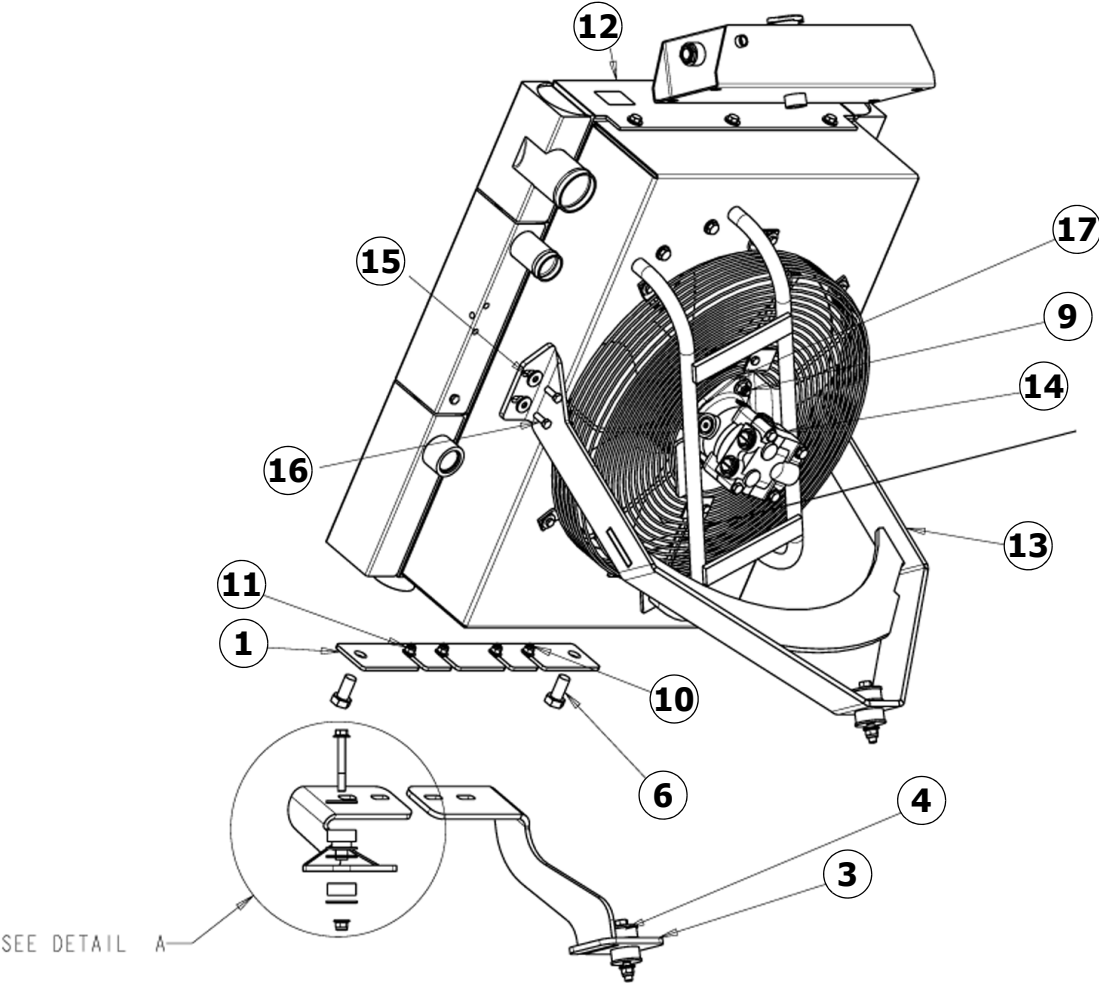
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116048	ASSEMBLY - Engine, Cummins 148 HP.	1
1	AU100876	SCREW, METRIC FLANGE w/BODY - M10 x 25	4
2	AU116319	AIR INTAKE - Out	1
3	AU116588	ASSEMBLY - Air Cleaner	1
4	P105609	REDUCER, HUMP HOSE - 4-1/2" to 4"	1
5	P540256	ADAPTER, HUMP HOSE - 4"	1
6	AU117218	AIR INTAKE - Fresh Air.	1
7	AU116261	BRACKET - Mounting, Pump	1
8	AU117689	BRACKET - Mounting, Center.	1
9	AU100348	SCREW, METRIC FLANGE w/BODY - M12 x 50	4
10	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	6
11	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	4
12	AU102427	CLAMP - Constant Torque, 3-3/4" Min 4-5/8" Max	5



DD4045 Directional Drill
REAR COMPARTMENT ASSEMBLY

2-13

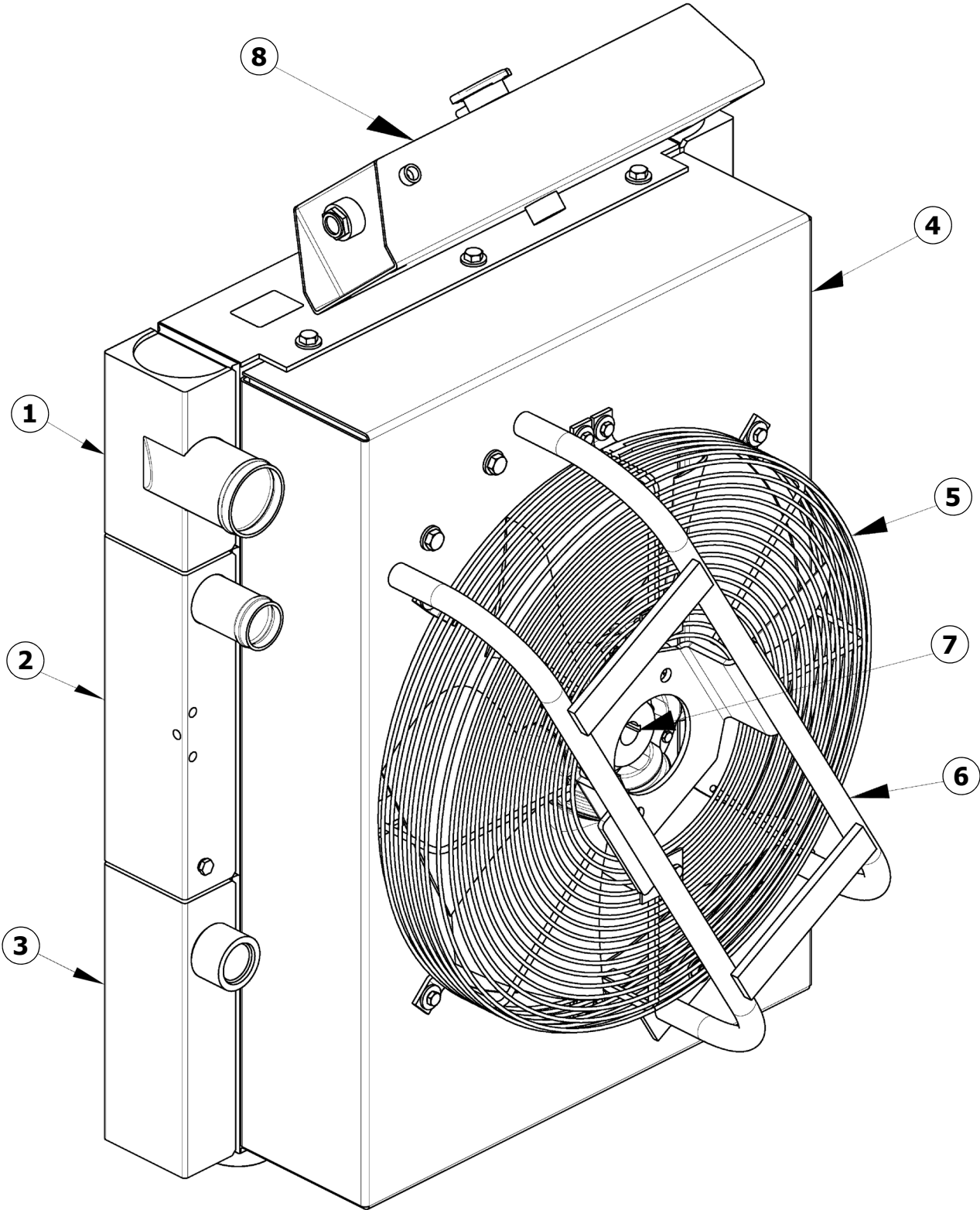
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116325	ASSEMBLY - Rear Compartment	1
1	AU116143	ASSEMBLY - Hydraulic Tank	1
2	AU117986	MOUNTING - Cooling Package	1
3	AU123439	MOUNT - Filler / Surge Tank	2
4	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	8
5	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	8
6	AU121548	SEAL PLATE - Below Cooler.	1
7	AU124068	FOAM - Polyurethane	3
8	AU124069	FOAM - Polyurethane	1



DD4045 Directional Drill
COOLING PACKAGE MOUNTING

2-15

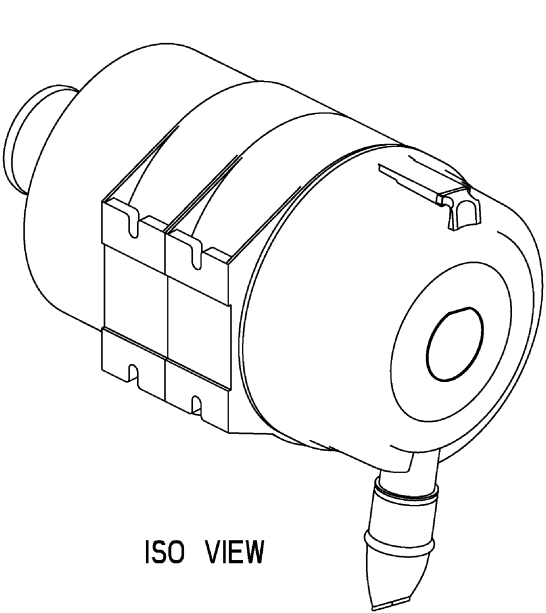
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117986	MOUNTING - Cooling Package	1
1	AU118008	PLATE - Mounting	1
2	AU118087	SUPPORT - Isolator, Left	1
3	AU118088	SUPPORT - Isolator, Right	1
4	8NG28121	ISOLATOR - Universal Mounting.	3
5	496-81018	WASHER - 0.521 x 2.000 x 0.134 in Hdn ZND	6
6	426-1224	BOLT - Hex Hd 0.75 x 1.50 GR8 ZND.	2
7	AU100354	SCREW, METRIC FLANGE w/BODY - M12 x 90	3
8	495-81203	WASHER - 1.281 x 2.000 x 0.119 in CST ZND.	6
9	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	5
10	AU100878	SCREW, METRIC FLANGE w/BODY - M10 x 35	4
11	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	4
12	AU117990	PACKAGE - Cooling	1
13	AU118354	SUPPORT - Isolator, Center	1
14	AU118007	MOTOR - Hydraulic, 25cc	1
15	496-41041	WASHER - 0.406 x 1.125 x 0.134 in Hdn ZND	4
16	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	4
17	AU100830	SCREW, METRIC FLANGE w/BODY - M12 x 40	2



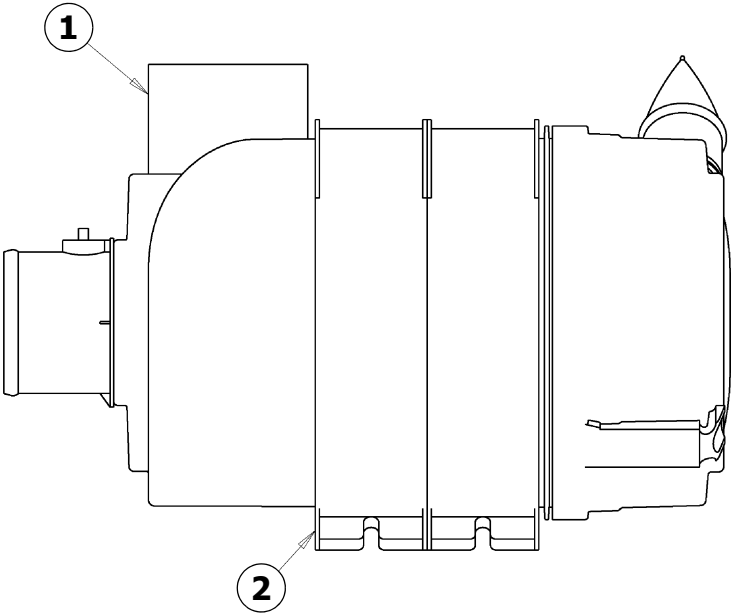
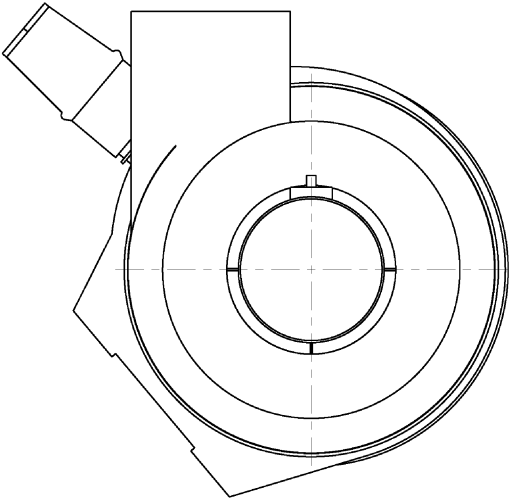
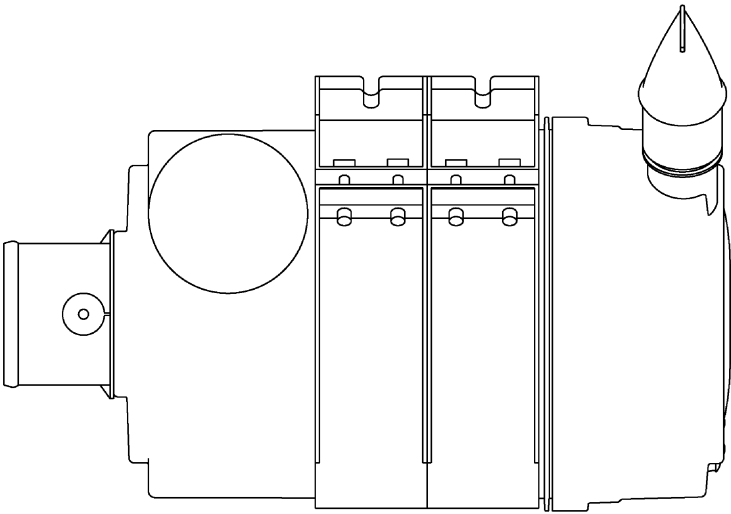
DD4045 Directional Drill COOLING PACKAGE

2-17

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117990	PACKAGE - Cooling	1
1	AU117989	COOLER - Charge Air	1
2	AU117988	COOLER - Radiator	1
3	AU117987	COOLER - Hydraulic Oil	1
4	AU117997	ASSEMBLY - Shroud	1
5	AU118001	ASSEMBLY - Fan Guard, 22"	1
6	AU117996	MOUNT - Motor, Cooling Package	1
7	AU118000	FAN - 22", AKG# 8400.326.0022	1
8	AU118080	ASSEMBLY - Tank, Fill / Surge	1



ISO VIEW



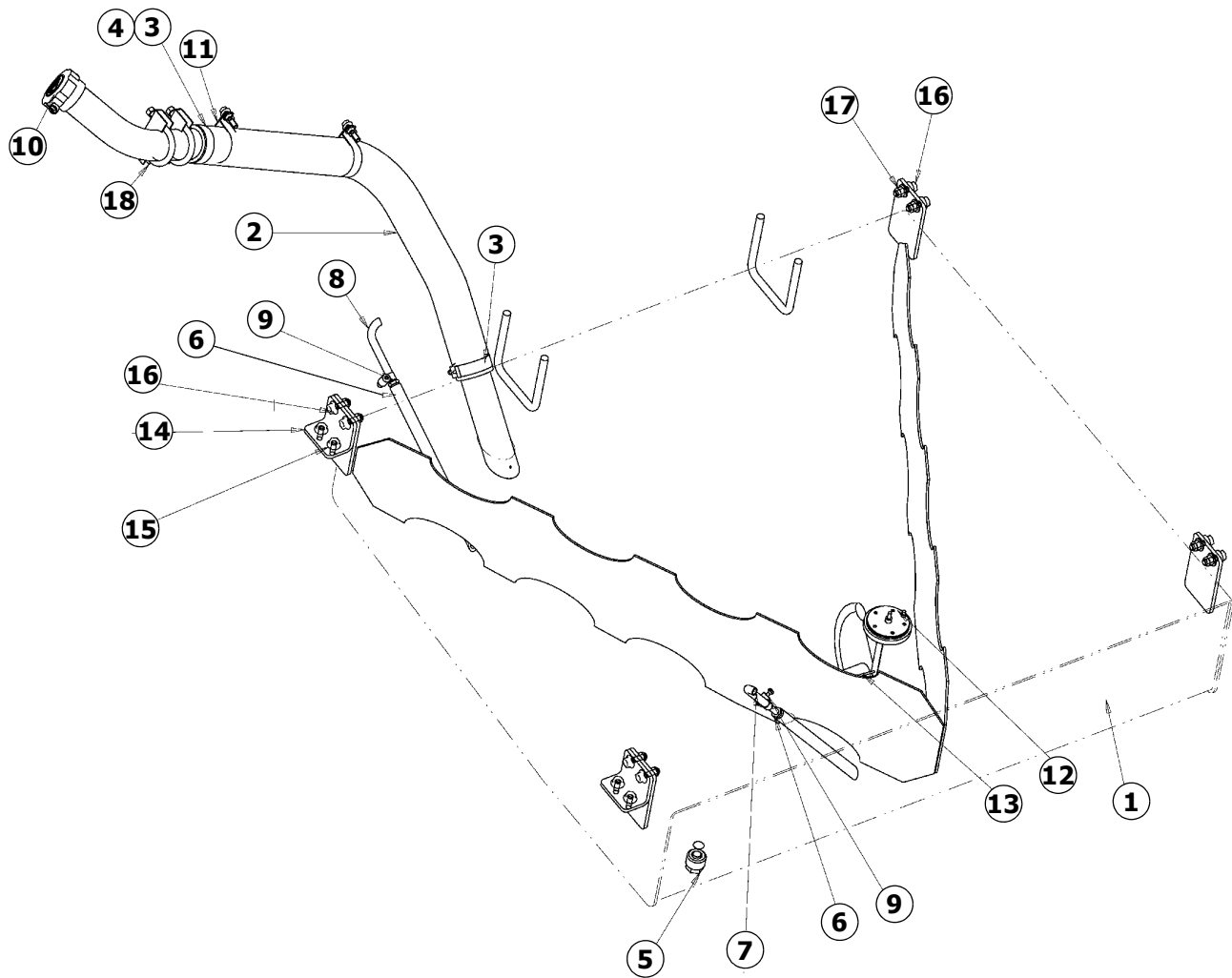
DD4045 Directional Drill
AIR CLEANER ASSEMBLY

2-19

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116588	ASSEMBLY - Air Cleaner	1
1	AU116315	AIR CLEANER.	1
2	AU116587	BAND - Mounting.	2
3	293797A1	SWITCH - Air Restriction (not shown)	1
4	P777639	FILTER - Primary Air Element	1
5	P781039	FILTER - Secondary Air Element	1

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FUEL SYSTEM**

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FUEL TANK

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117640	ASSEMBLY - Fuel Tank	1
1	AU116134	WELDMENT - Fuel Tank	1
2	AU117637	HOSE - Fuel Tank Fill	1
3	8CL14032	CLAMP - T-Bolt, 2.06 - 2.31 Dia	2
4	AU118832	FILLER NECK - Fuel	1
5	AU119908	MAGNETIC PLUG - Hex Hd	1
6	217-151	STEM - Str Bead Hose 3/8 ID x 1/4 NPTF	2
7	AU117649	HOSE - 3/8", Engine Fuel Supply	1
8	AU117650	HOSE - 3/8", Engine Fuel Return	1
9	214-1408	CLAMP - Hose Type F #08	2
10	AU117630	CAP - Diesel Fuel w/Lock	1
11	91-900729-14	CLAMP - Support, Hose	2
12	528359R4	GASKET - Sending Unit	1
13	AU117631	SENDER - Fuel, 8.5" Tank Depth	1
14	AU119508	PLATE - Tank Mounting	2
15	AU100875	SCREW, METRIC FLANGE w/BODY - M10 x 20	4
16	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	8
17	AU100527	NUT, METRIC FLANGE PREVAILING - M10 Zinc	8
18	AU111838	U-BOLT CLAMP - Standard	2
19	AU121900	HOSE - 3/8", Engine to Fuel Filter	1
20	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	2
21	AU100526	NUT, METRIC FLANGE PREVAILING - M8 Zinc	2

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G			
Ground Stake Assembly	4-29		
I			
Ignition Switch Assembly	4-27		
K			
KIT - eS!LOK	4-37		
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Stake, Dirt	4-41		
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Vehicle Electrical Center Main (A) .	4-15		
Vehicle Electrical Center Main (B) .	4-17		
Vehicle Electrical Center Main (C) .	4-35		

DD4045 Directional Drill
MAIN HARNESS

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU117964	HARNESS - Main, DD4045	1

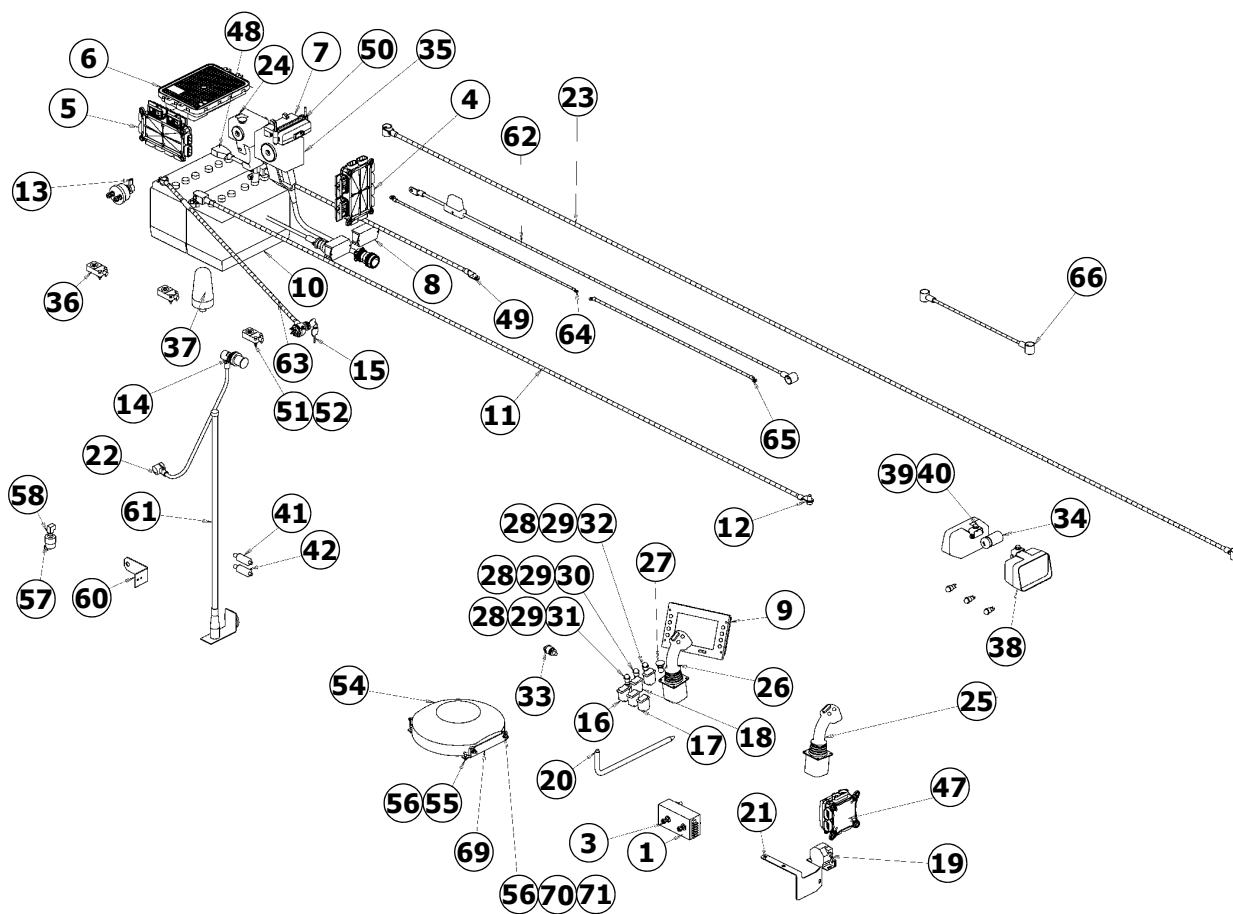
**DD4045 Directional Drill
SEAT HARNESS**

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU117963	HARNESS - Seat, DD4045	1

**DD4045 Directional Drill
DRILL FRAME HARNESS**

4-7

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU122967	HARNESS - Drill Frame, DD4045	1

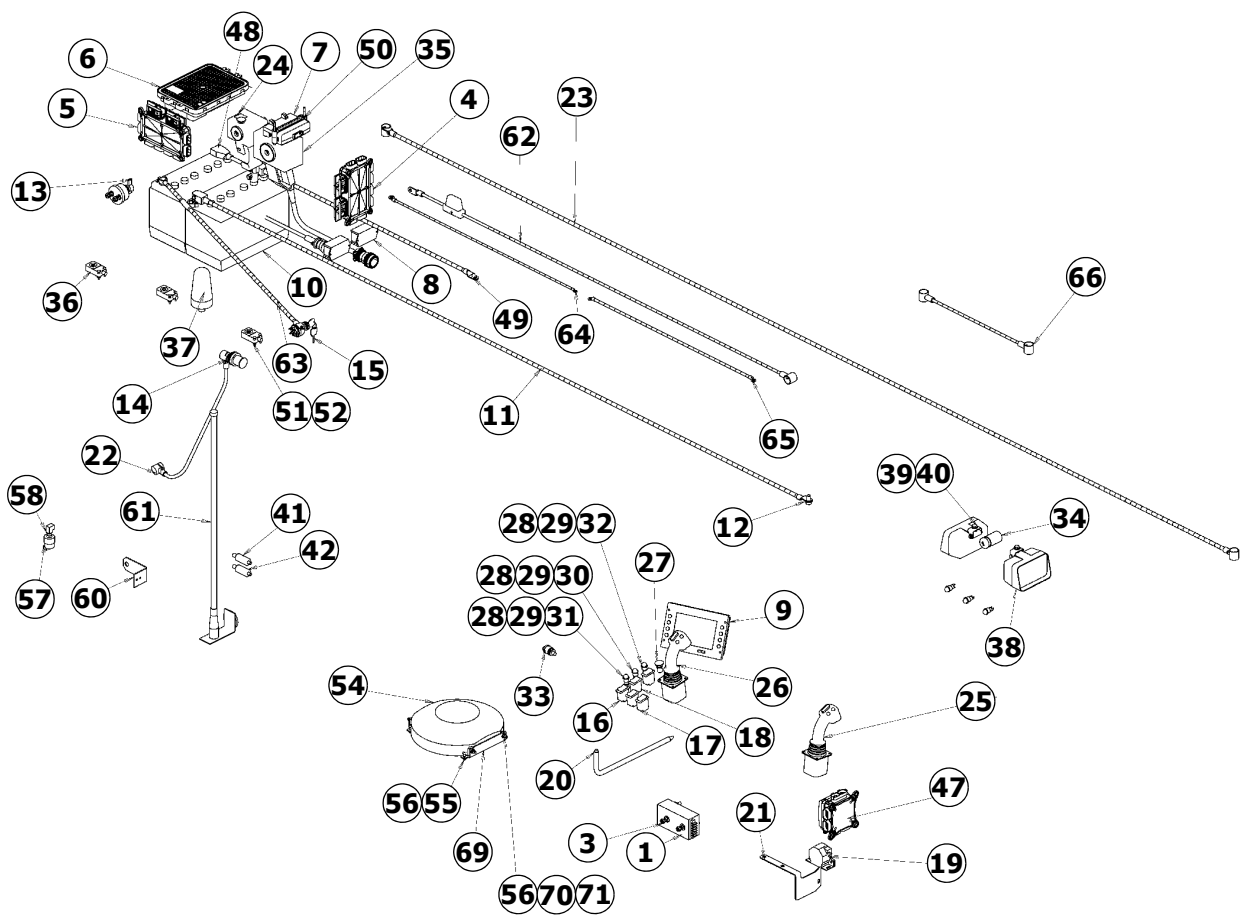


DD4045 Directional Drill ELECTRICAL GROUP

4-9

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116579	ELECTRICAL GROUP	REF
1	8EE27103	ZPALERT - w/20A SPDT Relay	1
2	8EE27104	TESTER - ZapAlert.	1
3	129-770	NUT - Hex, 0.375 - 16 GR5 BZN	2
4	AU119073	VEHICLE ELECTRICAL CENTER - Main (A)	1
5	AU119074	VEHICLE ELECTRICAL CENTER - Main (B)	1
6	AU117955	CONTROLLER - Programmed, MC88	1
	AU117890	CONTROLLER - 88 Pin, Unprogrammed	1
	AU117954	PROGRAM - DD4045	1
7	AU117892	CONTROL MODULE - OX 12	1
8	AU115133	RESISTOR PACK	2
9	AU117957	DISPLAY - Programmed	1
	AU103384	DISPLAY - DP600, Unprogrammed.	1
	AU117956	PROGRAM - DD4045	1
10	A187928	BATTERY	2
11	AU117635	CABLE - Battery (-).	1
	8EP02206	TERMINAL - Battery, Straight, Pos, 1/0.	1
	7EC51106	CABLE - Weld, 1/0.	1
	21001543	BOOT - Battery, Black	1
	8ET20009	LUG - 1/0, Crimp, Copper, 1/2" Hole	1
12	AU100413	SCREW, METRIC FLANGE FULL - M12 x 20	1
13	R52278	SWITCH - Master Disconnect	1
14	AU105186	POST - Battery, Remote.	1
15	AU103815	ASSEMBLY - Ignition Switch	1
16	AU113662	SWITCH - Rocker, ON - OFF, 2 Pole	2
17	AU113664	SWITCH - Rocker, (ON) - OFF - (ON), 2 Pole	1
18	AU113665	SWITCH - Rocker, ON - (OFF), 1 Pole, or, (ON) - OFF, 1 Pole.	2
19	8EP29105	ALARM - Backup	1
20	AU109242	ASSEMBLY - Ground Stake	1
21	AU108897	PLATE - Mount	1
22	366009A1	CABLE - Starter	1
23	AU117636	CABLE - Power to Starter.	1
	7EC51106	CABLE - Weld, 1/0.	1
	21001544	BOOT - Battery, Red	1
	8ET20005	LUG - 1/0, Crimp, Copper, 13/32" Hole	1
24	AU115509	TRAVEL PENDANT	1
25	8EP47613	JOYSTICK - Carr / Rot	1
26	AU117962	JOYSTICK - Modified Carr / Rot.	1

Continued on following page >>

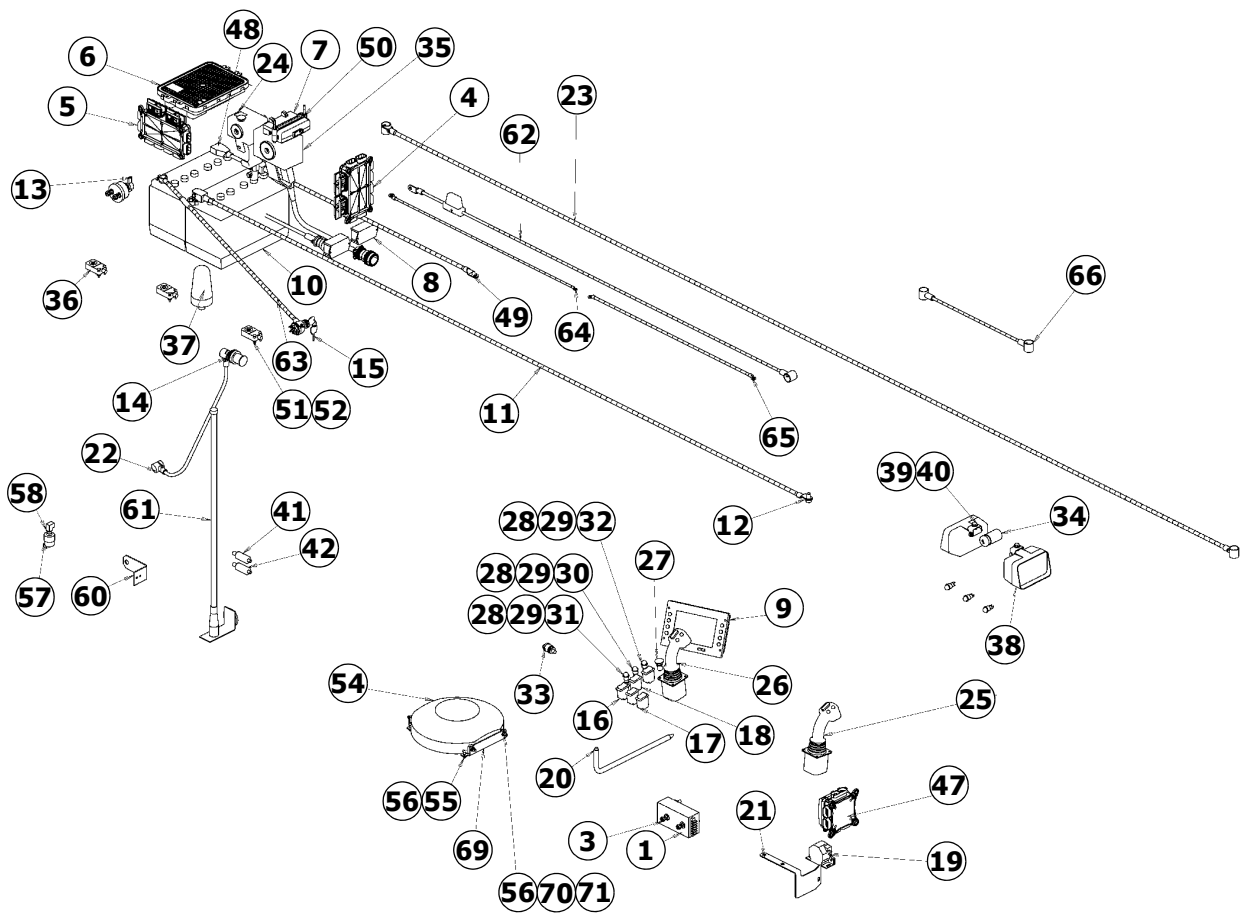


DD4045 Directional Drill ELECTRICAL GROUP

4-11

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116579	ELECTRICAL GROUP	REF
27	8EP46103	SWITCH - Pushbutton, Red Mushroom, Maint.	1
28	8EO21401	ASSEMBLY - Socket, Type T-2	6
29	8EO91101	BULB - Type T-2, 12 V, #12 PSB	6
30	8EO21403	LENS - Dome Fluted, Green, Type T-2	3
31	8EO21402	LENS - Dome Fluted, Red, Type T-2	1
32	8EO21406	LENS - Dome Fluted, Amber, Type T-2	2
33	AU122940	SWITCH - Pushbutton	1
34	8EO24110	POWER OUTLET - Electical	1
35	AU117960	LIFEJACKET	1
36	8EP65159	SWITCH - Proximity	3
37	6EE27201-01	ASSEMBLY - Strobe, Small	1
	8EE27201	STROBE - Small	1
	8ET64102	TERMINAL - Male Tab, 16-14 Nylon Blue	1
	8ET64003	DISCONNECT - 16-14 Nylon Blue	1
38	109081A1	LIGHT - Flood	2
39	426-612	BOLT - Hex Hd 0.375 x 0.75 GR8 ZND	2
40	495-11041	WASHER - 0.406 x 0.812 x 0.065 in CST ZND	2
41	8EP78221	TRANSDUCER - 5300 PSI, 7/16 - 20 SAE	1
42	8EP78222	TRANSDUCER - 3300 PSI, 7/16 - 20 SAE	1
43	8EP78223	TRANSDUCER - 3000 PSI, 9/16 - 18 SAE	1
44	AU117963	WIRING HARNESS - Seat	1
45	AU117964	WIRING HARNESS - Main	1
46	AU117965	SCHEMATIC - Electrical	1
47	AU119075	VEHICLE ELECTRICAL CENTER - Main (C)	1
48	H433512	CABLE - Dual Battery, Red (Pos).	1
	A27072	COVER - Terminal, Red	1
49	AU117634	CABLE - Battery (+)	1
50	AU100316	SCREW, METRIC FLANGE w/BODY - M6 x 80	2
51	440-11016	SCREW - PHD Type 1, #10 - 24 x 1.00 CST ZND	6
52	193-1004	NUT - KEPS EXT T Washer #10 - 24 UNC ZP	6
53	AU118280	SOLENOID - Relay, 12V, 85A	1
54	AU107026	FAN - Electric	1
55	AU100870	SCREW, METRIC FLANGE w/BODY - M6 x 25	4
56	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc	8
57	293797A1	ASSEMBLY - Switch, Air Restriction, Male Thread	1
58	217-1050	ELBOW - 90 Deg Pipe 1/8 - 27 NPTF Female	1
59	AU122856	ADAPTER - Cable, Antenna	1
60	8ER20010-01	PLATE - Bracket	1

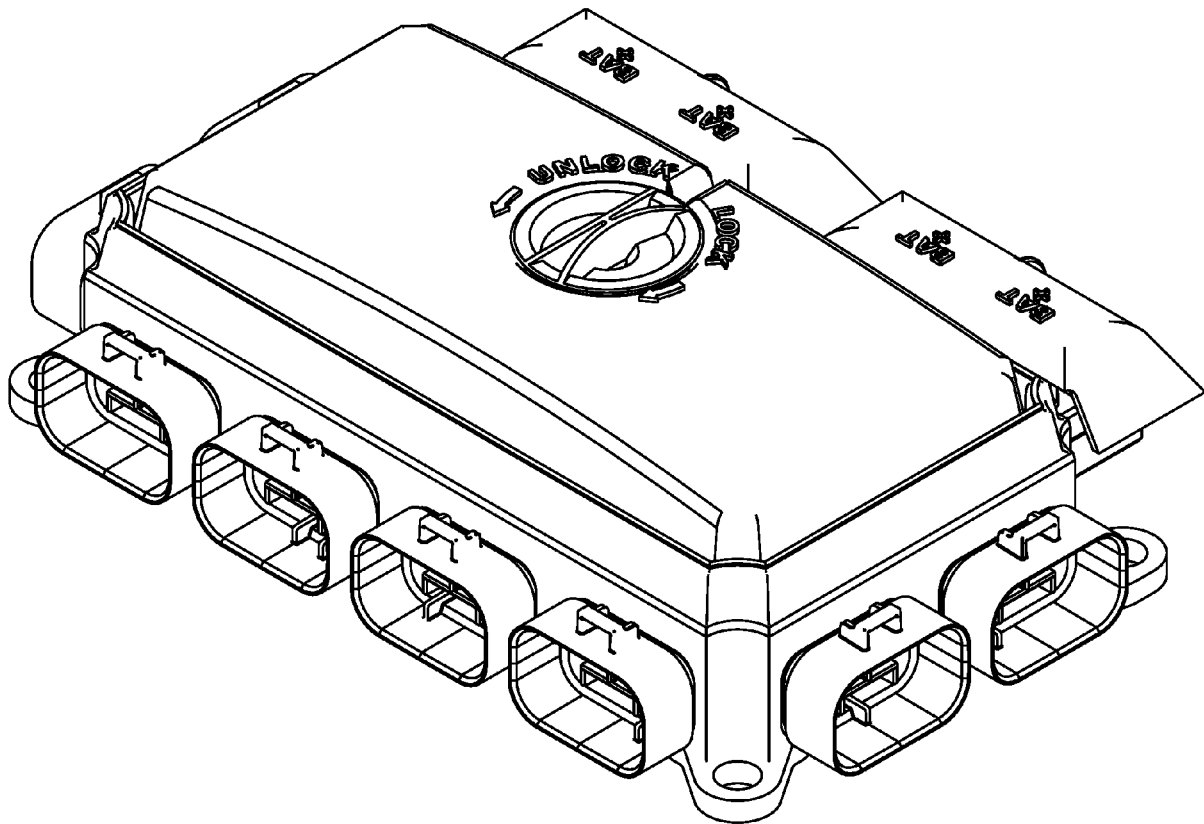
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DD4045 Directional Drill ELECTRICAL GROUP

4-13

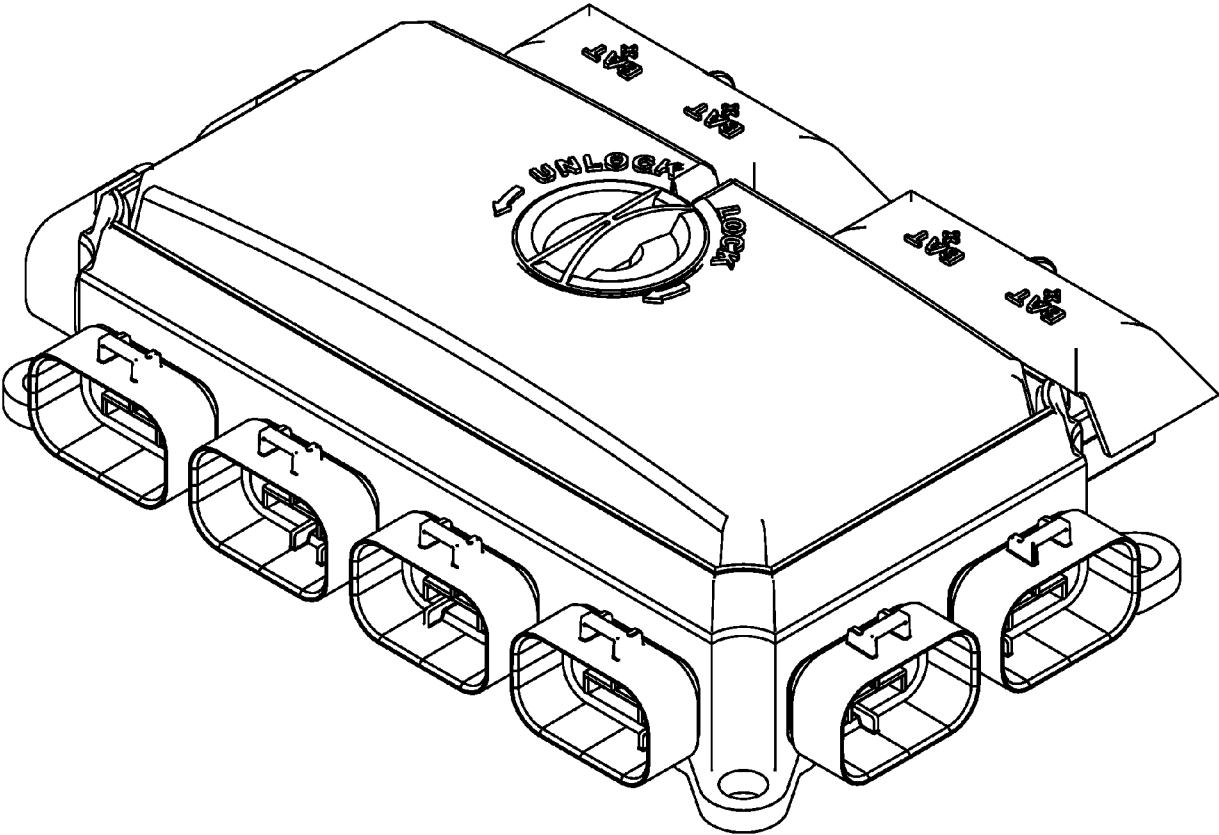
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116579	ELECTRICAL GROUP	REF
61	8ER20010	ANTENNA - Long Range	1
62	AU122908	CABLE - Fused Starter to Start Heater	1
63	AU122907	CABLE - Ground Strap	1
64	AU122910	CABLE - 4 AWG Weld, Alt to Starter	1
65	AU122911	CABLE - 4 AWG Weld, Red, Alt to Starter	1
66	AU122909	CABLE - Elec, Solenoid to Grid Heater	1
67	AU122967	HARNESS - Elec, Drill Frame	1
68	AU123785	KIT - ES!LOK	1
69	AU124320	Plate, Fan Mount	2
70	613-6020	BOLT - Thd to Hd, M6 x 20 CL8.8 Pln	4
71	H426767	WASHER - 0.281 x 0.625 x 0.065 in Hdn Znd	4



DD4045 Directional Drill
VEHICLE ELECTRICAL CENTER MAIN (A)

4-15

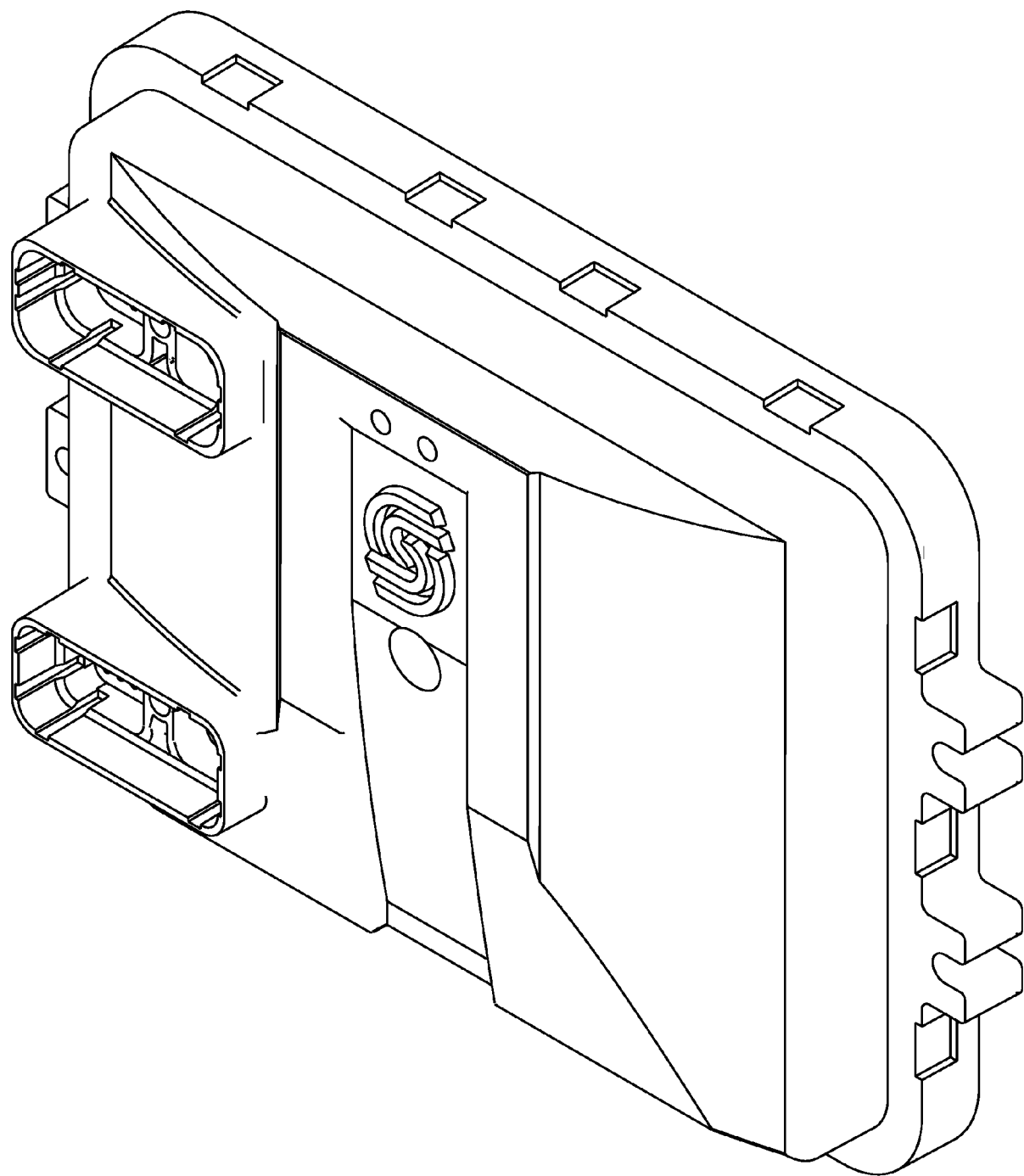
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU119073	VEHICAL ELECTRICAL CENTER MAIN (A)	1



DD4045 Directional Drill
VEHICLE ELECTRICAL CENTER MAIN (B)

4-17

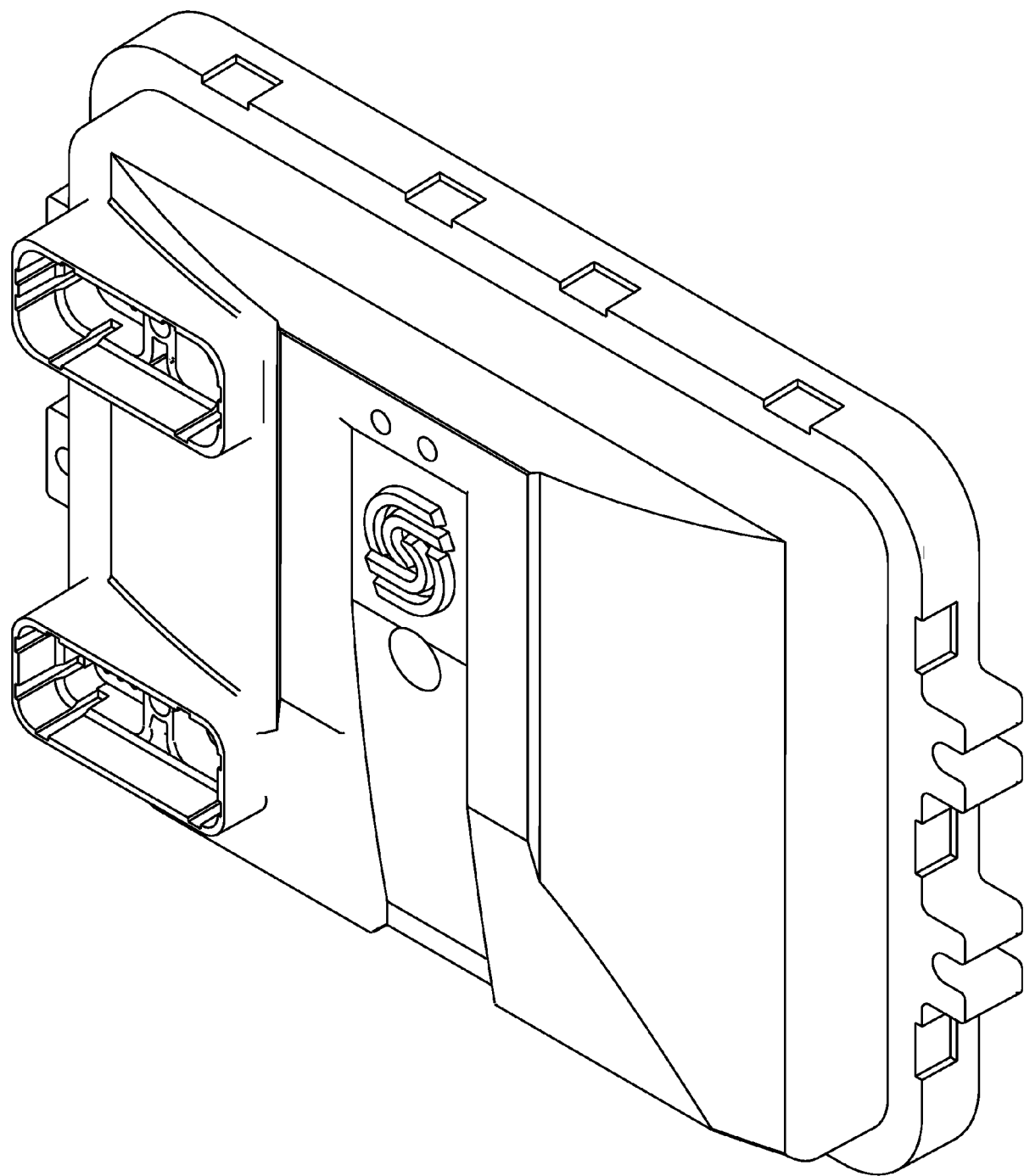
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU119074	VEHICAL ELECTRICAL CENTER MAIN (B)	1



DD4045 Directional Drill
PROGRAMMED CONTROLLER - MC88

4-19

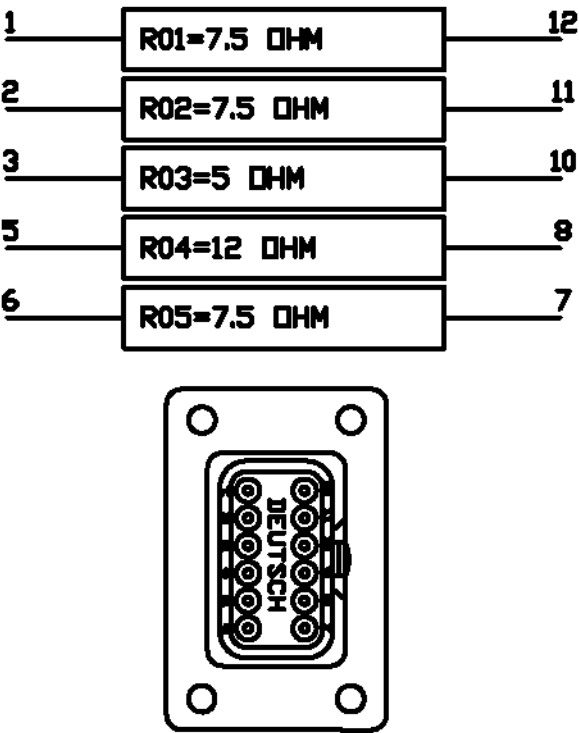
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117955	PROGRAMMED CONTROLLER - MC88.	1
1	AU117890	CONTROL MODULE - MC88.	1
2	AU117954	PROGRAM - DD4045.	1



DD4045 Directional Drill
CONTROL MODULE - OX 12

4-21

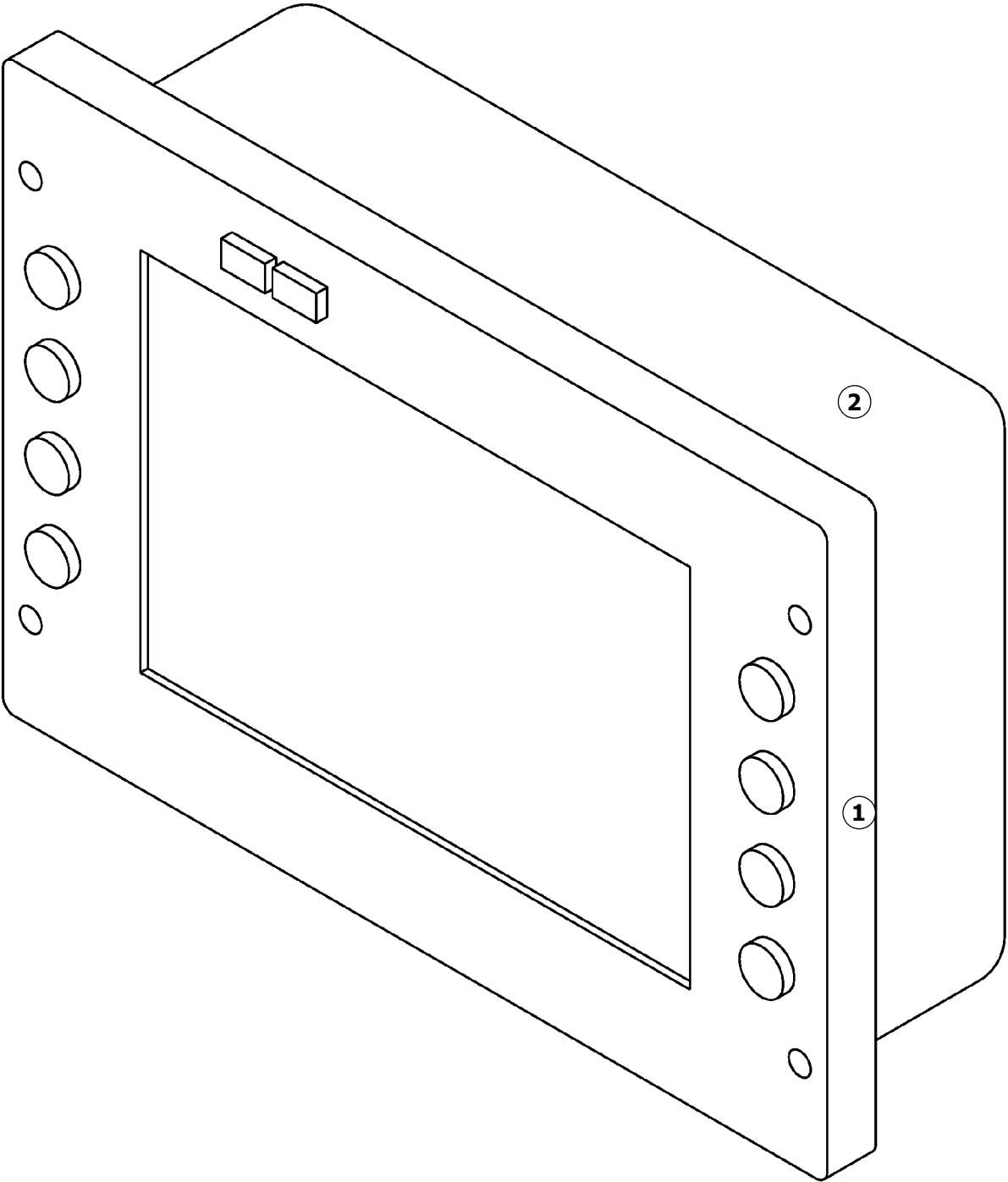
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1	AU117892	CONTROL MODULE - OX 12	1



DD4045 Directional Drill
RESISTER PACK

4-23

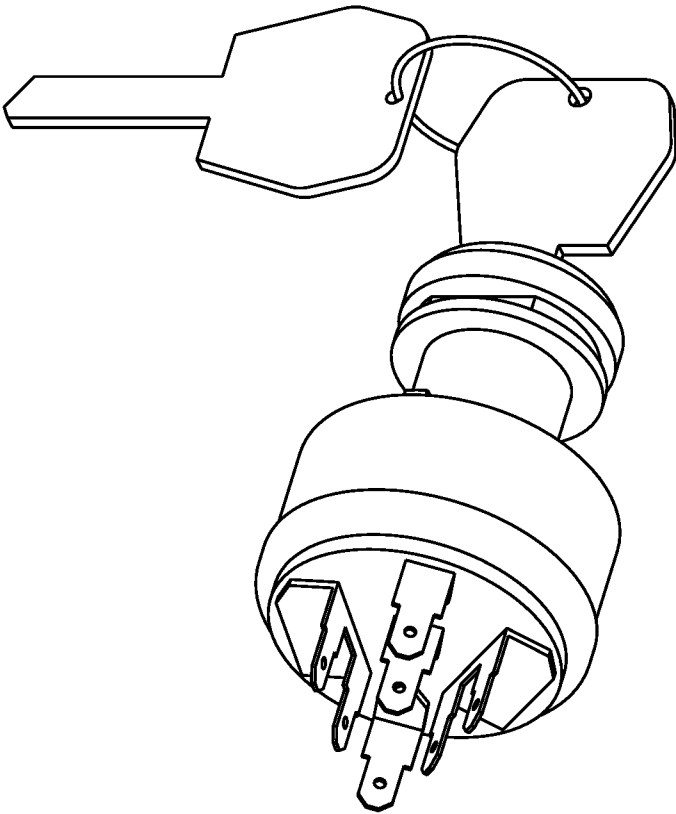
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1	AU115133	RESISTER PACK.....	1



DD4045 Directional Drill
PROGRAMMED DISPLAY

4-25

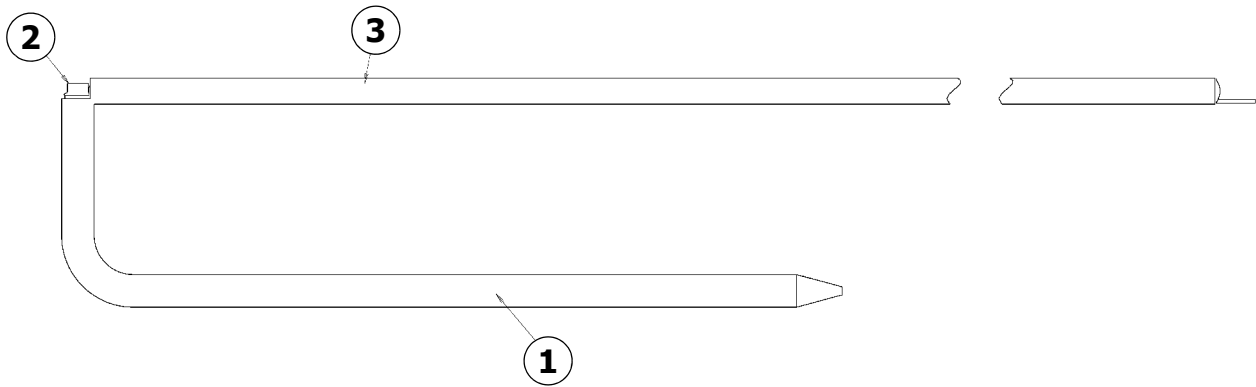
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117957	DISPLAY - Programmed	1
1	AU103384	TERMINAL - Unprogrammed DP600 (includes item 2)	1
2	AU103515	BEZEL - Includes Mounting Hardware	1
3	AU117956	PROGRAM - DD4045	1



DD4045 Directional Drill
IGNITION SWITCH ASSEMBLY

4-27

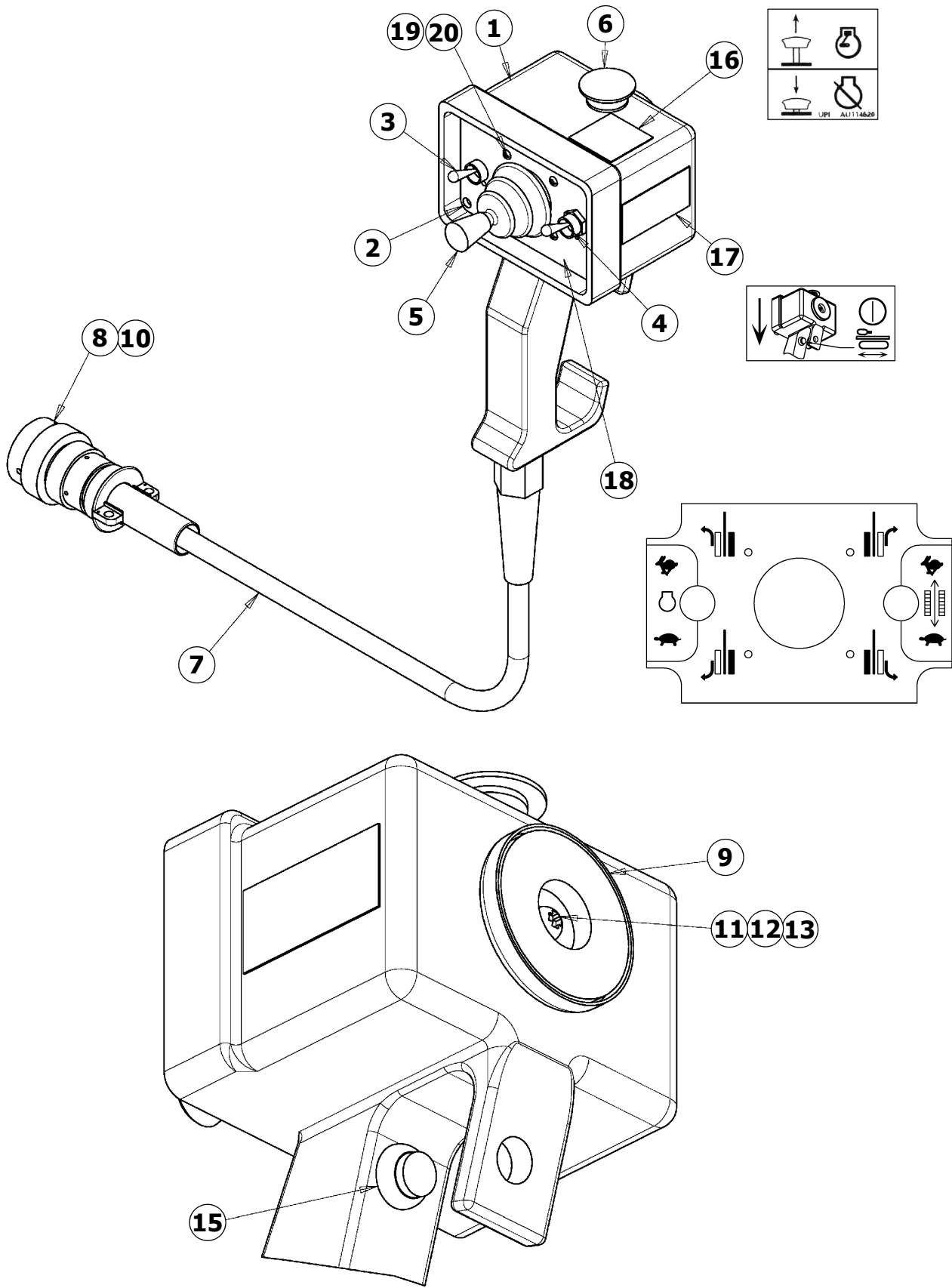
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU103815	ASSEMBLY - Ignition Switch	1



DD4045 Directional Drill
GROUND STAKE ASSEMBLY

4-29

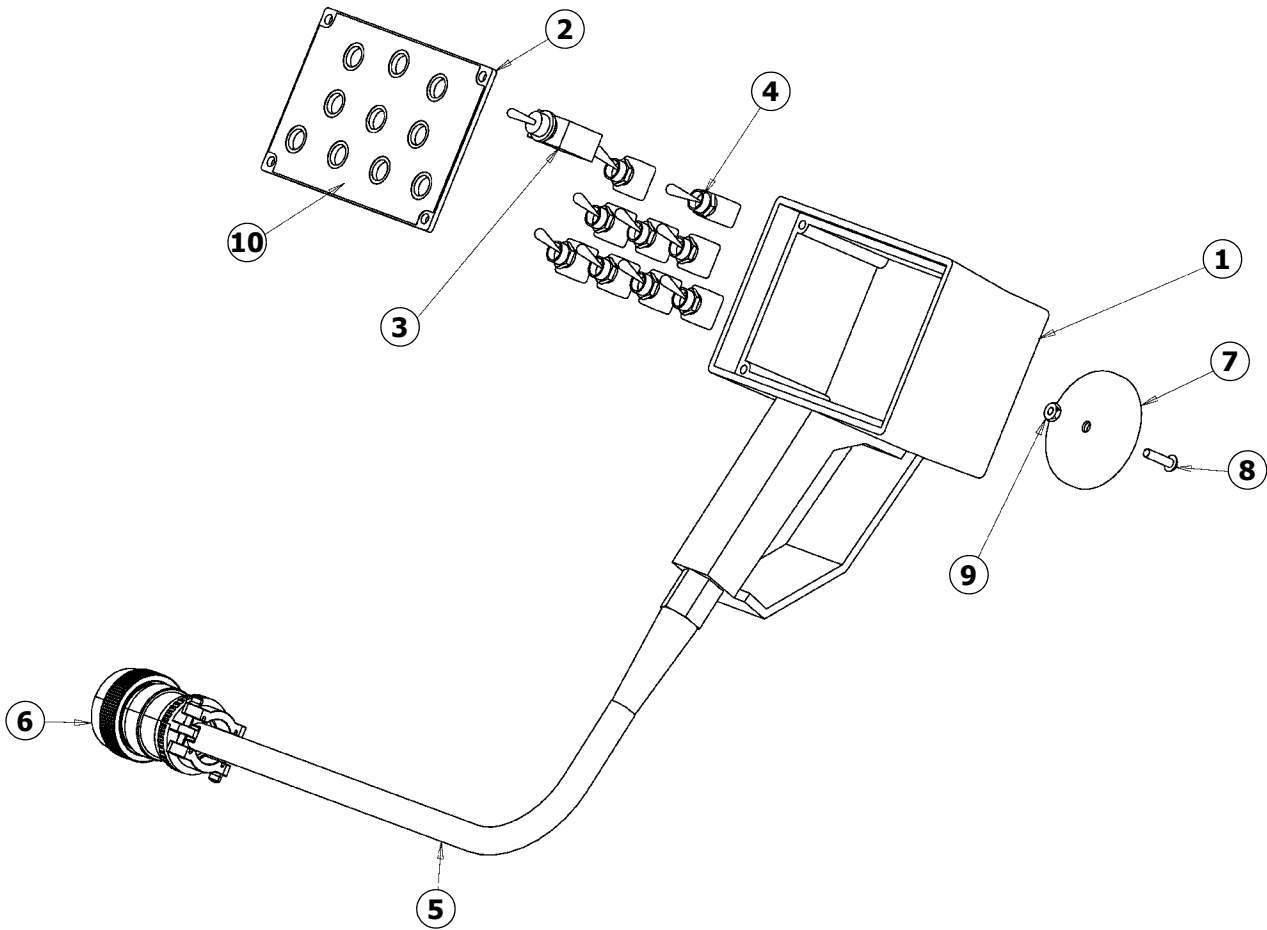
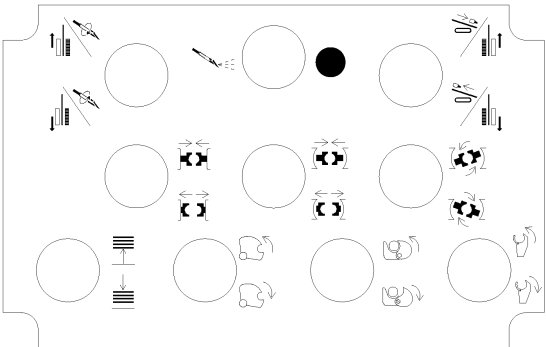
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU109242	ASSEMBLY - Ground Stake	1
1	AU109224	BAR - Ground Stake	1
2	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	1
3	AU124406	CABLE - Strike Alert	1



**DD4045 Directional Drill
TRAVEL PENDANT**

4-31

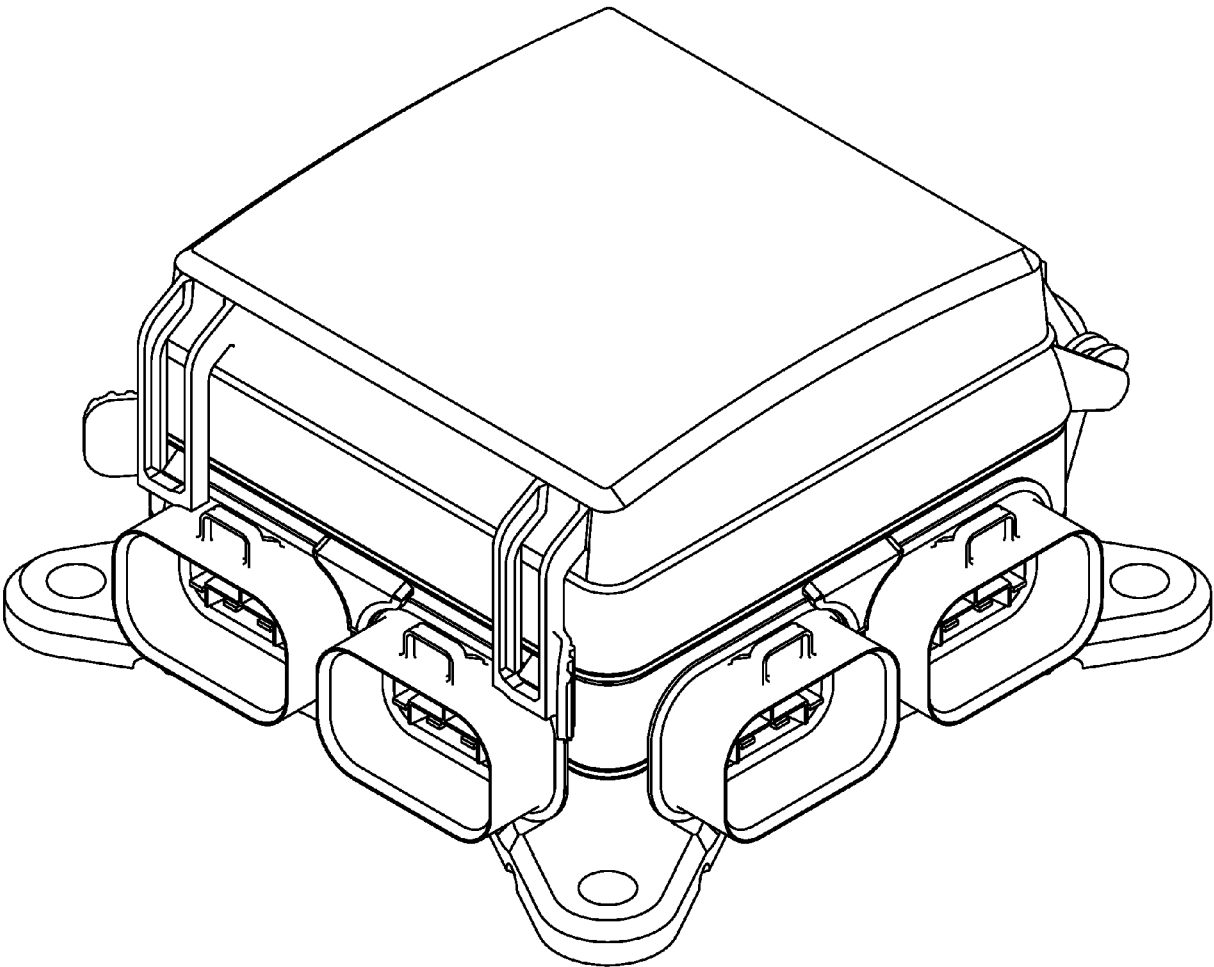
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115509	ASSEMBLY - Travel Pendant.	1
1	8EN83005	HOUSING - Pendant	1
2	AU124367	PLATE - Mounting, Travel Control	1
3	8EP46141	SWITCH - Toggle, Mini, (On)-Off-(On).	1
4	8EP46142	SWITCH - Toggle, Mini, Off-None-On	1
5	8EP47612	JOYSTICK - Travel.	1
6	8EP46101A	PUSHBUTTON, Red Mushroom, Momentary	1
7	8EC81305	CORD - Control, Retract 24 inch/10Foot	1
8	8EC61010	PLUG - Male, with Clamp, 18-14	1
9	8EH12002	MAGNET - Ceramic, 2.03 Diameter x .312 H.	1
10	8EC69007	PIN - Contact, 16-18 AWG, Deutsch	10
11	459-11012	SCREW - Machine, 10 - 32 x 3/4 Slotted Pan Head	1
12	492-11010	WASHER - Spring Lock, Split Type, No. 10	1
13	225-14210	NUT - Hex, #10-32 UNF, 303 Stainless Steel	1
14	8ET73201	NUT - Wire, 2#18-2#16 Nylon Crimp	11
15	8EP46111	PUSHBUTTON, Raised, Normally Open	1
16	AU114620	DECAL - Travel Pendant E-Stop	1
17	AU115510	DECAL - Travel Pendant Pushbutton Activation	1
18	AU124368	DECAL - Travel Pendant	1
19	440-1048	SCREW - PHD Type 1 #4 - 40 x 0.50 CST ZND	4
20	231-14104	NUT - Prev Trq #4 GRB CAD Insert.	4
21	8EP47612-1	CONNECTOR - 8 Pin Ribbon.	1



DD4045 Directional Drill LIFE JACKET DEVICE

4-33

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117960	ASSEMBLY - Life Jacket Device	1
1	AU118226	ENCLOSURE - Handheld Device.	1
2	AU124365	PLATE - Mounting, Life Jacket.	1
3	AU121460	SWITCH - Toggle, SPDT	1
4	8EP46141	SWITCH - Toggle, SPDT, (On)-Off-(On)	9
5	AU118228	CORD - Control, Retractable, 24" / 10"	1
6	AU118205	CONNECTOR - Electrical, Deutsch HD36-24	1
7	8EH12002	MAGNET - Ceramic, 2.03 Diameter x .312 H.	1
8	459-11012	SCREW - Machine, 10 - 32 x 3/4 Slotted Pan Head	1
9	225-14210	NUT - Hex, #10-32 UNF, 303 Stainless Steel	1
10	AU124366	DECAL - Life Jacket Device	1



DD4045 Directional Drill
VEHICLE ELECTRICAL CENTER MAIN (C)

4-35

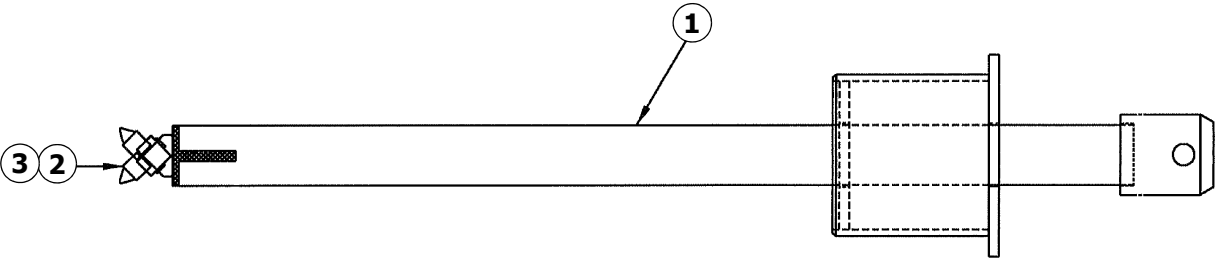
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU119075	VEHICAL ELECTRICAL CENTER MAIN (B)	1

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**DD4045 Directional Drill
KIT - eS!LOK™**

4-37

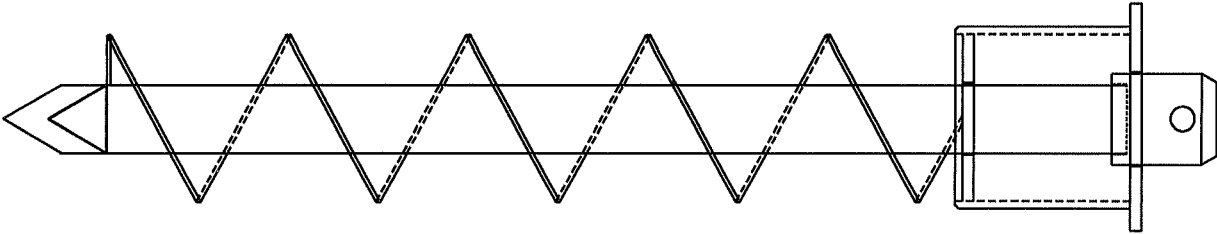
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU123785	KIT - ES!LOK	REF
1	AU119809	CONTROL - Wireless	1
2	AU119810	RECEIVER - Wireless	1
3	AU119811	ANTENNA - Swivel, 2.4 GHz	1
4	AU119812	CABLE - Antenna, 3M Extension	1



DD4045 Directional Drill
STAKE, ROCK

4-39

REF.	PART NO.	DESCRIPTION	REQ'D.
1	32GB7532	STAKE - Rock	1
2	449011	BLOCK - Bit, Mini Bullet	2
3	448021	BIT - Mini Bullet w/Snap Ring	2



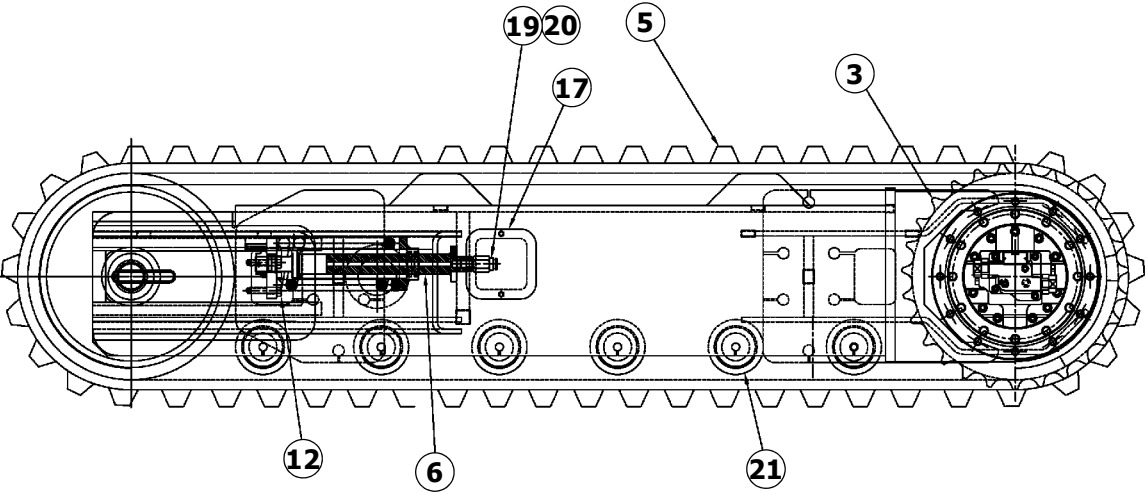
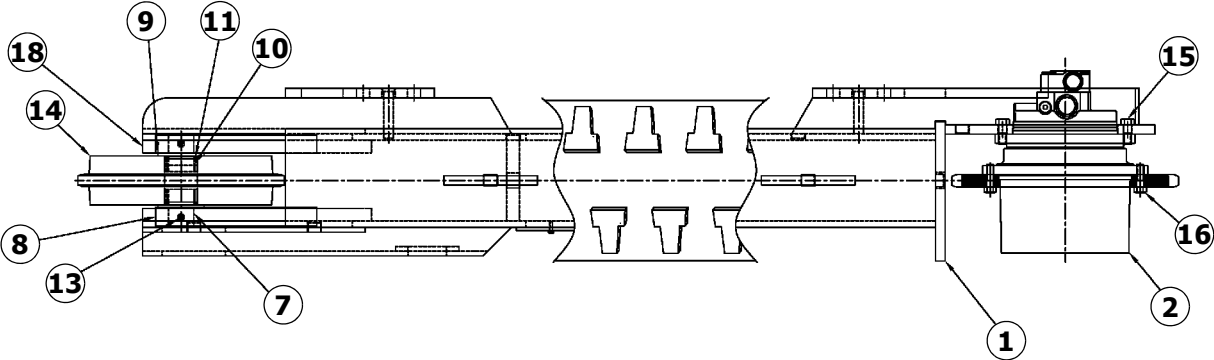
DD4045 Directional Drill
STAKE, DIRT

4-41

REF.	PART NO.	DESCRIPTION	REQ'D.
1	32GB7531	STAKE - Dirt.....	1

**ALPHABETICAL INDEX
TRACKS**

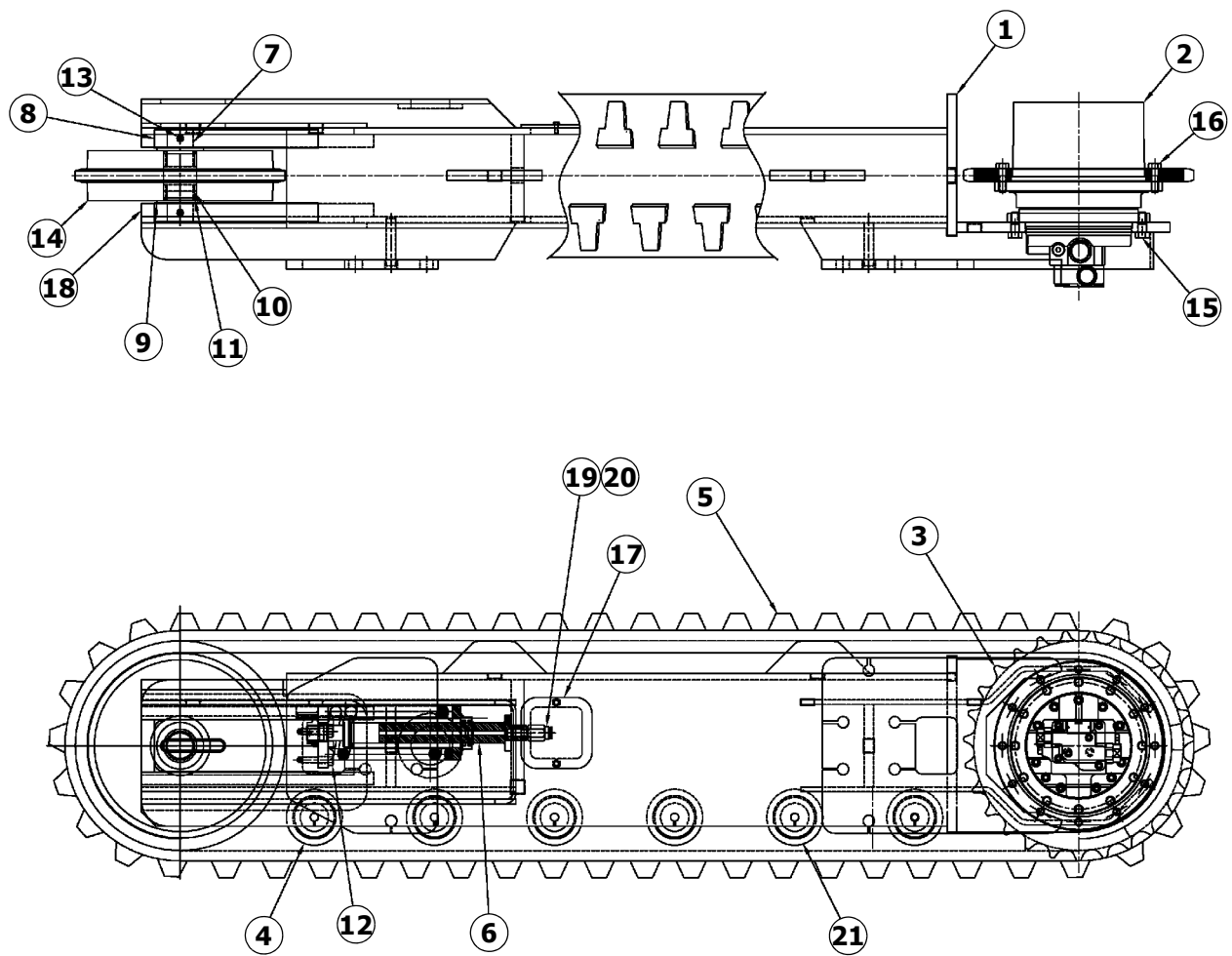
DESCRIPTION	PAGE	DESCRIPTION	PAGE
C			
Crawler Assembly.....	5-5		
T			
Track Assembly - Right Hand	5-3		



DD4045 Directional Drill
TRACK ASSEMBLY - RIGHT HAND

5-3

REF.	PART NO.	DESCRIPTION	REQ'D.
	32GB2405	ASSEMBLY - Track Drive, Right Hand	1
1	32GB2402	WELDMENT - Track Drive, Right Hand.	1
2	8GB85017	GEARBOX ASSEMBLY - with Hydraulic Motor.	1
3	30DD2424	SPROCKET - Drive, Track, 27 Tooth	1
5	32GB2414	TRACK - Rubber, 300 x 92 x 52.5.	1
6	32GB2412	TENSIONER ASSEMBLY - Track.	1
7	32GB2409	PIN - Axle 2.000 OD x 7.25 Long	1
8	32GB2408	SLIDER - Tensioner Bar, 1-1/2 x 4 x 12-11/16 Long.	1
9	8CF90032	BEARING - Thrust, 2.00 ID x 3.62 OD x .19 Thk.	2
10	8CF60032	BEARING - Roller, without Inner Ring, 2.00 ID x 2.562 OD	2
11	8HS11032	SEAL - Shaft, 2.00 x 2.56 x .23 Thk	2
12	426-832	CAPSCREW - Hex Head, 1/2 - 13 x 2 inch Long	4
13	8CP31631	PIN - Slotted, Spring, .50 Diameter x 4.00 Long	1
14	32GB2410	SPROCKET - Idler, 16-1/4 OD x 4 Thk	1
15	814-16040	CAPSCREW - Hex Head, 16mm - 2.0 x 40mm Long	12
16	814-14045	CAPSCREW - Hex Head, 14mm - 2.0 x 45mm Long	12
17	32GB2413	COVER - Access Opening.	1
18	32GB2408	SLIDER - Tensioner Bar, 1-1/2 x 4 x 12-11/16 Long.	1
19	30GB2412-1	FITTING - Grease, Giant Button Head	1
20	30GB2412-2	WASHER - Copper, Seal.	1
21	30DD2434	ROLLER - Track	4
22	814-14030	BOLT	12



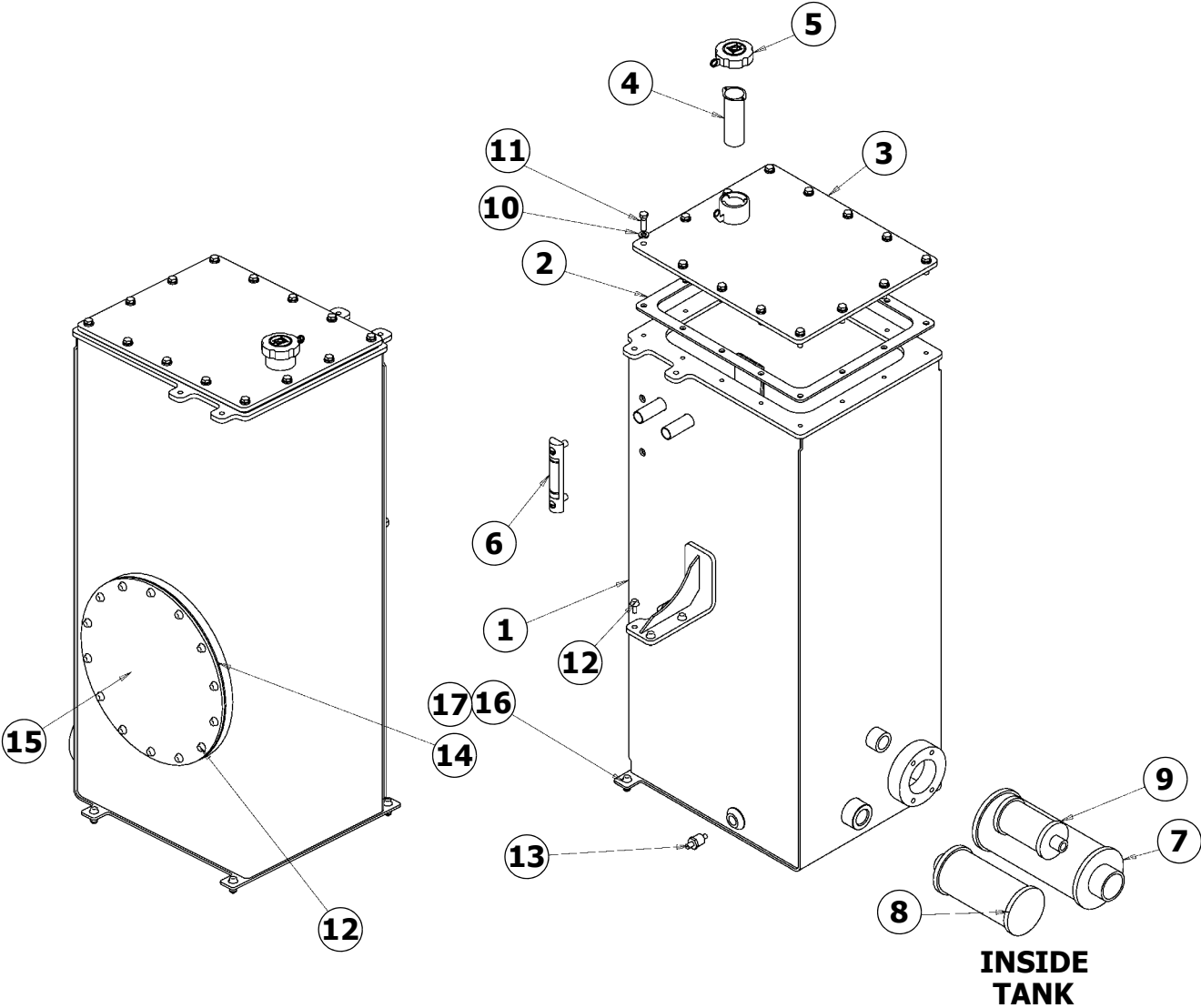
DD4045 Directional Drill
CRAWLER ASSEMBLY - LEFT HAND

5-5

REF.	PART NO.	DESCRIPTION	REQ'D.
	32GB2406	ASSEMBLY - Track Drive, Left Hand	1
1	32GB2404	WELDMENT - Track Drive, Left Hand	1
2	8GB85017	GEARBOX ASSEMBLY - with Hydraulic Motor.	1
3	30DD2424	SPROCKET - Drive, Track, 27 Tooth	1
5	32GB2414	TRACK - Rubber, 300 x 92 x 52.5.	1
6	32GB2412	TENSIONER ASSEMBLY - Track	1
7	32GB2409	PIN - Axle 2.000 OD x 7.25 Long	1
8	32GB2408	SLIDER - Tensioner Bar, 1-1/2 x 4 x 12-11/16 Long.	1
9	8CF90032	BEARING - Thrust, 2.00 ID x 3.62 OD x .19 Thk.	2
10	8CF60032	BEARING - Roller, without Inner Ring, 2.00 ID x 2.562 OD	2
11	8HS11032	SEAL - Shaft, 2.00 x 2.56 x .23 Thk	2
12	426-832	CAPSCREW - Hex Head, 1/2 - 13 x 2 inch Long	4
13	8CP31631	PIN - Slotted, Spring, .50 Diameter x 4.00 Long	1
14	32GB2410	SPROCKET - Idler, 16-1/4 OD x 4 Thk	1
15	814-16040	CAPSCREW - Hex Head, 16mm - 2.0 x 40mm Long	12
16	814-14045	CAPSCREW - Hex Head, 14mm - 2.0 x 45mm Long	12
17	32GB2413	COVER - Access Opening.	1
18	32GB2408	SLIDER - Tensioner Bar, 1-1/2 x 4 x 12-11/16 Long.	1
19	30GB2412-1	FITTING - Grease, Giant Button Head	1
20	30GB2412-2	WASHER - Copper, Seal.	1
21	30DD2434	ROLLER - Track	6
22	814-14030	BOLT	12

**ALPHABETICAL INDEX
HYDRAULIC**

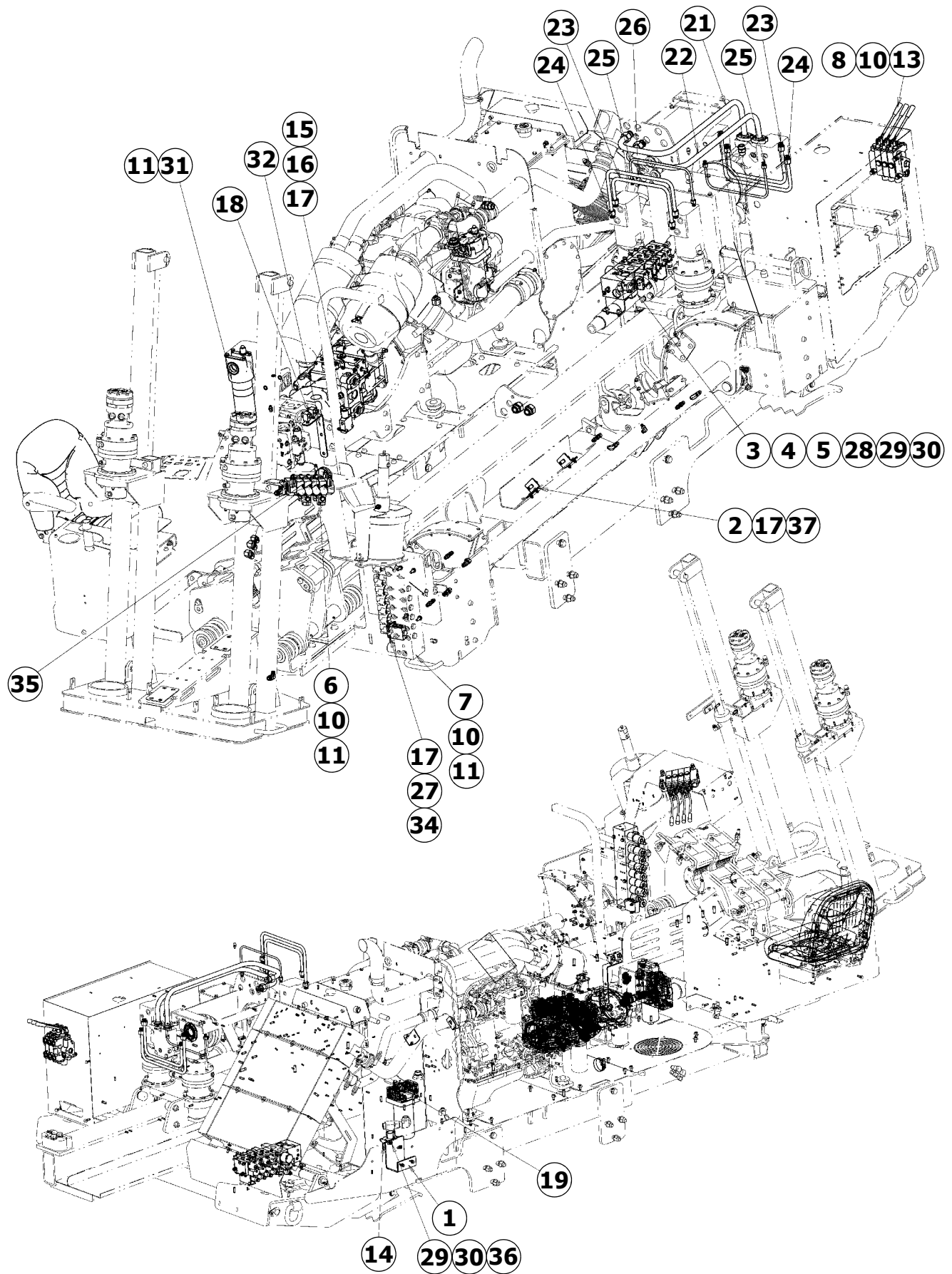
DESCRIPTION	PAGE	DESCRIPTION	PAGE
F			
Filter, Return	8-65		
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H			
Hoses and Fittings	8-57, 8-59, 8-61		
Hydraulic Fittings Kit	8-11 to 8-55		
Hydraulic Group	8-5		
Hydraulic Tank	8-3		
P			
Pressure Filter	8-69		
V			
Valve, 5 Section	8-7		
Valve, 9 Section	8-9		
Valve, Dir.....	8-63		



DD4045 Directional Drill HYDRAULIC TANK

8-3

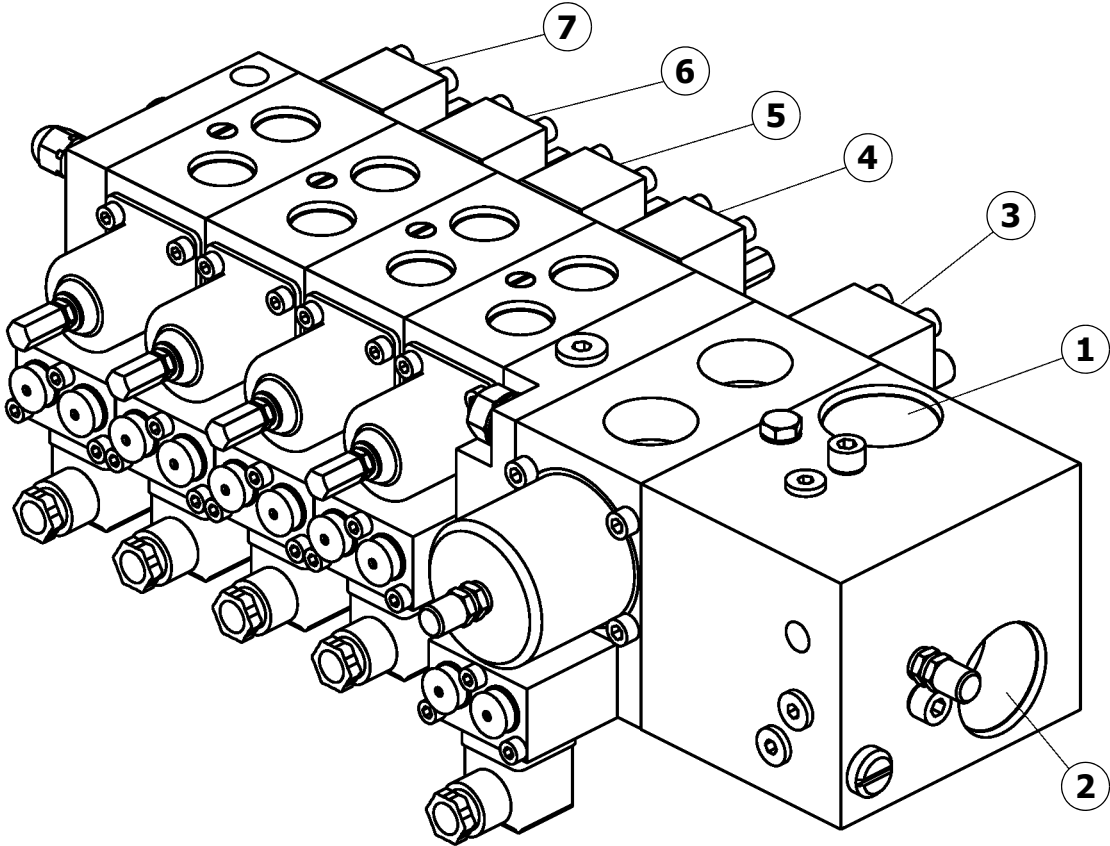
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116143	ASSEMBLY - Hydraulic Tank	1
1	AU116595	WELDMENT - Hydraulic Tank	1
2	AU117202	GASKET - Hydraulic Tank	1
3	AU116328	WELDMENT - Cover, Hydraulic Tank	1
4	AU101238	ASSEMBLY - Strainer	1
5	AU105820	CAP - Hydraulic Fluid, with Lock	1
6	L116247	GAUGE - Liquid Level	1
7	AU116600	STRAINER - Nipple Style, 2-1/2" NPT	1
8	AU116599	STRAINER - Nipple Style 1-1/2" NPT	1
9	AU116598	STRAINER - Nipple Style 1" NPT	1
10	495-81129	WASHER - 0.406 x 0.750 x 0.119 in CST ZND	14
11	426-620	BOLT - Hex Hd 0.375 x 1.25 GR8 ZND	14
12	AU100872	SCREW, METRIC FLANGE w/BODY - M8 x 20	18
13	30-460-8006	TEMPERATURE SENDER - 1/2" NPT	1
14	AU122311	GASKET - Hydraulic Tank	1
15	AU122304	GASKET - Hydraulic Tank	1
16	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	3
17	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc	3



DD4045 Directional Drill HYDRAULIC GROUP

8-5

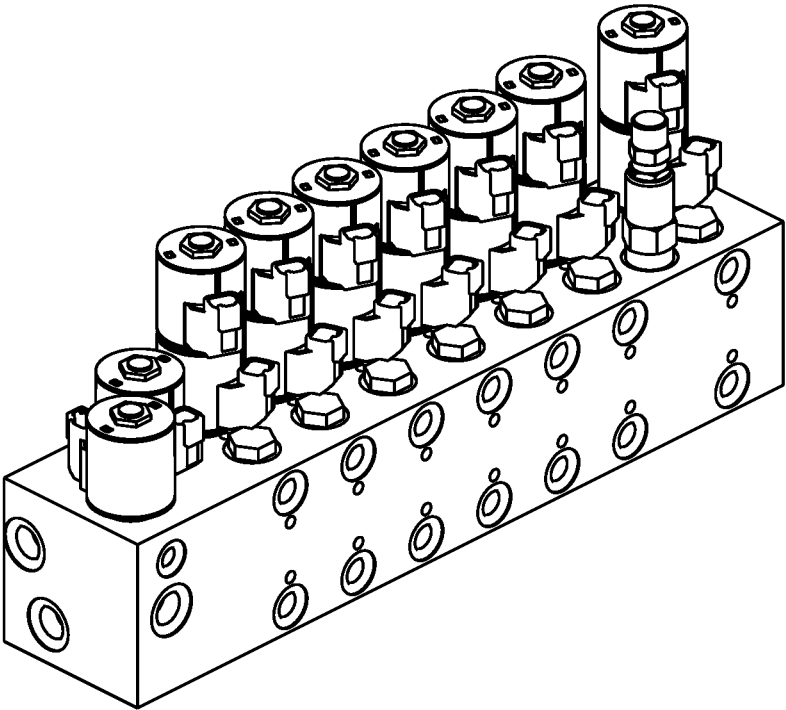
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116580	HYDRAULIC GROUP	1
1	AU124864	PLATE - Mount, Thermal Bypass	1
2	AU124863	PLATE - Mount	2
3	AU121320	MOUNTING BRACKET - Front, 5 Section Valve.	1
4	AU121285	VALVE - 5 Section.	1
5	AU121321	MOUNTING BRACKET - Rear, 5 Section Valve	1
6	8HV80159	VALVE - Stakedown	1
7	AU111494	VALVE - 9 Section / Multi-function.	1
8	8HV80153	VALVE - Setup.	1
9	AU116581	KIT - Hydraulic Fittings	1
10	496-21041	WASHER - 0.406 x 0.812 x 0.089 in Hdn ZND	10
11	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	11
12	AU119060	KIT - Hydraulic Hose	1
13	426-620	BOLT - Hex Hd 0.375 x 1.25 GR8 ZND.	3
14	8HV01001	VALVE - Thermal Bypass	1
15	8HV80118	VALVE - Dir, Cart, 3W2P, SOL, 12VDC	1
16	AU1009721	SCREW, METRIC FLANGE w/BODY - M6 x 50	2
17	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	8
18	270083	VALVE - Shuttle.	2
19	AU118533	FILTER - Return Line, 100 GPM / 300 PSI	1
20	AU119010	CARRIER - Hose.	1
21	AU119408	TUBE - Formed, 1", Rotary A, Bulkhead to Motor	1
22	AU119407	TUBE - Formed, 1", Rotary B, Bulkhead to Motor	1
23	AU119409	TUBE - Formed, 5/8", Carriage, Motor to Motor	2
24	AU119410	TUBE - Formed, 5/8", Carriage, Motor to Motor	2
25	AU119452	TUBE - Formed, 3/8", Carriage, Case Drain, Motor to Motor	2
26	214-1712	CLAMP - Hose, Type M # 12.	2
27	AU112323	FLOW DIVIDER -8 ORB / -6 ORB, -6 ORB.	1
28	AU100394	SCREW, METRIC FLANGE FULL - M8 x 12	4
29	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	5
30	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	7
31	AU118636	FILTER - Hydraulic, Hi-Press	1
32	AU121543	PLATE - Mount, Shuttle Valve	1
33	AU122283	SCHEMATIC - Hydraulic, DD4045	1
34	AU100315	SCREW, METRIC FLANGE w/Body - M6 x 60	2
35	21001356	CLAMP, T-BOLT - Spring Load, 2.75" Min - 3.06" Max.	3
36	AU100327	SCREW, METRIC FLANGE w/BODY - M8 x 90	2
37	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	4



**DD4045 Directional Drill
VALVE, 5 SECTION**

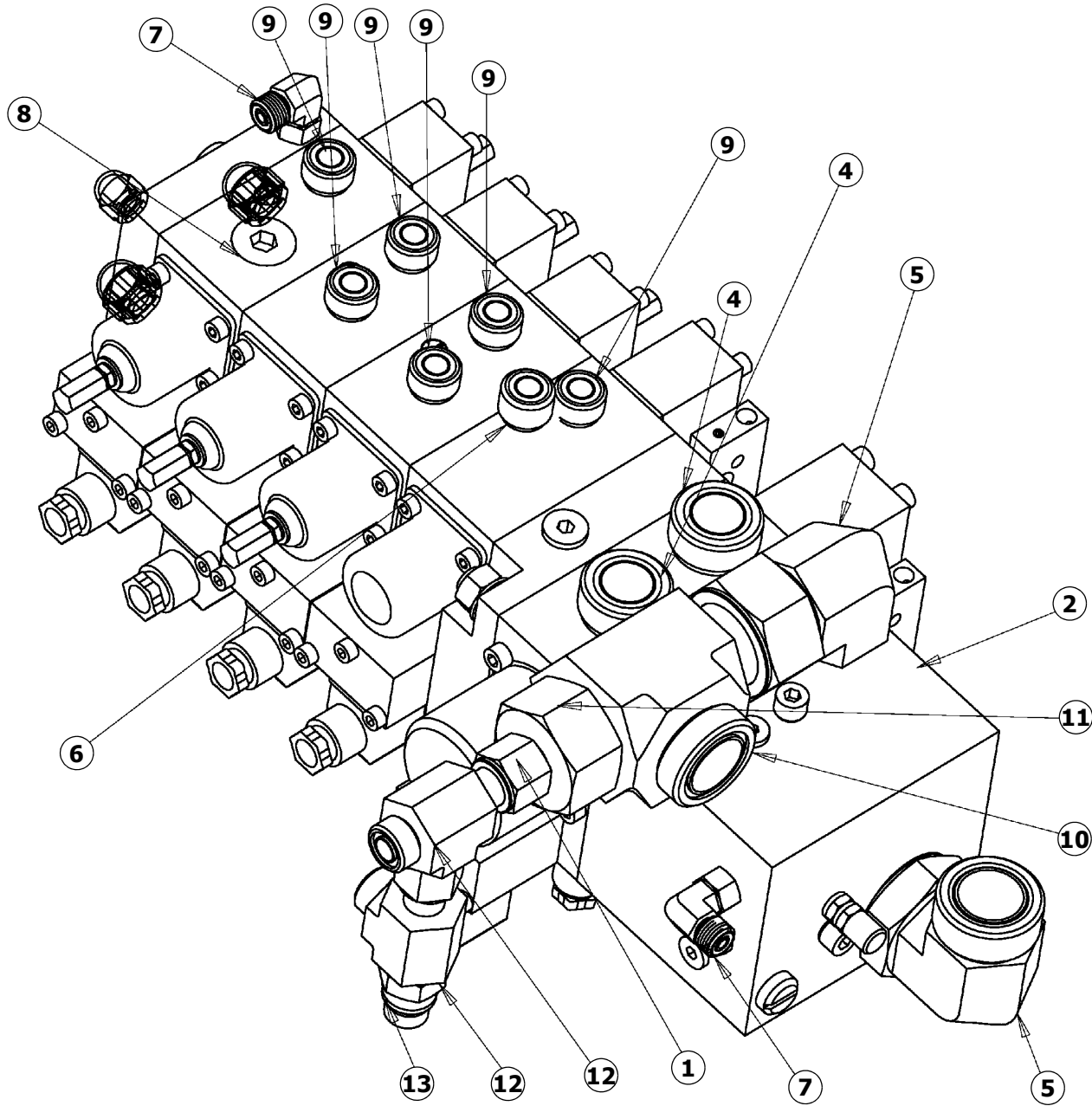
8-7

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116575	VALVE - Dir, EI / Hyd Prop, 5 Section	1
1	NSS	PORT - Tank	1
2	NSS	PORT - Pressure	1
3	NSS	SECTION - Carriage	1
4	NSS	SECTION - Fan	1
5	NSS	SECTION - Left Track	1
6	NSS	SECTION - Right Track	1
7	NSS	SECTION - Auxiliary	1



DD4045 Directional Drill
VALVE, 9 SECTION

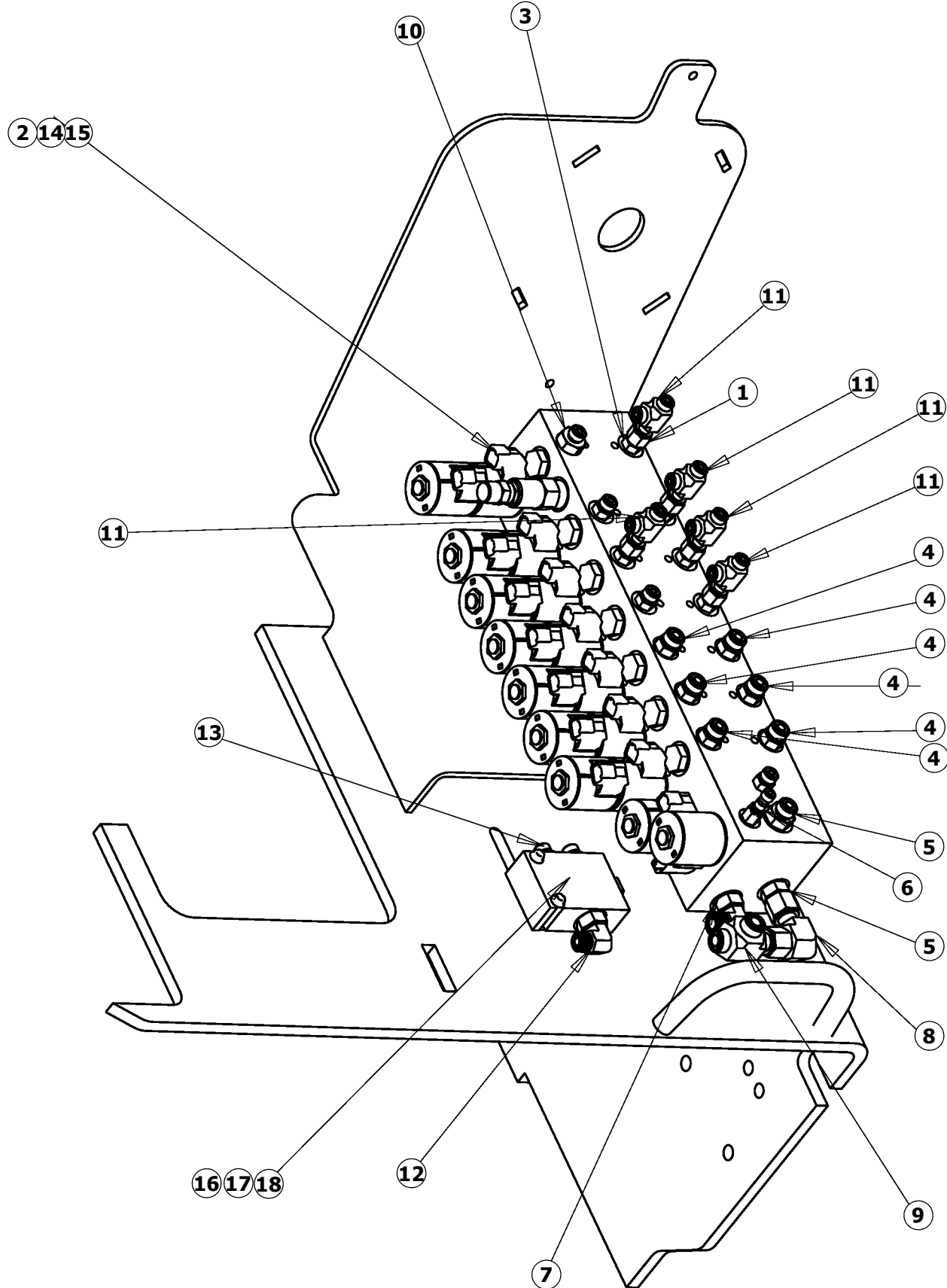
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU111494	VALVE - 9 Section Multifunction	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-11

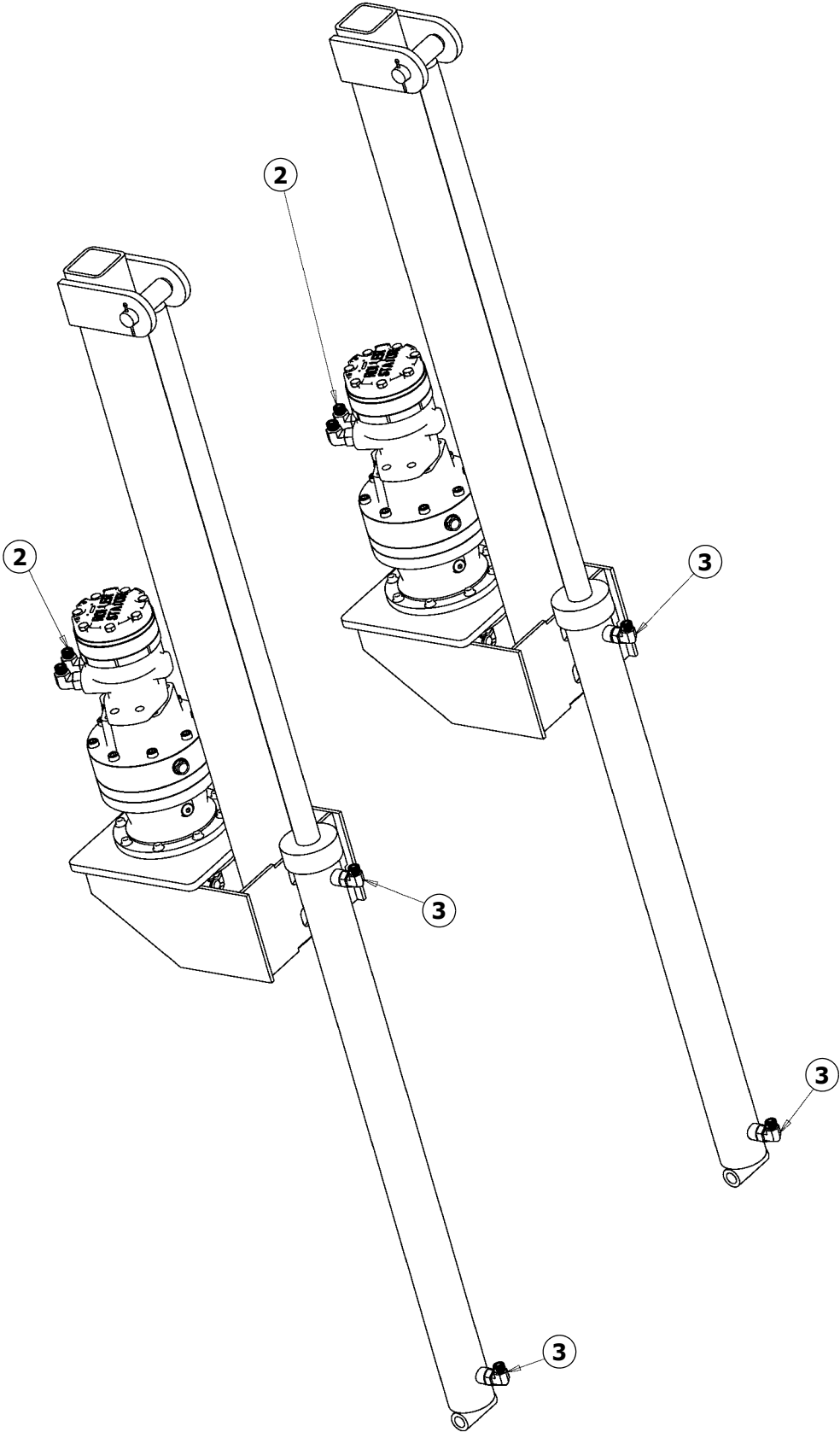
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU121285	VALVE - 5 Section	1
4	8OA621616	CONNECTION - Straight, -16 BSPP / -16 ORFS	2
5	8OL32020	CONNECTION - 90 Deg, -20 ORFS / -20 ORB.	2
6	AU121465	VALVE, CHECK, 30 PSI -10 ORFS / -1- ORB	1
7	8OL30404	CONNECTION - 90 Deg, -4 ORFS / -4 ORB.	2
8	8SP00010	PLUG -10 ORB	1
9	8OA30810	CONNECTION - Straight, -8 ORFS / -10 ORB	6
10	8OR82020	CONNECTION - Run Tee, -20 ORFS / -20 ORFS	1
11	8OA80820	CONNECTION - Reducer, -20 ORFS / -8 ORFS	1
12	8OR80808	CONNECTION - Run Tee, -8 ORFS / -8 ORFS	2
13	8OA80608	CONNECTION - Straight, -6 ORFS / -8 ORFS	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-13

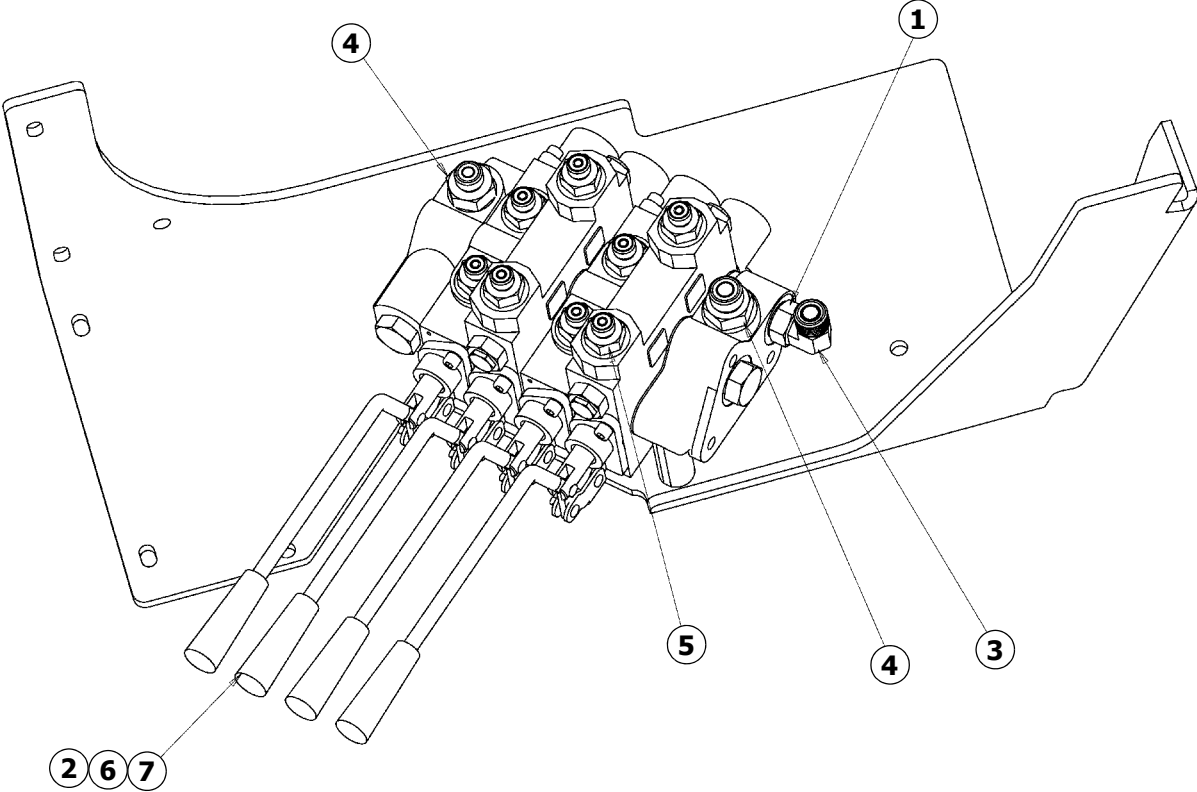
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU111494	VALVE - 9 Section, Multifunction.	1
3	8OA30406	CONNECTION - Straight, -4 ORFS / -6 ORB	8
4	8OA30606	CONNECTION - Straight, -6 ORFS / -6 ORB	6
5	8OA30608	CONNECTION - Straight, -6 ORFS / -8 ORB	1
6	8QD63501	COUPLING - Quick Disconnect.	1
7	8OL30808	CONNECTION - 90 Deg, -8 ORFS / -8 ORB.	1
8	8OL80808	CONNECTION - 90 Deg, -8 ORFS / -8 ORFS	1
9	8OR80808	CONNECTION - Run Tee, -8 ORFS / -8 ORFS	1
10	AU112767	CONNECTION - Straight, -4 ORFS / -6 ORB Orifice	1
11	8OR80404	CONNECTION - Run Tee, -4 ORFS / -4 ORFS	5
12	8OL30408	CONNECTION - 90 Deg, -4 ORFS / -8 ORB.	1
13	8OA30404	CONNECTION - Straight, -4 ORFS / -4 ORB	2
14	496-21041	WASHER - 0.406 x 0.812 x 0.089 in HTD ZND.	4
15	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	4
16	AU112323	FLOW DIVIDER -8 ORB / -6 ORB, -6 ORB.	1
17	AU100315	SCREW, METRIC FLANGE w/BODY - M6 x 60	2
18	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	2



**DD4045 Directional Drill
HYDRAULIC FITTINGS KIT**

8-15

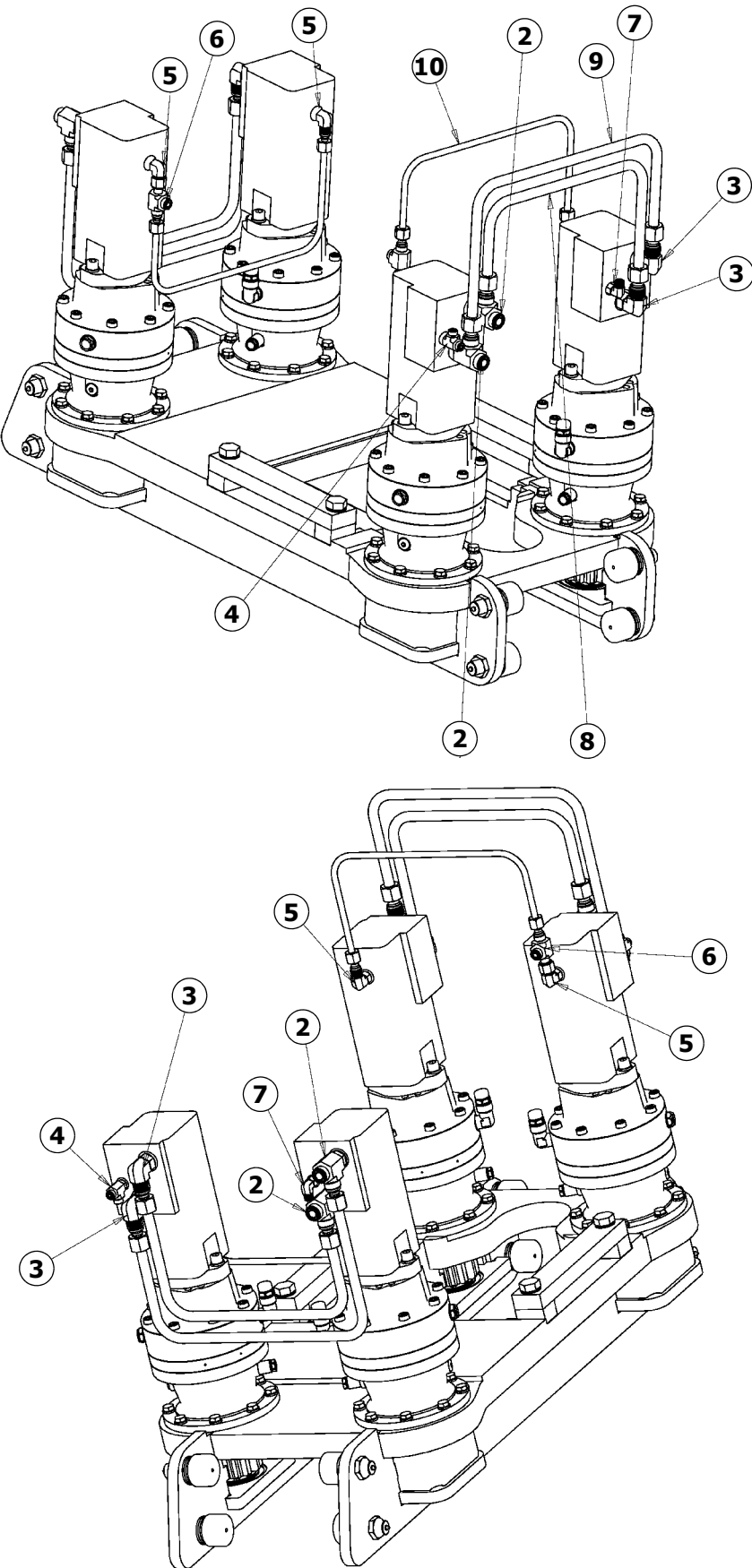
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OL30610	CONNECTION - 90 Deg, -6 ORFS / -10 ORB.	4
3	8OL30608	CONNECTION - 90 Deg, -6 ORFS / -8 ORB.	4



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-17

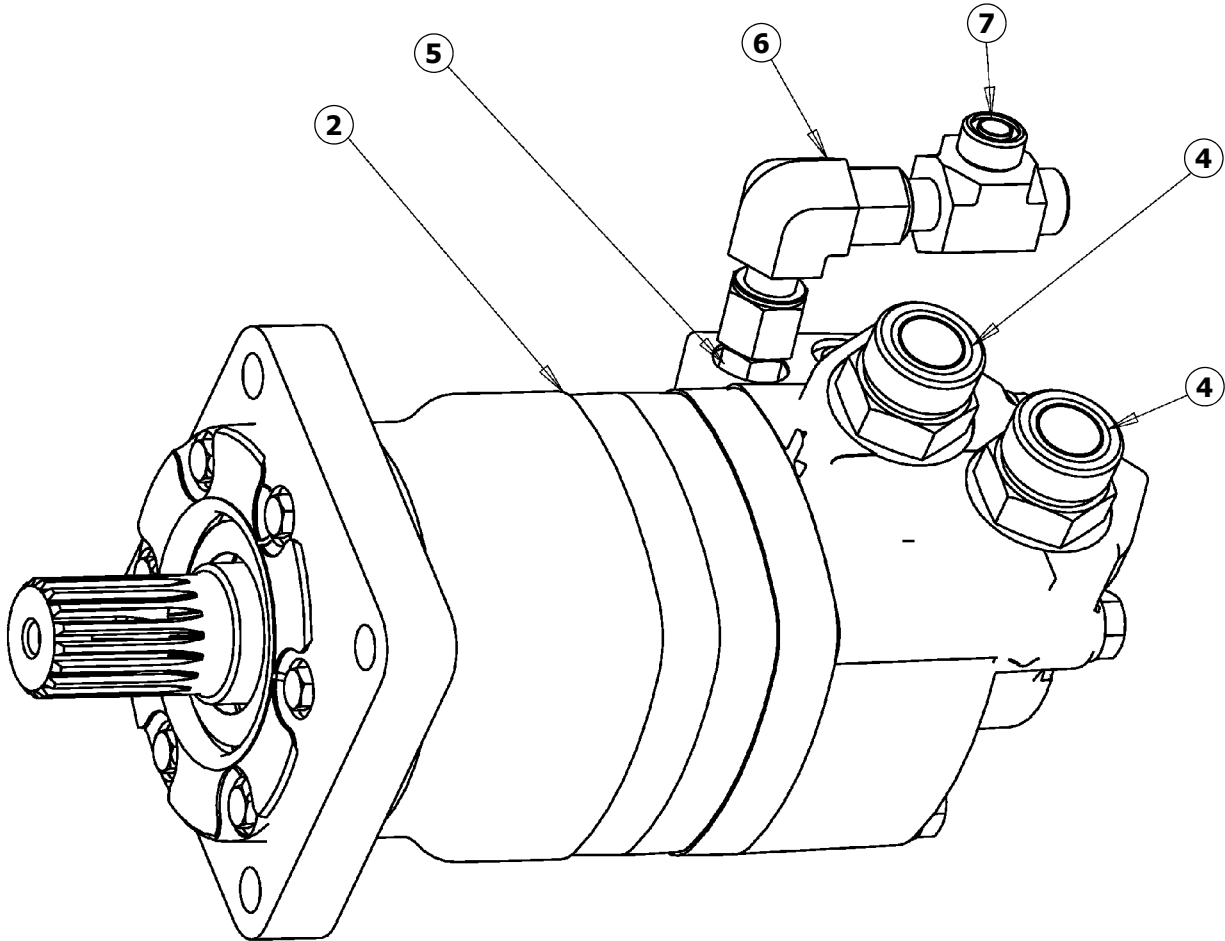
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8HV80159	VALVE - Stakedown	1
3	8OL30808	CONNECTION - 90 Deg, -8 ORFS / -8 ORB.	1
4	8OA30810	CONNECTION - Straight, -8 ORFS / -10 ORB	1
5	8OA30408	CONNECTION - Straight, -4 ORFS / -8 ORB	8
6	496-21041	WASHER - 0.406 x 0.812 x 0.089 in HDN ZND	3
7	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	3



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-19

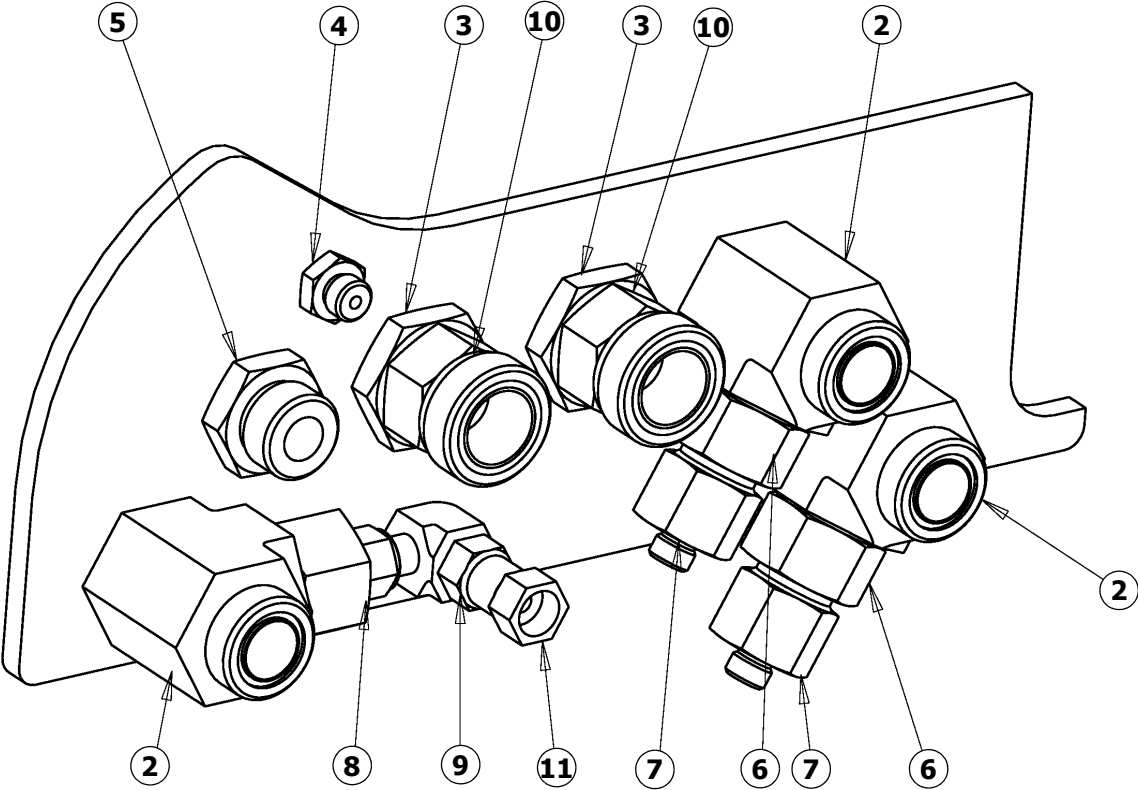
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OR31010	CONNECTION - Run Tee, -10 ORFS / -10 ORB	4
3	8OL31010	CONNECTION - 90 Deg, -10 ORFS / -10 ORB.	4
4	8OR30404	CONNECTION - Run Tee, -4 ORFS / -4 ORB	2
5	8OL30606	CONNECTION - 90 Deg, -6 ORFS / -6 ORB.	4
6	8OR80606	CONNECTION - Run Tee, -6 ORFS / -6 ORFS	2
7	8OL30404	CONNECTION - 90 Deg, -4 ORFS / -4 ORB.	2
8	AU119409	TUBE, FORMED, 5/8" - Carriage, Motor to Motor.	2
9	AU119410	TUBE, FORMED, 5/8" - Carriage, Motor to Motor.	2
10	AU119452	TUBE, FORMED, 3/8" - Carriage, Case Drain, Motor to Motor.	2



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-21

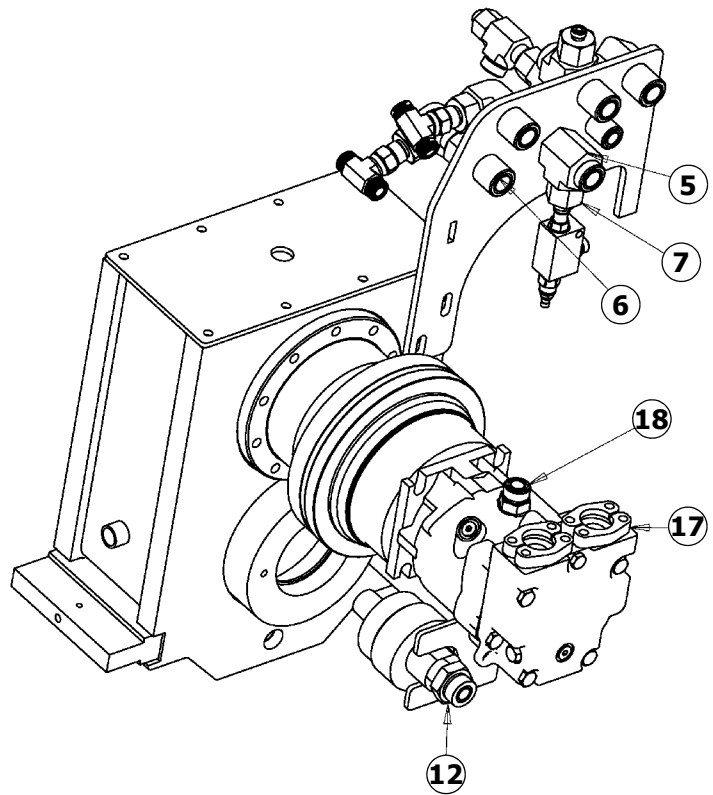
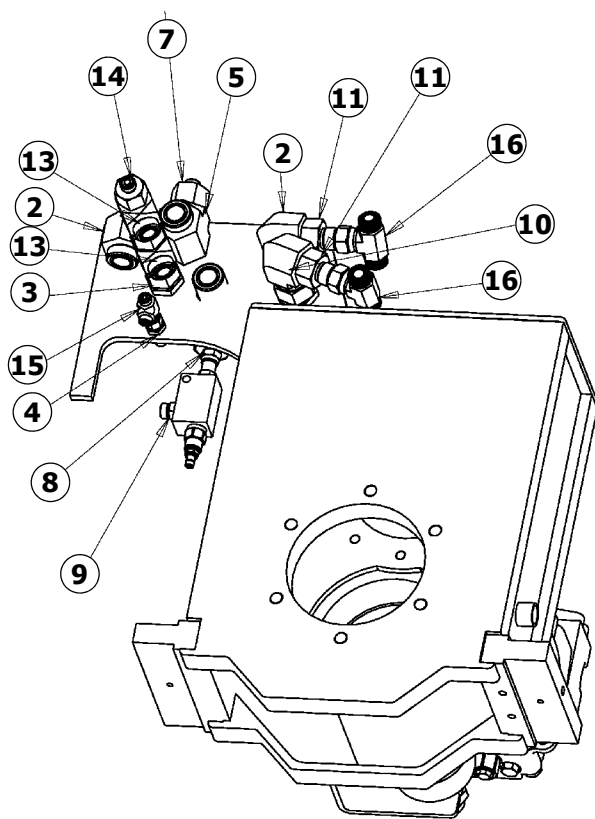
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU117459	MOTOR - Hydraulic 312 CC/R	1
3	AU116270	ASSEMBLY - Mud Pump.	1
4	8OA31616	CONNECTION - Straight, -16 ORFS / -16 ORB	1
5	8OA30806	CONNECTION - Straight, -8 ORFS / -6 ORB	14
6	8OL80808	CONNECTION - 90 Deg, -8 ORFS / -8 ORFS	1
7	8OR80808	CONNECTION - Run Tee, -8 ORFS / -8 ORFS	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-23

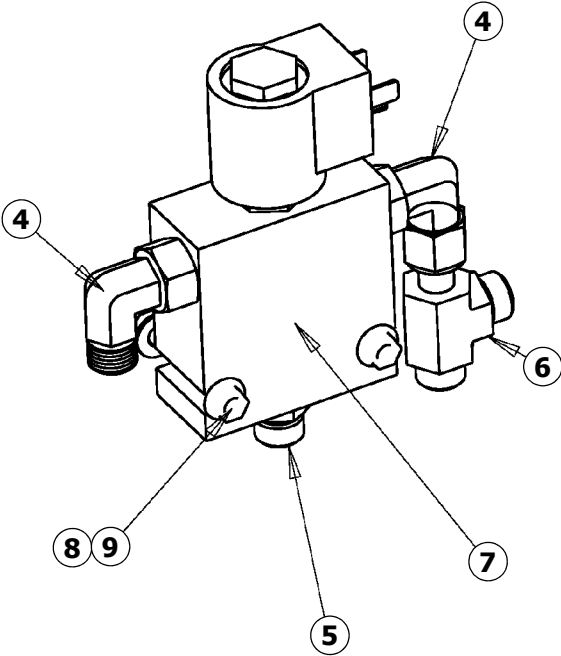
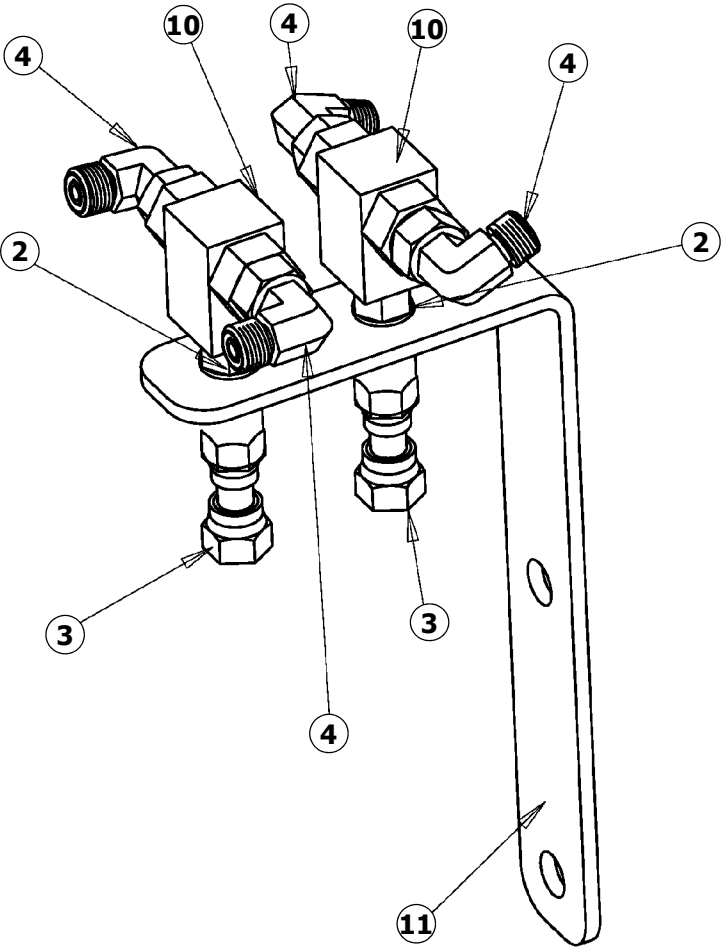
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OR91616	CONNECTION - Bulkhead, Run Tee, -16 ORFS / -16 ORFS	3
3	8OA91616	CONNECTION - Bulkhead, Straight ORFS	2
4	8OA90404	CONNECTION - Bulkhead, -4 ORFS / -4 ORB	1
5	8OA91212	CONNECTION - Bulkhead, Straight ORFS	1
6	8OA81216	CONNECTION - Reducer, -16 ORFS / -12 ORFS	2
7	8OA80412	CONNECTION - Reducer, -12 ORFS / -4 ORFS	2
8	8OA80616	CONNECTION - Reducer, -16 ORFS / -6 ORFS	1
9	8OL80606	CONNECTION - 90 Deg, -6 ORFS / -6 ORFS	1
10	8OA82016	CONNECTION - Reducer, -20 ORFS / -16 ORFS	2
11	8SA60606	CONNECTION - Female Straight, -6 SAE FEM / -6 ORFS FEM	1



**DD4045 Directional Drill
HYDRAULIC FITTINGS KIT**

8-25

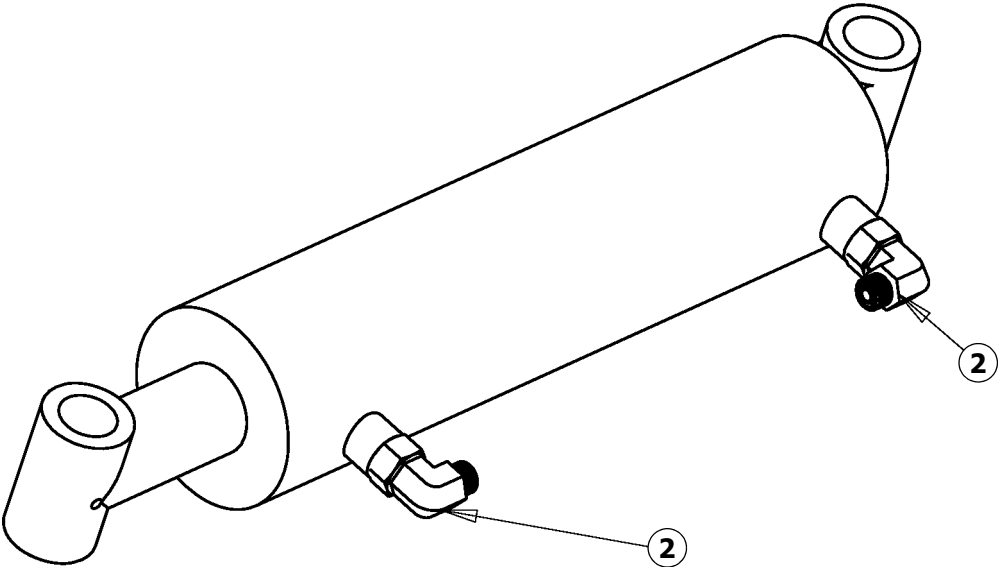
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OL91616	CONNECTION - Bulkhead, 90 Deg, -16 ORFS / -16 ORFS	2
3	8OA91212	CONNECTION - Bulkhead, Straight ORFS	1
4	8OA90404	CONNECTION - Bulkhead, -4 ORFS / -4 ORB	1
5	8OR91616	CONNECTION - Bulkhead, Run Tee, -16 ORFS / -16 ORFS	2
6	8OA91616	CONNECTION - Bulkhead, Straight ORFS	1
7	8OA80616	CONNECTION - Reducer, -16 ORFS / -6 ORFS	2
8	8OA00606	CONNECTION - Straight, -6 ORFS / -6 ORB	1
9	8OA30606	CONNECTION - Straight, -6 ORFS / -6 ORB	1
10	8OL81616	CONNECTION - 90 Deg, -16 ORFS / -16 ORFS	1
11	8OA81016	CONNECTION - Reducer, -16 ORFS / -10 ORFS	2
12	8OA11616	CONNECTION - Straight, -12 ORFS / -16 ORB	1
13	8OR81212	CONNECTION - Run Tee, -12 ORFS / -12 ORFS	2
14	8OA80612	CONNECTION - Reducer, -12 ORFS / -6 ORFS	1
15	8OR80404	CONNECTION - Run Tee, -4 ORFS / -4 ORFS	1
16	8OB81010	CONNECTION - Branch Tee, -10 ORFS / -10 ORFS	2
17	8TS06216	KIT, SPLIT FLANGE -16 SAE, w/o Rings and Bolts	2
18	8OA31212	CONNECTION - Straight, -12 ORFS / -12 ORB	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-27

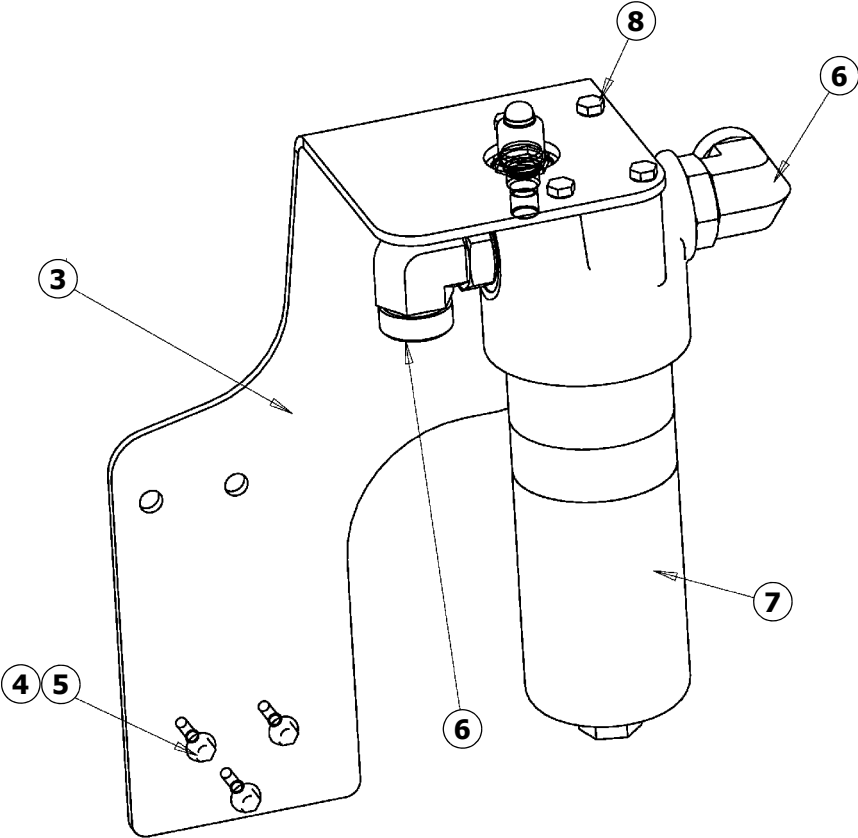
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OAA0406	CONNECTION - Bulkhead, -4 ORFS / -6 ORB	2
3	8SA60404	CONNECTION - Straight, -4 SAE Female / -4 ORFS Female	2
4	8OL30406	CONNECTION - 90 Deg, -4 ORFS / -6 ORB.	6
5	8OA30406	CONNECTION - Straight, -4 ORFS / -46 ORB	1
6	8OR80404	CONNECTION - Run Tee, -4 ORFS / -4 ORFS	3
7	8HV80118	VALVE - DIR CART 3W2P SOL 12VDC	1
8	AU109721	SCREW, METRIC FLANGE w/BODY - M6 x 50	2
9	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	2
10	270083	VALVE - Shuttle.	2
11	AU121543	PLATE - Shuttle Valve Bracket	1



**DD4045 Directional Drill
HYDRAULIC FITTINGS KIT**

8-29

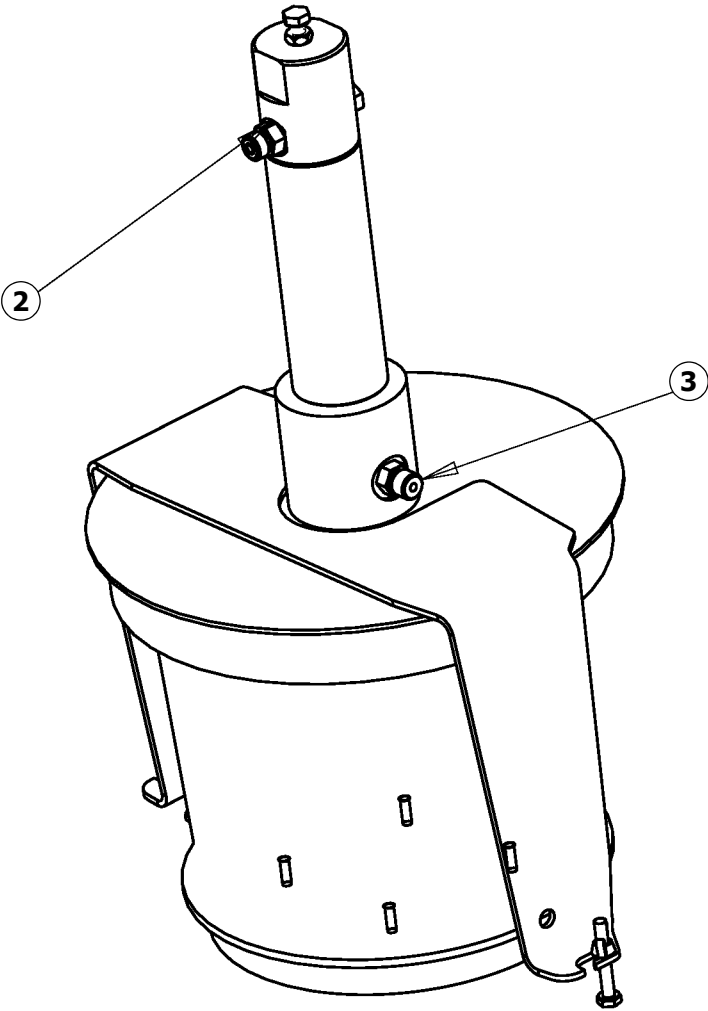
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OL30610	CONNECTION - 90 Deg, -6 ORFS / -10 ORB.	2



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-31

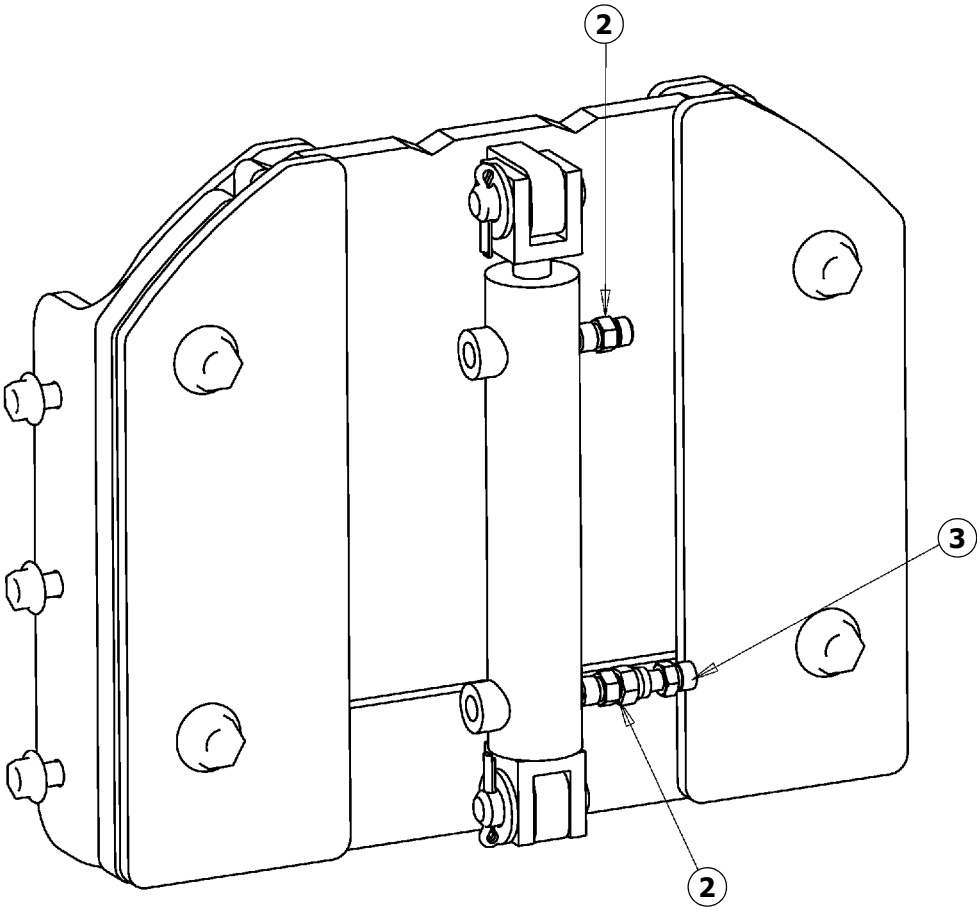
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU116140	ASSEMBLY - Undercarriage	2
3	AU120230	ASSEMBLY - Filter Mount	3
4	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	3
5	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	3
6	8OL32020	CONNECTION - 90 Deg, -20 ORFS / -20 ORB.	2
7	AU118636	FILLER - Hydraulic, Hi-Press.	1
8	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	1



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-33

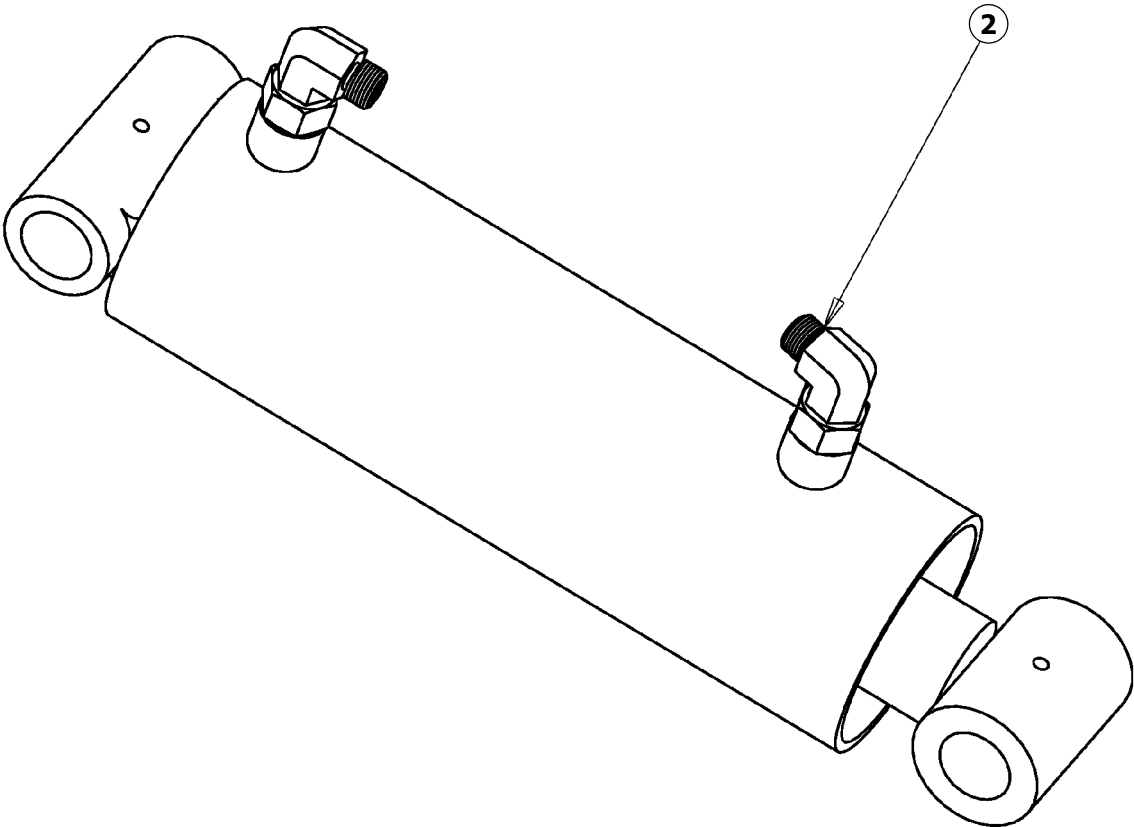
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OA30404	CONNECTION - Straight, -4 ORFS / -4 ORB	1
3	8OA30406	CONNECTION - Straight, -4 ORFS / -6 ORB	1



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-35

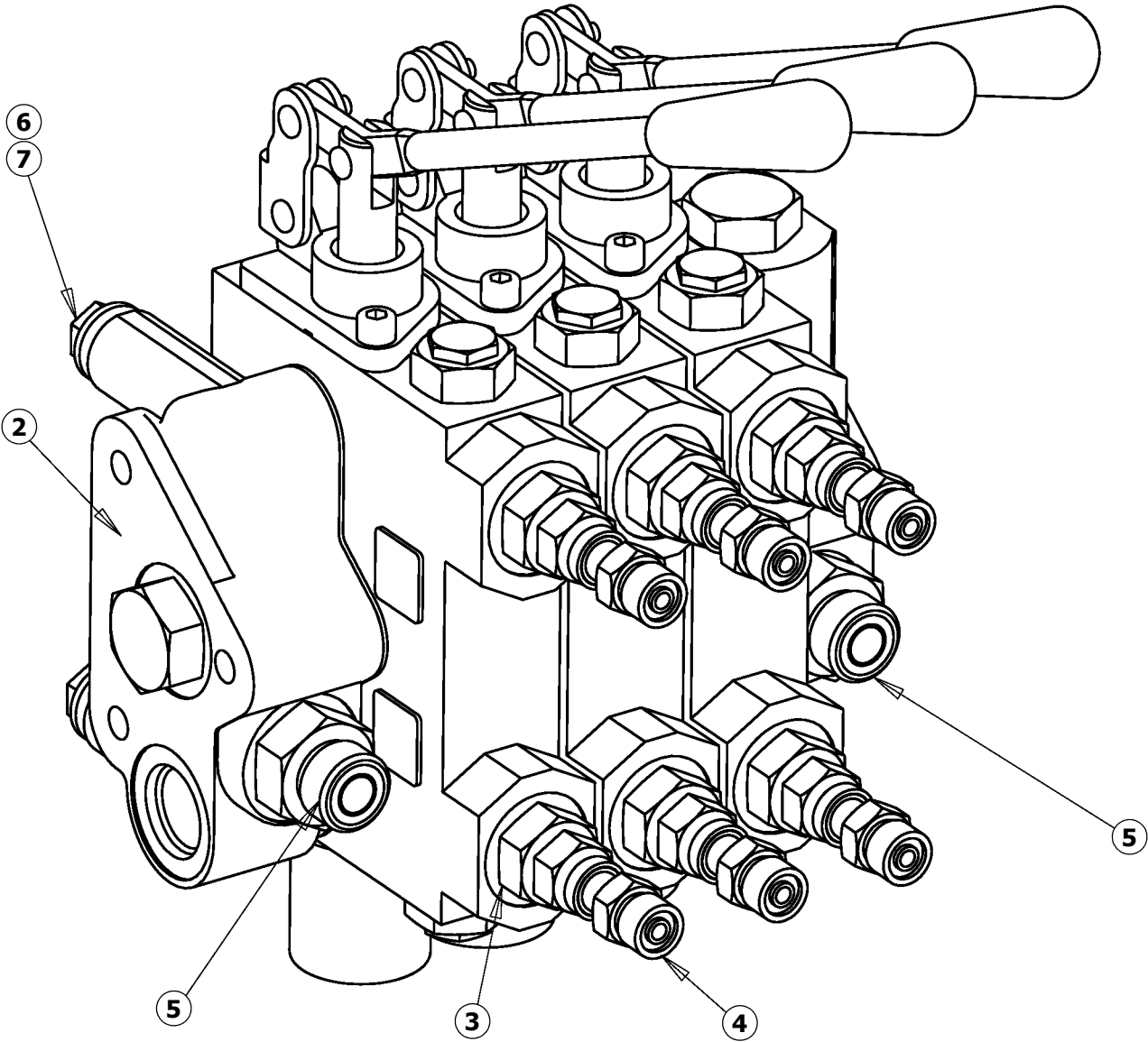
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OA30406	CONNECTION - Straight, -4 ORFS / -6 ORB	2
3	AU111506	CONNECTION - Orifice Fitting, 0.047" -4 -4 ORFS.	1



**DD4045 Directional Drill
HYDRAULIC FITTINGS KIT**

8-37

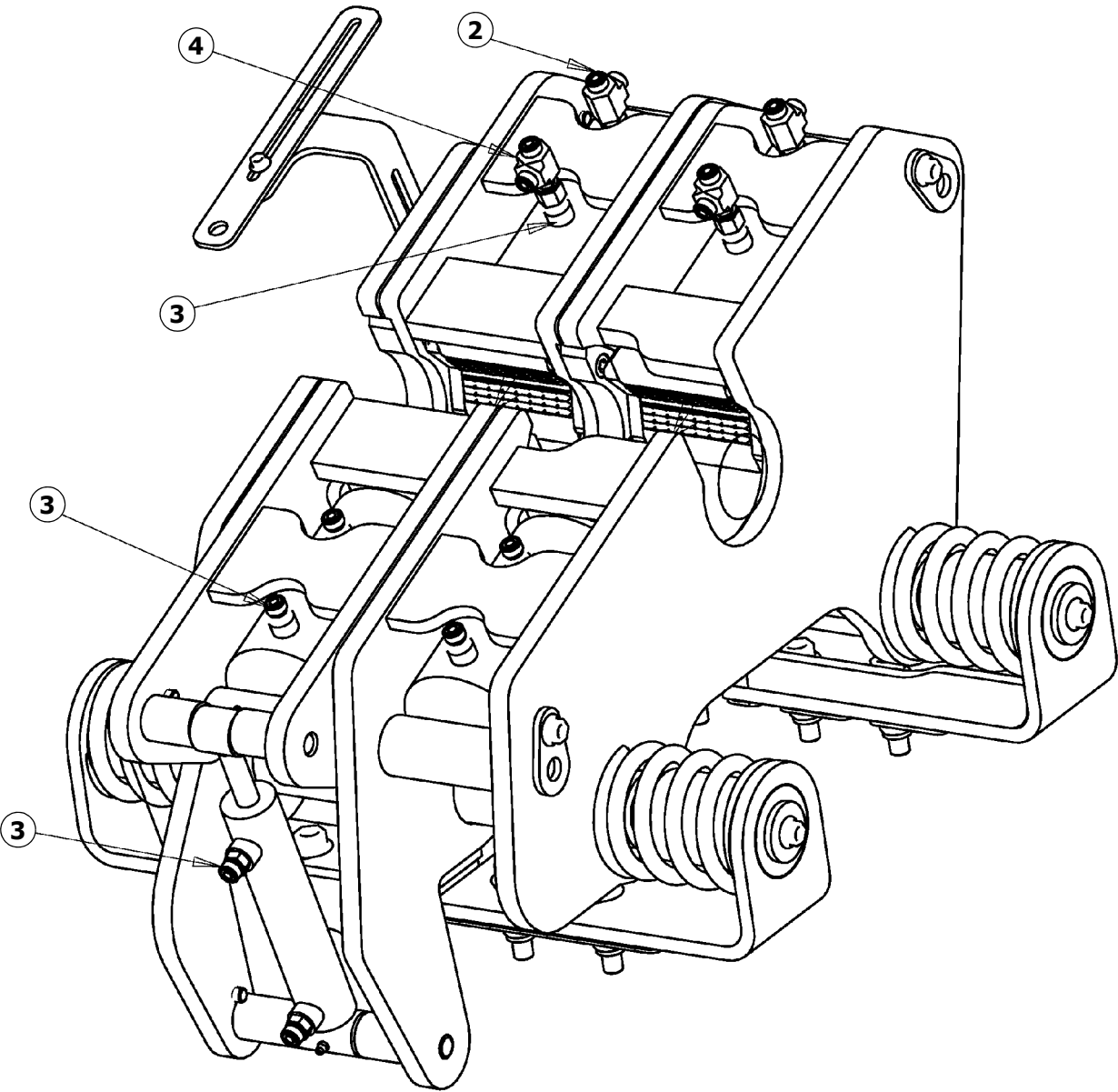
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OL30610	CONNECTION - 90 Deg, -6 ORFS / -10 ORB.	2



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-39

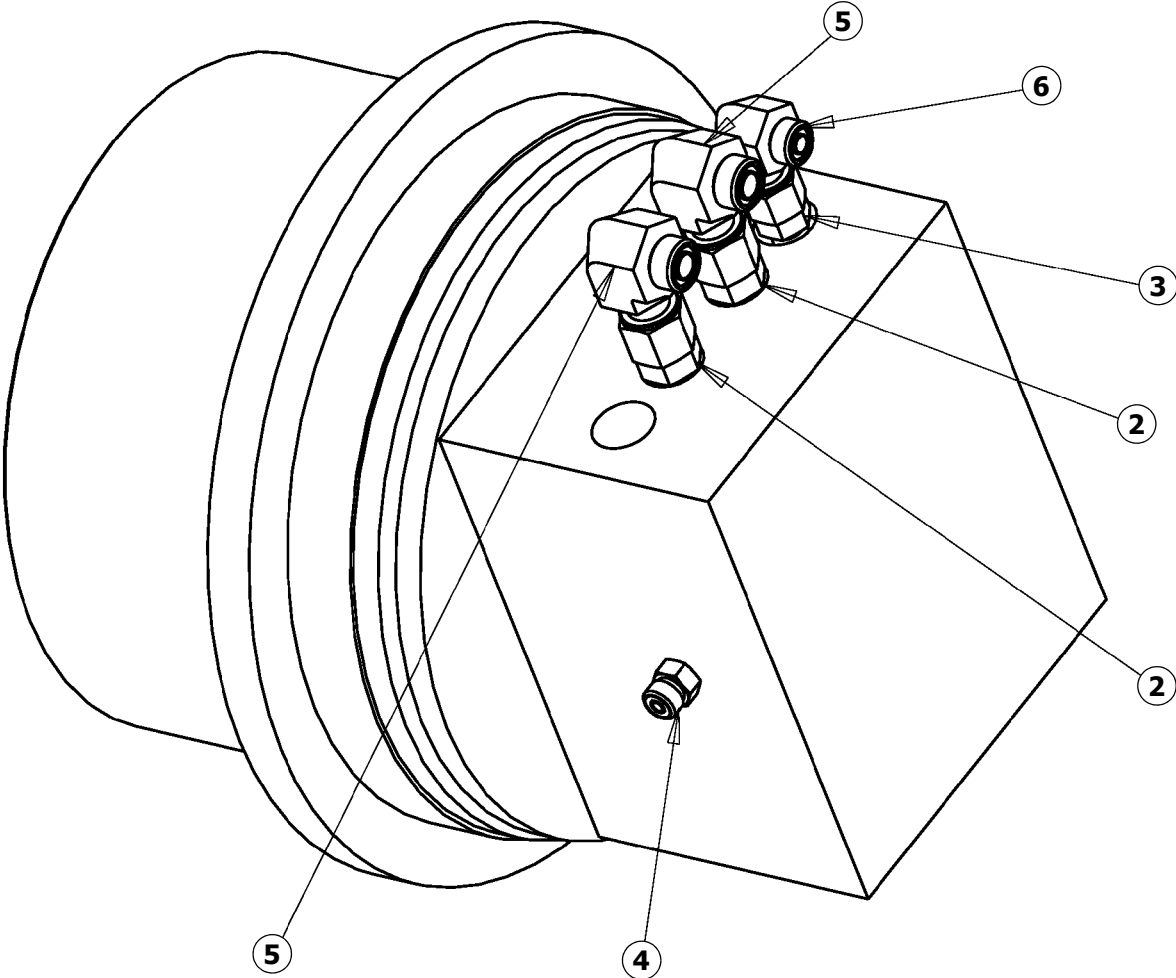
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8HV80153	VALVE - Setup.	1
3	8OA30408	CONNECTION - Straight, -4 ORFS / -8 ORB	6
4	AU111506	CONNECTION - Orifice Fitting - 0.047" , -4 -6 ORFS	6
5	8OA30810	CONNECTION - Straight, -8 ORFS / -10 ORB	2
6	496-21041	WASHER - 0.406 x 0.812 x 0.089 in HDN ZND	3
7	426-620	BOLT - Hex Hd 0.375 x 1.25 GR8 ZND.	3



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-41

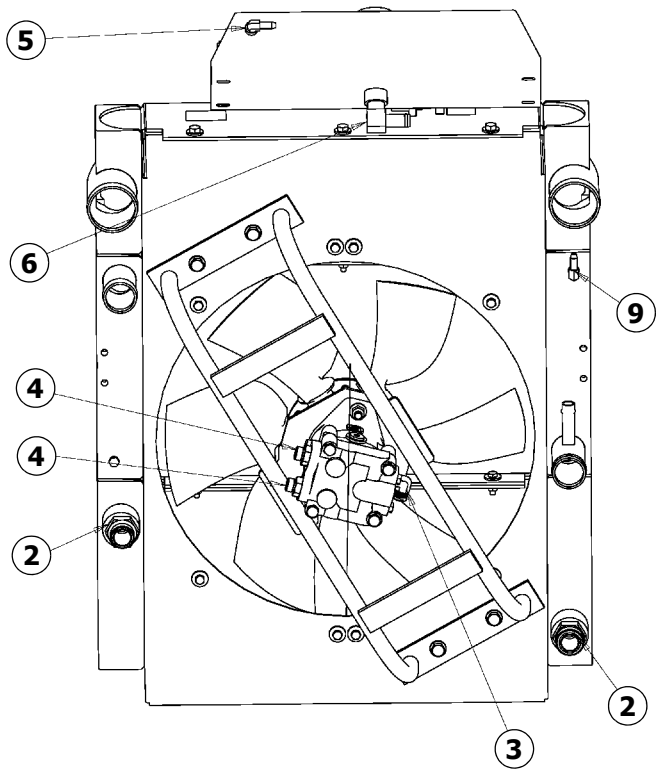
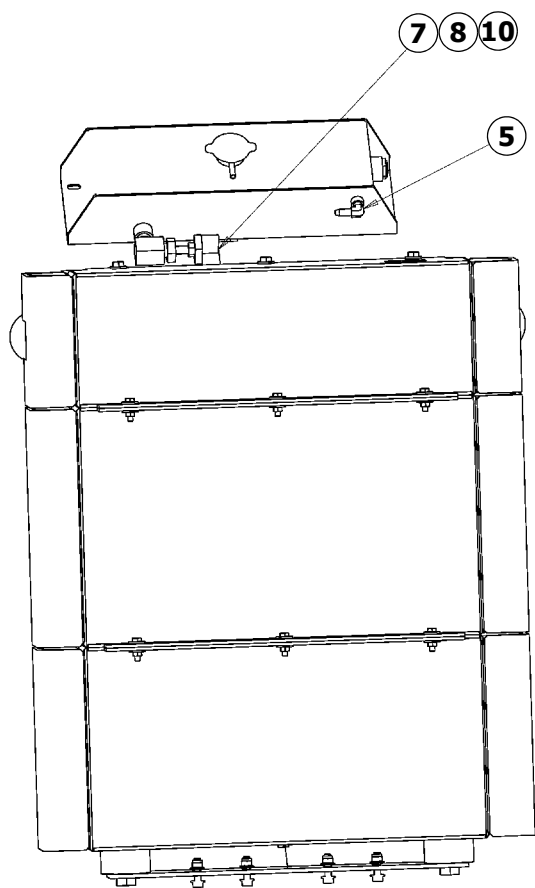
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	50GB3223	CONNECTION - Run Tee, Orifice, 0.125 Dia	2
3	8OA30606	CONNECTION - Straight, -6 ORFS / -6 ORB	8
4	8OR80606	CONNECTION - Run Tee, -6 ORFS / -6 ORFS	2



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-43

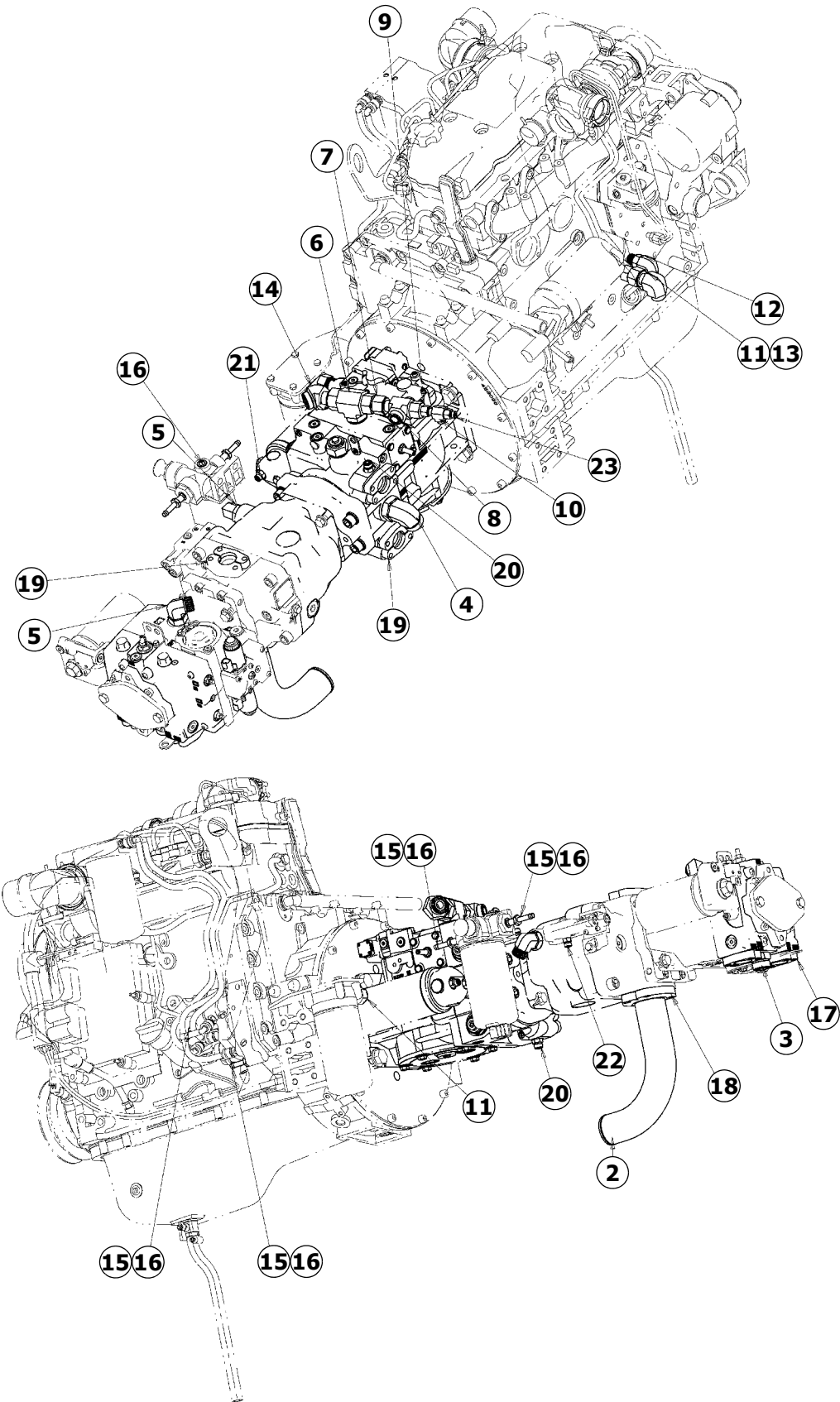
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OA60129	CONNECTION - Straight, -8 ORFS / -8 ORB	2
3	8OA60131	CONNECTION - Straight, -6 ORFS / -6 ORB	1
4	8OA60132	CONNECTION - Straight, -4 ORFS / -6 ORB	1
5	8OL80808	CONNECTION - 90 Deg, -8 ORFS / -8 ORFS	2
6	8OL80606	CONNECTION - 90 Deg, -6 ORFS / -6 ORFS	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-45

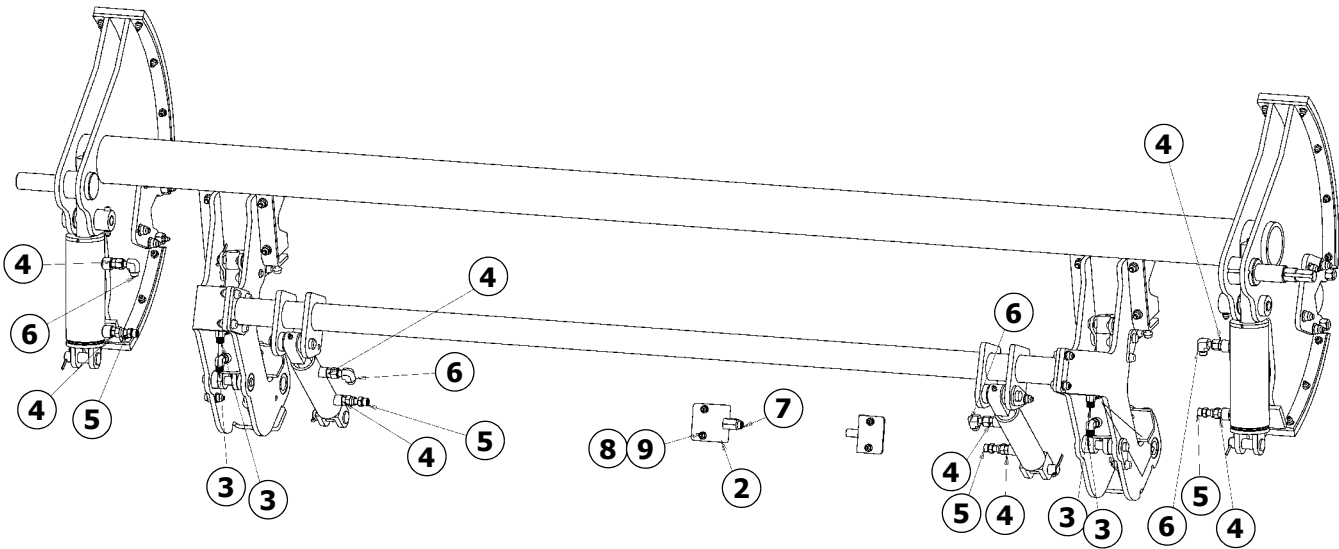
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OA31620	CONNECTION - Straight, -16 ORFS / -20 ORB	1
3	8OL30808	CONNECTION - 90 Deg, -8 ORFS / -8 ORB.	1
4	8OA30810	CONNECTION - Straight, -8 ORFS / -10 ORB	2
5	217-293	ELBOW - 90 Hose Stem, 3/8 ID x 1/4 NPTF	3
6	217-135	STEM - 90 Bead Hose, 3/4 ID x 3/4 NPTF	1
7	221-414	ELBOW - 90, 1/2 NPTF Male/Female, MI Blk	1
8	65-CI-1725	BUSHING - Reducer, Internal/External, NPT	1
9	217-125	STEM - Straight Hose Barb, 3/8ID X1/4N	1
10	AU120127	SENSOR - Coolant Level	1



DD4045 Directional Drill HYDRAULIC FITTINGS KIT

8-47

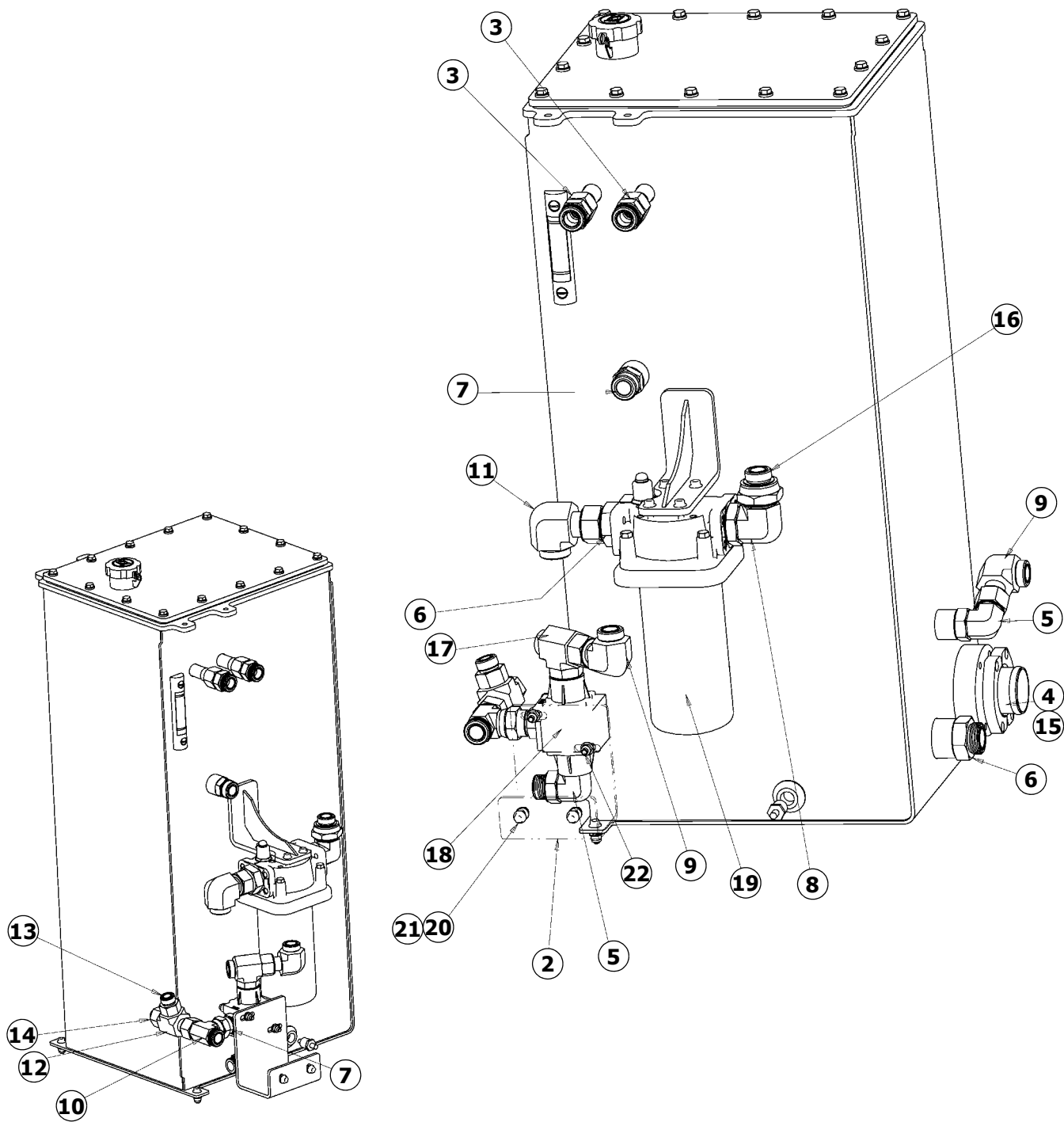
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU121324	CONNECTION - Hose ID 2-1/2" SAE Flange 2-1/2"	1
3	8OA31616	CONNECTION - Straight, -16 ORFS / -16 ORB	1
4	8OL32020	CONNECTION - 90 Deg, -20 ORFS / -20 ORB.	1
5	8OL31312	CONNECTION - 90 Deg, -12 ORFS / -12 ORB.	2
6	8OB31616	CONNECTION - Branch Tee, -16 ORFS / -16 ORB	1
7	8OA81216	CONNECTION - Reducer, -16 ORFS / -12 ORFS	1
8	8OR81212	CONNECTION - Run Tee, -12 ORFS / -12 ORFS	1
9	8OA80612	CONNECTION - Reducer, -12 ORFS / -6 ORFS	1
10	8OR80606	CONNECTION - Run Tee, -6 ORFS / -86 ORFS	1
11	8OA31210	CONNECTION - Straight, -12 ORFS / -10 ORB	3
12	8OL31210	CONNECTION - 90 Deg, -12 ORFS / -10 ORB.	1
13	8OL81212	CONNECTION - 90 Deg, -12 ORFS / -12 ORFS	1
14	8OE81616	CONNECTION - 45 Deg, -16 ORFS / -16 ORFS	1
15	AU121716	FITTING, FUEL HOSE BARB - M12 x 3/4" Hose ID	4
16	AU121717	SEAL - M12 Fuel Fitting.	5
17	8TS06216	KIT, SPLIT FLANGE -16 SAE, w/o Rings and Bolts	2
18	91-FF593-40	KIT, SPLIT FLANGE -16 SAE, w/o Rings and Bolts	1
19	8TS46220	KIT, SPLIT FLANGE -16 SAE, w/o Rings and Bolts	3
20	8OA30606	CONNECTION - Straight, -6 ORFS / -6 ORB	2
21	8OA30406	CONNECTION - Straight, -4 ORFS / -6 ORB	1
22	8OA30404	CONNECTION - Straight, -4 ORFS / -4 ORB	1
23	8OA80406	CONNECTION, REDUCER, -4 ORFS / -7 ORFS	1



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-49

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU124863	PLATE - Mount	2
3	8OL30404	CONNECTION - 90 Deg, -4 ORFS / -4 ORB.	4
4	8OA30406	CONNECTION - Straight, -4 ORFS / -6 ORB	8
5	AU111506	ORIFICE FITTING - 0.047", -4 -4 ORFS	4
6	8OL80404	CONNECTION - 90 Deg, -4 ORFS / -4 ORFS	4
7	8OR90404	CONNECTION - Bulkhead, Run Tee, -4 ORFS / -4 ORFS	2
8	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	4
9	AU100525	NUT, METRIC FLANGE PREVAILING - M6 Zinc	4

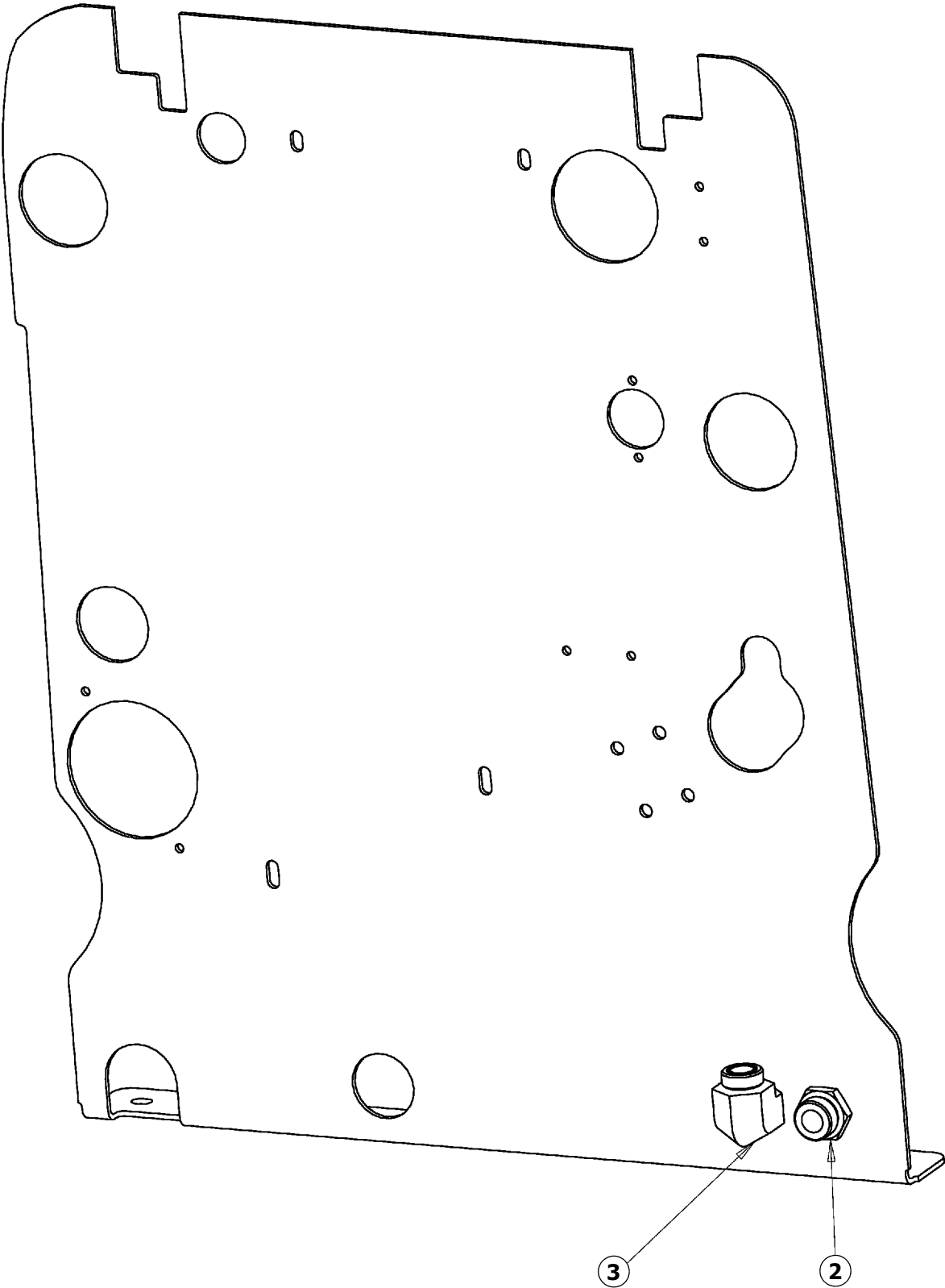


DD4045 Directional Drill

HYDRAULIC FITTINGS KIT

8-51

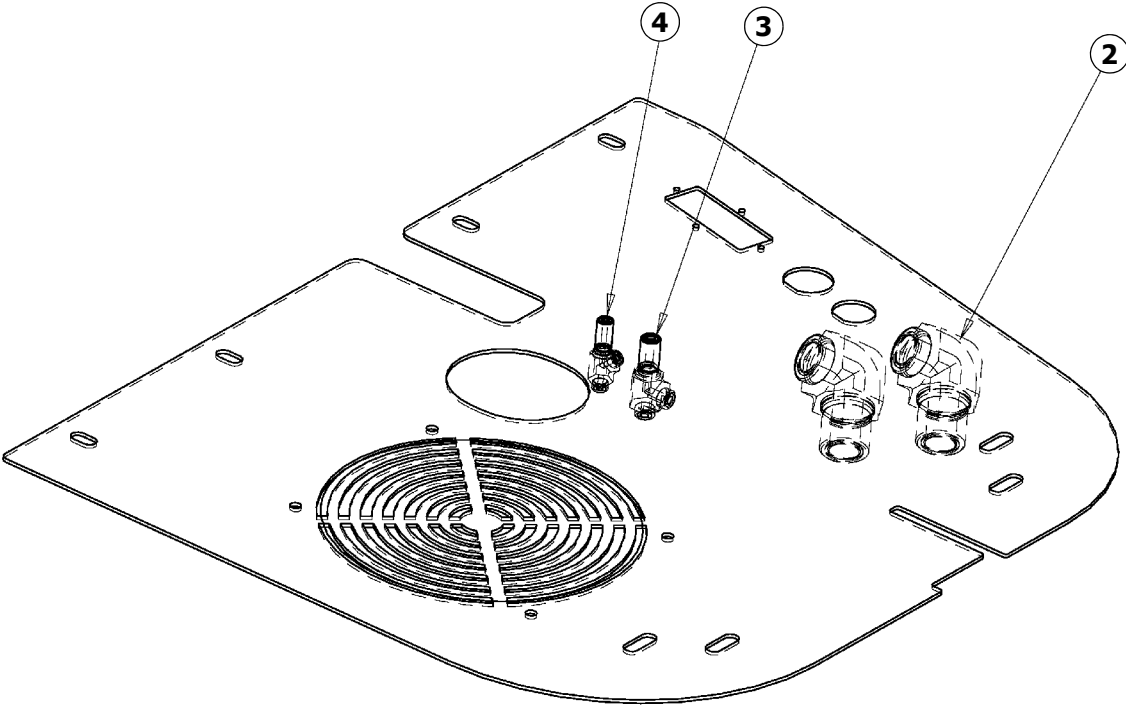
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	AU124864	PLATE - Mount, Thermal Bypass	1
3	8OAB1616	CONNECTION -16 ORFS / 1" Tube	2
4	AU117686	CONNECTION - Hose ID 2-1/2" -SAE Flange 2-1/2"	1
5	8OL31616	CONNECTION - 90 Deg, -16 ORFS / -16 ORB.	2
6	8OA32024	CONNECTION - Straight, -20 ORFS / -24 ORB	2
7	8OA31616	CONNECTION - Straight, -16 ORFS / -16 ORB	2
8	8OL32424	CONNECTION - 90 Deg, -24 ORFS / -24 ORB.	1
9	8OL81616	CONNECTION - 90 Deg, -16 ORFS / -16 ORFS	2
10	8OB81616	CONNECTION - Branch Tee, -16 ORFS / -16 ORFS	1
11	8OL82020	CONNECTION - 90 Deg, -20 ORFS / -20 ORFS	1
12	8OR81616	CONNECTION - Run Tee, -16 ORFS / -16 ORFS	1
13	8OA81216	CONNECTION - Reducer, -16 ORFS / -12 ORFS	1
14	8OA80816	CONNECTION - Reducer, -16 ORFS / -8 ORFS	1
15	91-FF593-40	KIT, SPLIT FLANGE -16 SAE, w/o Rings and Bolts	1
16	8OA81624	CONNECTION - Reducer, -24 ORFS / -16 ORFS	1
17	8OB31616	CONNECTION - Branch Tee, -16 ORFS / -16 ORB	1
18	8HV01001	VALVE - Thermal Bypass	1
19	AU118533	FILLER - Return, 100 GPM/300PSI.	1
20	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	2
21	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	4
22	AU100327	SCREW, METRIC FLANGE w/BODY - M8 x 90	2



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-53

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OA91616	CONNECTION - Bulkhead, Straight ORFS	2
3	8OL91616	CONNECTION - Bulkhead, 90 Deg, -16 ORFS / -16 ORFS	1



DD4045 Directional Drill
HYDRAULIC FITTINGS KIT

8-55

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU116581	KIT - Hydraulic Fittings	1
2	8OL92020	CONNECTION - Bulkhead, 90 Deg, -20 ORFS / -20 ORFS	2
3	8OR90606	CONNECTION - Bulkhead, Run Tee, -6 ORFS / -6 ORFS	1
4	8OR90404	CONNECTION - Bulkhead, Run Tee, -4 ORFS / -4 ORFS	1

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DD4045 Directional Drill HOSES AND FITTINGS

8-57

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU119060	KIT - Hose	1
1	AU121089	HOSE, -16 ORFS / -16 ORFS, H1 Suction to Tank	1
2	AU119745	HOSE, -12 ORFS / -12 ORFS, Open Loop Case Drain to Rear Bulkhead	1
4	AU119747	HOSE, -8 ORFS / -8 ORFS, 5 Section Port B to Left Track P1	1
5	AU119748	HOSE, -8 ORFS / -8 ORFS, 5 Section Port A to Left Track P2	1
6	AU119749	HOSE, -8 ORFS / -8 ORFS, 5 Section Port B to Right Track P2	1
7	AU119750	HOSE, -8 ORFS / -8 ORFS, 5 Section Port A to Right Track P1	1
8	AU119767	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port B to Right Stabilizer Cylinder End	1
9	AU119768	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port A to Right Stabilizer Rod End	1
10	AU119769	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port B to Left Stabilizer Cylinder End	1
11	AU119770	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port A to Left Stabilizer Rod End	1
12	AU119771	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port B to Thrust Frame Rod/Cyl End	1
13	AU119772	HOSE, -4 ORFS / -6 ORFS, Setup Valve Port A to Thrust Frame Rod/Cyl End	1
14	32GB3250-49B	HOSE, -6 ORFS / -6 ORFS, Left Track Case Drain to Front Bulkhead Tee	1
15	AU119775	HOSE, -4 ORFS / -4 ORFS, Left Track 2 Speed to Front Bulkhead Tee	1
16	AU119776	HOSE, -12 ORFS / -12 ORFS, H1 Case Drain to Rotary Case Drain Tee	1
17	AU117617	HOSE, -16 ORFS / -16 ORFS, Mud Pump to Pressure Washer	1
18	AU119777	HOSE, -4 ORFS / -4 ORFS, Right Track 2 Speed to Front Bulkhead Tee	1
19	AU119778	HOSE, -6 ORFS / -6 ORFS, Right Track Case Drain to Front Bulkhead Tee	1
20	AU119779	HOSE, -16 ORFS / -16 ORFS, Rotary Case Drain Rear Bulkhead to Thermal Bypass Tee	1
20A	AU119779	HOSE, -16 ORFS / -16 ORFS, Carriage Return Rear Bulkhead to Lower Tank Return Port	1
20B	AU119779	HOSE, -16 ORFS / -16 ORFS, Thermal Bypass Valve to Upper Rear Tank Return Port	1
21	AU119780	HOSE, -12 ORFS / -12 ORFS, Antifreeze Tank to Mud Pump	1
22	AU119781	HOSE, -16 Code 62 / -16 ORFS, H1 Port B to Mud Pump Drive Motor Port B	1
23	AU119782	HOSE, -16 Code 62 / -16 ORFS, H1 Port A to Mud Pump Drive Motor Port A	1
24	AU119783	HOSE, -6 ORFS / -6 ORFS, Rotary Case Drain Tee to Case Drain Front Bulkhead	1
25	AU121962	HOSE, -4 ORFS / -4 ORFS, Elevator Flow Divider to B4 on 9 Section Valve	1
26	AU119785	HOSE, Main Water to Mud Pump	1
28	AU119788	HOSE, -4 ORFS / -4 ORFS, Sprayer to TJC Applicator	1
29	AU119790	HOSE, -16 ORFS / -16 ORFS, Filter to Tank	1
30	AU119791	HOSE, -12 ORFS / -12 ORFS, Engine Outlet to Remote Filter Inlet	1
31	AU119791	HOSE, -12 ORFS / -12 ORFS, Engine Inlet to Remote Filter Outlet	1
32	AU119795	HOSE, Tank 2-1/2" Port to Open Loop S Port	1
33	20GB3200-101	HOSE, -4 ORFS / -4 ORFS, 2 Speed Front Bulkhead to 2 Speed Tee	1
34	AU119797	HOSE, -4 ORFS / -4 ORFS, Rotary Charge Pump Filter Outlet Port to 2 Speed Port 3	1
35	AU119798	HOSE, -16 ORFS / -16 ORFS, Cooler Port on Thermal By-Pass Valve to Cooler Inlet	1
36	AU119799	HOSE, -8 ORFS / -8 ORFS, Tank Port on Setup Valve to T Port on 5 Section Valve	1
37	AU119801	HOSE, -6 ORFS / -4 ORFS, Tank Port on 5 Section Valve to T Port on 5 Section Valve	1
38	AU120423	HOSE, -20 ORFS / -20 ORFS, Tank Port on 5 Section Valve to Filter Tee	1
39	AU120424	HOSE, -4 ORFS / -4 ORFS, LS Port on 5 Section Valve to X Port on Load Sense Pump	1
40	AU120425	HOSE, -8 ORFS / -8 ORFS, Mud Pump Motor Tee to Inlet Port on Thermal By-Pass Valve	1
41	AU120426	HOSE, -8 ORFS / -8 ORFS, Fan Motor Port B to A Port on 5 Section Valve Fan Section	1
42	AU120427	HOSE, -8 ORFS / -10 ORFS, Fan Motor Port A to B Port on 5 Section Valve Fan Section	1
43	AU120428	HOSE, -8 ORFS / -8 ORFS, Fan Motor Case Drain to Tee at Mud Pump Motor Case Drain	1
44	32GB3250-61	HOSE, -6 ORFS / -4 ORFS, Rotary Pump M1 Port to Shuttle Valve	1
45	AU120430	HOSE, -6 ORFS / -4 ORFS, Rotary Pump M2 Port to Shuttle Valve	1
46	AU119796	HOSE, -20 ORFS / -20 ORFS, Outlet on Oil Cooler to Tee on Filter	1
47	AU120429	HOSE, -4 ORFS / -4 ORFS, 2 Speed Port 1 to Rotary Pump Case Drain Tee	1
48	AU120735	HOSE, -16 ORFS / -16 ORFS, Rotary Pump Case Drain Tee to Rear Bulkhead	1
50	AU120730	HOSE, -10 ORFS / -10 ORFS, Updrill Frnt Bulkhd Port A to Rt Frnt Carriage Motor Port A	1
51	AU121090	HOSE, -10 ORFS / -10 ORFS, Updrill Frnt Bulkhd Port B to Rt Frnt Carriage Motor Port B	1
52	AU120731	HOSE, -10 ORFS / -10 ORFS, Updrill Frnt Bulkhd Port B to Lft Rr Carriage Motor Port A	1

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DD4045 Directional Drill HOSES AND FITTINGS

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REF.	PART NO.	DESCRIPTION	REQ'D.
	AU119060	KIT - Hose	1
53	AU121091	HOSE, -10 ORFS / -10 ORFS, Uppr Drill Frm Bulkhd Port A to Lft Rr Carriage Motor Port B	1
54	AU119777	HOSE, -6 ORFS / -6 ORFS, Cross Port Relief Valve Port B to Port A Uppr Drill Frm Bulkhd	1
55	AU120737	HOSE, -20 ORFS / -20 ORFS, Tank to Rotary S Port	1
56	AU119794	HOSE, -4 ORFS / -4 ORFS, Lft Frt Carriage Mtr 2 Speed to Rt Frt Carriage Mtr 2 Speed	1
57	AU119794	HOSE, -4 ORFS / -4 ORFS, Lft Rr Carriage Mtr 2 Speed to Rt Rr Carriage Mtr 2 Speed	1
58	AU119774	HOSE, -4 ORFS / -4 ORFS, Rt Frt Carriage Motor 2 Speed to Upper Drill Frame Bulkhead	1
59	AU119774	HOSE, -4 ORFS / -4 ORFS, Lft Rr Carriage Motor 2 Speed to Upper Drill Frame Bulkhead	1
60	AU120738	HOSE, -4 ORFS / -4 ORFS, 2 Speed Valve to Lower Drill Frame Bulkhead	1
61	AU120739	HOSE, -16 ORFS / -16 ORFS, 5 Sect Valve Carriage Sect Port A to Lwr Drill Frame Bulkhd	1
62	AU120740	HOSE, -16 ORFS / -16 ORFS, 5 Sect Valve Carriage Sect Port B to Lwr Drill Frame Bulkhd	1
63	AU120741	HOSE, -16 ORFS / -16 ORFS, Lwr Drill Frame Bulkhd Port A to Updr Drill Frame Bulkhd	1
64	AU120742	HOSE, -16 ORFS / -16 ORFS, Lwr Drill Frame Bulkhd Port B to Updr Drill Frame Bulkhd	1
65	AU120743	HOSE, -6 ORFS / -6 ORFS, Rt Frt Carriage Motor Case Drain to Upper Drill Frame Bulkhd	1
66	AU120744	HOSE, -6 ORFS / -6 ORFS, Rt Rr Carriage Motor Case Drain to Upper Drill Frame Bulkhd	1
67	AU120745	HOSE, -12 ORFS / -12 ORFS, Lwr Drill Frm Bkhd Case Drain to Thrml By-Pass Valve Tee	1
68	AU120746	HOSE, -16 ORFS / -16 ORFS, Mud Pump to Lower Drill Frame Bulkhead	1
69	AU120733	HOSE, -20 ORFS / -20 ORFS, Rotary Port A Frt Bulkhd to Lwr Drill Frame Bulkhd Port B	1
70	AU120733	HOSE, -20 ORFS / -20 ORFS, Rotary Port B Frt Bulkhd to Lwr Drill Frame Bulkhd Port A	1
71	AU120747	HOSE, -20 Code 62 / -20 ORFS, Rotary Port A to Front Bulkhead	1
72	AU120748	HOSE, -20 Code 62 / -20 ORFS, Rotary Port B to Front Bulkhead	1
73	AU120734	HOSE, -4 ORFS / -4 ORFS, Shuttle Valve to Lower Drill Frame Bulkhead Port A	1
74	AU120734	HOSE, -4 ORFS / -4 ORFS, Shuttle Valve to Lower Drill Frame Bulkhead Port B	1
75	AU120749	HOSE, -12 ORFS / -12 ORFS, Case Drain Rotary Motor to Upper Drill Frame Bulkhead	1
76	32GB3250-37A	HOSE, -4 ORFS / -6 ORFS, A Port on Stake Dn Valve to Port B on Stake Dn Mtr (Lft Side)	1
77	32GB3250-37B	HOSE, -4 ORFS / -6 ORFS, B Port on Stake Dn Valve to Port A on Stake Dn Mtr (Lft Side)	1
78	32GB3250-38A	HOSE, -4 ORFS / -6 ORFS, A Port on Stake Dn Valve to Port B on Stake Dn Mtr (Rt Side)	1
79	32GB3250-38B	HOSE, -4 ORFS / -6 ORFS, B Port on Stake Dn Valve to Port A on Stake Dn Mtr (Rt Side)	1
80	32GB3250-39A	HOSE, -4 ORFS / -6 ORFS, A Port on Stake Dn Valve to Piston End of Stake Dn Cyl (Lft)	1
81	32GB3250-39B	HOSE, -4 ORFS / -6 ORFS, B Port on Stake Dn Valve to Rod End of Stake Dn Cyl (Rt)	1
82	32GB3250-40A	HOSE, -4 ORFS / -6 ORFS, A Port on Stake Dn Valve to Piston End of Stake Dn Cyl (Rt)	1
83	32GB3250-40B	HOSE, -4 ORFS / -6 ORFS, B Port on Stake Dn Valve to Rod End of Stake Dn Cyl (Rt)	1
84	AU120750	HOSE, -8 ORFS / -8 ORFS, 9 Section Valve Case Drain to 5 Section Valve Case Drain	1
85	AU121097	HOSE, -8 ORFS / -8 ORFS, Aux at 5 Section Valve to 9 Section Valve	1
86	AU121093	HOSE, -8 ORFS / -8 ORFS, Inlet Drain Port at Setup Valv to Pwr Byd Port at Stk Dn Valve	1
87	AU121098	HOSE, -4 ORFS / -4 ORFS, 2 Speed Updr Drill Frame Bulkhd to Lwr Drill Frame Bulkhd	1
88	AU121963	HOSE, -8 ORFS / -8 ORFS, 9 Section Valve to Stake Down Valve	1
88A	AU121963	HOSE, -8 ORFS / -8 ORFS, 9 Section Valve to Stake Down Valve	1
89	AU121100	HOSE, -4 ORFS / -4 ORFS, Secondary Cam Flw Dvdr Valve Port 3 to B7 on 9 Sect Valve	1
90	AU121101	HOSE, -4 ORFS / -4 ORFS, Secondary Cam Flw Dvdr Valve Port 4 to Rr Rot Cyl Pist End	1
91	AU121102	HOSE, -4 ORFS / -4 ORFS, Frt Cyl Piston End of Primary Cam to A6 Tee on 9 Sect Valve	1
92	AU120757	HOSE, -4 ORFS / -4 ORFS, 9 Sect Valve Port A7 Tee to Second Rot Cam Frt Cyl Pist End	1
93	AU120758	HOSE, -4 ORFS / -4 ORFS, Primary Cam Rear Cyl Pisont End to 9 Sect Valve A6 Tee	1
94	AU120759	HOSE, -4 ORFS / -4 ORFS, 9 Sect Valve Port A7 Tee to Second Rot Cam Rr Cyl Pist End	1
95	AU120760	HOSE, -4 ORFS / -4 ORFS, 9 Sect Valve Port B5 Tee to Front Gripper Cylinder Piston End	1
96	AU120761	HOSE, -4 ORFS / -4 ORFS, 9 Sect Valve Port A5 Tee to Front Gripper Cylinder Rod End	1
97	AU120762	HOSE, -4 ORFS / -4 ORFS, 9 Sect Valve Port B5 Tee to Rear Gripper Cylinder Piston End	1
98	AU120763	HOSE, -4 ORFS / -4 ORFS, Primary Cam Flow Divider Valve Port 3 to 9 Section Valve B6	1
99	AU120764	HOSE, -4 ORFS / -4 ORFS, Primary Cam Flow Divider Valve Port 2 to Frt Rot Cyl Rod End	1
100	AU120732	HOSE, -4 ORFS / -4 ORFS, Primary Cam Flow Divider Valve Port 4 to Rr Rot Cyl Rod End	1
101	AU120732	HOSE, -4 ORFS / -4 ORFS, Second Cam Flow Divider Valve Port 2 to Frt Rot Cyl Rod End	1
102	AU120765	HOSE, -4 ORFS / -4 ORFS, Elevate Flow Divider Valve Port 4 to Frt Elevate Cyl Rod End	1

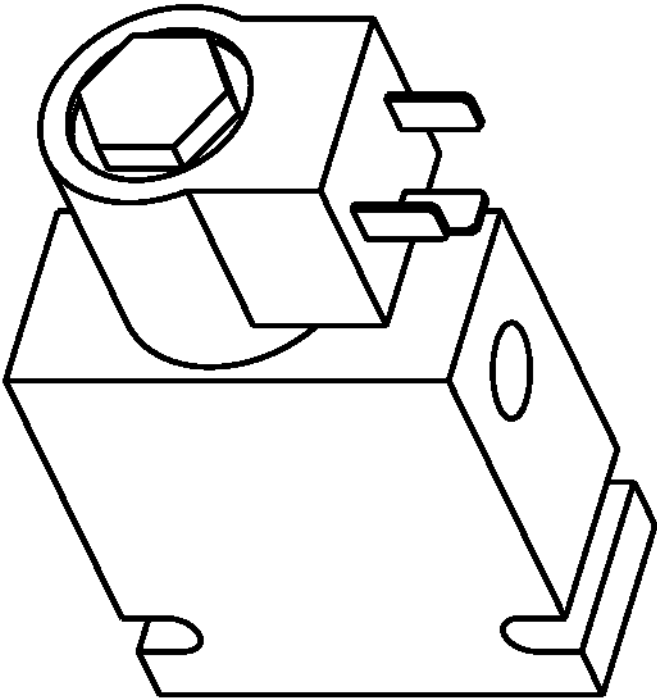
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DD4045 Directional Drill HOSES AND FITTINGS

8-61

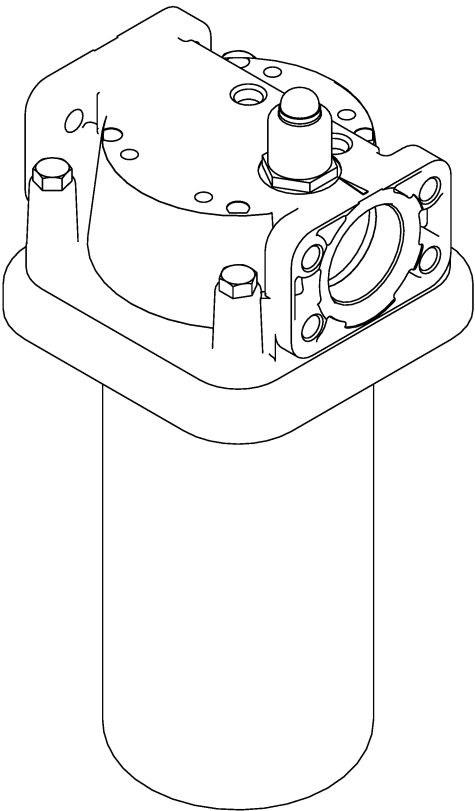
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU119060	KIT - Hose	1
103	AU120766	HOSE, -4 ORFS / -4 ORFS, Elevate Flow Divider Valve Port 2 to Rr Elevate Cyl Piston End	1
104	AU120767	HOSE, -4 ORFS / -4 ORFS, 9 Section Valve Port A5 Tee to Rr Gripper Cylinder Piston End	1
105	AU120768	HOSE, -4 ORFS / -4 ORFS, 9 Section Valve Port A4 Tee to Rr Elevate Cyl Rod End	1
106	AU120769	HOSE, -4 ORFS / -4 ORFS, 9 Section Valve Port A4 Tee to Frt Elevate Cyl Rod End	1
107	32GB3250-48A	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port A1 to Lft Stationary Clamp Cyl Pist End	1
108	32GB3250-48B	HOSE, -6 ORFS / -6 ORFS, Lft Station Clamp Pist End to Rt Station Clamp Cyl Pist End	1
109	32GB3250-49A	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port B1 to Lft Stationary Clamp Cyl Rod End	1
110	32GB3250-49B	HOSE, -6 ORFS / -6 ORFS, Lft Station Clamp Rod End to Rt Station Clamp Cyl Rod End	1
111	32GB3250-50A	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port A2 to Left Rotate Clamp Cyl Piston End	1
112	32GB3250-50B	HOSE, -6 ORFS / -6 ORFS, Lft Rotate Clamp Piston End to Rt Rotate Clamp Cyl Pist End	1
113	32GB3250-51A	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port B2 to Left Rotate Clamp Cyl Rod End	1
114	32GB3250-51B	HOSE, -6 ORFS / -6 ORFS, Lft Rotate Clamp Rod End to Right Rotate Clamp Cyl Rod End	1
115	32GB3250-52	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port A3 to Breakout Cylinder Piston End	1
116	32GB3250-53	HOSE, -6 ORFS / -6 ORFS, 9 Section Valve Port B3 to Breakout Cylinder Rod End	1
117	AU121777	HOSE, -12 ORFS / -12 ORFS, Lwr Drill Frame Bulkhd Case Drain to Upr Drill Frm Bulkhd	1
118	AU121778	HOSE, -16 ORFS / -16 ORFS, Lwr Drill Frame Bulkhd Port A to Upr Drill Frame Bulkhd	1
119	AU121779	HOSE, -16 ORFS / -16 ORFS, Lwr Drill Frame Bulkhd Mud to Upr Drill Frame Bulkhd	1
120	AU121780	HOSE, -16 ORFS / -16 ORFS, Lwr Drill Frame Bulkhd Case Drain to Upr Drill Frm Bulkhd	1
121	AU121870	HOSE, -20 ORFS / -20 ORFS, 5 Section P to High Pressure Filter Out	1
122	AU121899	HOSE, -20 Code 62 / -20 ORFS, Load Sense Pump Press Outlet to High Pressure Filter In	1
123	AU121099	HOSE, -16 ORFS / -16 ORFS, Mud Swivel to Upper Drill Frame Bulkhead	1
124	AU124258	HOSE, -4 ORFS / -4 ORFS, Tool Joint Applicator to 9 Section Valve	1



**DD4045 Directional Drill
VALVE, DIR. CART.**

8-63

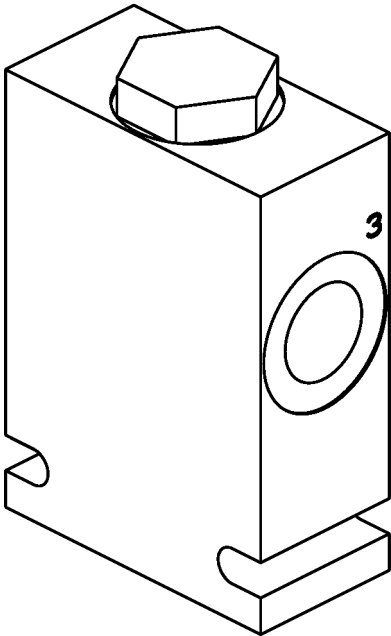
REF.	PART NO.	DESCRIPTION	REQ'D.
1	8HV80118	VALVE - Dir, Cart, 3W2P, SOL, 12 VDC.....	1



DD4045 Directional Drill
FILTER, RETURN

8-65

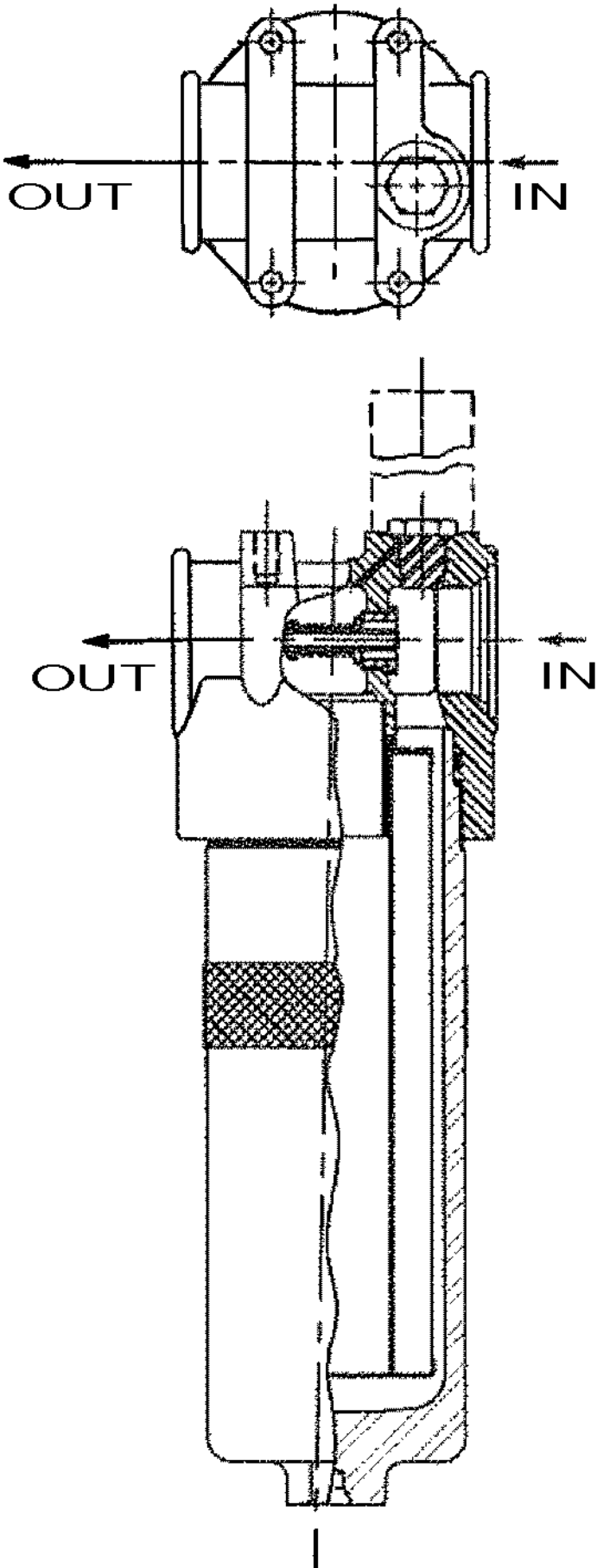
REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU118533	FILTER - Return, 100 GPM / 300 PSI	1
2	AU120660	FILTER - Element	1



DD4045 Directional Drill
FLOW DIVIDER

8-67

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU112323	FLOW DIVIDER -8 ORB / -6 ORB, -6 ORB.	1



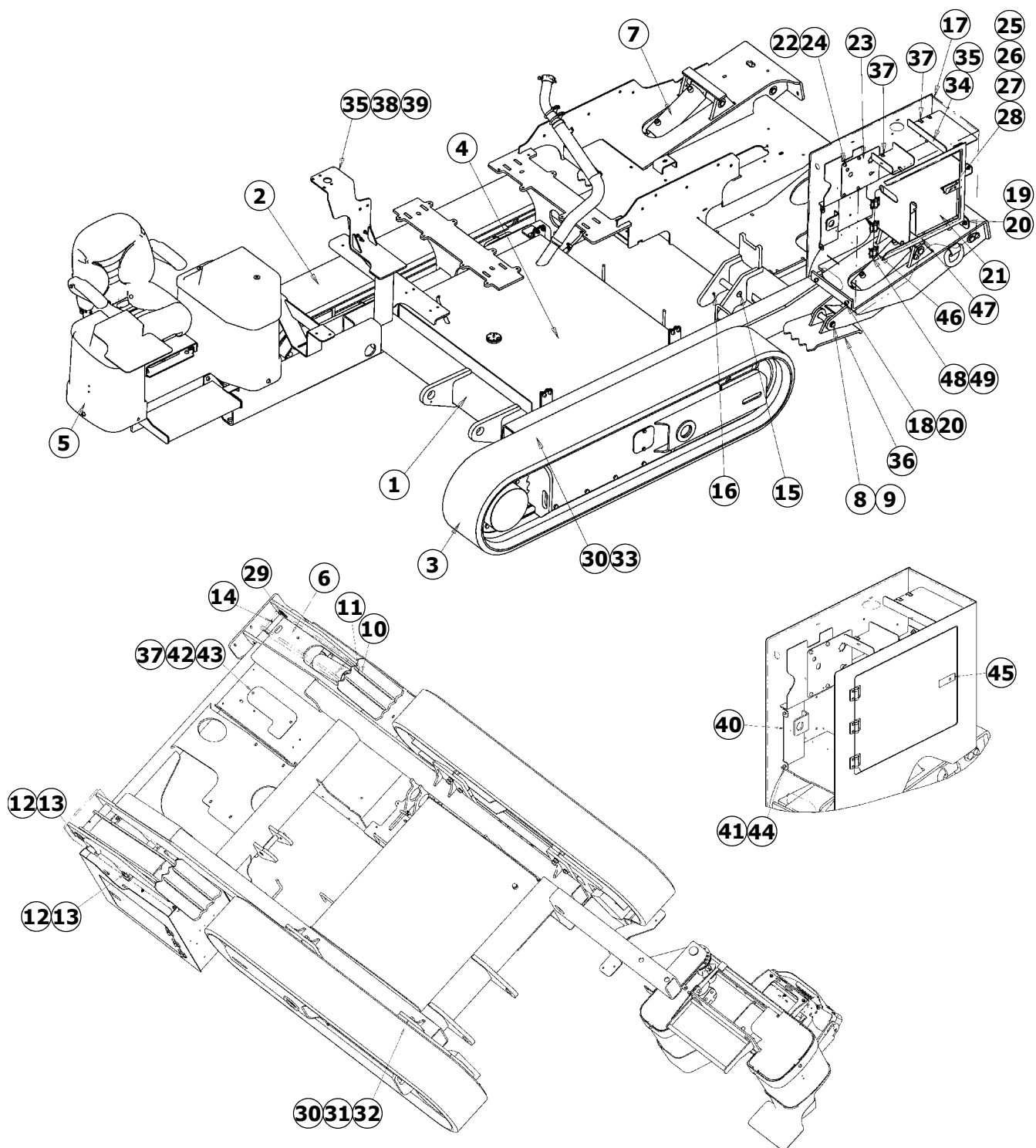
DD4045 Directional Drill
PRESSURE FILTER

8-69

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU118636	FILTER - Pressure, Top Ported	1
2	AU120530	FILTER - Element	1

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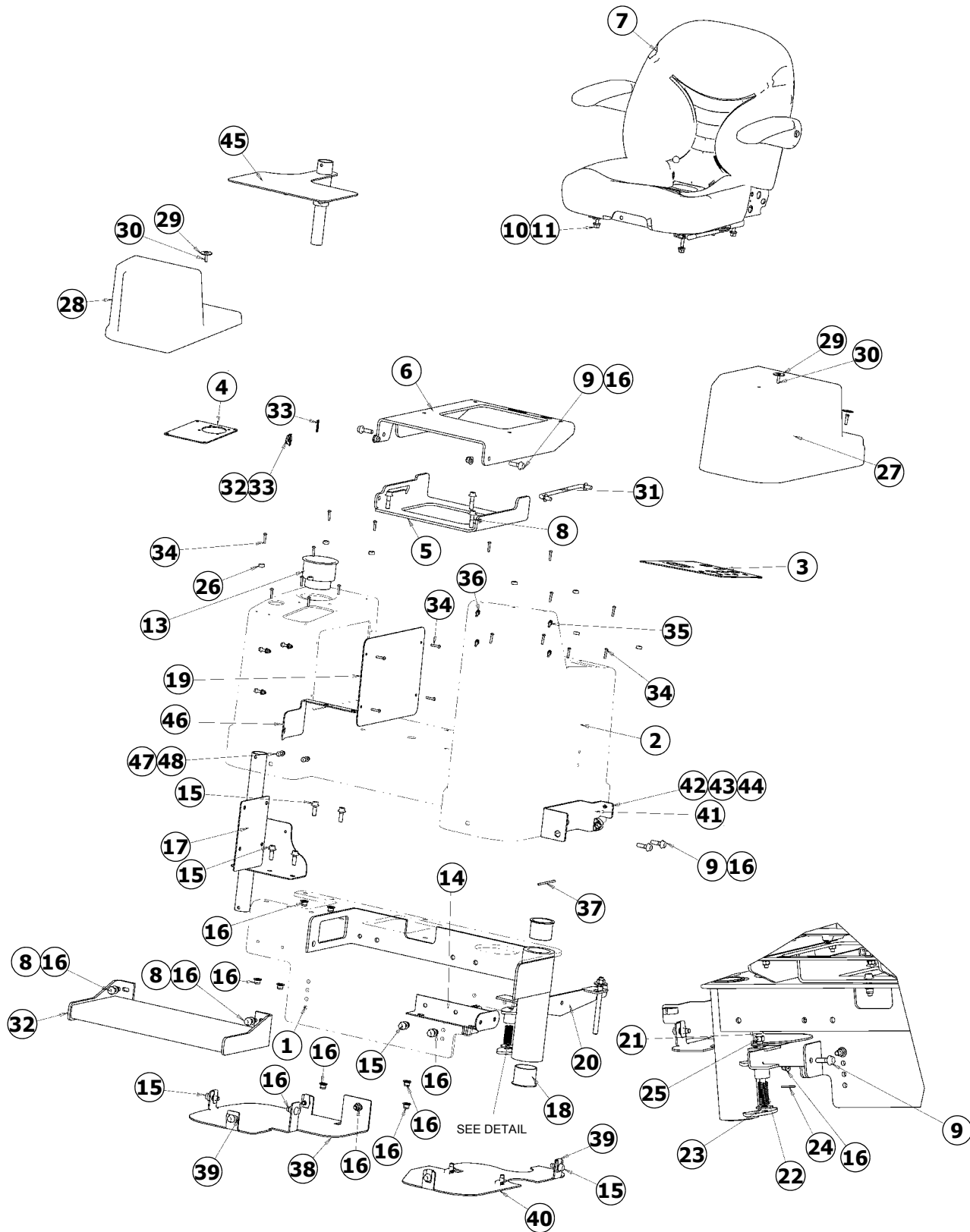


DD4045 Directional Drill

UNDERCARRIAGE ASSEMBLY

9-3

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116140	ASSEMBLY - Undercarriage	1
1	AU116131	WELDMENT - Chassis	1
2	32GB2405	ASSEMBLY - RH Track	1
3	32GB2406	ASSEMBLY - LH Track	1
4	AU117640	ASSEMBLY - Fuel Tank	1
5	AU117958	ASSEMBLY - Operators Console	1
6	AU116295	WELDMENT - Stabilizer Assembly	2
7	AU116285	CYLINDER - Hydraulic	2
8	H434379	PIN - Pivot	2
9	103-16112	RING - Clip	4
10	H434380	PIN - Pivot	2
11	103-16125	RING - Retainer	4
12	AU116290	PIN - Pivot with Flag	4
13	AU100414	SCREW, METRIC FLANGE FULL - M12 x 25	4
14	219-8	FITTING - Lube, 1/4 - 28 Tpr SAE-LT, 0.54 Long	2
15	AU111271	PIN - Dipper Cylinder to Boom	1
16	AU101477	SCREW, METRIC FLANGE w/BODY - M12 x 30	1
17	AU117613	ASSEMBLY - Console	1
18	AU100331	SCREW, METRIC FLANGE w/BODY - M10 x 40	2
19	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	2
20	AU100527	NUT, METRIC FLANGE PREVAILING - M10 Zinc	4
21	AU117625	PLATE - Cover	1
22	AU100862	NUT, U - M8 x 1.25 Long	4
23	AU117632	PLATE - Rear Controls Panel	1
24	AU100872	SCREW, METRIC FLANGE w/BODY - M8 x 20	4
25	D125079	ANGLE - Battery Hold Down	4
26	AU117616	PLATE - Battery Hold Down	2
27	H436311	BOLT - Battery Hold Down	4
28	231-5146	NUT - Serr Flg 3/8 - 16 UNC GR5 ZND	4
29	496-11131	WASHER - 1.312 x 2.500 x 0.150 in Hdn ZND	6
30	495-11081	WASHER - 0.812 x 1.469 x 0.134 in CST ZND	32
31	426-1248	BOLT - Hex Hd 0.750 x 3.00 GR8 ZND	12
32	232-41112	NUT - Prev Trq 3/4 GRC CAD Direct	12
33	426-1224	BOLT - Hex Hd 0.750 x 1.50 GR8 ZND	4
34	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	4
35	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc	7
36	AU120109	WELDMENT - Stabilizer Foot	2
37	AU100861	NUT, U - M6 x 1.0 Long	7
38	AU120230	ASSEMBLY - Filter Mount	1
39	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 25	3
40	AU117627	PLATE - Corner	1
41	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	4
42	AU122040	COVER - 5 Section Valve	1
43	AU100870	SCREW, METRIC FLANGE w/BODY k- M6 x 25	2
44	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc	4
45	50GB2302	LOCK - Key	1
46	AU123695	HINGE - 115 Deg Detent	3
47	AU123696	PLATE - Door	1
48	440-11012	SCREW - PHd Type 1 #10 - 24 x 0.75 CST ZND	12
49	193-1004	NUT - KEPS Ext T Wshr, #10 - 24 UNC ZP	12

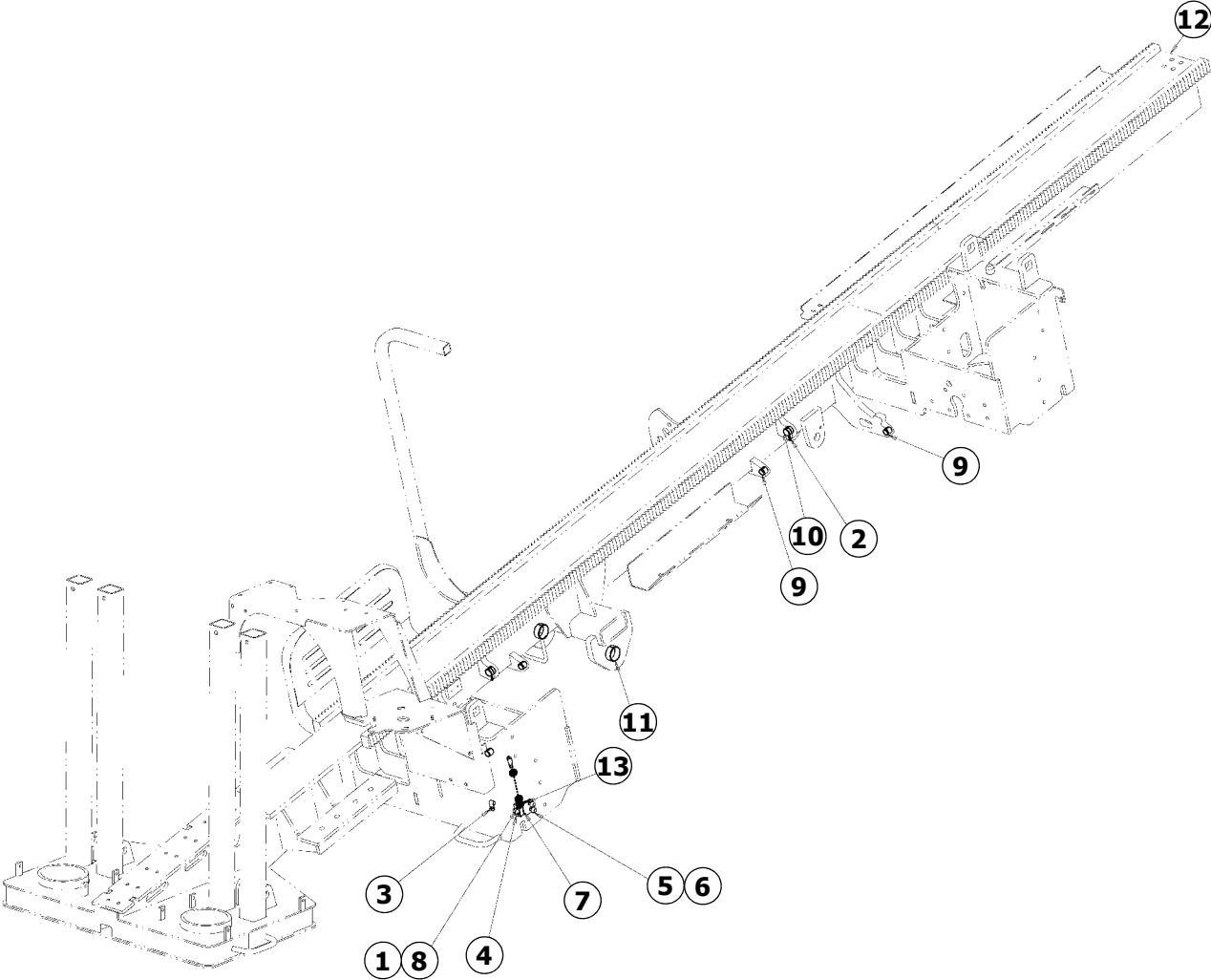


DD4045 Directional Drill

OPERATOR'S STATION ASSEMBLY

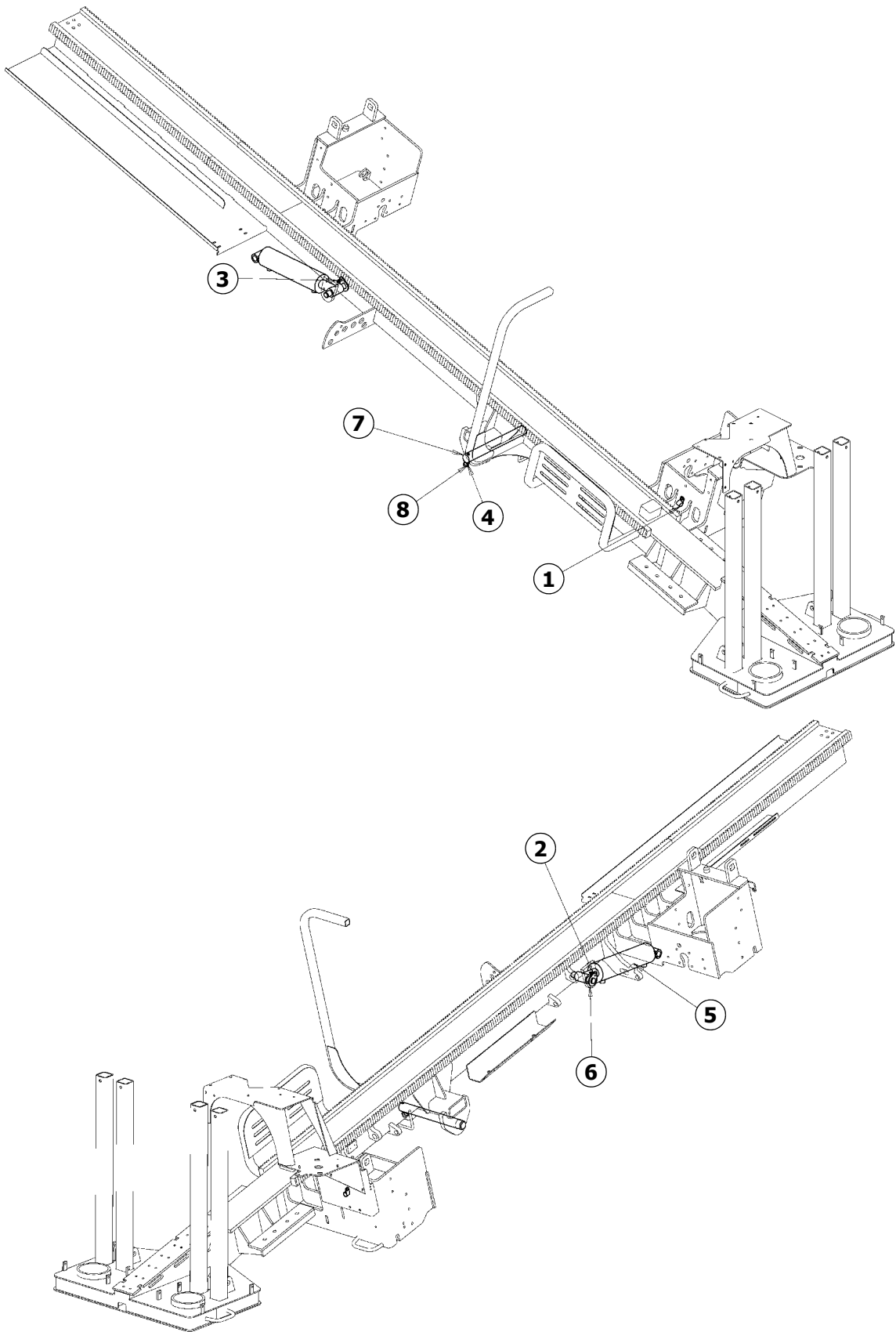
9-5

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117958	ASSEMBLY - Operators Console	1
1	AU110259	WELDMENT - Operators Console	1
2	12GB9210	CONSOLE - Fiberglass	1
3	AU117959	PLATE - Console/Switch	1
4	AU117961	PLATE - Joystick Mount	1
5	AU108632	PLATE - Seat Mount Bottom	1
6	AU117641	PLATE - Seat Mount Top	1
7	8EP47010	SEAT - Operators	1
8	AU100331	SCREW, METRIC FLANGE w/BODY - M10 x 40	5
9	AU100878	SCREW, METRIC FLANGE w/BODY - M10 x 35	5
10	495-81129	WASHER - .406 x 0.75 x .119 in CST ZND	4
11	329-106	NUT - Hex .375 - 16 GR8 PHC	4
12	12GB9202	ASSEMBLY - Foot Rest	1
13	8EO24121	CUP HOLDER - Two Step Black HDPE	1
14	12GB9228	WELDMENT - Operators Console Support	1
15	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	15
16	AU100527	NUT, METRIC FLANGE PREVAILING - M10 Zinc	18
17	AU114805	WELDMENT - Umbrella Mount	1
18	32GB9215	BEARING - Seat Pivot	2
19	AU108634	PLATE - Seat Ins Panel	1
20	AU108997	ARM - Seat Adjustment	1
21	AU108909	ROD - Seat Swing	1
22	AU109011	SPRING - Seat Pivot Lock	1
23	495-81163	WASHER - .531 x 1.50 x .119 in CST ZND	2
24	432-816	PIN - Cotter .125 x 1.00 in ZN	1
25	425-108	NUT - Hex .500 - 13 GR5 ZN	1
26	8EO24122	WASHER - Rubber	8
27	12GB9218	COVER - Console, LH	1
28	12GB9219	COVER - Console, RH	1
29	495-81119	WASHER - .344 x 1.25 x .061 in CST ZND	3
30	8BH21012	SCREW - Button Head (Allen)	3
31	AU109357	ROD - Seat Prop	1
32	496-21053	WASHER - 0.531 x 1.062 x 0.134 in Hdn ZND	1
33	136-159	PIN - Cotter Hair Int 3/16 in ZND	2
34	440-11016	SCREW - PHd Type 1 #10 - 24 x 1.00 CST PHC	20
35	363-11014	SCREW - Hex Hd #10 - 24 x 0.875 CST PHC	4
36	193-1004	NUT - KEPS Ext T Wshr #10 - 24 UNC ZP	4
37	432-1248	PIN - Cotter 0.188 x 3.00 in ZN	1
38	AU114287	PLATE - Splash Guard	1
39	AU100863	NUT, U - M10 x 1.5 Short	7
40	AU115218	PLATE - Splash Guard	1
41	AU115236	PLATE - Cord Retaining	1
42	AU115238	CLIP - Tool	2
43	440-1068	SCREW - PHd Type 1 #6 - 32 x 0.500 CST ZND	2
44	193-1003	NUT - KEPS Ext T Wshr #6 - 32 UNC ZP	2
45	AU121823	MOUNT - Locator	1
46	AU108897	PLATE - Mount	1
47	AU100871	SCREW, METRIC FLANGE w/BODY - M16 x 30	5
48	AU100525	NUT, METRIC FLANGE PREVAILING - M6 Zinc	5



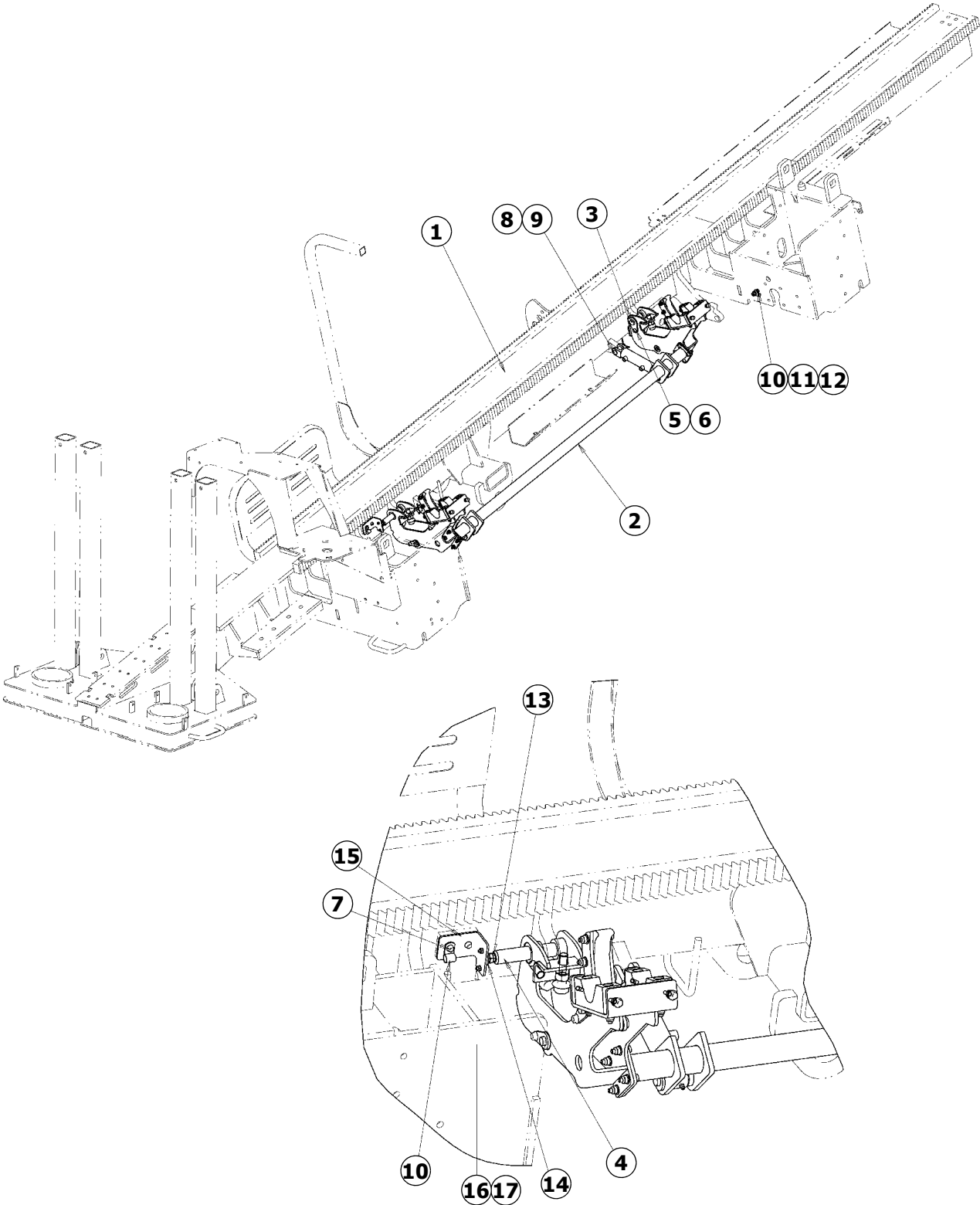
THRUST FRAME Mounting Prep

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	193-1003	NUT - KEPS Ext T Wshr, #6-32 UNC ZP	2
2	219-8	FITTING - Lube, 1/4 - 28 Tpr SAE-LT, 0.54 Long	2
3	515-23127	CLAMP - Insul, 12.7mm 3/8 in Bolt ZND	1
4	86992539	SWITCH - Neutral Start	1
5	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	2
6	AU100878	SCREW, METRIC FLANGE w/BODY - M10 x 35	2
7	AU101637	SPACER - Switch	1
8	AU102475	U-BOLT - Switch Mounting	1
9	AU109676	SPRING BUSHING - 0.75" ID x 1.00" OD x 2.00" Long	4
10	AU118035	SPRING BUSHING - 1.00" ID x 1.25" OD x 1.00" Long	2
11	AU118566	SPRING BUSHING - 2.00" ID x 2.25" OD x 1.00" Long	2
12	AU122448	WELDMENT - Thrust Frame	1
13	AU122875	PLATE - Switch Mount.	1



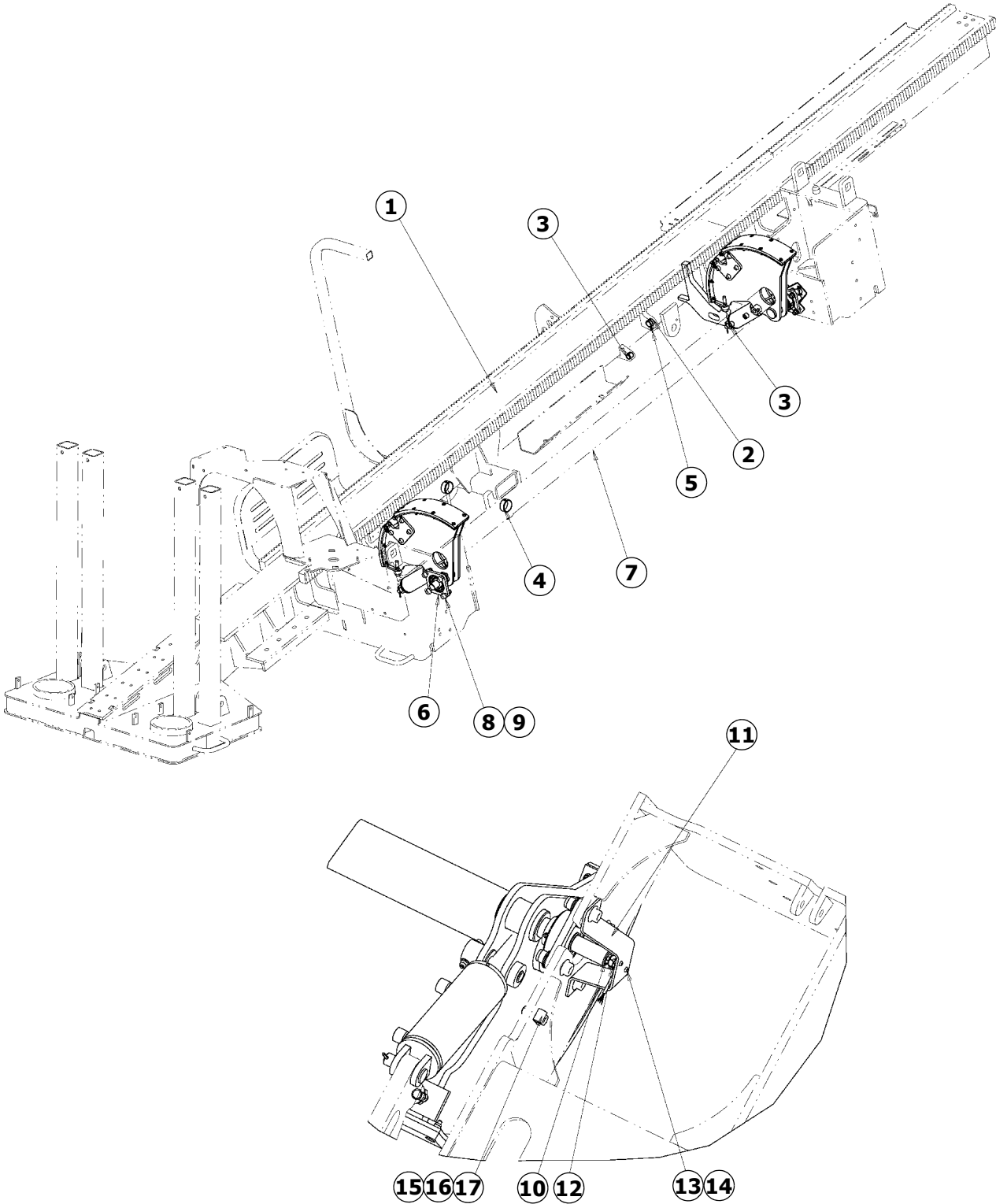
THRUST FRAME Mounting

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	515-25254	CLAMP - Insul 25.4mm M12 Bolt ZND	1
2	AU100319	SCREW, METRIC FLANGE w/BODY - M8 x 40	1
3	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	1
4	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	1
5	AU116296	CYLINDER - 4 x 12, Hydraulic.	1
6	AU117944	PIN - Pivot	1
7	AU118521	PIN - Main Pivot.	1
8	H313981	PIN - Cotter	1



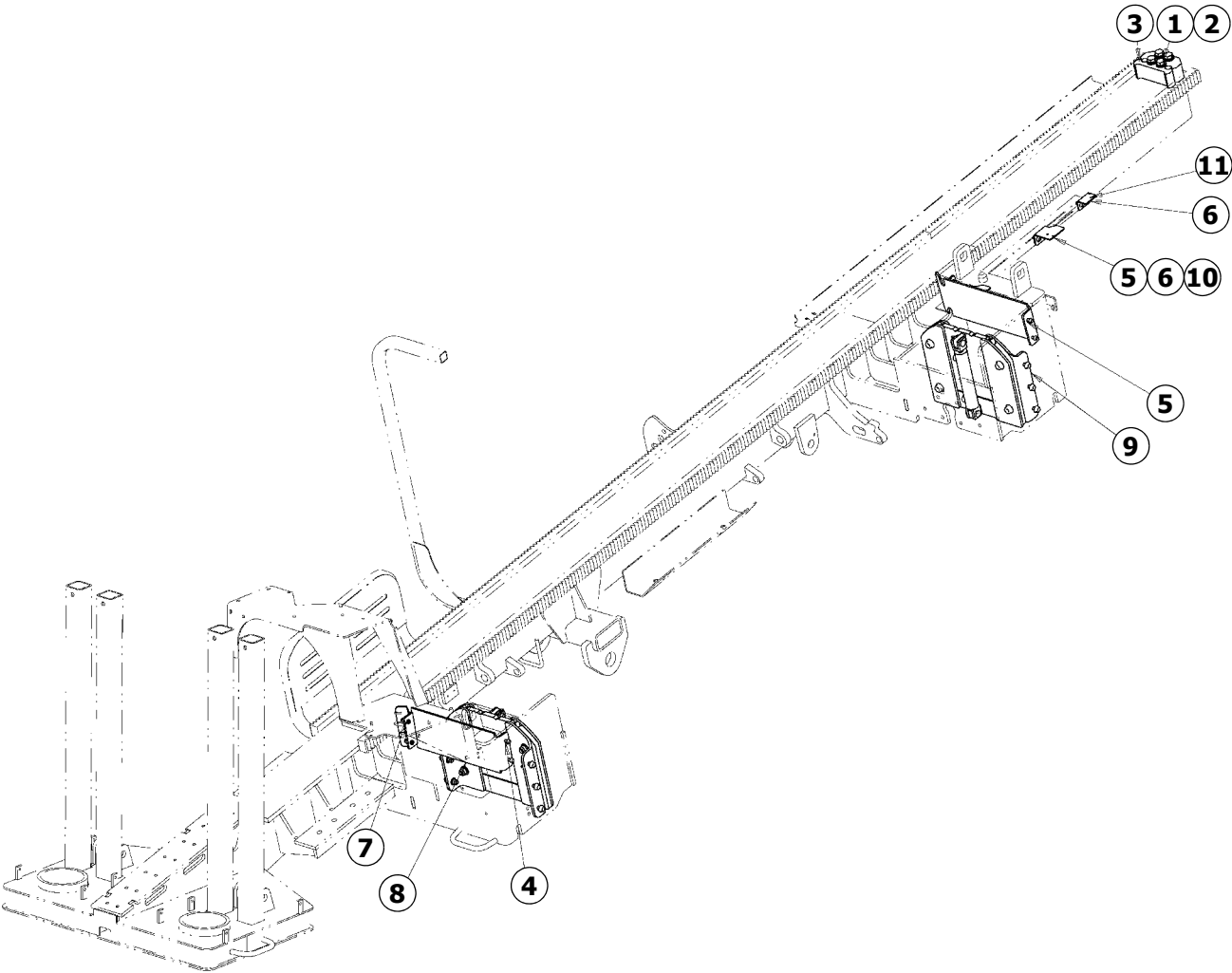
THRUST FRAME Cam 1 Assembly

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	AU122448	WELDMENT - Thrust Frame	1
2	AU117460	ASSEMBLY - Spindle Rod Loader	1
3	AU118048	PIN - Pivot, Rod Loader.	1
4	AU124261	PIN - Pivot	1
5	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	2
6	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	2
7	AU100867	SCREW, METRIC FLANGE w/BODY - M6 x 12	2
8	AU109885	PIN - 0.75 x 2.5' Clevis	1
9	432-1028	PIN - Cotter 0.156 x 1.75 in ZN	1
10	515-23127	CLAMP - Insul 12.7mm 3/8 in Bolt ZND	2
11	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	1
12	AU100869	SCREW, METRIC FLANGE w/BODY - M10 x 30	1
13	AU124272	JAM NUT - M10 - 1.0.	1
14	AU124270	SENSOR - Rotary	1
15	AU124266	PLATE - Mounting	1
16	440-1088	SCREW - PHd Type 1 #8-32 x 0.500 CST ZND	2
17	193-1002	NUT - KEPS Ext T Wshr # 8-32 UNC ZP	2



THRUST FRAME Cam 2 Assembly

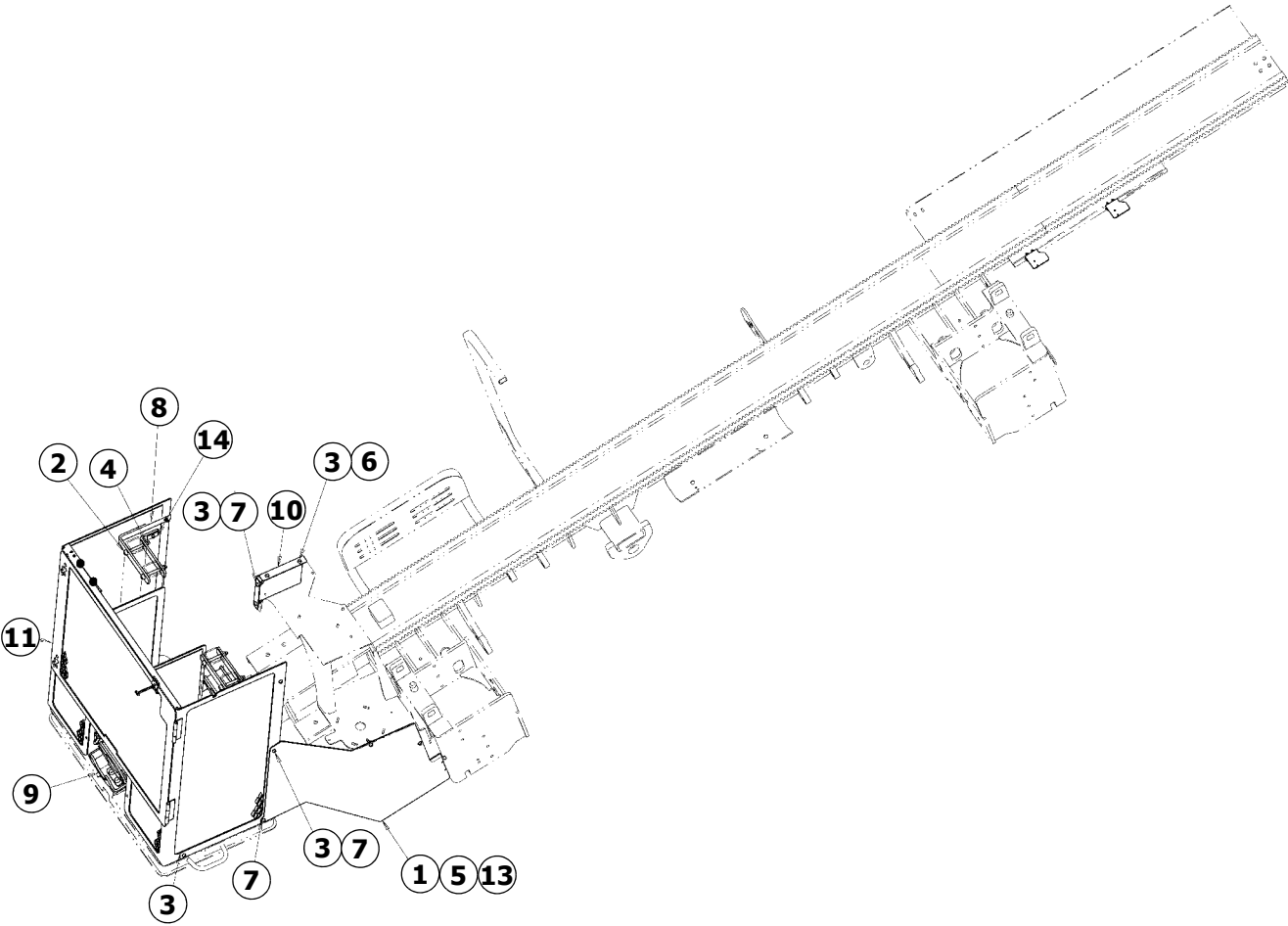
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	AU122448	WELDMENT - Thrust Frame	1
2	AU118035	SPRING BUSHING - 1.00 ID x 1.25 OD x 1.00 L	2
3	AU109676	SPRING BUSHING - 0.75 ID x 1.00 OD x 1.00 L	4
4	AU118566	SPRING BUSHING - 2.00 ID x 2.25 OD x 1.00 L	2
5	219-8	FITTING - Lube, 1/4-28 TPR SAE-LT 0.54 L.	2
6	AU121325	BEARING -	2
7	AU117272	ASSEMBLY - Basket Rod Loader	1
8	AU100347	SCREW, METRIC FLANGE w/BODY - M12 x 45	8
9	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	8
10	AU124272	JAM NUT - M10 - 1.0.	1
11	AU124265	PLATE - Mounting	1
12	AU124270	SENSOR - Rotary	1
13	440-1088	SCREW - PHd Type 1 #8-32 x 0.500 CST ZND	2
14	193-1002	NUT - KEPS Ext T Wshr #8-32 UNC ZP	2
15	515-2312	CLAMP - Insul 12.7 mm 3/8 in Bolt ZND	1
16	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	1
17	AU100877	SCREW, METRIC FLANGE w/BODY - M10 x 30	1



DD4045 Directional Drill
THRUST FRAME
Elevator and Misc. Assembly

9-15

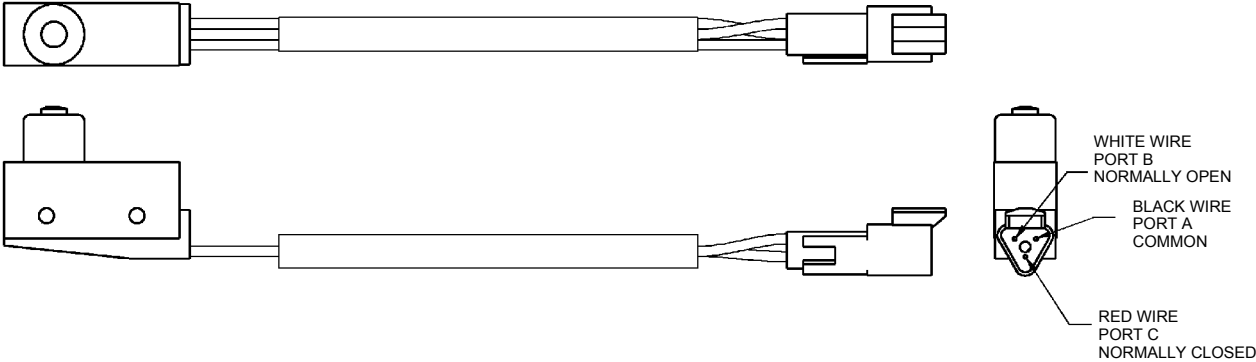
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	426-1256	BOLT - Hex Hd 0.75 x 3.50 GR8 ZND.	4
2	496-11081	WASHER - 0.812 x 1.500 x 0.134 in Hdn ZND	8
3	32GB2011	STOP - Carriage	1
4	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	4
5	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	10
6	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	6
7	AU100874	SCREW, METRIC FLANGE w/BODY - M8 x 30	4
8	AU118917	ASSEMBLY - Deflector Plate.	2
9	AU121923	ASSEMBLY - Elevator.	2
10	AU122460	PLATE - Proximity Switch Mount.	2
11	AU122537	PLATE - Switch Mount.	1



THRUST FRAME

Stakedown Guard & Rod Guide Assembly

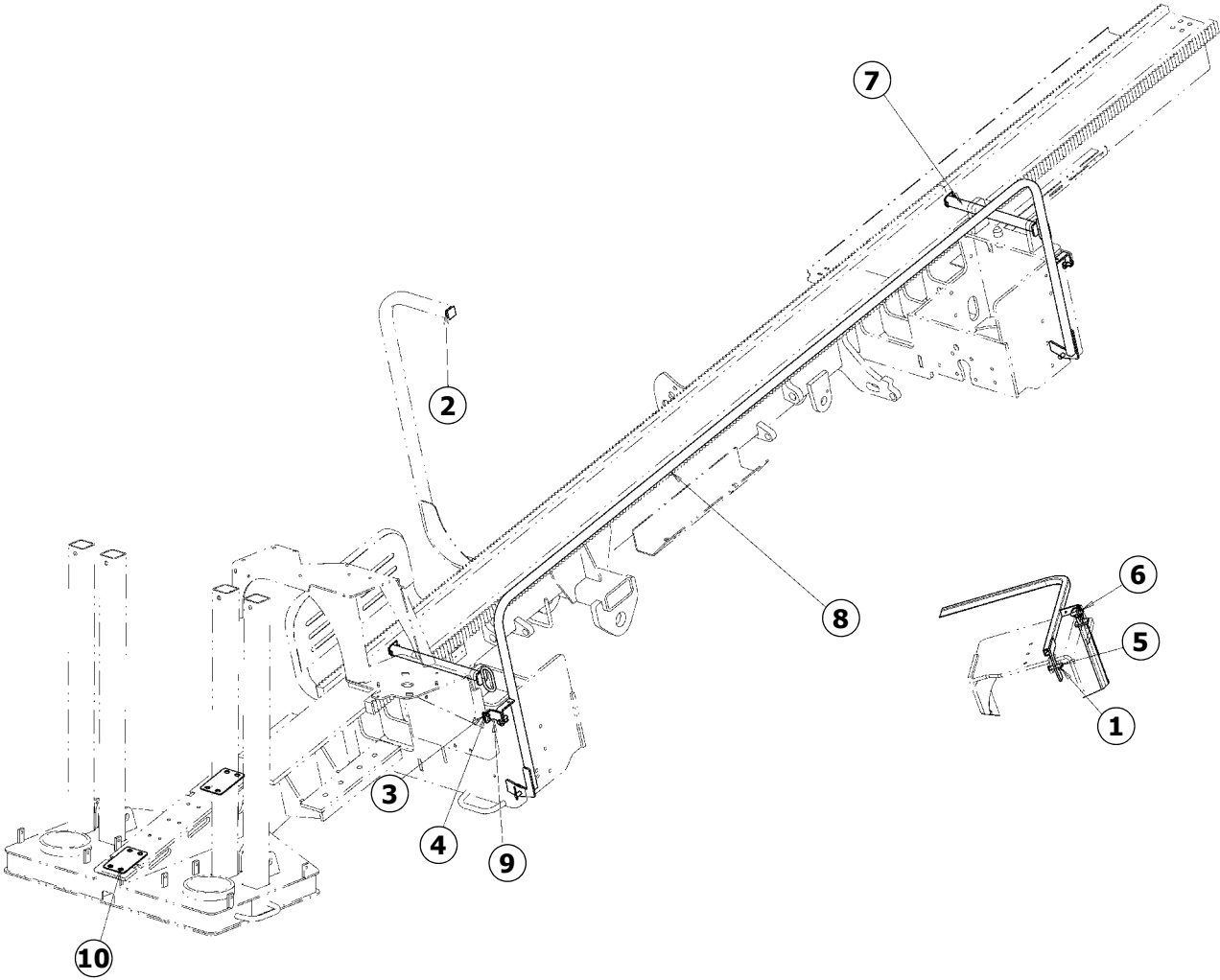
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	3
2	AU100357	SCREW, METRIC FLANGE w/BODY - M12 x 120	4
3	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	19
4	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	4
5	AU100862	NUT, U - M8 x 1.25 Long.	3
6	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	6
7	AU100874	SCREW, METRIC FLANGE w/BODY - M8 x 30	13
8	AU119039	PLATE - Stakedown Guard Mounting	2
9	AU119093	ASSEMBLY - Rod Guide.	2
10	AU121073	PLATE - Guard	1
11	AU122455	COVER - Stakedown.	1
12	AU122460	PLATE, PROXIMITY - Switch Mount.	2
13	AU122462	COVER, GUARD - 9 Section Valve.	1
14	AU122788	ASSEMBLY - Bracket	2



DD4045 Directional Drill
NEUTRAL START SWITCH ASSEMBLY

9-19

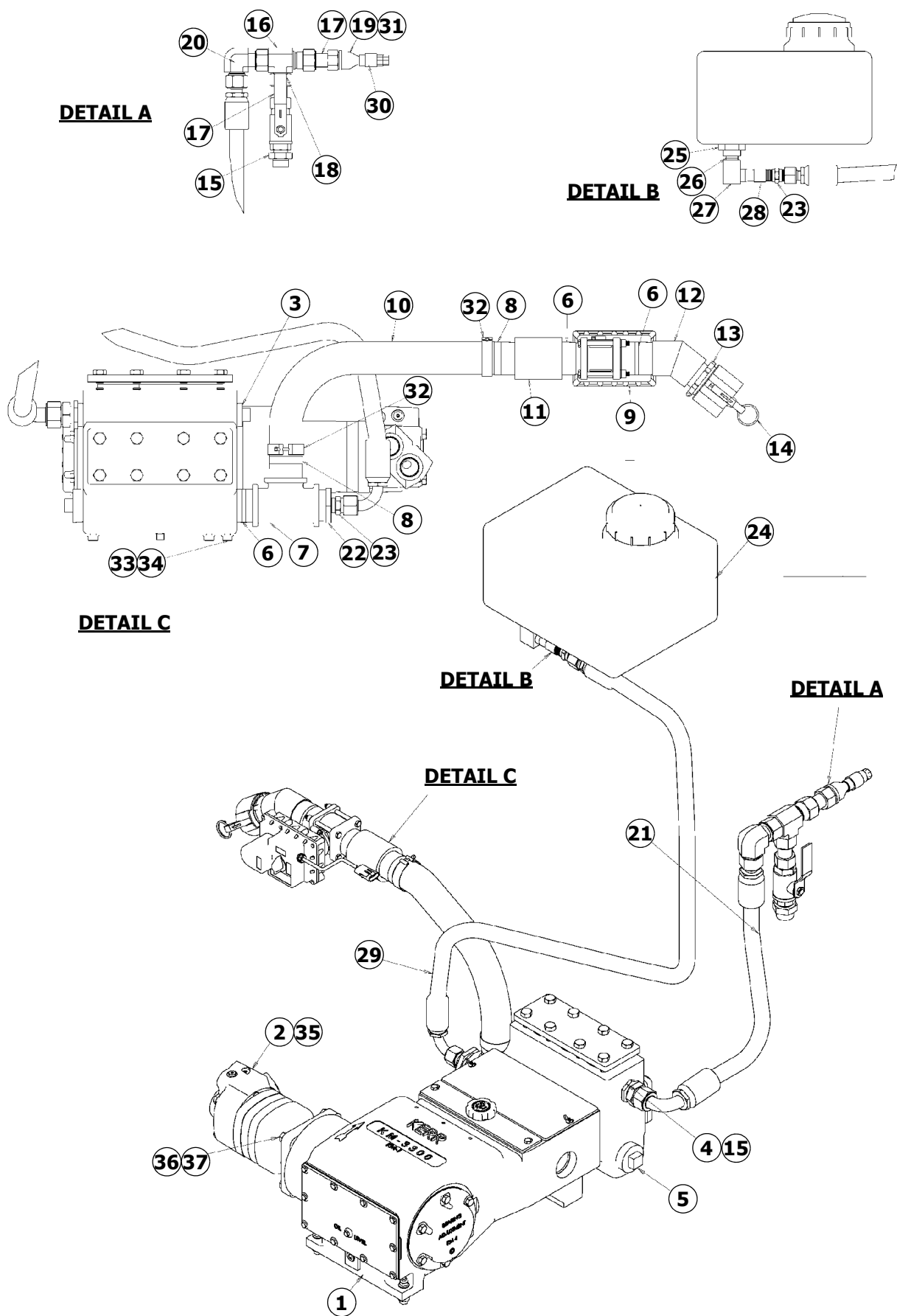
REF.	PART NO.	DESCRIPTION	REQ'D.
1	86992539	ASSEMBLY - NEUTRAL START SWITCH	1



THRUST FRAME

Mirror & Rod Loader Guard Assembly

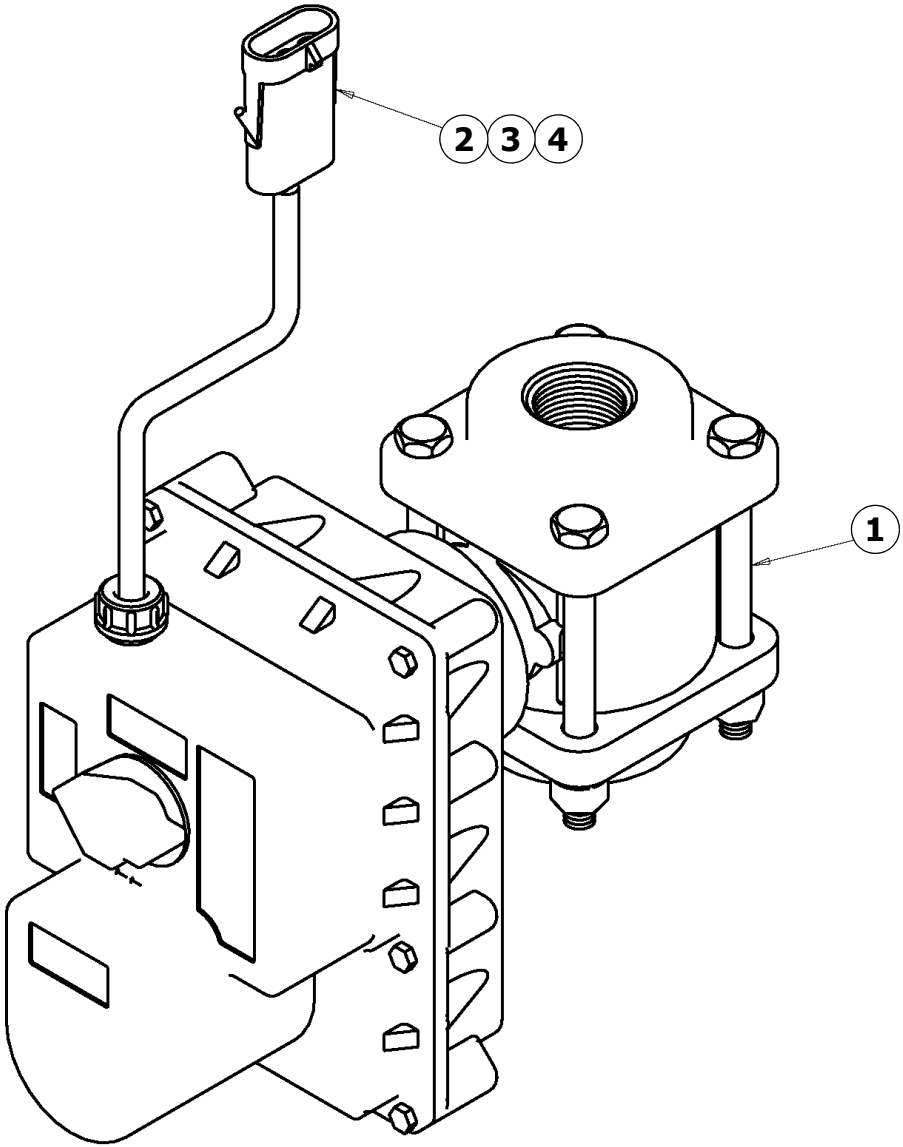
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115522	ASSEMBLY - Thrust Frame.	1
1	432-1028	PIN - Cotter 0.156 x 1.75 in ZN	2
2	8PP92001	CAP - End, Plastic	1
3	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	2
4	AU100870	SCREW, METRIC FLANGE w/BODY - M6 x 25	2
5	AU109964	PIN - Clevis	2
6	AU109970	PIN - Snap Ring.	2
7	AU118581	ASSEMBLY - Rod Box Pin	2
8	AU119031	ASSEMBLY - Guard	1
9	AU119037	PLATE - Rod Box Guard	1
10	AU123409	PLATE - Shim	2



DD4045 Directional Drill MUD PUMP ASSEMBLY

9-23

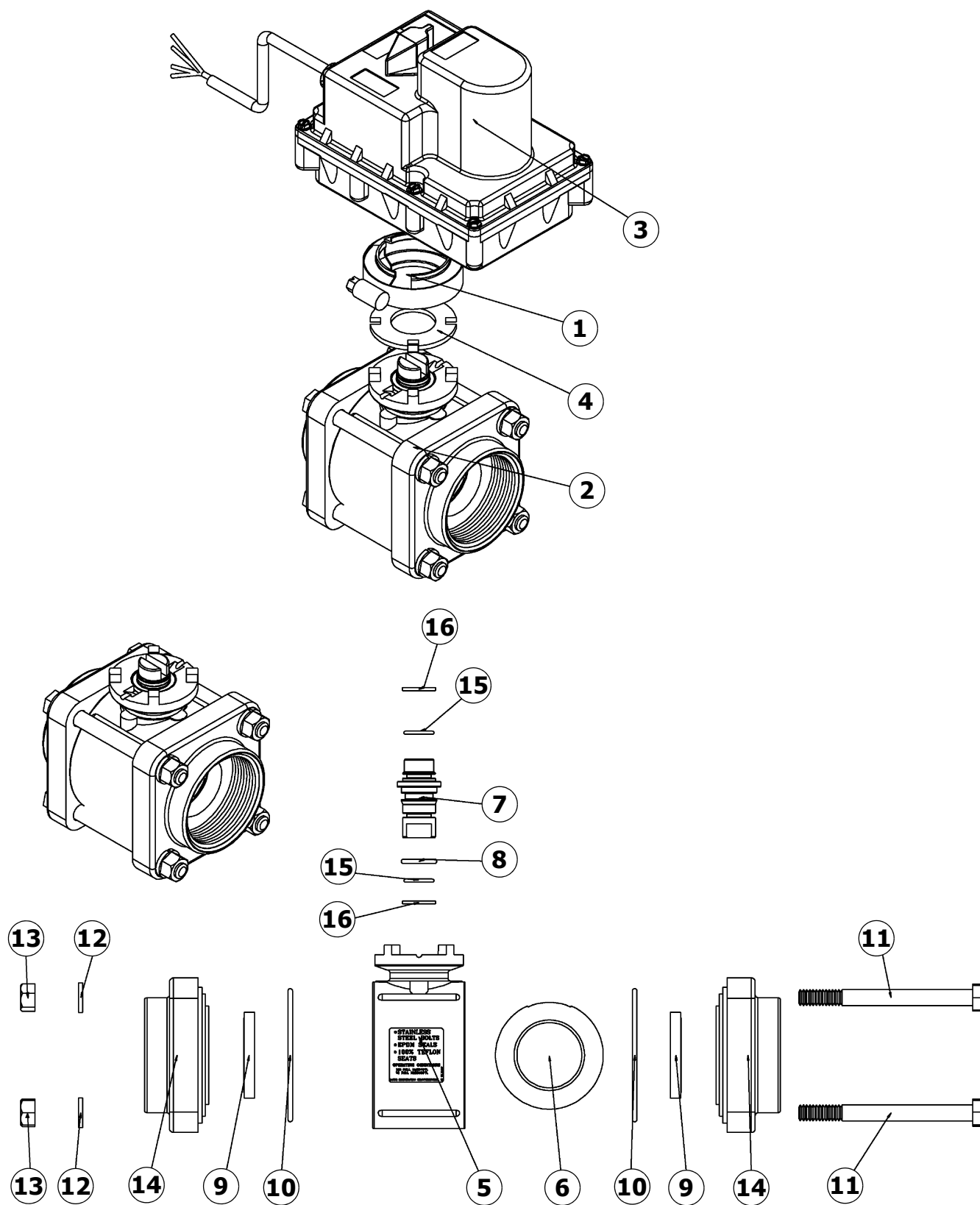
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116270	ASSEMBLY - Mud Pump	1
1	AU116271	PUMP - Mud (Kerr KM3300)	1
2	AU117459	MOTOR - Hydraulic, 312 CC/R	1
3	217-532	PLUG - Sq Hd Pipe 1-1/4 - 11.5 NPTF STL PLN	1
4	221-70	BUSHING - Hex Reducer Pipe 1-1/4 x 1, Black	1
5	8PP10032	PLUG - Square HD Pipe	1
6	8PN23200	NIPPLE - Pipe, Steel 2" NPT	3
7	8PT10032	TEE - Pipe, 2" NPT	1
8	8PN11332	HOSE BARB - 2" NPT x 2" Hose	2
9	6HV29033	VALVE - 2" Electric	1
10	AU116299	HOSE - Tank to Pump	1
11	65-CI-1960	COUPLING - Pipe, Hi Pressure, NPT	1
12	8PE15032	FITTING - 45 Deg Elbow 2"	1
13	AU110378	ADAPTER - Male, 2"	1
14	AU110379	CAP - 2" Quick Disc.	1
15	8OA11616	CONNECTION - Straight, -12 ORFS / -16 ORB	2
16	8OR91616	CONNECTION - Bulkhead, Run Tee, -16 ORFS / -16 ORFS	1
17	8OA65016	CONNECTION - Adapter, -16 ORFS Female / 1" NPT Male	2
18	8HV22016	BALL VALVE - 1" NPT	1
19	8PC11604	BELL REDUCER - 1" x 1/4" NPT	1
20	8OL81616	CONNECTION - 90 Deg -16 ORFS / -16 ORFS	1
21	AU117617	HOSE - Pump to Pressure Washer	1
22	65-CI-1750	BUSHING - Hex Reducer, 2 x 3/4 Black	1
23	8OA11212	CONNECTOR - Male, ORFS, 12-12-FLO	2
24	32GB1214	TANK - 6G, No Fitting - Poly	1
25	20MC8508	FITTING - Tank, Bulkhead, Plastic	1
26	221-1211	NIPPLE - Pipe 3/4 NPTF x 1-3/8 Galv Stl	1
27	221-1415	ELBOW - 90 Deg 3/4 NPTF Male/Female M.I. Black	1
28	8HV21012	VALVE - Ball 3/4 Full Port	1
29	AU117618	HOSE - Tank to Pump	1
30	8QD55204	QUICK DISCONNECT - 1/4 Male NPT	1
31	8QD08204	ADAPTER - 6-6-G64L, Str Thread	1
32	8CL14041	CLAMP - T-Bolt, 2.06 - 2.31 Dia	2
33	AU100333	SCREW, METRIC FLANGE w/BODY - M10 x 50	3
34	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc	3
35	70-9004104-1580	O-RING - Dash No. 158, 0.103 Dia x 4.737 ID x 4.943 OC.	1
36	492-11050	WASHER - Spring Lock, Reg 0.500 in Znd	4
37	426-832	BOLT - Hex Hd 0.500 x 2.00 GR8 ZND	4



**DD4045 Directional Drill
VALVE, 2" ELECTRIC**

9-25

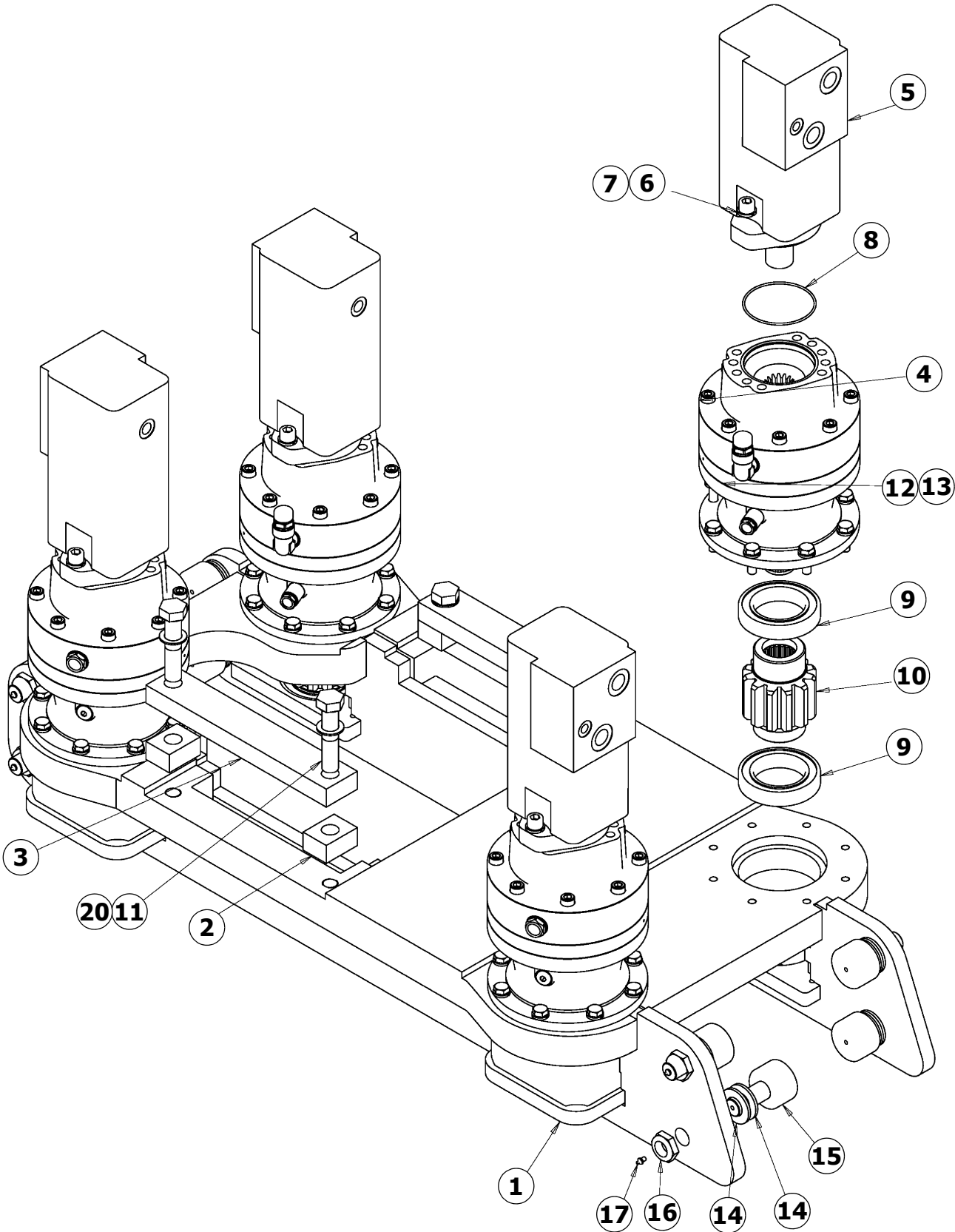
REF.	PART NO.	DESCRIPTION	REQ'D.
	6HV29033	VALVE - 2" Electric	1
1	8HV29033	VALVE - Ball, 2" Electric	1
2	8EC92203	CONNECTOR - 3 Way Male Packard	1
3	8EC92502	SEAL - Packard 14/16 AWG	3
4	8EC92302	TERMINAL - Male, 14-16 GA	3



DD4045 Directional Drill
VALVE, BALL, 2" ELECTRIC

9-27

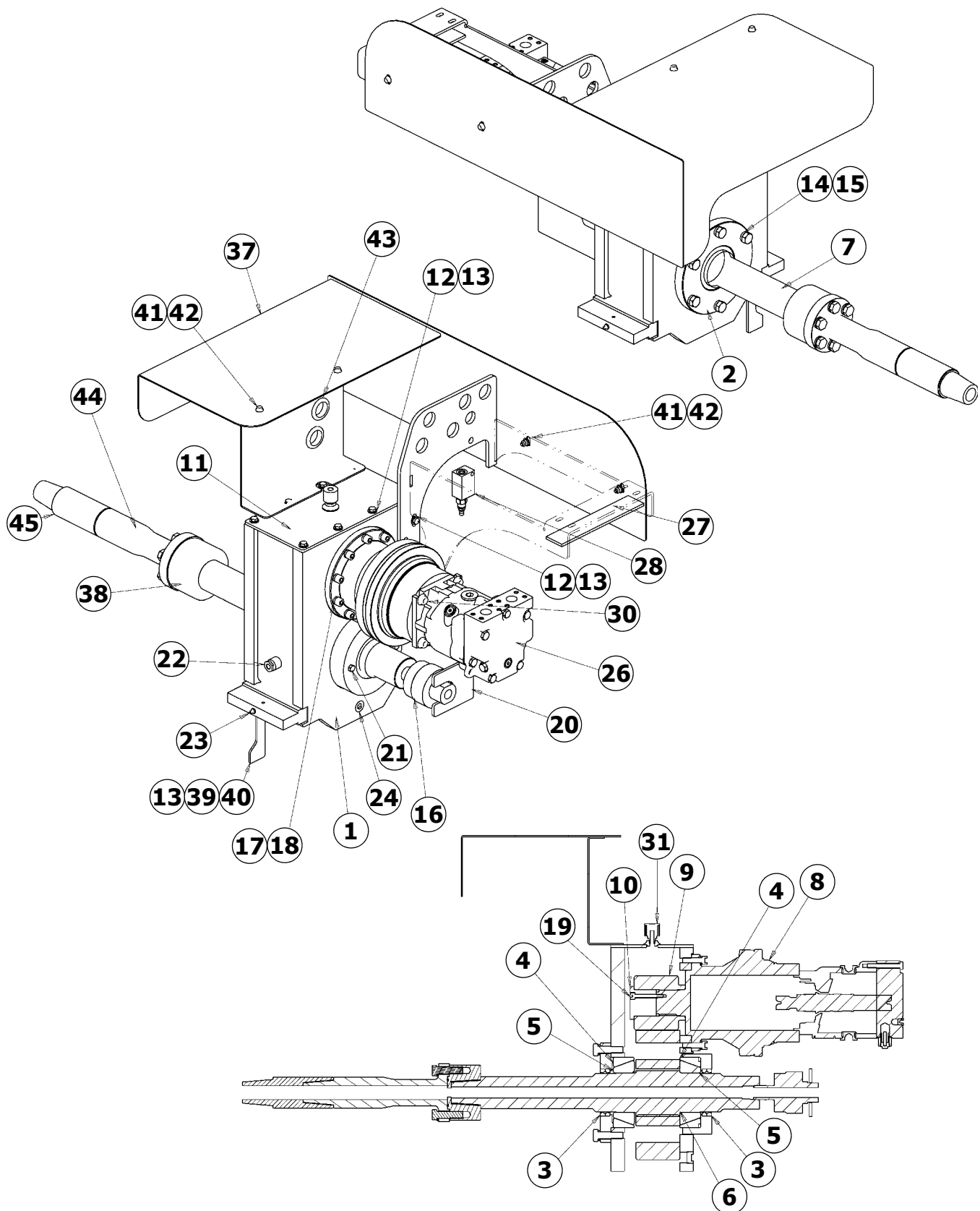
REF.	PART NO.	DESCRIPTION	REQ'D.
	8HV29033	VALVE - Ball, 2" Electric	1
1	AU114153	CLAMP - 1" Flange	1
2	AU114154	VALVE - 2"	1
3	AU114155	MOTOR - 1-1/4 Sec, 3 Wire, On/Off	1
4	AU114156	FILTER - Weep Hole	1
5	AU114157	BODY - 2" Electric Valve	1
6	AU114158	BALL - Hollow, SS, 2" Electric Valve	1
7	AU114159	STEM - 1" Electric Valve	1
8	AU114160	O-RING -114 EPDM	1
9	AU114161	SEAT - TFM, 2" Electric Valve	2
10	AU114162	O-RING - Body, 2" Electric Valve	2
11	NSS	BOLT - 3/8 x 4	4
12	NSS	WASHER - Lock, 3/8	4
13	NSS	NUT - 3/8	4
14	AU114163	PLATE - End, 2" Electric Valve	2
15	AU114164	O-RING - 2-015 EPDM	2
16	AU114165	SEAL - TFE	2



DD4045 Directional Drill CARRIAGE ASSEMBLY

9-29

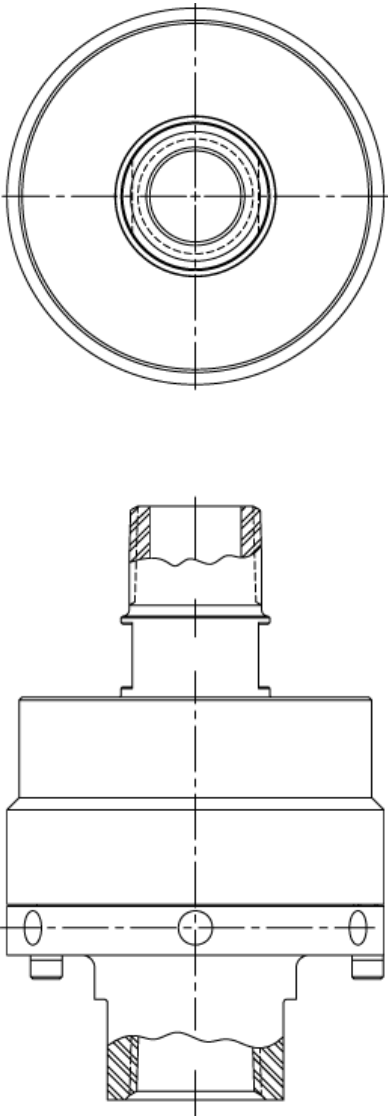
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115600	ASSEMBLY - Carriage	1
1	AU115601	WELDMENT - Carriage	1
2	32GB4022	SPACER - Clamp, Carriage.	4
3	32GB4021	CLAMP - Rotary Box, Carriage	2
4	8GB80063	GEARBOX - Planetary, Sgl, SAE A.	4
5	AU115604	MOTOR - Hydraulic, LSHT, 25PD.	4
6	492-11050	WASHER - Spring Lock, Reg 0.500 in ZND	8
7	864-12045	SCREW - Soc Hd M12 x 45 Class 8.8 ZND	8
8	8HS51152	SEAL, O-RING - BUNA N, -152 Size.	4
9	8CF40005	BEARING - Ball, Radial, 2.36 x 3.74	8
10	32GB4020	PINION - Drive Carriage	4
11	8LW51112	WASHER - Lock, Reg 0.438 in ZND	4
12	492-11044	WASHER - Spring Lock, Reg 0.438 in ZND	32
13	8HH65358	SCREW - Cap, M10 x 30 mm	32
14	496-11094	WASHER - 0.938 x 1.750 x 0.134 in Hdn ZND	24
15	8CF30032	BEARING - Cam Follower, 2" Dia	8
16	131-465	NUT - Jam, Hex, 7/8 - 14 NF, Nyloc	8
17	8PP00104	FITTING - Lube, 3/16 Drive Type	8
18	8PP00200	CAP - Grease Fitting (Not Shown).	10
19	8CF30003	PLUG - Brass, 3/16 (Not Shown).	8
20	426-1256	BOLT - Hex Hd 0.75 x 3.50 GR8 ZND.	4



DD4045 Directional Drill ROTARY

9-31

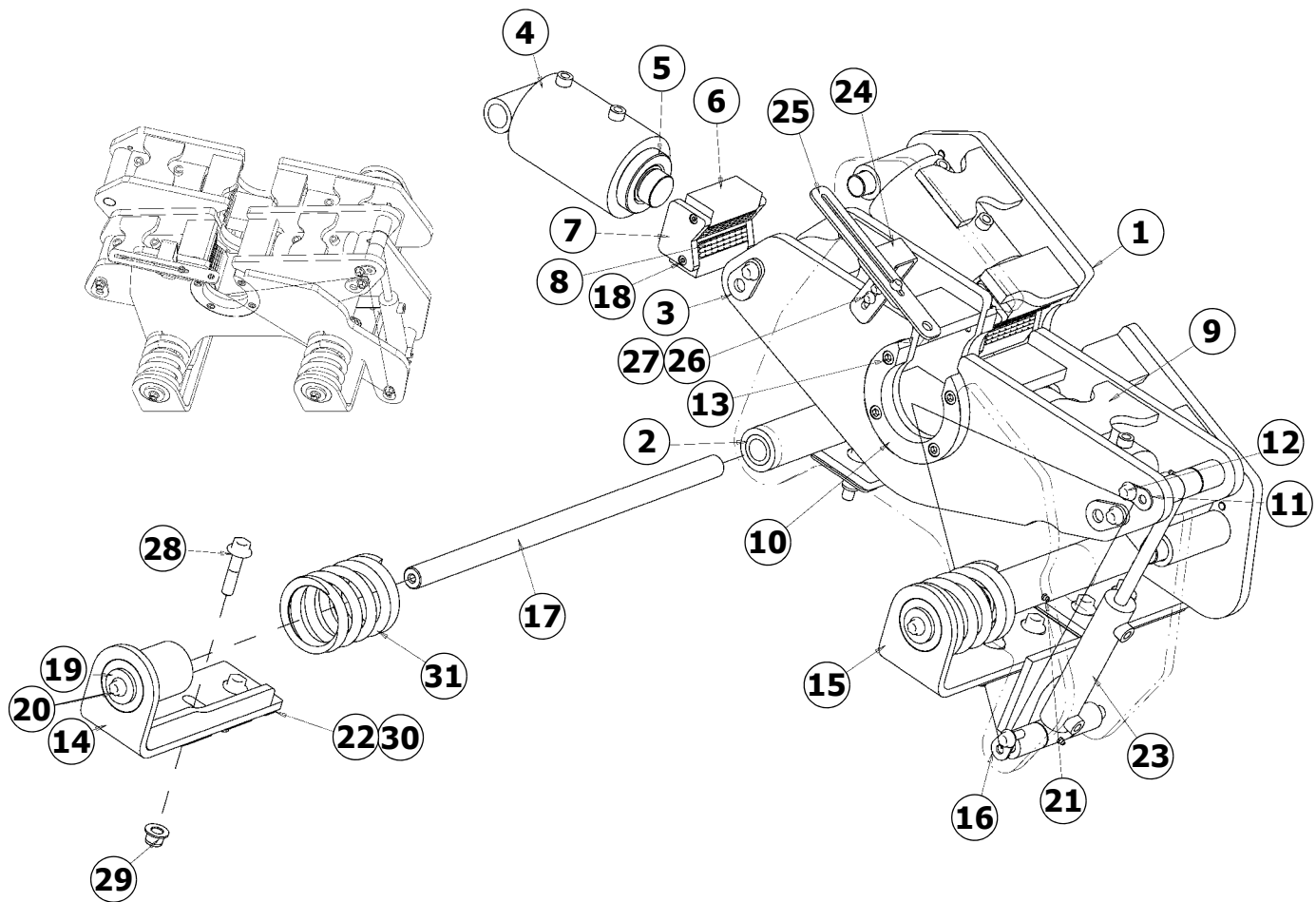
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117215	ASSEMBLY - Rotary	1
1	32GB4401	BOX - Rotary	1
2	32GB4412	CAP - Rotary Bearing	1
3	8HS13033	SEAL - Shaft, 3.40 x 4.25 x 0.44	4
4	8CF63007	CUP - Bearing, Tapr Roll, 6.37 OD	2
5	8CF63008	CONE - Bearing, Tapr Roll, 3.56 ID.	2
6	32GB4465	RING - Gear, Rotary	1
7	32GB4420	SPINDLE - Rotary, Am Pac DSI 2.375 Pin	1
8	8GB80064	GEARBOX - Planetary.	1
9	32GB4460	PINION - Rotary.	1
10	32GB4461	CAP - Rotary Pinion.	1
11	32GB4450	PLATE - Top, Rotary Box	1
12	8FW21106	WASHER - Flat, 3/8 ZN Pltd	13
13	426-616	BOLT - Hex Hd 0.375 x 1.00 GR8 ZND.	15
14	8LW81110	WASHER - Split Lock, 5/8"	6
15	8HH51510	CAPSCREW - Hex Hd, 5/8 - 11 x 2-1/4.	6
16	32GB4210	SWIVEL - Rotary	1
17	8LW81108	WASHER - Split Lock, 1/2" x 0.175" Thk.	10
18	864-12045	SCREW - Soc Hd, M12 x 45 Class 8.8 ZND	10
19	8SH95365	SCREW - Soc Hd, M10 x 65 Class 8.8 ZND	3
20	32GB4475	BRACKET - Mud Swivel	1
21	8HH51303	CAPSCREW - Hex Hd, 3/8 - 16 x 3/4	2
22	8PP70008	PLUG - Site Glass	1
23	8PP00100	FITTING - Lube, 1/8 NPT x 11/16 Long.	2
24	8PP75012	PLUG - Drain, Hdls Hex Skt, 3/4 NPTF.	1
25	8HS51250	SEAL - O-Ring, -250 Size, 70 Durometer	1
26	8HM50016	MOTOR - Hydraulic, Fixed	1
27	AU118010	MOUNT - Hose Carrier, Rotary	1
28	8HV61011	VALVE - Pressure Relief 150 - 6000 PSI	1
29	8PP00200	CAP - Grease Fitting	2
30	AU100416	SCREW, METRIC FLANGE FULL - M12 x 35	4
31	31543	FILTER - Breather	1
32	32GB0903-2	SPACER - Bulkhead, 12 GA	2
33	32GB0903-1	SPACER - Bulkhead, 3/8" Thk.	1
34	8SM02002	SHIM - Bearing Adjust, 0.020" Thk	1
35	8SM00702	SHIM - Bearing Adjust, 0.007" Thk	2
36	8SM00502	SHIM - Bearing Adjust, 0.005" Thk	3
37	AU117212	GUARD - Carriage.	1
38	AU114322	ASSEMBLY - Spindle Adapter.	1
39	AU121312	PLATE - Proximity Trigger.	1
40	492-11038	WASHER - Spring Lock Reg 0.375 in ZND.	2
41	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	4
42	AU100526	NUT, METRIC FLANGE PREVAILING - M8 Zinc	4
43	AU120853	GROMMET - Rubber, 1.5" ID	2
44	AU119350	ADAPTER - Flange, Short, Flange x HIWS2-602 P	1
45	AU119351	SUBSAVER - HISW2-602 B x HISW2-602 P	1



DD4045 Directional Drill
ROTARY SWIVEL

9-33

REF.	PART NO.	DESCRIPTION	REQ'D.
1	32GB4210	SWIVEL - Rotary, 1 inch NPTF RH x 1 inch NPTM.	1

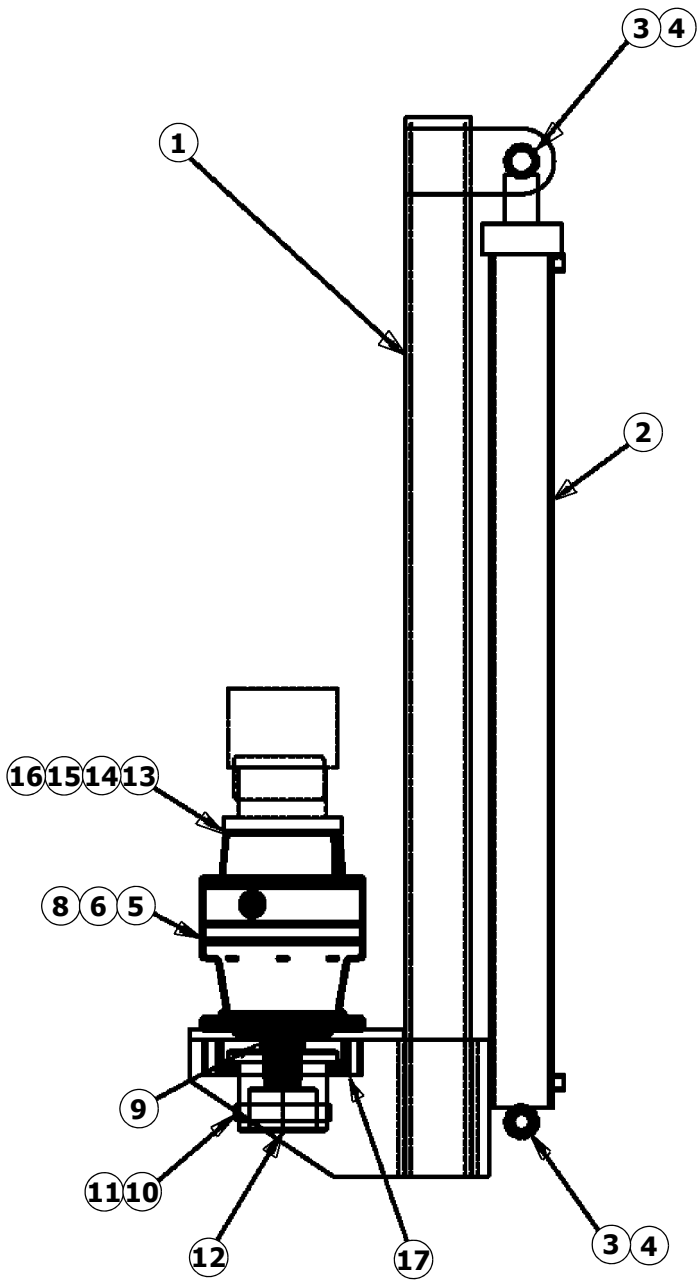


DD4045 Directional Drill

WRENCH ASSEMBLY

9-35

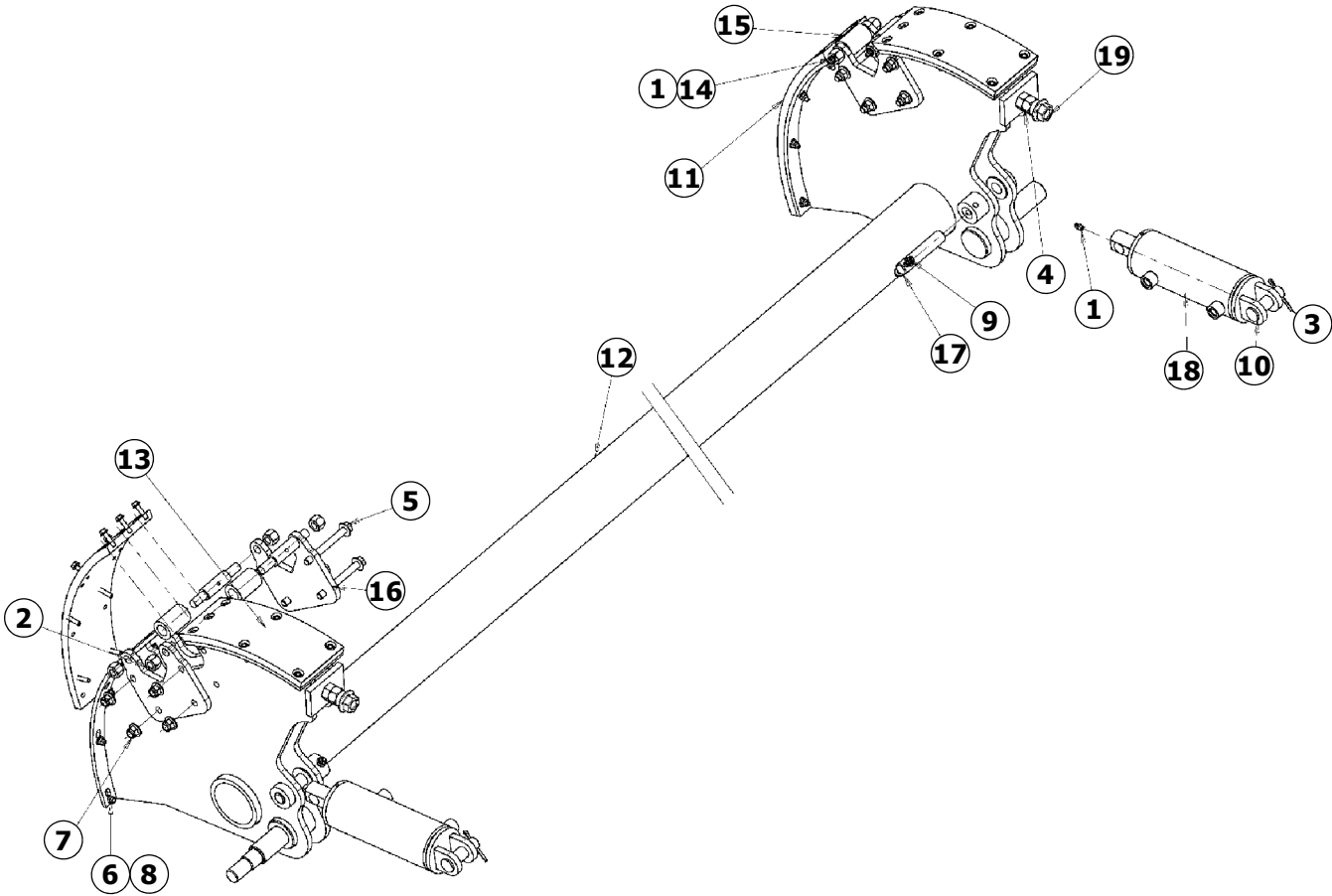
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU123931	ASSEMBLY - Wrench	1
1	AU116983	WRENCH.	1
2	AU119081	BEARING - Flanged Sleeve	4
3	AU119056	PIN - Wrench	4
4	AU116939	CYLINDER - Hydraulic, 4.50 Bore x 2.00 Stroke.	4
5	32GB6010	BUSHING - Cylinder	4
6	AU119049	HOLDER - Wrench Die	4
7	AU119046	RETAINER - Wrench Die.	8
8	305643	DIE - Wrench	8
9	AU116999	WELDMENT - Wrench.	1
10	AU119038	GUIDE - Wrench	2
11	32GB6225	PIN - Wrench	1
12	AU101477	SCREW, METRIC FLANGE w/BODY - M12 x 30	6
13	861-12025	SCREW - Soc Hd M12 x 25 Class 12.9 BLO	8
14	AU123858	BRACKET - Wrench Mounting	2
15	AU123857	BRACKET - Wrench Mounting	2
16	32GB6226	PIN - Wrench	1
17	AU123860	PIN - Wrench	2
18	861-8025	SCREW - Soc Hd, M8 x 25 Class 12.9 BLO	16
19	195-81269	WASHER - 0.531 x 2.000 x 0.25 in CST ZND.	4
20	AU100418	SCREW, METRIC FLANGE FULL - M12 x 50	4
21	219-8	FITTING - Lube, 1/4-28 Tpr SAE-LT 0.54 Long	4
22	AU123875	PLATE - Wrench Shim.	4
23	8HC10007	CYLINDER - Hydraulic, 1.50 Dia Bore x 6.0 Stroke	1
24	AU121079	PLATE - Nozzle Mount	1
25	AU121080	PLATE - Nozzle Mount	1
26	AU100873	SCREW, METRIC FLANGE w/BODY - M8 x 25	3
27	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	1
28	AU100364	SCREW, METRIC FLANGE w/BODY - M16 x 70	8
29	AU100529	NUT, METRIC FLANGE PREVAILING - M16, Zinc.	8
30	AU123846	PLATE, Wrench Shim	4
31	AU123859	SPRING - Compression.	4



DD4045 Directional Drill STAKEDOWN ASSEMBLY

9-37

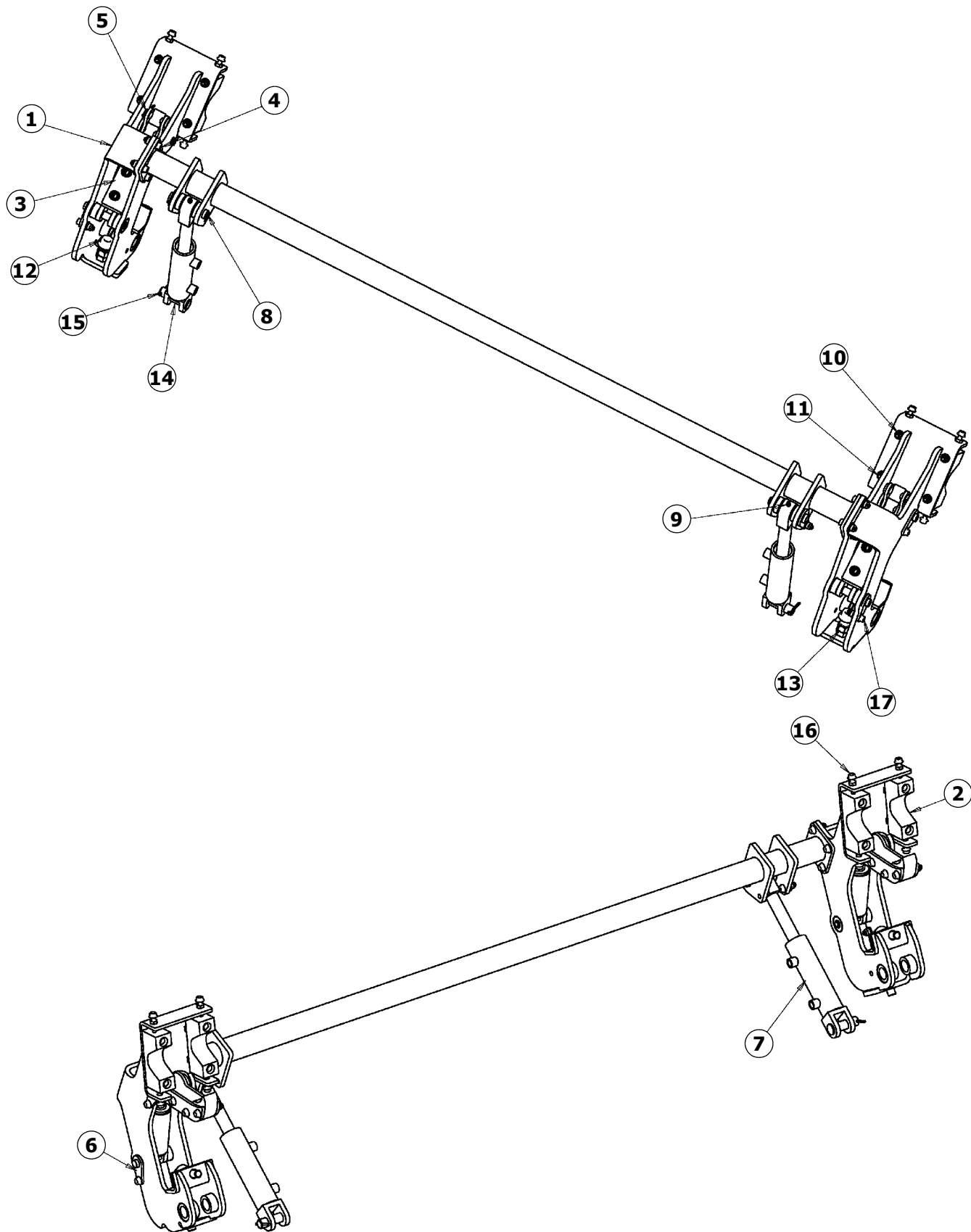
REF.	PART NO.	DESCRIPTION	REQ'D.
	32GB7520	ASSEMBLY - Stakedown	1
1	32GB7521	WELDMENT - Stakedown	1
2	8HC25036	CYLINDER - Hydraulic, 2-1/2 inch Bore x 36 inch Stroke, -08 SAE Ports	1
3	32GB7522	PIN - Cylinder	2
4	8CP10407	PIN - Cotter, 1/8 inch Diameter x 2 inch Long	4
5	8GB80063	GEARBOX - Planetary, Single Speed	1
6	AU100326	SCREW, METRIC FLANGE w/BODY - M8 x 80	8
8	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	8
9	32GB7509	SPACER - Gearbox	1
10	32GB7507	PIN - Stakedown, Auger Coupler.	1
11	8SR16001	RING - Retaining, E-Type, 3/4 inch	2
12	32GB7526	COUPLER - Stakedown Auger Drive	1
13	8HM24048	MOTOR - Hydraulic, LSHT	1
14	8HH51256	SCREW - Cap, Hex Head, 5/16 - 18 x 1-1/4 inch Long.	1
15	8HS51236	SEAL - O-Ring.	1
16	864-12035	SCREW - Cap, Hex Head, M12 x 1/75 x 35 MM Long	4
17	32GB7527	RETAINER - Stakedown Auger Drive	1



DD4045 Directional Drill
BASKET ROD LOADER ASSEMBLY

9-39

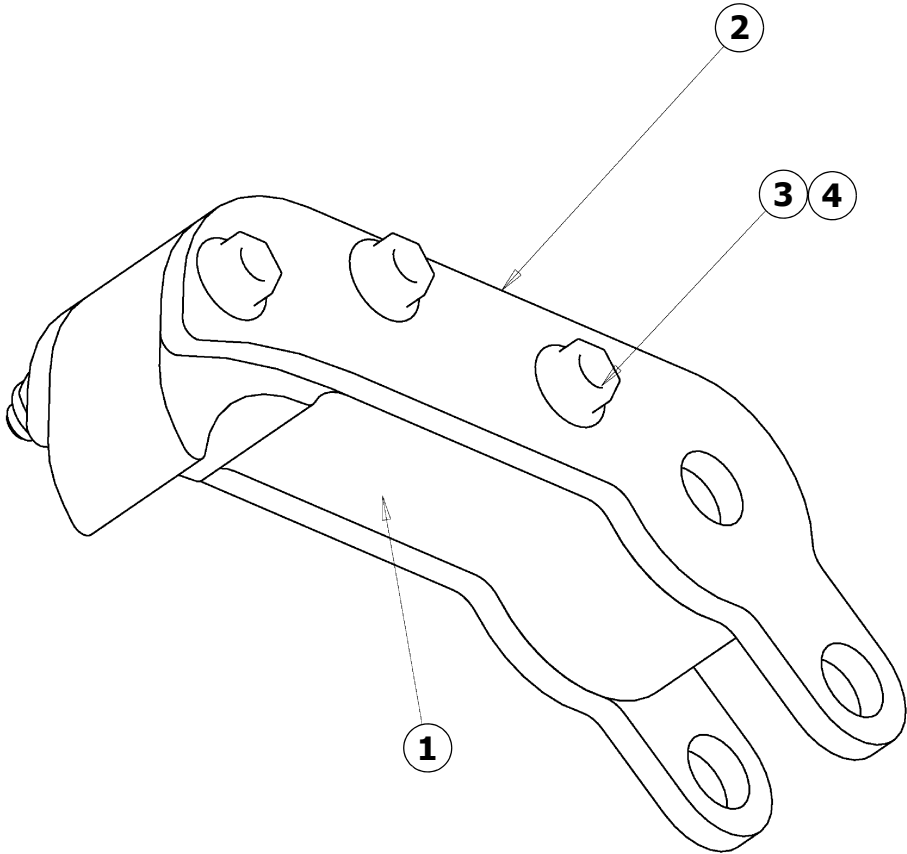
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117272	ASSEMBLY - Rod Loader	1
1	219-8	FITTING - Lube, 1/4 - 28 Tpr SAE-LT 0.54 Long	6
2	231-4218	NUT - Prev Trq 1/2 GRA ZND NonDir	8
3	432-1028	PIN - Cotter 0.156 x 1.75 in ZN	2
4	829-1416	NUT - M16 Class 10 ZND	2
5	AU100339	SCREW, METRIC FLANGE w/BODY - M10 x 90	8
6	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	35
7	AU100527	NUT, METRIC FLANGE PREVAILING - M10, Zinc.	8
8	AU100870	SCREW, METRIC FLANGE w/BODY - M6 x 25	32
9	AU109721	SCREW, METRIC FLANGE w/BODY - M6 x 50	2
10	AU109885	PIN - 0.75 x 2.5" Clevis	2
11	AU117284	WEAR PLATE - Rod Loader	2
12	AU117300	ASSEMBLY - Cam.	1
13	AU117305	WEAR PLATE - Rod Loader	2
14	AU117339	SHAFT - Pipe Roller	4
15	AU117340	TUBE - Roller.	4
16	AU117358	PLATE - Pipe Holder	4
17	AU117427	PIN - Straight	2
18	AU120624	CYLINDER - Hydraulic	2
19	AU120606	SCREW, METRIC FLANGE FULL - M16 x 60	2



DD4045 Directional Drill
SPINDLE ROD LOADER ASSEMBLY

9-41

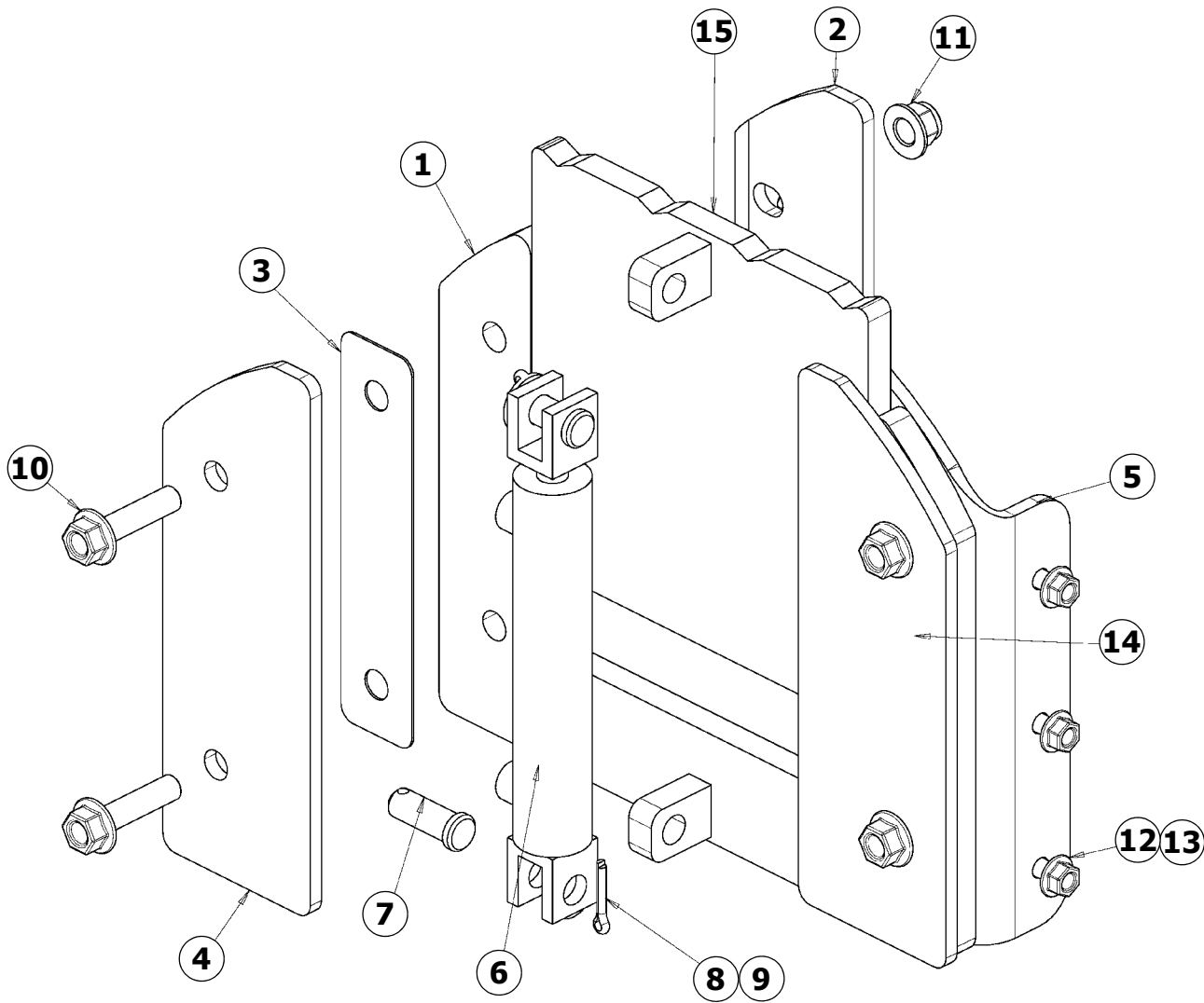
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117460	ASSEMBLY - Rod Loader	1
1	AU117604	WELDMENT - Spindle Rod Loader	1
2	AU117448	HOLDER - Pipe	4
3	AU117558	CYLINDER - 3000 psi 1.75 x 1.25 Stroke	2
4	AU117726	ASSEMBLY - Gripper	2
5	AU117727	PIN - 0.625 x 1.75" Clevis	2
6	AU117806	PIN - Pivot	4
7	AU117809	CYLINDER - Hydraulic	2
8	AU118041	PIN - Pivot	2
9	219-8	FITTING - Lube, 1/4 - 28 Tpr SAE-LT 0.54 Long	2
10	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	14
11	AU100323	SCREW, METRIC FLANGE w/BODY - M8 x 60	8
12	AU120624	SCREW, METRIC FLANGE FULL - M16 x 60	4
13	829-1416	NUT - M16 Class 10 ZND	4
14	AU109885	PIN - 0.75 x 2.50" Clevis	2
15	432-1028	PIN - Cotter, 0.156 x 1.75 in ZN	4
16	AU100399	SCREW, METRIC FLANGE FULL - M8 x 35	8
17	AU100874	SCREW, METRIC FLANGE w/BODY - M8 x 30	6



DD4045 Directional Drill
GRIPPER ASSEMBLY

9-43

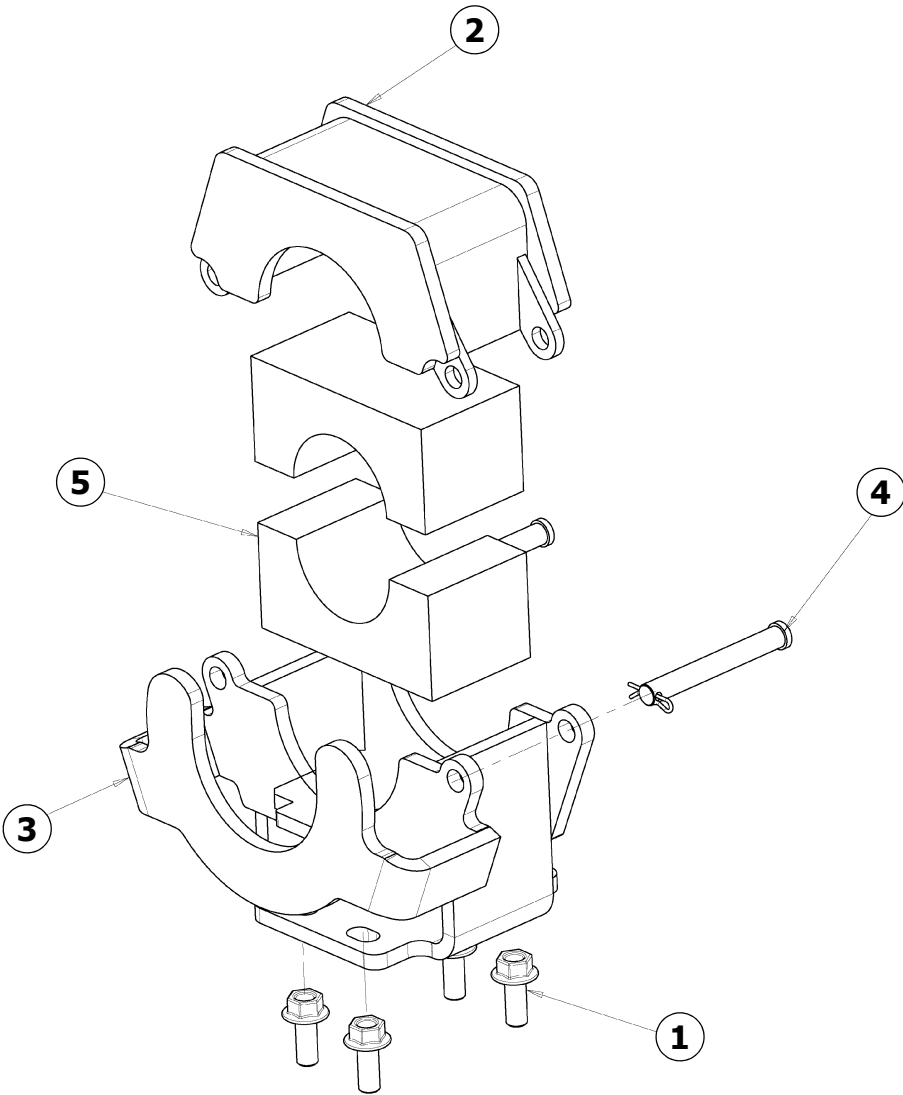
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU117726	ASSEMBLY - Gripper	1
1	AU117449	INSERT - Gripper	1
2	AU117581	PLATE - Gripper	2
3	AU100323	SCREW, METRIC FLANGE w/BODY - M8 x 60	3
4	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	3



**DD4045 Directional Drill
ELEVATOR ASSEMBLY**

9-45

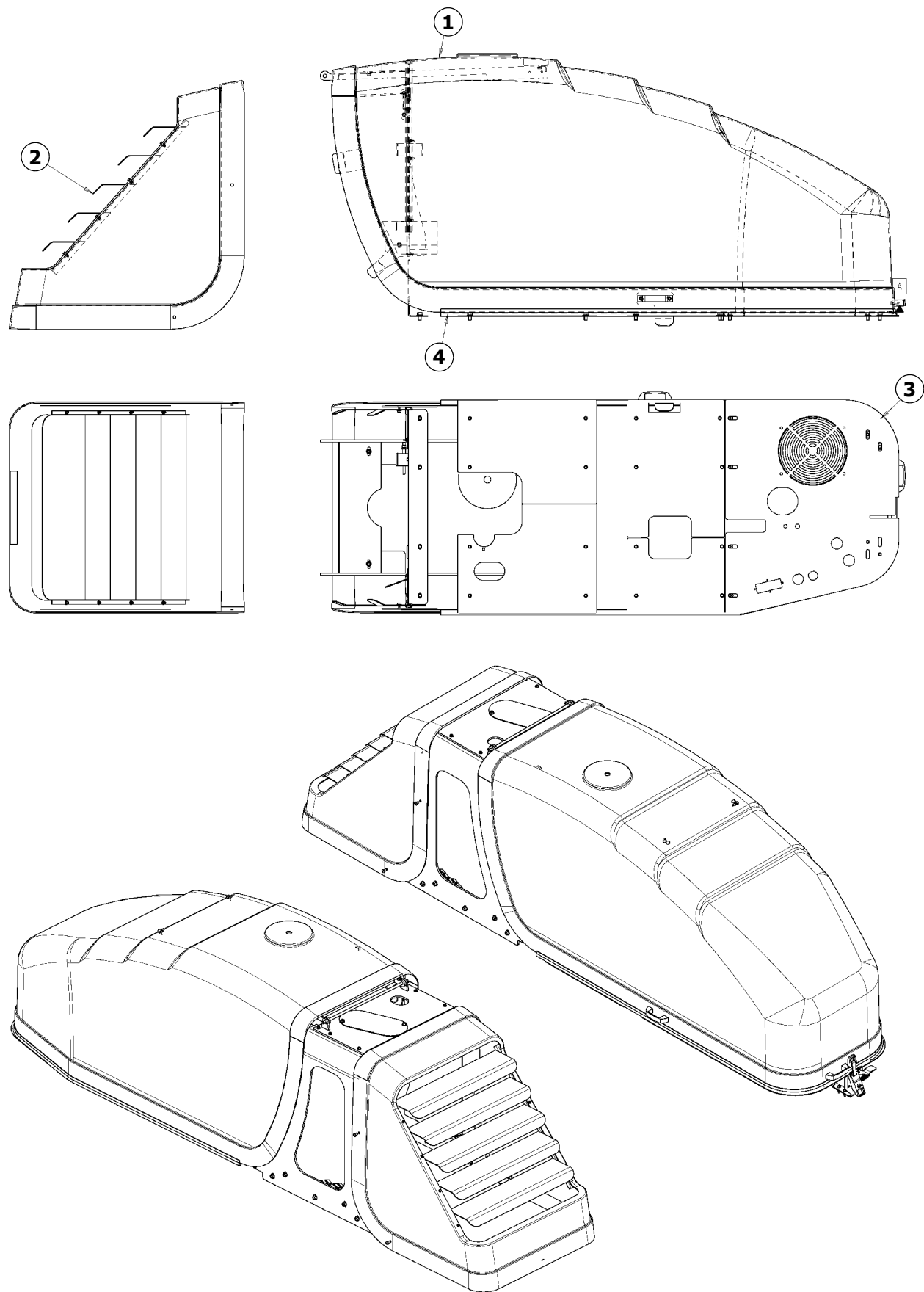
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU121923	ASSEMBLY - Elevator	1
1	AU121928	PLATE - Elevator, Cylinder Lift Point.	1
2	AU118322	PLATE - Elevator	1
3	AU118323	PLATE - Elevator	2
4	AU118325	PLATE - Elevator	2
5	AU118326	PLATE - Elevator	1
6	AU118214	CYLINDER - Hydraulic, 1.500 Dia Bore x 6.000 Stroke	1
7	H030262	PIN - Clevis	2
8	432-1620	PIN - Cotter, 0.250 x 1.25 in ZN	2
9	496-11081	WASHER - 0.812 x 1.500 x 0.134 in Hdn ZND	2
10	AU100363	SCREW, METRIC FLANGE w/BODY - M16 x 65	4
11	AU100529	NUT, METRIC FLANGE PREVAILING - M16, Zinc.	4
12	AU100348	SCREW, METRIC FLANGE w/BODY - M12 x 45	6
13	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	6
14	219-8	FITTING - Lube, 1/4 - 28 Tpr SAE-LT, 0.54 Long	2
15	AU121929	PLATE - Elevator, Slide / Pipe Lift	1



DD4045 Directional Drill ROD GUIDE ASSEMBLY

9-47

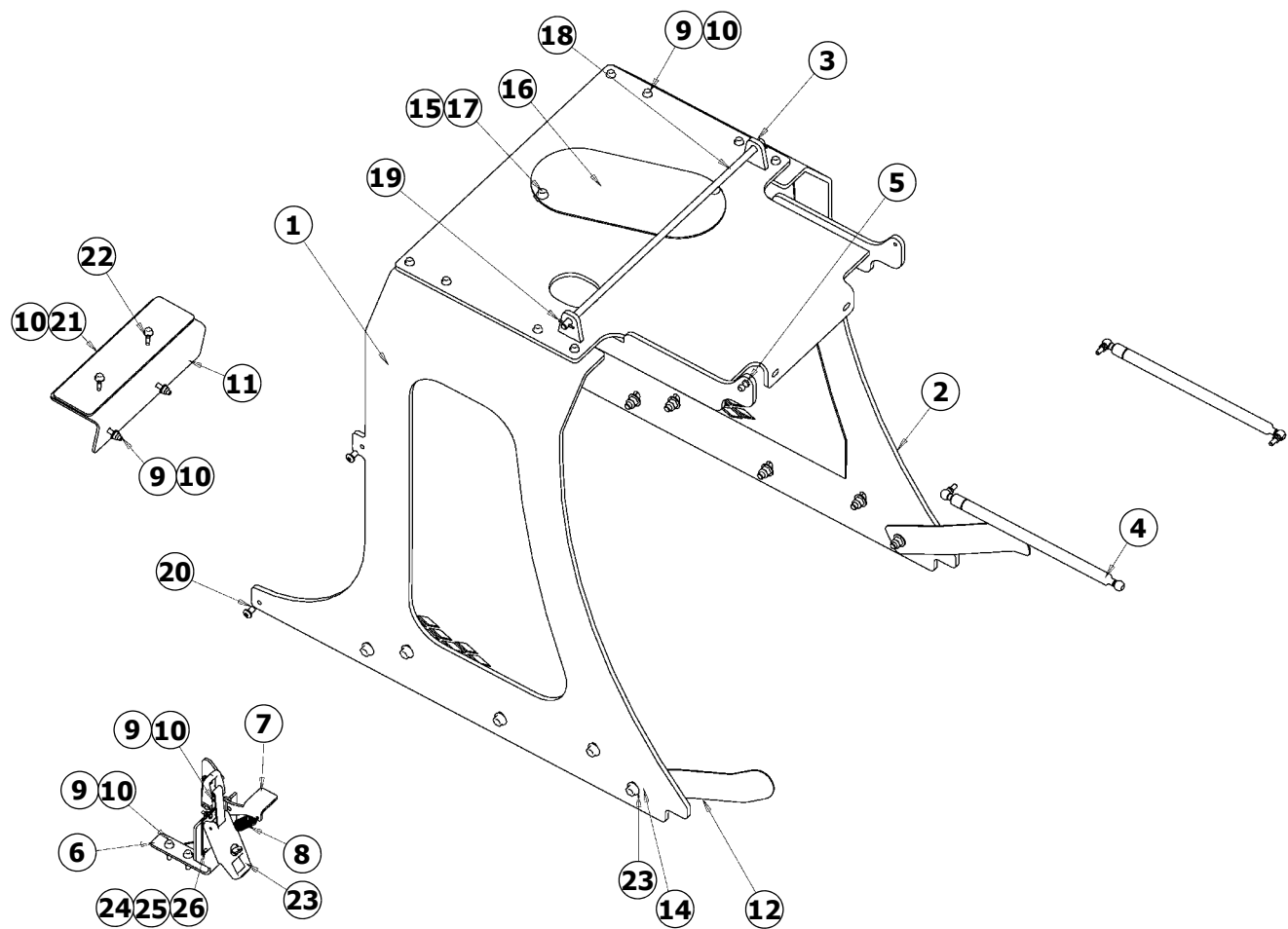
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU119093	ASSEMBLY - Rod Guide	1
1	AU101477	SCREW, METRIC FLANGE w/BODY - M12 x 30	4
2	AU115588	WELDMENT - Rod Guide	1
3	AU115589	WELDMENT - Rod Guide	1
4	AU119042	PIN - Clevis, with Cotter Pin Retainer	2
5	AU119095	BUSHING - Rod Guide	2



DD4045 Directional Drill
HOOD ASSEMBLY

9-49

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU118310	ASSEMBLY - Hood	1
1	AU115517	ASSEMBLY - Front Hood	1
2	AU118302	ASSEMBLY - Rear Hood	1
3	AU116330	WELDMENT - Seal Plates	1
4	AU118723	BULB SEAL - 3805 mm Cut Length	1

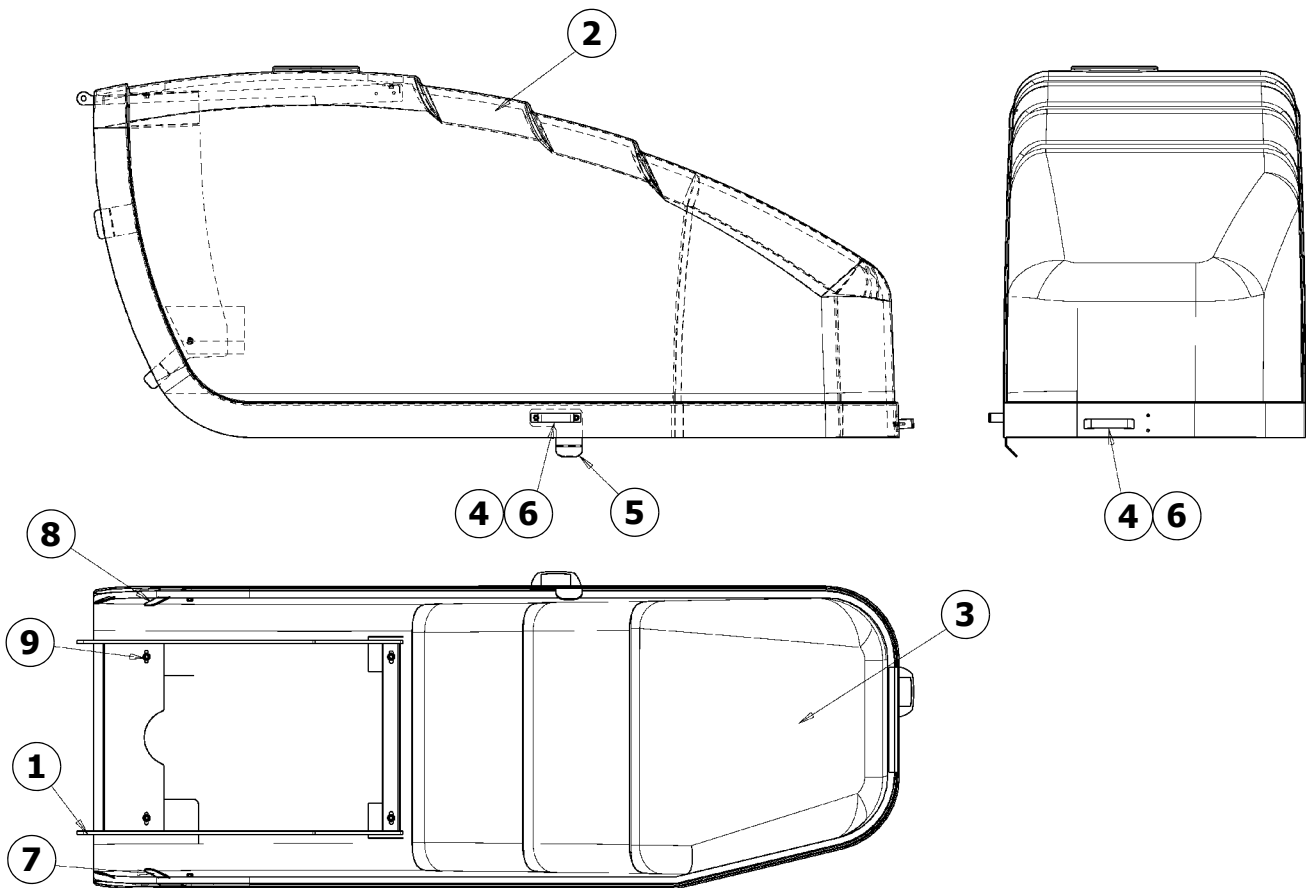


DD4045 Directional Drill

HOOD MOUNTING ASSEMBLY

9-51

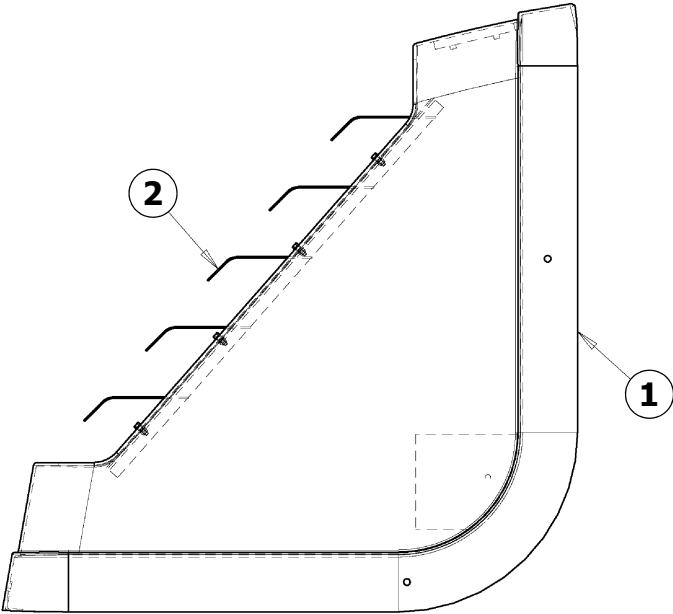
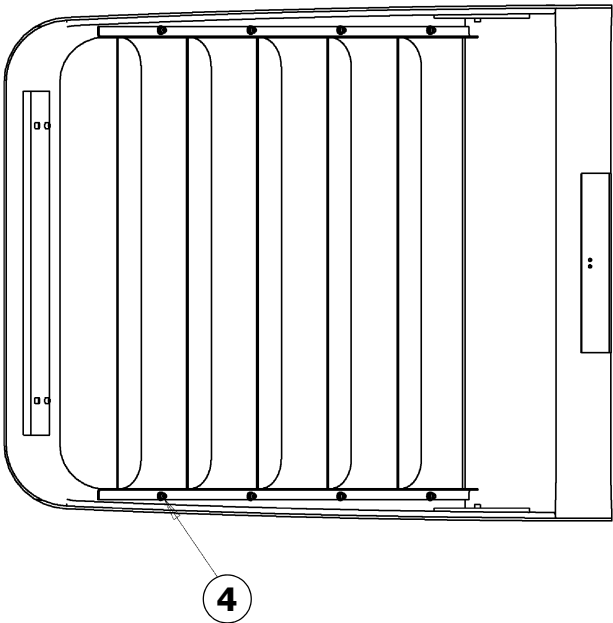
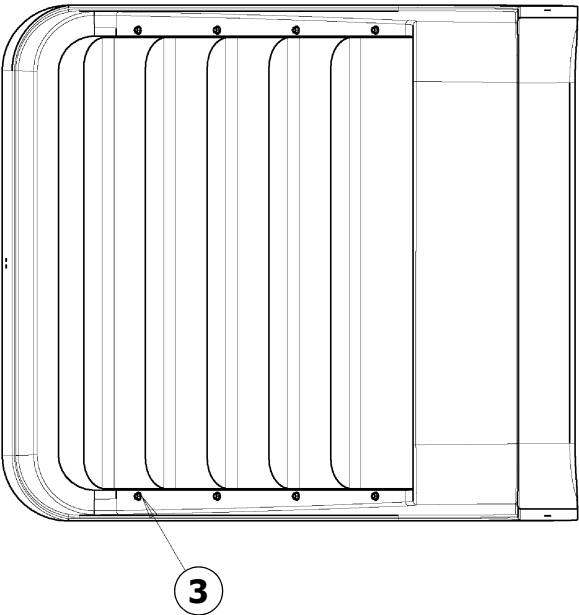
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU118310	ASSEMBLY - Hood	1
1	AU121461	PLATE - Mounting, Hood, Weldment.	1
2	AU121462	PLATE - Mounting, Hood, Weldment.	1
3	AU118309	WELDMENT - Hood Mounting.	1
4	32GB5110	SHOCK - Gas Spring.	2
5	8HH96100	STUD - Pivot	4
6	AU118512	MOUNT - Hood Safety Latch.	1
7	AU111869	LATCH - Hood Safety	1
8	AU112966	SPRING - Tension.	1
9	AU100318	SCREW, METRIC FLANGE w/BODY - M8 x 35	13
10	AU100526	NUT, METRIC FLANGE PREVAILING - M8, Zinc.	15
11	AU118515	PLATE - Rear Hood Stop	1
12	32GB5016	GUIDE - Hood	2
13	AU100830	SCREW, METRIC FLANGE w/BODY - M12 x 40	10
14	AU100528	NUT, METRIC FLANGE PREVAILING - M12, Zinc.	10
15	AU100863	NUT, U - M10 x 1.50 Short	2
16	AU118526	PLATE - Cover.	1
17	AU100876	SCREW, METRIC FLANGE w/BODY - M10 x 25	2
18	AU118537	BAR - Hood Pin	1
19	8CP10403	PIN - Cotter, 1/8 Dia x 1" Long	2
20	AU119330	SCREW - Bulkhead Hex Soc, M10 x 1.5 x 16.	4
21	AU119331	PLATE - Sandwich.	1
22	AU100874	SCREW, METRIC FLANGE w/BODY - M8 x 30	2
23	AU122811	LATCH - Lockable, Draw.	1
24	470-11012	SCREW - PHd Sltd # 10-24 x 0.75 CST ZND	5
25	495-11022	WASHER - 0.219 x 0.438 x 0.049 in CST ZND.	5
26	193-1004	NUT - KEPS Ext T # 10-24 UNC ZP	5



DD4045 Directional Drill
HOOD ASSEMBLY, FRONT

9-53

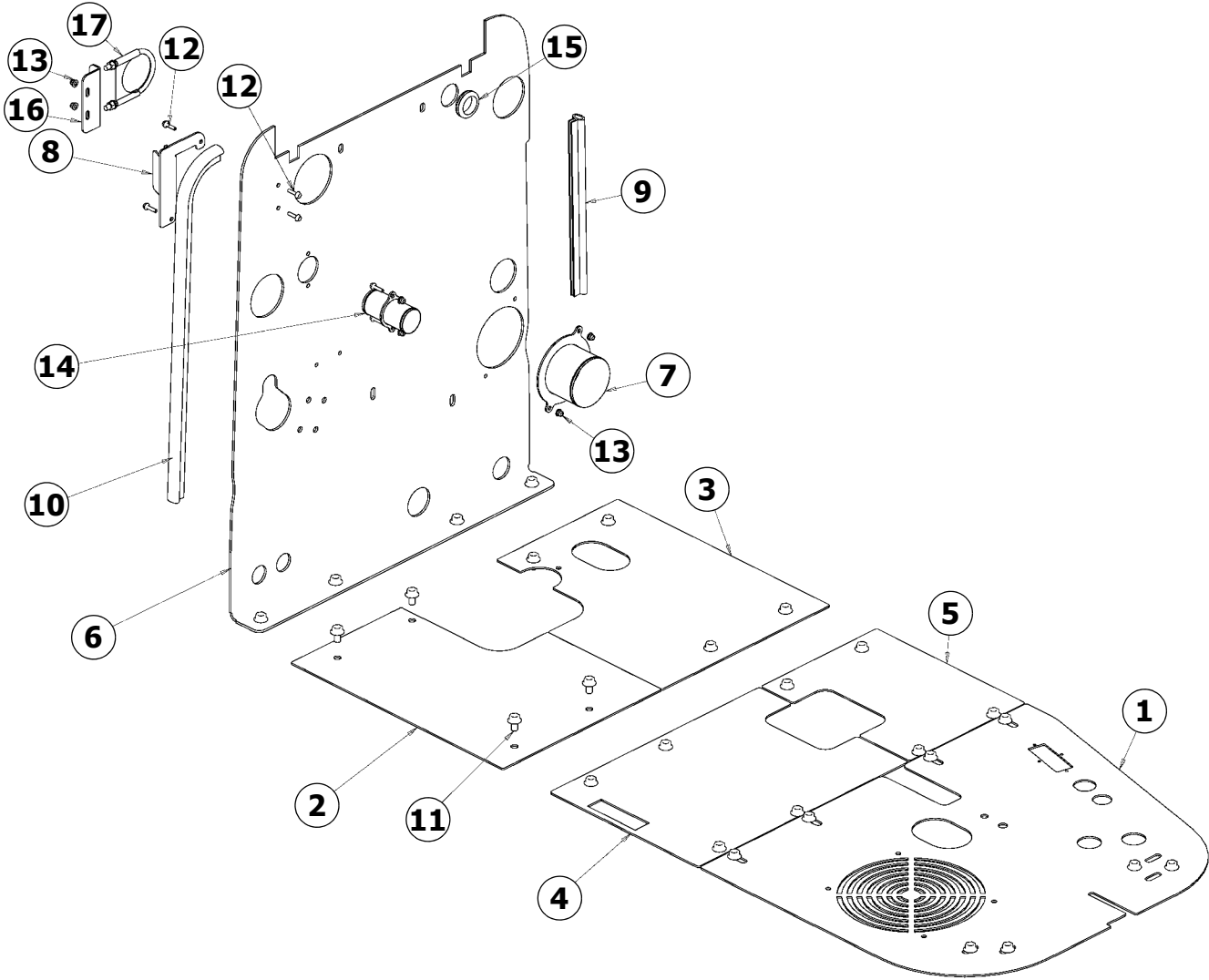
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115517	ASSEMBLY - Hood, Front	1
1	AU118730	HINGE - Front Hood	1
2	AU118727	HOOD - Front, Fiberglass	1
3	AU115515	LINING - Sound and Heat Resistant	1
4	AU104854	HANDLE - Grab	2
5	AU121776	PLATE - Front Hood Guide	1
6	AU100872	SCREW, METRIC FLANGE w/BODY - M8 x 20	4
7	AU123306	PLATE - Hood Catch	1
8	AU123307	PLATE - Hood Catch	1
9	231-5146	NUT, Serr Flg 3/8-16 UNC GR5 ZND	6



DD4045 Directional Drill
HOOD ASSEMBLY, REAR

9-55

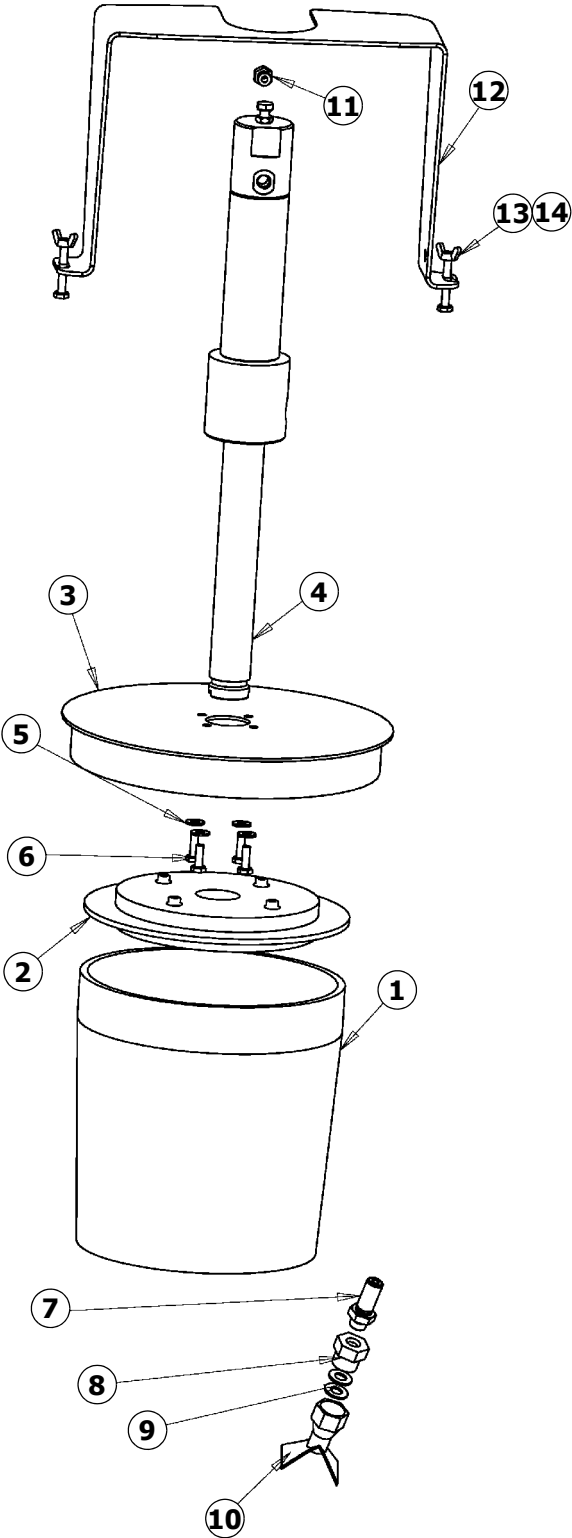
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU118302	ASSEMBLY - Hood, Rear	1
1	AU118367	HOOD - Rear, Fiberglass	1
2	AU118366	WELDMENT - Rear Hood Louver	1
3	AU100869	SCREW, METRIC FLANGE w/BODY - M6 x 20	8
4	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	8



DD4045 Directional Drill
SEAL PLATES ASSEMBLY

9-57

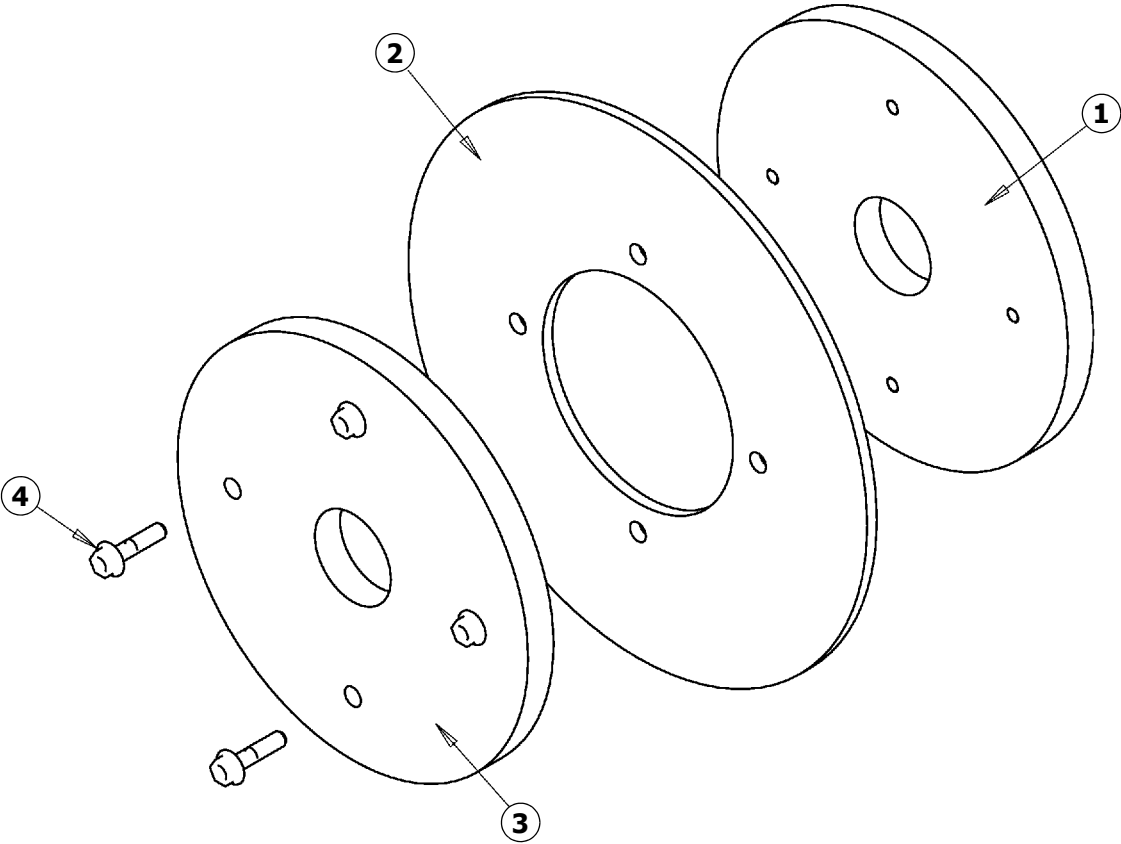
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU116330	ASSEMBLY - Seal Plates	1
1	AU116571	PLATE - Hood Seal	1
2	AU116572	PLATE - Hood Seal	1
3	AU116573	PLATE - Hood Seal	1
4	AU118532	PLATE - Hood Seal	1
5	AU120220	PLATE - Hood Seal	1
6	AU118213	PLATE - Bulkhead	1
7	AU119406	MOUNT - Fresh Air Intake	1
8	AU119404	PLATE - Air Intake, Heat Deflector	1
9	AU118539	SEAL - Bulb, 389 mm Cut Length	1
10	AU118724	SEAL - Bulb, 775 mm Cut Length	1
11	AU100413	SCREW, METRIC FLANGE FULL - M12 x 20	28
12	AU100870	SCREW, METRIC FLANGE w/BODY - M6 x 25	6
13	AU100525	NUT, METRIC FLANGE PREVAILING - M6, Zinc.	6
14	AU120224	BULKHEAD - Radiator.	1
15	AU120853	GROMMET - Rubber, 1.5" ID	1
16	AU120221	PLATE - Exhaust Support	1
17	8NG28118	CLAMP - Guillotine	1



DD4045 Directional Drill
TOOL JOINT LUBE APPLICATOR

9-59

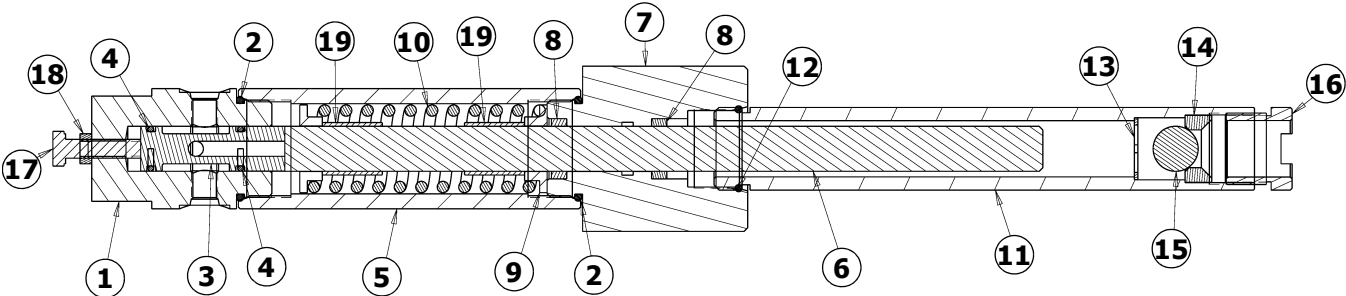
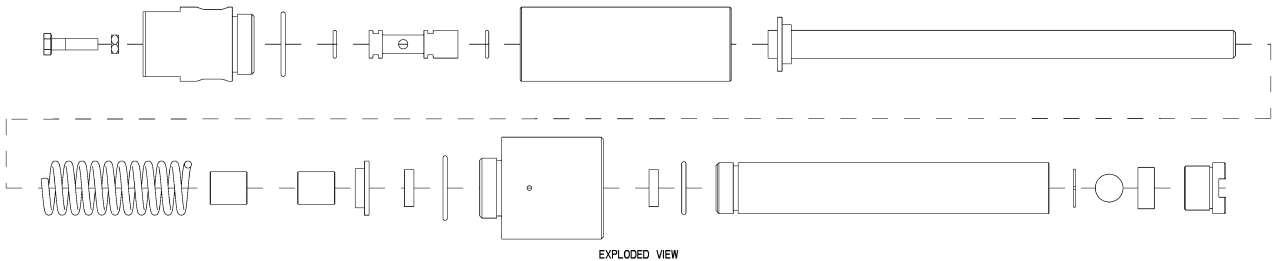
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU108820	ASSEMBLY - Tool Joint Lube Applicator.	1
1	01DT9904	THREAD COMPOUND - Kopr-Kote	1
2	AU108646	SEAL - Rubber, Follower.	1
3	AU108790	WELDMENT - Cover	1
4	AU108837	PUMP - Grease, TJC, Hydraulic, Cartridge.	1
5	495-11028	WASHER - 0.281 x 0.625 x 0.065 in CST ZND.	4
6	426-412	BOLT - Hex Hd 0.250 x 0.750 GR8 ZND.	4
7	8OAA0404	CONNECTION - Bulkhead, Straight -4 ORFS / -4 ORB	1
8	8SA31004	REDUCER - -4 ORB / 7/8 - 14 Thread	1
9	496-11041	WASHER - 0.406 x 0.812 x 0.065 in HDN ZND	2
10	AU108817	NOZZLE - Spray, Airless	1
11	218-5153	PLUG - Hex, ORB 1/4	1
12	AU109840	TIE DOWN - Grease Cover	1
13	129-409	NUT - Wing, 1/4 - 20 UNC ZND.	2
14	426-428	BOLT - Hex Hd 0.25 x 1.75 GR8 ZND.	2



DD4045 Directional Drill
SEAL, FOLLOWER

9-61

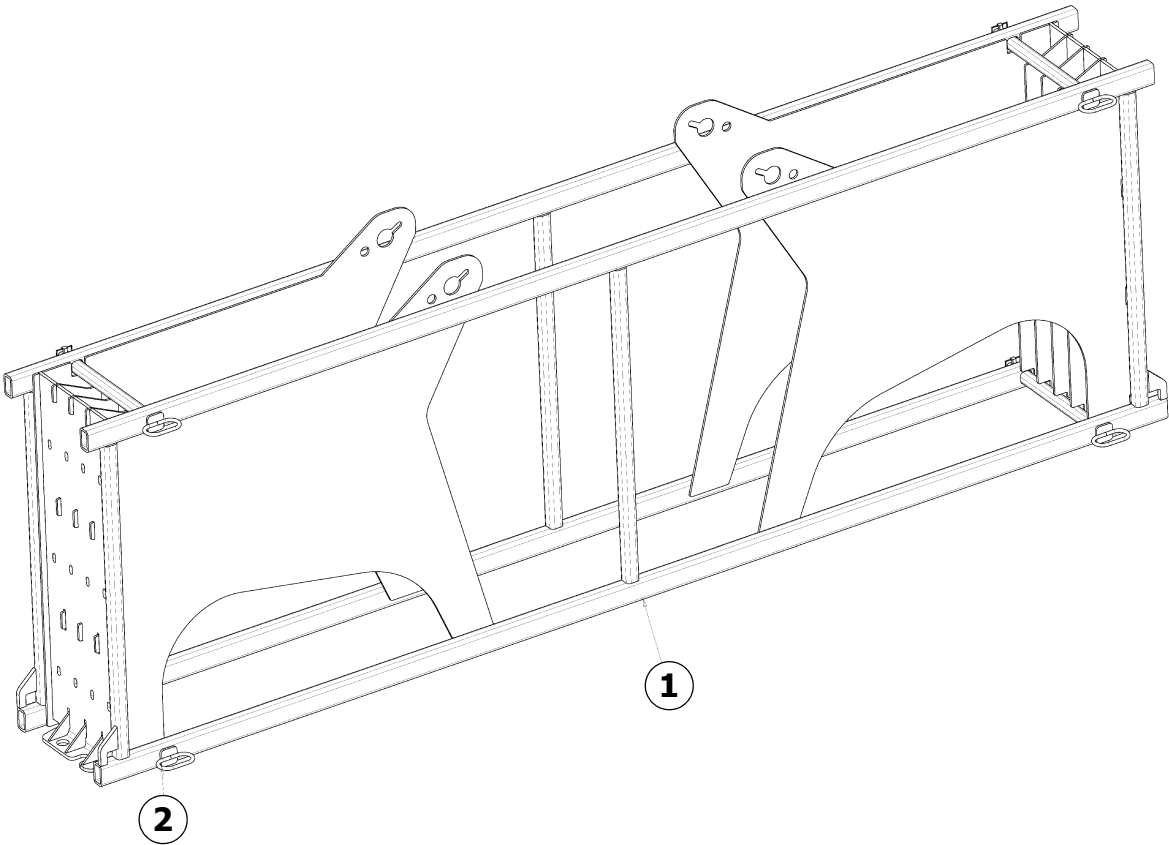
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU108646	ASSEMBLY - Seal, Follower	1
1	AU108641	PLATE	1
2	AU108814	SEAL - Rubber, Follower.	1
3	AU108640	PLATE	1
4	AU108870	SCREW, METRIC FLANGE w/BODY - M6 x 25	4



DD4045 Directional Drill
GREASE PUMP, HYDRAULIC CARTRIDGE

9-63

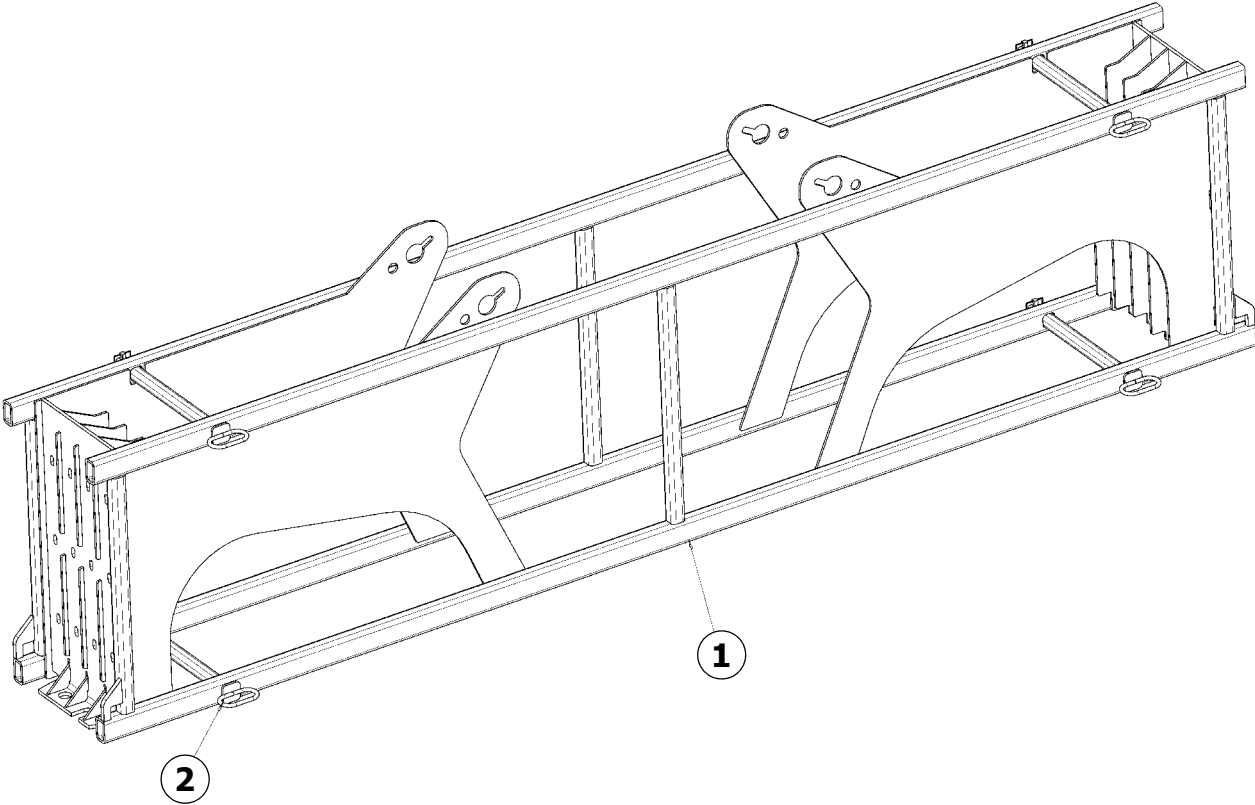
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU108837	ASSEMBLY - Grease Pump, Hydraulic Cartridge	1
1	AU108858	CAP - Cylinder	1
2	8HS51920	SEAL - O-Ring, -920 Size	2
3	AU108861	SPOOL - Adjusting	1
4	238-5113	O-RING - 0.094 x 0.562 in Class 5	2
5	AU108862	BARREL - Cylinder	1
6	AU108865	PLUNGER	1
7	AU108859	BODY - Pump	1
8	8HS10002	SEAL - Deep Polypak, 3/4" ID x 1.0" OD x 1/4" Thk	2
9	AU108863	GUIDE - Rod	1
10	AU108870	SPRING	1
11	AU108866	BARREL - Pump	1
12	8HS51916	SEAL - O-Ring, -916 Size	1
13	AU108860	CLIP - Retainer	1
14	AU108867	SEAT - Valve	1
15	AU108869	BALL - Stainless Steel, 3/4" Dia	1
16	AU108868	TUBE - Inlet	1
17	426-520	BOLT - Hex Hd 5/16 x 1.250 GR8 ZND	1
18	425-145	NUT - Hex Jam 5/16-18 GR5 ZND	1
19	AU108871	BEARING - Sleeve, Bronze	2



DD4045 Directional Drill
TJOD ROD BOX ASSEMBLY, 3.25

9-65

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU115610	ASSEMBLY - TJOD Rod Box, 3.25.....	1
1	AU117654	WELDMENT - TJOD Rod Box, 2.80	1
2	AU118581	ASSEMBLY - Rod Box Pin	4
3	AU121953	COVER - Pipe Basket (OPTIONAL)	1



DD4045 Directional Drill
TJOD ROD BOX ASSEMBLY, 2.800

9-67

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU124645	ASSEMBLY - TJOD Rod Box, 2.800	1
1	AU124646	WELDMENT - TJOD Rod Box, 2.800	1
2	AU118581	ASSEMBLY - Rod Box Pin	4
3	AU121953	COVER - Pipe Basket (OPTIONAL)	1

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DD4045 Directional Drill
SHIPPING KIT

9-69

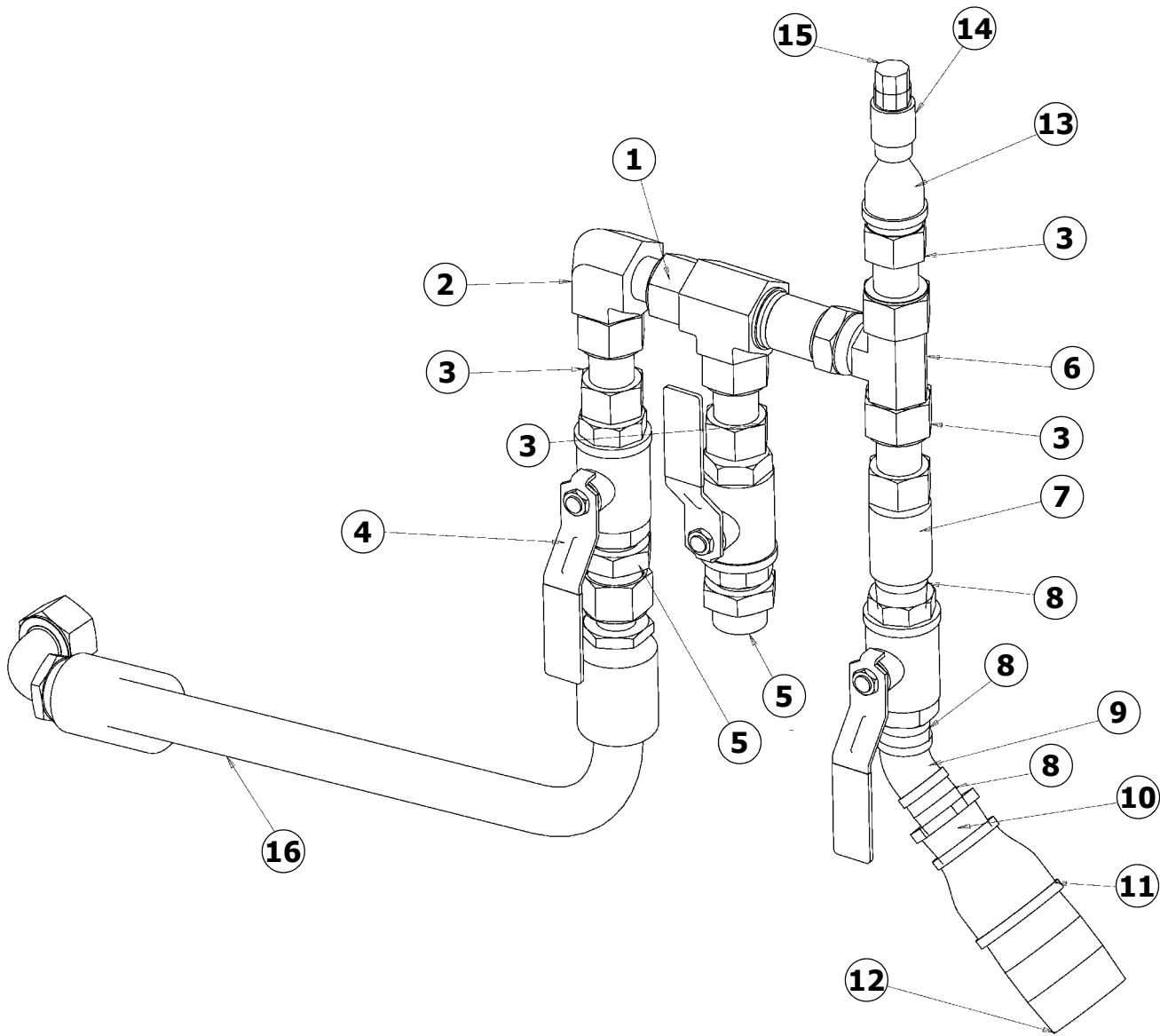
REF.	PART NO.	DESCRIPTION	REQ'D.
	32GB7600	ASSEMBLY - Shipping Kit.	1
1	32GB1215	KIT - 2", Y Strainer.	1
2	32GB7610	WAND - Wash Down.	1
3	AU114336	ASSEMBLY - Cylinder Lockout.	1
4	8AA00005	UMBRELLA.	1
5	8CL25014	ASSEMBLY - Clamp.	1
6	30GB2412-5	COUPLER - Grease.	1
7	AU116192	WIPER - Rod.	1

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DD4045 Directional Drill
AIR HAMMER KIT
(OPTIONAL)

9-71

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU123014	KIT - Air Hammer.	1
1	AU123012	Module Program	1
2	AU123013	Display Program	1
3	AU123011	Cable Assembly	1
4	AU124704	Attachment Kit.	1



2011.11.11

DD4045 Directional Drill
AIR HAMMER ATTACHMENT KIT
(OPTIONAL)

9-73

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU124704	KIT - Attachment, Air Hammer.	1
1	8OR91616	CONNECTION - Bulkhead, Run Tee, -16 ORFS / -16 ORFS.	1
2	8OL81616	CONNECTION - 90 Degree, -16 ORFS / -16 ORFS.	1
3	8OA65016	CONNECTION - Adapter, -16 ORFS Female / 1" NPT Male	4
4	8HV22016	BALL VALVE - 1" NPT	3
5	8OA11616	CONNECTION - Straight, -16 ORFS / -16 ORB.	2
6	8OB81616	CONNECTION - Branch Tee, -16 ORFS / -16 ORFS.	1
7	221-340	COUPLING - Pipe, 1.0 NPSC Stl Black	1
8	221-236	NIPPLE - Pipe, 1.0 NPTF x 1.625 Black Stl	3
9	221-370	ELBOW - 45 Degree, 1" NPT	1
10	221-70	BUSHING - Hex Reducer, Pipe, 1-1/4 x 1 Blk	1
11	221-362	BELL REDUCER - 2" x 1.25" NPT	1
12	221-305	NIPPLE - Pipe, 2.0 NPTF x 3.00 Black Stl	1
13	8PC11604	BELL REDUCER - 1" x 0.25" NPT	1
14	8QD55204	QUICK DISCONNECT - 1/4 Male NPT.	1
15	8QD08204	ADAPTER - 6 - 6 - G64L, Str Thread	1
16	AU124711	HOSE - Pump to Pressure Washer.	1

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SOFT CAB
(Optional)

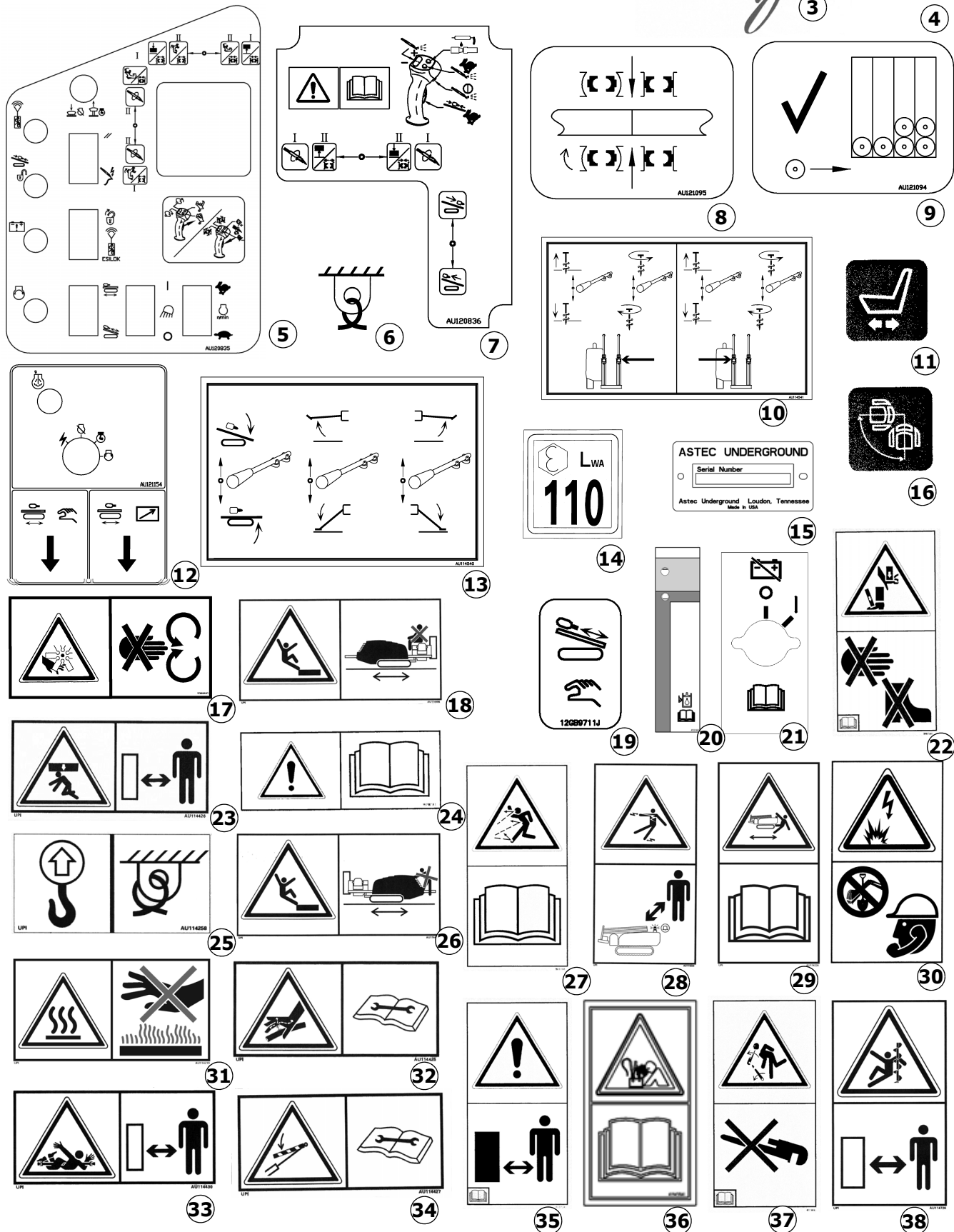
REF.	PART NO.	DESCRIPTION	REQ'D.
	AU121865	SOFT CAB.	1
1	AU121828	MOUNT - Soft Cab	2
2	AU100871	SCREW, METRIC FLANGE w/BODY - M6 x 30.	4
3	AU121862	PLATE - Backing.	2
4	AU100861	NUT, U - M6 x 1.0 Long	4
5	AU121863	ENCLOSURE - Soft Cab.	1

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DD4045 Directional Drill
OPERATOR STATION COVER
(Optional)

9-77

REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU121927	OPERATOR STATION COVER	1


DD-4045
Earth Pro
Series


DECALS

REF.	PART NO.	DESCRIPTION	REQ'D.
	AU121114	DECAL GROUP - DD4045	1
1	8NP41445	DECAL - Astec, Red and Blue Pattern	1
2	AU120848	DECAL - Model "DD4045"	2
3	AU111653	DECAL - Earth Pro, Medium Size	1
4	AU111692	DECAL - "A", Astec Underground	1
5	AU120835	DECAL - Left Joystick Overlay	1
6	139728A1	DECAL - Tie Down	4
7	AU120836	DECAL - Right Joystick Overlay	1
8	AU121095	DECAL - Pipe Breakout Clear	1
9	AU121094	DECAL - Pipe Return Clear	1
10	AU114541	DECAL - Stakedown Setup	1
11	368391A1	DECAL - Seat Fore/Aft	1
12	AU121154	DECAL - Rear Controls (Inside Box)	1
13	AU114540	DECAL - Stabilizer/Thrust Frame Setup	1
14	221870A1	DECAL - Danger, Bystander	1
15	AU100572	PLATE - Serial Number	1
16	368392A1	DECAL - Seat Pivot In/Out	2
17	175504A1	DECAL - Danger, Fan Entanglement, ISO	1
18	AU114496	DECAL - Warning, No Riders (Front), ISO	1
19	12GB9711J	DECAL - Remote Plug	1
20	412214A2	DECAL - Hydraulic Oil Level	1
21	329019A1	DECAL - Master Disconnect Switch	1
22	395076A1	DECAL - Danger, Crush, Hands and Feet, ISO	6
23	AU114426	DECAL - Danger, Crush From Above, ISO	3
24	394581A1	DECAL - Warning, Read Operators Manual, ISO	2
25	AU114258	DECAL - Tie Down/Lift Hook Combination, ISO	4
26	AU114429	DECAL - Warning, No Riders While Trimming, ISO	1
27	391157A1	DECAL - Warning, Flying Objects, ISO	2
28	AU114228	DECAL - Danger, Strike Alert Electrocution Hazard, ISO	2
29	AU114226	DECAL - Danger, Runover Hazard, ISO	2
30	AU123660	DECAL - Call Before You Dig, ISO	2
31	AU114219	DECAL - Danger, Hot Surface, ISO	2
32	AU114425	DECAL - Danger, Hydraulic Components Under Pressure, ISO	2
33	AU114430	DECAL - Danger, Entanglement Hazard, Small, ISO	2
34	AU114427	DECAL - Warning, Use Cylinder Lock For Service, ISO	1
35	395072A1	DECAL - Warning, Stand Clear, ISO	4
36	419459A1	DECAL - Danger, Battery Explosion, ISO	1
37	391160A1	DECAL - Do Not Use Pipe Wrench, ISO	1
38	AU114726	DECAL - Danger, Vertical Auger Entanglement, ISO	1
39	AU104193	FASTENER - Steel Tack (Used to attach Serial Number plate.)	2
40	AU124951	KIT - Manual, English, DD-4045	1
41	352-24	BAG - Polyethylene, 3 mil, 12 x 15	1
42	AU123272	MANUAL - Operators, English, DD-4045	1
43	AU119349	MANUAL - Parts, English, DD-4045	1
44	AU111546	MANUAL - Safety	1
45	AU103157	TAG - Do Not Operate	1

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DD4045 Directional Drill

OPTIONAL EQUIPMENT

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REF.	PART NO.	DESCRIPTION	REQ'D.
1	AU119197	Drill Pipe EPWS2 - 602, Forged One Piece	1
2	AU119198	Transition Sub Assembly	1
3	AU113704	Hex Collar	1
4	AU117104	Crossover Adapter, AUQDC32.375BxAUST32.375P	1
5	AU114270	Sonde Housing Assembly	1
6	AU121372	Tailpiece, Quick Disconnect Starter Rod	1
7	AU121411	Bit, 4", Cutting, Pointed w/Carbide Chips	1
8	AU121814	Bit, 5", Cutting, Pointed w/Carbide Chips	1
9	AU121078	Bit, 4", Cutting, 10 Degree Square w/Carbide Chips	1
10	AU121413	Bit, 5", Cutting, 10 Degree Square w/Carbide Chips	1
11	AU121382	Bit, 4", Button Type	1
12	AU116406-03	Reamer, Bulldog, 8"	1
13	AU116406-04	Reamer, Bulldog, 10"	1
14	AU116406-08	Reamer, Bulldog, 12"	1
15	AU116406-15	Reamer, Bulldog, 14"	1
16	AU116875-03	Reamer, Clay Whip, 8"	1
17	AU116875-04	Reamer, Clay Whip, 10"	1
18	AU116875-05	Reamer, Clay Whip, 12"	1
19	AU116875-06	Reamer, Clay Whip, 14"	1
20	AU116875-07	Reamer, Clay Whip, 16"	1
21	AU116407-01	Reamer, V-Rock, 8"	1
22	AU116407-02	Reamer, V-Rock, 10"	1
23	AU116407-03	Reamer, V-Rock, 12"	1
24	AU116407-04	Reamer, V-Rock, 14"	1
25	00503-230	Swivel, 60K lbs	1
26	00503-245	Swivel, 90K lbs	1
27	01DT5104	Shackle, 3-1/4 Ton, 5/8"	1
28	01DT5101	Shackle, 4-3/4 Ton, 3/4"	1
29	01DT5105	Shackle, 6-1/2 Ton, 7/8"	1
30	AU119900	Locating System, F2 Remote w/Remote Display	1
31	AU119899	Locating System, F2 Remote w/o Remote Display	1
32	01DT4250	Locating System, Eclipse Remote w/Remote Display	1
33	AU115219	Locating System, Eclipse Remote w/o Remote Display	1
34	AU119900-UK	Locating System, F2 Remote w/Remote Display, United Kingdom	1
35	AU119899-UK	Locating System, F2 Remote w/o Remote Display, United Kingdom	1
36	01DT4250-UK	Locating System, Eclipse Remote w/Remote Display, United Kingdom	1
37	AU115219-UK	Locating System, Eclipse Remote w/o Remote Display, United Kingdom	1
38	AU119900-AU	Locating System, F2 Remote w/Remote Display, Australia	1
39	AU119899-AU	Locating System, F2 Remote w/o Remote Display, Australia	1
40	01DT4250-AU	Locating System, Eclipse Remote w/Remote Display, Australia	1
41	AU115219-AU	Locating System, Eclipse Remote w/o Remote Display, Australia	1
42	AU119900-CH	Locating System, F2 Remote w/Remote Display, China	1
43	AU119899-CH	Locating System, F2 Remote w/o Remote Display, China	1
44	01DT4250-CH	Locating System, Eclipse Remote w/Remote Display, China	1
45	AU115219-CH	Locating System, Eclipse Remote w/o Remote Display, China	1
46	AU119897-AU	Long Range F2 Transmitter (Gray) 15" Length, Australian Telemetry	1
47	AU119897	Long Range F2 Transmitter (Gray) 15" Length, US Telemetry	1
48	01DT4251	Std Range Eclipse Transmitter (Black) 50 ft Depth Range	1
49	01DT4255	Ext Range Eclipse Dual Transmitter (Lavender) 40-60 ft Depth Range	1

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