

Parts Manual

PB13X

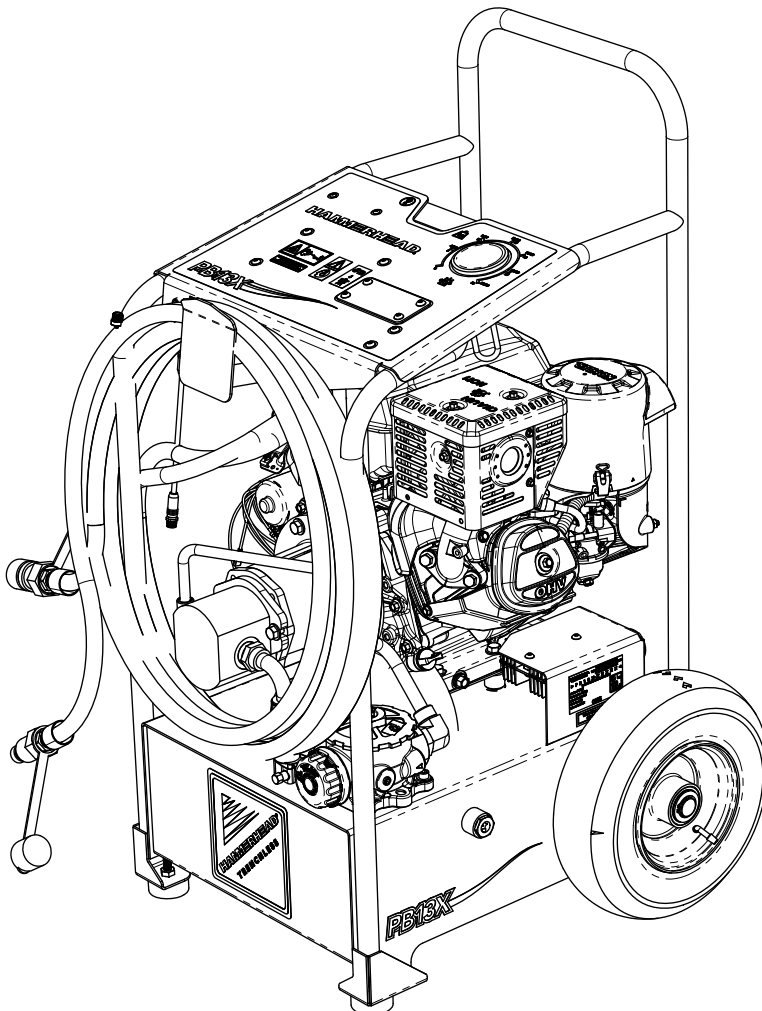


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Preface



PB13X

For replacement copy order P/N 960–1151
Update 02/09/2024

Descriptions and specifications were current at the time of publication. However, The Charles Machine Works, Inc. (HammerHead Trenchless) reserves the right to make changes in engineering, design and specifications; add improvements; or discontinue manufacturing at any time without notice or obligation. This manual may not reflect the most current version of your machine. Please visit www.hammerheadtrenchless.com for the most recent and up to date version.



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Welcome

HOW TO USE THIS MANUAL

This manual contains illustrations and parts list of components and assemblies which make up various HammerHead® models. Each page consists of the name of the assembly or component, a figure number, reference numbers, part numbers, part names, and the quantities of the parts used.

Assembly or component names help identify the illustration and parts for each figure. This name also helps locate the general area of the machine where the assembly or component can be located.

Figure numbers are used to identify each assembly or component and to group these assemblies or components into major categories.

Reference numbers shown in a column refers to the numbered parts in the illustration. This ties the part in the illustration to the part number and description in the parts list. Part numbers are used to identify individual parts or part assemblies.

Part descriptions provide the name of the part, plus additional information such as dimensional specifications and what parts are grouped together to form part assemblies, which helps you identify the part(s).

Quantities listed for each figure are only for that assembly or component and not the total used per machine unless stated so in the "Remarks" column.

This parts manual is not intended to be a complete guide for machine service or repairs. Contact your HammerHead dealer for any of your service or technical requirements.

ORDERING PARTS

Parts for repair or replacement are available through the worldwide network of authorized HammerHead dealers. The use of aftermarket replacement parts in your HammerHead equipment reduces performance and overall equipment life and may also void or interfere with the factory warranty.

Use only genuine HammerHead parts from your authorized dealer for repair or replacement. Always give the serial number and model number of the machine for which parts are being ordered. When ordering parts for component(s), which are not manufactured by HammerHead Trenchless Equipment, also give the serial number of that component(s). Order all parts by part number, part name, and quantity needed. Do not order parts by illustration reference numbers.

UPDATING AND REORDERING MANUALS

The parts lists, illustrations, and specifications in this manual are based on the latest information available at the time of publication. Your machine may have product improvements and options not yet contained in this manual. Please check the web site www.hammerheadtrenchless.com for any updates.

The Charles Machine Works, Inc. reserves the right to make changes at any time without notice or obligation to you. Your dealer will receive notice of these changes and can assist you with accurate parts identification when ordering.

A copy of this manual is supplied with each machine. Additional copies are available through your dealer. When ordering additional manuals, use the reorder number listed on the front cover and the quantity needed. Electronic copies of this manual are also available on the web at www.hammerheadtrenchless.com.

OPERATING INSTRUCTIONS

Instructions on recommended equipment use and maintenance can be found in the Operator's Manual shipped with your equipment. Operator's Manuals are also available on the web at www.hammerheadtrenchless.com.

Thank you for buying and using Genuine HammerHead® Trenchless Equipment, parts and accessories.

HammerHead Trenchless® Limited Warranty

The Charles Machine Works, Inc. dba HammerHead Trenchless ("HammerHead") warrants that all new products it manufactures (with the exception of cured in place pipe consumable materials, which are covered by a separate warranty) will be free from defects in materials, under normal use and service, for one year after delivery to the purchaser (or such other party as the purchaser may direct) or 1000 operating hours, whichever occurs first. The warranty period for any item repaired or replaced pursuant to this warranty shall be the remainder, if any, of the original, defective Product's warranty period.

For any covered issue during the warranty period, Buyer must timely notify HammerHead in writing of such defect, and HammerHead shall, at its option, supply a functionally equivalent replacement product or request the return of the product to its plant in Lake Mills, Wisconsin so that HammerHead may repair it, each without charge. Such repair or replacement is the purchaser's sole and exclusive remedy against Hammerhead, whether in contract or arising out of warranties, representations, or defects. Hammerhead reserves the right to use remanufactured replacement parts under this warranty as it deems appropriate.

No item may be returned without prior written authorization from HammerHead.

This warranty does not cover:

- CIPP Consumables
- Defects other than those in materials (including but not limited to workmanship and design defects)
- Transportation expenses in connection with the repair or replacement of covered products
- Failures caused due to a product that has been installed or used in a manner inconsistent with written warnings, instructions, or recommendations by HammerHead, including but not limited to in product decals or in the owner's guide/user manual; or installed in a manner inconsistent with applicable law or standard industry practices
- Any product that has been neglected, altered, misused, abused, or used in any way which, in HammerHead's opinion, adversely affects its performance
- Failures caused by improper storage; handling installation or maintenance; use of non-HammerHead approved parts or materials; unapproved modifications or alterations; or use of unapproved accessories
- Failures caused by outside influence, including but not limited to Acts of God, fire, or other accident
- Wear items or components failing due to normal wear
- Items that are not manufactured by us (which are warranted only to the extent of the original manufacturer's warranty and subject to their allowance to us, if found defective by them)
- Any additional training or consulting services which may be provided by HammerHead or its representatives or agents (nor shall such training or services extend any product warranty period)
- Damages that arose in whole or in part due to HammerHead's reliance upon drawings, specifications, samples, descriptions, documentation, requirements, requests, or instructions received from the customer, the installer, or either of their agents
- Charges for labor and/or parts beyond those needed to complete the warranted repair or replacement

HammerHead reserves the right to modify, alter, and improve any product without incurring any obligation to replace any product previously sold without such modification, alteration, or improvement. No person is authorized to give any other warranty, or to assume any additional obligation on HammerHead's behalf unless made in writing, and signed by an officer of HammerHead.

THIS WARRANTY AND ANY POSSIBLE LIABILITY OF HAMMERHEAD HEREUNDER IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR A PARTICULAR PURPOSE. HAMMERHEAD IS NOT LIABLE FOR LOST REVENUE, LOST PROFITS, LOSS OF BUSINESS OPPORTUNITY, OR ANY INDIRECT, INCIDENTAL, PUNITIVE, SPECIAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF A PRODUCT COVERED BY THIS WARRANTY, INCLUDING ANY EXPENSE OF OBTAINING SUBSTITUTE EQUIPMENT OR SERVICE

DURING PERIODS OF NONUSE. IN NO EVENT SHALL HAMMERHEAD'S LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

NO ACTION AGAINST HAMMERHEAD ARISING OUT OF OR RELATED TO THIS WARRANTY MAY BE FILED NO MORE THAN ONE (1) YEAR AFTER THE CLAIM ARISES.

**HAMMERHEAD TRENCHLESS®
LAKE MILLS, WISCONSIN**

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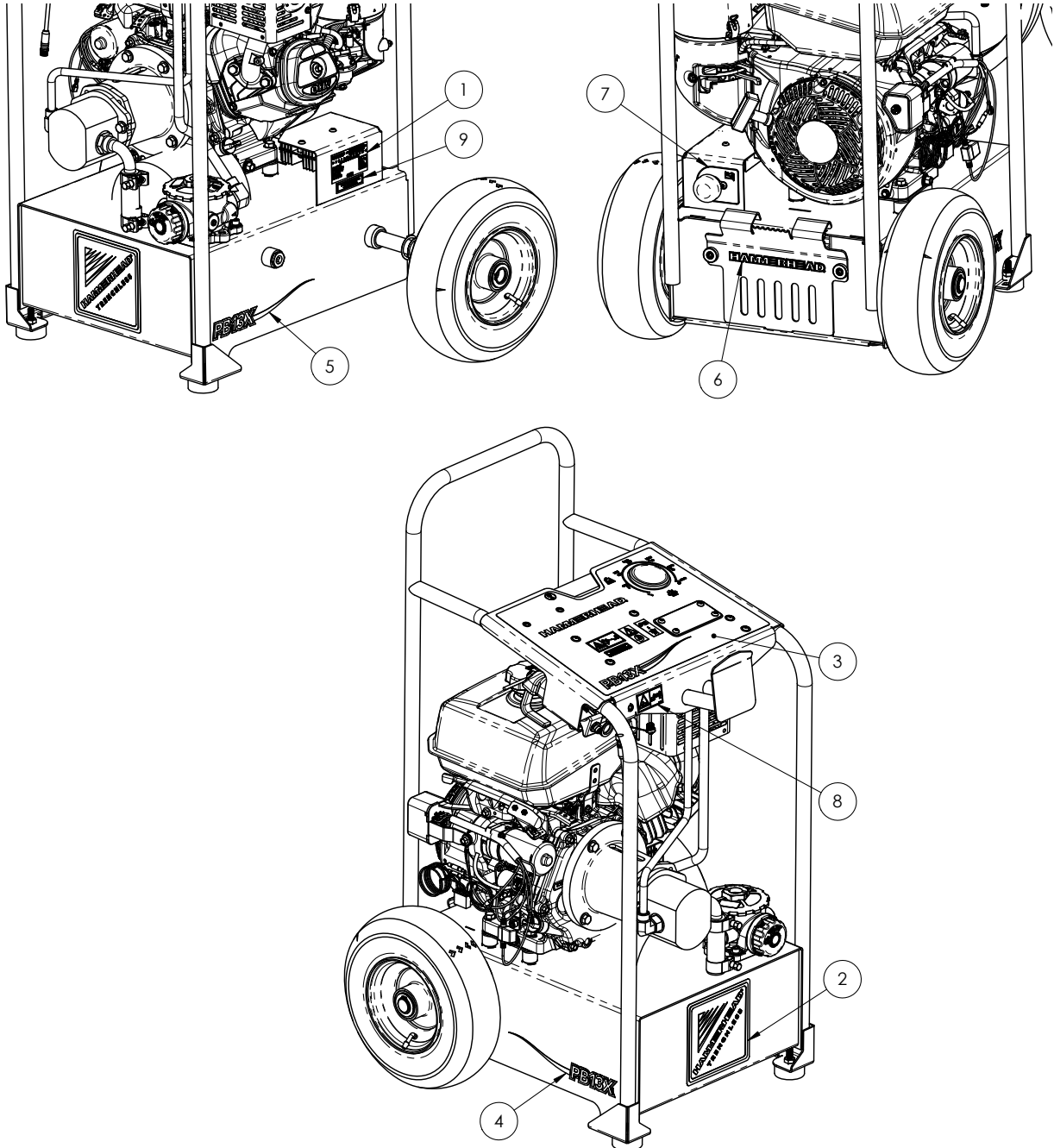
Decals

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Decals Locations

PARTS LIST



Decals Locations

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7254	SERIAL PLATE, PB13X	1	
2	912-4973	DECAL, HH MOUNTAIN SQ-6X6	1	
3	912-7255	DECAL, CONTROL PANEL PB13X	1	
4	912-7327	DECAL, PB13X RIGHT	1	
5	912-7300	DECAL, PB13X LEFT	1	
6	922-7004	DECAL, HH CABLE LETTERING 7"	1	
7	912-7301	DECAL,BATTERY STOP	1	
8	912-7335	DECAL, REMOTE CONTROL PB13X	1	
9	270-6297	CANADA ICES COMPLIANCE DECAL - ISSUE 5	1	

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FOOTNOTES:

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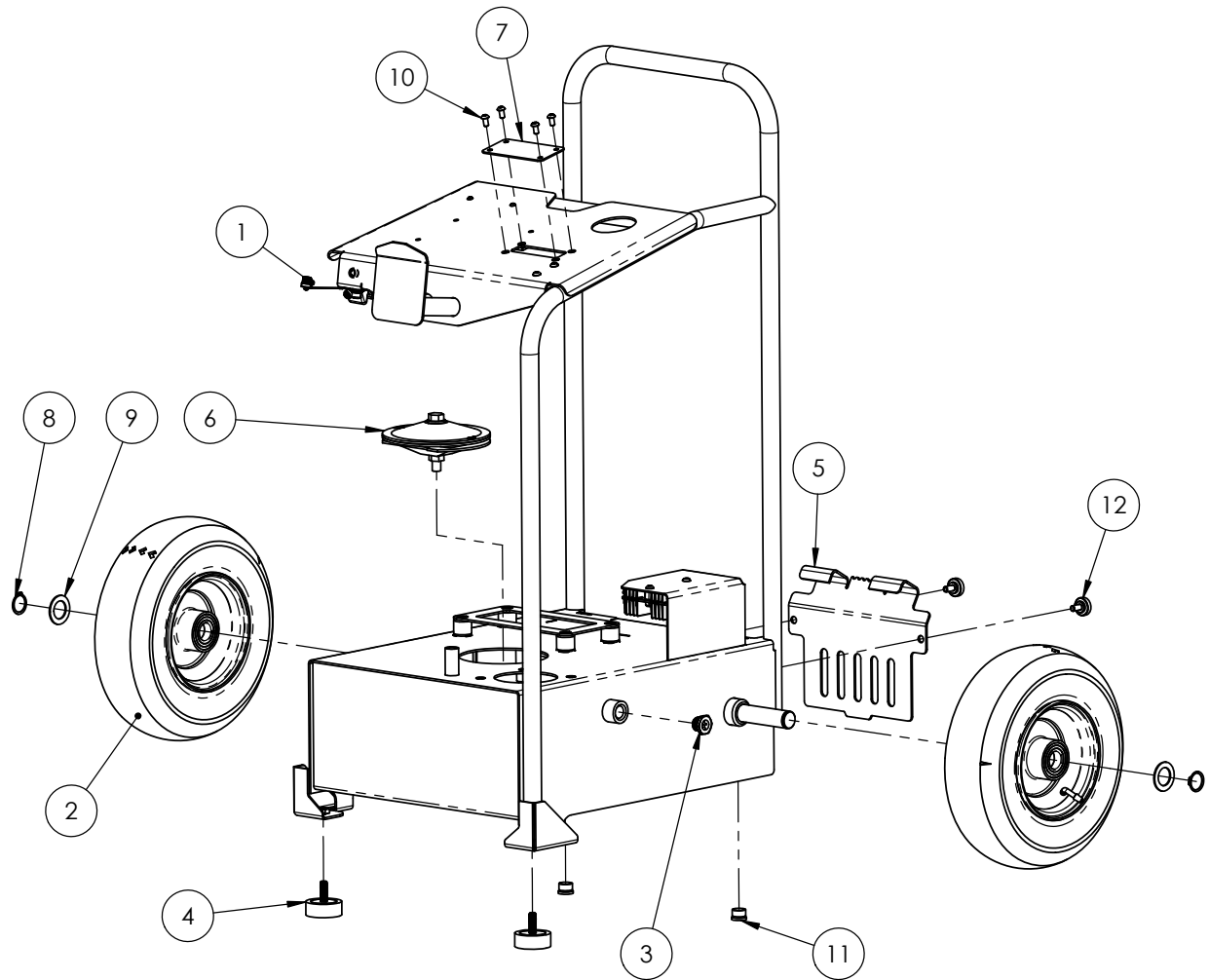
Frame ---

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Frame Components

PARTS LIST



Frame Components

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7317	FRAME, PB13X	1	
2	922-2169	WHEEL, 12"	2	
3	912-6209	FLUID LEVEL WINDOW, SAE 3/4-16	1	
4	912-7206	RUBBER FOOT, ø2 X 3/8-16	2	
5	912-7205	BATTERY COVER	1	
6	912-6638	CLEANOUT, 6"	1	
7	912-7272	COVER, VALVE PLATE	1	
8	923-1749	RETAINING RING, 1" SHAFT"	2	
9	912-7238	WASHER, 1" MIL-SPEC NARROW	2	
10	912-7314	SCREW, BHCS SS, 1/4-20 X 0.5"	4	
11	933-2064	PLUG, ORB-8 HX SC MAGNETIC	2	
12	912-7308	THUMB SCREW, 5/16 X 5/8 HEX DRIVE	2	

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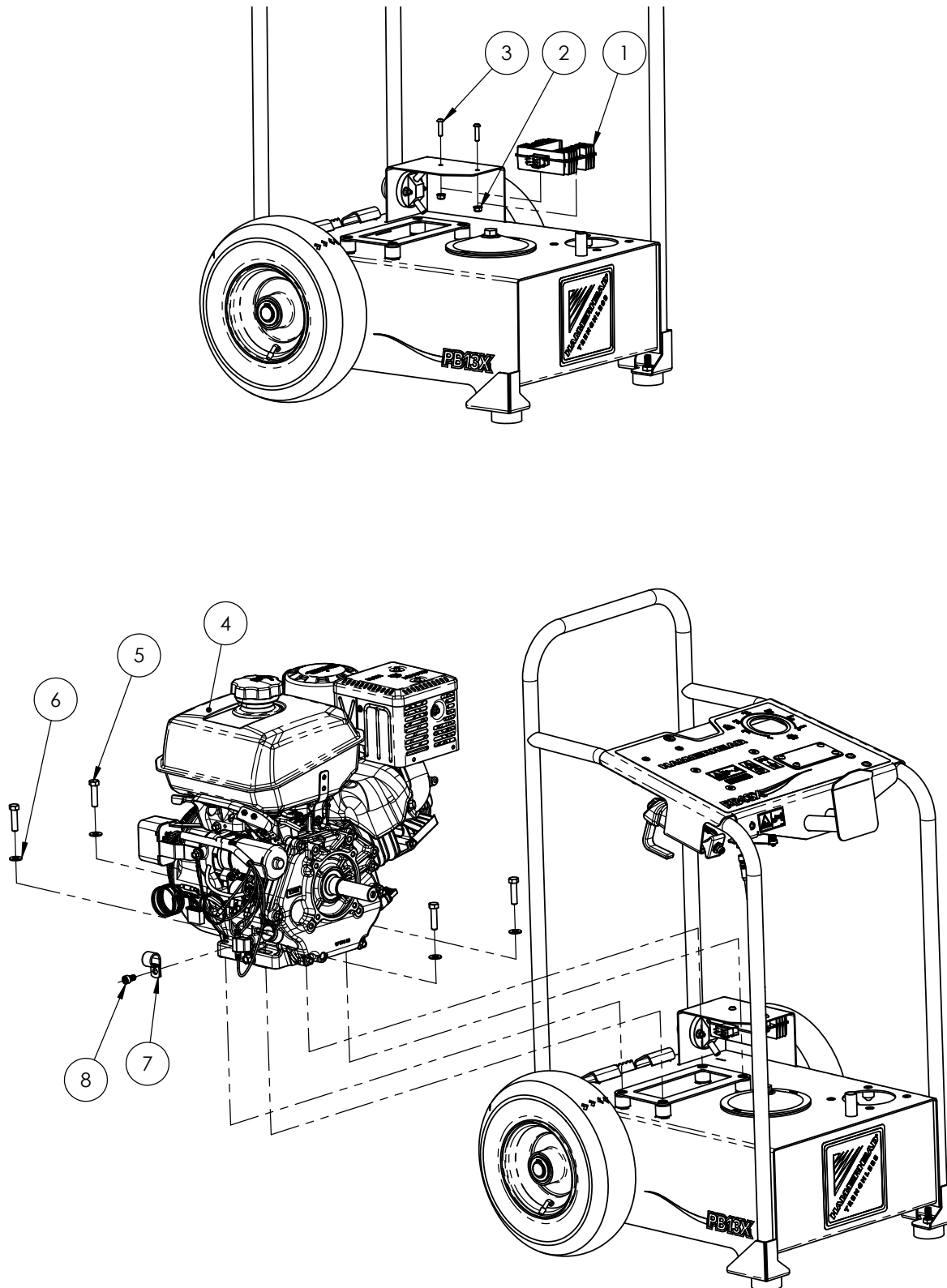
Engine

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Engine Mount

PARTS LIST



Engine Mount

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7219	REGULATOR, KOHLER 18A	1	
2	912-7310	NUT, 1/4-20 SS FLANGE NYLON LOCK	2	
3	912-7311	SCREW, BHCS SS, 1/4-20 X 1"	2	
4	912-7273	ENGINE, 14HP CH440-3280	1	
5	06HH24	SCREW, 3/8-16 x 1.5 HHC - GR8	4	
6	06FW-SAE	WASHER, 3/8"	4	
7	912-7339	CLAMP, 3/4" VINYL 8MM	1	
8	912-7256	SCREW, M8X15 SHC, SS	1	

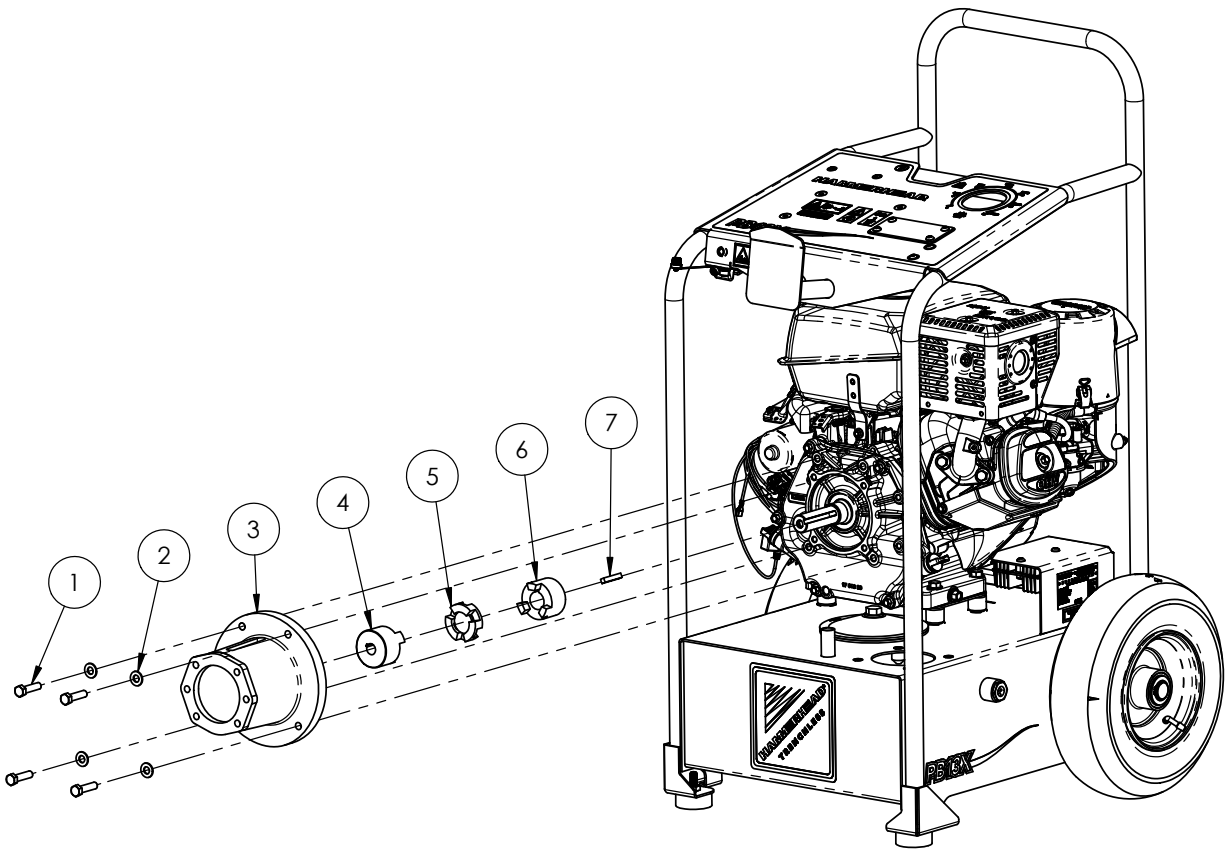
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FOOTNOTES:

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Engine-Pump Assembly

PARTS LIST



Engine-Pump Assembly

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	06HH24	SCREW, 3/8-16 x 1.5 HHC - GR8	8	
2	06FW-SAE	WASHER, 3/8"	8	
3	912-6632	MOUNT, PUMP/ENGINE	1	
4	912-4823	HUB, 5/8" B X 5/32" KW	1	
5	912-4824	INSERT, PUMP DRIVE	1	
6	912-4822	HUB, 1B X 1/4KW	1	
7	912-7312	MACHINE KEY, 1/4 X 1.5"	1	
8	912-7253	OIL, 10W-50 SYNTHETIC, QT	1.1	NOT SHOWN

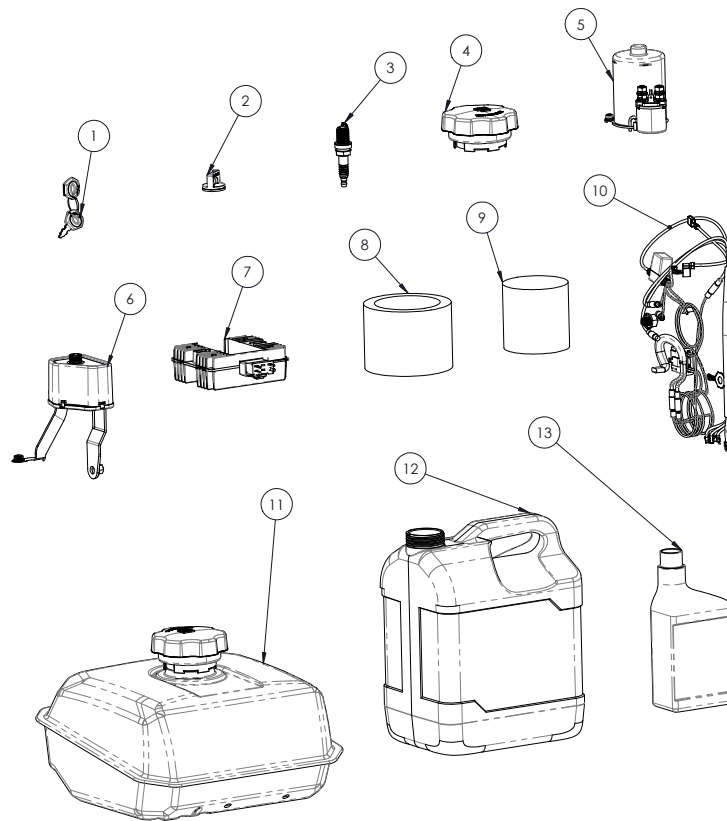
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FOOTNOTES:

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Engine Service Parts

PARTS LIST



Engine Service Parts

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7343	SPARE KEY, CH440	1	
2	912-7345	OIL CAP, CH440	1	
3	912-7352	SPARK PLUG, CH440	1	
4	912-7346	FUEL CAP, CH440	1	
5	912-7347	STARTER ASSY, CH440	1	
6	912-7348	KEY ASSY, CH440	1	
7	912-7219	REGULATOR, KOHLER 18A	1	
8	912-7344	PRE FILTER, CH440	1	
9	912-7349	AIR FILTER, CH440	1	
10	912-7351	HARNESS, CH440	1	
11	912-7350	FUEL TANK, CH440	1	
12	912-3158	OIL, HYDRAULIC, US 200, GALLON	6.6	
13	912-7253	OIL, 10W-50 SYNTHETIC, QT	1.1	

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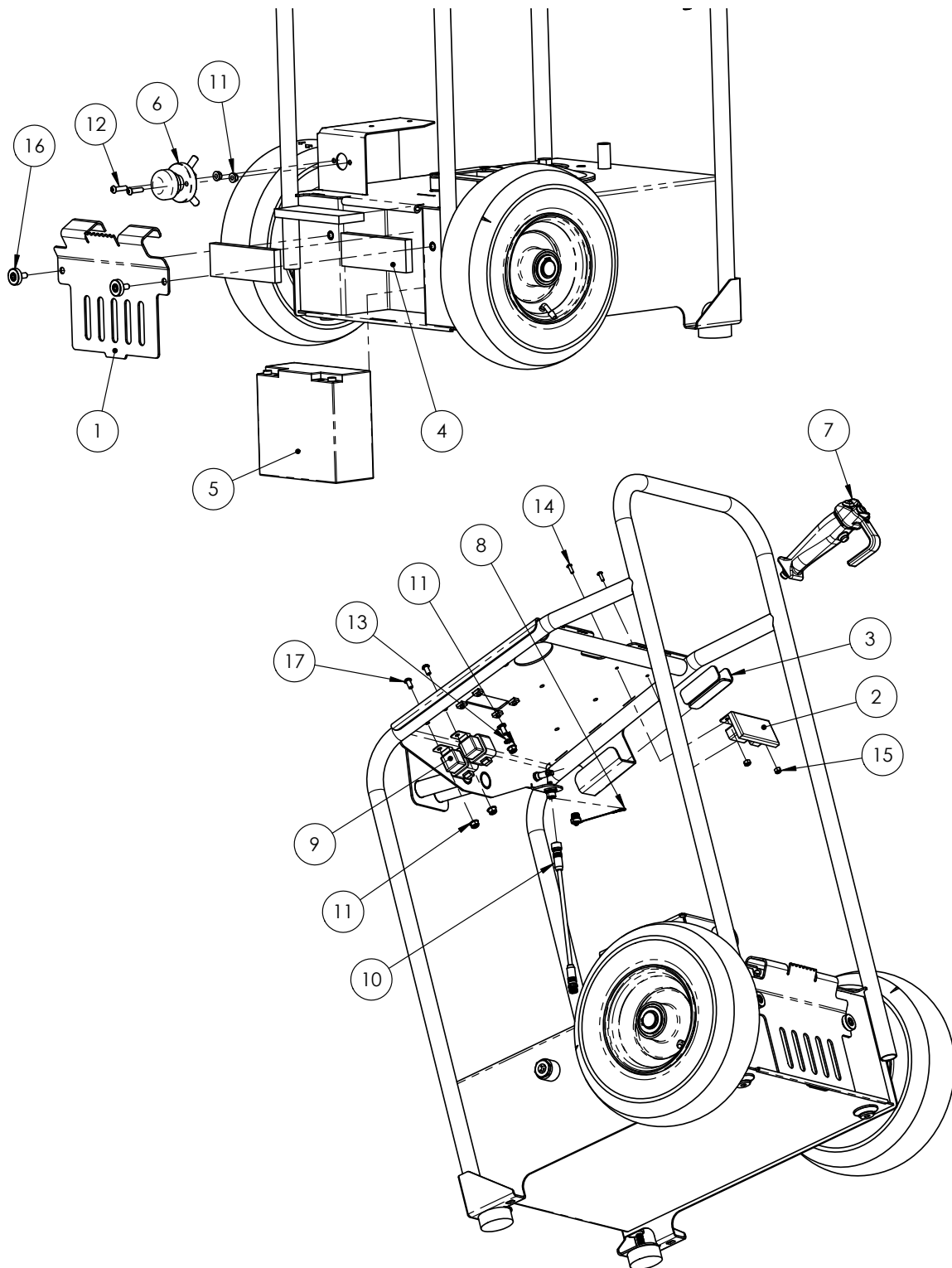
Electrical ---

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Electrical Components

PARTS LIST



Electrical Components

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7205	BATTERY COVER	1	
2	912-7203	CONTROLLER, PB13X	1	
3	912-7333	FOAM CUT, 1/8" X 3"	3	
4	912-7224	BATTERY FOAM CUT, 1/2" X 6"	3	
5	912-7217	BATTERY, 18AH INT	1	
6	912-7218	BATTERY DISCONNECT, TWIST	1	
7	912-7338	REMOTE ASSEMBLY PB13X	1	
8	912-7261	CAP, M12 CONNECTOR	1	
9	912-7246	WIRE HARNESS, PB13X	1	
10	912-7326	CABLE, PB13X CONTROL	1	
11	912-7310	NUT, 1/4-20 SS FLANGE NYLON LOCK	7	
12	912-7311	SCREW, BHCS SS, 1/4-20 X 1"	4	
13	04ETLW	WASHER, 1/4" ETL	1	
14	912-7303	SCREW, BHCS SS, #8-32 X 1/2"	2	
15	912-7302	NUT, #8-32 SS NYLON LOCK	2	
16	912-7308	THUMB SCREW, 5/16 X 5/8 HEX DRIVE	2	
17	912-7314	SCREW, BHCS SS, 1/4-20 X 0.5"	2	

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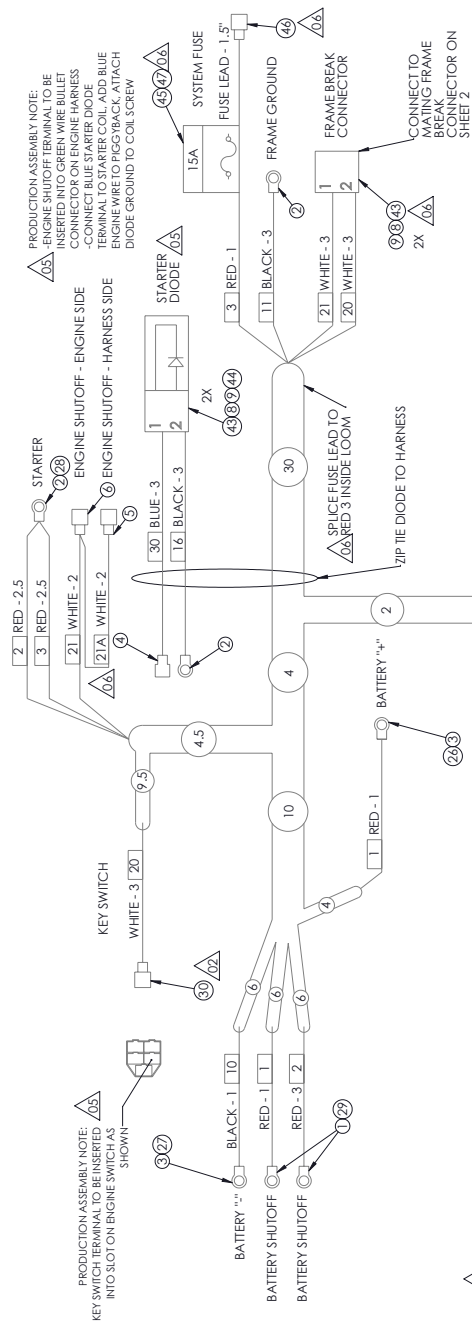
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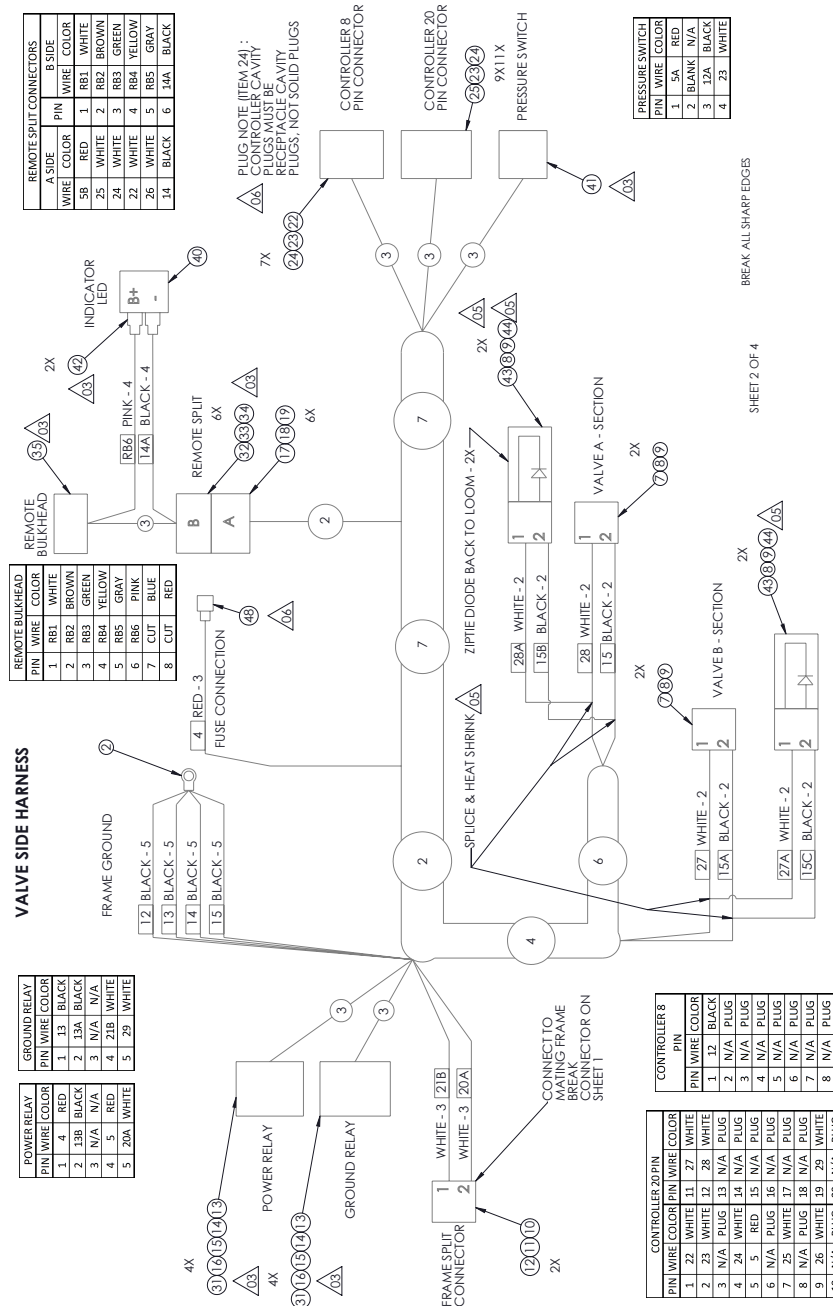
ENGINE SIDE HARNESS



1. GENERAL ELECTRICAL WORK
2. ALL WIRE TO BE SATISFIED
3. INSULATE ALL TERMINALS UNLESS OTHERWISE SPECIFIED. FACTORY
4. APPLIED WIRE TAPPING SHALL BE PERMITTED. ALL WIRE SHALL BE PERMISSIBLE
5. AND NOTING ALL TERMINALS TO BE TESTED TO WIRE TERMINAL
6. AND TAPPED AND SPOT SOLDERED TO WIRES
7. TAPPED HARNESS TO BE 100% CIRCUIT CONTINUITY CHECKED BEFORE
8. APPLY ELECTRICAL GREASE TO ALL FEMALE TERMINALS AND SOCIETS
9. AS MOISTURE BARRIER (EXCEPT SEALED CONNECTORS).
10. BRAD COILS OR BLACK OR BLACK WITH YELLOW TRACERS.
11. PLACE SPICES A MINIMUM OF 1" APART.
12. PRINT WIRE LABEL EVERY 3"
13. MAX. WIDTH OF ALL #6 & SIZE IS .30"

Wire Harness

VALVE SIDE



MATERIAL LISTS

WIRE TABLE FOR HELIX WIRE HARNESS					
NO	GAGE	COLOR	LABEL	FROM	TO
1	8	RED	N/A	BATTERY - "+" TERMINAL	BATTERY SHUTOFF
2	8	RED	N/A	BATTERY SHUTOFF	STARTER
3	14	RED	N/A	ENGINE SHUTOFF	ENGINE SHUTOFF
4	14	RED	N/A	CIRCUIT BREAKER - "+" TERMINAL	POWER RELAY - PIN 1
5	16	RED	N/A	POWER RELAY - PIN 4	CONTROLLER 20 PIN - PIN 5
5A	18	RED	N/A	SPICE TO WIRE 5	PRESSURE SWITCH - PIN 1
5B	18	RED	N/A	SPICE TO WIRE 5	REMOTE CONNECTOR - PIN 1
6	14	RED	N/A	BATTERY - "-" TERMINAL	ENGINE GROUND
7	8	BLACK	N/A	ENGINE GROUND	FRAME GROUND
8	14	BLACK	N/A	FRAME GROUND	CONTROLLER 8 PIN - PIN 1
11	14	BLACK	N/A	FRAME GROUND	SPICE TO WIRE 12
12A	18	BLACK	N/A	FRAME GROUND	SPICE TO WIRE 12
13	18	BLACK	N/A	FRAME GROUND	SPICE TO WIRE 13
13A	18	BLACK	N/A	FRAME GROUND	SPICE TO WIRE 13
13B	18	BLACK	N/A	FRAME GROUND	POWER RELAY - PIN 2
14	14	BLACK	N/A	FRAME GROUND	REMOTE CONNECTOR - PIN 6
14A	18	BLACK	N/A	REMOTE SPILT B - PIN 6	INDICATOR LED - PIN - "+"
15	18	BLACK	N/A	FRAME GROUND	VALVE - A SECTION - PIN 2
15A	18	BLACK	N/A	SPICE TO WIRE 15	VALVE - A SECTION - PIN 2
15B	18	BLACK	N/A	SPICE TO WIRE 15	DIODE - PIN 2
15C	18	BLACK	N/A	SPICE TO WIRE 15A	DIODE - PIN 2
15D	18	BLACK	N/A	STARTER SOLENOID SCREW	FRAME SPILT CONNECTOR - PIN 2
20	18	WHITE	KEY SIGNAL	KEY SWITCH - "ACC" TERMINAL	FRAME SPILT CONNECTOR - PIN 2
21	18	WHITE	ENGINE SHUTOFF	ENGINE SHUTOFF - ENGINE SIDE	FRAME SPILT CONNECTOR - PIN 1
21A	18	WHITE	ENGINE SHUTOFF	ENGINE SHUTOFF - ENGINE SIDE	FRAME SPILT CONNECTOR - PIN 1
21B	18	WHITE	ENGINE SHUTOFF	ENGINE SHUTOFF - ENGINE SIDE	FRAME SPILT CONNECTOR - PIN 1
22	18	WHITE	RUN SIGNAL	CONTROLLER 20 PIN - PIN 1	GROUND RELAY - PIN 4
23	18	WHITE	STOP SIGNAL	CONTROLLER 20 PIN - PIN 2	REMOTE CONNECTOR - PIN 4
24	18	WHITE	MANUAL DOWN	CONTROLLER 20 PIN - PIN 7	REMOTE CONNECTOR - PIN 1
25	18	WHITE	STOP SIGNAL	CONTROLLER 20 PIN - PIN 9	REMOTE CONNECTOR - PIN 5
26	18	WHITE	RETRACT OUTPUT	CONTROLLER 20 PIN - PIN 11	VALVE - B SECTION - PIN 1
27	18	WHITE	EXTEND OUTPUT	CONTROLLER 20 PIN - PIN 12	VALVE - B SECTION - PIN 1
28	18	WHITE	N/A	SPICE TO WIRE 28	DIODE - PIN 1
28A	18	WHITE	N/A	SPICE TO WIRE 28	DIODE - PIN 1
29	18	WHITE	STOP OUTPUT	CONTROLLER 20 PIN - PIN 19	GROUND RELAY - PIN 5
30	18	BLUE	STARTER SIGNAL	STARTER SOLENOID QD	DIODE - PIN 1
30S1	24	WHITE	N/A	REMOTE BULKHEAD - PIN 1	REMOTE SPILT B - PIN 1
30S2	24	BROWN	N/A	REMOTE BULKHEAD - PIN 2	REMOTE SPILT B - PIN 1
30S3	24	GREEN	N/A	REMOTE BULKHEAD - PIN 3	REMOTE SPILT B - PIN 3
30S4	24	YELLOW	N/A	REMOTE BULKHEAD - PIN 4	REMOTE SPILT B - PIN 4
30S5	24	GRAY	N/A	REMOTE BULKHEAD - PIN 5	REMOTE SPILT B - PIN 5
30S6	24	PINK	N/A	REMOTE BULKHEAD - PIN 6	INDICATOR LED - PIN 1B+
30S7	24	PINK	N/A	REMOTE BULKHEAD - PIN 7	INDICATOR LED - PIN 1B+
30S8	24	RED	N/A	REMOTE BULKHEAD - PIN 8	CUT FLIGHT TO BULKHEAD

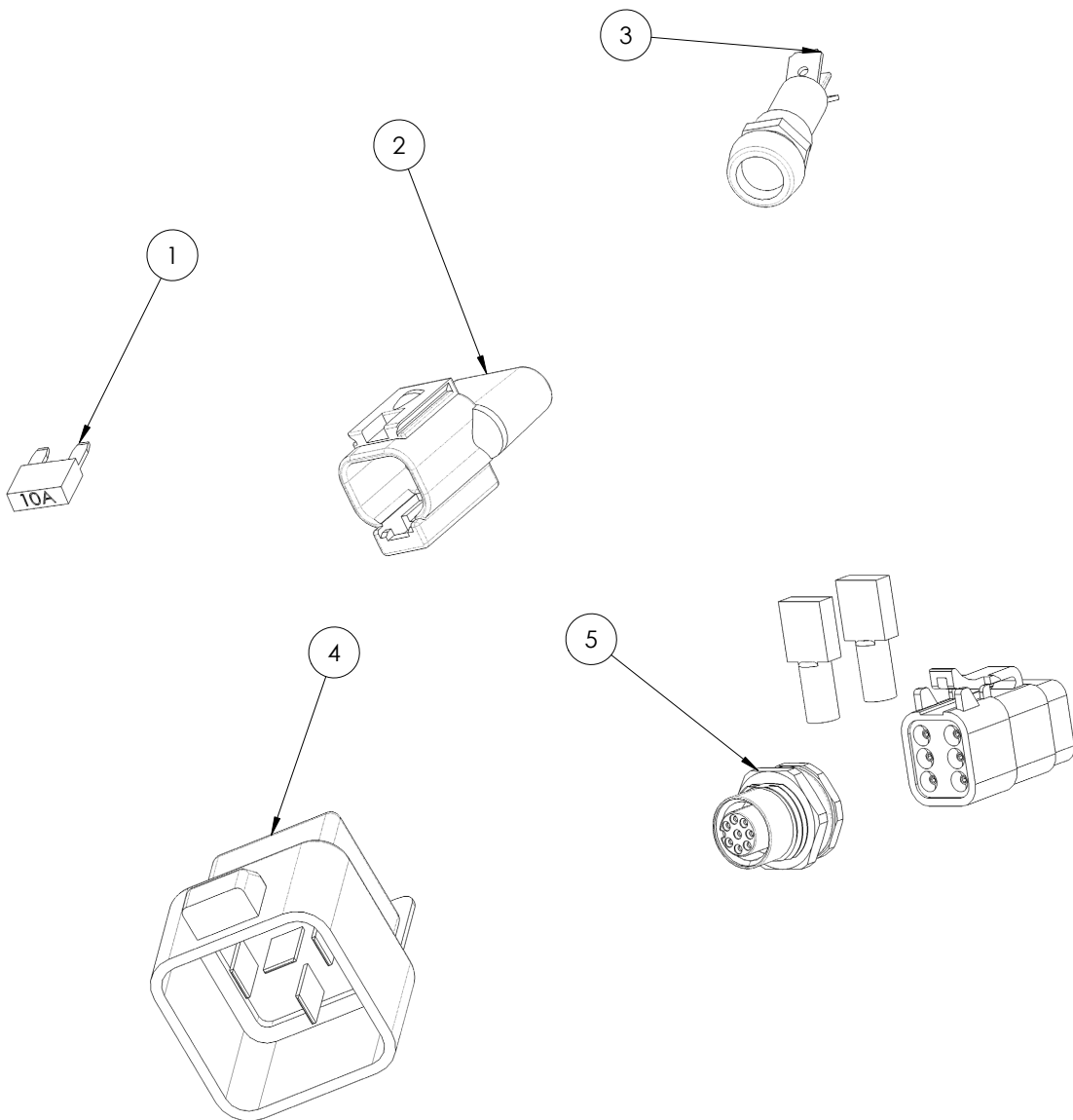
ITEM NO	QTY	VENDOR PART NUMBER	DESCRIPTION	WATKEX P/N
1	3	VARIOUS	RING TERMINAL, 3/8" STUD	
2	4	VARIOUS	RING TERMINAL, 1/4" STUD	
3	2	VARIOUS	RING TERMINAL, #10 STUD	
4	1	VARIOUS	PIGGY BACK QUICK DISCONNECT, 0.250, 14-16 GA.	
5	1	VARIOUS	BULLET CONNECTOR, 15# FEMALE	31717
6	1	VARIOUS	BULLET CONNECTOR, 15# MALE	
7	2	AT06-25-LED201	AT PLUG, 2 SOCKET HOUSING, LED MODIFICATION	38564
8	2	AT06-25-LED201	AT PLUG, 2 SOCKET HOUSING, LED MODIFICATION	38564
9	12	0462-201-16141-AT62-201-16141	D7/AT SOLID PIN, 16-20 GA., SIZE 16, NICKEL	31059
10	1	DT04-2P/AT04-2P	D7/AT RECEPTACLE, 2 PIN HOUSING	38171
11	1	W2P/AVW2P	D7/AT RECEPTACLE WEDGE, 2 PIN	38183
12	2	0460-202-16141-AT60-202-16141	D7/AT SOLID PIN, 16-20 GA., SIZE 16, NICKEL	31108
13	2	12065662	APTIV MINI RELAY CONNECTOR BODY, 630 SERIES	38109
14	2	12065663	APTIV MINI RELAY CONNECTOR SEAL, 630 SERIES	39022
15	2	12084103	APTIV MINI RELAY 4-WAY CABLE SEAL, 630 SERIES	
16	8	12066614	APTIV FEMALE TERMINAL, 16-14 GA., 630 SERIES	31085
17	1	DTM04-6P/ATM04-6P	DTM/ATM MINI RECEPTACLE, 6 PIN HOUSING	38627
18	1	WM-6P/AVM-6P	DTM/ATM MINI RECEPTACLE WEDGE, 6 PIN	38639
19	8	1060-20-0122/AT60-20-0122	DTM/ATM PIN, 16-20 GA., SIZE 20, NICKEL	38646
22	1	33477-4801	MOLEX M0150 8 PIN CONNECTOR, FEMALE DUAL ROW	38411
23	10	33012-8001	MOLEX M0150 8 PIN CONNECTOR, FEMALE DUAL ROW	31055
24	18	34345-4001	MOLEX SEATED RECEPTACLE CAVITY PLUG	
25	1	34345-4001	MOLEX SEATED RECEPTACLE CAVITY PLUG	
26	1	VARIOUS	STUD TERMINAL COVER, BLACK, 3/16" STUD, 8 GA. WIRE (ASTRONIX #404-112 VTE 212 N 2 V 10)	
27	1	VARIOUS	STUD TERMINAL COVER, RED, 3/16" STUD, 8 GA. WIRE (ASTRONIX #404-112 VTE 212 N 2 V 10)	
28	1	VARIOUS	STUD TERMINAL COVER, RED, 3/8" STUD, 8 GA. WIRE (ASTRONIX #404-110 VTE 216 N 2 V 10)	
29	2	VARIOUS	APTIV METRI-PACK 56 FEMALE TERMINAL W/LOCKING TANG, 16-14 GA.	
30	1	VARIOUS	12VDC SKIRTED MINI RELAY - SEE 912-7292 FOR DETAILS	
31	2	VARIOUS	12VDC SKIRTED MINI RELAY - SEE 912-7292 FOR DETAILS	
32	1	DTM06-6S/ATM06-6S	DTM/ATM MINI PLUG, 6 SOCKET HOUSING	
33	1	WM-6S/AVM-6S	DTM/ATM MINI PLUG WEDGE, 6 SOCKET	
34	6	1062-20-0122/AT62-20-0122	DTM/ATM SOCKET, 16-20 GA., SIZE 20, NICKEL	
35	1	VARIOUS	M12X 8A CONNECTOR, FEMALE PLUG, REAR P69 - SEE 912-7291 FOR DETAILS	
40	1	VARIOUS	12V LED RED, #7/16" PANEL MOUNT, .106" MIN THICKNESS, 1/4" QC	47673
41	1	VARIOUS	M12X 4A CONNECTOR, FEMALE PLUG, WIREABLE - SEE 912-7293 FOR DETAILS	
42	2	VARIOUS	1/4" FEMALE QUICK DISCONNECT TERMINAL FULLY INSULATED, 22-18 GA.	30513
43	4	DT06-25/AT06-25	D7/AT PLUG, 2 SOCKET HOUSING	
44	3	DT04-2P-IT01	D7-2 WAY RECEPTACLE DIODE	
45	1	VARIOUS	16 GA NIUNE MINI FUSE HOLDER	
46	1	LITTELFUSE	1/4" FEMALE QUICK DISCONNECT TERMINAL, FULLY INSULATED, 14-16 GA.	46487
47	1	VARIOUS	15A MINI AUTOMOTIVE FUSE	46256
48	1	VARIOUS	1/4" MALE QUICK DISCONNECT TERMINAL, FULLY INSULATED, 14-16 GA.	

Notes:

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Harness Service Parts

PARTS LIST



Harness Service Parts

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	912-7341	MINI BLADE FUSE, 10A	1	
2	912-7342	DIODE, 2 PIN RECEPTACLE	1	
3	912-7340	LED, 12V RED	1	
4	912-7252	RELAY, 12VDC PANEL MOUNT	2	
5	912-7353	REMOTE CONNECTOR KIT, PB13X	1	

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FOOTNOTES:

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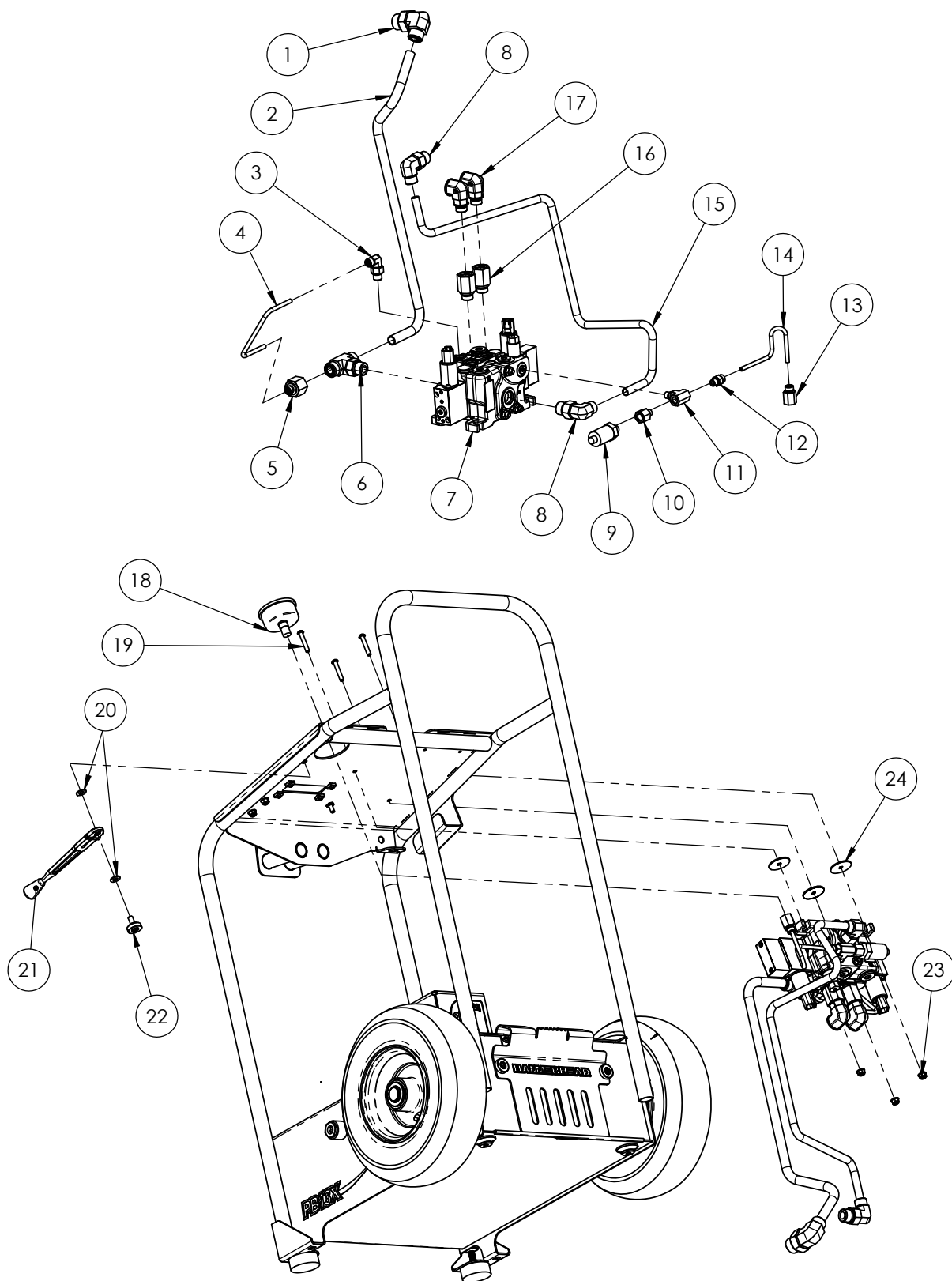
Hydraulic_____

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Pressure Valve Assembly

PARTS LIST



Pressure Valve Assembly

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	926-2311	ELBOW, 10MO X 12MB 90°	1	
2	912-7328	TUBE, RETURN	1	
3	926-2301	ELBOW, 4MO X 6MB 90°	1	
4	912-7329	TUBE, DRAIN	1	
5	926-3403	ADAPTER, 10FO X 4MO	1	
6	926-5208	TEE, 10MO X 10MO X 10MB BRANCH	1	
7	912-7223	VALVE, SINGLE SECTION	1	
8	926-2308	ELBOW, 8MO X 10MB 90°	2	
9	912-7222	PRESSURE SWITCH, ADJ 290-5800psi	1	
10	926-6201	ADAPTER, 4MB X 4FP	1	
11	926-8600	TEE, 4FB X 4FB X 4MB BRANCH	1	
12	926-2200	ADAPTER, 4MO X 4MB	1	
13	926-6300	ADAPTER, 4MO X 4FP	1	
14	912-7234	TUBE, PRESSURE GAUGE	1	
15	912-7233	TUBE, PRESSURE FEED	1	
16	926-3830	ADAPTER, 8MB X 8FB	2	
17	926-8232	ELBOW, 8MB X 8FB 90°	2	
18	912-0917	GAUGE 3000 PSI PANEL MOUNT	1	
19	912-7305	SCREW, BHCS SS, 1/4-20 X 1.5"	3	
20	05FW-SAE	WASHER, 5/16"	2	
21	912-7296	LEVER, HB13X	1	
22	912-7308	THUMB SCREW, 5/16 X 5/8 HEX DRIVE	3	
23	912-7310	NUT, 1/4-20 SS FLANGE NYLON LOCK	5	
24	912-7315	SELF-RETAINING WASHER 1/4 NYLON	3	

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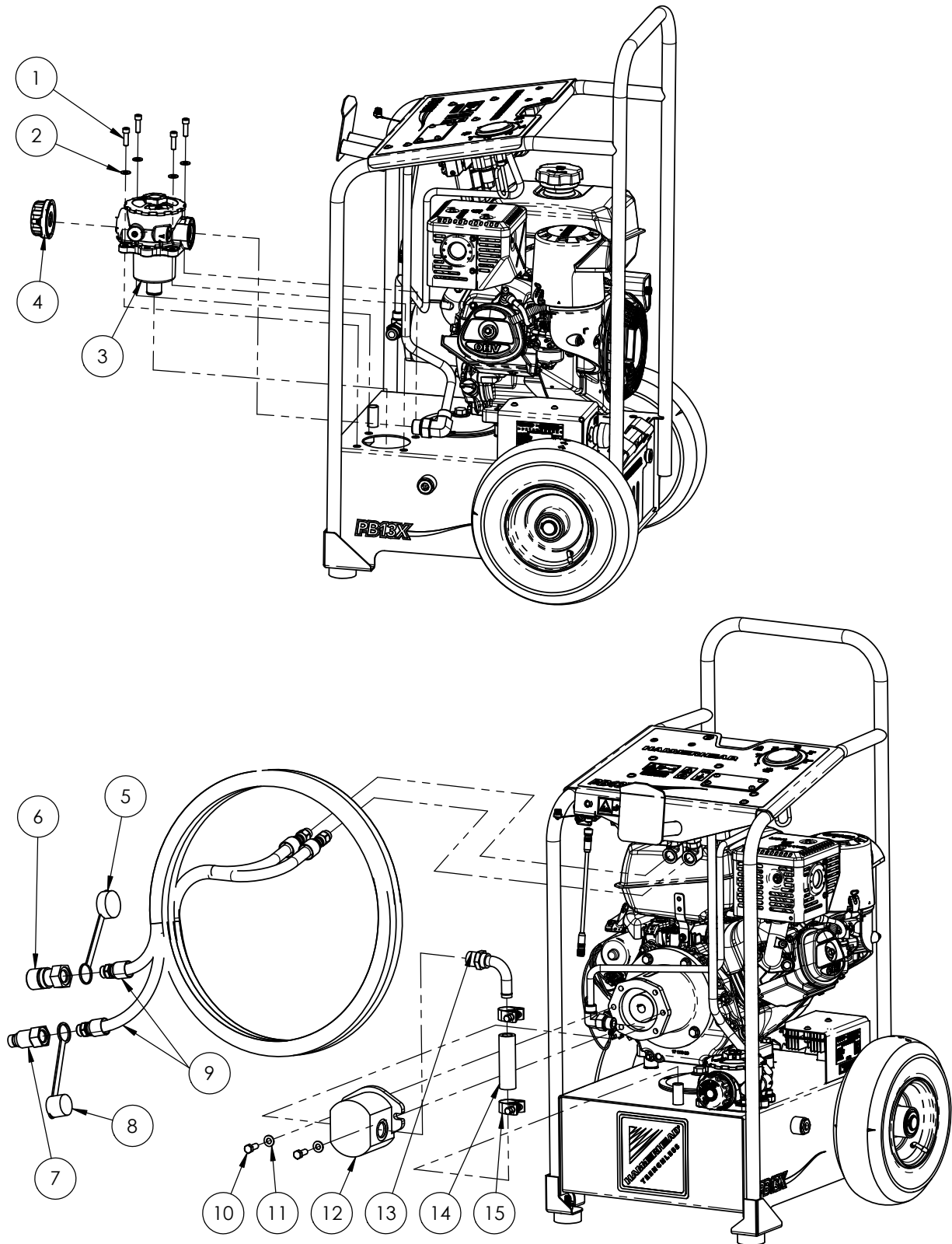
FOOTNOTES:

NOTE:

SEE OPERATOR'S MANUAL FOR VALVE AND PRESSURE SWITCH SETTING PROCEDURES.

Pump, Filters & Hoses

PARTS LIST



Pump, Filters & Hoses

PARTS LIST

REF NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS
1	05SH16	SCREW, 5/16-18 x 1.00" SHC	4	
2	05FW-SAE	WASHER, 5/16"	4	
3	912-6645	RETURN FILTER ASSY	1	
4	912-6650	BREATHING ASSY	1	
5	912-4856	DUST CAP, PCI COUPLER	1	
6	912-3039	COUPLER 1/2"	1	
7	912-3038	NIPPLE	1	
8	912-4855	DUST CAP, PCI PLUG	1	
9	912-7221	HOSE, 8MBX-10MB X 180"	2	
10	06HH16	SCREW, 3/8-16 x 1.00 HHC - GR8	2	
11	06FW-SAE	WASHER, 3/8"	2	
12	912-4825	PUMP, GEAR .37CI	1	
13	926-6504	ELBOW, 12MB X 12HS 90°	1	
14	912-7236	HOSE, SUCTION	1	
15	912-6652	CLAMP, T, 1-5/32	2	

NOT SHOWN:

FOOTNOTES:

NOTE:

Notes:

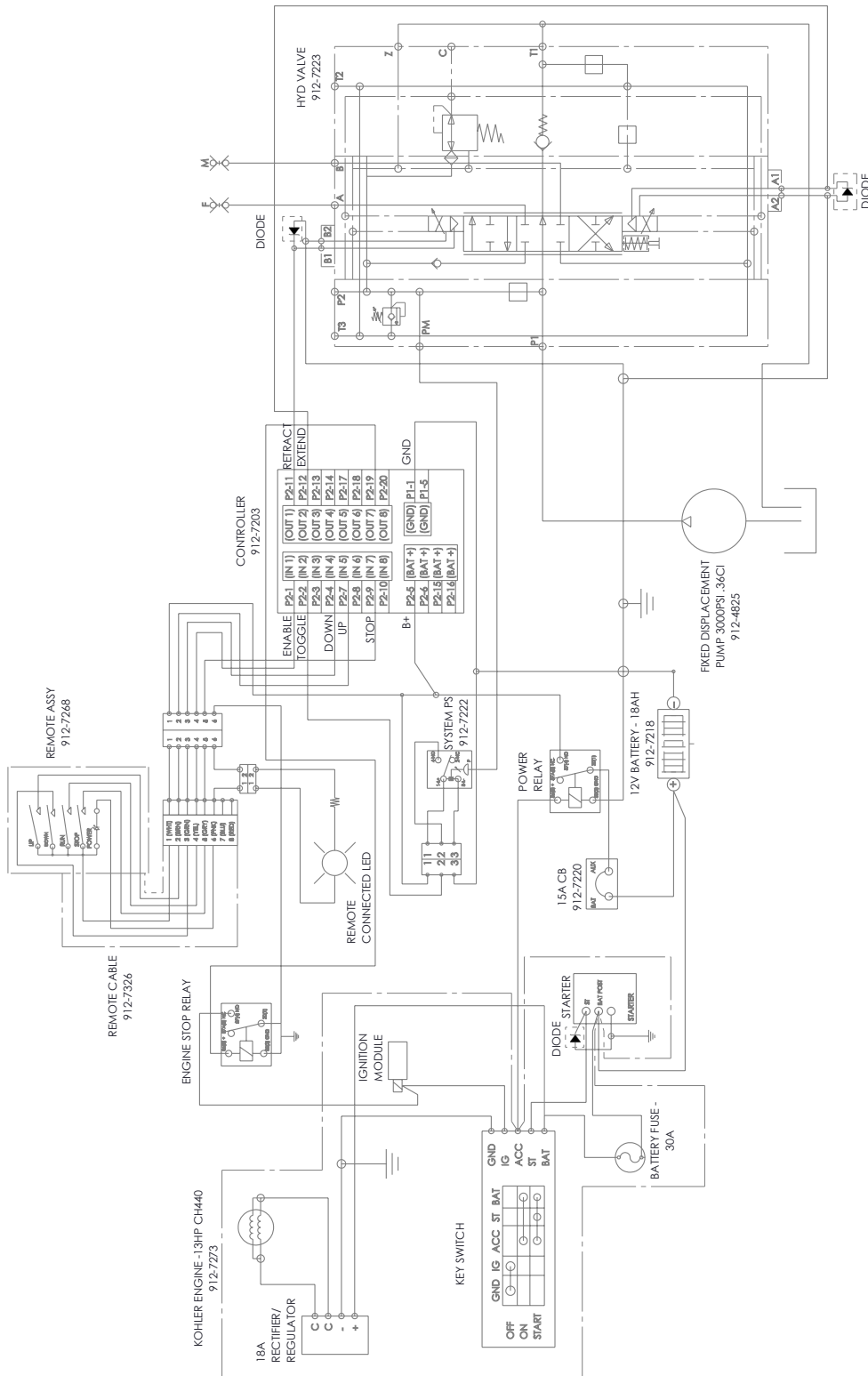
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Schematic ---

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Electrical / Hydraulic Schematic



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Torque Standards - Hydraulic Fittings

O—RING BOSS FITTINGS

Assembly Torque (+10% —0)													
Dash Size	Nom. Size (Inch)	SAE Size	Female Thread	Male Thread	O-Ring	O-Ring Boss		O-Ring Boss		Hollow Hex		Hex Head	
						Non-Adjustable		Adjustable		Plugs			
			I.D. (IN)	O.D. (IN)	I.D. (IN)	ft-lbs. (in-lbs.)	N-m	ft-lbs. (in-lbs.)	N-m	ft-lbs. (in-lbs.)	N-m	ft-lbs. (in-lbs.)	N-m
-2	1/8	5/16-24	17/64	5/16	17/64	-	-	-	-	(30)	4	(85)	10
-3	3/16	3/8-24	21/64	3/8	21/64	-	-	-	-	(55)	6	(155)	18
-4	1/4	7/16-20	25/64	7/16	25/64	26	35	(180)	20	(120)	14	22	29
-5	5/16	1/2-20	29/64	1/2	29/64	30	40	30	40	(170)	19	23	32
-6	3/8	9/16-18	1/2	9/16	1/2	35	46	35	46	34	46	29	40
-8	1/2	3/4-16	11/16	3/4	11/16	60	80	60	80	60	80	52	70
-10	5/8	7/8-14	13/16	7/8	13/16	100	135	100	135	100	135	85	115
-12	3/4	1-1/16-12	31/32	1-1/16	31/32	135	185	135	185	135	185	135	183
-14	7/8	1-3/16-12	1-7/64	1-3/16	1-7/64	175	235	175	235	175	235	175	237
-16	1	1-5/16-12	1-15/64	1-5/16	1-15/64	200	270	200	270	200	270	200	271
-20	1-1/4	1-5/8-12	1-35/64	1-5/8	1-35/64	250	340	250	340	250	340	250	339
-24	1-1/2	1-7/8-12	1-51/64	1-7/8	1-51/64	305	415	305	415	305	415	305	414
-32	2	2-1/2-12	2-27/64	2-1/2	2-27/64	375	510	375	510	375	510	375	509

NOTE:

Ensure the threads and sealing surfaces are free from nicks, burrs, scratches or any foreign material. Lubricate the o-ring with a light coat of oil. To tighten adjustable o-ring fittings, hold the fitting and tighten the nut. To tighten non-adjustable o-ring fittings, tighten the fitting. When tightening together fittings with dissimilar coatings, torque to 115% of maximum recommended torque value for a given size.

O—RING FACE SEAL FITTINGS

Dash Size	Nom. Size (Inch)	Thread Size	Female Thread	Male Thread	Assembly Torque (+10% —0) (Primary Method)		Flats from Wrench Resistance (FFWR) (Secondary Method)		O-Ring
					ft-lbs. (in-lbs.)	N-m	Tube Nuts	Swivel & Hose	
-4	1/4	9/16-18	1/2	9/16	18	25	1/2	3/4	5/16
-6	3/8	11/16-16	11/16	11/16	30	40	1/2	3/4	3/8
-8	1/2	13/16-16	3/4	13/16	40	55	1/2	3/4	1/2
-10	5/8	1-14	13/16	1	60	80	1/2	3/4	5/8
-12	3/4	1-3/16-12	1-7/64	1-3/16	85	115	1/2	1/2	3/4
-16	1	1-7/16-12	1-23/64	1-7/16	110	150	1/2	1/2	15/16
-20	1-1/4	1-11/16-12	1-19/32	1-11/16	150	205	1/2	1/2	1-3/16
-24	1-1/2	2-12	1-59/64	2	230	315	1/2	1/2	1-1/2

PIPE FITTINGS

Nom. SAE Dash Size	Fractional Size	Threads Per Inch	Turns from Finger Tight
2	1/8	27	2-3
4	1/4	18	2-3
6	3/8	18	2-3
8	1/2	14	2-3
12	3/4	14	2-3
16	1	11-1/2	1.5-2.5
20	1-1/4	11-1/2	1.5-2.5
24	1-1/2	11-1/2	1.5-2.5
32	2	11-1/2	1.5-2.5

NOTE:

Ensure the threads and sealing surfaces are free from nicks, burrs, scratches or any foreign material. Lubricate the o-ring with a light coat of oil. To tighten adjustable o-ring fittings, hold the fitting and tighten the nut. To tighten non-adjustable o-ring fittings, tighten the fitting. When tightening together fittings with dissimilar coatings, torque to 115% of maximum recommended torque value for a given size.

Torque Values - SAE Fasteners

GRADE 5: UNC OR UNF THREAD

Size	Coarse Thread		Fine Thread	
	ft-lbs	N-m	ft-lbs	N-m
1/4	6	8.5	8	11
5/16	13	18	15	20.5
3/8	25	35	30	40
7/16	40	55	45	60
1/2	60	80	70	95
9/16	90	120	95	130
5/8	120	165	145	200
3/4	210	285	240	325
7/8	320	435	350	475
1	480	650	560	760
1-1/8	700	950	780	1060
1-1/4	1020	1385	1100	1545

NOTE:

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to strength of original.

Make sure fastener threads are clean and that the threads are properly started. This will prevent them from cross threading or galling when tightened.

Tighten plastic insert or crimped type steel locknuts to approximately 50% of dry torque indicated on chart. Apply torque to the nut – not the bolt head. Tighten toothed or serrated type locknuts to full torque value.

LUBRICATED means coated with lubricant. DRY means plain or zinc plated without any type of lubricant.

GRADE 8: UNC OR UNF THREAD

Size	Coarse Thread		Fine Thread	
	ft-lbs	N-m	ft-lbs	N-m
1/4	10	13	11	15
5/16	20	27	22	29.5
3/8	35	47	40	55
7/16	55	75	65	88
1/2	90	120	95	130
9/16	120	165	135	185
5/8	180	245	195	265
3/4	300	405	340	460
7/8	500	680	560	760
1	800	1085	920	1250
1-1/8	1180	1600	1340	1815
1-1/4	1720	2330	1900	2575

NOTE:

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

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Make sure fastener threads are clean and that the threads are properly started. This will prevent them from cross threading or galling when tightened.

Tighten plastic insert or crimped type steel locknuts to approximately 50% of dry torque indicated on chart. Apply torque to the nut – not the bolt head. Tighten toothed or serrated type locknuts to full torque value.

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Torque Values - Metric Fasteners

Size	Class 4.8				Class 8.8 and 9.8				Class 10.9				Class 12.9			
	Lubricated		Dry		Lubricated		Dry		Lubricated		Dry		Lubricated		Dry	
	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.	N-m	ft-lbs.
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1600	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

NOTE:

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to strength of original.

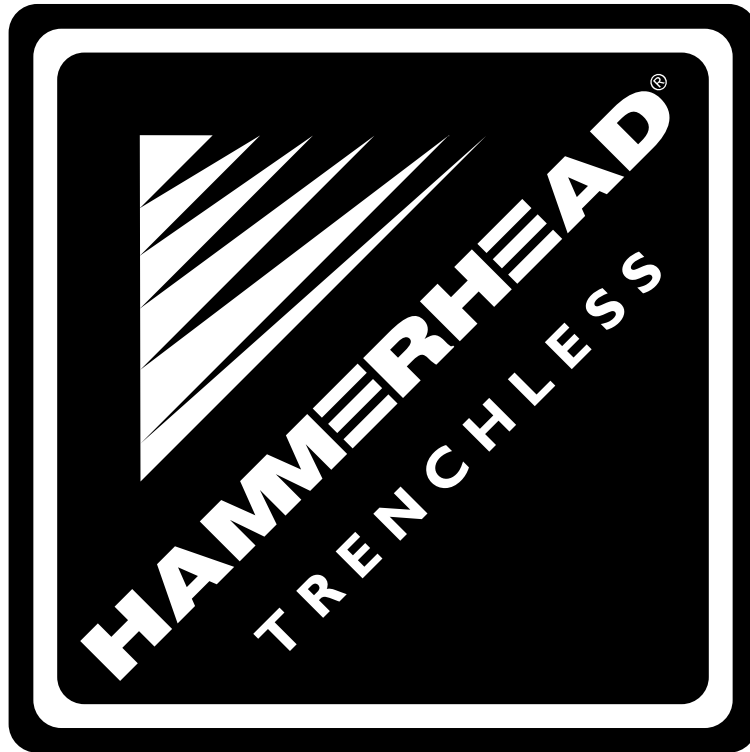
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Notes:

[illegible]



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