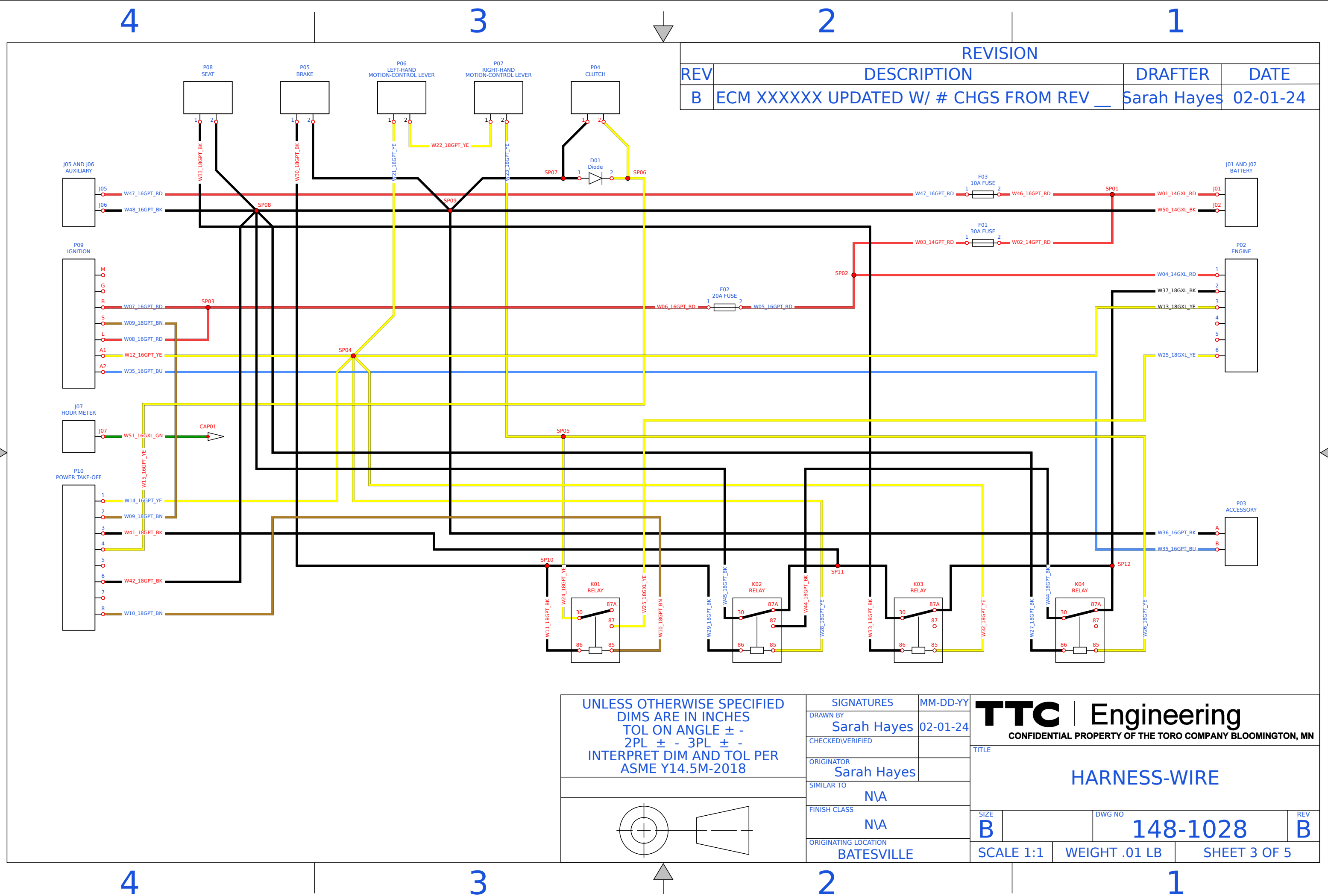




4

3

2

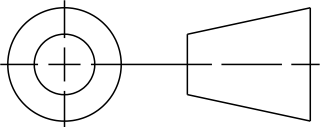
1

REVISION

REV	DESCRIPTION	DRAFTER	DATE
B	ECM XXXXXX UPDATED W/ # CHGS FROM REV __	Sarah Hayes	02-01-24

CONNECTOR	MANUFACTURER	MANUFACTURER PART NO.	DESCRIPTION	QUANTITY
D01	ONSEMI	1N4007	STANDARD RECTIFIER, 1000 V, 1.0 A	1
J01	TE CONNECTIVITY	485030-1	CLOSED RING TONGUE TERMINAL, 18 - 14 AWG, 5/16 / M8 STUD SIZE, 8.33 MM [.328 IN] STUD DIAMETER, OPEN BARREL, STRAIGHT, TIN, UNINSULATED	1
J02	TE CONNECTIVITY	485030-1	CLOSED RING TONGUE TERMINAL, 18 - 14 AWG, 5/16 / M8 STUD SIZE, 8.33 MM [.328 IN] STUD DIAMETER, OPEN BARREL, STRAIGHT, TIN, UNINSULATED	1
J05	TE CONNECTIVITY	3-350819-2	QUICK DISCONNECTS, RECEPTACLE, 16 - 14 AWG WIRE SIZE, 1.31 - 2.08 MM² WIRE SIZE, MATING TAB WIDTH 6.35 MM [.25 IN], STRAIGHT, BRASS, ULTRA-FAST 250	1
J06	TE CONNECTIVITY	3-350819-2	QUICK DISCONNECTS, RECEPTACLE, 16 - 14 AWG WIRE SIZE, 1.31 - 2.08 MM² WIRE SIZE, MATING TAB WIDTH 6.35 MM [.25 IN], STRAIGHT, BRASS, ULTRA-FAST 250	1
J07	TE CONNECTIVITY	3-350819-2	QUICK DISCONNECTS, RECEPTACLE, 16 - 14 AWG WIRE SIZE, 1.31 - 2.08 MM² WIRE SIZE, MATING TAB WIDTH 6.35 MM [.25 IN], STRAIGHT, BRASS, ULTRA-FAST 250	1
P02	TE CONNECTIVITY	1-480704-0	RECTANGULAR POWER CONNECTORS, HOUSING, PLUG, WIRE-TO-BOARD / WIRE-TO-WIRE, 6 POSITION, 6.35 MM [.25 IN] CENTERLINE, WIRE & CABLE, UNIVERSAL MATE-N-LOK	1
P02	TE CONNECTIVITY	350218-1	PIN CONTACT, TIN, 600 VAC, LOCKING LANCE CONTACT RETENTION, 20 - 14 AWG WIRE SIZE, .52 - 2.08 MM² WIRE SIZE, CRIMP, BRASS, POWER, UNIVERSAL MATE-N-LOK	4
P03	APTIV	12010300	PLUG SEAL FITS TO 6.7 MM CAVITY	2
P03	APTIV	12010973	2 WAY 2.6 W/P SEALED	1
P03	APTIV	12015792	2 WAY 2.6 W/P SEALED	1
P03	APTIV	12124580	2.6 W/P FEMALE LOCKING LANCE SEALED TERMINAL	2
P03	APTIV	15324982	SINGLE WIRE SEAL FITS TO 6.7 MM CAVITY	2
P04	APTIV	02965511	6.3 FEMALE 56 SERIES SN LOCKING LANCE UNSELAED TERMINAL	2
P04	APTIV	08911979	2 WAY F 56 SERIES UNSEALED CONNECTOR	1
P05	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	2
P05	APTIV	02973872	2 WAY F 56 SERIES 6.3 UNSEALED CONNECTOR	1
P06	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	2
P06	APTIV	02973872	2 WAY F 56 SERIES 6.3 UNSEALED CONNECTOR	1
P07	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	2
P07	APTIV	02973872	2 WAY F 56 SERIES 6.3 UNSEALED CONNECTOR	1
P08	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	2
P08	DELTA SYSTEMS	96526	CONNECTOR, PLUNGER SWITCH	1
P09	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	1
P09	APTIV	02965511	6.3 FEMALE 56 SERIES SN LOCKING LANCE UNSELAED TERMINAL	4
P09	DELTA SYSTEMS	972311	CONNECTOR, 7-POSITION	1
P10	APTIV	02965510	56 SERIES FEMALE LOCKING LANCE SN UNSEALED TERMINAL	4
P10	APTIV	02965511	6.3 FEMALE 56 SERIES SN LOCKING LANCE UNSELAED TERMINAL	2
P10	DELTA SYSTEMS	972306	CONNECTOR HOUSING (NO POLE A)	1
P11	APTIV	12010300	PLUG SEAL FITS TO 6.7 MM CAVITY	6
P11	APTIV	12077412	M/P 2.8 FEMALE LOCKING LANCE SEALED SERIES	6
P11	APTIV	15324981	SINGLE WIRE SEAL FITS TO 6.7 MM CAVITY	2
P11	APTIV	15324982	SINGLE WIRE SEAL FITS TO 6.7 MM CAVITY	4
P11	GEP POWER PRODUCTS	FRH-A12	HOUSING AND SEAL - PDM, FRH, 12 POS	1
P11	GEP POWER PRODUCTS	FRH-A12-C	COVER - PDM, FRH, 12 POS, GEP	1
P11	GEP POWER PRODUCTS	FRH-A12-MB-C1	BRACKET - PDM, FRH, 90° BENT, ZINC STEEL	1
P11	GEP POWER PRODUCTS	FRH-A12-T	TPA - PDM, FRH	1
P11	LITTELFUSE	0297010	10 A MINI® 32V AUTOMOTIVE BLADE FUSE	1
P11	LITTELFUSE	0297020	20 A MINI® 32V AUTOMOTIVE BLADE FUSE	1
P11	LITTELFUSE	0297030	30 A MINI® 32V AUTOMOTIVE BLADE FUSE	1
P12	APTIV	12010300	PLUG SEAL FITS TO 6.7 MM CAVITY	7
P12	APTIV	12077411	M/P 2.8 FEMALE LOCKING LANCE SEALED SERIES	17
P12	APTIV	15324982	SINGLE WIRE SEAL FITS TO 6.7 MM CAVITY	17
P12	GEP POWER PRODUCTS	FRH-A12-MB-C1	BRACKET - PDM, FRH, 90° BENT, ZINC STEEL	1
P12	GEP POWER PRODUCTS	FRH-A12-T	TPA - PDM, FRH	2
P12	GEP POWER PRODUCTS	FRH-A24	HOUSING AND SEAL - PDM, FRH, 24 POS	1
P12	GEP POWER PRODUCTS	FRH-A24-C	COVER - PDM, FRH, 24 POS	1
P12	HONGFA	HFV9-G/12-ZS-R(257)	AUTOMOTIVE RELAY	4
-	HELLERMANN TYTON	156-04091	2-PIECE CABLE TIE/FIR TREE MOUNT, 8.0"L, 0.26 - 0.28" MOUNTING HOLE DIAMETER, PA66HS, BLACK, 500/PKG	8
-	APTIV	-	ROUND CONVOLUTED CONDUIT [POLYETHYLENE, BLACK, SLIT]	-

UNLESS OTHERWISE SPECIFIED
DIMS ARE IN INCHES
TOL ON ANGLE ± -
2PL ± - 3PL ± -
INTERPRET DIM AND TOL PER
ASME Y14.5M-2018



SIGNATURES

MM-DD-YY

DRAWN BY

Sarah Hayes

02-01-24

CHECKED/VERIFIED

ORIGINATOR

Sarah Hayes

SIMILAR TO

N\A

FINISH CLASS

N\A

ORIGINATING LOCATION

BATESVILLE

TTC | Engineering

CONFIDENTIAL PROPERTY OF THE TORO COMPANY BLOOMINGTON, MN

TITLE

HARNESS-WIRE

SIZE

B

DWG NO

148-1028

REV

B

SCALE 1:1

WEIGHT .01 LB

SHEET 4 OF 5

4

3

2

1

4

3

2

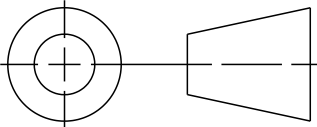
1

REVISION			
REV	DESCRIPTION	DRAFTER	DATE
B	ECM XXXXXX UPDATED W/ # CHGS FROM REV __	Sarah Hayes	02-01-24

WIRE	GAUGE	MATERIAL	PRIMARY COLOR	SECONDARY COLOR	FROM CONNECTOR	FROM CAVITY	FROM MANUFACTURER	FROM TERMINAL	FROM SEAL/INSULATION SLEEVE	TO CONNECTOR	TO CAVITY	TO MANUFACTURER	TO TERMINAL	TO SEAL/INSULATION SLEEVE
W01	14	GXL	RED	-	J01	1	TE CONNECTIVITY	485030-1	INSULATION	SP01	X	-	SONIC_SPLICE	INSULATION
W02	14	GPT	RED	-	SP01	X	-	SONIC_SPLICE	INSULATION	P11	7	APTIV	12077412	15324981
W03	14	GPT	RED	-	P11	8	APTIV	12077412	15324981	SP02	X	-	SONIC_SPLICE	INSULATION
W04	14	GXL	RED	-	P02	1	TE CONNECTIVITY	350218-1	-	SP02	X	-	SONIC_SPLICE	INSULATION
W05	16	GPT	RED	-	SP02	X	-	SONIC_SPLICE	INSULATION	P11	11	APTIV	12077412	15324982
W06	16	GPT	RED	-	P11	12	APTIV	12077412	15324982	SP03	X	-	SONIC_SPLICE	INSULATION
W07	16	GPT	RED	-	SP03	X	-	SONIC_SPLICE	INSULATION	P09	B	APTIV	02965511	-
W08	16	GPT	RED	-	SP03	X	-	SONIC_SPLICE	INSULATION	P09	L	APTIV	02965511	-
W09	18	GPT	BROWN	-	P10	2	APTIV	02965510	-	P09	S	APTIV	02965510	-
W10	18	GPT	BROWN	-	P10	8	APTIV	02965510	-	P12	19	APTIV	12077411	15324982
W11	18	GPT	BLACK	-	SP10	X	-	SONIC_SPLICE	INSULATION	P12	15	APTIV	12077411	15324982
W12	16	GPT	YELLOW	-	SP04	X	-	SONIC_SPLICE	INSULATION	P09	A1	APTIV	02965511	-
W13	18	GXL	YELLOW	-	P02	3	TE CONNECTIVITY	350218-1	-	SP04	X	-	SONIC_SPLICE	INSULATION
W14	16	GPT	YELLOW	-	SP04	X	-	SONIC_SPLICE	INSULATION	P10	1	APTIV	02965511	-
W15	16	GPT	YELLOW	-	SP06	X	-	SONIC_SPLICE	INSULATION	P10	4	APTIV	02965511	-
W16	16	GPT	YELLOW	-	SP06	X	-	SONIC_SPLICE	INSULATION	D01	2	-	-	-
W17	16	GPT	YELLOW	-	P04	2	APTIV	02965511	-	SP06	X	-	SONIC_SPLICE	INSULATION
W18	16	GPT	BLACK	-	P04	1	APTIV	02965511	-	SP07	X	-	SONIC_SPLICE	INSULATION
W19	16	GPT	BLACK	-	SP07	X	-	SONIC_SPLICE	INSULATION	D01	1	-	-	-
W20	16	GPT	BLACK	-	SP07	X	-	SONIC_SPLICE	INSULATION	SP09	X	-	SONIC_SPLICE	INSULATION
W21	18	GPT	YELLOW	-	P06	1	APTIV	02965510	-	SP04	X	-	SONIC_SPLICE	INSULATION
W22	18	GPT	YELLOW	-	P06	2	APTIV	02965510	-	P07	1	APTIV	02965510	-
W23	18	GPT	YELLOW	-	P07	2	APTIV	02965510	-	SP05	X	-	SONIC_SPLICE	INSULATION
W24	18	GPT	YELLOW	-	P12	13	APTIV	12077411	15324982	SP05	X	-	SONIC_SPLICE	INSULATION
W25	18	GXL	YELLOW	-	P02	6	TE CONNECTIVITY	350218-1	-	P12	21	APTIV	12077411	15324982
W26	18	GPT	YELLOW	-	P12	10	APTIV	12077411	15324982	SP05	X	-	SONIC_SPLICE	INSULATION
W27	18	GPT	BLACK	-	SP08	X	-	SONIC_SPLICE	INSULATION	P12	6	APTIV	12077411	15324982
W28	18	GPT	YELLOW	-	SP04	X	-	SONIC_SPLICE	INSULATION	P12	22	APTIV	12077411	15324982
W29	18	GPT	BLACK	-	SP10	X	-	SONIC_SPLICE	INSULATION	P12	18	APTIV	12077411	15324982
W30	18	GPT	BLACK	-	P05	1	APTIV	02965510	-	SP10	X	-	SONIC_SPLICE	INSULATION
W31	18	GPT	BLACK	-	SP09	X	-	SONIC_SPLICE	INSULATION	P05	2	APTIV	02965510	-
W32	18	GPT	YELLOW	-	SP04	X	-	SONIC_SPLICE	INSULATION	P12	7	APTIV	12077411	15324982
W33	18	GPT	BLACK	-	P08	1	APTIV	02965510	-	P12	3	APTIV	12077411	15324982
W34	18	GPT	BLACK	-	SP08	X	-	SONIC_SPLICE	INSULATION	P08	2	APTIV	02965510	-
W35	16	GPT	BLUE	-	P09	A2	APTIV	02965511	-	P03	B	APTIV	12124580	15324982
W36	16	GPT	BLACK	-	SP09	X	-	SONIC_SPLICE	INSULATION	P03	A	APTIV	12124580	15324982
W37	18	GXL	BLACK	-	P02	2	TE CONNECTIVITY	350218-1	-	SP12	X	-	SONIC_SPLICE	INSULATION
W38	18	GPT	BLACK	-	SP12	X	-	SONIC_SPLICE	INSULATION	P12	8	APTIV	12077411	15324982
W39	18	GPT	BLACK	-	SP11	X	-	SONIC_SPLICE	INSULATION	P12	1	APTIV	12077411	15324982
W40	18	GPT	BLACK	-	P12	23	APTIV	12077411	15324982	SP11	X	-	SONIC_SPLICE	INSULATION
W41	18	GPT	BLACK	-	SP11	X	-	SONIC_SPLICE	INSULATION	P10	3	APTIV	02965510	-
W42	18	GPT	BLACK	-	SP08	X	-	SONIC_SPLICE	INSULATION	P10	6	APTIV	02965510	-
W43	18	GPT	BLACK	-	P12	11	APTIV	12077411	15324982	SP12	X	-	SONIC_SPLICE	INSULATION
W44	18	GPT	BLACK	-	P12	4	APTIV	12077411	15324982	P12	24	APTIV	12077411	15324982
W45	18	GPT	BLACK	-	SP08	X	-	SONIC_SPLICE	INSULATION	P12	16	APTIV	12077411	15324982
W46	16	GPT	RED	-	SP01	X	-	SONIC_SPLICE	INSULATION	P11	5	APTIV	12077412	15324982
W47	16	GPT	RED	-	P11	6	APTIV	12077412	15324982	J05	1	TE CONNECTIVITY	3-350819-2	INSULATION
W48	16	GPT	BLACK	-	SP08	X	-	SONIC_SPLICE	INSULATION	J06	1	TE CONNECTIVITY	3-350819-2	INSULATION
W49	14	GPT	BLACK	-	SP09	X	-	SONIC_SPLICE	INSULATION	SP08	X	-	SONIC_SPLICE	INSULATION
W50	14	GXL	BLACK	-	J02	1	TE CONNECTIVITY	485030-1	INSULATION	SP09	X	-	SONIC_SPLICE	INSULATION
W51	16	GXL	GREEN	-	J07	1	TE CONNECTIVITY	3-350819-2	INSULATION	CAP01	X	-	-	-

CONNECTOR	MANUFACTURER	MANUFACTURER PART NO.	TPA/SECONDARY LOCK PART NO.	TORO PART NO.
J01	TE CONNECTIVITY	485030-1	-	32170-229
J02	TE CONNECTIVITY	485030-1	-	32170-229
J05	TE CONNECTIVITY	3-350819-2	-	32170-294
J06	TE CONNECTIVITY	3-350819-2	-	32170-294
J07	TE CONNECTIVITY	3-350819-2	-	32170-294
P02	TE CONNECTIVITY	1-480704-0	-	32160-175
P03	APTIV	12015792	-	32160-071
P04	APTIV	08911979	-	32160-057
P05	APTIV	02973872	-	32160-016
P06	APTIV	02973872	-	32160-016
P07	APTIV	02973872	-	32160-016
P08	DELTA SYSTEMS	96526	-	32160-017
P09	DELTA SYSTEMS	972311	-	-
P10	DELTA SYSTEMS	972306	-	32160-047
P11	GEP POWER PRODUCTS	FRH-A12	FRH-A12-T	32160-467
P12	GEP POWER PRODUCTS	FRH-A24	FRH-A12-T	32161-005

UNLESS OTHERWISE SPECIFIED
DIMS ARE IN INCHES
TOL ON ANGLE ± -
2PL ± - 3PL ± -
INTERPRET DIM AND TOL PER
ASME Y14.5M-2018



SIGNATURES	MM-DD-YY
DRAWN BY Sarah Hayes	02-01-24
CHECKED/VERIFIED	
ORIGINATOR Sarah Hayes	
SIMILAR TO N\A	
FINISH CLASS N\A	
ORIGINATING LOCATION BATESVILLE	

TTC | Engineering

CONFIDENTIAL PROPERTY OF THE TORO COMPANY BLOOMINGTON, MN

TITLE

HARNESS-WIRE

SIZE
B

DWG NO
148-1028

REV
B

SCALE 1:1

WEIGHT .01 LB

SHEET 5 OF 5