

KAT Confirmation for Active Part Nos. in Table Drawing

A N Manikandan CNN

From: Subramani Gopalakrishnan CNN
Sent: Thursday, April 29, 2021 4:32 PM
To: L Saikiran CNN
Cc: N Shanmugasundaram CNN; Balraj Dhanasekaran CNN; R Anbazhagan CNN; A N Manikandan CNN; E Shanmuga Sundaram CNN; M Mohamed Asfar CNN; R Sujith CNN
Subject: RE: 100594440 Buy or make confirmation

Dear Sai

Please keep only one more partno 100593490 in addition to 100594440.

Remain all obseleted , FYI

Regards
Gopala Krishnan

From: L Saikiran CNN <saikiran.l@zf.com>
Sent: Thursday, April 29, 2021 3:13 PM
To: Subramani Gopalakrishnan CNN <gopalakrishnan.subramani@zf.com>
Cc: Natarajan Shanmugasundaram CNN <shanmugasundaram.n@zf.com>; Balraj Dhanasekaran CNN <dhanasekaran.balraj@zf.com>; R Anbazhagan CNN <anbazhagan.r@zf.com>; A N Manikandan CNN <manikandan.an@zf.com>; E Shanmuga Sundaram CNN <shanmugasundaram.e@zf.com>; M Mohamed Asfar CNN <mohamedasfar.m@zf.com>; R Sujith CNN <sujith.r@zf.com>
Subject: FW: 100594440 Buy or make confirmation

Dear Gopal,

We need your support and intervention. **Part no 100594440** is already released in PLM as Table drawing & it comprises of the following part numbers.

S.No	WABCO P/N	Remarks	Absolute Yes/No
1	100594440	TYCO Connector CRP Implementation	No
2	100593470	Not given in TML WH V1 - Matrix	To be confirmed by Gopal
3	100593480	Not given in TML WH V1 - Matrix	To be confirmed by Gopal
4	100593490	Not given in TML WH V1 - Matrix	To be confirmed by Gopal
5	100594460	Not given in TML WH V1 - Matrix	To be confirmed by Gopal

As you know 100594440 received from TML for TYCO Connector CRP implementation. Kindly check and confirm that the remaining part numbers are also required for Customer to implement this change.

If it is absolute we will proceed only with 100594440. Request your feedback.

Best Regards
Saikiran L

Technical Project Manager, Product Engineering
Commercial Vehicle Control System (Div. W)

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From: E Shanmuga Sundaram CNN <shanmugasundaram.e@zf.com>
Sent: Thursday, April 22, 2021 3:47 PM
To: L Saikiran CNN <saikiran.l@zf.com>

Cc: R Anbazhagan CNN <anbazhagan.r@zf.com>; A N Manikandan CNN <manikandan.an@zf.com>; RAJAMANI NAGALAKSHMI CNN <nagalakshmi.rajamani@zf.com>; Balraj Dhanasekaran CNN <ghanasekaran.balraj@zf.com>
Subject: 100594440 Buy or make confirmation

Dear Saikiran,

The TML ABS frame harness of P/N: **100594440** is already released in PLM in “BUY” - Sourcing status. As per the current scenario all the ABS WH has to be in “MAKE”.
So kindly the confirm the buy or make for P/N: 100594440, **this is one of the part in Tyco connector CRP implementation.**

Please provide the sourcing confirmation ASAP to proceed in drawing preparation and MFR approval.

Thanks regards
E.Shanmuga Sundaram
PE-EMD

ZF Group
Commercial Vehicle Control Systems
WABCO INDIA LIMITED
Plot No. 3 (SP), III Main Road
Ambattur Industrial Estate,
Ambattur, Chennai – 600058,India,
Tel : +91 (044) 4224 2000

Part No.
M593470 etc

GA

ENGINEERING CHANGES			
ECN No.	DATE	REV	SIGN
10842	19.07.07	New	RBS
10947	28.09.07	1	RBS
Note regarding "Rubber grommet SCL Part No M592920, 645, 3 mm sheet metal thickness" deleted.			
Note regarding "Grommet kept loose" and "1500 mm branch.... kept loose" added. DIM 150 was 75. Other details refer sheet 2. Drawing redrawn.			
10996	27.11.07	2	RBS
ECN details refer sheet 2			
11063	20.12.07	3	RBS
In Part Nos. M593470, M593480, M593490, M594440 and M594460, Identification tag added. Drawing redrawn.			
11005	24.07.08	4	RBS
In Corrugated sleeve, outer diameter 28mm 16 mm and 10 mm were 32 mm 20 mm and 16 mm respectively. Drawing redrawn.			
12083	16.03.11	5	RBS
Drawing template WABCO was WABCO-TVS (India) Ltd. Drawing redrawn.			
507922	03.08.21	6	Shanmuga E
Part Nos. M593470, M593480 and M594460 are deleted. SE Cable CSA changed from 0.75 Sq. mm (B&B) to 0.55sq.mm W. 3Core moulded MV cables changed to single wires with TYCO CRP connector 4P : 1-2349482-1 for all modulator valves			

Connector X2

1A	4A	7A	9A	12A
1	4	7	9	12
EV	AV	Nc	IGM	IG
2A	5A	8A	10A	13A
2	5	8	10	13
EV	AV	IGM	IG	IG
3A	6A	8A	11A	14A
3	6	8	11	14
EV	AV	IGM	IG	IG

View from cable entry side
Tyco part no.1-0967624-1
18 Pin Connector Housing

WABCO

ABS-E 24V/4S/MWP2000

WABCO

ECU E-Version (E-Basic) – 12V/24V
(For Reference only)

18-Pin Connector

Connector X2

Grommet Ø50
to be kept loose

100mm

150 mm

2000 mm

Connector- B
250 SERIES FEMALE CONNECTOR

Connector- A

ET01-2W

TYCO connector
P.No. : 172128-1

50mm

VIEW A

From cable entry side

CODE- DIN 72585-B1-3.1-Sn/K1

VIEW B

GROUND(YELLOW /GREEN)

2

OUTLET(BLUE)

1

INLET(BROWN)

3

VIEW B

TYCO Connector P.NO: 1-2349482-1

FR

S

M

S1

M1

P2

P4

P3

P5

S2

M2

RR

S

RR

M4

RL

S

RL

VIEW A

VIEW B

HEAT SHRINK SLEEVE

SPLICING JOINT

YELLOW / GREEN

FL

YELLOW / GREEN

FR

YELLOW / GREEN

RL

YELLOW / GREEN

RR

Single pole tap assembly for common ground.

Connector- B

30

1

1

ET01-2W

HEAT SHRINK SLEEVE

NOTE:

● –SPLIT JOINTS- BLACK COLOR PVC INSULATION TAPES SHALL BE USED AT JOINTS.

Ⓢ- 2 CORE POLYURETHANE SENSOR CABLES, HAVING A TWIST OF > 20 TWISTS/METER.

Ⓜ- 3 CORE POLYURETHANE MODULATOR VALVE CABLES

Ⓟ- SEE VIEW FOR CONTACT POSITIONS.

Crimping shall be done using automatic/semi automatic machines only.

** All MV Cable Terminal – Tyco P.No:0-0927768-3 (WABCO P.No:894 070 829 4)

All SE Cable Terminal – Tyco P.No:0-0927771-3 (WABCO P.No:894 070 734 4)

For Lengths P1, P2, P3, Corrugated sleeve of outer diameter 28 mm shall be used

For Lengths P4 and P5, Corrugated sleeve of outer diameter 16 mm shall be used

For Lengths S1,M1,S2,M2,S3,M3,S4,M4 Corrugated sleeve of outer diameter 10 mm shall be used

All Yellow / Green wires from the MV cables shall be splice jointed and connected to the common ground connector as shown

All the cables shall be covered with fire retardant slit type COT tubes of black colour

The flammability of COT tubes :
a. Flame should extinguish naturally
b. Combustion rate should be maximum 100mm / minute

FR – Front Right ; FL – Front Left ; RR – Rear Right; RL – Rear Left.

1500 mm branch of the connector B will tapped with the main branch and 500 to be kept loose.

● CRITICAL

● MAJOR

NO SYMBOL – MINOR

XVI	STEEL	NO TREATMENT
XVI	CAST IRON	PLATED
XV	STEEL	ZINC-IRON PLATED
XIV	CAST IRON	NO TREATMENT
XIII	ZINC ALLOY	ANODISED
XII	PLASTIC	NO TREATMENT
XI	RUBBER	NO TREATMENT
X	STAINLESS STEEL	NO TREATMENT
IX	BRASS	NO TREATMENT
VIII	ZINC ALLOY	CHROMATED
VI	ALUMINIUM ALLOY	ANODISED
V	ALUMINIUM ALLOY	CHROMATED
V	CAST IRON	PAINTED
IV	STEEL	POWDER COATED
III	STEEL	PAINTED
II	STEEL	PHOSPHATED
I	STEEL	ZINC PLATED
PART CODE	MATERIAL	SURFACE PROTECTION

S.No	Wire Size	Wire Colour	Circuit From Connector X2	Circuit To
9	0.75 sq.mm	Black	Pin No 10 of Connector X2	FR Sensor extension
10	0.5 sq.mm	White	Pin No 11 of Connector X2	RL Sensor extension
11	0.75 sq.mm	Black	Pin No 12 of Connector X2	FL Sensor extension
12	0.5 sq.mm	White	Pin No 13 of Connector X2	FR Sensor extension
13	0.75 sq.mm	Brown	Pin No 14 of Connector X2	RL Sensor extension
14	0.5 sq.mm	White	Pin No 15 of Connector X2	FL Sensor extension
15	0.75 sq.mm	Black	Pin No 17 of Connector X2	RR Sensor extension
16	0.5 sq.mm	White	Pin No 18 of Connector X2	RR Sensor extension
17	1.5 sq.mm	Black	Single pole ground connector and Bconnector	All ground wires of mv cable

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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN mm

REMOVE BURRS AND SHARP EDGES FROM FINISHED PARTS

ALL DIMENSIONS ARE AFTER SURFACE PROTECTION / TREATMENT

MALE THREAD TO IS 14962 (Part 3) 6h : 2001

FEMALE THREAD TO IS 14962 (Part 3) 6H : 2001

GENERAL TOLERANCES

RANGE OF NOMINAL DIMENSIONS (± mm)

≤ 50

> 50

≤ 180

> 180

≤ 400

> 400

(± %)

1

2

3

4

3

10

100 mm

SCALE

NTS

ABS FRAME WIRING HARNESS

MV/SE CABLE ASSEMBLY

FOR ABS 4S/4M SYSTEM 12V/24V,KWP2000

PART No.

M 593470 etc

GA

SHEET 1 OF 2

PART No.					M593470 etc		GA
ENGINEERING					CHANGES		
ECON No.	DATE	REV	N		RBS		
10842	19.07.07	N	SBS				
10947	28.09.07	1	RBS				
Cable branch wire length revised as per customer requirement to suit vehicle fitment. Note regarding "All cable lengths are rounded off to 500 mm on the higher side" deleted. Other details refer sheet 1. Drawing redrom.							
10996	27.11.07	2	RBS				
New Part No. M594440 added in the table. Drawing redrom.							
11063	20.12.07	3	RBS				
New Part No. M594460 added in the table. Drawing redrom.							
11005	24.07.08	4	RBS				
ECON details refer sheet 1. Drawing redrom.							
12083	16.03.11	5	RBS				
Revision details refer of 1							
507922	03.08.21	6	Shanmuga E				
Revision details refer to sheet 1.							

[illegible]

Branch details:

FL-Sensor (From ECU connector X2 to FL sensor)

$$= P1+P2+S3$$

FR-Sensor (From ECU connector X2 to FR sensor)

$$= P_1 + P_2 + P_4 + S_1$$

RL-Sensor (From ECU connector X2 to RL sensor)

$$= P_1 + P_2 + P_3 + S_4$$

RR-Sensor (From ECU connector X2 to RR sensor)

$$= P_1 + P_2 + P_3 + P_5 + S_2$$

FL-Modulator valve (From ECU connector X2 to FL Modulator valve)

$$= P_1 + P_2 + M_3$$

FR-Modulator Valve (From ECU connector X2 to FR Modulator valve)

$$= P1+P2+P4+M1$$

RL-Modulator Valve (From ECU connector X2 to RL Modulator valve)

$$= P_1 + P_2 + P_3 + M_4$$

RR-Modulator Valve (From ECU connector X2 to RR Modulator valve)

$$= P_1 + P_2 + P_3 + P_5 + M_2$$

Note:

All the cables shall be covered with fire retardant slit type COT tubes (PPFR)

The flammability of COT tubes :

a. Flame should extinguish naturally

b. Combustion rate should be maximum 100mm / minute

TOLERANCE CHART		
BRANCH LENGTHS		
S.No.	LENGHT IN mm	TOLERANCE mm
1	LESS THAN 200	+10/-0
2	201 TO 500	+15/-0
3	501 TO 1000	+20/-0
4	1001 TO 2000	+25/-0
5	2001 TO 5000	+25/-0
6	OVER 5001	+30/-0
MAIN TRUNK		
S.No.	LENGHT IN mm	TOLERANCE mm
1	LESS THAN 200	+/-10
2	201 TO 500	+/-10
3	501 TO 1000	+/-10
4	1001 TO 2000	+15/-0
5	2001 TO 5000	+15/-0
6	OVER 5001	+20/-0
FOR CLIPS		
CLIP TO CLIP TOLERANCE mm		
ALL		+5/-0
FOR GROMMET AND CLIPS IN mm		
GROMMET/CLIP TO BRANCH/OTHER COMPONENT		+10/-0

03.08.2021		'F'	CRP IMPLEMENTATION	Shanmuga E	Anbazhagan	Anbazhagan
09.07	00JM 2003	'C' 'E'	PARTY'S DRG REVISED REDRAWN	BJK	AKG	S.ROY
Date	Mod No	SL No	Modification	DO	CHK	APP

TATA MOTORS PART/DESC : W/H FRAME ASSEMBLY-ABS-E, 4S/4M WABCO - RHD

TATA MOTORS PART NO : 2073 5460 0404

XVI	STEEL	NO TREATMENT
XV	CAST IRON	PLATED
XIV	STEEL	ZINC-IRON PLATED
XIII	CAST IRON	NO TREATMENT
XII	ZINC ALLOY	ANODISED
XI	PLASTIC	NO TREATMENT
X	RUBBER	NO TREATMENT
IX	STAINLESS STEEL	NO TREATMENT
VIII	BRASS	NO TREATMENT
VII	ZINC ALLOY	CHROMATED
VI	ALUMINIUM ALLOY	ANODISED
V	ALUMINIUM ALLOY	CHROMATED
IV	CAST IRON	PAINTED
III	STEEL	POWDER COATED
II	STEEL	PAINTED
I	STEEL	PHOSPHATED
PART CODE	MATERIAL	ZINC PLATED
		SURFACE PROTECTION

	SIGN	DATE	MATERIAL	--
DRN	BSN	13.03.11	ALTERNATE MATERIAL	--
CHD	RBS	13.03.11	SURFACE PROTECTION	REFER TABLE
APD	SN	13.03.11	RAW PART No.	--

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REMOVE BURRS AND SHARP EDGES FROM FINISHED PARTS

ALL DIMENSIONS ARE AFTER SURFACE PROTECTION / TREATMENT

MALE THREAD TO IS 14962 (Part 3) 6h : 2001

FEMALE THREAD TO IS 14962 (Part 3) 6H : 2001

GENERAL TOLERANCES					
RANGE OF NOMINAL DIMENSIONS ($\pm$ mm)					FORCE, POWER, PRESSURE etc.,
≤ 50	> 50 ≤ 180	> 180 ≤ 400	> 400	($\pm$ ')	($\pm$ %)
1	2	3	4	3	10

WABCO AMBATTUR, CHENNAI – 600058, INDIA		
SCALE NTS	ABS FRAME WIRING HARNESS(RHD) MV/SE CABLE ASSEMBLY	PART No. M593470 etc [GA
	FOR ABS 4S/4M SYSTEM 12V/24V,KWP2000	SHEET 2 OF 2