



SHOWMAN 412 S LOUDSPEAKER

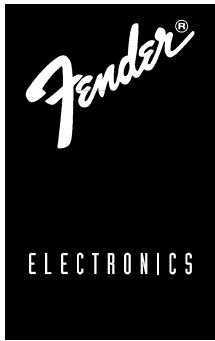
p/n 021-1675-010 (120V)

SERVICE MANUAL



CONTENTS:

Notices	2
Specifications	3
Parts lists:	
End item	4
Input assembly	4
PCB assembly	4
Cabinet assembly	5
Service diagrams.....	6
Assembly diagrams	7-10



SHOWMAN 412 S LOUDSPEAKER

(This is the model name for warranty claims)

SERVICE MANUAL

OCTOBER 2001

IMPORTANT NOTICE:

The information contained herein is CONFIDENTIAL and PROPRIETARY to Fender Musical Instruments Corp. It is disclosed solely for use by qualified technicians for purposes of equipment maintenance and service. It is not to be disclosed to others without the expressed permission of Fender Musical Instruments Co. All specifications subject to change without notice.

For warranty repair service, only Fender specified part numbers are to be used. It is recommended they also be used for post-warranty maintenance and repair.

Parts marked with an asterisk (*) indicate the required use of that specific part. This is necessary for RELIABILITY and SAFETY requirements. **DO NOT USE A SUBSTITUTE!**

A coded naming convention is used in the description of certain parts. The codes and what they mean are as follows:

CAPACITOR CODES

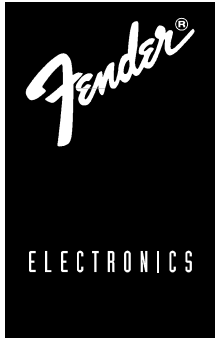
CAP AE	=	Aluminum Electrolytic
CAP CA	=	Ceramic Axial
CAP CD	=	Ceramic Disk
CAP MPF	=	Metalized Polyester Film
CAP MY	=	Mylar
CAP PFF	=	Polyester Film/Foil

RESISTOR CODES

RES CC	=	Carbon Comp
RES CF	=	Carbon Film
RES FP	=	Flame Proof
RES MF	=	Metal Film
RES WW	=	Wire Wound

HARDWARE CODES

BLX	=	Black Oxide
CR	=	Chrome Plated
HWH	=	Hex Washer Head
M	=	Machine Screw
NI	=	Nickel Plated
OHP	=	Oval Head Phillips
PB	=	Particle Board
PHP	=	Pan Head Phillips
PHPS	=	Pan Head Phillips Sems
SMA	=	Sheet Metal "A" Point
SMB	=	Sheet Metal "B" Point
SS	=	Stainless Steel
TF	=	Thread Forming
ZI	=	Zinc Plated



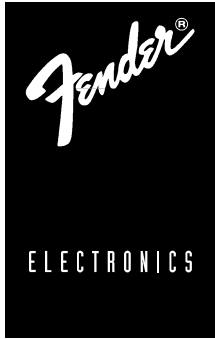
SHOWMAN 412 S LOUDSPEAKER

(This is the model name for warranty claims)

SPECIFICATIONS

Product Release No.:	PR 507 <i>(This is not a model number)</i>
Part Number:	021-1675-010
Impedance:	16Ω Mono, 8Ω Stereo
Sensitivity:	96 dB, 1 Watt - 1 meter
Power Handling:	300 Watts
Drivers:	Four 12" (30.5 cm) Steel-Frame drivers w/1-3/4" (4.5 cm) voice coils & 54 oz. (1.53 kg) magnets (p/n 053982)
Connections:	1/4" high-current input jacks
Cabinet:	5/8" (1.6 cm) 11-ply Birch Plywood
Enclosure Volume:	$V_B = 5.2 \text{ ft}^3$. (147 l)
Dimensions:	Height: 30" (76.2 cm) Width: 30" (76.2 cm) Depth: 15" (38.1 cm)
Weight:	99 lbs. (45 kg)

Product specifications are subject to change without notice



SHOWMAN 412 S LOUDSPEAKER

(This is the model name for warranty claims)

PARTS LIST

NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY

END ITEM

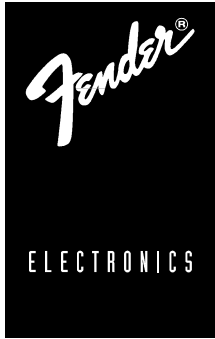
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057441000	CAB ASSY SHOWMAN 412S	
1	0012582000	CLAMP CABLE NYL SCRW MNT ¼	
1	0022327000	WSHR FLAT 8x7/16 NI	
1	0023192000	NAMEPLATE FNDR 65 TWIN(994093)	
16	0026577000	SCRW M 10-32x1 PHP BLX	
18	0026800000	SCRW SMAB 8x1-3/4 OHP BLX	
5	0030858000	SCRW SMA 8x5/8 PHP NI	
3	0037985000	SCRW SMAB 2x3/8 PHP BLX	
4	0053982000	SPEAKER 12" 16 OHMS	
4	0056483000	CASTER SWIVEL EL COM 2-12 CABS	
4	0057442000	INPUT ASSY SHOWMAN 412S	
1	0057486000	MANUAL OWNERS SHOWMAN 412S	
1	0057662000	SVC DIAG COMB SHOWMAN 412S	
1	0057755000	WIRE SET SHOWMAN 412S	

INPUT ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	0016352000	NUT HEX 3/8-32x3/32 TK NI	
2	0016436000	WSHR LCK INTL 3/8x.687x.035 NI	
2	0031153000	WSHR FLAT 3/8x.614 NI (049)	
1	0031184000	SCRW M6-32x1/4 PHPS BLX ITLW	
1	0057428000	PLATE INPUT SHOWMAN 412S	
1	0057661000	PCB ASSY SHOWMAN 412S	

INPUT PCB ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	0027674000	JACK 1/4 PCB 2/CD SCC INSL	
1	0050687000	CABLE JMPR 6 CKT .156 ROUND	
1	0057660000	PCB FAB SHOWMAN 412S	
1	0057756000	SWITCH SLIDE 3PDT LOCKING	
1	0057762000	WIRE SET PCB SHOWMAN 412S	



SHOWMAN 412 S LOUDSPEAKER

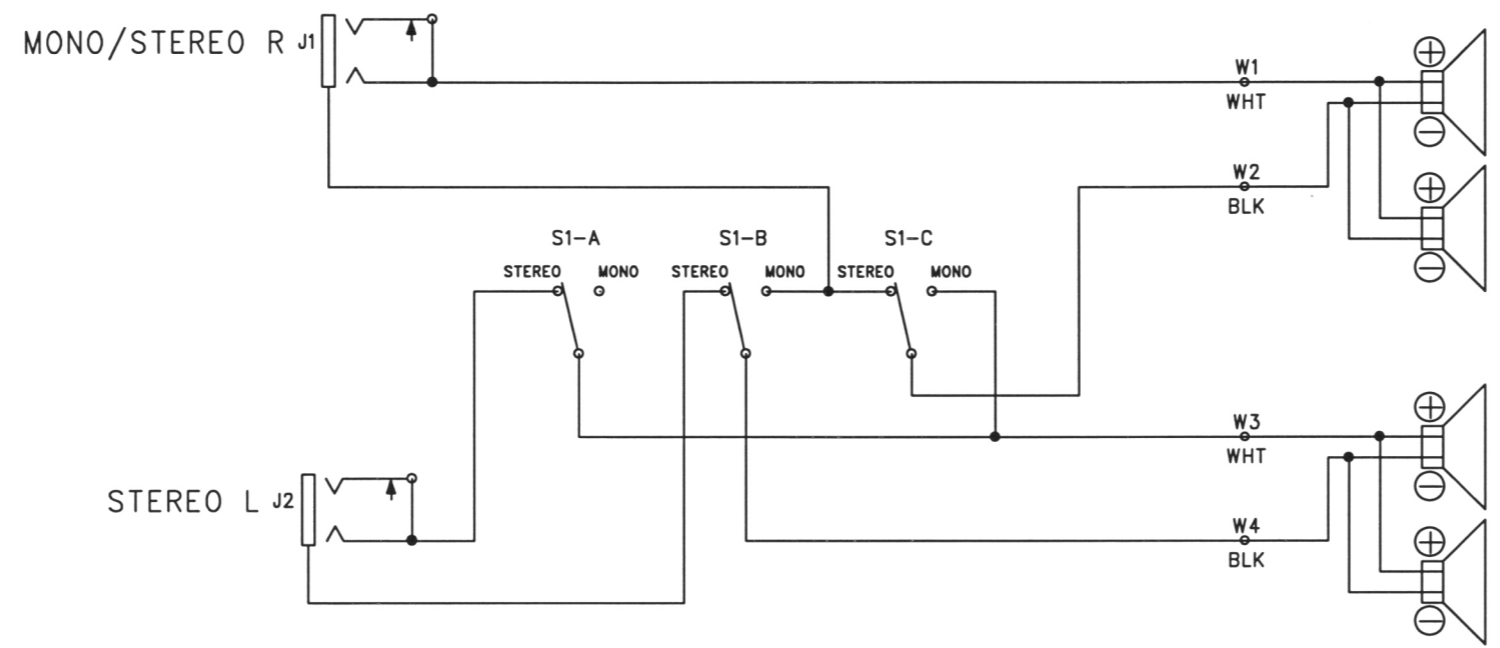
(This is the model name for warranty claims)

PARTS LIST


CABINET ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	0014150000	HANDLE-CABINET 6 CH	
2	0014151000	HANDLE HOUSING	
20	0016627000	SCRW SMA 8x3/4 OHP BLX	
20	0021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	
8	0026568000	CORNER 3 HOLE NI	
3.16	0026570000	TOLEX "BRAVURA BLACK"	(SY)
24	0026517000	SCRW SMAB 8X5/8 THP NI	
4	0026577000	SCRW M 10-32x1 PHP BLX	
16	0027199000	SCRW SMAB 10x3/4 PHP NI	
.167	0029085000	VELCRO STRIP LOOP 1.5"wd BLK	(YD)
.167	0029086000	VELCRO STRIP HOOK 1.5"wd BLK	(YD)
.800	0037788000	CLOTH GRILLE BLACK/SILVER	(SY)
2	0038796000	SCREW, 8x1-1/2 PFH SM ZI	
4	0051049000	FOOT RUBBER 1.5 DIA	
4	0056482000	MOUNTING PLATE EL COM	

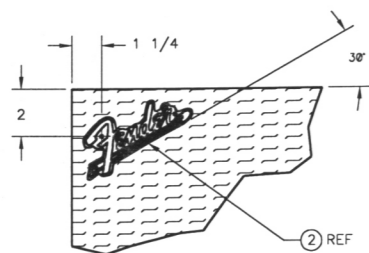
R E V I S I O N S			
REV.	DESCRIPTION	DATE	APPROVED
A	EC2686	14-SEP-01	JKH



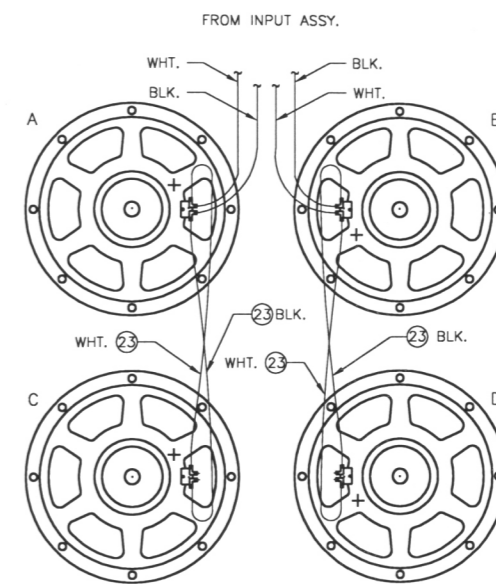
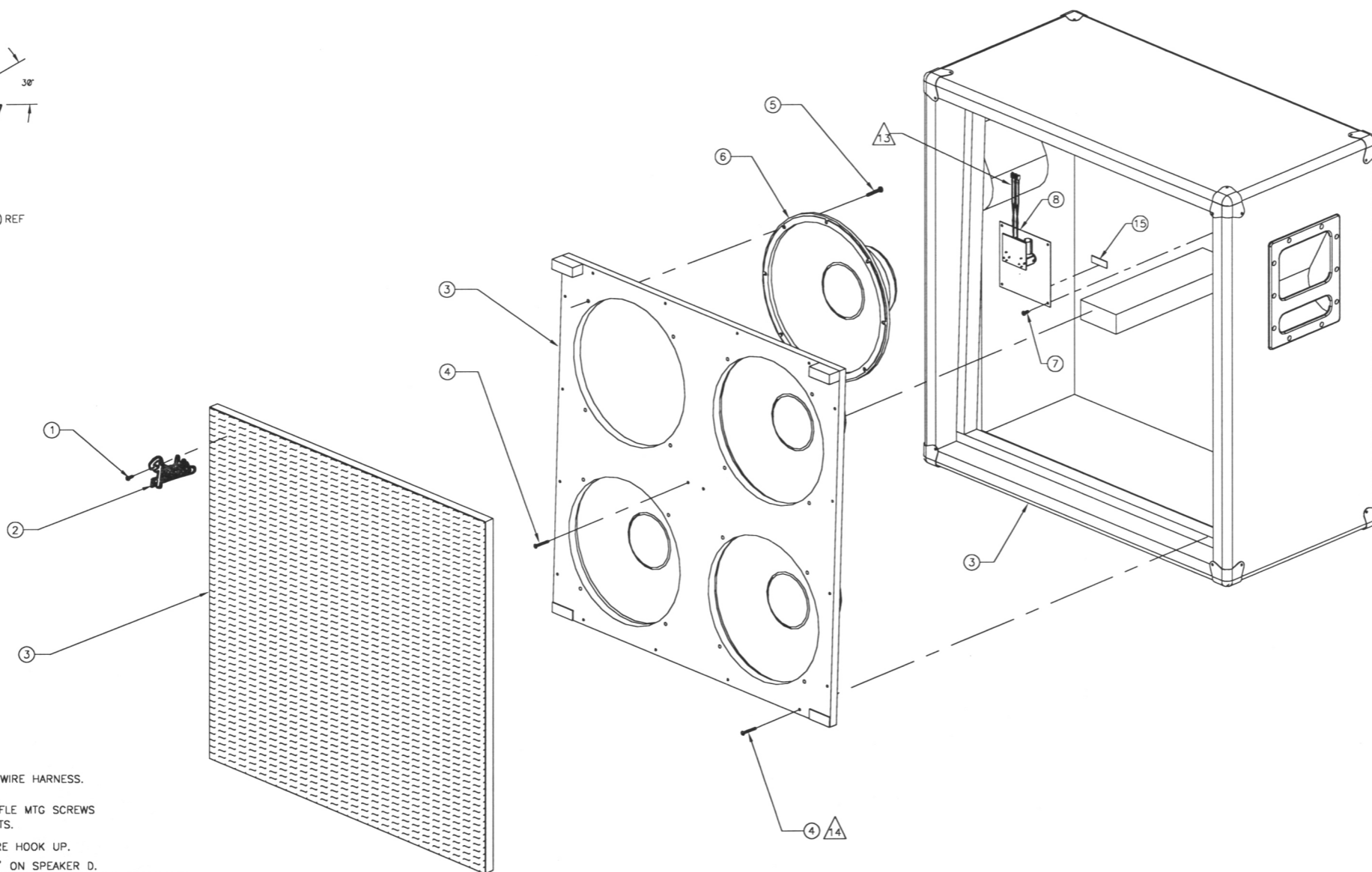
NOTES:
 1. SWITCH SHOWN IN STEREO POSITION.

THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFIDENCE AND SHALL NOT BE DISCLOSED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS.		 MUSICAL INSTRUMENTS Corona, CA U.S.A.	
CHECKED BY: <u>B. Pen</u> DATE: <u>18-SEP-01</u>		TITLE: SERVICE DIAGRAM, COMBINED (schematic) SHOWMAN 412S	
APPROVED BY: <u>J. HUBBARD</u> DATE: <u>18 SEP 2001</u>		SIZE B	DRAWING NUMBER 0057662000
DRAWN: DON FOX	ENGR: J. HUBBARD	RELEASE DATE: 14-SEP-01	REV. A SHEET: 1 OF 1
DATABASE FILE: Z507S.SCH		SHEET: 1 OF 1	

REV	REV NUMBER	BY	DATE/REVISE
A	RELEASED EC2686 PR507	RB	9/18/2001
B	EC 2/02 ADDED ITEMS 21-24 REVISED 9 & 14	RB	11/26/2001



LOGO PLACEMENT DETAIL
N.T.S.



SPEAKER ORIENTATION DETAIL
NO SCALE

(N.S.) = NOT SHOWN

24	1	0057662000	SVC DIAG COMB SHOWMAN 412S (N.S.)
23	1	0057755000	WIRE SET SHOWMAN 412S
22	AR	0055718000	FLEX FOAM PART B (N.S.)
21	AR	0055717000	FLEX FOAM PART A (N.S.)
20	1	0022327000	WSHR FLAT 8x7/16 NI (N.S.)
19	1	0012582000	CLAMP CABLE NYL SCRW MNT 1/4 (N.S.)
17	1	9903320000	BAG POLY ZIP 10x13 2M (N.S.)
16	1	0010526000	TAB CASTER REMOVAL NOTICE (N.S.)
15	1	0029816000	LABEL SERIAL MEXICO
14	AR	0055719000	INSTAMATE PACK FILM (N.S.)
13	1	0057427000	CARTON SHOWMAN 412S (N.S.)
12	1	0029757000	BAG POLY 35x22x52 .0015 (N.S.)
11	1	0057486000	MANUAL OWNERS SHOWMAN 412S SPEAKER (N.S.)
10	AR	0057348000	CORROSEAL 50# (12"X 250' ROLL)
9	4	0056483000	CASTER SWIVEL EL COM 2-12 CABS (N.S.)
8	1	0057442000	INPUT ASSEMBLY SHOWMAN 412S SPEAKER
7	5	0030858000	SCRW SMA 8x5/8 PHP NI
6	4	0053982000	SPKR 12" 16 OHM
5	16	0026577000	SCRW M 10-32x1 PHP BLX
4	18	0026800000	SCRW SMAB 8x1-3/4 OHP BLX
3	1	0057441000	CABINET ASSEMBLY SHOWMAN 412S SPEAKER
2	1	0023192000	NAMEPLATE FNDR 65 TWIN(994093)
1	3	0037985000	SCRW SMA 2x3/8 PHP BLX

15. LOCATED AT REAR OF BAFFLE TO SECURE WIRE HARNESS.
14. USE SOAP OR GREASE ON POINTS OF BAFFLE MTG SCREWS (ITEM #4) TO MINIMIZE SPLITTING OF CLEATS.
13. SEE SPEAKER ORIENTATION DETAIL FOR WIRE HOOK UP.
12. BLACK WIRE FROM SPEAKER B "-" TO "-" ON SPEAKER D.
ALAMBRE NEGRO DE ALTAVOZ "B" "NEGATIVO" A "NEGATIVO" DE ALTAVOZ "D".
11. WHITE WIRE FROM SPEAKER B "+" TO "+" ON SPEAKER D.
ALAMBRE BLANCO DE ALTAVOZ "B" "POSITIVO" A "POSITIVO" DE ALTAVOZ "D".
10. BLACK WIRE FROM "LEFT" INPUT ASSY. TO "-" ON SPEAKER B.
ALAMBRE NEGRO DE ASEMBLEA "IZQUIERDO" INPUT A "NEGATIVO" DE ALTAVOZ "B".
9. WHITE WIRE FROM "LEFT" INPUT ASSY. TO "+" ON SPEAKER B.
ALAMBRE BLANCO DE ASEMBLEA "IZQUIERDO" INPUT A "POSITIVO" DE ALTAVOZ "B".
8. BLACK WIRE FROM SPEAKER A "-" TO "-" ON SPEAKER C.
ALAMBRE NEGRO DE ALTAVOZ "A" "NEGATIVO" A "NEGATIVO" DE ALTAVOZ "C".
7. WHITE WIRE FROM SPEAKER A "+" TO "+" ON SPEAKER C.
ALAMBRE BLANCO DE ALTAVOZ "A" "POSITIVO" A "POSITIVO" DE ALTAVOZ "C".
6. BLACK WIRE FROM "RIGHT" INPUT ASSY. TO "-" ON SPEAKER A.
ALAMBRE NEGRO DE ASEMBLEA "DERECHO" INPUT A "NEGATIVO" DE ALTAVOZ "A".
5. WHITE WIRE FROM "RIGHT" INPUT ASSY. TO "+" ON SPEAKER A.
ALAMBRE BLANCO DE ASEMBLEA "DERECHO" INPUT A "POSITIVO" DE ALTAVOZ "A".
4. COPYRIGHT - 2001 - FENDER MUSICAL INSTRUMENTS CORP.
3. - 3 - SAMPLES OF FIRST PARTS MUST BE APPROVED BY FENDER R&D BEFORE STARTING PRODUCTION.
2. ALL DIMENSIONS ARE IN INCHES.
1. DO NOT SCALE DRAWING.
- NOTES: UNLESS OTHERWISE NOTED

MATERIAL	N/A		ENGINEER	J. GIFFORD	
FINISH	N/A		DRAWN	R. BARR	
TOL. UNLESS NOTED	FRACT. --- 1/32 .X --- 0.050 .XX --- 0.010 XXX --- 0.005 ANGLES --- 0.5 DEGREES HOLE DIA. --- +0.005 - 0.001 UNMARKED ANGLES ARE 90 DEGREES.		DATE	6/18/2001	
APPROVED	J. HUBBARD		DATE	7 DEC 2001	
TITLE			END ITEM		
SHOWMAN 412S SPEAKER			SHOWMAN 412S SPEAKER		
SHEET	SIZE	DRAWING NUMBER	REV.		
1/1	D	0211675010	B		
SCALE	N/A				

8

7

6

5

4

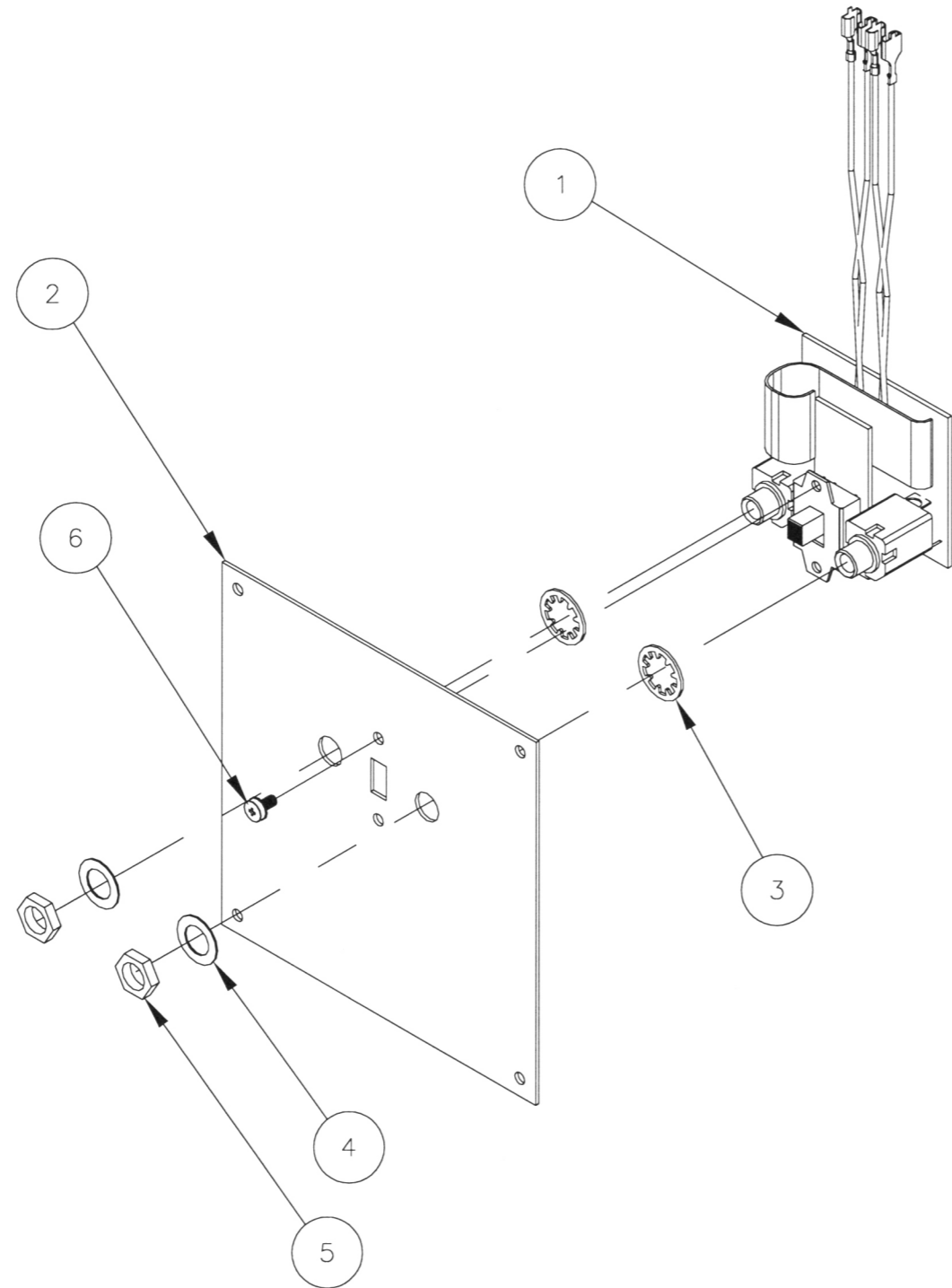
3

2

1


THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFIDENCE AND SHALL NOT BE DISCLOSED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS CORP.

REV	EC NUMBER	BY	DATE/ARCHIVE
A	RELEASED EC 2686 PR 507	RB	9/12/2001

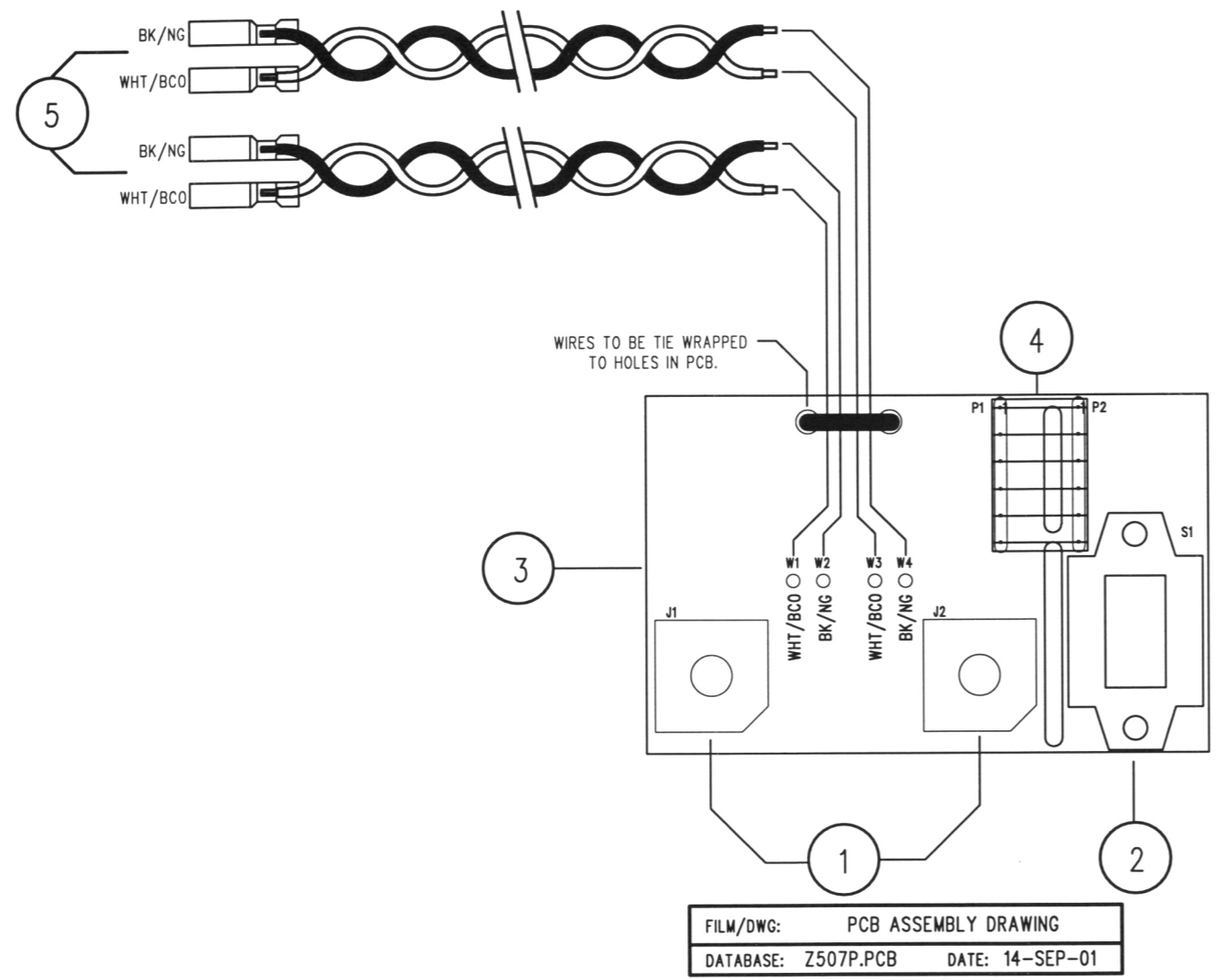


4. COPYRIGHT - 2001 - FENDER MUSICAL INSTRUMENTS CORP.
3. - 3 - SAMPLES OF FIRST PARTS MUST BE APPROVED BY FENDER R&D BEFORE STARTING PRODUCTION.
2. ALL DIMENSIONS ARE IN INCHES.
1. DO NOT SCALE DRAWING.
- NOTES: UNLESS OTHERWISE NOTED

ITEM	QTY	PART NO.	DESCRIPTION
6	2	0031184000	SCRW M6-32x1/4 PHPS BLX ITLW
5	2	0016352000	NUT HEX 3/8-32x3/32 TK NI
4	2	0031153000	WSHR FLAT 3/8x.614 NI (049)
3	2	0016436000	WSHR LCK INTL 3/8x.687x.035 NI
2	1	0057428000	PLATE INPUT SHOWMAN 412S
1	1	0057661000	PCB ASSY SHOWMAN 412S


MATERIAL N/A		ENGINEER J. HUBBARD	 FENDER MUSICAL INSTRUMENTS CORP. CORONA, CALIFORNIA U.S.A.			
FINISH N/A		DRAWN R. BARR				
TOL. UNLESS NOTED		DATE 9/12/2001	TITLE INPUT ASSEMBLY SHOWMAN 412S SPEAKER			
FRACT. ----- +- 1/32 .X ----- +- 0.050 .XX ----- +- 0.010 .XXX ----- +- 0.010 ANGLES ----- +- 0.5 DEGREES HOLE DIA. ----- +-0.005 - 0.001 UNMARKED ANGLES ARE 90 DEGREES.		DFT. ENG. ENG. SPT JKH DATE DATE DATE 9/19/07 19 SEP 2001 APPROVED J. HUBBARD DATE 19 SEP 2001	SHEET 1 of 1	SIZE B	PART/DRAWING NUMBER 0057442000	REV. A
		SCALE 1/2				

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	EC2686	14-SEP-01	JKH



ITEM	QTY	FENDER PART NUMBER	DESCRIPTION
1	2	0027674000	JACK 1/4 PCB 2/CD SCC INSL
2	1	0057756000	SWITCH SLIDE 3PDT LOCKING
3	1	0057660000	PCB FABRICATION SHOWMAN 412S
4	1	0050687000	CABLE JMPR 6 CKT .156 ROUND
5	1	0057762000	WIRE SET PCB SHOWMAN 412S

NOTES: (UNLESS OTHERWISE NOTED)

THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFIDENCE AND SHALL NOT BE DISCLOSED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS.		 MUSICAL INSTRUMENTS Corona, CA U.S.A.	
CHECKED BY: <u>Bob Dean</u> DATE: <u>18-SEP-01</u>		TITLE: PCB ASSEMBLY, SHOWMAN 412S	
APPROVED BY: <u>J. HUBBARD</u> DATE: <u>18 SEP 2001</u>		SIZE: B	DRAWING NUMBER: 0057661000
DRAWN: DON FOX	ENGR: J. HUBBARD	RELEASE DATE: 14-SEP-01	REV. A
DATABASE FILE: Z507P.PCB		SHEET 1 OF 1	