

# by **HARMAN**

# Service Manual

## VPX715

## 15" High-Power Two-Way Speaker





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#### **Professional Series**

### **Key Features:**

- 15" high efficiency woofer
- 1.5" annular polymer diaphragm compression driver
- ► Enclosure constructed of premium plywood and finished in black DuraFlex<sup>TM</sup> coating
- ► 70° × 60° (H × V) coverage pattern for even and smooth response on and off axis
- Heavy-duty 16-gauge protective screen backed steel grille
- ▶ Dual-angle socket for pole mounting
- ▶ 13 rigging points for suspension installation

## **Applications:**

- Sound reinforcement for live music and speech or prerecorded applications
- ▶ As satellite speaker for use with subwoofers

VPX715 is a 15" two-way speaker system designed for live music, speech or pre-recorded applications.

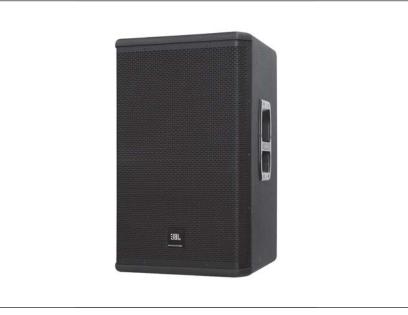
VPX715 uses a 1.5" JBL 2408H-2 annular polymer diaphragm neodymium compression driver to collaborate with a 15" high efficiency woofer for acoustic reproduction of high power, low distortion and low power compression. The 15" woofer embeds an optimal demodulating cooling aluminum ring, hence, stable performance is guaranteed even after long working hours. The speaker system creates a 70° × 60° (H × V) coverage pattern to ensure even and smooth response no matter on or off axis.

VPX715 is designed for versatile installation. Thirteen (13) suspension points and a dual-angle (0° straight vertical, 10° backward tilting) 35 mm socket are available for either flying or pole mounting and convenient orientation adjust. Two (2) integral handles make it easier to transport and install.

The entire system presents itself in a professional and low profile manner and aims to provide prolonged reliability and durability to its users. The trapezoidal enclosure is constructed of quality plywood and finished in rugged DuraFlex<sup>TM</sup> coating to sustain frequent transit and set-up. The front grille is made from 16-gauge steel and backed with acoustically transparent fabrics to provide adequate protection to drivers and circuits inside.



## 15" High-Power Two-way Speaker



## Specifications:

System:	
Frequency Range (-10 dB) <sup>1</sup> :	47 Hz - 20 kHz
Frequency Response $(\pm 3 \text{ dB})^1$ :	80 Hz - 20 kHz
Coverage Pattern:	$70^{\circ} \times 60^{\circ} (H \times V)$
Crossover Mode:	Passive
Crossover Frequency:	2.0 kHz
Power Rating <sup>1</sup> :	450 W/900 W/1800 W (Continuous/Program/Peak)
Sensitivity (1w@1m) <sup>2</sup> :	98 dB
Nominal Impedance:	8 Ohms
Maximum SPL <sup>3</sup> :	125 dB (131 dB peak)
Physical:	
LF Driver:	1 × 15" (381.00 mm) woofer
HF Driver:	1 × JBL 2408H-2 tweeter
Enclosure:	Trapezoidal, 15/18 mm, plywood
Suspension / Mounting:	13 points (3@top, 3@bottom, 2@each side, 3@rear), M10 thread hardware; Dual-angle 35 mm pole socket
Transport:	2 × die-cast handles with backing cup
Finish:	Black DuraFlex <sup>TM</sup> finish
Grille:	Powder coated, black, 16-gauge perforated steel with acousti- cally transparent black screen backing
Input Connectors:	2 × Neutrik® Speakon® NL-4
Dimensions $(H \times W \times D)$ :	$701 \text{ mm} \times 432 \text{ mm} \times 470 \text{ mm}(27.6 \text{ in} \times 17.0 \text{ in} \times 18.5 \text{ in})$
Net Weight:	25.34 Kg (55.87 lbs)
Optional Accessories:	SS2-BK: Tripod speaker stand SS3-BK: Satellite speaker pole

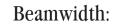
1 IEC standard, pink noise with 6 dB crest factor for 2 hours

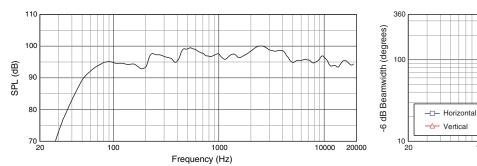
2 Full space  $(4\pi)$  conditions

3 Calculated maximum SPL based on rated power handling

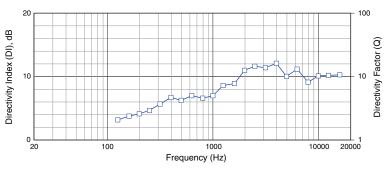
JBL continually engages in research related to product improvement. Some materials, production methods and design refinements are introduced into existing products without notice as a routine expression of that philosophy. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

## **Frequency Response:**



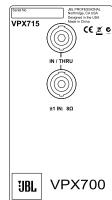


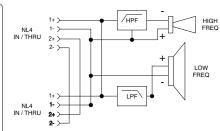
## **Directivity Index:**



Block Diagram:

100





10000

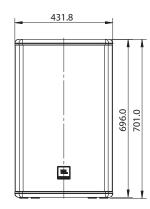
20000

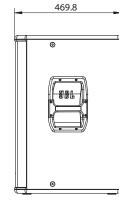
1000

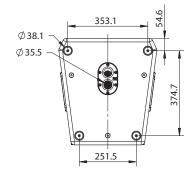
Frequency (Hz)

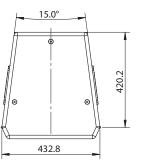
## Dimensions:

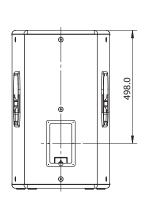
Dimensions in mm

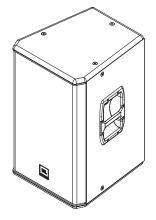










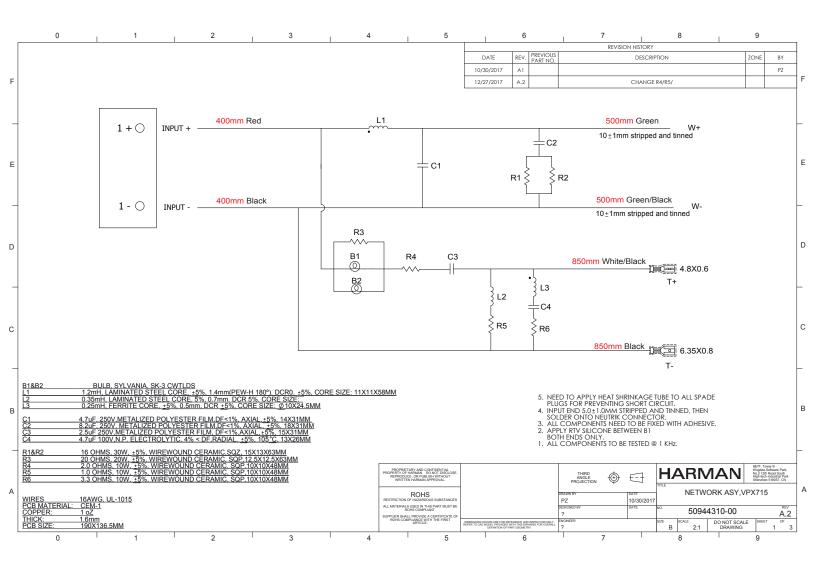


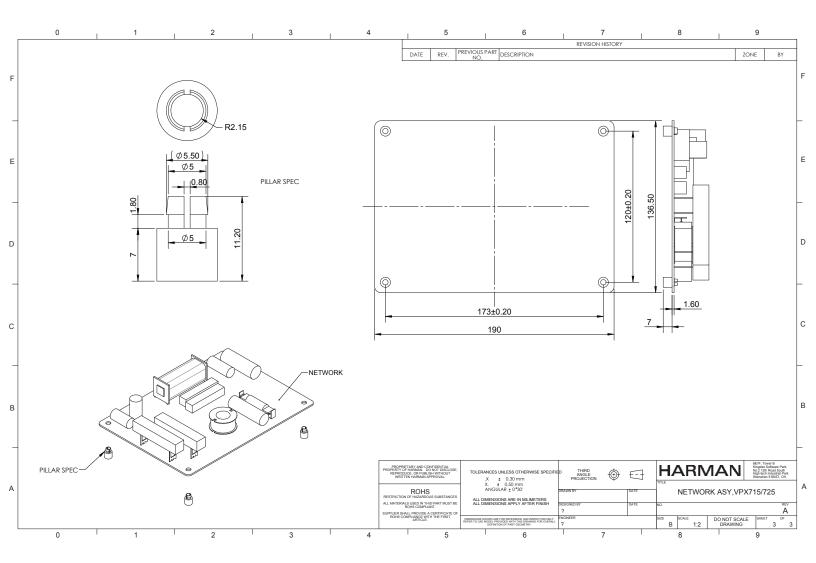


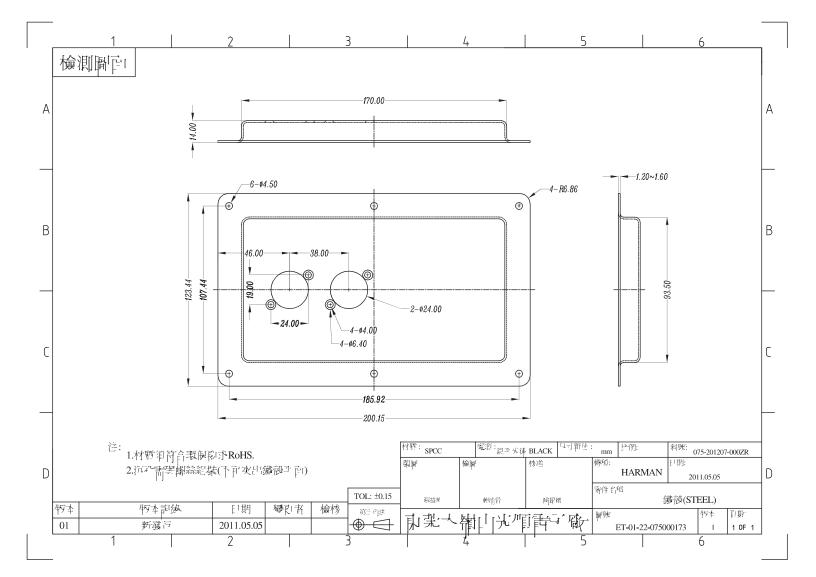
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JBL	Engi	neering Standard	Date Effective 6/3/2014	Number 1000141211		
Engineering		ineering Design Specification		Page 1 of 2		
	Model:	5041776 (KP401	15 WF)			
Frequency range(	-10dB):	55Hz~3KHz				
Harmonic Distort	on:					
Frame:		Alu. die cast; black	satin texture powder co	ated		
Magnet:		Y35 ferrite; Φ190m	nm(O.D.)XΦ85mm(I.D.	)X20mm(T)		
Bucking Magnet:		N/A				
Top plate:		10mm thick steel; C	D.D.: 175mm; I.D.: 79.4	mm; ECB		
T-yoke:		10.6mm thick back	platel, O.D.: 180mm; E	CB		
Pole piece:		74.65mm(O.D.)X37	7.2mm(I.D.)X10mm(H)	,ECB(电泳黑)		
Conductive ring:		Alu 1100; 73.7mm(O.D.)X68.2mm(I.D.)X15mm(H) under pole piece				
Voice Coil:		0.27 CCA APISVW	er; 0.15GF bobbin; 0.13 /; 2x22 ohms in parallel	; DCR: 5.5ohms;		
Cone/Surround:		Semi-pressed deep t	perforations on former treated papar cone; dot t ound; damping glue bru	exture;uncoated;		
Tinsel lead		-	ed tinsel with heat shrin	k tube insulated		
Spider: Dustcup:			up; mesh texture; unco	ated;		
Gasket(front):		damping glue brush 7mm thick EVA; bl	ed on front ack; 4 pieces per set			
Gasket(rear):		2mm thick 40durom	neter EVA; black; 4 piec	es per set		
Terminal tap:		Binding post push to	erminal block, "+" Red	"-" Black		
Polarity:		positive volt gives t	o + terminal get forward	l on cone motion.		
Power Test:		Pink noise; 60~600l 52.9V at 7.0ohms(4 REVISIONS	Hz; 12dB/Oct cut off; 6 00W ref.); 100hrs	dB crest factor;		
LTR		CRIPTION	DATE APPR	]		
X8 A	Param	eter update	11/25/2013 6/3/2014			
		Design Engineer				

Engineering Standard	Date effective 6/3/2014		Number 1000141211	Page 2 of 2
	Model 5041776 (K Parameters	XP4015 WF)		
Before power	r test			
Re: 5.5	Ohms			
Fs: <b>45</b>	Hz			
Qts: 0.42				
Qms: 9				
Qes: <b>0.44</b>				
Vas: <b>138</b>	Liters			
Sd: <b>860</b>	Cm^2			
Cms: 133	um/N			
Mms: <b>94</b>	g			
BL: <b>18.3</b>	T.M			
Xmax <b>3.35</b>	mm			
Xmax, damage 17	mm			
SPL(ref) 98.2	dB(2.83V/1m)			







	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
0	VPX715	B.3 (Design)	S/M, VPX715				Released	
1	🏟 <u>49790P</u>	C.9 (Design)	MICROFOAM 1/32X18X20			4 each	Released	
1	🏟 <u>65012</u>	D.7 (Design)	TAPE,PKG,3"X3000LINFT			2 Meter	Released	
1	<sup>2</sup>	D.6 (Design)	RIBBON,XFR,THRM,4.5"x1181			4 Inch	Released	
1	🋱 <u>5013165</u>	A.6 (Design)	STAPLE 8014 12.8mmX14mm			24 each	Released	
1	<sup>(2)</sup> <u>5019069</u>	B.6 (Design)	BARCODE BLANK LABEL CHINA 4SN			2 each	Released	
1	🋱 <u>5041776</u>	C.9 (Design)	AUD,LS,ASY,KP4015 WOOF			1 each	Released	
2	 <u>5041382</u>	A.8 (Design)	XDCRMECH, DUST CAP, MQ85 WOOF			1 each	Released	
2	🔅 <u>5041684</u>	A.7 (Design)	XDCRMECH,CONE ASY,KP4015 WOOF			1 each	Released	
2	🛱 <u>5041729</u>	B.5 (Design)	XDCRMECH, VOICE COIL, MQ82			1 each	Released	
2	🛱 <u>5041732</u>	A.8 (Design)	XDCRMECH,BACK PLATE,MQ82 WF			1 each	Released	
2	🛱 <u>5041734</u>	A.8 (Design)	XDCRMECH, MAGNET, MQ82 WF			1 each	Released	
2		A.9 (Design)	XDCRMECH, AL FRAM, MQ85 WF			1 each	Released	
2		C.4 (Design)	XDCRMECH, SPIDER, MQ85 WF			1 each	Released	
2	🛱 <u>5041744</u>	A.10 (Design)	XDCRMECH, EVA FRONT GKT, MQ85 WF			4 each	Released	
2	🛱 <u>5041746</u>	A.9 (Design)	XDCRMECH,EVA BACK GKT, MQ85 WF			4 each	Released	
2	🏟 <u>5041749</u>	C.5 (Design)	XDCRMECH, POLE PIECE, MQ85 WF			1 each	Released	
2	🗯 <u>5041750</u>	B.8 (Design)	XDCRMECH, RING, MQ85 WF			2 each	Released	
2	🔅 <u>5041773</u>	A.6 (Design)	XDCRMECH,TERMINAL POLE, MQ8 WF			1 PR Pair	Released	
2		B.6 (Design)	LBL,PRNT,KP4015 WOOF			1 each	Released	
3		B.7	ART,LABEL,KP4015 WOOF			1 each	Released	

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
	5042438	(Design)						
2	🥶 <u>5045638</u>	A.9 (Design)	XDCRMECH, TOP PLATE, KP4015 WOOF			1 each	Released	
1	첉 <u>5081552</u>	B.1 (Design)	ENCL, CABINET, ASY, MRX715			1 each	Released	
2		C.10 (Design)	T-NUT,10-32			24 each	Released	
2	<sup>2</sup>	C.8 (Design)	ADH,JOWAT-110-60,BROWN			0.033 gallon, US	Released	
2		C.12 (Design)	ADHESIVE, URETHANE			0.08 gallon, US	Released	
2	🛱 <u>5013163</u>	A.6 (Design)	NAIL F30 30mm LONG			22 each	Released	
2	🛱 <u>5058298</u>	A.8 (Design)	BASECOAT, BLACK CHEMTHANE 7030			0.51 gallon, US	Released	
2	🛱 <u>5058299</u>	B.7 (Design)	TOPCOAT, BLACK CHEMTHANE 1400			0.045 gallon, US	Released	
2	352214-001	C.10 (Design)	T-NUT,10-32,SPECIAL,PRO			6 each	Released	
2	361328-002	C.7 (Design)	MRX515,GRILLE STANDOFF			2 each	Released	
3	444867-001	C.6 (Design)	25MMX48"X96'WH BIRCH PLWD			0.4 Square Foot SF	Released	
2	362721-001	A.5 (Design)	BONDO 494 DYNALITE FILLER			0.1 gallon, US	Released	
2	<u>364102-001</u>	C.6 (Design)	TAPE,3M,3"x50,GRY,3903			3 Meter	Released	
2	445955-001	A.15 (Design)	HDWR,BRKT,90DEGREE ASY			6 each	Released	
2	445956-001	A.15 (Design)	HDWR,BRKT,SINGLE POINT ASY,KP600			1 each	Released	
2	5089835-00	A.5 (Design)	ENCL,TOP PNL, MRX715			1 each	Released	
2	5089836-00	A.5 (Design)	ENCL,BTM PNL, MRX715			1 each	Released	
2	5089837-00	A.5 (Design)	ENCL,BFL,PNL,MRX715			1 each	Released	
2	5089838-00	A.5 (Design)	ENCL,SIDE_L,PNL,MRX715			1 each	Released	

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
2	5089839-00	A.5 (Design)	ENCL,SIDE_R,PNL,MRX715			1 each	Released	
2	5089840-00	A.5 (Design)	ENCL,REAR,PNL,MRX715			1 each	Released	
2	5089841-00	A.5 (Design)	ENCL,MID STIF,PNL,MRX715			1 each	Released	
2	5089843-00	A.5 (Design)	ENCL,SIDE STIF, PNL,MRX715			2 each	Released	
2	5089845-00	A.5 (Design)	ENCL,PORT_L,PNL,MRX715			1 each	Released	
2	5089846-00	A.5 (Design)	ENCL,PORT_R,PNL,MRX715			1 each	Released	
2	882-41410-15	B.4 (Design)	HDWR,FASTNR,SCR,ST4×15 PH,PAN, BLK ZINC			26 each	Released	
2	CONSUMABLES	7 (Design)	ADHESIVES/PAINTS/CHEMICALS/ LABELS/ETCALL			19.335 Piece	Released	
1	🛱 <u>5081560</u>	A.7 (Design)	SPKSYS, GRILLE ASY, MRX715			1 each	Released	
2	🧯 <u>5081551</u>	A.4 (Design)	HDW, BDGE, FROFESSIONAL,MRX700			1 each	Released	
2		A.4 (Design)	SPKSYS, GRL, MRX715			1 each	Released	
2	<u>445921-001</u>	A.11 (Design)	HDWR,SPRING,KP600			1 each	Released	
2	445922-001	A.10 (Design)	HDWR,FSTNR,LOCK-WASHER,KP600			1 each	Released	
1	<sup>()</sup> 351256-001	B.8 (Design)	CUP, DUAL POLE, VRX/JRX			1 each	Released	
1	<sup>2</sup> 352957-001	C.9 (Design)	GASKET, DUAL POLE CUP, VRX/JRX			1 each	Released	
1	<sup>2</sup> 353445-001	B.12 (Design)	FOOT, SRX			4 each	Released	
1	🛱 <u>354267-001</u>	B.7 (Design)	HORN, MRX512, VARIOUS			1 each	Released	
1	<sup>2</sup> <u>362055-001</u>	C.8 (Design)	FILLER, MRX515			2 each	Released	
1	🛱 <u>363125-001</u>	C.7 (Design)	GASKET, HANDLE MRX			2 each	Released	
1	<sup>2</sup>	F.1	2408-2 UNIT ASSEMBLY (DANDONG)			1 each	Released	

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
		(Design)						
2	🛱 <u>63627</u>	C.9 (Design)	ADH,C.A.,SICO-MET		027	0.057 gram	Released	
2	 <u>69437</u>	C.7 (Design)	ADHES,LOCTITE 242		024	0.4 Milliliter	Released	
2	🧱 <u>74822</u>	A.10 (Design)	LBL, DTC			1 each	Released	
3	🋱 <u>72471</u>	D.6 (Design)	RIBBON,XFR,THRM,4.5"x1181			0.2 Meter	Released	
3	🋱 <u>75225</u>	A.7 (Design)	LABEL, BLANK			1 each	Released	
2	 <u>5006634</u>	A.7 (Design)	GLUE, LOCTITE 326			0.38 gram	Released	
2	 <u>5012084</u>	A.6 (Design)	SERIAL NUMBER LABEL BLANK			1 each	Released	
2	🛱 <u>5019953</u>	F.11 (Design)	2408-2 ADAPTER		001	1 each	Released	
2	🛱 <u>5019985</u>	C.9 (Design)	2408-2 BACK PLATE		006	1 each	Released	
2	🗯 <u>5019990</u>	C.9 (Design)	2408-2 TOP PLATE		005	1 each	Released	
2	🛱 <u>5019995</u>	D.11 (Design)	2408-2 OD SPACE RING		008	1 each	Released	
2	🛱 <u>5020282</u>	G.9 (Design)	2408-2 PHASING PLUG		002	1 each	Released	
2		D.12 (Design)	2408-2 MAGNET		007	1 each	Released	
2		C.11 (Design)	2408-2 OD GLUE RING		009	1 each	Released	
2	🔅 <u>5022585</u>	C.10 (Design)	2408-2 ID SPACER RING		022	1 each	Released	
2	🔅 <u>5024020</u>	A.6 (Design)	SC97, 1MM SOLDER WIRE C512 CORE (CHINA)			1.2 gram	Released	
2	🛱 <u>5044859</u>	A.8 (Design)	LABEL, 2408H-2			1 each	Released	
2	 <u> 5083690</u>	A.3 (Design)	FERROFLUID, APG CDF 1120		030	0.145 gram	Released	
2	<u>352859-001</u>	C.8 (Design)	ADH, MOYEN 3087		018	0.001 Milliliter	Released	
2		D.7	ACTIVATOR, LOCTITE 7091, VARIOUS			0.085	Released	

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
	<u>353219-001</u>	(Design)				Milliliter		
2	<u>353928-001</u>	G.6 (Design)	VOICE COIL, 2408		004	1 each	Released	
2	354266-001	C.5 (Design)	PSA, INNER RING, 2408H		028	3 each	Released	
2	361513-001	C.7 (Design)	KAPTON FILM-TAPE, 5mm WIDE, 0.025 MM THK		015	0.2 Lineal Foot	Released	
2	361514-001	C.6 (Design)	TERMINAL BOARD, .250, 2408H		010	1 each	Released	
2	361514-002	C.6 (Design)	TERMINAL BOARD, .187, 2408H		011	1 each	Released	
2	361573-001	B.11 (Design)	PSA STRIP, 2408H		019	4 each	Released	
2	361574-001	A.4 (Design)	ADHESIVE, LOCKTITE E20-HP EPOXY		021	0.031 Milliliter	Released	
2	363122-001	C.8 (Design)	SILICONE SEALANT		025	0.28 gram	Released	
2	365108-001	C.9 (Design)	RUBBER RING, 2408H-1		029	1 each	Released	
2	370-0000-00	E.3 (Design)	SCREEN, 7/8 DIA, EXIT		014	1 each	Released	
2	803-93056-08	C.6 (Design)	SCR,8-32 X 1/2,BTN,HEX,NF,SS		013	4 each	Released	
2		A.5 (Design)	DIAPHRAGM, FINISHED 2408H-2(CHINA)			1 each	Released	
3		D.8 (Design)	2408-2 DIAPHRAGM			1 each	Released	
3		A.5 (Design)	3m twist and fill general purpose cleaner			0.6 Milliliter	Released	
3	<u>363073-001</u>	C.8 (Design)	GLASS BEADS, COMCO INC., P/N PD1033-3			0.096 ounce	Released	
2	CONSUMABLES	7 (Design)	ADHESIVES/PAINTS/CHEMICALS/ LABELS/ETCALL			0.595 Piece	Released	
1		A.8 (Design)	POLY FIBER PAD, DANDONG			20 Square Foot SF	Released	
1	🛱 <u>5094426-00</u>	A.5 (Design)	SPEC SHEET, VPX715			1 each	Released	
1		A.6	INPUT,TERMINAL CUP, ASY, VPX715			1 each	Released	

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
		(Design)						
2	<sup>2</sup> <u>5081555</u>	A.4 (Design)	TERMINAL CUP, MRX715			1 each	Released	
2	5094431-00	A.4 (Design)	NETWORK, VPX715			1 each	Released	
2	5094433-00	A.6 (Design)	LAB, PRODUCT LABEL, VPX715			1 each	Released	
1	<sup>(2)</sup> <u>5094435-00</u>	A.5 (Design)	LAB, POP STIKER, VPX715			1 each	Released	
1	<sup>(2)</sup> <u>5094438-00</u>	A.5 (Design)	SHPMAT, CARTON, VPX715			1 each	Released	
1	<sup>(2)</sup> <u>5094450-00</u>	A.7 (Design)	SPKSYS, HANDLE, ASY, VPX700			2 each	Released	
2	<u>362328-001</u>	B.8 (Design)	HANDLE ASSY, MRX			1 each	Released	
2	5095121-00	A.6 (Design)	LAB, HANDLE, PMMA, VPX700			1 each	Released	
1	😂 <u>5096419-00</u>	A.4 (Design)	SHPMAT,OUTR,FILLER,VPX715			2 each	Released	
1	804-01110-16	9 (Design)	SCR,10-32 X 1,FIL,PH,BLK			8 each	Released	
1	<u></u>	D.6 (Design)	SCR,10-32 X 1,FLT,PH,BLK ZINC,LCS	10		8 each	Released	
1	<u>804-41110-12</u>	D.8 (Design)	SCR,10-32 X 3/4,PAN,PH,BLK ZINC,LCS			8 each	Released	
1		C.6 (Design)	SCR,10-32X1,PAN,PH,BLK			6 each	Released	
1	<u></u> <u>818-13710-30</u>	A.6 (Design)	HDWR,FASTNR,SCR,M10×30 HED, FLAT, EDB			13 each	Released	
1		C.9 (Design)	SCR, 6 X 5/8,PAN,PH,PB,BLK ZINC,LCS			6 each	Released	
1	882-41410-30	A.4 (Design)	SCR,PA4×30,PAN,PH,BLK ZINC			4 each	Released	
1	882-51110-12	C.10 (Design)	SCR, 6 X 3/4,OV,PH,PTCL,BLK ZC,LCS			14 each	Released	
1	884-11110-12	C.6 (Design)	SCR,10 X 3/4,FLT,PH,PB,BLK ZINC,LCS			8 each	Released	
1		C.6 (Design)	SCR,10 X 3/4,PAN,PH,PB,BLK ZINC,LCS			4 each	Released	

### Multi-Level BOM Report

	Number	Version	Name	Line Number	Find Number	Quantity	State	Reference Designator
	<u>884-41110-12</u>							
1	CONSUMABLES	7 (Design)	ADHESIVES/PAINTS/CHEMICALS/ LABELS/ETCALL			0.536 Piece	Released	