

**MOBILE SURGICAL  
X-RAY SYSTEM BV25-S**

**VOLUME 1 OF 2  
SYSTEM INFORMATION**

**MOBILE SURGICAL X-RAY SYSTEM BV25-S**

1. Manufacturing documents BV25-S
  - Specification and Packing list BV25-S
  - Status Report with test and performance data BV25-S
  - Licence for Practix-C tank
  - A.P. Certificate
  - List of Service manuals
  
2. Service documentation BV25-S
  - Volume 1: BV25-S information
  - Volume 2: Video information



**FILING INSTRUCTIONS**

This manual should be filed in the set of  
Service documentation for the  
Mobile Surgical X-ray system BV25-S.



# PACKING LIST

PROJECT NAME : BIE  
 SYSTEM : BV25 SPECIAL DUTSLAND  
 COMM. ORDER : 320301 886581

COLLO NUMBER	ITEM NUMBER	DESCRIPTION	
454101		BV 25 MOBILE C-ARM X-RAY SYST. COMPACT MOBILE STAND SET OF DOCUMENTATION SET OF USER MANUALS MOBILE MONITOR TROLLY	



O R D E R - D E L I V E R Y - S H E E T

SYSTEM KIND : / / / / /

UPDATED INCLUDING CHANGE NBR:

PROJECT-DEST: BIE  
 COUNTRY : GERMANY  
 HOSPITAL :

CUST. ORDER : 320301 886581      ORDER-KIND : OL  
 SHOPORDER : SBO CE00587  
 PROJECT-NUMBER: 9896 000 22651  
 CORRESPONDENT : 6000 DIS BASELMA      SCREENER: 6000 DIS LODEWYK

LINE NO	ITEM NO	QTY	ITEM DESCRIPTION	LOT-NO	CDD
1010	989600022651	1	BV25 SPECIAL GERMANY	0000042105	220695
	0001		MMC1001		
	2001		989600006451		
	2002		989600006471		
	2003		980775300001		
	2004		984910000201		
	2005		980772102001		
	0002		989601010231		





# Status report Mobile Surgery System

1 System type:  BV25  BV26  BV29  BV212

2 Alfa-numeric code: MMC 1001 12 NC: 9896 000 22651

3 Factory nr. : S B0 C E00587

4 Mains voltage: 220 V

5 Mains resistance: 600 mΩ

6 Mains frequency: 50 Hz

7 Tested by: M. LEIJTEN Date: 14-6-95

## 8 High Voltage for Fluoroscopy

kV setting on desk		100 kV	75 kV	40 kV
Primary High Voltage	PRHV	<u>346,0</u> V	<u>257,5</u> V	<u>137,8</u> V
kVp beam Fluoroscopy *)	KVFLUO	<u>104,5</u> kV	<u>74,3</u> kV	
Mini-XPlus serial number:		<u>140</u>		

## 9 Tube current Fluoroscopy

kV setting on desk		100 kV	70 kV	50 kV	40 kV
mA reading on desk		3,0 mA	2,6 mA	0,44 mA	0,10 mA
Measured current Normal Dose	MAFLUO	<u>2,98</u> mA	<u>2,55</u> mA	<u>0,43</u> mA	<u>0,08</u> mA
kV setting on desk		100 kV	70 kV	50 kV	40 kV
mA reading on desk		7,2 mA	6,2 mA	1,1 mA	0,24 mA
Measured current High Dose	MAFLHD	<u>7,11</u> mA	<u>6,10</u> mA	<u>1,04</u> mA	<u>0,23</u> mA

## 10 Tube current Radiography

kV setting on desk		100 kV	70 kV	40 kV
mAs setting on desk	(20 mA fixed)	80 mAs	80 mAs	80 mAs
Measured current Radiography	MARAD	<u>20,3</u> mA	<u>20,9</u> mA	<u>20,4</u> mA
0,25 Volt (measured at SE19:MP4 and MP5) equals 1 mA				

\*) **Caution:** Non invasive High Voltage measurement depends highly on waveform and filtration. The measuring equipment should have a dedicated calibration. In case of doubt always check the primary high voltage on measuringpoint: SE37 +PRHV/-PRHV (See table below)

kV <sub>beam</sub>	U <sub>primary</sub> Fluoroscopy	U <sub>primary</sub> Exposure
100 kV	346 V ± 1 V (setpoint)	364 V ± 11 V
80 kV	278 V ± 3 V	296 V ± 9 V
60 kV	209 V ± 3 V	228 V ± 7 V
40 kV	139 V ± 3 V	160 V ± 5 V



Factory nr. : S B0 C E00 987

11 High Voltage for Radiography

kV setting on desk		100 kV	75 kV	40 kV
Primary High Voltage	PRHV	367,1 V	278,3 V	155,6 V
kV setting on desk		100 kV	80 kV	60 kV
kVp beam Radiography *)	KVRAD	105,4 kV	81,2 kV	59,4 kV
Mini-XPlus serial number:	<u>140</u>			

12 Exposure Time Radiography

mAs setting on desk	(20 mA fixed)	2 mAs	20 mAs	80 mAs
Exposure Time		100 ms	1,00 s	3,99 s

13 Beam Alignment Fluoroscopy / Radiography

Deviation		Cflu	P + Q	R + S	P + Q + R + S
Fluoroscopy	F0	4 mm	12 mm	11 mm	23 mm
Fluoroscopy	F1	mm	mm	mm	mm
Fluoroscopy	F2	mm	mm	mm	mm
Deviation		Crad	P  +  Q	R  +  S	P  +  Q  +  R  +  S
Radiography		7 mm	10 mm	11 mm	21 mm

FO = Largest II format F1 and F2 not applicable for BV25/26

14 Visible Area

II mode	F0	F1	F2
Horizontal	141 mm	mm	mm
Vertical	142 mm	mm	mm

FO = Largest II format F1 and F2 not applicable for BV25/26

\*) **Caution:** Non invasive High Voltage measurement depends highly on waveform and filtration. The measuring equipment should have a dedicated calibration. In case of doubt always check the primary high voltage on measuringpoint: SE37 +PRHV-PRHV (See table page 1)



Factory nr. : S B D C E 00 587

15 Leakage Radiation at 105 kV and 65 Watt \*)

Radiation	27,3 $\mu\text{Gy/hr}$
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16 Fluoroscopic entrance exposure rate \*)

Exposure rate	34106 $\mu\text{Gy/min}$
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17 Dose Rate Fluoroscopy at 75 kV \*)

	F0	F1	F2
Normal mode	0,26 $\mu\text{Gy/s}$	$\mu\text{Gy/s}$	$\mu\text{Gy/s}$
Boost mode	0,73 $\mu\text{Gy/s}$	$\mu\text{Gy/s}$	$\mu\text{Gy/s}$

F0 = Largest II format F1 and F2 not applicable for BV25/26

18 Reproduceability and Output \*)

Reproduceability	C.O.V.	0
Output		2,17 $\mu\text{Gy/m}^2/\text{mAs}$

19 Fluoroscopy automatic conditions

Attenuation 20 mm Al + 2 mm Cu		F0	F1	F2
Tube Voltage on display	kV desk	74 kV	kV	kV
Tube Current on display	mA desk	2,7 mA	mA	mA

  

Attenuation 20 mm Al + 4 mm Cu		F0	F1	F2
Tube Voltage on display	kV desk	89 kV	kV	kV
Tube Current on display	mA desk	2,9 mA	mA	mA

F0 = Largest II format F1 and F2 not applicable for BV25/26

20a Video Signals

Black Level		43 mV
Stabilized Video Out memory		400 mV
Set-up of clean circle		65 mV
Contrast ratio memory	B/A	6,4

\*) Dose and Dose rate measured in Gray (Conversion factor  $\mu\text{Gy}$  to  $\mu\text{R}$  = 114,5)



Factory nr. : S B0 C E00587

20b Video Levels Memory

Base attenuation		1 mm CU	2 mm Cu	2,5 mm CU
Fluoroscopy	base	720 mV	460 mV	300 mV
Fluoroscopy	+ 0,5 mm Cu	580 mV	290 mV	170 mV
SUB	base	210 mV	210 mV	210 mV
SUB inject	+ 0,3 mm Cu	130 mV	110 mV	130 mV
MAX	base		mV	
MAX inject	+ 0,3 mm Cu		mV	
MAP	base		mV	
MAP inject	+ 0,3 mm Cu		mV	
MAP cath	base		mV	
MAP cath	+ 2,5 mm Al		mV	

21 Resolution on TV-monitor

Il. mode	F0	F1	F2
At center	2,2 lp/mm	lp/mm	lp/mm
F0 = Largest Il format F1 and F2 not applicable for BV25/26			

22 Picture Performance

Il. mode	F0	F1	F2
Spots	1		
F0 = Largest Il format F1 and F2 not applicable for BV25/26			

23 Earth Leakage current

Normal condition	109,9 $\mu$ A
Single fault condition	180,1 $\mu$ A





Factory nr. : S B0 C E00 587

24 **Earth Resistance**

Il-container	120 mΩ
X-Ray tank	120 mΩ
C-arm	120 mΩ
Monitor	100 mΩ
Trolley covers	95 mΩ
Stand covers	110 mΩ
Reference point: earth terminal of mains plug	

25 **Installed Software release**

Release number	Rel. : ✓
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26 **Installed Options**

System type		BV25	BV26	BV29	BV212
Second Monitor for BV25	MMC 1031	<input type="checkbox"/>			
Image Storage Extension 34 images	MMC 1041	<input type="checkbox"/>			
Video Data Unit	MMC 1051	<input type="checkbox"/>			
Video Hard Copy Unit 1	MMC 1061	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video Hard Copy Unit 1/4	MMC 1081	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Image Storage 190 + Mosaic	MMC 1112		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angio Extension	MMC 1122		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video Memory 32 images	MMC 1131		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video Memory 128 images	MMC 1141		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remote Control	MMC 1191		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laser Aligment Tool	MMC 1201	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Printer Sony UP910	MMC 1211	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THIS EQUIPMENT HAS BEEN INSPECTED AND TESTED BY THE LATEST AND MOST EXACTING METHODS AND WAS FOUND TO CONFORM TO SPECIFICATION. SHOULD ANY COMPLAINT ARISE PLEASE QUOTE SYSTEM SERIAL NO. C E.00.587

