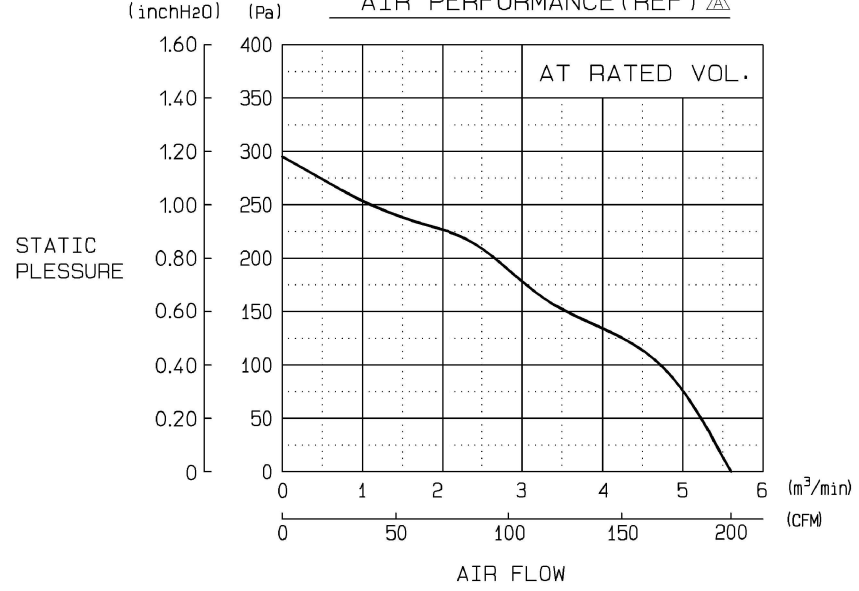
F			
E			
D			
C	M.Suzuki	Aug-29-18	18-1521
B	M.Suzuki	Jan-10-18	18-0073
A	M.Suzuki	Dec-26-17	17-2354

1. MODEL	W12E12BS11B5-07Z90/G1238C12B8ZP-C1	
2. RATING		
2.1 VOLTS	12VDC	
2.2 CURRENT	1.85A	
2.3 PHASE	1	
2.4 POLES	4	
2.5 DUTY CYCLE	CONT.	
3. AIR PERFORMANCE(DOUBLE CHAMBER METHOD)		
3.1 MAX.STATIC PRESSURE	206Pa(0.83inchH2O)MIN. (AT RATED VOL. , MAX SPEED) NOMINAL : 300Pa(1.20inchH2O)	
3.2 MAX.AIR FLOW	5.1m³/min(180.1CFM)MIN. (AT RATED VOL. , MAX SPEED) NOMINAL : 5.6m³/min(197.7CFM)	
4. ELECTRICAL PERFORMANCE		
4.1 ROTATION SPEED	6200±600min⁻¹ (AT RATED VOL. , FREE AIR , MAX SPEED)	
4.2 CURRENT	2.1A MAX. (AT RATED VOL. , FREE AIR) NOMINAL : 1.85A	
4.3 CONSUMING POWER	25.2W MAX. (AT RATED VOL., FREE AIR) NOMINAL : 22.2W	
4.4 INSULATION RESISTANCE	10MΩ MIN.(AT 500VDC)	
4.5 DIELECTRIC STRENGTH	500VAC FOR ONE MINUTE BETWEEN FRAME AND LEAD WIRES (USUALLY INSPECT AT 600VAC, ONE SECOND, 1mA)	
5. THE OTHERS		
5.1 APPLICABLE VOLTAGE RANGE	10.2~13.8VDC(NOMINAL VOLTAGE:12VDC)	
5.1 START UP VOLTAGE	8.0V	
5.2 OPERATING ENVIRONMENT RANGE	-10~+70℃ (NORMAL HUMIDITY, NON CONDENSATION) STANDARDS FOR ITEMS 3.1,3.2,4.1~4.3,5.4,8.1 SHOULD BE MET WHEN MEASURED AFTER HAVING SAT FOR 24 HOURS AT ROOM TEMPERATURE FOR FANS SUBJECTED TO SPECIFIED TEMPERATURE RANGE FOR 100 HOURS.	
5.3 STORAGE TEMPERATURE RANGE	-40~+75℃ (NORMAL HUMIDITY, NON CONDENSATION)	
5.4 NOISE LEVEL	70dB(A) MAX.(AT RATED VOL. , FREE AIR , FRONT 1m) (64dB(A) AV.)	
5.5 APPEARANCE	VENTURI :PLASTIC (UL V-0) PROPELLER :PLASTIC (UL V-0)	
5.6 BEARING	BALL BEARING	
5.9 CURRENT LIMIT PROTECTION	IN THE CASE THAT POWER IS TURNED ON DURING FAN ROTOR IS LOCKED, THE FAN SHALL ATTEMPT TO RESTART AT A TYPICAL REPETITION RATE (TEMPERATURE RISE WILL BE PREVENTED). THE FAN WILL AUTOMATICALLY RESTART WHEN THE LOCKED ROTOR.	
5.10 REVERSE POLARITY PROTECTION	POWER SUPPLY VOLTAGE MUST NOT BE APPLIED BETWEEN SIGNAL OUTPUT LINE AND ANY OTHER LINE DIRECTLY. REVERSE POLARITY PROTECTION IS EFFECTIVE TO JUST SWITCH THE POSITIVE AND NEGATIVE POWER LINE.	
5.11 HOT SWAP	APPLY THE HOT SWAP PROTECTION	
5.11 SAFETY STANDARD	UL/cUL (FILE No.E48889) TUV (FILE No.R-50004410)	
5.12 MASS	300g(REF.)	
6. SENSOR	PULSE OUTPUT TYPE (DWG.BB10391-01)	

7. SPECIAL TEST	
7.1 LIFE EXPECTANCY	MORE THAN 90% MUST RUN AFTER CONTINUOUS OPERATION OF 70,000 HOURS AT RATED VOLTAGE, 40℃ AMBIENT TEMPERATURE AND 65% RELATIVE HUMIDITY. LIFE IS DEFINED WHEN THE MOTOR SPEED DECREASES MORE THAN 30% AGAINST ITS INITIAL SPEED.
7.2 VIBRATION TEST	STANDARDS FOR ITEMS 3.1,3.2,4.1~4.3,5.4,8.1 SHOULD BE MET AFTER 30 MINUTES 0.2mm AMPLITUDE, 55Hz VIBRATION IN EACH DIRECTION : UP-DOWN, RIGHT-LEFT, FORWARD-BACK.
7.3 SHOCK TEST	STANDARDS FOR ITEMS 3.1,3.2,4.1~4.3,5.4,8.1 SHOULD BE MET IF THE FANS FALL NATURALLY FROM A HEIGHT OF 30cm IN THE PACKING BOX FOR EACH DIRECTION.

AIR PERFORMANCE(REF) △



NOTE
THE ABBOVE STANDARD SHOULD BE THE SPECIFIED VALUE AT NORMAL TEMPERATURE(23℃) AND NORMAL HUMIDITY(60~65%) UNLESS OTHERWISE NOTICE.

RoHS指令適用品
RoHS DIRECTIVE APPLIED

SHT.NO.1/3

入庫 REGISTERED 入 18.08.30 庫	設計 DESIGNED	M.Suzuki	Nov-17-13	尺度 SCALE N.T.S
	製図 DRAWN	M.Suzuki	Aug-29-18	
	審査 CHECKED	M.Nakamura	Aug-29-18	DWG.SIZE A3
	承認 APPROVED	M.Senba	Aug-30-18	

外形図 OUTLINE

G1238C12B8ZP-C1 △

3角法 THIRD ANGLE PROJECTION

日本電産サーボ株式会社
NIDEC SERVO CORPORATION

図番 DWG.NO. AS78792 C

8. OTHERS

8.1 LOCKED ROTOR

NO DAMAGE SHALL BE FOUND FOR CONTINUOUS 1 HOUR AT LOCKED ROTOR.

8.2 CAUTIONS IN INSTALLATION OF FAN MOTORS

PLEASE CONSIDER SYSTEM LAYOUT NOT TO PLACE ANY OBSTACLES WITHIN 3mm FROM THE FAN HOUSING EDGE OF INLET SIDE(IMPELLER SIDE).
IN CASE OF SCREWING THE FAN HOUSING, FLATNESS OF INSTALLATION SURFACE SHOUDL BE MAX.0.1, OTHERWISE THE HOUSING MAY TRANSFORM AND INTERFERE WITH THE IMPELLER.
THE FAN SHOULD NOT GET ANY IMPACT OR VIBRATION DURING ROTATION. WHEN VIBRATION OR IMPACT IS APPLIED TO THE FAN DURING ROTATION, THE FAN MAY BREAK BY INTERFERING WITH OBSTACLE IN THE SYSTEM.PLEASE FIX THE FAN IN THE SYSTEM SO THAT IT WILL NOT RATTLE. VIBRATION OF THE FAN MAY CAUSE CONTACT BETWEEN THE FAN AND THE SYSTEMS, WHICH WILL GENERATE NOISE.
PLEASE DO NOT PLACE ANY OBSTACLE NEAR OUTLET AND INLET SIDE OF THE FAN. PLACING OBSTACLES NEAR THE FAN MAY DETERIORATE AIR FLOW. IT MAY CAUSE COOLING PERFORMANCE REDUCTION AS WELL AS FAN MOTOR LIFE DETERIORATION DUE TO HEAVY DOAD ON THE BEARINGS.
FOR ANY USAGE THAT DOES NOT MEET ABOVE CONDITIONS, PLEASE EVALUATE AT USER'S SIDE OR CONSULT WITH US.

8.3 USAGE OF FAN MOTOR

PLEASE DO NOT PUT RESISTORS OR OTHER ELECTRONIC COMPONENTS ON THE EXTENTION OF THE FAN MOTOR LEAD WIRES FOR THE PURPOSE OF FAN MOTOR SPEED REDUCTION.
IT MAY MAKE THE VOLTAGE TO THE FAN FLUCTUATE AND BECOME LOWER THAN LOWER LIMIT OF OPERATING VOLTAGE RANGE.
IN THIS CASE, THERE MAY BE SUCH FAILURES LIKE NO START OR UNSTABLE ROTATION OF FAN MOTOR.

8.4 WET-PROOF TREATMENT

PCB SURFACE SHALL BE WET-PROOF TREATED(DIPPING).
PCB COATING : 1B73 TYPE (MADE BY AIR BROWN CO.,LTD.) OR EQUIVALENT.

8.5 RUST-PROOF TREATMENT

OUT-SIDE SURFACE OF STATOR CORE SHALL BE RUST-PROOF TREATED.
CORE COATING : NITTOL 120R (MADE BY NITTO DENKO CORP.) OR EQUIVALENT.

9. SPECIAL ITEMS

9.1 SPECIFICATION CHANGE

ANY CHANGE TO THE PRAMETERS SPECIFIED IN THIS DOCUMENT SHALL BE DETERMINED BY MUTUAL AGREEMENT ON BOTH PARTIES.

9.2 UNCERTAINTY

IN THE EVENT THAT A QUESTION MAY ARISE ABOUT THIS DOCUMENT OR AN AREA NOT SPECIFIED IN THIS DOCUMENT, BOTH PARTIES SHALL DISCUSS AND DETERMINE A SOLUTION IN GOOD FAITH.

9.3 WARRANTY

OUR WARRANTY IS LIMITED TO THE REPLACEMENT OF FAILED FAN AT FREE OF CHARGE. IF AND ONLY IF THE FAILURE IS FOUND WITHIN TWO YEARS AFTER IT WAS SHIPPED OUT FROM OUR PRODUCTION FACILITY, AND IF THE CAUSE OF THE FAILURE IS PROVEN TO BE ATTRIBUTABLE TO THE SUPPLIER.
OUR LIABILITY DOES NOT EXTEND TO THE CONSEQUENTIAL DAMAGES CAUSED BY THE FAILED FAN.

9.4 NOTE

PLEASE CONSIDER HAVING AN INDEPENDENT PROTECTION SYSTEM IN THE CUSTOMER'S INSTRUMENTS IN THE EVENT THAT THE FAN SHOULD STOP OPERATING.

9.5 POWER SOURCE

BRUSHLESS DC FANS ARE DESIGNED TO BE USED AT DC POWER SOURCE WITH BYPASS CAPACITOR. WE WOULD RECOMMEND YOU TO USE DC POWER SOURCE WHICH IS FILTERED RIPPLE AND NOISE.
.FANS ARE DESIGNED TO PERFORM AS EXPECTED WHEN STABLE VOLTAGE IS SUPPLIED.
.FLUCTUATION OF THE VOLTAGE BETWEEN Vcc(+) AND GND WHILE THE FAN IS POWERED MUST BE WITHIN THE SPWCIFIED OPERATING VOLTAGE RANGE.
.FLUCTUATION CYCLE OF THE VOLTAGE BETWEEN Vcc(+) AND GND WHILE THE FAN IS POWERED MUST BE LONGER THAN THE FAN'S ROTATION CYCLE.
.GND OF THE FAN MUST BE KEPT BELOW THE VOLTAGE OF ITS Vcc(+) WHEN THE VOLTAGE IS SWITCHED ON/OFF OR THE FAN IS NOT RUNNING.

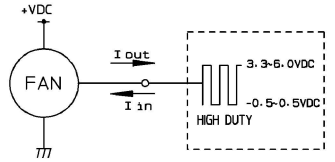
9.6 ENVIRONMENT-RELATED SUBSTANCES

BASED ON RoHS, CADMIUM, LEAD, MERCURY, AND COMPOUND OF THESE SUBSTANCES AND HEXAVALENT CHROMIUM COMPOUND, POLYBROMO BI-PHENYL(PBB) AND POLYBROMO DI-PHENYL ETHER(PBDE) ARE NOT INCLUDED IN THIS PRODUCT.

SPEED PERFORMANCE (AT RATED VOL., FREE AIR) REF.

SPECIFICATION(TEMPERATURE:21~25℃ HUMIDITY:60~65%)

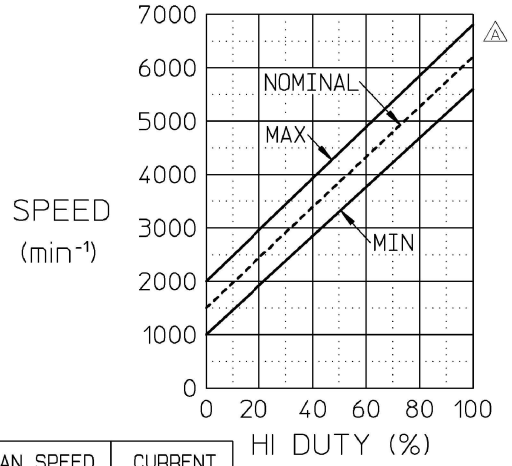
△ CASE 1 ·FREQUENCY 20~30kHz
NOMINAL 25kHz



△

*THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT AT 20kHz-30kHz.
PWM SIGNAL WITH 5.0 VDC TTL/CMOS LEVEL . THE PREFERRED OPERATING POINT FOR THE FAN IS 25kHz, AND DUTY CYCLE FROM 0% TO 100%.

IF THE PWM CONTROL WIRE CONNECT TO GROUND, THE ROTOR WILL SPIN AT LOW SPEED.
AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED. EED.
IF THE PWM CONTROL WIRE OPEN, THE ROTOR WILL SPIN AT MAXIMUM SPEED.



△ △

PWM SIGNAL LEVEL(%)	FAN SPEED (min-1)	CURRENT (A)
0	1500±500	MAX 0.29
50	3900±550	MAX 1.03
100	6200±600	MAX 2.10

入庫 REGISTERED 入 18.08.30 庫	設計 DESIGNED	M.Suzuki	Nov-17-13	尺度 SCALE	N.T.S.
	製図 DRAWN	M.Suzuki	Aug-29-18		
	審査 CHECKED	M.Nakamura	Aug-29-18	DWG.SIZE	A3
	承認 APPROVED	M.Senba	Aug-30-18		

外形図 OUTLINE

G1238C12B8ZP-C1 △

3角法 THIRD ANGLE PROJECTION

RoHS指令適用品
RoHS DIRECTIVE APPLIED

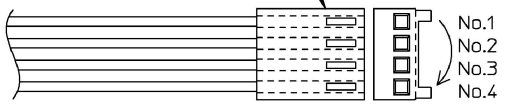
SHT.NO.2/3

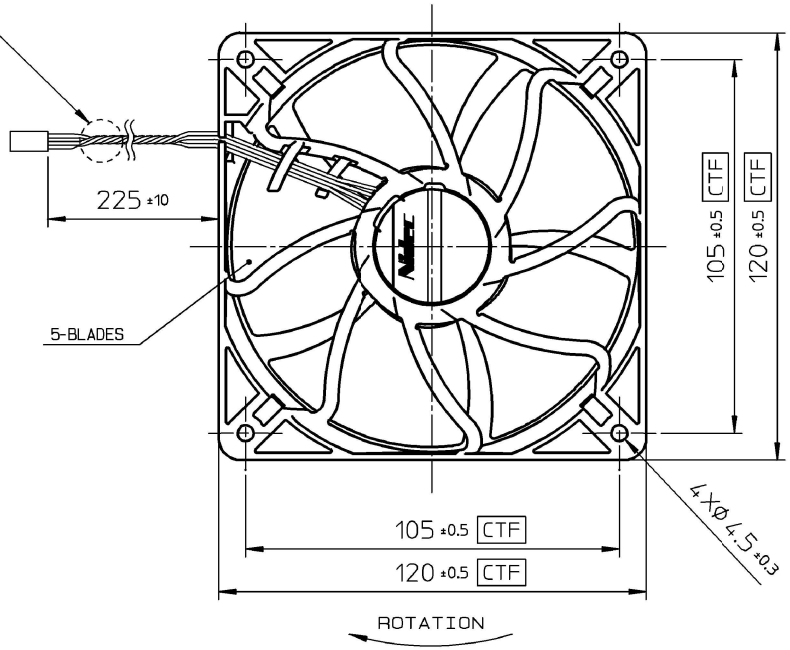
日本電産サーボ株式会社
NIDEC SERVO CORPORATION

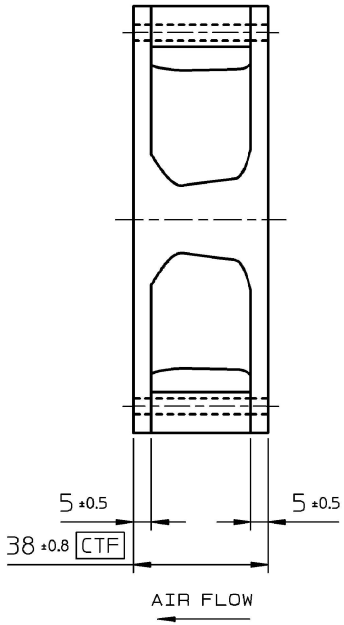
図番 DWG.NO. AS78792 C

LEAD WIRE : UL1061 AWG24
2 TWISTS MIN./(1.5INCH)

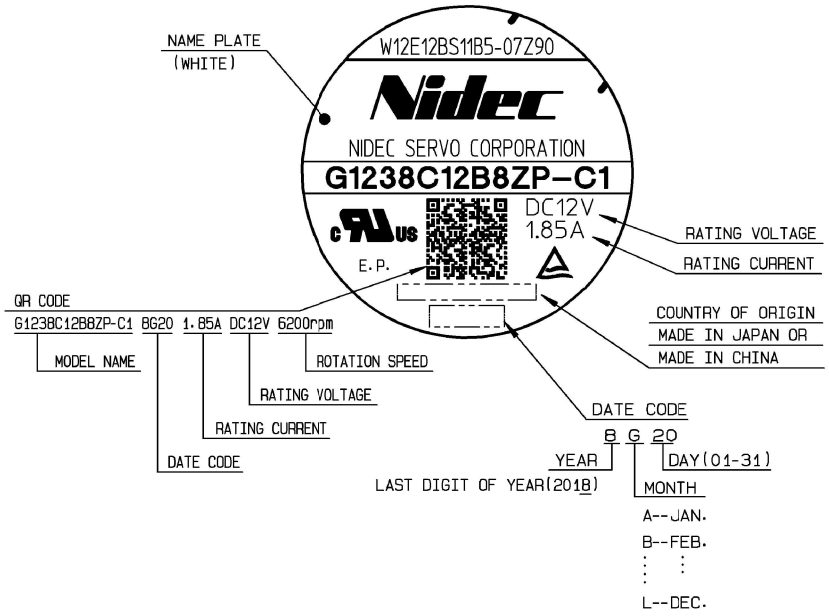
CONNECTOR
HOUSING : A2543H00-4P (JWT)
OR EQUIVALENT
PIN : A2543T0P-B2 (JWT)
OR EQUIVALENT
No.1 : BLACK (GND)
No.2 : RED (+)
No.3 : YELLOW (SIG)
No.4 : BLUE (CONT)







NAME PLATE DETAIL △A △C



RoHS指令適用品
RoHS DIRECTIVE APPLIED

SHT.NO.3/3

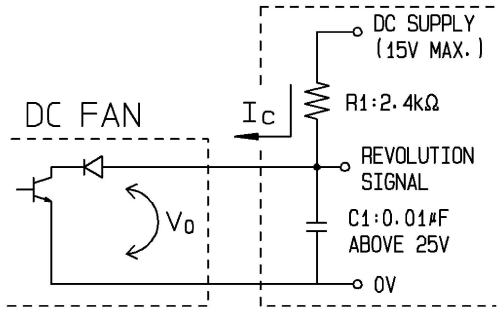
入庫 REGISTERED 入 18.08.30 庫	設計 DESIGNED	M. Suzuki	Nov-17-13	尺度 SCALE	外形図 OUTLINE
	製図 DRAWN	M. Suzuki	Aug-29-18	N. T. S.	G1238C12B8ZP-C1 △A
	審査 CHECKED	M. Nakamura	Aug-29-18	DWG.SIZE	3角法 THIRD ANGLE PROJECTION
	承認 APPROVED	M. Senba	Aug-30-18	A3	
	単位 DIMENSIONS mm	日本電産サーボ株式会社 NIDEC SERVO CORPORATION		図番 DWG.NO.	AS78792 C

記事 REMARK

PULSE SENSOR SPECIFICATION
パルスセンサ仕様書

(PULSE OUTPUT TYPE:MODEL CODE:P)

1. SENSOR TYPE　PULSE OUTPUT TYPE
2. OUTPUT TYPE　OPEN COLLECTOR TYPE
3. ELECTRICAL　SPECIFICATION



REMARK: AS FOR MEASURING V ,IT IS NECESSARY TO PUT CR LOW PASS FILTER WHICH IS CONSTRUCTED OF R1 AND C1. THE TIME CONSTANT OF R1 X C1 IS TO BE MORE THAN 24us SUCH AS R1=2.4k C1=0.01uF.

ABSOLUTE MAXIMUM SPECIFICATION

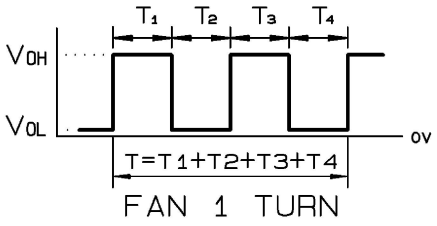
COLLECTOR CURRENT	I_C =10mA MAX.
RELEASE VOLTAGE	V_{OH} =15V MAX.

ELECTRICAL CHARACTERISTICS

SATURATION VOLTAGE AT I_C =5mA	V_{OL} =0.8V MAX.

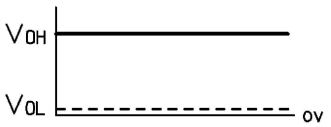
OUTPUT WAVEFORM

(AT REVOLUTION)



FAN 1 TURN

(AT LOCKED POSITION)



REMARK: AT LOCKED POSITON, OUTPUT BECOMES V_{OH} OR V_{OL} ,
T=T1+T2+T3+T4=60/N (SEC) N:FAN SPEED(min)

$$\text{DUTY} = \frac{T1}{T1+T2} = 50 \pm 10\%$$

CAUTION

PLEASE BE CAREFUL THAT REVOLUTION SIGNAL LEAD WIRE (YELLOW WIRE) SHALL NOT HAVE ANY VOLTAGE DIRECTLY APPLIED.(IT SHOULD DAMAGE INNER CIRCUIT.)

入庫 REGISTERED 入 17.12.27 庫

改訂記号	承認	審査	作成者	改訂年月日	設計変更通知票番号	対象範囲 項番	対象範囲 頁	改訂内容
−	センハ'	ナカムラ	スス'キ	17-12-19				新規作成

日本電産サーボ株式会社
NIDEC SERVO CORPORATION

図番 DWG.NO. BB10391-

 DB