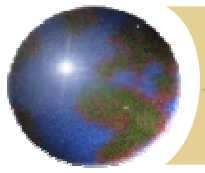


JB Brananne, Inc.
Supporting truck, trailer industries since 1993

Hub & Drum Assembly

6 Orchard Rd, Lake Forest, CA 92630
Tel. 949-215-7704 Fax. 949-215-7790
E-mail : inquiry@jbbrananne.com



Contents

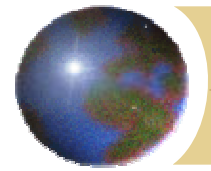
- ✦ Hub Specification

- ✦ Brake Drum Specification

- ✦ Hub & Drum Assembly

- ✦ Material Inspection Report
 - Hub
 - Hub Bolt
 - Brake Drum

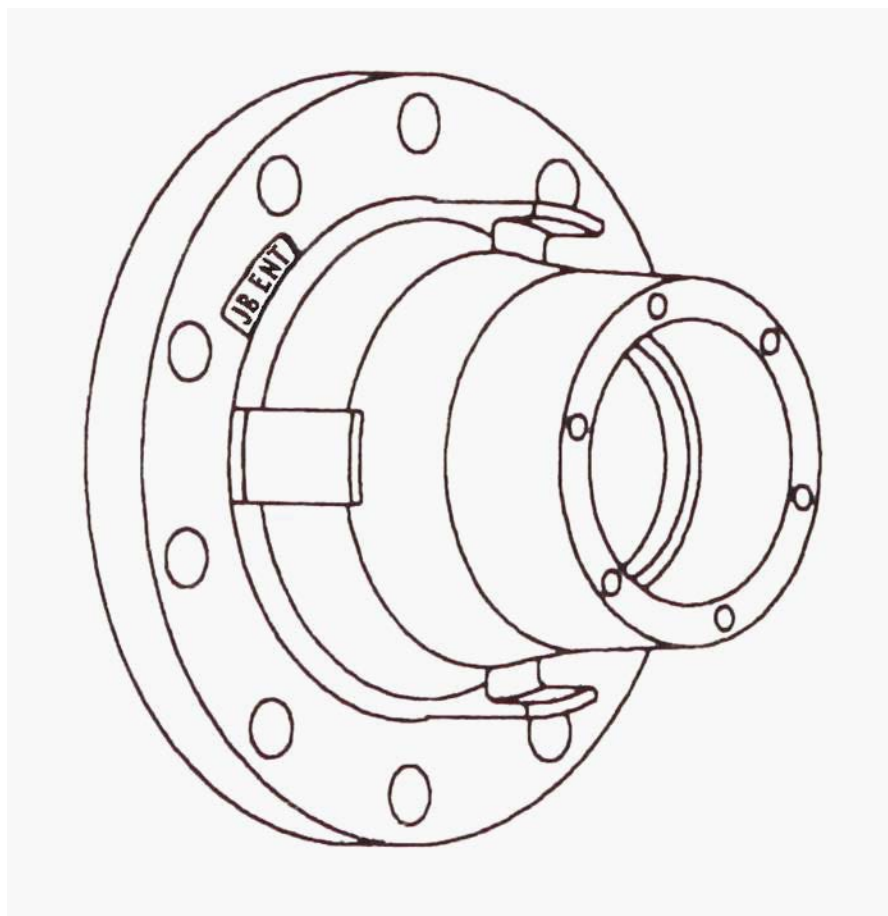
- ✦ Test Certification
 - Radial Test

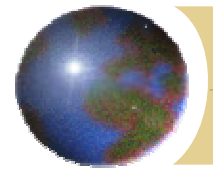


HUB

PART #	Description
7011	Non-ABS
7011 T	ABS

SPECIFICATION	
DESCRIPTION	10 STUD HUB USES OUT BOARD DRUM
HUB CAP CIRCLE	6-P.C.D. 139.7 mm
PILOT DIA	222.9 mm
BOLT CIRCLE	10-P.C.D. 285.75 mm
WEIGHT (HUB)	36 LBS

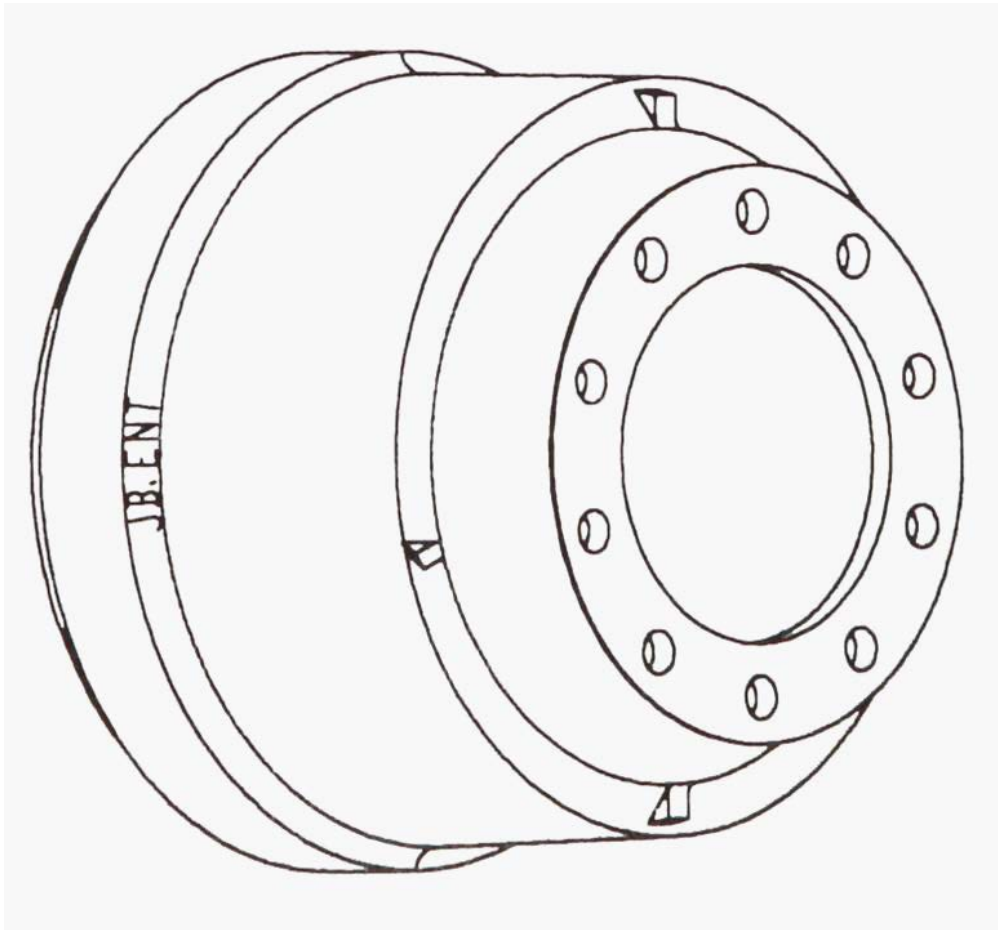


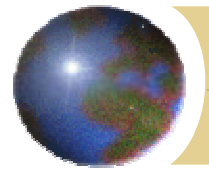


BRAKE DRUM

PART #
7028

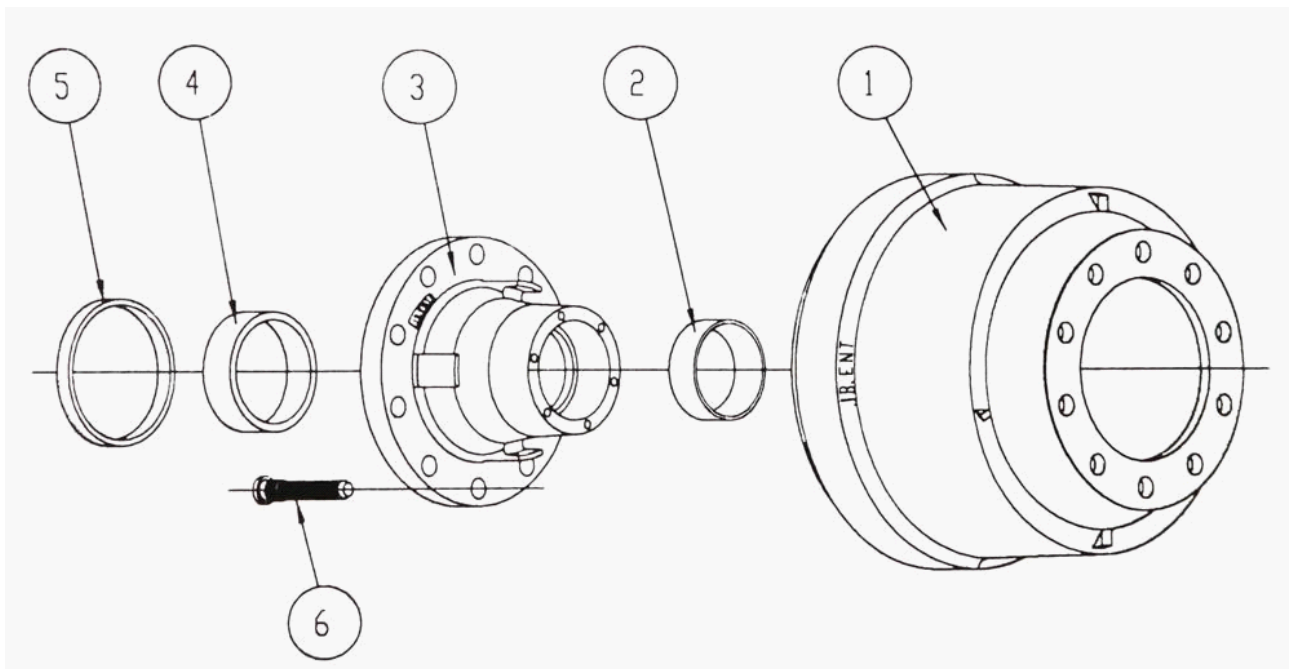
SPECIFICATION	
BRAKE SIZE	16.5" x 7"
OVERALL DEPTH	268.2 mm
PILOT DIA	222.9 mm
BOLT CIRCLE	10-P.C.D. 285.75 mm
BRAKE SURFASE	193 mm
WEIGHT (BRAKE DRUM)	112 LBS



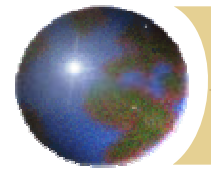


HUB & DRUM ASSEMBLY

PART #	Description
5025	Non-ABS
5025 T	ABS



NO	Part Name	Part No.	NO	Part Name	Part No.
1	Brake Drum	7028	4	Outer Bearing Cup	HM 218210
2	Outer Bearing Cup	HM 212011	5	ABS Ring	51403
3	HUB	7011 Non-ABS	6	Hub Bolt	101161
		7011 T ABS			



Material Inspection Report

Inspected Date : Mar 03, 1999

Part Name	Part No.	Material Grade	LOT No.	Decision
HUB	7011	FCD450	9B19	O.K

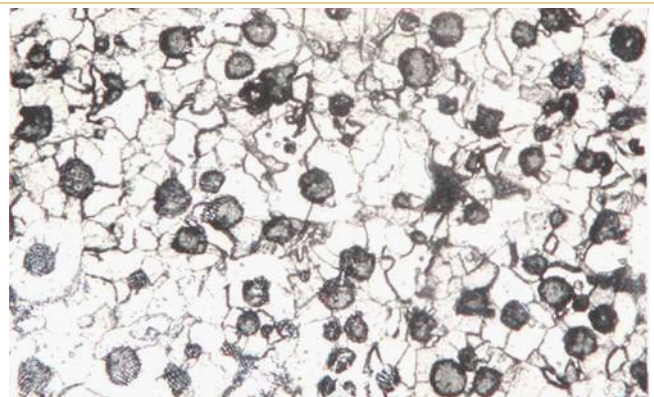
1. CHEMICAL COMPOSITION

Composition	C	Si	Mn	P	S	Ti	Mg
SPEC	3.0 ~ 4.0	2.0 ~3.0	0.2 ~ 0.6	0.10 Max	0.025 Max	0.025 Max	0.025 ~ 0.080
RESULT	3.43	2.31	0.30	0.042	0.014	0.003	0.051
Composition	Ni	Cr	Mo	Cu	Al	V	
SPEC	0.025 Max	0.08 Max	0.15 Max	0.40 Max	0.025 Max	0.04 Max	
RESULT	0.002	0.037	0.008	0.03	0.016	0.009	

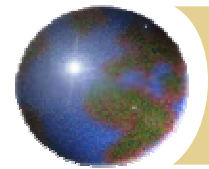
2. PHYSICAL PROPERTIES

PROPERTIES	SPEC	RESULT			Decision	
		S1	S2	S3		
Tensile Strength(Kg.f/mm ²)	45 Min	52.5	52.3	52.7	OK	
Elongation (%)	10 Min	15.7	16.07	15.65	OK	
Brinell Hardness (HBN)	143 ~ 217	163	159	163	OK	
Micro Structure (x 100)	Graphite Type	Type I, Type II	I, II	I, II	I, II	OK
	Nodularity (%)	80 Min	90	90	90	OK
	Pearlite (%)	50 Max	20	20	20	OK
	Ferrite (%)	50 Min	80	80	80	OK

● Microphotograph (X 100, 3% Nital)



APPROVED BY :  DATE : 99. 3. 4



Material Inspection Report

Inspected Date : Mar 04, 1999

Part Name	Part No.	Material Grade	LOT No.	Decision
HUB-BOLT	101161	SCM435	24/02/991	ACCEPT

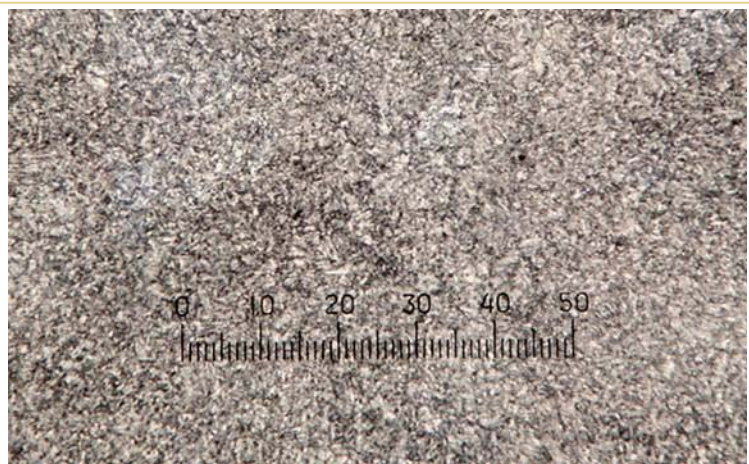
1. CHEMICAL COMPOSITION

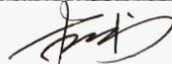
Composition		C	Si	Mn	P	S	Cr	Cu	Mo
SPEC		0.33 ~ 0.38	0.15 ~ 0.35	0.60 ~ 0.85	0.030 Max	0.030 Max	0.90 ~ 1.20		0.15 ~ 0.30
RESULT	S1	0.360	0.264	0.71	0.0246	0.0075	1.090	0.020	0.176
	S2	0.358	0.260	0.75	0.0234	0.0071	1.082	0.019	0.182

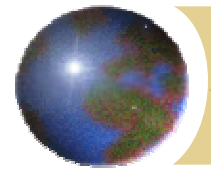
2. PHYSICAL PROPERTIES

PROPERTIES		SPEC	RESULT			Decision
			S1	S2	S3	
Tensile Strength(Kg.f/mm ²)		55 Min	68.7	68.2		OK
Elongation (%)		20 %	27	24		OK
Brinell Hardness (HRC)		32 ~ 38	36	35.5	35	OK
Micro Structure (x 100)	Graphite Type					
	Graphite Size					
	Pearlite Base					
	Ferrite + Carbide					

Microphotograph
: TEMPERD MARTENSITE
(X 200, 5% Nital)



APPROVED BY :  DATE : 99.3.8



Material Inspection Report

Inspected Date : Mar 04, 1999

Part Name	Part No.	Material Grade	LOT No.	Decision
B/DRUM	7028	GC25	9B11	ACCEPT

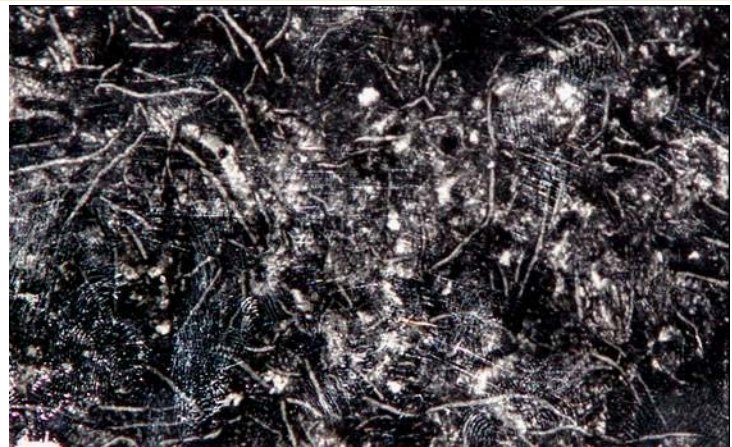
1. CHEMICAL COMPOSITION

Composition		C	Si	Mn	P	S	Cr	Cu	Sn
SPEC		3.0 ~4.0	1.6 ~2.2	0.60 ~0.90	0.10 Max	0.10 Max	0.20 ~ 0.40	0.40 ~0.80	3.0 ~4.0
RESULT	S1	3.16	2.00	0.63	0.043	0.071	0.326	0.510	3.16
	S2	3.26	1.92	0.72	0.045	0.064	0.312	0.534	3.26

2. PHYSICAL PROPERTIES

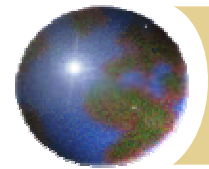
PROPERTIES		SPEC	RESULT			Decision
			S1	S2	S3	
Tensile Strength(Kg.f/mm ²)		25 Min	29.4	29.1		OK
Elongation (%)						
Brinell Hardness (HBN)		207 ~ 255	217	212	212	OK
Micro Structure (x 100)	Graphite Type	ASTM A247 VII (A TYPE)	A	A		OK
	Graphite Size	No 4 ~ 5	4 ~ 5	4 ~ 5		OK
	Pearlite Base	90 % Min	95 %	95 %		OK
	Ferrite + Carbide	10% Max	5 %	5 %		OK

Microphotograph (X 100, 3% Nital)

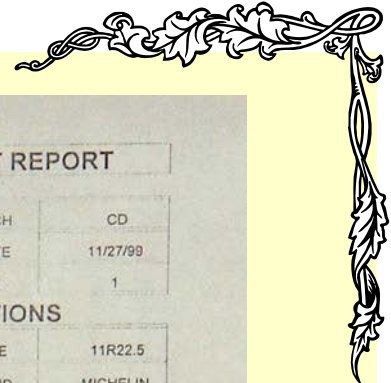


APPROVED BY :

DATE : 99. 3. 5



Test Certification



STL TEST NUMBER	JB9-1001
STL JOB NUMBER	L9-663
ACCOUNT REP.	GARVEN
CUSTOMER	JB ENTERPRISES
ENGINEER	CHONG
PURCHASE ORDER	ST102799-42

WHEEL SPECIFICATIONS

WHEEL SIZE	22.5x8.25
PART NUMBER	JB ENT.7011
MOLD NUMBER	D395
MATERIAL	STEEL
ADAPTOR NUMBER	N/A
WEAR PLATE	N/A
STUD NUMBER	M22x1.5
LUG NUT NUMBER	2 PC. FLANGE NUT

RADIAL FATIGUE TEST REPORT

SET UP TECH	DB	END TECH	CD
START DATE	11/02/99	END DATE	11/27/99
SHIFT LEADER	CP	STATION	1

TEST SPECIFICATIONS

INITIAL PSI	144	TIRE SIZE	11R22.5
LOAD RANGE	H	TIRE BRAND	MICHELIN
RADIAL TEST LOAD (lbs.)	20,250		
TEST TORQUE (ft lbs.)	450		
TEST DURATION (cycles)	3,000,000		
TEST SPEED (mph)	10		
TEST SPEC.	SAE J1095		
NUMBER OF TIRES USED	4		
FAILURE CRITERIA:	CRACKS		

SPECIAL INSTRUCTIONS

DYE CHECK AT:	1,000,000	2,000,000	3,000,000
THIS IS A HUB TEST - NOT A WHEEL TEST			
TAKE TIRE TEMP AT EVERY INSPECTION			

FLATNESS CHECK AT START .000 .000 .000 FLATNESS CHECK AT END .000 .000 .000

TEST RESULTS

CYCLES COMPLETED (1)		922,320	INSPECTION	DYE	ALL 450
TECHNICIAN		CP	TOTAL HOURS	170.80	
DATE		11/09/99			
COMMENTS (1)	No cracks found.				

2ND TORQUE

CYCLES COMPLETED (2)		1,670,220	INSPECTION	DYE	ALL 450
TECHNICIAN		CP	TOTAL HOURS	309.3	
DATE		11/16/99			
COMMENTS (2)	No cracks found.				

FINAL TORQUE

CYCLES COMPLETED (3)		3,000,000	INSPECTION	DYE	ALL 450
TECHNICIAN		CD	TOTAL HOURS	555.72	
DATE		11/27/99			
COMMENTS (3)	Test Complete. No cracks found.				

APPROVAL: *Chong* DATE: 12-1-99 98-001

