



ZAMPERLA

IN THE USA

**MANUFACTURER OF
QUALITY AMUSEMENT RIDES**

State of New Jersey
Dept. of Community Affairs
Division of Codes & Standards
Bureau of Code Services
PO Box 808
Trenton, NJ 08625-0808
Attn: Constantine Toma

Monday, October 09, 2000

Re: Crazy Sub rides,

Dear Constantine,

This is in response to your letter of September 12, 2000 regarding the potential hazard noticed on the Crazy Sub ride in Bowcraft Amusement Park.

The door design of the Crazy Sub, Crazy Bus and Fire Chief are not alike.

The Crazy Sub door consists of solid fiberglass construction. The door latching mechanism on the Crazy Sub is mounted on the inside of the door. This mechanism is partially out of view of the operator during ride operation. The ride employs lap bars, which is the primary safety device.

The Crazy Bus and Fire Chief doors consist of a gate design. The gate latching mechanism on the Crazy Bus and Fire Chief is mounted on the outside of the gate. This mechanism is in total view of the operator during ride operation. The ride employs lap bars, which is the primary safety device.

We have reviewed the door latching design on both types of rides. We have determined that the door latching mechanism on the Crazy Sub does constitute a potential hazard. The gate latching mechanism on the Crazy Bus and Fire Chief does not constitute a potential hazard. In both cases the rider safety is not compromised because of the primary lap bar safety device.

Based on the above conclusions we have issued a Service Bulletin #2000 CS1 (attached). This bulletin removes the capability of the rider to open the door. This removes the potential hazard on the Crazy Sub ride.

Phil Castellano

Phil Castellano
Technical Service Manager

ZAMPERLA INC.
49 Fanny Road
Parsippany, New Jersey 07054-6545
USA
Phone: 973 334 8133 Fax: 973 334 6880

Bulletin No: 2000 CS1

Release Date: 10/09/2000

Effective Date: 10/09/2000

Supersedes:

Completion Date: As soon as possible

Page: 1 of 4

SERVICE BULLETIN

Ride Manufacturer: Zamperla Inc.

Affected Production Dates: All

Ride Name: Crazy Sub

Affected Serial Nos.: All

Model Number: Crazy Sub

Abstract Of Issue:

The ride doors can be opened during ride operation.

Reason For Release:

The latch mechanism is accessible to the riders and out of view of the operator.

Action To Be Taken:

Follow the attached procedure to modify the door.

Detail Of Issue:

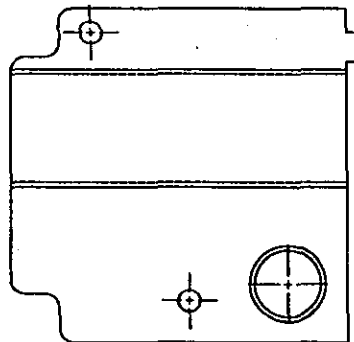
Attached procedure and drawings.

Future Action To Be Taken:

None.

Procedure to modify the Crazy Sub door.

1. Remove the door latch mechanism from the fiberglass door.
2. Transfer the latch pivot hole (Refer to drawing) center point to the fiberglass door.
3. Drill a 3/8-inch hole through the door (Refer to drawing) in this center point.
4. Cut the door latch knob (Refer to drawing) flush with the mechanism.
5. Remove the locking lever (Refer to drawing) from the mechanism.
6. Install the door latch mechanism to the fiberglass door.
7. The latch pivot hole should be centered in the fiberglass door hole.
8. Use the supplied door opening key to open the door.

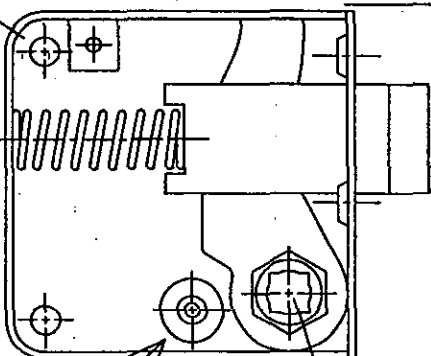


COPERTIVO DELLA SCATOLA

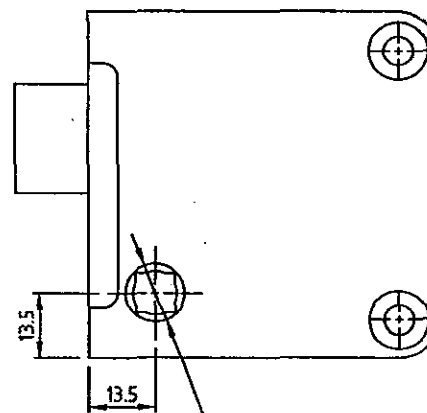


TAGLIARE LA LEVA DI APERTURA
A FILO CON IL BORDO DELLA SCATOLA

Cut flush here
(4)



Latch
pivot hole
(2)



ESEGUIRE FORO $\phi 12$ SUL
FONDO DELLA SCATOLA

MOLLA DELLA SICUREZZA DA ELIMINARE

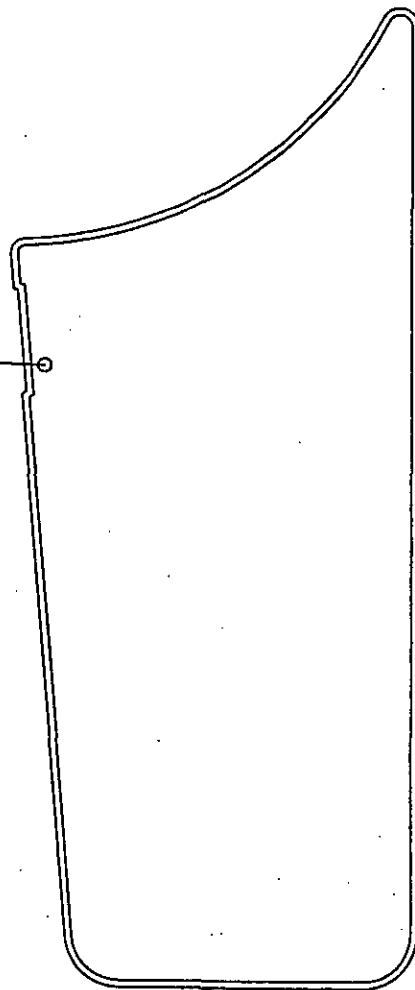
Remove this
piece (5)

LEVA DELLA SICUREZZA DA ELIMINARE

RONDELLA IN OTTONE DA ELIMINARE

N° - \triangle						N. PEZZI		DESCRIZIONE		MAT.	
QUOTE SENZA SPECIFICAZIONI						SERRATURA Cod. 1071417		N. Pezzi		1:1	
DA 0	DA 7	DA 21	DA 121	POS. CODICE	Materiale		CRAZY BUS		COSTRUZIONI PER PARCHI DIVERTIMENTO		
A 0	A 30	A 120	A 220	Materiale		SOGGETTO SUBMARINE		Via Monte Grappa 7-38077 ALTAVILLA (VI)		Questo disegno non può venire riprodotto, né ceduto a terzi o a ditte concorrenti, senza il nostro consenso. Esso viene consegnato in questa espressa condizione.	
+ 0,1	+ 0,2	+ 0,3	+ 0,8	Disegnato		SERRATURA		N. DIS		9369079030A	
DA 321	DA 1001	DA 2001	DA 4001	Data		26/09/00					
A 1000	A 2000	A 4000	A 8	Verificato							
+ 0,2	+ 0,5	+ 1,2	+ 3	Data							

Drill a 3/8 inch hole here (3)



REALIZZARE CON STAMPO Cod. S0100008

N° —											
QUOTE SENZA SPECIFIC. TOLLER.				POS. CODICE		N. PEZZI		DESCRIZIONE		MAT.	
DA 0	DA 7	DA 31	DA 121								
A 8	A 30	A 120	A 320								
+ 0.1	+ 0.2	+ 0.3	+ 0.5	Materiale		N. Pezzi		Scala			
- 0.1	- 0.2	- 0.3	- 0.5	VTR GELCOAT				1:5			
DA 321	DA 1001	DA 2001	DA 4001	Macchine						 COSTRUZIONI PER PARCHI DIVERTIMENTO Via Monte Grappa 7-36077 ALTAVILLA (VI)	
1000	A 2000	A 4000	A <	CRAZY BUS							
+ 0.8	+ 1.2	+ 2	+ 3	Designate		Gruppo				Questo disegno non puo' venire riprodotto, ne ceduto a terzi o a ditte concorrenti, senza la nostra consenso. Esso viene consegnato a questa espressa condizione.	
				C.Z.		SOGGETTO SUBMARINE					
				Data		Denominazione					
				26/09/00		PORTA SOGGETTO SUBMARINE					
				Verificato		N. DIS		V0,01		0,1 20,05A	
				Data							



Bulletin No: 08 CB01
Release Date: 30 June 2008
Effective Date: 30 June 2008
Supersedes:
Completion Date: Immediately
Page: 1 of 7

SERVICE BULLETIN

Ride Manufacturer: Zamperla SPA	Affected Production Dates: 1996 and later
Ride Name: Crazy Bus Family	Affected Serial Nos.: Models only with EC 2046 Brevini
Model Number: See Affected Serial Nos.	gearboxes with a vertically mounted motor, non-belt driven.

Abstract Of Issue:

Based on field experience, additional maintenance is required.

Reason For Release:

Based on field experience, additional maintenance is required.

Action To Be Taken:

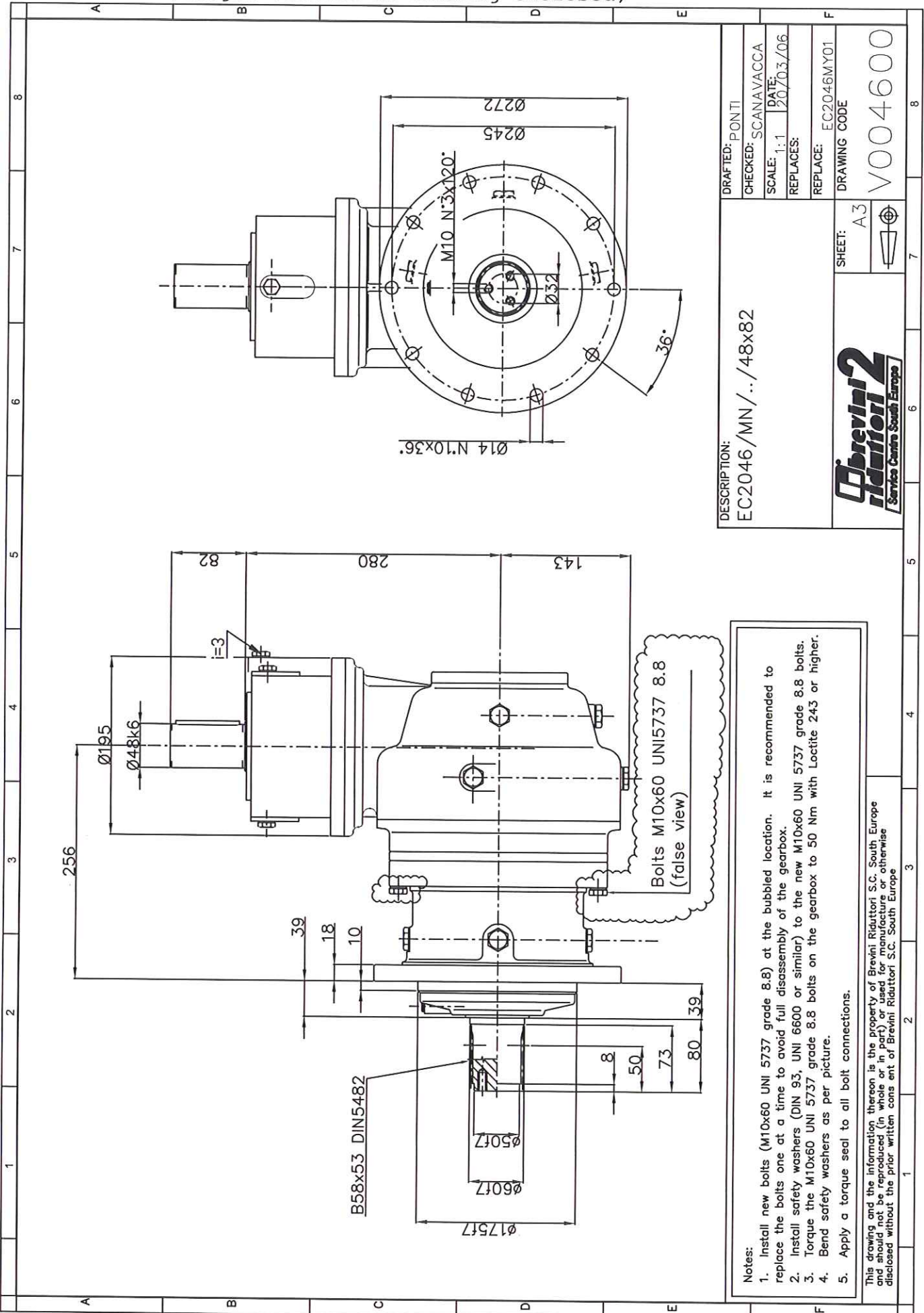
- 1) Position vehicle in upper position as per attached drawing 08 CB01.
- 2) Remove both rear gearboxes as indicated per attached drawing 9369087000B.
- 3) Install new bolts (M10x60 UNI 5737 grade 8.8), one at a time to avoid full disassembly of gearbox, per attached drawing V004600. Verify the 4 guide pins are not damaged and replace if necessary.
- 4) Install safety washer (DIN 93, UNI 6600 or similar) to each bolt as shown in attached picture. If a washer interferes with the gearbox housing, it is acceptable to snip the edge of the washer to fit.
- 5) Torque the M10x60 UNI 5737 grade 8.8 bolts to 50 Nm (37 ft-lbs) with Loctite 243 or higher in a star pattern. Use of a crowfoot wrench will be required due to the limited clearance.
- 6) Bend safety washers as per picture.
- 7) Apply a torque seal to all bolt connections.

Detail Of Issue:

See attachments.

Future Action To Be Taken:

Weekly, visually inspect the bolts.



DESCRIPTION:
EC2046/MN/./48x82

DRAFTED: PONTI
CHECKED: SCANAVACCA
SCALE: 1:1 DATE: 20/03/06
REPLACES:
REPLACE: EC2046MY01
DRAWING CODE



SHEET: A3

V004600

- Notes:
1. Install new bolts (M10x60 UNI 5737 grade 8.8) at the bubbled location. It is recommended to replace the bolts one at a time to avoid full disassembly of the gearbox.
 2. Install safety washers (DIN 93, UNI 6600 or similar) to the new M10x60 UNI 5737 grade 8.8 bolts.
 3. Torque the M10x60 UNI 5737 grade 8.8 bolts on the gearbox to 50 Nm with Loctite 243 or higher.
 4. Bend safety washers as per picture.
 5. Apply a torque seal to all bolt connections.

This drawing and the information thereon is the property of Brevini Riduttori S.C. South Europe and should not be reproduced (in whole or in part) or used for manufacture or otherwise disclosed without the prior written consent of Brevini Riduttori S.C. South Europe



Secure all these screws
nr.8 M10x60 UNI5737 8.8
by means of safety washers
UNI 6600 as indicated
Torque 50Nm

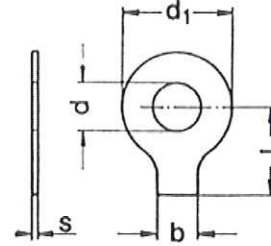
Section 2 Non-Threaded Fasteners, Etc.



TAB WASHERS # 93

Ref: DIN 93 - One Tab

Three materials: Plain Steel, A2 (304) Stainless or A4 (316) Stainless



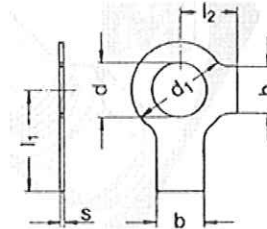
SCREW DIA. mm	# 93 Steel	# 93 A2 Stainless	# 93 A4 Stainless	I.D. mm d	O.D. mm d1	b	l	s
3	x	-	-	3.2	12	4	13	0.38
4	x	x	-	4.3	14	5	14	0.38
5	x	x	x	5.3	17	6	16	0.5
6	x	x	x	6.4	19	7	18	0.5
8	x	x	x	8.4	22	8	20	0.75
10	x	x	x	10.5	26	10	22	0.75
12	x	x	x	13	30	12	28	1
14	x	x	x	15	33	12	28	1
16	x	x	x	17	36	15	32	1
18	x	x	x	19	40	18	36	1
20	x	x	x	21	42	18	36	1
22	x	x	x	23	50	20	42	1
24	x	x	x	25	50	20	42	1
27	x	x	x	28	58	23	48	1.6
30	x	x	x	31	63	26	52	1.6
33	x	-	-	34	68	28	56	1.6
36	x	x	-	37	75	30	60	1.6
39	x	-	-	40	82	32	64	1.6
42	x	-	-	43	88	35	70	1.6

"x" denotes stock availability

TWO TAB WASHERS # 463

Ref: DIN 463 - Two Tabs

Two materials: Plain Steel or A4 (316) Stainless



SCREW DIA. mm	# 463 Steel	# 463 A4 Stainless	I.D. mm	O.D. mm	b	l1	l2	S
4	x	-	4.3	9	5	14	6.5	0.38
5	x	x	5.3	10	6	16	8	0.5
6	x	x	6.4	12.5	7	18	9	0.5
8	x	x	8.4	17	8	20	11	0.75
10	x	x	10.5	21	10	22	13	0.75
12	x	x	13	24	12	28	15	1
14	x	x	15	28	12	28	16	1
16	x	x	17	30	15	32	18	1
18	x	x	19	34	18	36	20	1
20	x	x	21	37	18	36	21	1
22	x	x	23	39	20	42	23	1
24	x	x	25	44	20	42	25	1
27	x	x	28	50	23	48	29	1.6
30	x	x	31	56	26	52	32	1.6
33	x	-	34	60	28	56	34	1.6
36	x	-	37	66	30	60	38	1.6
39	x	-	40	72	32	64	41	1.6
42	x	-	43	78	35	70	44	1.6

"x" denotes stock availability

How to Order
 Item #: 93 A2
 Size: 20
 Quantity: 300
 Tel: 1-888-966-MMCC

Vibration Meters & Tachometers

Tamper and Vibration Detection Paint



Apply this paint directly to equipment for easy and economical detection. Squeeze on correctly positioned fittings, studs, nuts, parts, and assemblies. When paint dries it becomes brittle and cracks from any movement caused by tampering or vibration. It's noncorrosive and adheres to most surfaces, including all types of metals. Temperature range is -10° to +450° F.

General-purpose paint is excellent for use on small parts.
Aircraft industry paint resists aircraft hydraulic fluid.
Fast-drying paint is for large jobs such as machinery bolts.

Color	Size	Each
General Purpose		
Black	1/2 oz.	1476T55 \$2.87
Blue	1/2 oz.	1476T115 2.87
Brown	1/2 oz.	1476T33 2.87
Gray	1/2 oz.	1476T44 2.87
Green	1/2 oz.	1476T114 2.87
Orange	1/2 oz.	1476T112 2.87
Purple	1/2 oz.	1476T113 2.87
Red	1/2 oz.	1476T111 2.87
White	1/2 oz.	1476T11 2.87
Yellow	1/2 oz.	1476T22 2.87
Aircraft Industry		
Pink	1/2 oz.	1476T122 4.38
Yellow	1/2 oz.	1476T12 4.38
Fast Drying		
Blue	1 oz.	1476T21 5.68

Digital Vibration Meter

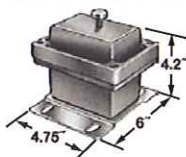


- Acceleration Range: 0.02 to 199.9 g
- Frequency Range: 3 to 1000 Hz
- Velocity Range: 0.02 to 199.9 in./sec.
- Displacement Range: 0.1 to 199.9 mils
- Accuracy: ±2.5% of full scale

In addition to vibration, this meter measures acceleration, velocity, and displacement. Ideal for monitoring the performance of rotating machines such as fans and pumps. Meter has an LCD display that holds the reading for one minute, a polystyrene housing, and comes with a 1 1/2" probe. Size is 6" Lg. x 3" Wd. x 1" Dp. Operating temperature range is 32° to 122° F. Meter operates on a 9-volt battery (included) and comes with a vinyl carrying case and a certificate of calibration traceable to NIST (National Institute of Standards and Technology).

	Each
Meter.....	8721T1 \$637.31
Replacement 9-Volt Battery (1/Pkg.).....	71455K56 Per Pkg. \$2.57

Vibration-Monitoring Switch



Protect your machinery from damage and downtime with this switch. If vibration or shock exceeds a set point, the contacts actuate to either shut down your machine or activate an alarm. Reset switch with the push of a button. The activation point is adjustable between 0-5 gravity units (g's) at 0-60 Hz. Switches are SPDT and rated 15 amps @ 125 or 480 VAC. Conduit connection is 3/4" NPT female.

Switch has four 0.375" dia. mounting slots (mounting hardware not included). Housing is cast aluminum and rated for hazardous locations for Class I, Groups C and D, Div. 1; Class II, Groups E, F, and G, Div. 1. Meets NEMA 4 and IP65 for dirt and water protection. UL and C-UL listed. CE approved.

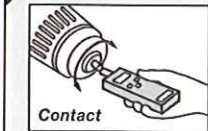
1188T31	Each \$446.67
---------------	---------------

About Tachometers

Tachometers measure the speed of rotating parts on machines such as shafts, gears, and belts.

Contact tachometers come in direct contact with an object and are an excellent choice for dirty and dusty environments. *Cone tips* are for shafts with a center hole. *Concave tips* are for shafts, pulleys, saws, and other items with a flat end surface.

Noncontact tachometers have a beam of light or laser that reflects off a piece of reflective tape attached to the rotating point.



Analog Contact Tachometer



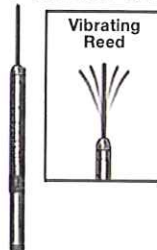
- Range: 0 to 4000 rpm
- Accuracy: ±3% of full scale

Housed in steel for durability, this reversible tachometer can measure in both directions (clockwise and counterclockwise). It has a 2 3/4" dia. dial face with a glass cover and includes one cone and one concave tip.

Optional 12" extension shaft enables access to hard-to-reach areas.

O'all Size, Dia. x Lg.	Each
Tachometer.....3" x 4".....	1416T1 \$74.69
Optional 12" Extension Shaft.....	1416T2 24.00
Per Set	
Replacement Tips (One Cone, One Concave).....	1416T3 \$5.33

Pocket-Size Vibration Meters



Quickly detect and measure machine vibration with these pen-size tools. A flexible steel wire reed detects vibration while the scale on the side of the meter indicates the machine vibration in cycles per minute (cpm). A simple calculation determines motor speed in rpm for engines with multiple cycles. Housing is made of aluminum and is 6 1/2" long. Come with a vinyl carrying case.

Combination set contains one of each meter in a vinyl carrying case.

Vibration Range	Accuracy of Reading	Each
200-2,000 cpm	±5-10%	1353T15 \$49.94
2,000-21,000 cpm.....	±10-15%	1353T11 36.19
Combination Set	1353T13 Per Set	\$82.44

Data-Logging Vibration Meter and Stethoscope



- Acceleration Range: 0.01 to 199.9 g
- Frequency Range: 10 to 10,000 Hz
- Velocity Range: 0.01 to 199.9 in./sec.

Listen to, monitor, and record machine performance. In addition to vibration, this meter measures acceleration and velocity. It also has an easy-to-read chart that lets you determine the severity of the vibration based on the size of your machine.

Meter has an LCD display, padded headphones, and a 4 1/2" long sensor probe for locating problem areas. The magnetic base allows you to mount the probe on a machine for constant readings. Recorded data can be entered into the monitoring software (included) so you can predict when machine maintenance is required. Software is compatible with Windows 95/98, XP, and NT 4.0; minimum system requirements are 166 MHz, 32 MB of RAM, and 100 MB of hard-drive space. Size is 6" Lg. x 3" Wd. x 1" Dp. Operating temperature is -14° to +122° F. Operates on two AA batteries (included) and comes with a nylon carrying case.

	Each
Meter.....	8738T1 \$1230.36
Replacement AA Batteries (4/Pkg.).....	71455K53 Per Pkg. \$3.10