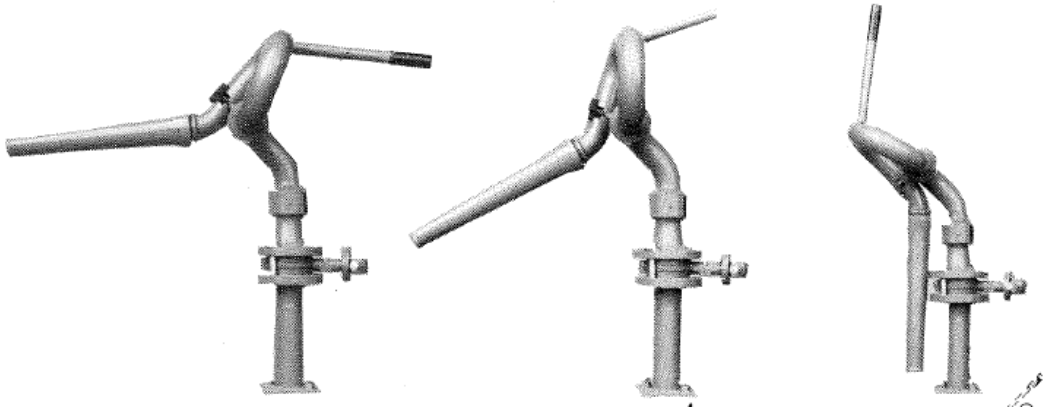
Installation, Operation & Maintenance Manual



Stang 2.50" Snorkel Monitor
925000 Series

2616 Research Drive Unit B
Corona, Ca 92882 USA
www.stangindustries.com

12/2009

DOC#: 925000om
REV: A 12/16/09

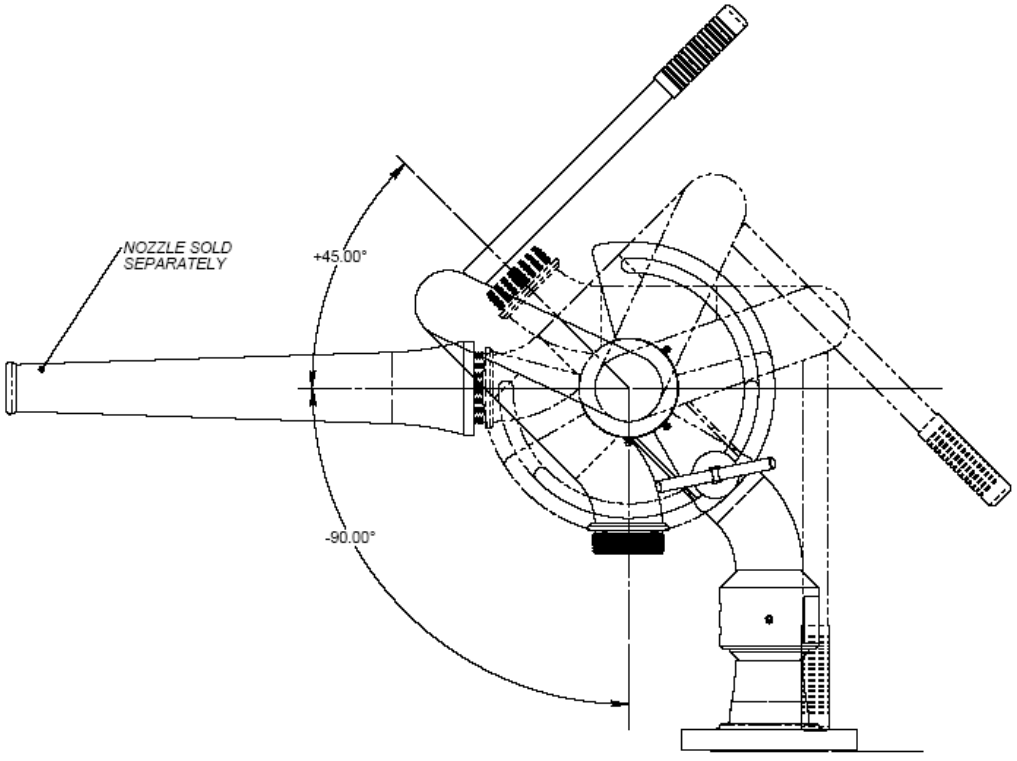
1. Introduction

The Stang 2.50” Snorkel Monitor is a manually controlled water cannon that has a vertical & horizontal rotation. The Snorkel monitor is similar to a station monitor but has the ability to shoot water at almost a 90° negative depression. These are often used in tank cleaning applications where the operator has to shoot water down from direct horizontal.

The welded single waterway design allows for an efficient & performance enhanced flow as weld as a heavy duty construction. Horizontal rotation is controlled via a lock knob and the vertical travel lock is actuated by a bladelock mechanism. This monitor is available with various intake options. Please refer to the list below for dash numbers.

2. General Features

- Schedule 40 Steel Waterway
- Aluminum Nickel Bronze Rotation Swivels
- ANSI Flange or NPT Intake
- NH Thread outlet
- Molded Handgrip for Rotation Operation
- Lock Knob & Bladelock Travel Locks



3. General Specifications

1. WATER:
   - FLOW RATE: 250-1000 USGPM
   - OPER. PRESSURE RANGE: 50-150 PSI
   - PRESSURE LOSS @ 750 USGPM: 16 PSI
   - OPTIMUM OPER. PRESSURE: 120PSI (INLET)
2. TRAVEL
   - VERTICAL +75° -90°
   - HORIZONTAL 360°
3. MOUNTING:
   - INLET: SEE CONFIGURATION CHART
   - OUTLET: 2.5" (MALE) NH THREAD
4. MATERIALS:
   - WATERWAY: CARBON STEEL (COATED INSIDE AND OUT)
   - SWIVELS: ALUMINUM NICKEL BRONZE
   - THREAD BUTT: ALUMINUM NICKEL BRONZE

UNIT WEIGHT: VARIOUS/ APPROX 50LBS (DRY)

4. Dash Number Reference

CONFIGURATIONS	
925000-1	MONITOR, 2.50" SNORKEL W/2.5-150#RF & BL, STL-AB
925000-11	MONITOR, 2.50" SNORKEL W/3.0-150#RF & BL, STL-AB
925000-21	MONITOR, 2.50" SNORKEL W/4.0-150#RF & BL, STL-AB
925000-31	MONITOR, 2.50" SNORKEL W/6.0-150#RF & BL, STL-AB
925000-41	MONITOR, 2.50" SNORKEL W/2.5NPT(M) & BL, STL-AB
925000-51	MONITOR, 2.50" SNORKEL W/2.5NPT(F) & BL, STL-AB
925000-61	MONITOR, 2.50" SNORKEL W/2.5-150#FF & BL, STL-AB
925000-71	MONITOR, 2.50" SNORKEL W/3.0-150#FF & BL, STL-AB
925000-81	MONITOR, 2.50" SNORKEL W/4.0-150#FF & BL, STL-AB
925000-91	MONITOR, 2.50" SNORKEL W/6.0-150#FF & BL, STL-AB

5. Installation

****Warning****

Installation should be conducted by qualified personnel only. Improper installation can be hazardous & deadly to property & life.

Some installations may require the use of a butterfly valve between monitor inlet flange & installation standpipe flange. When using a valve install per proper valve installation procedure.

5.1. Flange Installation:

When installing to a flanged connection, make sure the mating flange is the same size as the flange on the monitor. Use the proper flange gasket to make a watertight seal. Use a minimum of grade 5 bolts with galvanized finish. Make sure each hole in flange has been used and the thread engagement is 1.5 x diameter. It is advisable to use a locking mechanism such as lock washers underneath the nuts. Tighten to proper torque.

5.2. NPT Inlet:

Connect the NPT threads using a high quality thread sealant on the threads. Tighten using a spanner or pipe wrench.

6. Operation

****Warning****

Operation should be conducted by qualified personnel only. Water jet & reaction forces can be hazardous & deadly to property & life. Use with extreme caution.

Make sure all connections to the monitor are tight as per above instructions.

1. All travel rotations are locked.
2. Monitor outlet is not pointed to people or animals.
3. Open water supply valve slowly.
4. Check for leaks.
5. At this point slowly loosen the travel locks so you can rotate the monitor.
6. For shutdown lock travel locks in position. Slowly turn off water supply.

7. System Maintenance

7.1. For swivel maintenance refer to TB-17 at the end of this document.

7.2. Threads on lock knobs need to stay lubricated with anti seize lubricant.

8. Storage

8.1. Make sure all water is removed from waterway.

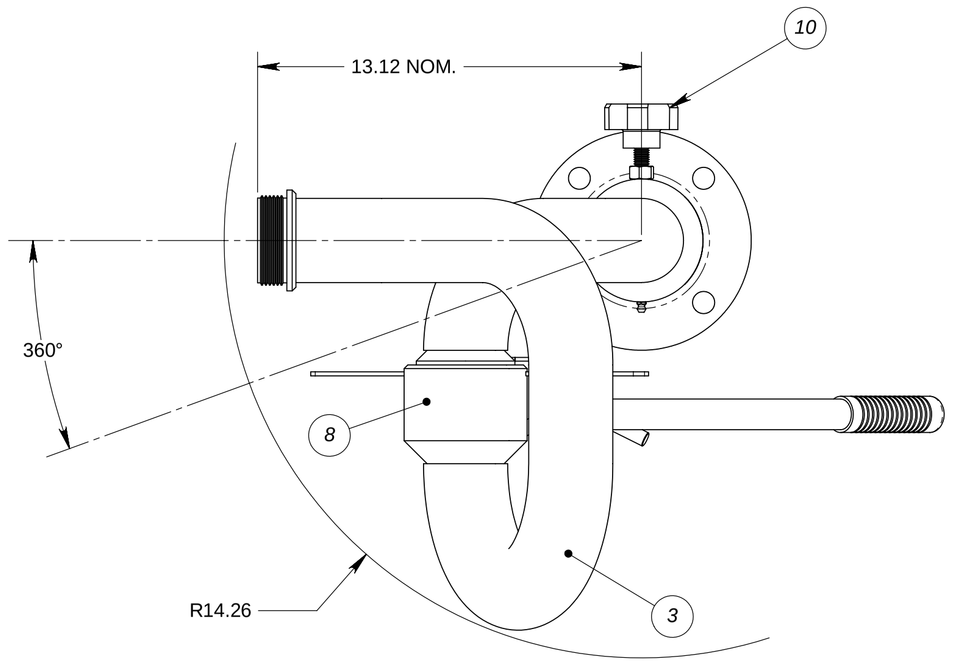
8.2. Swivel is well greased.

9. Parts Breakdown

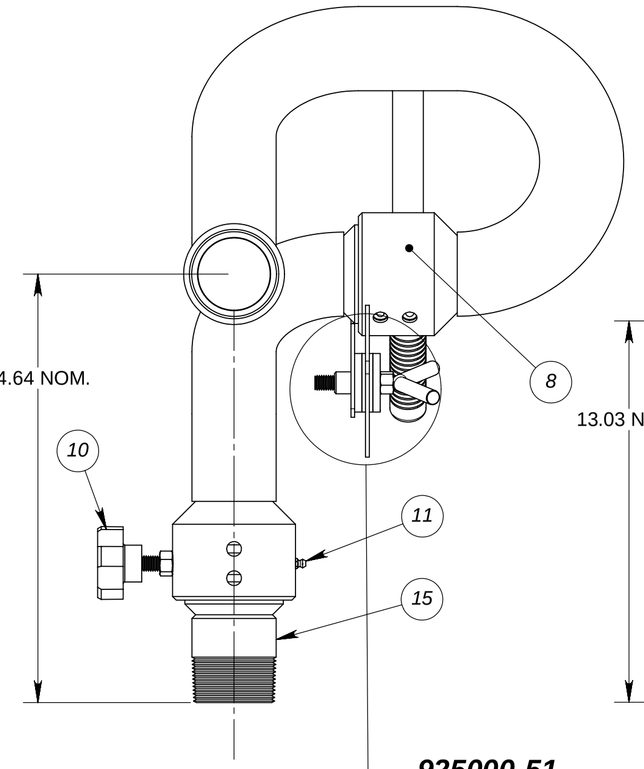
Please refer to technical drawing for parts breakdown.

NOTES:
1) DO NOT SCALE THIS DRAWING
2) BREAK ALL SHARP EDGES
3) ALL DIMENSIONS DISPLAYEDIN PARENTHESIES ARE FOR REFERENCE ONLY.
4) IF MONITOR DASH NUMBER HAS A SUFFIX SUCH AS EP MAKE SURE THAT THE MAJOR SUB-ASSEMBLIES HAVE THE SAME SUFFIX.

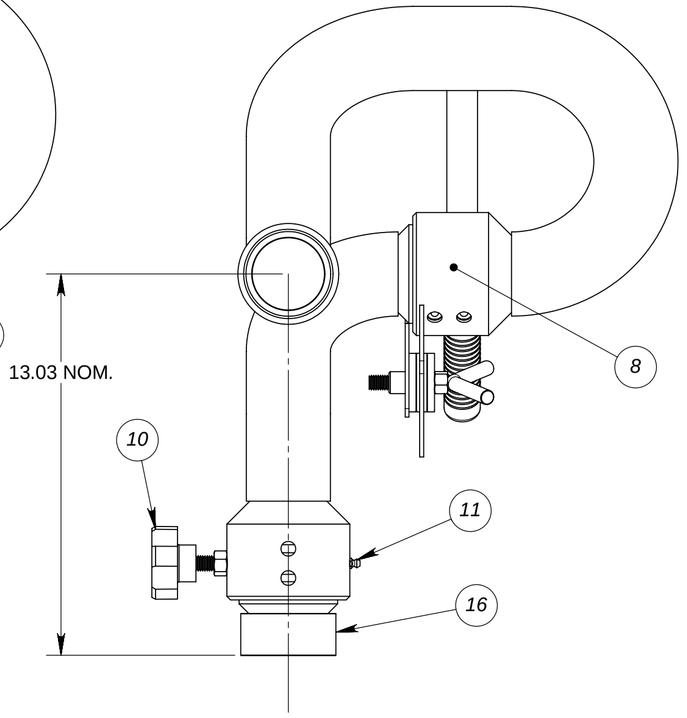
REVISIONS			
LTR	REVISION	DATE	BY
A	INITIAL RELEASE	02/08/06	EK

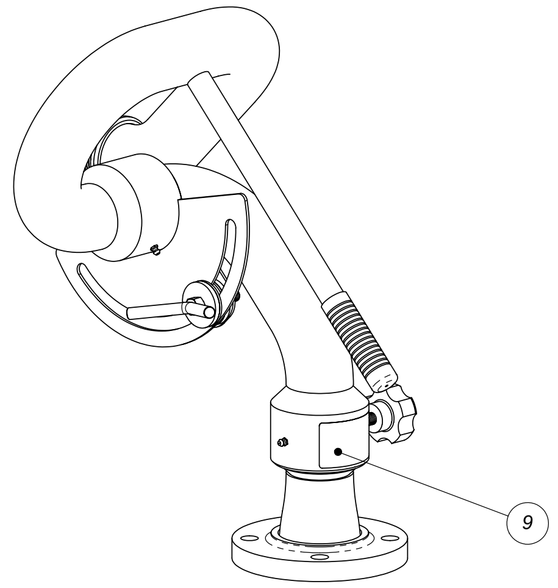


925000-41



925000-51





GENERAL SPECS
1. WATER: • FLOW RATE: 250-1000 USGPM • OPER. PRESSURE RANGE: 50-150 PSI • PRESSURE LOSS @ 750 USGPM: 16 PSI • OPTIMUM OPER. PRESSURE: 120PSI (INLET) 2. TRAVEL • VERTICAL +75° -90° • HORIZONTAL 360° 3. MOUNTING: • INLET: SEE CONFIGURATION CHART • OUTLET: 2.5" (MALE) NH THREAD 4. MATERIALS: • WATERWAY: CARBON STEEL (COATED INSIDE AND OUT) • SWIVELS: ALUMINUM NICKEL BRONZE • THREAD BUTT: ALUMINUM NICKEL BRONZE UNIT WEIGHT: VARIOUS/ APPROX 50LBS (DRY)

SUFFIX TABLE (SEE NOTES)	
DASH NUMBER SUFFIX	
NO SUFFIX	RED FINISH
EP	RED EPOXY FINISH
P	POLISH (SS) ONLY
NP	NO PAINT

CONFIGURATIONS	
925000-1	MONITOR, 2.50" SNORKEL W/2.5-150#RF & BL, STL-AB
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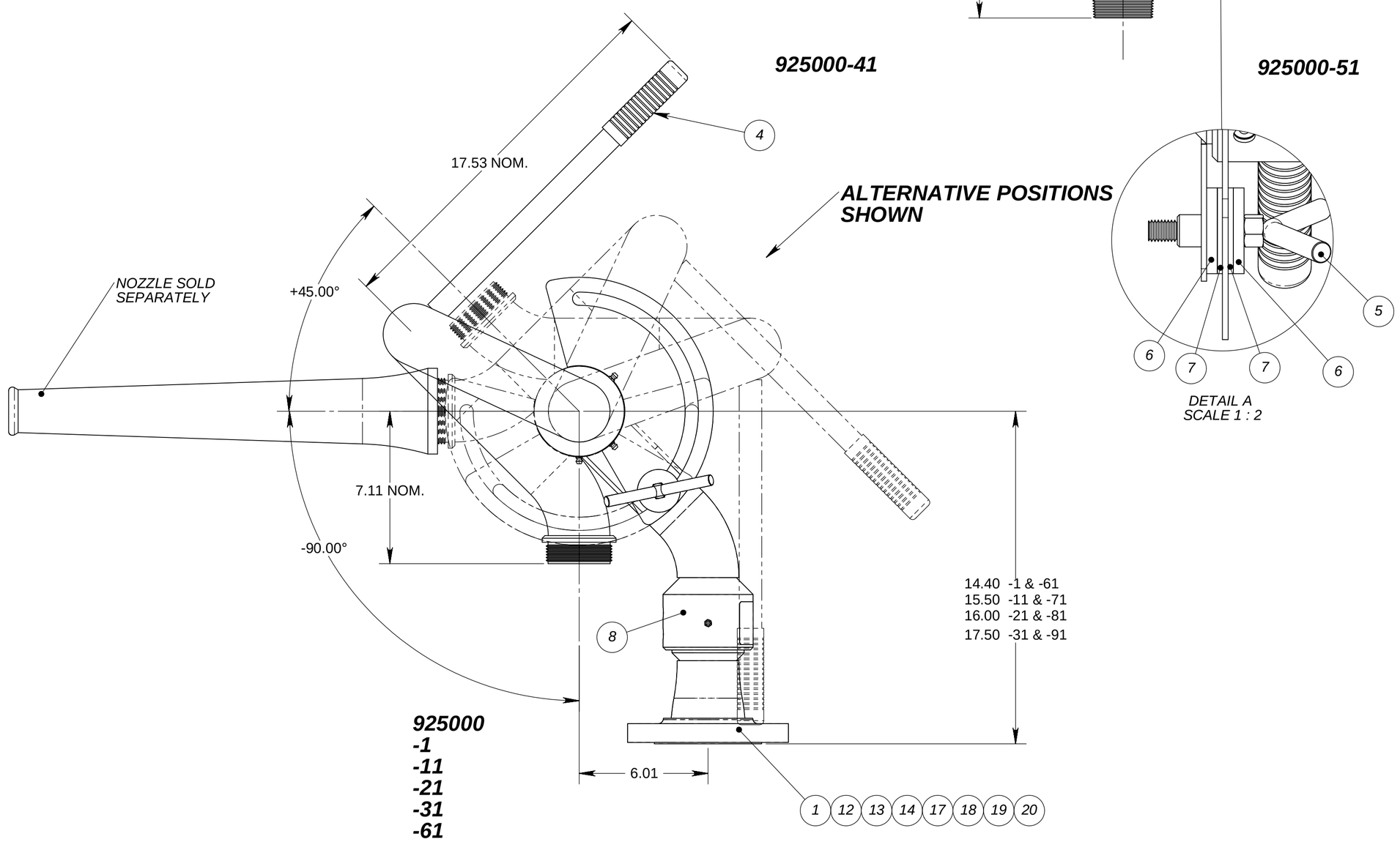


925000
-1
-11
-21
-31
-61
-71
-81
-91

DETAIL A
SCALE 1 : 2

-91/QTY.	-81/QTY.	-71/QTY.	-61/QTY.	-51/QTY.	-41/QTY.	-31/QTY.	-21/QTY.	-11/QTY.	-1/QTY.	ITEM #	P/N	DESCRIPTION
1	-	-	-	-	-	-	-	-	-	20	802085-71	BASE INTAKE, 2.50" W/6.0-150#FF FLG, STL-AB
-	1	-	-	-	-	-	-	-	-	19	802085-61	BASE INTAKE, 2.50" W/4.0-150#FF FLG, STL-AB
-	-	1	-	-	-	-	-	-	-	18	802085-51	BASE INTAKE, 2.50" W/3.0-150#FF FLG, STL-AB
-	-	-	1	-	-	-	-	-	-	17	802085-41	BASE INTAKE, 2.50" W/2.5-150#FF FLG, STL-AB
-	-	-	-	1	-	-	-	-	-	16	802090-91	BASE INTAKE, 2.50" W/2.5NPT(F), SS-AB
-	-	-	-	-	1	-	-	-	-	15	802090-81	BASE INTAKE, 2.50" W/2.5NPT(M), SS-AB
-	-	-	-	-	-	1	-	-	-	14	802085-31	BASE INTAKE, 2.50" W/6.0-150#RF FLG, STL-AB
-	-	-	-	-	-	-	1	-	-	13	802085-21	BASE INTAKE, 2.50" W/4.0-150#RF FLG, STL-AB
-	-	-	-	-	-	-	-	-	1	12	802085-1	BASE INTAKE, 2.50" W/2.5-150#RF FLG, STL-AB
2	2	2	2	2	2	2	2	2	2	11	100112-8	FITTING, ZERK, STR, 1/4-28UNF, CRES
1	1	1	1	1	1	1	1	1	1	10	102537-1	LOCK KNOB, 50-20UNF-2A THD
1	1	1	1	1	1	1	1	1	1	9	100853-1	PLATE, ALUM ID
2	2	2	2	2	2	2	2	2	2	8	103829-1	SWIVEL KIT, 2.5 NOM. (NOT SHOWN)
2	2	2	2	2	2	2	2	2	2	7	105448-11	WASHER, FLAT, .50ID X 2.00OD X.120T, DELRIN
2	2	2	2	2	2	2	2	2	2	6	103817-11	WASHER, FLAT, 2.00OD X .56ID X .25T, 304
1	1	1	1	1	1	1	1	1	1	5	103815-11	LOCK HANDLE WELDMENT
1	1	1	1	1	1	1	1	1	1	4	100256-2	GRIP,HAND,BLK PLSTC,#RG14055
1	1	1	1	1	1	1	1	1	1	3	801175-11-90	ELL, UPPER, 2.50" SNORKEL, BL W/HANDLE@90°, STL-AB
1	1	1	1	1	1	1	1	1	1	2	801288-11	ELL, LOWER, 2.50" SNORKEL W/BL, STL-AB
-	-	-	-	-	-	-	-	-	1	-	1	802085-11	BASE INTAKE, 2.50" W/3.0-150#RF FLG, STL-AB

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS ANGULAR
.XX ±.03 ±2˚
.XXX ±.010

DO NOT SCALE DRAWING

TREATMENT N/A

FINISH SEE SUFFIX TABLE

SIZE **D** | SUPP. # N/A

STANG INDUSTRIAL PRODUCTS
1250 RAILROAD ST.
CORONA, CA 92882

MONITOR, 2.50" SNORKEL W/BLADELOCK

P/N	MATL.
925000	STL-AB

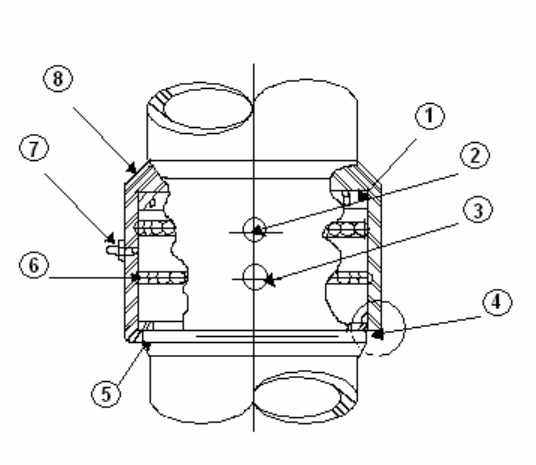
CAGE#	DRAWN	CHECK	REVISION
55822	EK		A

DATE	DESIGN	SCALE	SHEET
02/08/06		NTS	1 OF 1

Technical Bulletin

Stang Industrial Products
951-479-9810
www.stangindustrial.com

Technical Bulletin #:	TB-17
Part #:	N/A
Description:	Swivel Joint Service Instructions
TB Description	For the repair & service of Stang swivels



Parts

1. Pressure Seal
2. Ball Retainer Plug
3. Retaining Ring (For Plug)
4. Dirt Seal
5. Inner Race
6. Steel Balls
7. Grease Zerk
8. Outer Race

Equipment needed

1. Retaining ring pliers (Truarc or equal: #1 internal rings on joints up to 4", and #3 for 6" joints and larger)
2. Sharp pointed tool (Example: alignment punch or ice pick).
3. Solvent to soften grease in ball races.
4. Cleaning material-rags.
5. Lubricant: All purpose grease, grade #2.
6. New Seals.

Maintenance

1. Lubricate swivel joint through grease zerk (7) after each 24 hours of accumulated use.

Caution: Excessive grease pressure can cause packing displacement and consequent leakage.

2. Inspect swivel joint at regular intervals for water leakage. If leakage is detected, replace packing as described in the repair procedure.

REPAIR

1. Disassembly:
   A. With retaining ring pliers, remove the two retaining rings (3).
   B. Insert sharp pointed tool into middle of the ball retainer plug (2) and lift at slight angle. The ball retainer plug has a metal plate on top with a small hole in the middle of the plate to aid in removal.
   C. Rotate swivel joint to allow balls (6) to roll out of races. If grease is thick and heavy, balls may not fall free. Use solvent to clean. Balls will always roll out if races are clean. Parts will disassemble when all the balls have been removed, and the seals will be exposed. A flexible polyethylene rod or similar tool may be used to push balls from race.
2. Cleaning:
   A. Remove old seals (1 & 4) and replace with new parts.
   B. Thoroughly clean all parts and apply a thin coat of lubricant around the packing.

Reassembly

1. Replace pressure seal with new part if necessary. Lips must face away from ball grooves. Put small amount of grease on seal to ease reassembly.
2. Replace dirt seal. (Item 4)
3. Press the separate swivel joint races together and drop in the balls until the races are filled.
4. Replace the ball retainer plugs (2).
5. Replace retainer rings (3) with retaining ring pliers.
6. Lubricate the ball race area by using a small hand grease gun to force a small amount of the lubricant through grease zerk (7). Then rotate one portion of the 90% and regrease. Repeat 2 more times.
   a. **Caution:** Do not over grease. Excessive grease pressure can cause leakage and/or difficult rotation.