

Section 3

Pneumatic



Section 3

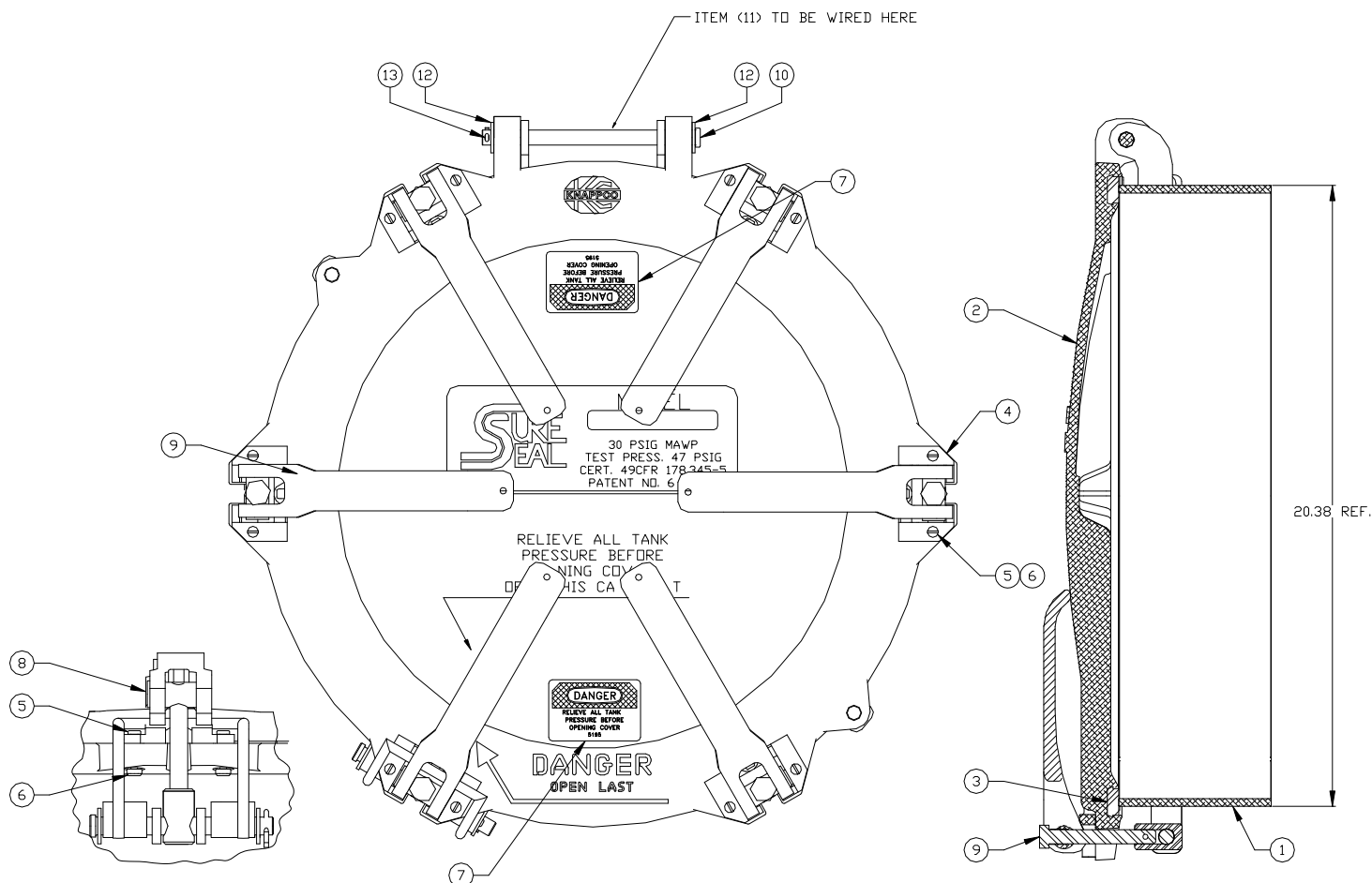
Pneumatic

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LM1151 20" Pressure Manhole

PARTS BREAK DOWN



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	3467	Aluminum Weld Ring	1
2	9093 ¹	Aluminum Cover	1
3	9209 ¹	Gasket, White Neoprene	1
4	6832 ^{1,3}	Wear Plate, Nylon	6
5	6585 ^{1,3}	Screw, Hex 10-24 x 1 1/2"	12
6	4486 ^{1,3}	Lock Nut	12
7	5195 ¹	Danger Decal	2
8	10870 ^{2,3}	Cam Assy. w/ Safety Catch	1
9	10869 ^{2,3}	Cam Assy.	5

1 - Included in 12218, 2 - Included in 12439, 3 - Included in 11734

ITEM	PART NUMBER	DESCRIPTION	QTY.
10	3955 ²	Clevis Pin, 1/2 x 7"	1
11	5259	Tag (Weld Ring Flatness)	1
12	1043 ²	Washer, 1/2 Flat	2
13	1045 ²	Cotter Pin	1

REPAIR KITS

12218	LM+ Cover Assy. Kit
12439	LM+ Cam Assy. Kit w/ Hinge Pin
12439	LM+ Cam Assy. Kit w/ Wear Plates
LM1051	LM+ Cover Assy. w/ 6 Cams



LM 20" PRESSURE MANHOLE

Features:

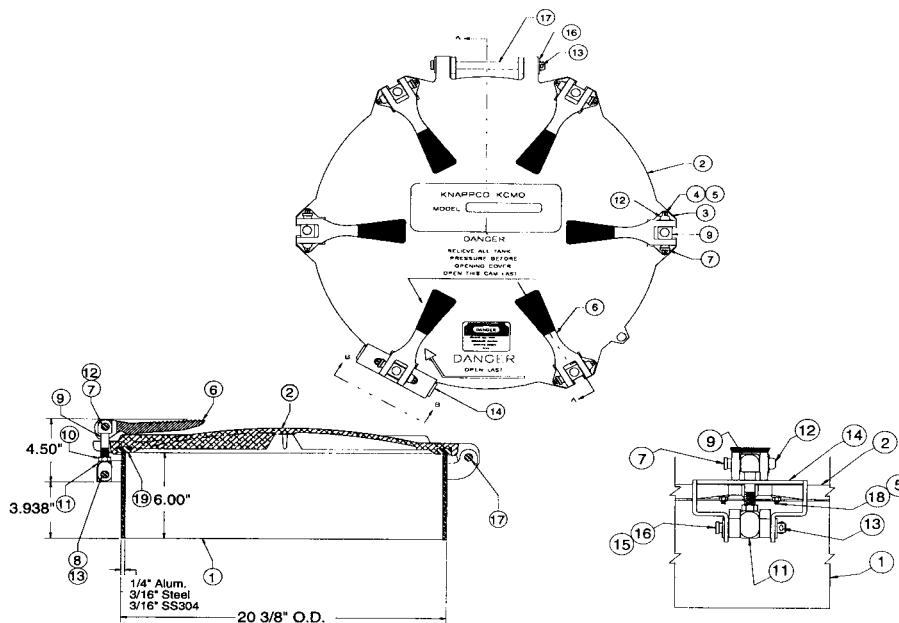


- Working Pressure 25psi (MAWP); tested to 40psi
- Standard 6" high weld ring
- 6 quick opening adjustable cam levers provide a positive seal
- Available with various gasket options
- Open rib design in the cover provides strength without hanging up product
- Meets current manhole requirements for MC307 and DOT-407(HM183)

OVERALL HEIGHT: 8 3/4" (Approximately)

AVERAGE SHIPPING WEIGHT: 55 lbs (with steel weld ring)

MODEL	COVER MATERIAL		WELD RING		GASKET		VENT	
	#	CONTACT / EXTERNAL PARTS	#	MATERIAL	#	MATERIAL	#	TYPE
LM	1	Aluminum / Plated	0	None	1	Buna N	0	No Vent
	2	Aluminum / 304 SS	1	Alum. 1/4 x 6	2	White Neoprene		
			2	Steel 3/16 x 6	3	Viton		
			3	304 SS 3/16 x 6	4	Teflon Envelope		

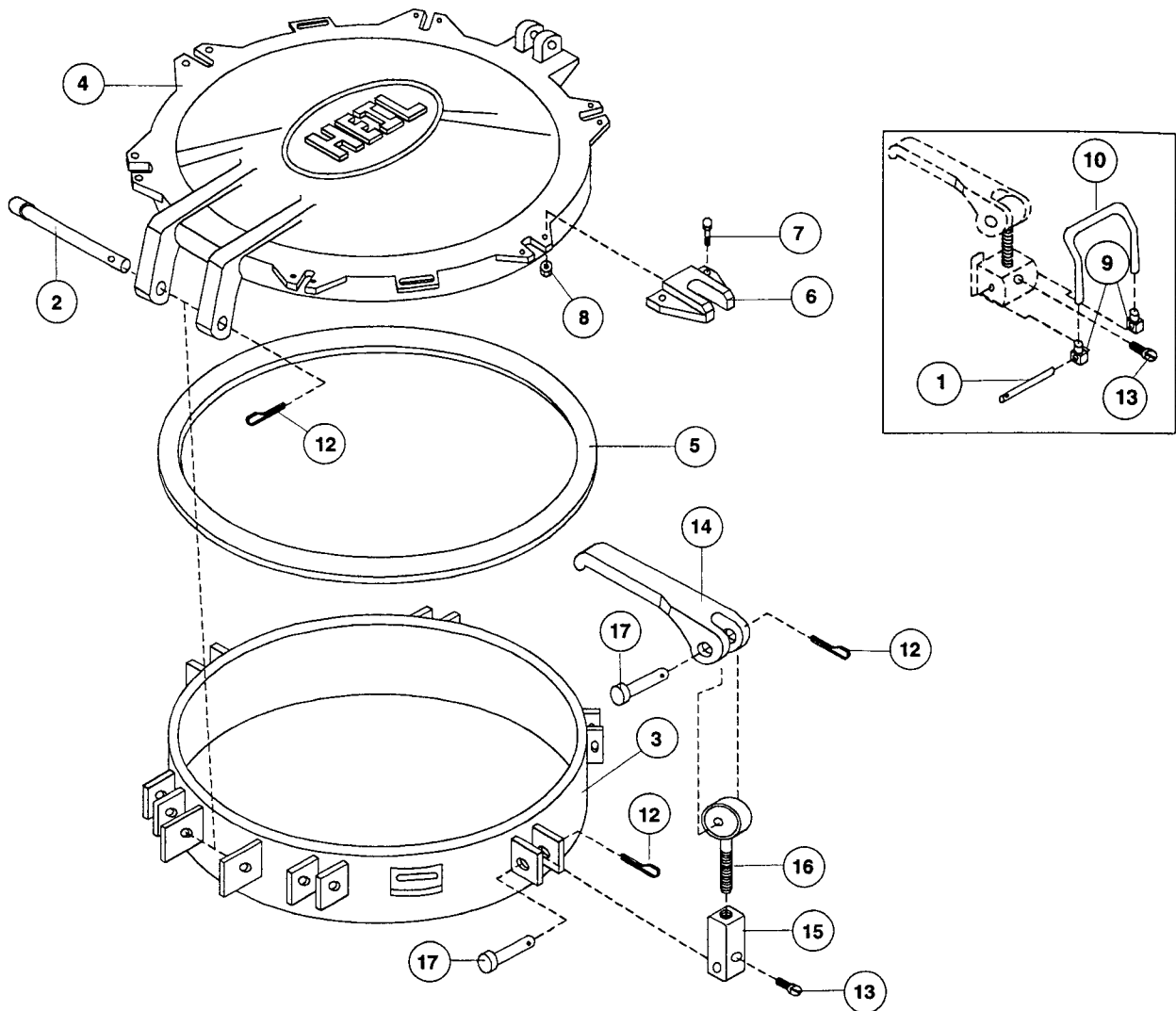


LM 20" PRESSURE MANHOLE

REFERRALS	DESCRIPTION	STEEL	ALUMINUM	PLATED	304 SS	OTHER
1	Weld Ring Assembly	3512	3467		3511	
2	Kit Cover Assembly White Neo.		3581			
	Kit Cover Assembly Black Buna N		3717			
3	Wear Plate (6)				2592	
4	Screws, SS, 10-32 (10)				3546	
5	Nuts, SS, 10-32 (12)				3544	
KIT CAM ASSEMBLY				3519	4111	
6	Cam Lever (6)			3949	3508	
7	Pivot Pin (6) upper			3952	1438	
8	Pivot Pin Lower (5)			5677		
9	Clamp Stud (6)			3439	3700	
10	Jam Nut (6)			1016	1082	
11	Connector (6)			1012	1078	
12	Pal Nut (12)			1020		
13	Cotter Pin			1045	1083	
14	Safety Catch			3686	3513	
15	Safety Catch Pin			3953	1435	
16	Washer (4)			1043	2618	
17	Hinge Pin			3955	3237	
18	Screw - 10-32 x 7/8 (2)				3545	
Gaskets						
	Buna N	White Neoprene	Viton	Tef-Env	Silicone	
19	3395	3523	4244	4875	4862	



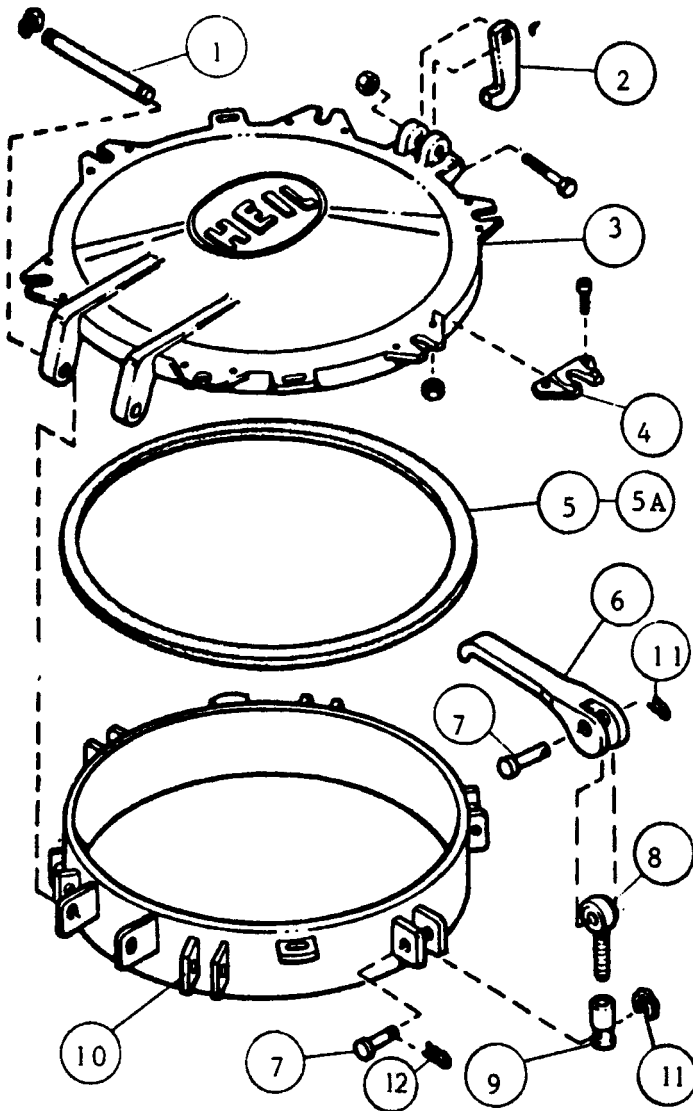
20" KNAPPCO MANHOLE COVER



HEIL NO. 112-5784-001 VENDOR NO. MM1110

Ref	Heil/Vendor Part No.	Description	Req
1	KN-1042	Pin (safety latch).....	2
2	KN-4091	Pin (hinge).....	1
3	KN-4468	Ring assembly.....	1
4	KN-6923	Cover.....	1
5	KN-4479	Buna gasket.....	1
6	KN-6372	Cam wear plate.....	6
7	KN-4484	Fastener (wear plate).....	12
8	KN-4486	Nut (wear plate).....	12
9	KN-4494	Pivot block.....	4
10	KN-4497	Safety latch.....	2
11	KN-9980	Cam assembly.....	1
12	KN-1083	Cotter pin.....	7
13	KN-3857	Screw (1/4-28 x 3/8, s.s).....	6
14	KN-6361	Cam handle.....	6
15	KN-4490	Nut (cam adjusting).....	6
16	KN-4888	Bolt (cam adjusting).....	6
17	KN-5677	Cam pin.....	10

Heil Manhole Assembly



REF.	PART NO.	DESCRIPTION
1	509P	HINGE PIN
2	131	SAFETY LATCH
3	2016AC	COVER, with wear plates & Gaske
4	826	WEAR PLATE, w/screw
5	134EN	GASKET, black
5A	134BNW	GASKET, white
6	821	CAM
7	822	CAM PIN
8	824	ADJUSTING BOLT
9	823	ADJUSTING NUT
10	828A	HINGE EAR, alum.
11	825	RETAINING RING
12	829S	HITCH PIN S/S

Cam Assembly Kit
9980

HOW TO IDENTIFY

- 2016 Cast Between Hinge Ears
- Bolt on Wear Plates
- 6 Cast Iron Hold Down Assys.
- Die Cast Aluminum Cover
- 821 Cast onto Cam
- 3/8" x 1" Rectangular Gasket

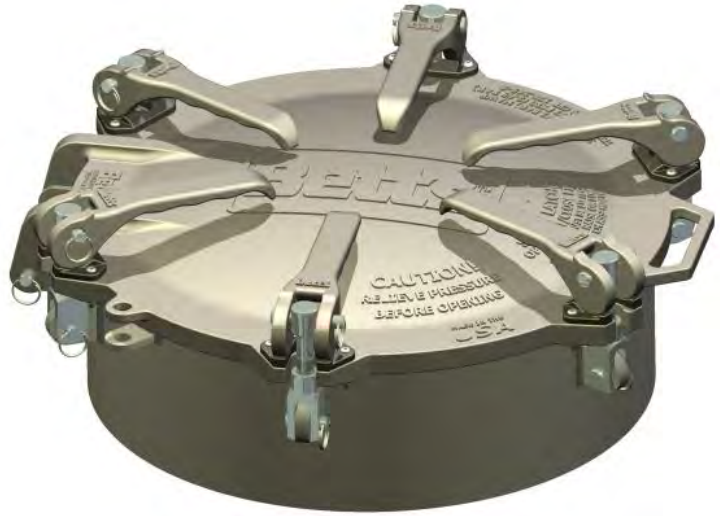
20" CAM-LATCH MANHOLE

35 psi (2.4 bar) MAWP

Betts Industries' Cam-Latch Manhole offers a high-quality, robust design able to meet the stringent requirements of the transportation and processing industries. Whether it is for railcar or over-the-road, liquid or dry bulk, this manhole fills the requirement.

Manhole Specification

Model 8555 is a 20" full opening cam-latch manhole equipped with a quick opening cast aluminum cover which has a lift handle, two padlock tabs and replaceable nylon wear saddles. Six smooth-operating aluminum latches attached to robust 5/8" swingbolts are secured to the collar utilizing a single lug design. The hold-downs are adjustable to create a positive seal between the cover and collar. The cover incorporates innovative safety latches on each side of the handle. These safety latches will not swing off the cover until the cover is lifted slightly off the collar and residual tank pressure is relieved ensuring a stuck cover will not over-ride the safety mechanism. Manhole meets requirements of 49CFR §178.345-5 and §178.347-3.



MODEL 8555

Part Number	Materials of Construction			Weight	Collar Height ‡	Gasket ‡
	Hardware	Weld Collar	Cover and Cam Levers			
8555ABF-6	Zinc Plated Steel	Aluminum	Aluminum	41 lb (18.6 kg)	6” (152 mm)	White FDA Nitrile (Buna-N)
8555ACF-6	Stainless Steel		Aluminum			
8555SBF-6	Zinc Plated Steel	Steel	Aluminum	60 lb (27.2 kg)		
8555SCF-6	Stainless Steel		Aluminum			
8555CBF-6	Zinc Plated Steel	304 Stainless	Aluminum			
8555CCF-6	Stainless Steel		Aluminum			

Technical Specifications

Design Pressure *		Test Pressure *	Design Temperature	
Internal MAWP	External MAWP		Minimum	Maximum
35 psi (2.4 bar)	14.7 psi (1.0 bar)	53 psi (3.65 bar)	-40°F (-40°C)	250°F (121°C)

Letter	Material
F	White FDA Nitrile (Buna-N)
V	Black FKM (Viton®)
Q	Fluorosilicone

‡ Alternate collar height available by designating 4, 8, or 10 as last number of part number.

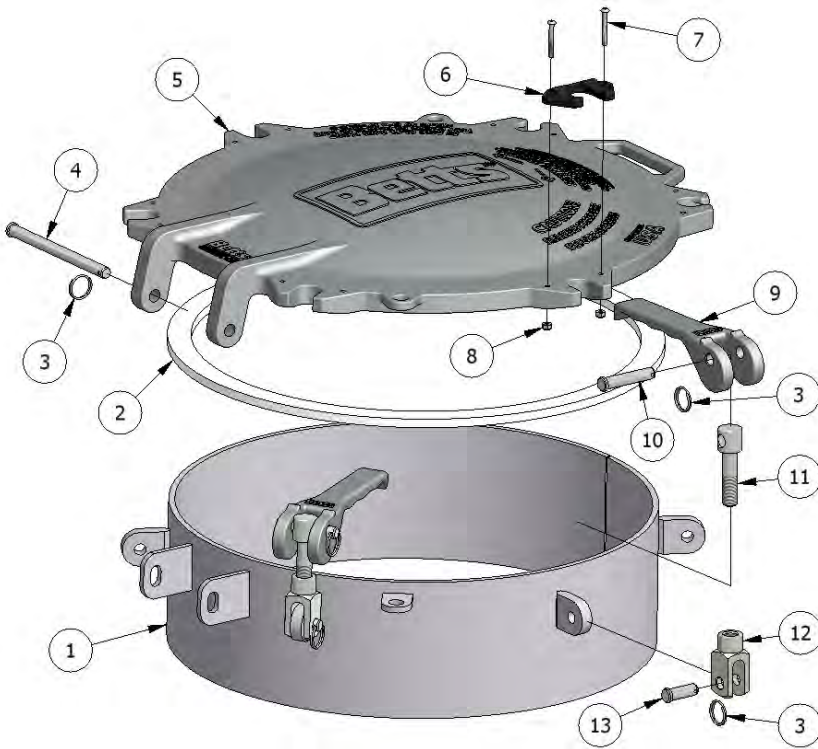
‡‡ Alternate gasket material available. See table at right.

* Tests were conducted and ratings determined using white nitrile gasket.

Note: During welding of the collars to the tank, care should be exercised to insure the collars remain flat and round in order to assure proper performance. If necessary, a welding fixture should be used to prevent distortion.

Parts List

20" CAM-LATCH MANHOLE



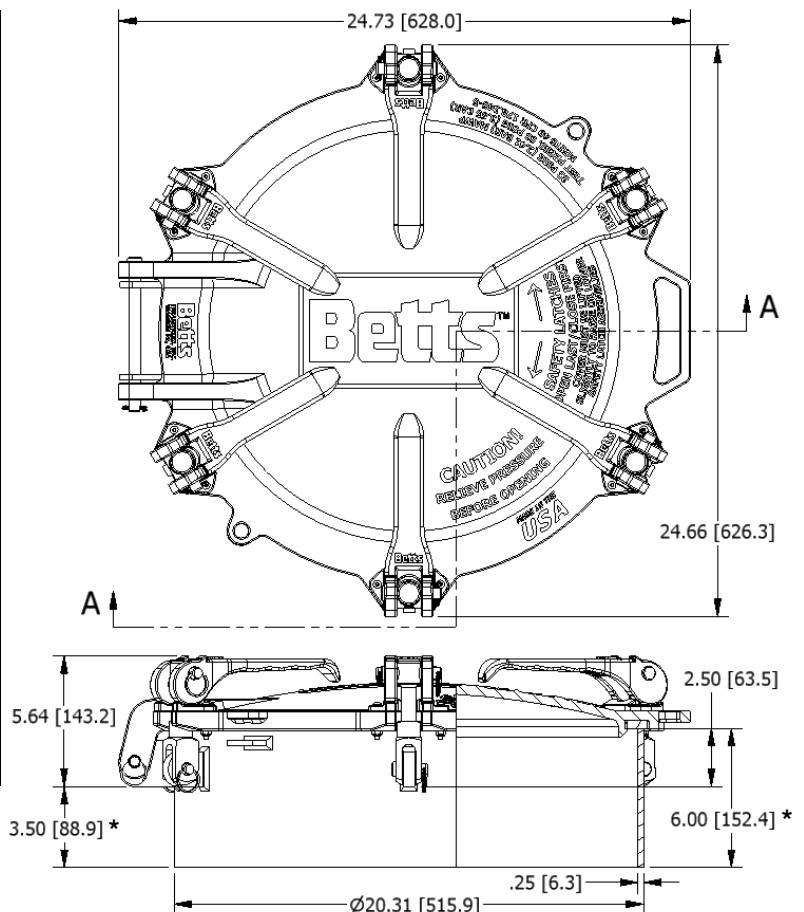
MAINTENANCE: Manhole assemblies should be inspected with sufficient frequency and due regard to the products carried.

- Inspect safety latches to insure they function properly. A properly functioning safety latch will not swing off the cover unless cover is lifted slightly off of the collar. Replace cover, clevis, latch, or wear saddle as needed.
- Inspect collar for corrosion or damage that could impair the strength or ability of manhole to seal.
- Inspect hardware for corrosion or damage that could reduce the strength of the hold-downs. Replace as needed.
- Replace worn or damaged gasket with a material compatible with products being carried.

No.	Description	Req.	Material	Part No.
1	Weld Collar Assem. (6" High)	1	Alum. 5454	6916AL-6
2	Gasket	1	White Nitrile(FDA)	4383WB
			Black FKM	4383VT
			Fluorosilicone	4383FS
3	Circle Cotter	13	302 Stainless	9Q5010
4	Hinge Pin	1	Steel (Zc. Plt.)	9Q4757
			303 Stainless	4401SL
5	Manhole Cover	1	Alum.	8552AL-BETTS
6	Wear Saddle	6	Nylon	6907NY
7	Cap Screw	12	18-8 Stainless	9Q5075
8	Lock Nut	12	18-8 Stainless	9Q5085
9	Cam Latch	6	Alum.	6910AL
10	Latch Pin	6	Steel (Zc. Plt.)	9Q4753
			17-4 Stainless	9Q4754
11	5/8 Swing Bolt	6	Steel (Zc. Plt.)	4381ZC
			304 Stainless	4381SL
12	5/8 Clevis	6	Steel (Zc. Plt.)	4382ZC
			304 Stainless	4382SL
13	Clevis Pin	6	Steel (Zc. Plt.)	9Q4751
			17-4 Stainless	9Q4752
Replacement Wear Saddle Kit (Items 6,7, & 8)			Nylon/SS	6907NY-KIT
Replacement Latch Kit (Items 3,6,7,8,9,10,11,12 & 13)			Steel (Zc. Plt.)	4402ALZC
			Stainless	4402ALSL

WARNING: Use only genuine BETTS INDUSTRIES INC. replacement parts. Substitute parts can impair the proper function of this product.

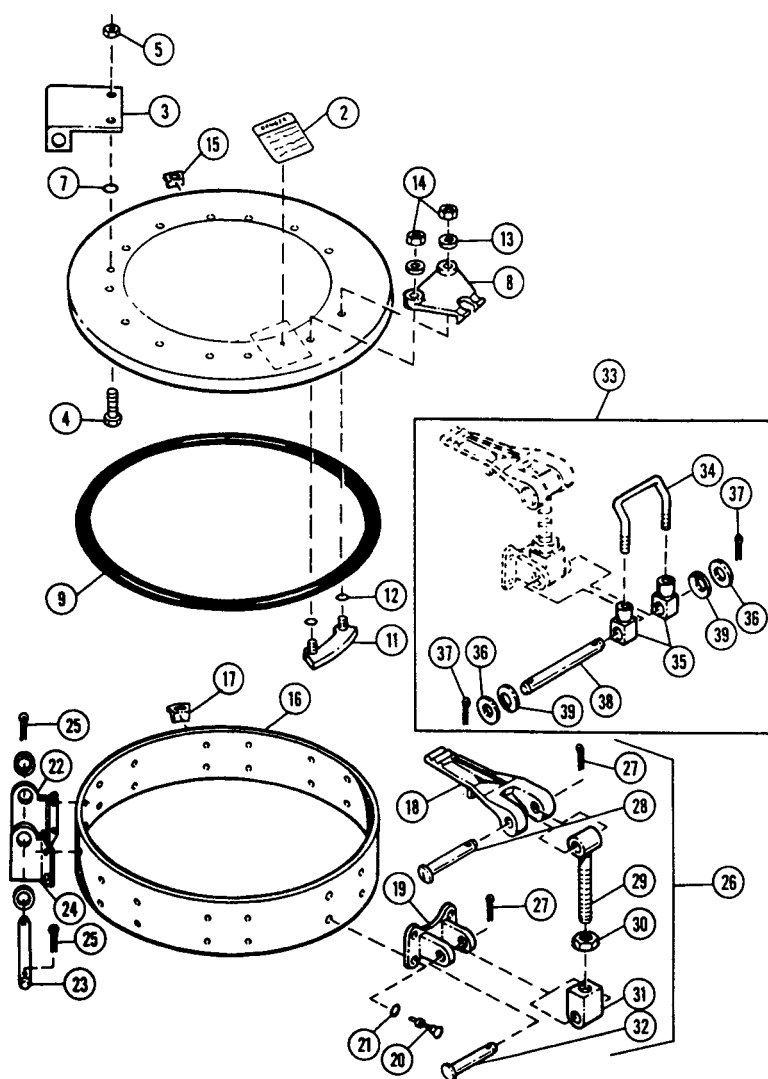
* Dimensions vary dependent on collar height.



Butler

STYLE MANHOLE

Also found on:
Heil • Polar • Penske • TEC



REF.	PART NO.	DESCRIPTION	REQ'D.
	901-556	COVER ASSEMBLY - (includes items 2 thru 15)	1
1	901-559	COVER	1
2	381-645	DECAL, warning	1
3	902-370	HINGE, upper	1
4	096-905	CAPSCREW - 3/8" - 16NC X 1"	2
5	096-696	NUT, hex. - 3/8" - 16NC	2
7	319-697	O-RING	2
8	070-094	LUG, hold down	6
9	901-603	GASKET, black	1
10	381-717	COVER, old style - 5 hold down - (not shown)	1
11	901-546	LUG, gasket retaining	6
12	319-665	O-RING	12
13	096-687	WASHER, shakeproof - 3/8"	12
14	096-696	NUT, hex. 3/8" - 16NC	12
15	381-977	SEAL CLIP, cover	2
-	900-698	COLLAR ASSEMBLY - (includes items 16 thru 39)	1
16	381-567	COLLAR	1
17	381-576	SEAL CLIP, collar	2
18	070-096	CAM	6
19	070-465	BRACKET, pivot block	6
20	382-888	RIVET - 3/8" x 3/4" flat head	28
21	319-697	O-RING	28
22	381-571	BRACKET, hinge	1
23	384-282	PIN, hinge	1
24	381-572	BRACKET, hinge	1
25	096-242	PIN, cotter - 1/8" x 3/4"	2
26	315-294	HOLD DOWN KIT - (includes items 27 thru 32)	6
27	096-242	PIN, cotter - 1/8" x 3/4"	12
28	070-469	PIN, cam	1
29	070-098	BOLT, eye	1
30	096-241	NUT, jam - 1/2" - 13NC	1
31	070-097	BLOCK, pivot	1
32	070-468	PIN, pivot block	1
33	384-280	SAFETY LATCH KIT - (includes items 34 thru 39)	2
34	384-281	LATCH, safety	1
35	070-097	BLOCK, pivot	2
36	096-657	WASHER, flat - 1/2"	2
37	096-242	PIN, cotter - 1/8" x 3/4"	2
38	384-282	PIN - 1/2" x 5"	1
39	900-010	WASHER, spring	A/R

Fruehauf

MANHOLE ASSEMBLY 20" FULL OPENING (Alum & Steel Tank)

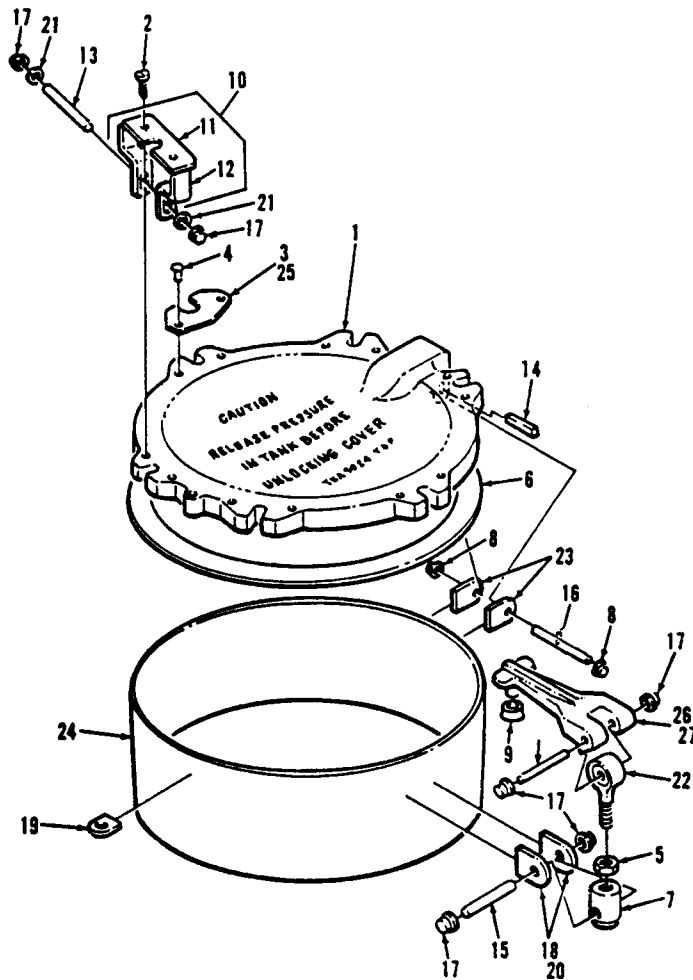


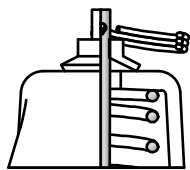
FIG. & INDEX NO.	FRUEHAUF PART NO.	DESCRIPTION	USABLE ON CODE	QTY. REQ.
-	TKB 0562 05	.. MANHOLE ASSEMBLY, 20" Full Opening		1
- 1	TKA 5924 T6	.. COVER, Aluminum 20" Cast Manhole		2
- 2	GM 447827	.. SCREW, Panhead x 3/4" Lg. Cad. Plated		5
- 3	TKA 8242	.. WEAR PLATE, 16 Ga. Steel Cad. Plated		10
- 4	VKA 6606	.. RIVET, 5/32" Dia. x 7/16" Lg.		1
- 5	GM 219758	.. NUT, 3/4"-16 Hex Jam		1
- 6	VKA 5927	.. GASKET, (Rubber, Duro SBR Compound), 3/8" x 20 7/8" O.D. x 19 7/8" I.D.		1
	VKA 5928	.. GASKET, (Neoprene) 3/8" x 20 7/8" O.D. x 19 7/8" I.D.		1
	TKA 8586	.. GASKET, (Non-Toxic White Neoprene), 3/8" x 20 7/8" O.D. x 19 7/8" I.D.		1
- 7	TKA 3222	.. SWIVEL, Cast Iron 3/4"-16 x 1 3/4"		1
- 8	ZKA 2260	.. NUT, 5/16" Push #375011 Palmnut		2
- 9	VKA 3318	.. TIP, Black Stool #152 Atlantic India		1
- 10	TWA 8864-F	.. SAFETY CATCH ASSEMBLY		1
- 11	TKA 0181	.. BAR, 3/16" x 2" wide x 5 5/8" Lg. H.S.L.A.		1
- 12	TKA 0179	.. BAR, 3/16" x 1 1/4" Wide, H.S.L.A.		2
- 13	TKA 8723	.. CLAMP CAM PIN, 1/2" Dia. x 3 1/2" Lg. Std. Cad. Pl.		1
- 14	TKA 7566	.. RUBBER STRIP, 1/4" x 1 1/4" Sq. x 2 3/4" Lg.		1
- 15	TKA 8724	.. SWIVEL PIN, 1/2" Dia. x 3" Lg. Steel Cad. Pl.		5
- 16	TKA 2764	.. HINGE PIN, 5/16" Dia. x 4" Lg. Steel Cad. Pl.		1
- 17	ZKA 2262	.. PUSH NUT, 1/2" #PW 500015 Palmnut		24
* - 18	TKA 0199	.. CLAMP LUG NUT, 1/4" Fabr. H.S.L.A. 1" x 1 1/2"		12
- 19	KB 0757030 23E	.. SEAL CLIP, Fabr. H.S.L.A.		1
* - 20	TKA 0199	.. HINGE LUG ALTERNATE, 1/4" Fabr. H.S.L.A., 1 1/2" x 4 9/16"		2
- 21	GM 120396	.. WASHER, 1/2" Flat S.A.E.		2
- 22	TKA 1214A	.. ROD END, 3/4"-16 x 3 1/2" Lg. Cad. Pl.		1
* - 23	TKA 0199	.. HINGE LUG, 1/4" Fabr. H.S.L.A.		2
** - 24	TKA 0208	.. COLLAR, 1/4" x 6" High x 63 5/8" Lg. H.S.L.A.		1
- 25	TKA 6082	.. WEAR PLATE, 16 Ga. Stn. Std. 304-2B, 2 1/8" x 4" Lg.		5
		(ALTERNATE)		
- 26	TKA 8731	.. CLAMP ASSEMBLY, 3 1/2" Bolt Cad. PL.		6
- 27	TKA 0714	.. CLAMP CASTING		1



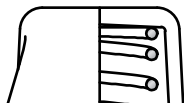
AUTOMATED SAFETY SYSTEM

Part Number	Description
AL1-ST KNAPPCO	Install Kit and Control Box
AL1-ST HEIL	Install Kit and Control Box
AL1-ST FRUEHAUF	Install Kit and Control Box
AL1-ST	Standard Lid Only - No Install Kit or Control Box
AL1-BTS BETTS	Install Kit and Control Box
AL1-BTS	No Install Kit or Control Box

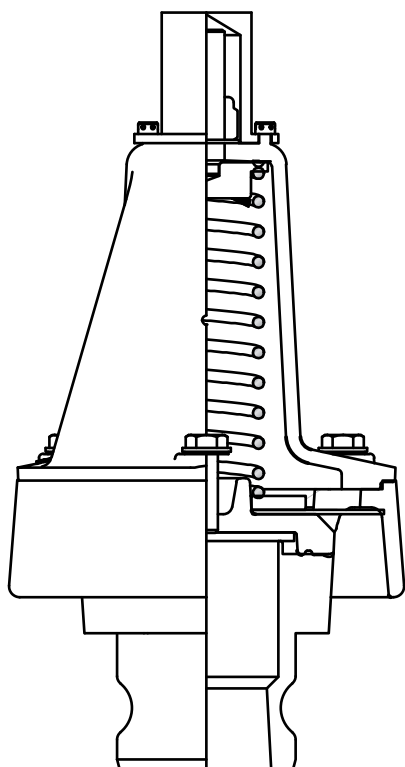
Note: Lid type is determined by Manhole Ring not Trailer Manufacturer



Manual Release



Fixed Pressure Models



Adjustable Models
Shown with Male Cam Lock Fitting

B.T.I. All-in ONE

Pressure Relief Valve

When ordering please specify:

Part Number - Pressure Setting (PSI) - (T)ank or (B)lower

BTRV-2150 - 15 - T

NOTE: Tank and Blower information is used only for accurate pressure setting.

Adjustable Models

Part No.	Inlet
BTRV-2150-#-X	2" Female Thread
BTRV-2350-#-X	2" Male Thread
BTRV-2550-#-X	2" Coupler

Add Required Pressure Setting & (T)ank or (B)lower
eg: BTRV-2150-15-T is a 15 psi Tank Valve

Fixed Pressure Models

Part No.	Inlet
BTRV-2250-#-X	2" Female Thread
BTRV-2450-#-X	2" Male Thread
BTRV-2650-#-X	2" Male Coupler

Add Required Pressure Setting & (T)ank or (B)lower
eg: BTRV-2250-15-T is a 15 psi Tank Valve

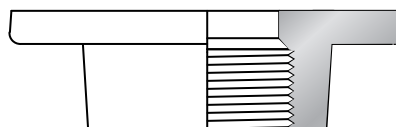
Manual Release Models

Part No.	Inlet
BTRV-2150-MR-#-X	2" Female Thread
BTRV-2350-MR-#-X	2" Male Thread
BTRV-2550-MR-#-X	2" Coupler

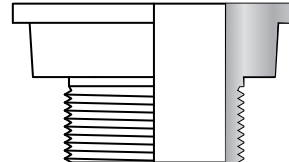
Add Required Pressure Setting & (T)ank or (B)lower
eg: BTRV-2150-MR-15-T is a 15 psi Tank Valve

Also available with:

Female Anodized Thread

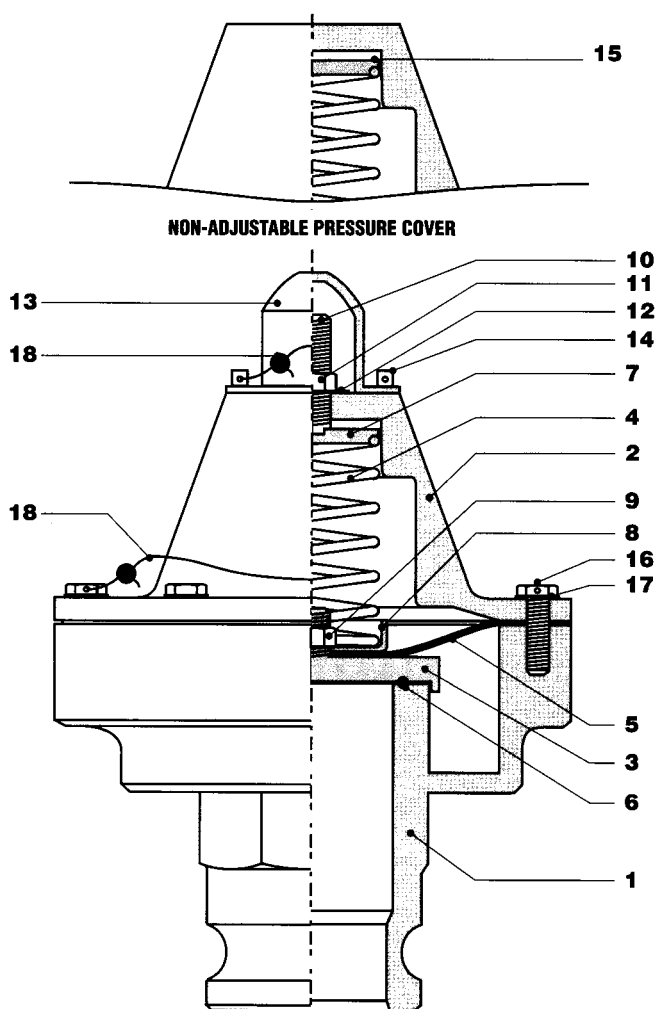


Male Anodized Thread

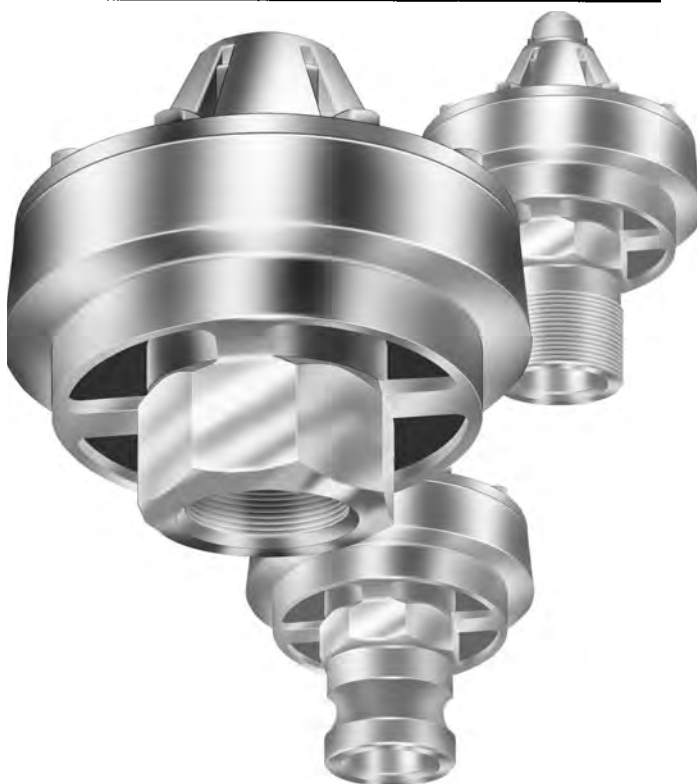
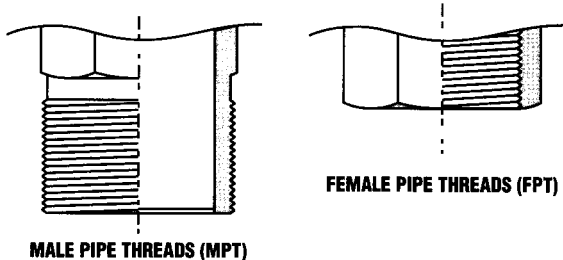




Sure Seal Series 2000 Pressure Relief Valves



ADJUSTABLE PRESSURE COVER, SHOWN WITH QUICK COUPLER (QC)



2" & 3" Available
2" & 3" Vacuum Relief
Also Available

ADJUSTABLE PRESSURE MODELS

Part #	Diaphragm Material	Inlet
RV-2100-#	Standard	2" FPT
RV-2150-#	High Temperature	2" FPT
RV-2300-#	Standard	2" MPT
RV-2350-#	High Temperature	2" MPT
RV-2500-#	Standard	2" QC
RV-2550-#	High Temperature	2" QC

Note- Add required PSI to part number when ordering, (example: RV-2100-15 is 15 PSI Model)

FIXED PRESSURE MODELS

Part #	Diaphragm Material	Inlet
RV-2200-#	Standard	2" FPT
RV-2250-#	High Temperature	2" FPT
RV-2400-#	Standard	2" MPT
RV-2450-#	High Temperature	2" MPT
RV-2600-#	Standard	2" QC
RV-2650-#	High Temperature	2" QC

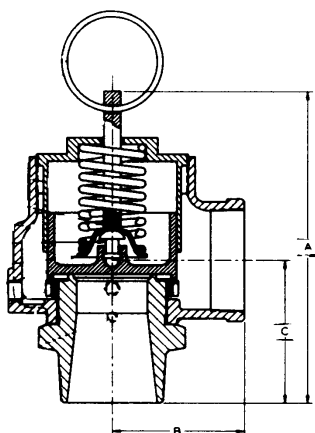
Note- Add required PSI to part number when ordering, (example: RV-2100-15 is 15 PSI Model)

CAST IRON SAFETY VALVES

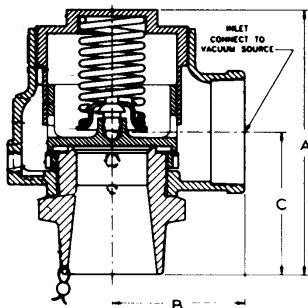
AIR AND VACUUM SERVICE



MODEL 337



MODEL 337



MODEL 215V

PRESSURE LIMITS 337 — 60 PSIG -300°F.

VACUUM LIMITS 215V — 22" HG. -300°F.

APPLICATIONS

- Protection of low to medium pressure high volume blowers, compressors and pneumatic conveying systems.
- Bulk hauling trailers/equipment.
- Light gauge tanks.
- Protection of high volume vacuum pumps and conveying systems.

FEATURES

High capacity full nozzle design. Bronze nozzle, disc and guide with cast iron housing. Flat bronze valve seats are lapped for optimum performance. Warn ring offers easy adjustability for precise opening with minimum preopen or simmer and exact blowdown control. Pivot between disc and spring corrects mis-alignment and compensates for spring side thrust. Model 337 has "pull-ring" lift device for easy manual testing. Every valve 100% tested/inspected for pressure setting, blowdown and leakage. All adjustments are factory sealed to prevent tampering or dis-assembly.

OPTIONS

Stainless steel trim (nozzle and disc).

SPECIFICATIONS

SIZE IN & OUT	A		B	C	WGHT LBS.
	337	215V			
2"	7	6½	3	3¼	8
2½"	8	7½	3½	3¾	14
3"	9	8½	4	4¼	20

CAPACITIES

SCFM Air, 60°F, 10% Accumulation

Set Pressure PSIG	MODEL 337			Set Inches Mercury	MODEL 215V		
	2"	2½"	3"		2"	2½"	3"
5	527	799	1157	1	140	213	308
10	743	1127	1632	2	217	329	477
15	903	1368	1982	3	264	400	579
20	1062	1609	2331	4	299	453	657
25	1221	1850	2680	5	331	501	726
30	1380	2091	3029	6	352	533	772
35	1539	2332	3379	7	372	564	817
40	1698	2573	3728	8	391	592	858
45	1857	2814	4076	9	403	610	884
50	2017	3055	4428	10	413	625	906
60	2335	3537	5125	12	424	642	930
				12.8 to 22	426	646	935

MODEL NUMBER/ORDER GUIDE

MODEL NO. POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EXAMPLE	2	1	5	V	-	H	0	1	-	Q	E				
	0	3	3	7											

INLET SIZE
H — 2"
J — 2½"
K — 3"

VARIATION (01 thru 99)
Number Provided Only by Manufacturer to Cover Specific Feature or Option.

DESIGN REVISION
Indicates Non-Interchangeable Revision. Dash (-) If Original Design.

SET PRESSURE
Models 337 2 PSIG (0002) thru 60 PSIG (0060)
Model 215V 1" HG (Inches of Mercury) (0001) thru 22" HG (0022) Vacuum

SPRING MATERIAL
E-Stainless (302)

VALVE SERVICE
K-Air ASME Sec VIII (Model 337 Only)
Q-Vacuum (Model 215V Only)

ASME Standard



N.B. Certified



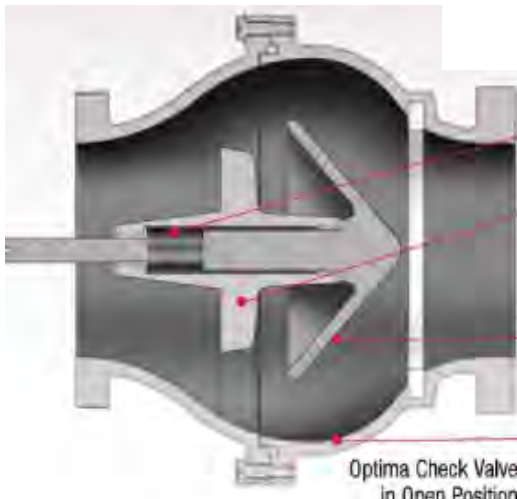
Bulk Tank Inc.



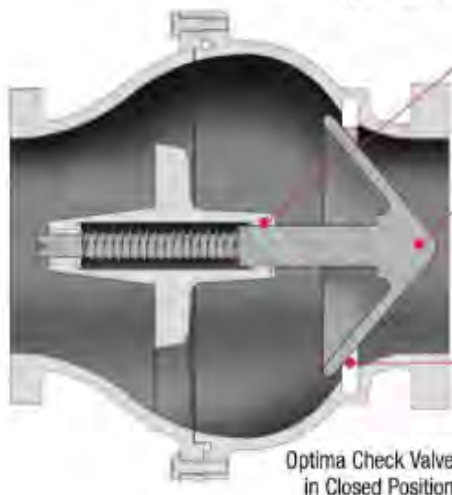
3" & 4" OPTIMA CHECK VALVES

3" Check Valves	
3" - FLANGED	
Part #	Part Description
BTCV3012	Without Spring
BTCV3022	With Spring
3" - THREADED	
Part #	Part Description
BTCV3012T	Without Spring
BTCV3022T	With Spring

4" Check Valves	
4" - FLANGED	
Part #	Part Description
BTCV4012	Without Spring
BTCV4022	With Spring
4" BLOWER CHECK VALVE - FLANGED	
BTCV4090	With Spring
4" BLOWER CHECK VALVE - CAM LOCK	
BTCV4090MCL3	Without Spring - 3" Cam Lock
BTCV4090MCL4	Without Spring - 4" Cam Lock
BTCV4090MCL3S	With Spring - 3" Cam Lock
BTCV4090MCL4S	With Spring - 4" Cam Lock



Optima Check Valve
in Open Position



Optima Check Valve
in Closed Position

Coil Spring - Tested to provide over twice the cycling life as a conventional torsion spring.

Spring Housing - Protects your load from being contaminated from a broken spring, a common problem with torsion springs and lift check valves on the market today.

Fewer Internal Parts - Fewer parts means lighter weight and less risk of parts contaminating material being conveyed.

Bell Housing Design - Provides more open area which results in less back pressure than a standard horizontal check valve.

Guide Bushings - Bushing stops poppet from opening too far and choking flow or damaging spring. Both bushings are located on same side of poppet to limit flow obstruction.

Conical Aluminum Poppet - Conical design allows for smooth air flow and less turbulence. Poppet is hard anodized to decrease wear and lightweight for fast response. Its one-piece construction has no fasteners to loosen and contaminate down stream flow.

Molded Gasket Seat - Seals conical surface of seat to conical surface of poppet.



3" Aluminum Swing Check Valve

Ordering Specifications

Part Number	Description
VC3011FG	3" Flanged with EPDM poppet
VC3011FG-LK	3" Flanged with EPDM poppet, seal kit
VC3021	3" Flanged with EPDM poppet, spring loaded
VC3012	3" Flanged with Silicone poppet
VC3022	3" Flanged with Silicone poppet, spring loaded

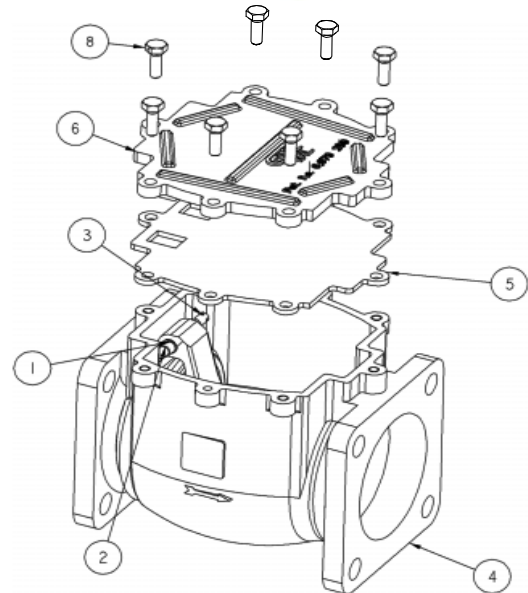


SureSeal VC3012 Check Valve Parts List

Item #	Name	Material	Quantity
1	3-CV-Bushing	PTFE	2
2	3-CV-Pin-R	A303 - SS	1
3	3-CV-Pin-L	A303 - SS	1
4	3-CV-A-Body	Aluminum 356-T6	1
5	3-CV-A-Gasket	White Silicone-FDA	1
6	3-CV-A-Lid	Aluminum 356-T6	1
7	3-CV-A-POPPE-T-S	Silicone Poppet	1
8	Z-1/4 - 20x3/4-BW	Zinc Plated Steel	8

Flapper Assembly Kits

Spring Loaded	KITVC312S
Non-spring Loaded	KITVC312N

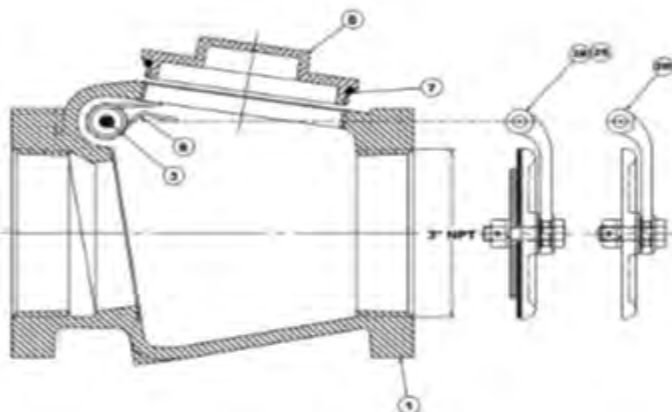


Bayco 3000 Series 3" Swing Check Valves

3000 Threaded and 3001 Square Flange Units

Bill of Materials

Item #	Description	Part #	Qty
1	swing check body	---	1
2M	valve flapper assembly with metal seal	use kit 300-SPK	1
2B	valve flapper assembly with Buna seal	use kit 300-BSPK	1
2S	valve flapper assembly with Silicone seal	use kit 300-SSPK	1
3	shaft	3000-4	1
4	shaft nut	3000-5	2
5	clean out cap	363000-10	1
6	spring (for units with spring return flapper)	SPRG/L4603	1
7	clean out cap O-ring seal	O-RINGAS238	1



Repair Kits

Part #	Description	Includes item #s
300-SSPK	silicone seal flapper assembly, shaft, nuts, flapper spring and clean out cap O-ring seal	2S, 3, 4, 6, 7
300-SK	silicone seal flapper assembly, shaft, nuts and clean out cap O-ring seal	2S, 3, 4, 7
300-BSPK	buna seal flapper assembly, shaft, nuts, flapper spring and clean out cap O-ring seal	2B, 3, 4, 6, 7
300-BK	buna seal flapper assembly, shaft, nuts and clean out cap O-ring seal	2B, 3, 4, 7
300-SPK	metal seal flapper assembly, shaft, nuts, flapper spring and clean out cap O-ring seal	2M, 3, 4, 6, 7
300-K	metal seal flapper assembly, shaft, nuts and clean out cap O-ring seal	2M, 3, 4, 7

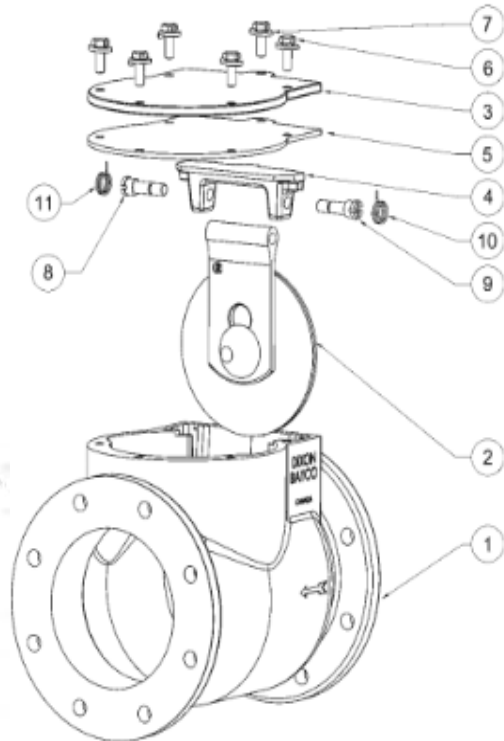
3030 Series 3" Swing Check Valve

(square flange; round flange; threaded end)

Item No.	Description	Part #	Qty
1	Body	341598	1
2	Flap valve yoke	341595	1
3	Flapper valve assembly	400614	1
4	Right hand shaft	390798	1
5	Left hand shaft	390799	1
6	Left hand spring	111935	1
7	Right hand spring	111934	1
8	Gasket	111932	1
9	Top cap	341611	1
10	Hex head bolt	111931	6
11	Washer lock	110928	6

Repair Kits

Part #	Description	Item #'s
3030RK1	Flapper assembly, lid gasket, yoke, shafts and springs	2, 3, 4, 5, 6, 7, 8
3030RK2	Flapper assembly, lid gasket, lid hardware, yoke, shafts and springs	2, 3, 4, 5, 6, 7, 8, 9, 10, 11
3030RK3	Left and right spring	6, 7
3030SK	Two drilled bolts and wire seal	



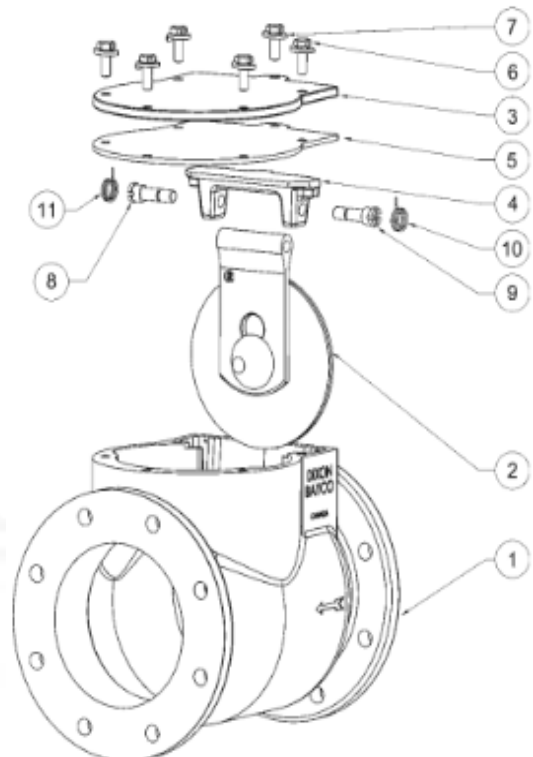
4040 Series 4" Swing Check Valve

(round flange; threaded end)

Item No.	Description	Part #	Qty
1	Body	340033	1
2	Flapper assembly	400631	1
3	Top cap	340039	1
4	Flap valve yoke	341595	1
5	Gasket	111215	1
6	Bolt	111931	6
7	Washer	110928	6
8	Shaft left hand	390799	1
9	Shaft right hand	390798	1
10	Spring right hand	111935	1
11	Spring left hand	111934	1

Repair Kits

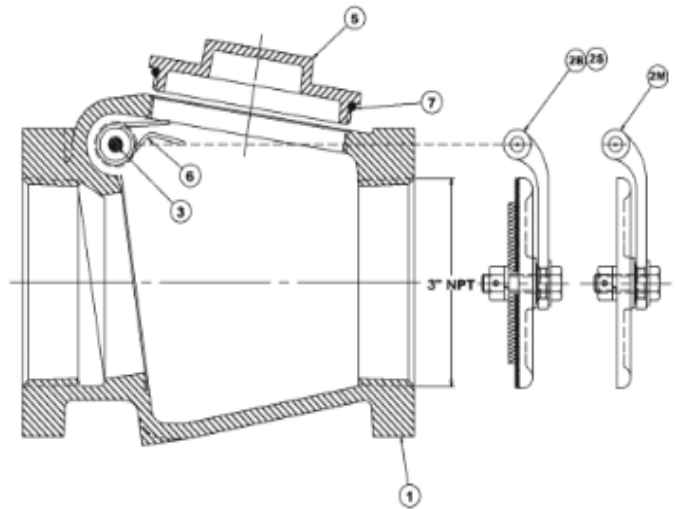
Part #	Description	Item #'s
4040RK1	Flapper assembly, lid gasket, yoke, shafts and springs	2, 4, 5, 8, 9, 10, 11
4040RK2	Flapper assembly, lid gasket, yoke, shafts and springs	2, 3, 4, 5, 6, 7, 8, 9, 10, 11
3030RK3	Left and right spring	10, 11
3030SK	Two drilled bolts and seal wire	



3000TE Series 3" Swing Check Valve

(threaded ends)

Item No.	Description	Part #	Qty
1	Body	3000TE-1	1
2M	Valve assembly - metal	3000-9M	1
2B	Valve assembly - Buna	3000-9B	1
2S	Valve assembly - Silicone	3000-9S	1
3	Shaft	3000-4	1
4	Shaft nuts	3000-5	2
5	Clean out	36 3000-10	1
6	Spring	SPRING/L4603	1
7	Seal	O-RING-AS-238	1



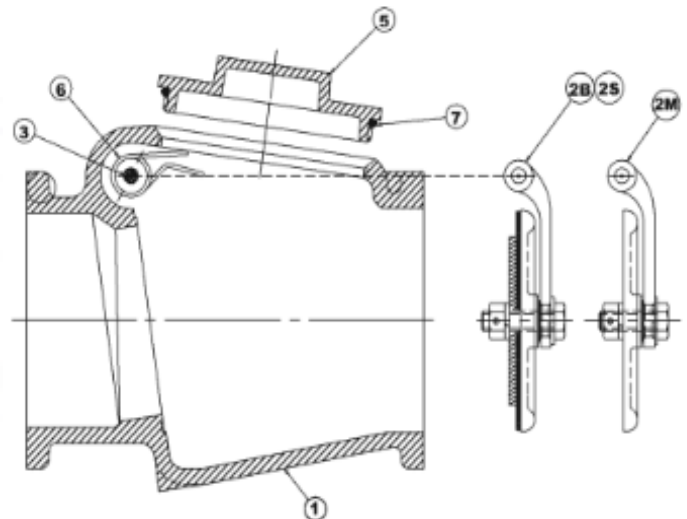
Repair Kits

Part #	Description	Item #'s
300-SSPK	Valve assembly w/ silicone seal, shaft, shaft nuts, spring, seal	2S, 3, 4, 6, 7
300-BSPK	Valve assembly w/ buna seal, shaft, shaft nuts, spring, seal	2B, 3, 4, 6, 7
300-SPK	Valve assembly w/ metal seal, shaft, shaft nuts, spring, seal	2M, 3, 4, 6, 7
300-SK	Valve assembly w/ silicone seal, shaft, shaft nuts, seal	2S, 3, 4, 7
300-BK	Valve assembly w/ buna seal, shaft, shaft nuts, seal	2B, 3, 4, 7
300-K	Valve assembly w/ metal seal, shaft, shaft nuts, seal	2M, 3, 4, 7

3001SQ Series 3" Swing Check Valve

(square flanged)

Item No.	Description	Part #	Qty
1	Body	3000SQ-1	1
2M	Valve assembly - metal	3000-9M	1
2B	Valve assembly - Buna	3000-9B	1
2S	Valve assembly - Silicone	3000-9S	1
3	Shaft	3000-4	1
4	Shaft nuts	3000-5	2
5	Clean out	36 3000-10	1
6	Spring	SPRING/L4603	1
7	Seal	O-RING-AS-238	1



Repair Kits

Part #	Description	Item #'s
300-SSPK	Valve assembly w/ silicone seal, shaft, shaft nuts, spring, seal	2S, 3, 4, 6, 7
300-BSPK	Valve assembly w/ buna seal, shaft, shaft nuts, spring, seal	2B, 3, 4, 6, 7
300-SPK	Valve assembly w/ metal seal, shaft, shaft nuts, spring, seal	2M, 3, 4, 6, 7
300-SK	Valve assembly w/ silicone seal, shaft, shaft nuts, seal	2S, 3, 4, 7
300-BK	Valve assembly w/ buna seal, shaft, shaft nuts, seal	2B, 3, 4, 7
300-K	Valve assembly w/ metal seal, shaft, shaft nuts, seal	2M, 3, 4, 7



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BLACKMAXX BUTTERFLY VALVE

Allo Maxx Disc & Maxxlife Seat

Part Number	Description
3B-795-501	3" BlackMaxx Body, AlloMaxx Disc & Maxxlife Seat
4B-795-501	4" BlackMaxx Body, AlloMaxx Disc & Maxxlife Seat
5B-795-501	5" BlackMaxx Body, AlloMaxx Disc & Maxxlife Seat
6B-795-501	6" BlackMaxx Body, AlloMaxx Disc & Maxxlife Seat

Allo Maxx Disc & Buna Seat

Part Number	Description
3B-795-530	3" BlackMaxx Body, AlloMaxx Disc & Buna Seat
4B-795-530	4" BlackMaxx Body, AlloMaxx Disc & Buna Seat
5B-795-530	5" BlackMaxx Body, AlloMaxx Disc & Buna Seat
6B-795-530	6" BlackMaxx Body, AlloMaxx Disc & Buna Seat

Stainless Disc & Maxxlife Seat

Part Number	Description
3B-790-501	3" BlackMaxx Body, Stainless Disc & Maxxlife Seat
4B-790-501	4" BlackMaxx Body, Stainless Disc & Maxxlife Seat
5B-790-501	5" BlackMaxx Body, Stainless Disc & Maxxlife Seat
6B-790-501	6" BlackMaxx Body, Stainless Disc & Maxxlife Seat

Ductile Disc & Maxxlife Seat

Part Number	Description
3B-600-500	3" BlackMaxx Body, Ductile Disc & Maxxlife Seat
4B-600-500	4" BlackMaxx Body, Ductile Disc & Maxxlife Seat
5B-600-500	5" BlackMaxx Body, Ductile Disc & Maxxlife Seat
6B-600-500	6" BlackMaxx Body, Ductile Disc & Maxxlife Seat

Ductile Disc & Buna Seat

Part Number	Description
3B-600-530	3" BlackMaxx Body, Ductile Disc & Buna Seat
4B-600-530	4" BlackMaxx Body, Ductile Disc & Buna Seat
5B-600-530	5" BlackMaxx Body, Ductile Disc & Buna Seat
6B-600-530	6" BlackMaxx Body, Ductile Disc & Buna Seat



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MAXXLIFE BUTTERFLY VALVE

Allomaxx Disc & Maxxlife Seat

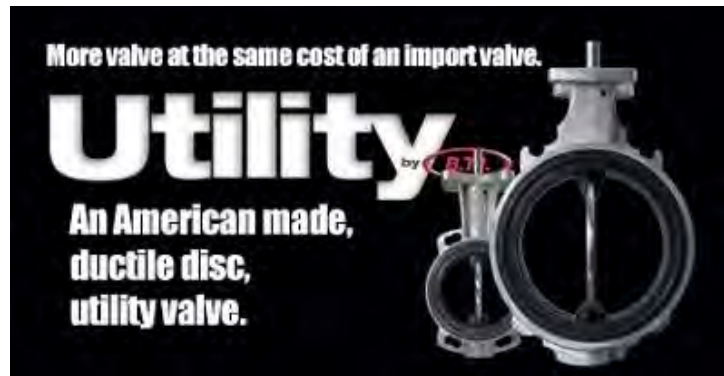
Part Number	Description
2-795-501	2" Maxxlife Body, Allomaxx Disc & Maxxlife White Seat
3-795-501	3" Maxxlife Body, Allomaxx Disc & Maxxlife White Seat
4-795-501	4" Maxxlife Body, Allomaxx Disc & Maxxlife White Seat
5-795-501	5" Maxxlife Body, Allomaxx Disc & Maxxlife White Seat
6-795-501	6" Maxxlife Body, Allomaxx Disc & Maxxlife White Seat

Stainless Disc & Maxxlife Seat

Part Number	Description
3-790-501	3" Maxxlife Body, Stainless Disc & Maxxlife White Seat
4-790-501	4" Maxxlife Body, Stainless Disc & Maxxlife White Seat
5-790-501	5" Maxxlife Body, Stainless Disc & Maxxlife White Seat
6-790-501	6" Maxxlife Body, Stainless Disc & Maxxlife White Seat
8-790-501	8" Maxxlife Body, Stainless Disc & Maxxlife White Seat

Ductile Disc & Maxxlife Seat

Part Number	Description
2-600-500	2" Maxxlife Body, Ductile Disc & Maxxlife Black Seat
3-600-500	3" Maxxlife Body, Ductile Disc & Maxxlife Black Seat
4-600-500	4" Maxxlife Body, Ductile Disc & Maxxlife Black Seat
5-600-500	5" Maxxlife Body, Ductile Disc & Maxxlife Black Seat
6-600-500	6" Maxxlife Body, Ductile Disc & Maxxlife Black Seat
8-600-500	8" Maxxlife Body, Ductile Disc & Maxxlife Black Seat



UTILITY BUTTERFLY VALVE

Allomaxx Disc & Buna Seat

Part Number	Description
2-795-530	2" Aluminum Body, Allomaxx Disc & Buna Seat
3-795-530	3" Aluminum Body, Allomaxx Disc & Buna Seat
4-795-530	4" Aluminum Body, Allomaxx Disc & Buna Seat
5-795-530	5" Aluminum Body, Allomaxx Disc & Buna Seat
6-795-530	6" Aluminum Body, Allomaxx Disc & Buna Seat

Stainless Disc & Buna Seat

Part Number	Description
3-790-531	3" Aluminum Body, Stainless Disc & Buna Seat
4-790-531	4" Aluminum Body, Stainless Disc & Buna Seat
5-790-531	5" Aluminum Body, Stainless Disc & Buna Seat
6-790-531	6" Aluminum Body, Stainless Disc & Buna Seat
10-790-531	10" Aluminum Body, Stainless Disc & Buna Seat

Ductile Disc & Buna Seat

Part Number	Description
2-600-530	2" Aluminum Body, Ductile Disc & Buna Seat
3-600-530	3" Aluminum Body, Ductile Disc & Buna Seat
4-600-530	4" Aluminum Body, Ductile Disc & Buna Seat
5-600-530	5" Aluminum Body, Ductile Disc & Buna Seat
6-600-530	6" Aluminum Body, Ductile Disc & Buna Seat
8-600-530	8" Aluminum Body, Ductile Disc & Buna Seat
10-600-530	10" Aluminum Body, Ductile Disc & Buna Seat

BUTTERFLY HANDLE CONVERSION CHART



Bulk Tank Inc.

SIZE	VALVE MANF.	STYLE	HANDLE PART #
3"	BTI	STEEL	400-250-4610
		ALUM OFFSET	HD700-207-4610
4-6"		STEEL	400-250-610
		ALUM OFFSET	HD700-207-610



STEEL



ALUMINUM
OFFSET



SIZE	VALVE MANF.	STYLE	HANDLE PART #
2-3"	SURE SEAL	STEEL	400-250-23-10
4-6"			400-250-46-10
6" 890 SERIES			400-250-610
2-6" 345 SERIES			400-250-46-10



STEEL

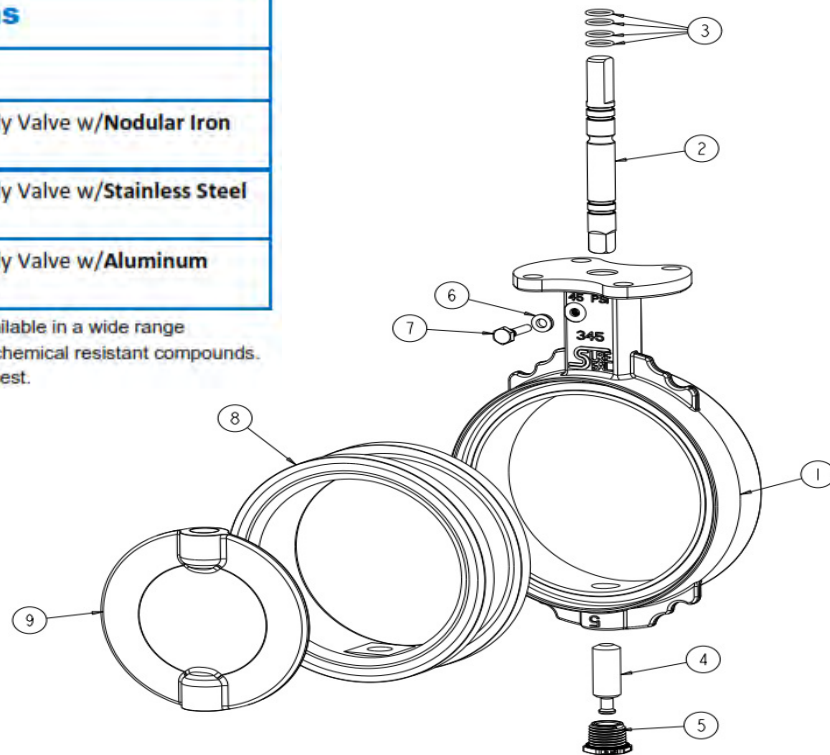


345 Butterfly Valve

Ordering Specifications

Part Number	Description
X-345-001700	345 Series Butterfly Valve w/ Nodular Iron Disc
X-345-002700	345 Series Butterfly Valve w/ Stainless Steel Disc
X-345-006700	345 Series Butterfly Valve w/ Aluminum Bronze Alloy Disc

X=Disc Size in Inches (2" to 6"). Seats available in a wide range of materials including FDA approved and chemical resistant compounds. Handles available and attached upon request.



PARTS BREAK DOWN

	2"	3"	4"	5"	6"
1 345 ALUMINUM HOUSING	2-345-206	3-345-206	4-345-206	5-345-206	6-345-206
2 TOP STEM	2-3-345-TS	2-3-345-TS	4-6-345-TS	4-6-345-TS	4-6-345-TS
3 O-RING BUNA-N	12442	12442	12442	12442	12442
4 BOTTOM STEM	2-3-345-BS	2-3-345-BS	4-6-345-BS	4-6-345-BS	4-6-345-BS
5 PLUG, VALVE STEM	2-6-PPLG	2-6-PPLG	2-6-PPLG	2-6-PPLG	2-6-PPLG
6 SEAL WASHER	12477	12477	12477	12477	12477
7 TOP STEM RETAINING PIN	2-6-345-STEM-PIN	2-6-345-STEM-PIN	2-6-345-STEM-PIN	2-6-345-STEM-PIN	2-6-345-STEM-PIN
8 SEAT (SEE CHART BELOW)	2-500-522XXX	3-500-522XXX	4-500-522XXX	5-500-522XXX	6-500-522XXX
9 DISC (SEE CHART BELOW)	2-300-322XXX	3-300-522XXX	4-300-322XXX	5-300-322XXX	6-300-322XXX

SEAT CHART MATERIAL

BLACK NITRILE	WHITE NITRILE	EPDM	VITON	SILICONE	TEFLON
X-500-522700	X-500-522701	X-500-522515	X-500-522540	X-500-522561	X-500-522650

*NOTE -(X) = VALVE SIZE

DISC CHART MATERIAL

NODULAR IRON	STAINLESS STEEL	NYLON COATED	ALUMINUM BRONZE
X300-322237	X-300-322209	X-300-322207U	X-300-322203

*NOTE -(X) = VALVE SIZE



UNITORQ ACTUATORS



DOUBLE ACTING ACTUATOR

PART NUMBER	DESCRIPTION
I-75DA	2", 3", 4" DOUBLE ACTING ACTUATOR
I-105DA	5", 6" DOUBLE ACTING ACTUATOR
I-157DA	4", 5", 6" EXCESSIVE TORQUE DOUBLE ACTING ACTUATOR
I-237DA	8" DOUBLE ACTING ACTUATOR
I-331DA	10" DOUBLE ACTING ACTUATOR

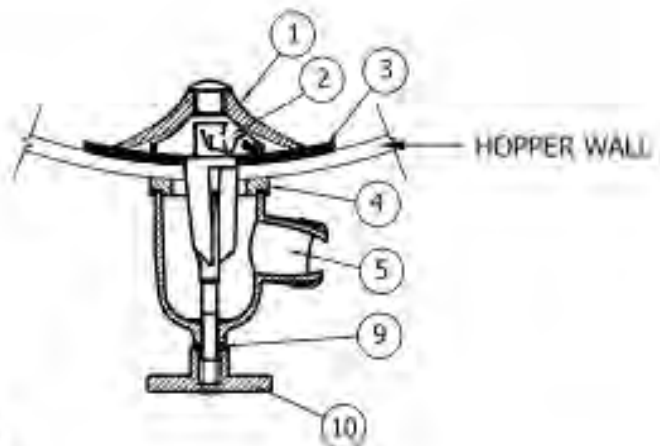
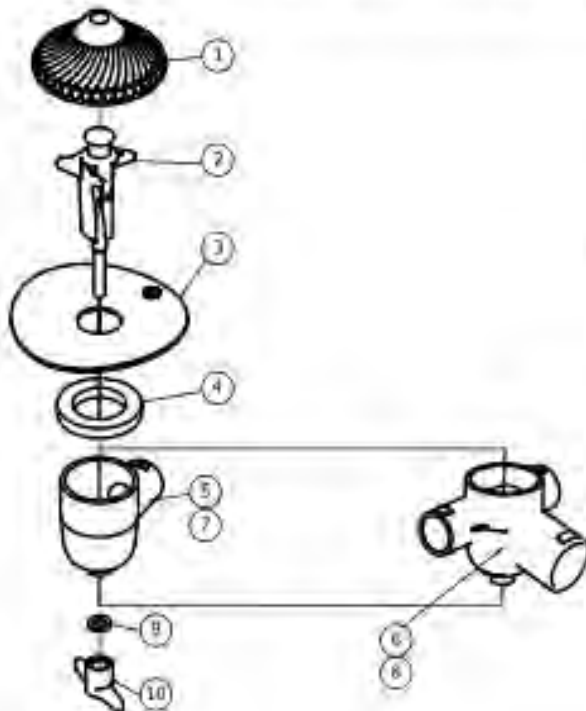
AIR OPEN SPRING RETURN ACTUATOR

PART NUMBER	DESCRIPTION
I-75-55-S	2", 3" AIR OPEN SPRING RETURN ACTUATOR
I-105-55-S	4", 5" AIR OPEN SPRING RETURN ACTUATOR
I-157-55-S	4", 5", 6" EXCESSIVE TORQUE AIR OPEN SPRING RETURN ACTUATOR
I-237-55-S	6" AIR OPEN SPRING RETURN ACTUATOR
I-331-55-S	8", 10" AIR OPEN SPRING RETURN ACTUATOR

SPIN FLOW AERATOR LIST

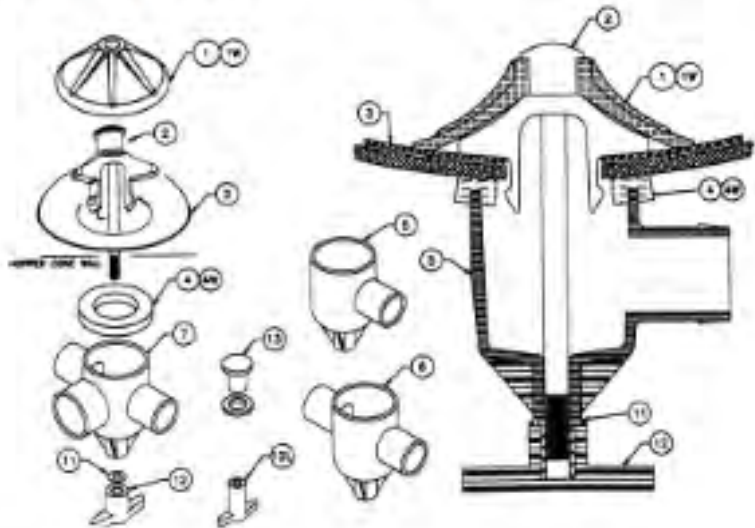


ITEM NO.	PART NO.	DESCRIPTION
1	A204	AERATOR RUBBER, BLUE SILICONE - FOOD GRADE
2	A205	AERATOR STEM
3	A207	WEAR PLATE W/GASKET, STAINLESS STEEL, CLEAR SILICONE
4	A208	PORT HOUSING GASKET, BLUE SILICONE - FOOD GRADE
5	A211	1 PORT AERATOR HOUSING (NATURAL)
6	A213	3 PORT AERATOR HOUSING (NATURAL)
7	A211C	1 PORT AERATOR HOUSING (CLEAR)
8	A213C	3 PORT AERATOR HOUSING (CLEAR)
9	A215	TEE HANDLE GASKET
10	A210	AERATOR TEE HANDLE
	A216	HOPPER PLUG W/GASKET
	A299	INSIDE AERATOR ASSEMBLY - ITEMS: 1 & 2
	A200	INSIDE AERATOR ASSEMBLY W/WEAR PLATE - ITEMS: 1, 2 & 3
	A221	1 PORT COMPLETE ASSEMBLY NATURAL - ITEMS: 1, 2, 4, 5, 9 & 10
	A223	3 PORT COMPLETE ASSEMBLY NATURAL - ITEMS: 1, 2, 4, 7, 9 & 10
	A201	1 PORT COMPLETE ASSEMBLY NATURAL W/WEAR PLATE - ITEMS: 1, 2, 3, 4, 5, 9 & 10
	A203	3 PORT COMPLETE ASSEMBLY NATURAL W/WEAR PLATE - ITEMS: 1, 2, 3, 4, 7, 9 & 10
	A221C	1 PORT COMPLETE ASSEMBLY CLEAR - ITEMS: 1, 2, 4, 5, 9 & 10
	A223C	3 PORT COMPLETE ASSEMBLY CLEAR - ITEMS: 1, 2, 4, 7, 9 & 10
	A201C	1 PORT COMPLETE ASSEMBLY CLEAR W/WEAR PLATE - ITEMS: 1, 2, 3, 4, 6, 9 & 10
	A203C	3 PORT COMPLETE ASSEMBLY CLEAR W/WEAR PLATE - ITEMS: 1, 2, 3, 4, 8, 9 & 10


















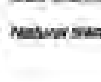






SURE FLO AERATOR SYSTEM



ITEM	PART #	DESCRIPTION
1	A104	Rubber Aerator, blue silicone - food grade
1W	AW104	Rubber Aerator, white silicone - food grade
2	A105	Aerator Housing, grey with stainless stem
3	A107	Aerator Stainless Steel Wear Plate, clear silicone
4	A108	Aerator Port Housing gasket, blue silicon - food grade
4W	AW108	Aerator Port Housing gasket, white silicon - food grade
5	A111	Aerator Port Housing, 1- port grey
6	A112	Aerator Port Housing, 2- port grey
7	A113	Aerator Port Housing, 3- port grey
8	A111C	Aerator Port Housing, 1- port Sure View, clear
9	A112C	Aerator Port Housing, 2- port Sure View, clear
10	A113C	Aerator Port Housing, 3- port Sure View, clear
11	A115	Aerator Tee Handle Gasket
12	A110	Aerator External Tee Handle, for use with Sure Flo, Solimar and Fruehauf Port Housings
12L	A110L	Aerator External Tee Handle, for use with Heil and Polar Housings
13	A116	Hopper Plug with gasket
	A99	Inside Aerator Assembly.....1, 2
	A100	Inside Aerator Assembly with wearplate.....1, 2, 3
	A121	1 - Port Complete Assembly Grey.....1, 2, 4, 5, 11, 12
	A122	2 - Port Complete Assembly Grey.....1, 2, 4, 6, 11, 12
	A123	3 - Port Complete Assembly Grey.....1, 2, 4, 7, 11, 12
	A101	1 - Port Complete Assembly Grey with wearplate.....1, 2, 3, 4, 5, 11, 12
	A102	2 - Port Complete Assembly Grey with wearplate.....1, 2, 3, 4, 6, 11, 12
	A103	3 - Port Complete Assembly Grey with wearplate.....1, 2, 3, 4, 7, 11, 12
	A121C	1 - Port Complete Assembly Sure View, clear.....1, 2, 4, 8, 11, 12
	A122C	2 - Port Complete Assembly Sure View, clear.....1, 2, 4, 9, 11, 12
	A123C	3 - Port Complete Assembly Sure View, clear.....1, 2, 4, 10, 11, 12
	A101C	1 - Port Complete Assembly Sure View, clear with wearplate.....1, 2, 3, 4, 8, 11, 12
	A102C	2 - Port Complete Assembly Sure View, clear with wearplate.....1, 2, 3, 4, 9, 11, 12
	A103C	3 - Port Complete Assembly Sure View, clear with wearplate.....1, 2, 3, 4, 10, 11, 12



AERATION SYSTEM

PART #	DESCRIPTION
 4124	Disk, blue silicone-food grade.....
 4134	Disk, natural silicone-food grade
 4125	Stem, grey, brass insert
 4135	Stem, natural, stainless insert.....
 4155	Stem, aluminum
 4126	Hopper Saver, black EPDM.....
 4146	Hopper Saver, black EPDM 2" opening
 4127	Manifold Gasket, blue silicone-food grade
 4137	Manifold Gasket, natural silicone-food grade.....
 4121	Manifold, 1-port grey.....
 4122	Manifold, 2-port grey.....
 4123	Manifold, 3-port grey.....
 4621	Manifold, 1-port clear.....
 4622	Manifold, 2-port clear.....
 4623	Manifold, 3-port clear.....
 4129	Tee-handle Assembly, stainless
 4130	*Raised Tee-handle Assembly
 4139	Bolt Assembly, hex, stainless.....
 4149	Bolt Assembly, Socket head, (internal hex)
 4159	Bolt Assembly, T.L.R., stainless



DISK

- 1 Blue silicone
- 2 Natural silicone



STEM

- 1 Grey, Brass insert
- 2 Natural, Stainless insert
- 3 Aluminum Stem



HOPPER SAVERS

- 1 Black EPDM
- 2 Black EPDM, 2" opening
- 3 None



MANIFOLD GASKETS

- 1 Blue Silicone
- 2 Natural silicone



MANIFOLDS

- 1 1-Port grey
- 2 2-Port grey
- 3 3-Port grey
- 4 1-Port clear
- 5 2-Port clear
- 6 3-Port clear



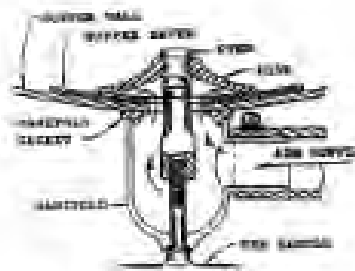
FASTENERS

- 1 Tee-handle Assy
- 2 Hex Bolt Assy
- 3 Socket head Assy (internal hex)
- 4 T.L.R. Assy

Example:

If you order #129131
You have ordered:

- 1" Disk - Blue Silicone
- 2" Stem - Natural, Stainless insert
- 1" Hopper Saver - Black EPDM
- 1" Manifold Gasket - Blue Silicone
- 2" Manifold - 1-Port grey
- 1" Tee-handle Assy



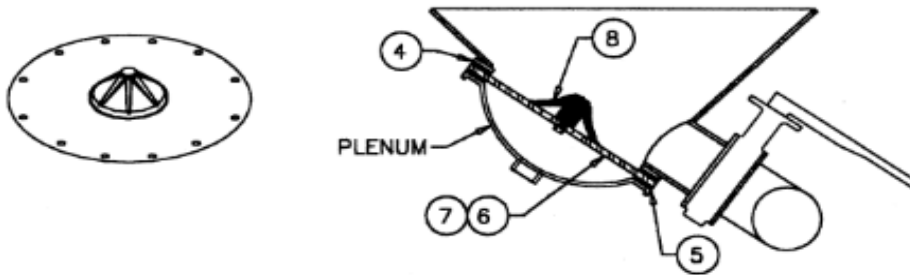


STAINLESS STEEL AND CARBON STEEL

GRAVITY OUTLET PLATE

10" PLATE - 13" O.D.

FOR FRUEHAUF TRAILERS



SECTION VIEW OF
HOPPER BOOT

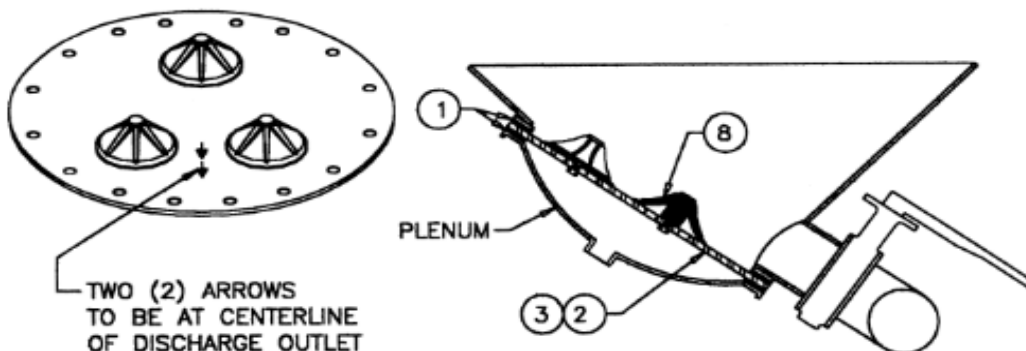
Item	Description	Fruehauf	Solimar	Sure Seal
1	Neoprene Gasket 20" O.D.	TKA 8557	5012	A322
2	20" Stainless Steel Aerator Plate 16" I.D. (Includes 3 Aerator rubbers)	TKG 2108-2	5050	AS3200
3	20" Carbon Steel Aerator Plate 16" I.D. (Includes 3 Aerator rubbers)	TKG 2108-4	5052	A3200
4	Neoprene Gasket-Upper Thickness 1/4" 13" O.D., 9 3/4" I.D.	VKA 8375	5018	A310U
5	Neoprene Gasket-Lower Thickness 1/8" 13" O.D., 9 3/4" I.D.	VKA 7421	5017	A310B
6	10" Carbon Steel Aerator Plate 13" O.D. (Includes 1 Aerator rubber)	TKG 2108-3	5053	A3100
7	10" Stainless Steel Aerator Plate 13" O.D. (Includes 1 Aerator rubber)	TKG 2108-1	5051	AS3100
8	Sure Flo Aerator Rubber (Blue)	TKG 0639-1	4124	A104

STAINLESS STEEL AND CARBON STEEL

20" PLATE - 16" I.D.

FOR FRUEHAUF TRAILERS

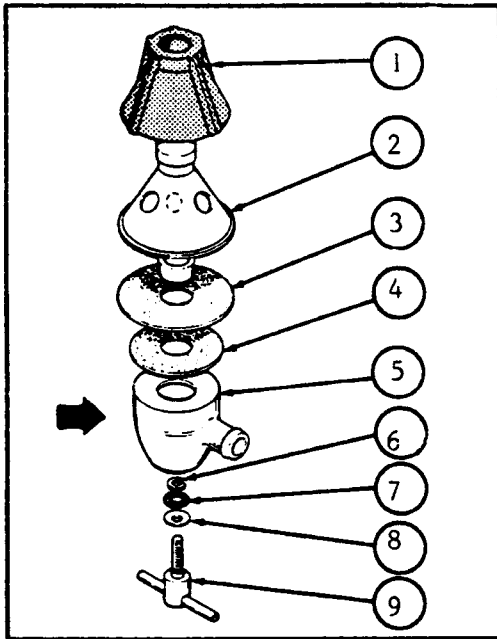
Replaces Fabric Pads, 311 Aluminum Aerator Plate or Solimar Aerator Plate



SECTION VIEW OF
HOPPER BOOT

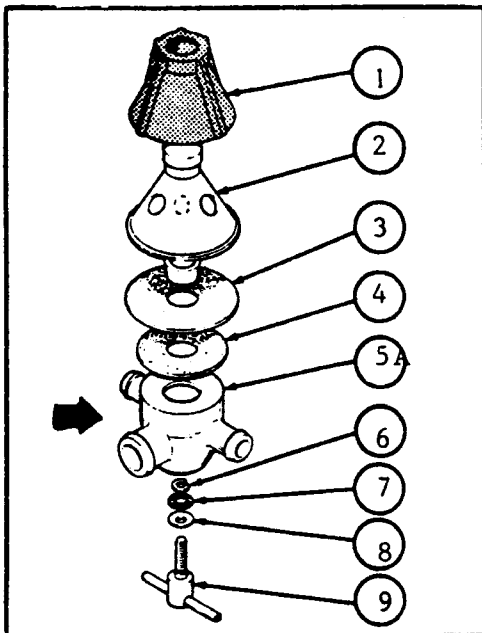
Heil/Butler Aeration System

1 PORT ASSY. 77P901617



REF. NO.	PART NO.	DESCRIPTION
1	903261.....	AERATION CONE (blue)
2	910210.....	AERATION CASTING
3	910213.....	CASTING GASKET (blue)
4	315731.....	MANIFOLD GASKET
5	315724.....	1 PORT MANIFOLD
5A	315730.....	3 PORT MANIFOLD
6	310277.....	E. CLIP
7	315726.....	HANDLE GASKET
8	310275.....	WAVE WASHER
9	315737.....	TEE HANDLE (s/s)

3 PORT ASSY. 77P901616



Aeration Hose

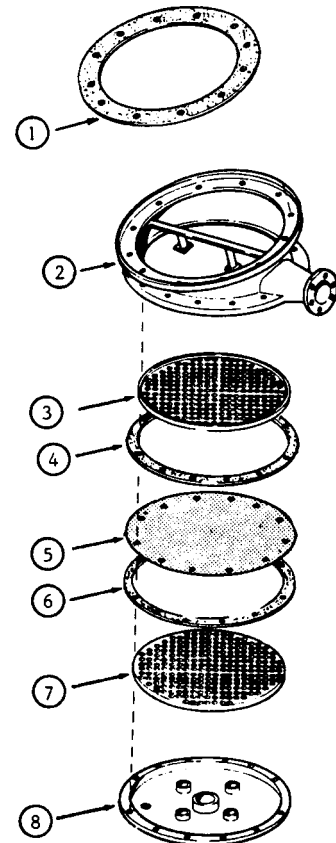
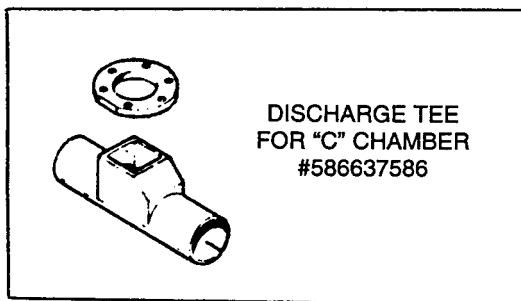
1" - AH1

1 1/2" - AH112

2" - AH2

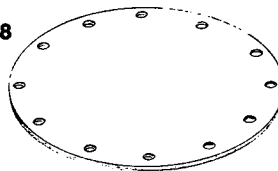
Heil "C" Chamber Aeration Assembly (STEEL)

REF. NO.	PART NO.	DESCRIPTION
1	222906.....	UPPER CHAMBER GASKET
2	948151.....	AERATION CHAMBER
3	775789.....	AERATION SCREEN
4	222919.....	AERATION PAD GASKET
5	141295.....	AERATION PAD
6	222919.....	AERATION PAD GASKET
7	775789.....	AERATION SCREEN
8	103863.....	LOWER CHAMBER COVER



Fruehauf Aeration Pad and Gasket

TKA 8808



O.D. 19 5/8
Holes 16
Hole Dia. 9/16
B.C. 18 1/8

TKA 8807 - 13" AERATION PAD
VKA 7421 - 1/8" THICK PAD GSKT
VKA 8375 - 1/4" THICK PAD GSKT

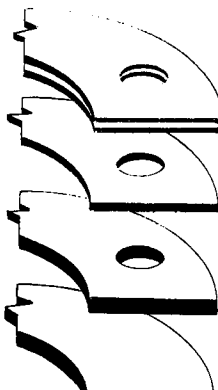
TKA 8809 - 30" AERATION PAD
TKA 9699 - 1/8" THICK ENV PAD GSKT

TKA 9700

TKA 8557

VKA 9234

TKA 8555



1/8" Thick Envelope x 19 5/8 O.D. 16 Holes

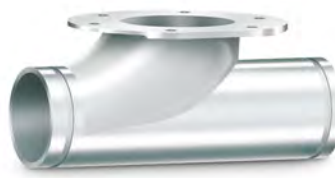
1/8" Thick x 19 5/8 O.D. 16 Holes

1/4" Thick x 19 5/8 O.D. 16 Holes

1/4" Thick x 19 5/8 O.D. No Holes



Bulk Tank Inc.



Siphon Flow Hopper Tees

Part Number	Size	Description
BT-500-A	5	5" Aluminum Straight Tee
BT-510-A	5	5" Aluminum Bottom Drop Tee
BT-500LP-A	5	5" Aluminum Low Pro. Straight Tee
BT-510LP-A	5	5" Aluminum Low Pro. Bottom Drop Tee
BT-600-A	6	6" Aluminum Straight Tee
BT-610-A	6	6" Aluminum Bottom Drop Tee
BT-600LP-A	6	6" Aluminum Low Pro. Straight Tee
BT-610LP-A	6	6" Aluminum Low Pro. Bottom Drop Tee
BT-810-A	8	8" Aluminum Bottom Drop Tee

Food Grade Siphon Flow Hopper Tees

Part Number	Size	Description
BT-500-A-FG	5	5" Aluminum Straight Tee
BT-500LP-A-FG	5	5" Aluminum Low Pro. Straight Tee
BT-600-A-FG	6	6" Aluminum Straight Tee
BT-600LP-A-FG	6	6" Aluminum Low Pro. Straight Tee

Stainless Ultra Lightweight Low Profile Siphon Flow Tees

Part Number	Size	Description
BT-500LP-SS	5	5" Stainless Low Pro. Straight Tee
BT-610LP-SS-SS	6	6" Stainless Low Pro. Bottom Drop Tee

Siphon Flow Bottom Drop Parts List

Part Number	Description
BT-510-A-DOOR-F	5" Bottom Drop Door Assembly
BT-610-A-DOOR-F	6" Bottom Drop Door Assembly
BT-810-A-DOOR-F	8" Bottom Drop Door Assembly
BT-510-GASKET	5" Bottom Drop Gasket
BT-610-GASKET	6" Bottom Drop Gasket
BT-810-GASKET	8" Bottom Drop Gasket
BD-PIVOT-PIN	Cam Pivot Pin 11/16" Diameter
BD-HOOK	Cam Hook Bolt 7/16" - 20
BD-CLEVIS PIN	Door Clevis Pin
BD-HITCH PIN	Hitch Pin
BD-SFPIN-LAN	Safety Pin with Steel Laynard
BT-EO-HANDLE-A	Easy Open Handle for 8" Bot. Drop Tee



Bulk Tank Inc.



Sand Hog Hopper Tee

Part Number	Size	Description
BT-400-D	4	4" Sandhog Straight Tee
BT-410-D-SS	4	4" Sandhog Bottom Drop Tee
BT-500-D	5	5" Sandhog Straight Tee
BT-510-D-SS	5	5" Sandhog Bottom Drop Tee
BT-600-D	6	6" Sandhog Straight Tee
BT-610-D-SS	6	6" Sandhog Bottom Drop Tee



Blackmaxx Super Sandhog Hopper Tee

Part Number	Size	Description
BT-400-DX	4	4" Super Sandhog Straight Tee
BT-410-DX	4	4" Super Sandhog Bottom Drop Tee
BT-500-DX	5	5" Super Sandhog Straight Tee
BT-500-DX-SSPCL	5	5" Super Sandhog Straight w/ Male Camlock
BT-510-DX	5	5" Super Sandhog Bottom Drop Tee
BT-510-DX-SSPCL	5	5" Super Sandhog Bottom Drop w/ Male Camlock
BT-510-DXSSPCLF	5	5" Super Sandhog Bottom Drop w/ Female Camlock
BT-600-DX	6	6" Super Sandhog Straight Tee
BT-610-DX	6	6" Super Sandhog Bottom Drop Tee
BT-610-DX-SSPCL	6	6" Super Sandhog Bottom Drop w/ Male Camlock
BT-610-DX-SSPCLF	6	6" Super Sandhog Bottom Drop w/ Female Camlock

Note: All tees come standard without Grooves.

G	Grooved on one end
GG	Grooved on both ends
PCL	Male Camlock (Only Available on 5" Bottom Drop & Straight Tees)
PCLF	Female Camlock (Only Available on 5" Bottom Drop Tees)
RT	Rear Thread

PARTS LIST			
IT	QT	PART NUMBER	DESCRIPTION
1	1	BT-410-DW	4" Iron Bottom Drop Tee, Weldment
2	2	B-315737	Tee Handle Screw
3	1	824	4in Bottom Drop Tee Door
4	1	681	BOTTOM DROP DOOR GASKET RETAINER
5	1	B-381678	4" Bottom Drop Gasket
6	1	3753	3/8-16 x 1 1/4" S/S HH BOLT
7	1	B-3724	3/8-16 S/S NYLON LOCK NUT

Groove X Groove

Groove X Plain

Plain X Thread

Plain X Plain

Part No. Configurations, Tees	
Part Number	End Configuration
BT-410-D	Plain X Plain
BT-410-D-GG	Groove X Groove
BT-410-D-GP	Groove X Plain
BT-410-D-PG	Plain X Groove
BT-410-D-PRT	Plain X Thread

4IN BOTTOM DROP HOPPER TEE PARTS LIST

PARTS LIST			
ITEM	Q	PART NUMBER	DESCRIPTION
1	1	BT-510-A-Door-F	Door Assembly, 5in Bottom Drop
1.1	2	BD-A-BUSH-D	DOOR HINGE BUSHING
1.2	1	BT-510 Gasket	Gasket, 5in Bottom Drop
1.3	1	BD-HINGEPIN	CAM HINGE PIN
1.4	2	BD-BUSH-C	PLAST BUSHING, CAM PIVOT
1.5	1	BD-SFPIN-LAN	BD SAFETY PIN W/ SETTL LANYARD
1.6	1	BD-LATCHPIN	HOOK LATCH PIN
1.7	1	BD-ST-Screw	SCREW #10 SELF THREADING
1.8	1	BT-510-A-DOOR	Door, 5in Bottom Drop
1.9	1	BD-CAM-5-A-M	Cam, 5in Bottom Drop
2	1	BT-510-D-F-SS	Tee Only Assembly, 5in Bottom Drop
2.1	1	BT-510-D	5x4 Bottom Drop Tee, Plain x Plain
2.2	2	BD-A-BUSH-HE	TEE EAR HINGE BUSHING
2.3	2	BD-A-BUSH-PE	PIVOT EAR BUSH-13RS081228SM120
2.4	1	BD-HOOK	CAM HOOK BOLT
2.5	1	BD-PIVOTPIN	CAM PIVOT PIN 11/16
2.6	1	NUTJAM-438-SS	Jam Nut, 7/16-20, 18-8SS
2.7	1	WASHER-438-SS	WSR, .47ID, .92OD, .065TK 18-8
3	1	BD-CLEVIS PIN	CLEV PIN 5/16X2.25 ZNCPLT CLR
4	1	BD-HITCHPIN	HITCH PIN 60818

*Part No. Configurations, Tees

Part Number	End Configuration
BT-510-D	Plain X Plain
BT-510-D-GG	Groove x Groove
BT-510-D-GP	Groove x Plain
BT-510-D-PG	Plain X Groove
BT-510-D-PCL	Plain X Cam Loc
BT-510-D-PCLF	Plain x Female Camloc

Refer to BTI 7.5 - 003 for assembly procedure
Refer to BTI-8.2-002 for testing procedure

5IN BOTTOM DROP HOPPER TEE PARTS LIST

Refer to BTI 7.5 - 003 for assembly procedure
Refer to BTI-8.2-002 for testing procedure

BT-610-D-CS
6 in Bottom Drop, Curb Side, Plain x Plain

BT-610-D-CS-GG
6 in Bottom Drop, Curb Side, Groove x Groove

BT-610-D-CS-GP
6 in Bottom Drop, Curb Side, Groove x Plain

BT-610-D-CS-PRT
6 in Bottom Drop, Curb Side, Plain x Thread

BT-610-D-CS-PCL
6 in Bottom Drop, Curb Side, Plain x Cam Loc

***Part No. Configurations, Tees**

Part Number	End Configuration
BT-610-D	Plain X Plain
BT-610-D-GG	Groove x Groove
BT-610-D-GP	Groove x Plain
BT-610-D-PRT	Plain x Thread
BT-610-D-PCL	Plain X Cam Loc

B.T.I.

6IN BOTTOM DROP HOPPER TEE PARTS LIST

PARTS LIST			
ITEM	Q	PART NUMBER	DESCRIPTION
1	1	BT-610-A-Door-F	Door Assembly, 6in Bottom Drop
1.1	2	BD-A-BUSH-D	DOOR HINGE BUSHING
1.2	1	BT-610-GASKET	6 in Molded B/D Gasket
1.3	1	BD-HINGEPIN	CAM HINGE PIN
1.4	2	BD-BUSH-C	PLAST BUSHING, CAM PIVOT
1.5	1	BD-SFPIN-LAN	BD SAFETY PIN W/ SETTLE LANYARD
1.6	1	BD-LATCHPIN	HOOK LATCH PIN
1.7	1	BD-ST-Screw	SCREW #10 SELF THREADING
1.8	1	BT-610-DOOR-M	6 in AI Door Machined
1.9	1	BD-CAM-6-A-M	Cam, Bottom Drop Door, 6in
2	1	BT-610-D-F-CS	Tee Only Assembly, 6in Bottom Drop
2.1	1	BT-610-D	6x4 Bottom Drop Tee, w/ Sand Trap
2.2	2	BD-A-BUSH-HE	TEE EAR HINGE BUSHING
2.3	2	BD-A-BUSH-PE	PIVOT EAR BUSH-13RS081228SM120
2.4	1	BD-HOOK	CAM HOOK BOLT
2.5	1	BD-PIVOTPIN	CAM PIVOT PIN 11/16
2.6	1	NUTJAM-438-SS	Jam Nut, 7/16-20, 18-8SS
2.7	1	WASHER-438-SS	WSR, .47ID, .92OD, .065TK 18-8
3	1	BD-CLEVIS PIN	CLEV PIN 5/16X2.25 ZNCPLT CLR
4	1	BD-HITCHPIN	HITCH PIN 60818

Refer to BTI 7.5 - 003 for assembly procedure
Refer to BTI-8.2-002 for testing procedure

BT-810-D-SS
8 in Bottom Drop, Street Side, Plain x Plain

BT-810-D-SS-GG
8 in Bottom Drop, Street Side, Groove x Groove

BT-810-D-SS-GP
8 in Bottom Drop, Street Side, Groove x Plain

BT-810-D-SS-PG
8 in Bottom Drop, Street Side, Plain x Groove

***Part No. Configurations, Tees**

Part Number	End Configuration	Description
BT-810-D	Plain x Plain	8" Bottom Drop Assembly, Plain x Plain
BT-810-D-GG	Groove x Groove	8" Bottom Drop Assembly, Groove x Groove
BT-810-D-GP	Groove x Plain	8" Bottom Drop Assembly, Groove x Plain
BT-810-D-PG	Plain x Groove	8" Bottom Drop Assembly, Plain x Groove
BT-810-D-S	Plain x Plain	8" Bottom Drop Assembly, Plain x Plain, w/ Spring
BT-810-D-S-GG	Groove x Groove	8" Bottom Drop Assembly, Groove x Groove, w/ Spring
BT-810-D-S-GP	Groove x Plain	8" Bottom Drop Assembly, Plain x Groove, w/ Spring

B.T.I.

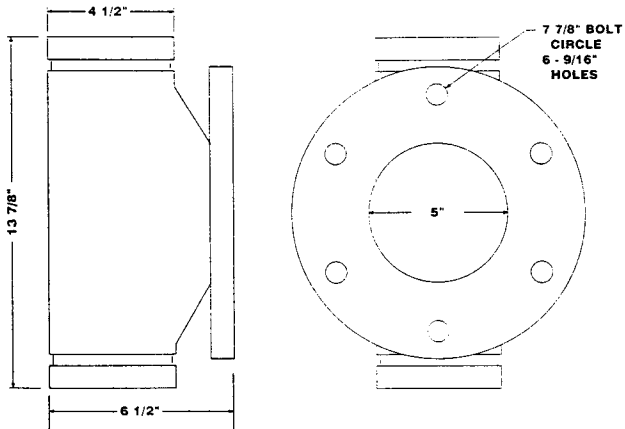
8" BOTTOM DROP HOPPER TEE PARTS LIST

1 PARTS LIST - BT-810-A(D)-SS			
ITE	QTY	PART NUMBE	DESCRIPTION
1.1	1	BT-810-A-M	8" ALUM BD SIPHON FLO MACH TEE
1.2	2	BD-A-BUSH-P E	PIVOT EAR BUSH-13RS081228SM120
1.3	1	BD-HOOK	CAM HOOK BOLT
1.4	1	BD-PIVOTPIN	CAM PIVOT PIN 11/16
1.5	2	BD-A-BUSH-H E	TEE EAR HINGE BUSHING
1.6	1	NUTJAM-438-SS	Jam Nut, 7/16-20, 18-8SS
1.7	1	WASHER-438-SS	WSR, .47ID, .92OD, .065TK 18-8

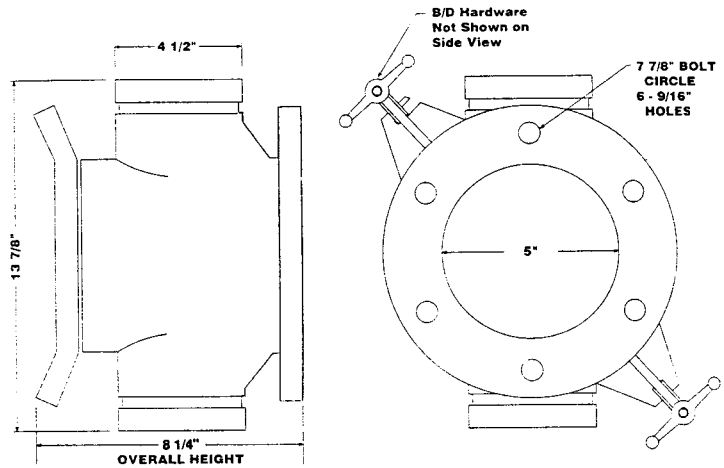
2 PARTS LIST - BTA-810-A-DOOR-F			
ITEM	QTY	PART NUMB	DESCRIPTION
2.1	1	BT-810-A-DO OR-M	8" ALUM BD DOOR
2.2	1	BD-CAM-SHO RT-M	8" BD ALUM CAM LEVER
2.3	1	BT-810-GAS KET	BOTTOM DROP GASKET, 8IN
2.4	2	BD-BUSH-C	PLAST BUSHING, CAM PIVOT
2.5	1	BD-LATCHPI N	HOOK LATCH PIN
2.6	1	BD-SFPIN-LA N	BD SAFETY PIN W/ SETTLE LANYARD
2.7	2	BD-A-BUSH-D	DOOR HINGE BUSHING
2.8	1	BD-HINGEPI N	CAM HINGE PIN
2.9	1	BD-ST-Screw	SCREW #10 SELF THREADING



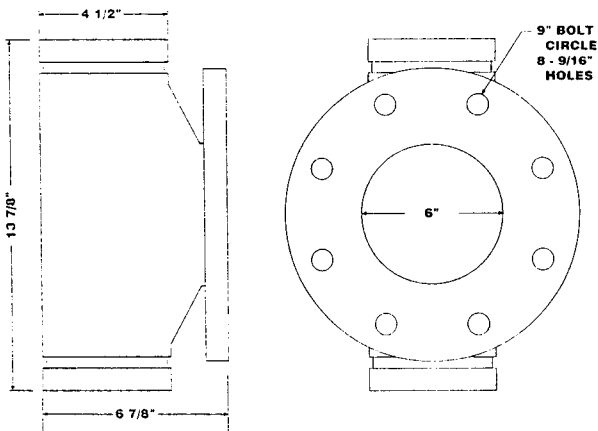
**5" Aluminum Tee
Part # T-500**



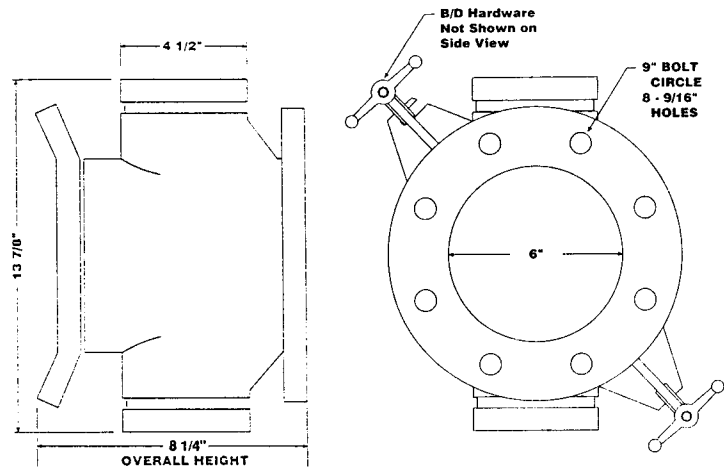
**5" Aluminum Bottom Drop Tee
Part # T-510**



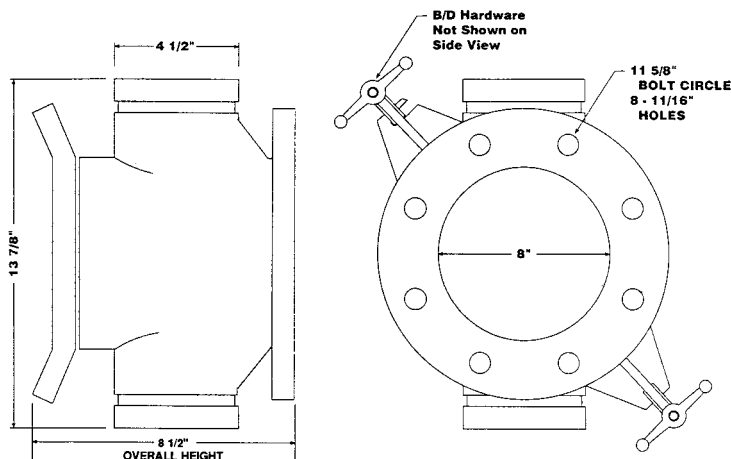
**6" Aluminum Tee
Part # T-600**



**6" Aluminum Bottom Drop Tee
Part # T-610**

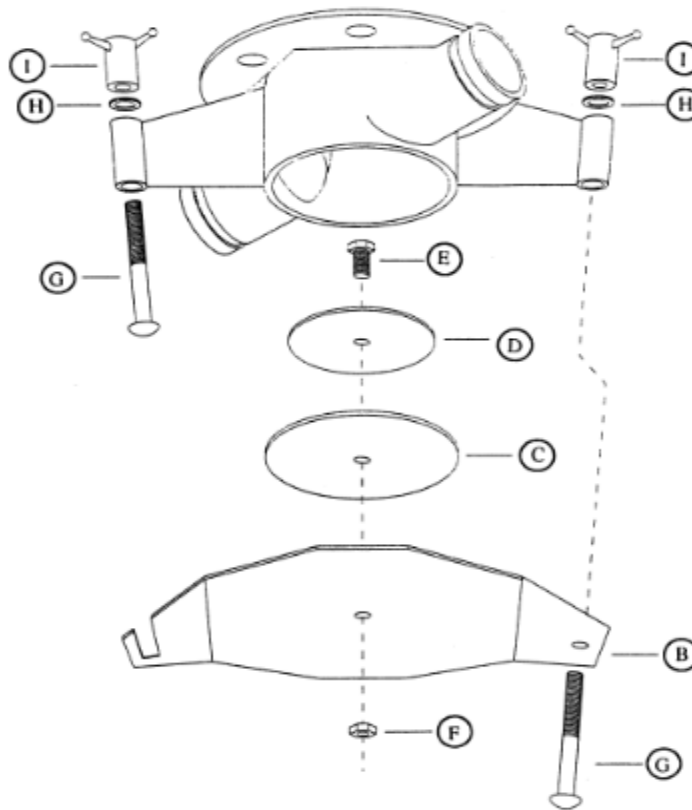


**8" Aluminum Bottom Drop Tee
Part # T-810**





5" - 6" - 8" Aluminum Bottom Drop Tee Parts Breakdown



5", 6" and 8" Drop Tee Parts

	Part #	Description
B	831	5-6" ALUM B/D DOOR ONLY
	833	8" ALUM B/D DOOR ONLY
C	B-381679	5" B/D GASKET
	680	6" B/D GASKET
	766	8" B/D GASKET
D	681	B/D GASKET RETAINER
E	753	3/8" X1-1/4" S/S BOLT
F	724	3/8" S/S LOCK NUT
G	21681	B/D BOLT - PLATED
H	674	5/8" B/D WASHER
I	109	B/D WING NUT - PLATED

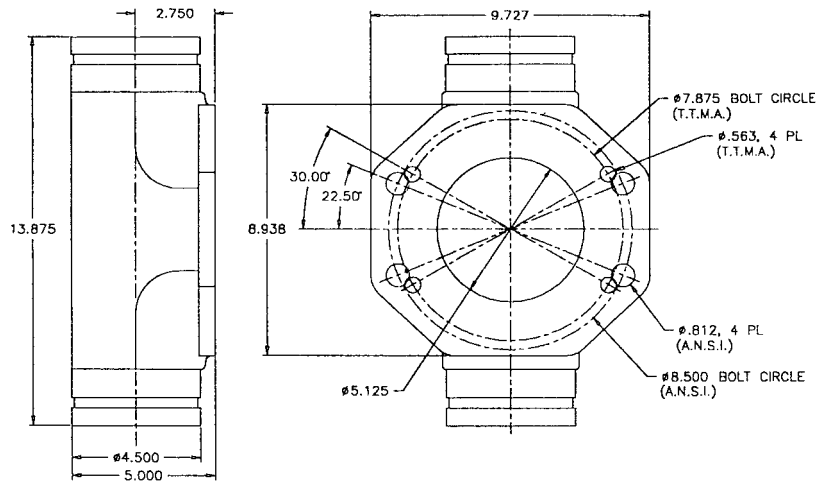
Bottom Drop Door Assembly w/ Gasket

(Consists of Ref# B, C, D, E, F)

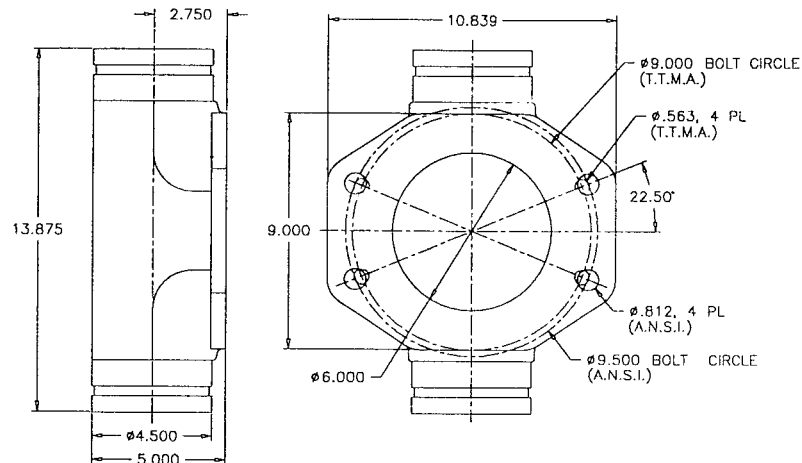
832LP	5" B/D DOOR ASSY.
832LP	6" B/D DOOR ASSY.
835	8" B/D DOOR ASSY.



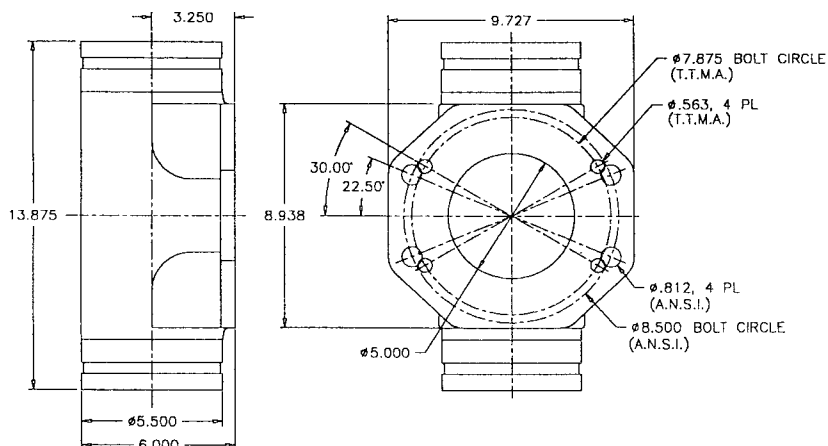
5" Aluminum Low Profile Tee
Part # T-500LP



6" Aluminum Low Profile Tee
Part # T-600LP

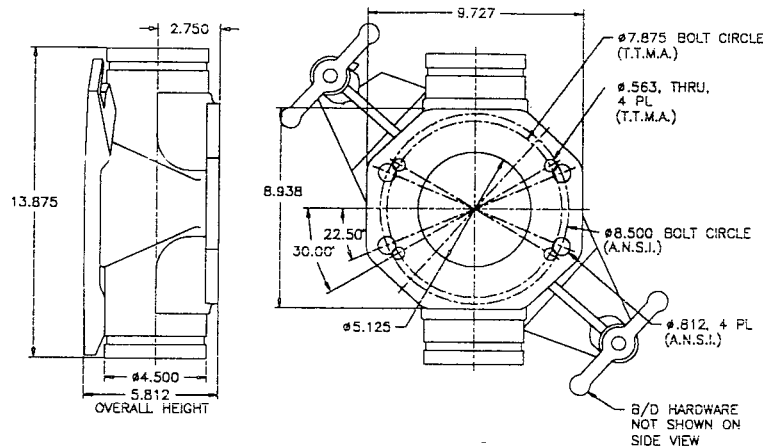


5" x 5" Aluminum Low Profile Tee
Part # T-550LP

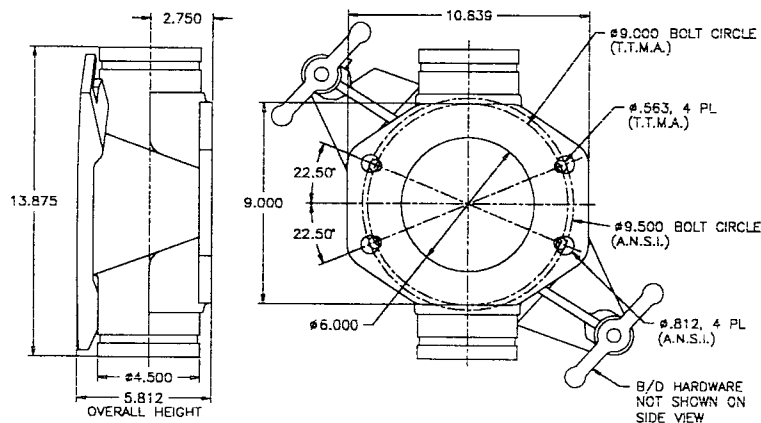




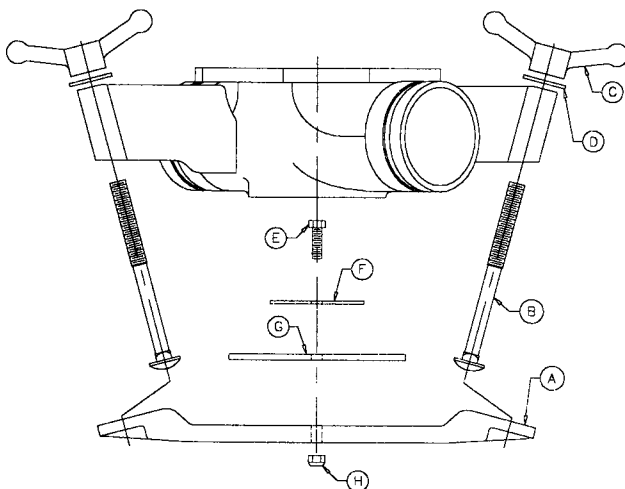
5" Aluminum Low Profile Bottom Drop Tee Part #T-510LP



6" Aluminum Low Profile Bottom Drop Tee Part #T-610LP



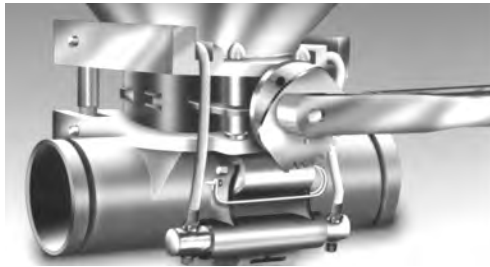
5" - 6" Aluminum Low Profile Bottom Drop Tee Parts Breakdown



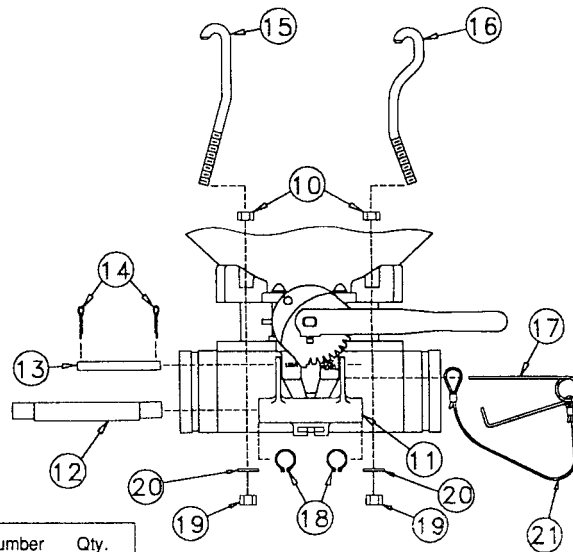
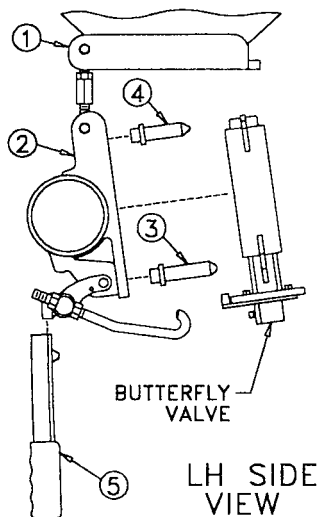
5"-6" Low Profile Bottom Drop Tee Parts			
Ref. No.	Part Number	Description	Qty
A	831LP	5"-6" Low Profile B/D Door	1
B	036LP	Low Profile B/D Bolt	2
C	109	B/D Wing Nut	2
D	674	B/D Washer	2
E	753	3/8" X 1 1/4" S/S Bolt	1
F	681	B/D Gasket Retainer	1
G	680	5" - 6" B/D Gasket	1
H	724	3/8" S/S Locknut	1

Low Profile Bottom Drop Door Assembly W/Gasket Consists of Ref #A, E, F, G & H

Part Number	Description
832LP	5"-6" Low Profile B/D Door Assembly

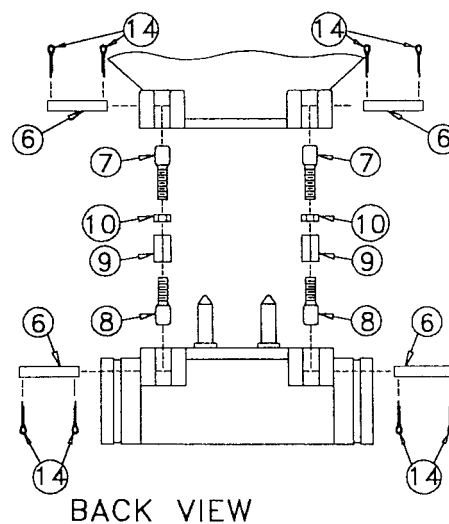


**Replacement Part Number and Description:
Low Profile Swing-Away Hopper Tee T-500LPSW**



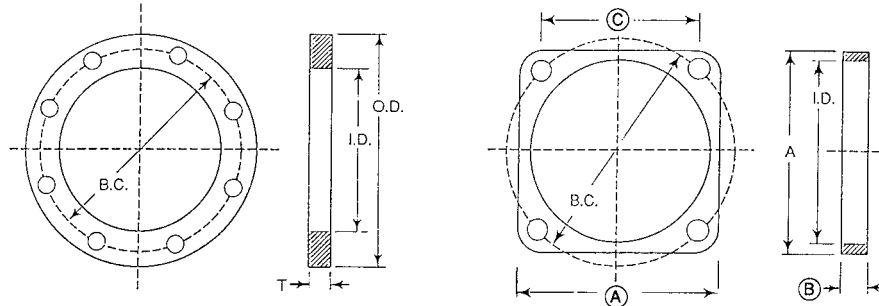
Item #	Description	Part Number	Qty.
1	Hopper Flange	801	1
2	Low Profile Swing-Away Hopper Tee	T-500LPSWM	1
3	Front Line-Up Pin	SS-3/4-SWF-PIN	2
4	Rear Line-Up Pin	SS-3/4-SWR-PIN	2
5	T-Handle	806	1
6	Eyebolt Pin	808	4
7	Top Eyebolt, RH Thread	098-SS-RH	2
8	Bottom Eyebolt, LH Thread	098-SS-LH	2
9	Hex Adjuster	SS-HEX-ADJ	2
10	Jam Nut, 1/2-13UNC	241	4
11	Bracket w/ T-Handle Slot	HDL-BRKT	1
12	Slide Bar	SS-1-HDL-BAR	1
13	Upper Pin, Handle	807	1
14	Cotter Key	242	10
15	LH Hook	SS-1/2-LH-HOOK	1
16	RH Hook	SS-1/2-RH-HOOK	1
17	Safety Pin	809	1
18	Snap Ring, External	803	2
19	Nut, 1/2-13 Locknut	SS-1/2-HX-NUT	2
21	Safety Cable	810	1

810-CBL-KIT Safety Pin, Cable & Clip Assy.





ALUMINUM PIPING AND HOPPER WELD FLANGES



3" Square Check Valve Flange - Aluminum

Part #	I.D.	B.C.	# of Holes	Hole Size	(A)	(B)	(C)
725	3.562	5.00	4	.5625	4.875	.375	3.50

TTMA Piping and Valve Flanges - Aluminum

Size	Part #	Thickness	O.D.	I.D.	B.C.	# of Holes	Hole Size
3"	750	.375	5.625	3.562	4.875	8	.4375

Note: Drilling in accordance with TTMA recommended standards

Valve Flanges - Aluminum

Size	Part #	Thickness	O.D.	I.D.	B.C.	# of Holes	Hole Size
3"	733	.375	6.00	3.562	4.875	6	.4375
4"	726	.50	9.00	4.00	7.00	6	.5625
5"	702	.50	10.00	5.00	7.875	6	.5625
6"	701	.50	11.00	6.00	9.00	8	.5625
8"	700	.50	13.50	8.00	11.625	8	.6875

Note: Above flanges match all popular Butterfly Valve Bolt Patterns

Valve Flanges - Aluminum

Size	Part #	Thickness	O.D.	I.D.	B.C.	# of Holes	Hole Size
2"	748	.375	5.562	2.375	4.25	4	.4375
3"	733	.375	6.00	3.562	4.875	6	.4375
3"	733BF	.375	6.00	none	4.875	6	.4375
4"	726	.50	9.00	4.00	7.00	6	.5625
4"	751	.375	6.625	4.50	5.875	8	.4375
5"	702	.50	10.00	5.00	7.875	6	.5625
6"	701	.50	11.00	6.00	9.00	8	.5625
8"	700	.50	13.50	8.00	11.625	8	.6875

Valve Flanges - Steel

Size	Part #	Thickness	O.D.	I.D.	B.C.	# of Holes	Hole Size
3"	730	.25	5.625	3.562	4.875	8	.4375
3"	745	.25	6.00	3.562	4.875	6	.4375
4"	706	.25	9.00	4.00	7.00	6	.5625
4"	707	.25	6.625	4.50	5.875	8	.4375
5"	705	.25	10.00	5.00	7.875	6	.5625
6"	704	.25	11.00	6.00	9.00	8	.5625
8"	709	.25	13.50	8.00	11.625	8	.6875

3" Square Check Valve Flanges - Steel

Part #	I.D.	B.C.	# of Holes	Hole Size	(A)	(B)	(C)
725S	3.562	5.00	4	.5625	4.875	.250	3.50



Bulk Tank Inc.

Blackmaxx All In One Coupler

Part Number	Size	Description
BTC-BM-A1-4	4	4" A1 Blackmaxx Solid Gasket Coupler - Cam Handle
BTC-BM-A1-4-B	4	4" A1 Blackmaxx Solid Gasket Coupler - Tee Handle
BTC-BM-A1-4-BS	4	4" A1 Blackmaxx Split Gasket Coupler - Tee Handle
BTC-BM-A1-4L	4	4" A1 Blackmaxx Solid Gasket Coupler - Cam Handle & Landyard
BTC-BM-A1-4S	4	4" A1 Blackmaxx Split Gasket Coupler - Cam Handle
BTC-BM-A1-4SL	4	4" A1 Blackmaxx Split Gasket Coupler - Cam Handle & Landyard



Aluminum All In One Coupler

Part Number	Size	Description
BTC-A1-3	3	3" A1 Solid Gasket - Cam Handle
BTC-A1-3B	3	3" A1 Solid Gasket - Tee Handle
BTC-A1-4	4	4" A1 Solid Gasket - Cam Handle
BTC-A1-4B	4	4" A1 Solid Gasket - Tee Handle
BTC-A1-4L	4	4" A1 Solid Gasket - Cam Handle & Landyard
BTC-A1-4S	4	4" A1 Split Gasket - Cam Handle
BTC-A1-4-BS	4	4" A1 Split Gasket - Tee Handle
BTC-A1-4SL	4	4" A1 Split Gasket - Cam Handle & Landyard
BTC-A1-5	5	5" A1 Solid Gasket - Cam Handle
BTC-A1-5B	5	5" A1 Solid Gasket - Tee Handle



Groove to Groove Aluminum All In One Coupler

Part Number	Size	Description
BTC-GG-4	4	4" Groove to Groove Coupler - Cam Handle
BTC-GG-4L	4	4" Groove to Groove Coupler - Cam Handle & Landyard
BTC-PB-4	4	4" Groove to Groove Coupler - Tee Handle (Import)
BTC-GG-6	6	6" Groove to Groove Coupler - Cam Handle
BTC-GG-6L	6	6" Groove to Groove Coupler - Cam Handle & Landyard

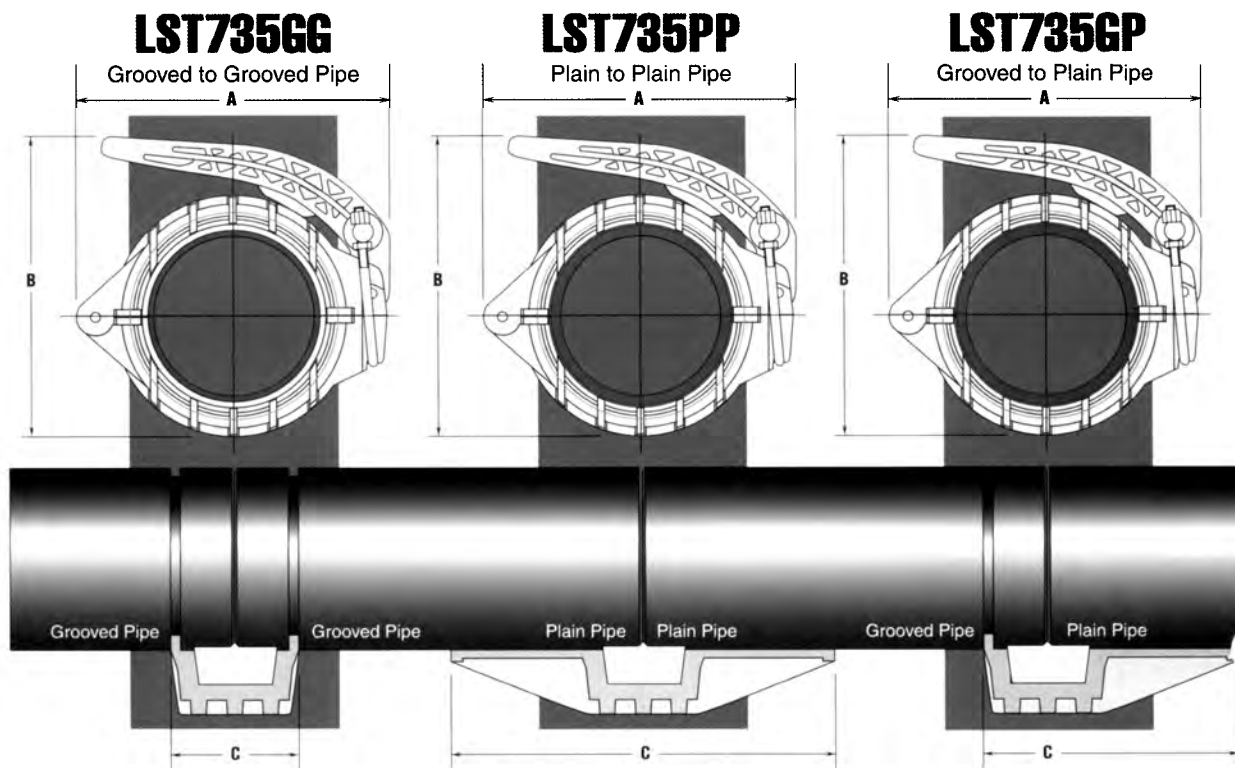
All In One Coupler Parts

Part Number	Description
BTC-A1-GSKT-3	3" A1 Solid Coupler Gasket
BTC-A1-GSKT-4	4" A1 Solid Coupler Gasket
BTC-A1-GSKT-4S	4" A1 Split Coupler Gasket
BTC-GG-GSKT-4	4" Groove to Groove Coupler Gasket
BTC-PB-GSKT	4" Groove to Groove Coupler Gasket (Tee Handle Import Only)
BTC-A1-GSKT-5	5" A1 Solid Coupler Gasket
BTC-GG-GSKT-6	6" Groove to Groove Coupler Gasket
BTC-HANDLE-3F	3" A1 Cam Handle Assy
BTC-HANDLE-4F	4" A1 Cam Handle Assy
BTC-HANDLE-5F	5" A1 Cam Handle Assy
BTC-A1-SCLIP	S-Clip For All In One Coupler
BTC-BOLT-ASSM	4" A1 Bolt Tee Handle Assy



Available in Three Styles

Sure Seal offers the new LST735 Coupler in three configurations.

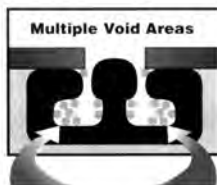


Nom. Size	O.D.	Material	Part No.	Wt. Lbs.	A	B	C
4	4.500	Engineered Polymer & SS Hardware	735GG	1.6	7.900	7.250	2.000
4	4.500	Engineered Polymer & SS Hardware	735PP	1.8	7.900	7.250	4.000
4	4.500	Engineered Polymer & SS Hardware	735GP	1.9	7.900	7.250	3.000

The Clean Seal System

CLEAN SEAL GASKETS are easy to install and replace. White gaskets are special formulated for dry bulk applications where F.D.A. approval is required. Black gaskets are specially formulated for petroleum products, while red gaskets are for high temp applications up to 400 degrees Fahrenheit.

Industry's Previous Design Gasket



Void areas in gasket create hiding spots for contamination. This makes cleaning hard to reach spots costly.

The Clean Seal Design Gasket

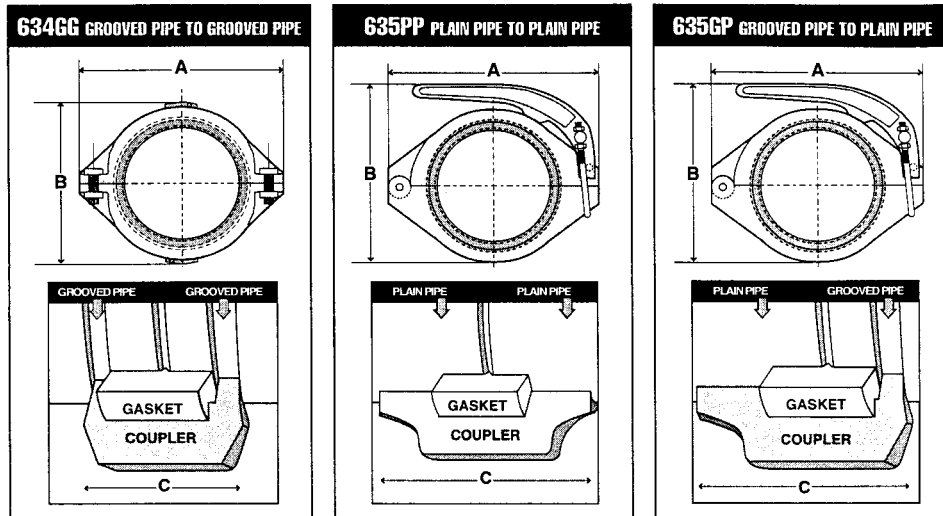


With no void areas in gasket there is no place for contamination to hide. A quick disassembly and visual inspection is all that is necessary.





Superior Aluminum Pipe Couplers

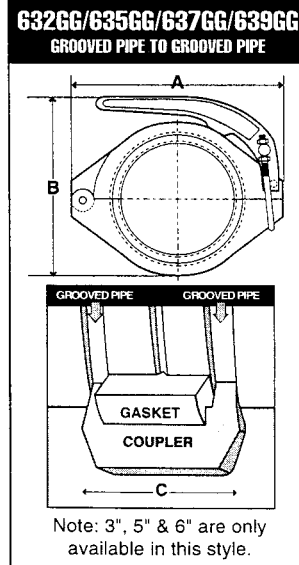


The aluminum quick couplers are furnished in different styles. The grooved pipe to grooved pipe coupler part numbers are 632GG, 634GG, 635GG, and 639GG. These couplers are superior to other couplers on the market today for the transportation industry. They are completely manufactured out of 713 aluminum and stainless steel for light weight and have SAE 841 oil impregnated bronze bushings in all pivot points. The couplers are corrosion resistant, they are adjustable, and are also easy to operate.

The part number 635GP is for grooved pipes or hopper tees to non grooved pipes. Most hopper tees have a groove on both ends, but most intermediate pipes do not

have a groove on both ends. The part number 635PP is for pipes or hopper tees without grooves on either pipe. These two couplings can be used in applications to replace the band style clamps. Most band clamps are rated at 10 psi, where the Sure Seal couplers are rated at 50 psi.

CLEAN SEAL GASKETS are easy to install and replace. White gaskets are special formulated for dry bulk applications where F.D.A. approval is required. Black gaskets are specially formulated for petroleum products, while red gaskets are for high temp applications up to 400 degrees Fahrenheit.



Description, Part Numbers & Weight					Dimensions		
Pipe or Tubing		Material	Part No.	Wt. Lbs	A	B	C
Nom. Size	O.D.						
3	3.500	Aluminum Clamp & SS Hardware	632GG	1.75	5.150	5.190	1.75
4	4.500	Aluminum Clamp & Bolts	634GG	2.4	7.900	6.000	2.000
4	4.500	Aluminum Clamp & SS Hardware	635GG	2.6	7.900	7.300	2.000
4	4.500	Aluminum Clamp & SS Hardware	635GP	2.8	7.900	7.300	3.000
4	4.500	Aluminum Clamp & SS Hardware	635PP	2.8	7.900	7.300	3.000
5	5.500	Aluminum Clamp & SS Hardware	637GG	3.5	9.200	8.100	2.000
6	6.625	Aluminum Clamp & SS Hardware	639GG	4.0	10.30	9.200	2.00

Superior Pipe Gaskets

Part Number	Description
Superior Pipe Gaskets	
650S	3" White Gasket FDA
652S	3" Black Gasket for Petro Service
655S	3" Red Gasket High Temp
651S	4" White Gasket FDA
654S	4" Black Gasket for Petro Service
664S	4" Red Gasket High Temp
653S	5" White Gasket FDA
656S	5" Black Gasket for Petro Service
667S	5" Red Gasket High Temp
657S	6" White Gasket FDA
658S	6" Black Gasket for Petro Service
669S	6" Red Gasket High Temp



MORRIS

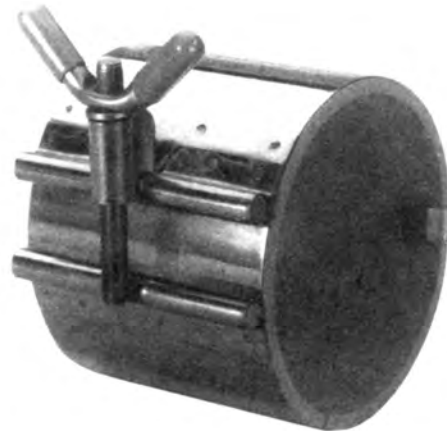
COUPLING COMPANY

Gripper™ Couplers

Single Wingnut Coupler

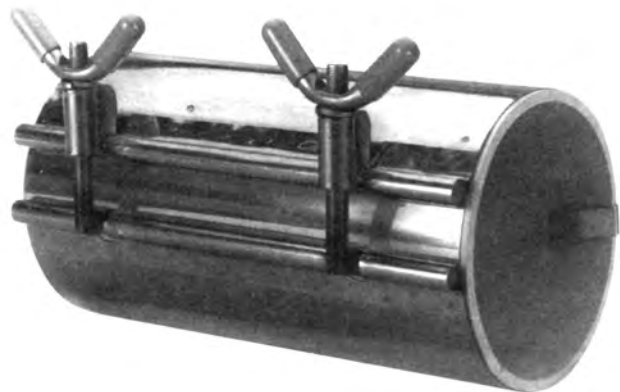
A O.D. Size (in.)	Code No.	Wt. (lbs.)	Std. Gum Gasket		Food Grade Gasket	
			Gripper PIC No.		Gripper PIC No.	
1.500	1501	0.58	2401501G2MB		2401501F2MB	
1.660	1661	0.60	2401661G2MB		2401661F2MB	
1.750	1751	0.62	2401751G2MB		2401751F2MB	
1.900	1901	0.65	2401901G2MB		2401901F2MB	
2.000	2001	0.68	2402001G2FGMB		2402001F2FGMB	
2.125	2121	0.70	2402121G2MB		2402121F2MB	
2.250	2251	0.71	2402251G2MB		2402251F2MB	
2.375	2371	0.74	2402371G2MB		2402371F2MB	
2.500	2501	0.77	2402501G2FGMB		2402501F2FGMB	
2.750	2751	0.80	2402751G2MB		2402751F2MB	
2.875	2871	0.84	2402871G2MB		2402871F2MB	
3.000	3001	0.88	2403001G2FGMB		2403001F2FGMB	
3.250	3251	0.97	2403251G2MB		2403251F2MB	
3.500	3501	1.06	2403501G2FGMB		2403501F2FGMB	
3.750	3751	1.15	2403751G2MB		2403751F2MB	
4.000	4001	1.25	2404001G2FGMB		2404001F2FGMB	
4.250	4251	1.32	2404251G2MB		2404251F2MB	
4.500	4501	1.40	2404501G2FGMB		2404501F2FGMB	
5.000	5001	1.55	2405001G2FGMB		2405001F2FGMB	
5.563	5561	1.63	2405561G2MB		2405561F2MB	
6.000	6001	1.72	2406001G2FGMB		2406001F2FGMB	
6.250	6251	1.78	2406251G2MB		2406251F2MB	
6.625	6621	1.82	2406621G2MB		2406621F2MB	
8.000	8001	2.25	2408001G2FGMB		2408001F2FGMB	
8.625	8621	2.38	2408621G2MB		2408621F2MB	
9.000	9001	2.45	2409001G2MB		2409001F2MB	
10.000	10001	2.65	2410001G2MB		2410001F2MB	

The GRIPPER was devised as a quick coupler for dry bulk transport tank tubing. This unique coupling just slides onto the tubing or wraps around it and is tightened by hand in seconds, but it provides better support than rubber hose and band clamps. The GRIPPER's positive-sealing gum gaskets allow for tube and pipe variations. And because it's made of 100% stainless steel, it will not corrode due to harsh weather or road conditions. Silicone gaskets that comply with applicable FDA requirements are available upon request.

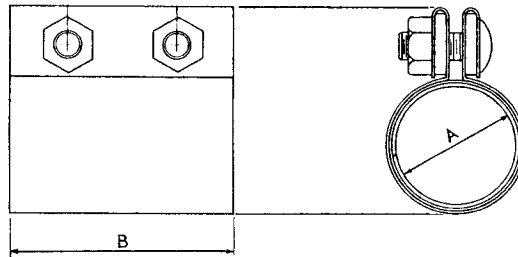


Double Wingnut Coupler

B O.D. Size (in.)	Code No.	Std. Gum Gasket		Food Grade Gasket	
		Gripper PIC No.		Gripper PIC No.	
4.000	2-4001	2804002G2MB		2804002F2MB	
4.500	2-4501	2804502G2MB		2804502F2MB	
5.000	2-5001	2805002G2MB		2805002F2MB	
6.000	2-6001	2806002G2MB		2806002F2MB	
6.625	2-6621	2806622G2MB		2806622F2MB	
8.000	2-8001	2808002G2MB		2808002F2MB	
8.625	2-8621	2808622G2MB		2808622F2MB	
10.000	2-10001	2810002G2MB		2810002F2MB	
10.750	2-10751	2810752G2MB		2810752F2MB	
12.000	2-12001	2812002G2MB		2812002F2MB	
12.750	2-12751	2812752G2MB		2812752F2MB	



Compression Couplings For Tubing And Pipe



The Morris Compression tubing and pipe coupling is designed for permanent installation in the joining of either plain end, threaded, grooved or a combination of any of these joints. The band type construction holds the entire surface of the joint in uniform compression.

Couplings are made of heavy gauge zinc plated steel ... prices of aluminum or stainless steel couplings quoted on request.

Gaskets furnished standard in red rubber or black neoprene ... please specify. Gaskets also available in white neoprene and a variety of other materials at a slight extra charge.

Condensed Table Of Specifications

SIZE	Thickness		
	Shell	Sleeve	Gasket
1/2" - 2-7/8" OD	.052	.052	.062
3" OD	.052	.052	.093
3-1/4" - 5" OD	.062	.052	.093
5-1/4" - 8-5/8" OD	.062	.052	.125
9" - 24" OD	.062	.062	.125

Tubing or Nom. Pipe (IPS) Size	O.D. Tubing Pipe (A)	Morris Coupling Code	Coupling Length (B)	No. of Bolts	Size of Bolts	Weight Each (lbs.)	Gasket	
							Black Gasket*	White Gasket*
							PIC No.	PIC No.
2" TUBING 2" PIPE	2.000	2-2C-OD	4"	2	1/2 x 1-3/4	2.1	0102002B2FG	0102002W2FG
	2.000	2-3C-OD	6"	3	1/2 x 1-3/4	3.1	0102003B2FG	0102003W2FG
	2.375	2-2C	4"	2	1/2 x 1-3/4	2.2	0102372B2FG	0102372W2
	2.375	2-3C	6"	3	1/2 x 1-3/4	3.5	0102373B2FG	0102373W2FG
	2.375	2-4C	8"	4	1/2 x 1-3/4	4.7	0102374B2	0102374W2
2-1/8" TUBING	2.125	2-1/8-2C-OD	4"	2	1/2 x 1-3/4	2.1	0102122B2	0102122W2
	2.125	2-1/8-3C-OD	6"	3	1/2 x 1-3/4	3.2	0102123B2FG	0102123W2FG
2-3/16" TUBING	2.187	2-3/16-2C-OD	4"	2	1/2 x 1-3/4	2.2	0102182B2FG	0102182W2FG
	2.187	2-3/16-3C-OD	6"	3	1/2 x 1-3/4	3.3	0102183B2FG	0102183W2
2-1/4" TUBING	2.250	2-1/4-2C-OD	4"	2	1/2 x 1-3/4	2.2	0102252B2	0102252W2
	2.250	2-1/4-3C-OD	6"	3	1/2 x 1-3/4	3.3	0102253B2FG	0102253W2FG
2-1/2" TUBING 2-1/2" PIPE	2.500	2-1/2-2C-OD	4"	2	1/2 x 1-3/4	2.6	0102502B2FG	0102502W2FG
	2.500	2-1/2-3C-OD	6"	3	1/2 x 1-3/4	3.4	0102503B2FG	0102503W2FG
	2.875	2-1/2-2C	4"	2	1/2 x 1-3/4	2.4	0102872B2	0102872W2
	2.875	2-1/2-3C	6"	3	1/2 x 1-3/4	3.7	0102873B2	0102873W2
	2.875	2-1/2-4C	8"	4	1/2 x 1-3/4	5.0	0102874B2	0102874W2
2-3/4" TUBING	2.750	2-3/4-3C-OD	6"	3	1/2 x 1-3/4	3.6	0102753B2	0102753W2
3" TUBING 3" PIPE	3.000	3-2C-OD	4"	2	5/8 x 2	3.2	0103002B2FG	0103002W2FG
	3.000	3-3C-OD	6"	3	5/8 x 2	4.5	0103003B2FG	0103003W2FG
	3.000	3-4C-OD	8"	4	5/8 x 2	5.9	0103004B2FG	0103004W2
	3.500	3-2C	4"	2	5/8 x 2	3.4	0103502B2FG	0103502W2
	3.500	3-3C	6"	3	5/8 x 2	5.1	0103503B2FG	0103503W2FG
3-1/4" TUBING	3.250	3-1/4-2C-OD	4"	2	5/8 x 2	3.5	0103252B2	0103252W2
	3.250	3-1/4-3C-OD	6"	3	5/8 x 2	5.0	0103253B2	0103253W2
3-1/2" TUBING	3.250	3-1/4-4C-OD	8"	4	5/8 x 2	6.5	0103254B2	0103254W2
	3.500	3-2C	4"	2	5/8 x 2	3.4	0103502B2FG	0103502W2
	3.500	3-3C	6"	3	5/8 x 2	5.1	0103503B2FG	0103503W2FG
3-1/2" PIPE	4.000	3-1/2-2C	4"	2	5/8 x 2	3.7	0104002B2FG	0104002W2
	4.000	3-1/2-3C	6"	3	5/8 x 2	5.3	0104003B2FG	0104003W2FG
3-3/4" TUBING	4.000	3-1/2-4C	8"	4	5/8 x 2	7.2	0104004B2FG	0104004W2FG
	3.750	3-3/4-3C-OD	6"	3	5/8 x 2	5.6	0103753B2	0103753W2
4" TUBING 4" PIPE	3.750	3-3/4-4C-OD	8"	4	5/8 x 2	7.4	0103754B2	0103754W2
	4.000	3-1/2-2C	4"	2	5/8 x 2	3.7	0104002B2FG	0104002W2
	4.000	3-1/2-3C	6"	3	5/8 x 2	5.3	0104003B2FG	0104003W2FG
	4.000	3-1/2-4C	8"	4	5/8 x 2	7.2	0104004B2FG	0104004W2FG
	4.500	4-2C	4"	2	5/8 x 2	3.8	0104502B2FG	0104502W2
4-1/4" TUBING	4.500	4-3C	6"	3	5/8 x 2	5.5	0104503B2FG	0104503W2FG
	4.500	4-4C	8"	4	5/8 x 2	7.7	0104504B2FG	0104504W2FG
4-1/2" TUBING	4.250	4-1/4-3C-OD	6"	3	5/8 x 2	5.5	0104253B2	0104253W2
	4.250	4-1/4-4C-OD	8"	4	5/8 x 2	7.0	0104254B2	0104254W2
4-1/2" PIPE	4.500	4-2C	4"	2	5/8 x 2	3.8	0104502B2FG	0104502W2
	4.500	4-3C	6"	3	5/8 x 2	5.5	0104503B2FG	0104503W2FG
	4.500	4-4C	8"	4	5/8 x 2	7.7	0104504B2FG	0104504W2FG
	5.000	4-1/2-2C	4"	2	5/8 x 2	4.2	0105002B2FG	0105002W2
	5.000	4-1/2-3C	6"	3	5/8 x 2	6.2	0105003B2FG	0105003W2FG
	5.000	4-1/2-4C	8"	4	5/8 x 2	8.1	0105004B2FG	0105004W2FG

PNEUMATIC HOSE & ACCESSORIES

Type 120° Dry Cement

Part # -- 120HD4

The black SBR/NR tube is lightweight and flexible for unloading dry bulk cement from trailers. Two ply cord fabric reinforces tube. Cover is 1/16" black SBR and provides excellent abrasion resistance. Hose features collapsible construction.

Tube: SBR/NR, static conductive. Black.
Reinforcement: Two plies of cord fabric.
Cover: SBR. Black.
Couplings: Quick-acting, combination nipples.
Length: 100 ft.
Temp. Range: -40°F to +150°F



I.D. (in.)	Tube Thick. (in.)	O.D. (in.)	W.P. (PSI)	Plies	Weight (Lbs./Ft.)
4	1/8	4 9/16	50	2	1.9
4	3/16	4 5/8	50	2	2.1

Hot Air Blower

Part # -- HA3

A lightweight, flexible hose for transferring hot air to tanks on dry bulk material trucks. EPDM tube resists high heat conditions developed by the blower. Can withstand temperatures up to 350°F intermittent, 300°F constant. Tube is reinforced with high tensile cord interwoven with spirals of steel wire and textile. EPDM cover resists heat, weather and ozone.

Tube: EPDM. Black.
Reinforcement: Spiral steel wire helix between synthetic textile plies.
Cover: EPDM. Black.
Couplings: Quick-acting.
Length: 100 ft.
Temp. Range: -30°F to +350°F



I.D. (in.)	O.D. (in.)	Plies	MBR (in.)	Weight (Lbs./Ft.)
3	3 11/16	2	15	2.0
4	4 11/16	2	18	2.8

Aeration Hose

1" -- AH1

1 1/2" -- AH112

2" -- AH2



4 1/2" I.D. Coupler Hose

Part # SS135-4500



Clamps

#20 Clamp (1" Hose) -- 62013

#28 Clamp (1 1/2" Hose) -- 62015

#36 Clamp (2" Hose) -- 62017

#72 Clamp (4 1/2" Hose) -- 62055

AIR PRESSURE GAUGES

Part # 030DRY (Dry)
or
Part # S215L-404C (Liquid Filled)



- 4" Dial Size
- Liquid filled
- 316 S/S Body
- Phosphor Bronze Bourdon Tube
- Solid Brass Movement
- Acrylic Window

Part # 1008AL



- 4½" Dial Size
- Die Cast Aluminum Body
- Phosphor Bronze Bourdon Tube
- Solid Brass Movement
- Acrylic Window
- Throttle Plug (standard)



Digital Gauge

Ordering Specifications

12634	Digital Pressure Gauge
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Features and Benefits

- Accuracy rating to 1/10 pound
- Bright LED display
- Visible from the entire length of the tractor and trailer
- Visible alert indicator flashes when a 3 PSIG differential is exceeded
- Aluminum Housing
- Accurate and reliable compared to standard gauges and will not be affected by ambient temperature changes, humidity or vibration



SPAN



0-30 Liquid Filled Heil/Span Gauge

#9328-0133 - Back Mount/Back Connection

#9328-0006 - Back Mount/Bottom Connection