

**CAT 1**

**24**

**LIQUID**

API VALVES & ADAPTERS  
API DUST CAPS  
GRAVITY DROP ADAPTERS / COUPLERS  
DROP ELBOWS / FILL ADAPTERS  
FUEL INLET/OUTLETS  
TTMA  
COMPONENTS

**VAPOR**

DROP ELBOWS  
POPPET ASSEMBLIES  
VAPOR RECOVERY COUPLERS  
COMPONENTS

**FUEL TANKER**



## INDEX

### LIQUID

- API Valves & Adapters ..... 2, 3
- Gravity Drop Couplers & Adapters . 4, 5
- Drop Elbow & Adapters ..... 6 - 9
- TTMA ..... 10
- Components ..... 11

### VAPOR

- Drop Elbow & Adapters ..... 12 - 13
- Vapor Recovery Couplers ..... 14
- Components ..... 15
- Repair Diagrams ..... 16 - 17
- TECHNICAL DATA ..... 18 - 21



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DISCLAIMERS

TERMS:

1/2% 10 Days, net 30 Days

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STOCKING WAREHOUSES

SEAL FAST, INC.

5603 Harvey Wilson Dr.

Houston, TX 77020

(713) 675-6324 or 800-231-0734

| FAX (713) 675-0146 or 800-681-1515

| E-mail sales@sealfast.com

PORTER ASSOCIATES

1150 Boot Road

Unit 1

Downingtown, PA 19335

(610) 518-2301

ASPEN MARKETING, INC

5160 Fox Street

Denver, CO 80216

(303) 455-8175

(303) 477-6504 Fax

THE WAGNER GROUP

125 State St.

P O Box 1683

Elkhart, IN 46516

(574) 294-2769

(574) 522-2083 Fax

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FUEL TANKER

API VALVES - BOTTOM LOADING/UNLOADING ADAPTER

LIQUID

USE WITH API VALVES

TTMA Flange - Solid Acrylic

USE WITH

Use w/Part# 106AH &106AHS

SIGHT GLASS

CORK GASKETS

- Heat-treated aluminum construction with a Brass Ring.
  - One-piece heavy-duty poppet & SS trim for longer life.
  - Multi-position short stroke aluminum handle w/Smooth rotation of less than 60°.
  - Flat bottom body eliminate product accumulation after
  - Large inside diameter for higher flow rate at 290 gallons per
  - Meets API RP-1004 specifications with a standard 4" TTMA flange.
  - Viton\* Seals
- \*Viton is a registered trademarks of DuPont Dow Elastomers.

Size	ALUMINUM	
	Part #	List
4"	106AH	

U.S. PAT# 5,622,201

LIQUID

API VALVES - BOTTOM LOAD ONLY

FUEL TANKER

API GRAVITY ADAPTER - COUPLER X FEMALE NPT

COUPLINGS +



Use w/Part# 1004GH



- Construction 1 pcs with TTMA 4" flange.
  - Heat-treated aluminum construction with a brass ring.
  - Meets API RP-1004 specifications.
  - Viton\* Seals
- \*Viton is a registered trademarks of DuPont Dow Elastomers.

Size	ALUMINUM	
	Part #	List
4"	106A	
repair kit	RK106	

- Aluminum w/Hard anodized to ensure the wear resistance of the contact surface.
- Convenient design for seal maintenance & replacement.
- Special treatment for crankshaft to avoid accidental impact force breaking.
- Easy for operator to push in.
- Ensure transmission safety when connecting

Size	ALUMINUM	
	Part #	List
4" x 4"	1004ALVA2	

API VALVES w/SIGHT GLASS - BOTTOM LOADING/UNLOADING ADAPTER

API DUST CAP USE ON 106 VALVES ONLY

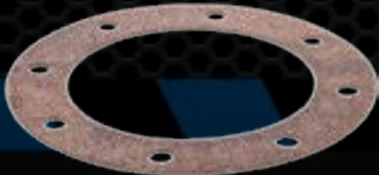
USE WITH API VALVES

TTMA Flange - Solid Acrylic

USE WITH



Use w/Part# 106AH &106AHS SIGHT GLASS on p.51



CORK GASKETS on p.51

- 4" Adapter Openable Sight Glass - Bottom Loading.
  - Fluid Flow Sight Level
  - Heat-treated aluminum construction with a Brass Ring.
  - One-piece heavy-duty poppet & SS trim for longer life.
  - Multi-position short stroke aluminum handle w/Smooth rotation of less than 60°.
  - Flat bottom body eliminate product accumulation after
  - Large inside diameter for higher flow rate at 290 gallons per
  - Meets API RP-1004 specifications with a standard 4" TTMA flange.
  - Viton\* Seals
- \*Viton is a registered trademarks of DuPont Dow Elastomers.

Size	ALUMINUM	
	Part #	List
4"	106AHS w/Sight Glass	
sight glass	106SGK	

U.S. PAT# 5,622,201



Used on 106 Valves Only

- Aluminum alloy construction w/Self-locking device.
- Meets API RP-1004 specification protects poppet face of API head.
- Nylon-Glass cam handle w/Self-locking feature reduces wear and is non-corrosive.
- Cam handle & lug designed for one hand operation.
- Buna-N gasket standard.
- Interchangeable with competitor's items made to the same specifications.

Size	ALUMINUM	
	Part #	List
4"	1004DC	
RPL Handle	1004CHRK	
Gasket	1004DR	



1004CHRK - Replacement Handle



1004DR - Replacement Gasket for API Cap



GRAVITY DROP ADAPTER

Available w/Self Locking Handles



TYPE  
GA

- Attach directly against openable API's.
- Allows drop hose with standard Seal Fast cam and groove couplings to clamp on and transfer petroleum from the API valve.
- Meets API RP-1004 specifications.
- Heat treated aluminum alloy.
- With stainless steel self-locking handles.

Size	ALUMINUM w/SS Self Locking Handles	
	Part #	List
3"	1004GA-300ALSK	
4"	1004GA-400ALSK	
replacement gasket	1004GR	



TYPE  
GA

- Attach directly against openable API's.
- Allows drop hose with standard Seal Fast cam and groove couplings to clamp on and transfer petroleum from the API valve.
- Meets API RP-1004 specifications.
- Heat treated aluminum alloy.
- With brass handles.

Size	ALUMINUM w/Brass Handles	
	Part #	List
3"	1004GA-300B	
4"	1004GA-400B	
replacement gasket	1004GR	

GRAVITY DROP COUPLER

Available w/Self Locking Handles



TYPE  
GB

- Attach directly against openable API's.
- Allows drop hose with standard Seal Fast cam and groove couplings to clamp on and transfer petroleum from the API valve.
- Meets API RP-1004 specifications.
- Heat treated aluminum alloy.
- With stainless steel self-locking handles.

Size	ALUMINUM	
	Part #	List
3"	1004GB-300ALSK	
4"	1004GB-400ALSK	
replacement gasket	1004GR	

GRAVITY DROP ADAPTER - TWO PIECE

Available w/Self Locking Handles



see on p.49



Size	ALUMINUM - Gravity Drop Two Piece			ALUMINUM - Adapter & Couplers		
	Part #	List	Features	Part #	List	Features
3"	1004GF-300AS		Male Adapter Straight	AF-300		Male Adapter Straight
3"	1004GF-301AS		Male Adapter Off-set	AF-301		Male Adapter Off-set
4"	1004GF-400AS		Male Adapter Straight	AF-400		Male Adapter Straight
3"	1004GF-300BLS		Female w/Sight Glass	BF-300		Female Coupler
4"	1004GF-400BLS		Female w/Sight Glass	BF-400		Female Coupler
3"	1004GF-300SB		Male Threaded w/Sight Glass 1004GF-300ASB	BF-300SK		Female Coupler w/Self Locking Handle
4"	1004GF-400SB		Male Threaded w/Sight Glass 1004GF-400ASB	BF-400SK		Female Coupler w/Self Locking Handle
3"	1004GF-300A		Male Adapter w/Out Sight Glass	MTF-300		Male Threaded
4"	1004GF-400A		Male Adapter w/Out Sight Glass	MTF-400		Male Threaded
3"	1004GF-300BL		Female Coupler w/Out Sight Glass	FTF-300		Female Threaded
4"	1004GF-400BL		Female Coupler w/Out Sight Glass	FTF-400		Female Threaded

Size	ALUMINUM - Gravity Drop Two Piece w/Sight - PARTS LIST				
	Part #	List	Features		
Kit	1004GF		Flange Gravity Drop Body		
Kit	1004SGK		Sight Glass Kit	(918SGK - same item as item # 1004SGK)	

FUEL TANKER

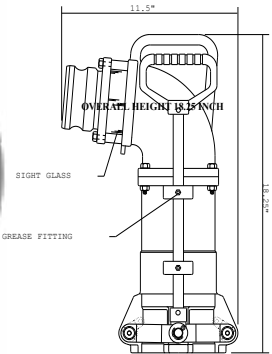
LIQUID

LIQUID

FUEL TANKER

DROP ELBOW - 918 SERIES DUAL POINT "D" HANDLE

► Overall Height = 18.25"



- Heavy duty aluminum alloy construction, center of gravity at handle, easy to operate.
  - Push to couple, pull to release.
  - Unique locking action that insure positive connection & uniform seal compression.
  - 360 degree round sight glass window on top.
  - 5 degree angled four bolt flange pattern with variety of different inlets to meet any requirement.
- Weight: 14.5 lb

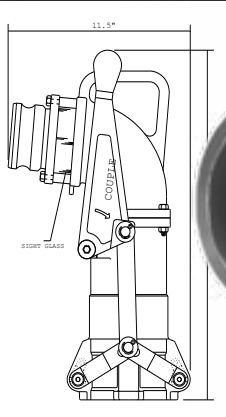
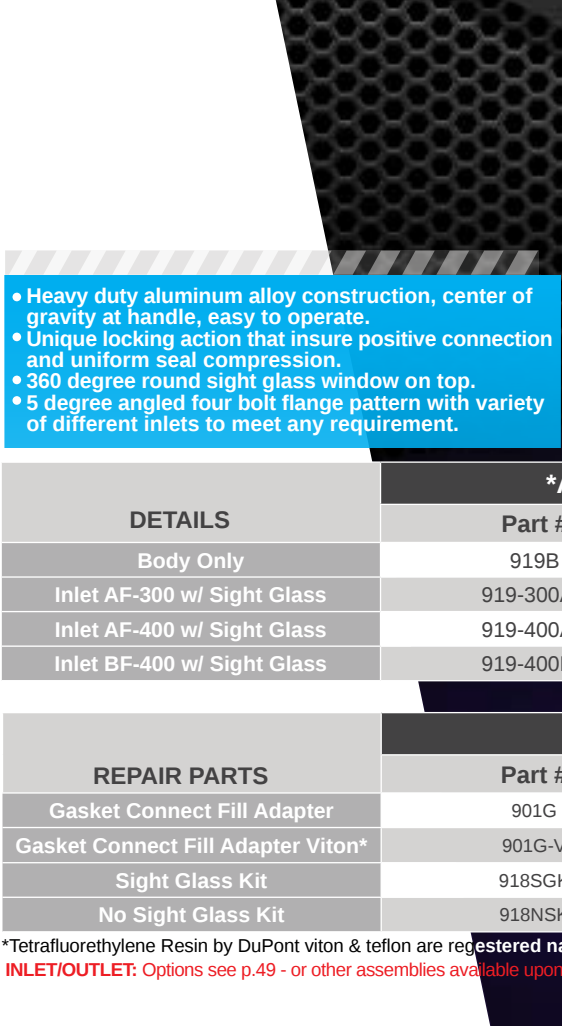
DETAILS	*ALUMINUM	
	Part #	List
Body Only	918B	
Inlet AF-300 w/ Sight Glass	918-300AS	
Inlet AF-400 w/ Sight Glass	918-400AS	
Inlet BF-400 w/ Sight Glass	918-400BS	

REPAIR PARTS	*ALUMINUM	
	Part #	List
Gasket Connect Fill Adapter	901G	
Gasket Connect Fill Adapter Viton*	901G-V	
Sight Glass Kit	918SGK	
No Sight Glass Kit	918NSK	

\*Tetrafluorethylene Resin by DuPont viton & teflon are registered names.  
**INLET/OUTLET:** Options see p.49 - or other assemblies available upon request

DROP ADAPTER - 919 SERIES DUAL POINT LEVER HANDLE

► Overall Height = 19.25"



- Heavy duty aluminum alloy construction, center of gravity at handle, easy to operate.
- Unique locking action that insure positive connection and uniform seal compression.
- 360 degree round sight glass window on top.
- 5 degree angled four bolt flange pattern with variety of different inlets to meet any requirement.

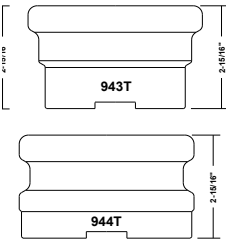
DETAILS	*ALUMINUM	
	Part #	List
Body Only	919B	
Inlet AF-300 w/ Sight Glass	919-300AS	
Inlet AF-400 w/ Sight Glass	919-400AS	
Inlet BF-400 w/ Sight Glass	919-400BS	

REPAIR PARTS	*ALUMINUM	
	Part #	List
Gasket Connect Fill Adapter	901G	
Gasket Connect Fill Adapter Viton*	901G-V	
Sight Glass Kit	918SGK	
No Sight Glass Kit	918NSK	

\*Tetrafluorethylene Resin by DuPont viton & teflon are registered names.  
**INLET/OUTLET:** Options see p.49 - or other assemblies available upon request

FILL ADAPTER - TOP SEAL DUAL POINT

► Female Thread available in 3" & 4"



- Integral internal wrenching lugs.
- Models incorporate dual notches in the base to accept locking clamp.
- Manufactured from durable materials as aluminum alloy & brass.
- Standard overall height 2-15/16".

DETAILS	ALUMINUM		BRASS	
	Part #	List	Part #	List
4" x 3"	943TA		943TB	
4" x 4"	944TA		944TB	

EXTENSION KIT - FOR 919 ELBOW



DETAILS	ALUMINUM		Size	CORK	
	Part #	List		Part #	List
5" x 5" x 3"	919EK		Universal	818CG	

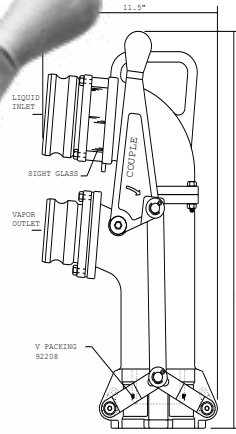
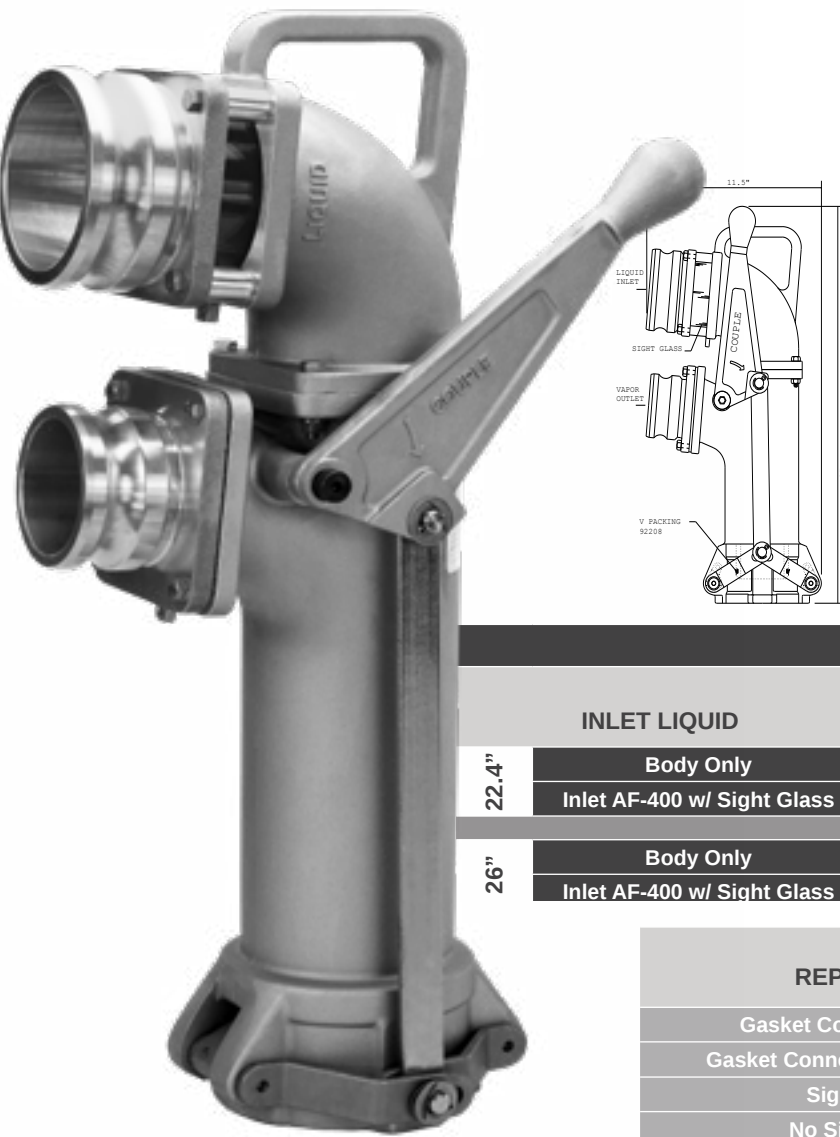


FUEL TANKER

LIQUID

COAXIAL DROP ELBOW - 922 SERIES SINGLE POINT LEVER HANDLE

► Overall Height: 922 = 22.4"  
926 = 26"



- Heavy duty aluminum alloy construction.
- Center of gravity at handle for easy operation.
- Unique locking action that insure positive connection and uniform seal compression at fill adapter.
- Product port (liquid inlet) on top and vapor port on bottom to eliminate vapor interference when draining product.
- 360 degree round sight glass on top for easy monitoring.
- 5 degree angled four bolt flange pattern with variety of different inlets and outlets to meet any requirement.
- Coaxial elbows meet stage 1 & 2 vapor recovery standards.

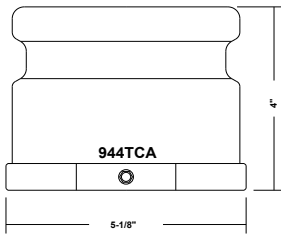
*ALUMINUM				
INLET LIQUID		OUTLET VAPOR	Part #	List
22.4"	Body Only	922B	922B	
	Inlet AF-400 w/ Sight Glass	AF-300	922-4AS-3A	
26"	Body Only	926B	926B	
	Inlet AF-400 w/ Sight Glass	AF-300	926-4AS-3A	

REPAIR PARTS		
	Part #	List
Gasket Connect Fill Adapter	901G	
Gasket Connect Fill Adapter Viton*	901G-V	
Sight Glass Kit	918SGK	
No Sight Glass Kit	918NSK	

\*VITON is a registered trademark of DuPont Dow Elastomer  
INLET/OUTLET: Options see p.49 - or other assemblies available upon request

FILL ADAPTER - TOP SEAL DUAL POINT

► Female Thread available in 4"



DETAILS	ALUMINUM	
	Part #	List
4" x 4"	944TCA	

- Integral internal wrenching lugs.
- Models incorporate dual notches in the base to accept locking clamp.
- Manufactured from durable materials as aluminum alloy & brass.
- Standard overall height 2-15/16".

LIQUID

FUEL TANKER

FUEL INLET/OUTLET - ADAPTER

USE WITH: 818, 918, 919, 922, 926, 1004GF Elbows or Gravity Drop			
	Size	ALUMINUM	
		Part #	List
Male Adapter Straight	2"	AF-200	
Male Adapter Straight	3"	AF-300	
Male Adapter Off-Set	3"	AF-301	
Male Adapter Straight	4"	AF-400	



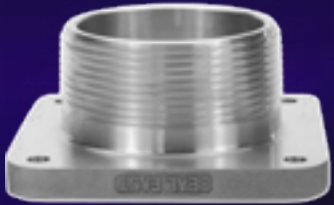
FUEL INLET/OUTLET - COUPLER

USE WITH: 818, 918, 919, 922, 926, 1004GF Elbows or Gravity Drop			
	Size	ALUMINUM	
		Part #	List
Female Coupler Straight	3"	BF-300	
Female Coupler Straight	4"	BF-400	
Female Coupler Off-Set	3"	BF-300SK	
Female Coupler Straight	4"	BF-400SK	



FUEL INLET/OUTLET - MALE NPT

USE WITH: 818, 918, 919, 922, 926, 1004GF Elbows or Gravity Drop			
	Size	ALUMINUM	
		Part #	List
Male Threaded	3"	MTF-300	
Male Threaded	4"	MTF-400	



FUEL INLET/OUTLET - FEMALE NPT

USE WITH: 818, 918, 919, 922, 926, 1004GF Elbows or Gravity Drop			
	Size	ALUMINUM	
		Part #	List
Female Threaded	3"	FTF-300	
Female Threaded	4"	FTF-400	



FUEL INLET/OUTLET - CHECK POPPET VALVE

USE WITH: 818, 918, 919, 922, 926, 1004GF Elbows or Gravity Drop			
	Size	ALUMINUM	
		Part #	List
Check Poppet Valve	3"	AF-300CP	



CORK GASKET

Size	CORK	
	Part #	List
Universal	818CG	



FUEL TANKER

MALE ADAPTER X TTMA



Size	ALUMINUM	
	Part #	List
3"	A300TTMAAL	
3" x 4"	A3040TTMAAL	
4"	A400TTMAAL	
6"	A600TTMAAL	

FEMALE NPT X TTMA



Size	ALUMINUM	
	Part #	List
3"	FNPT300TTMAAL	
4"	FNPT400TTMAAL	

LIQUID

FEMALE COUPLER X TTMA



ALUMINUM	
Part #	List
C300TTMAAL	
---	
C400TTMAAL	
C600TTMAAL	

MALE NPT X TTMA



ALUMINUM	
Part #	List
MNPT300TTMAAL	
MNPT400TTMAAL	

COMPONENTS

VAPOR CAP



- Orange Color Coding
- Ny-glass lockable pull out handle w/SS arms.
- Can be locked from either side of handle.
- Ability to add safety chains to cap from either side.
- One hand operation to open or close.



WARNING: NOT FOR PRESSURE APPLICATIONS

Size	ORANGE NYLON		GASKET	
	Part #	List	Part #	List
4"	840DC		G-940DC	

SIGHT GLASS KIT



Details	Size	ACRYLIC	
		Part #	List
1 pcs Solid Acrylic	4"	1004SGK or 918SGK	

CORK GASKET - FUEL INLET/OUTLET



Details	CORK	
	Part #	List
Universal	818CG	

DUST CAP - API USE ON 106 VALVES ONLY

►Self Locking Handle

- Aluminum alloy construction w/Self-locking device - Buna-N gasket standard.
- Meets API RP-1004 specification protects poppet face of API head.
- Nylon-Glass cam handle w/Self-locking feature reduces wear & is non-corrosive.
- Cam handle & lug designed for one hand operation.
- Interchangeable w/Competitor's items made to the same specifications.

Size	ALUMINUM	
	Part #	List
4"	1004DC	
RPL Handle	1004CHRK	
Gasket	1004DR	

PNEUMATIC AIR INTERLOCK VALVE



- Brass forged body w/All SS components.
- \*Unique design with filter.
- Adjustable contact pad & shaft accommodates competitive API's and other application.
- 1/4" NPT installs pneumatic connection.
- Can be installed as normally closed or open valve.
- Can be installed as top side or bottom side (up side down) to connect API's bottom loading adapter or vapor recovery adapter.

Details	BRASS	
	Part #	List
Valve	800	
Repair Kit (Pad)	800-PA	
Repair Kit (Gasket)	800-RK	

SIGHT GLASS - TTMA FLANGE



Details	Size	ACRYLIC	
		Part #	List
1 pcs Solid Acrylic	4"	ASG-400TF	

CORK GASKET - TTMA FLANGE

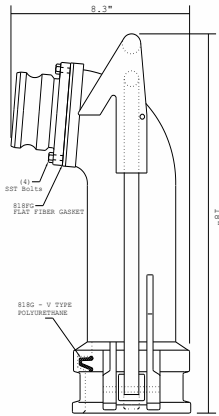
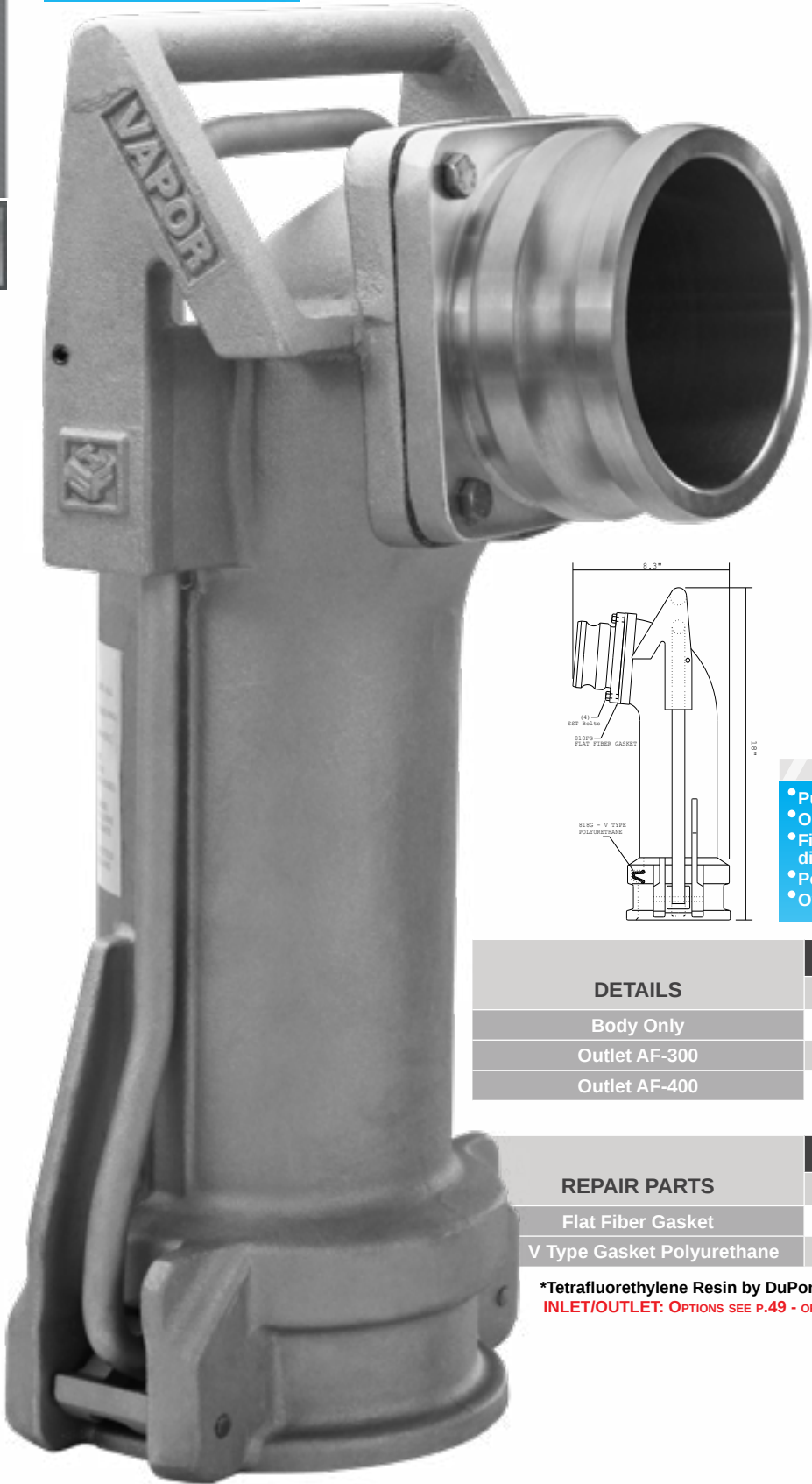


Size	CORK	
	Part #	List
4"	C-400TTMA	



DROP ELBOW - 818 SERIES DUAL POINT

► Overall Height = 18"



- Push to couple, push and squeeze to release.
- One piece aluminum alloy construction, easy to operate.
- Five degree angled four bolt flange pattern with variety of different outlets to meet any requirement.
- Polyurethane V type gasket
- Overall height 18"

DETAILS	*ALUMINUM	
	Part #	List
Body Only	818B	
Outlet AF-300	818-300A	
Outlet AF-400	818-400A	

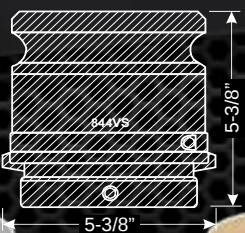
REPAIR PARTS		
	Part #	List
Flat Fiber Gasket	818FG	
V Type Gasket Polyurethane	818G	

\*Tetrafluorethylene Resin by DuPont viton & teflon are registered names.  
INLET/OUTLET: OPTIONS SEE P.49 - OR OTHER ASSEMBLIES AVAILABLE UPON REQUEST

POPPET ASSEMBLY ADAPTER - DUAL POINT SWIVEL ADAPTER

► Poppet Assembly Is Integrated w/Swivel Top Section

- Lower profile design reduces the need to adjust the riser pipe & spill bucket.
- Swivel top section that rotates 360° w/Product or vapor elbow movement while the swivel bottom section remains securely sealed to riser pipe.
- Viton gasket & PTFE-silicone O-ring seals provide compatibility w/All current fuels and fuel additives, including the proposed ethanol additive. No lubrication required, complete w/SS Socket screws.
- Female thread available w/ 3" and 4" NPSH to meet all riser pipe requirements.



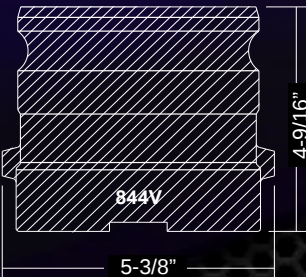
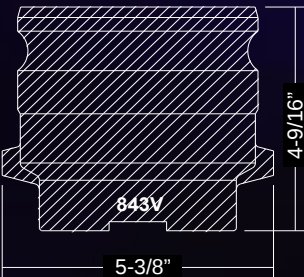
Size	ALUMINUM	
	Part #	List
4" x 3"	843VSA	
4" x 4"	844VSA	

Size	BRASS	
	Part #	List
4" x 3"	843VSB	
4" x 4"	844VSB	

POPPET ASSEMBLY ADAPTER - DUAL POINT POPPET ADAPTER

► Female Thread available in 3" & 4"

- Low profile design overall height 4-9/16".
- Models incorporate dual notches in the base to accept locking clamp.
- Poppeted adapter w/SS & stem for corrosion resistance.



843VA



844VA



843VB



844VB

Size	ALUMINUM	
	Part #	List
4" x 3"	843VA	
4" x 4"	844VA	

Size	BRASS	
	Part #	List
4" x 3"	843VB	
4" x 4"	844VB	

VAPOR RECOVERY COUPLER w/PROBE

► Available w/Self Locking Handles

• CVR can be used with 833F, 843A-1, 843A, 844A-1 & 844A



Type CVR

SIZES	ALUMINUM		
	HANDLE	Part #	List
3"	Brass	CVR 300AL	
4"	Brass	CVR 400AL	
4" x 3"	Brass	CVR4030AL	

ALUMINUM		
HANDLE	Part #	List
SS-Self Locking	CVR 300ALSK	
SS-Self Locking	CVR 400ALSK	
SS-Self Locking	CVR 4030ALSK	

VAPOR ADAPTER W/POPPET X 3" or 4" FEMALE NPSH

► Use w/CVR 400AL or CVR 4030AL

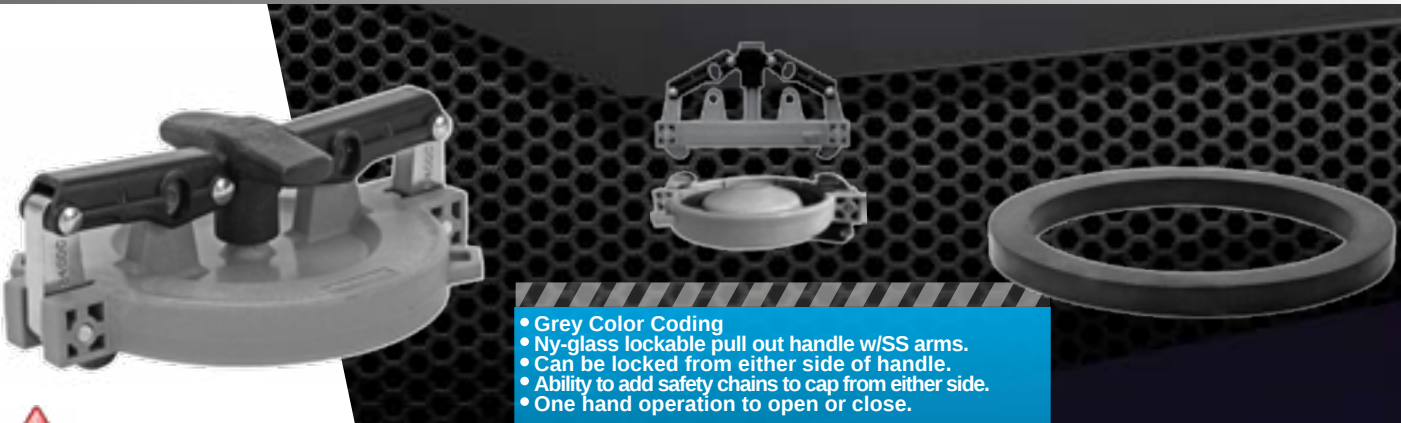
• Vapor adapter poppet with 4" Cam & Groove and 3" female NPSH



SIZES	ALUMINUM	
	Part #	List
4" x 3"	843A-1	
4" x 4"	844A-1	

HARDCOAT ALUMINUM	
Part #	List
843A	
844A	

FILL CAPS



- Grey Color Coding
- Ny-glass lockable pull out handle w/SS arms.
- Can be locked from either side of handle.
- Ability to add safety chains to cap from either side.
- One hand operation to open or close.



WARNING: NOT FOR PRESSURE APPLICATIONS

Size	GREY NYLON	
	Part #	List
4"	940DC	

GASKET	
Part #	List
G-940DC	

PNEUMATIC 3" VAPOR VALVE FOR 16" & 20" MAN HOLE COVER

- Poppet opens into tank to prevent leakage from surges or from overturned tank. 7.354 square inches of flow area.
- Hard anodized aluminum hood and low profile.
- Tapered seat design with Viton O-ring seal provides leaktight seal.
- SS spring, screws, bolts, and nuts resists corrosion.
- 1/4" NPT external pneumatic connection.
- P/N: 820P Installs easily off-set in 20" manhole or separate
- 3" TTMA size mounting ring.



816P - 3" Vent

820P - 3" Vent

Size	ALUMINUM	
	Part #	List
3" x 16" Manhole	816P	
3" x 20" Manhole	820P	
Repair Kit	816P-RK	
Repair Kit	820P-RK	

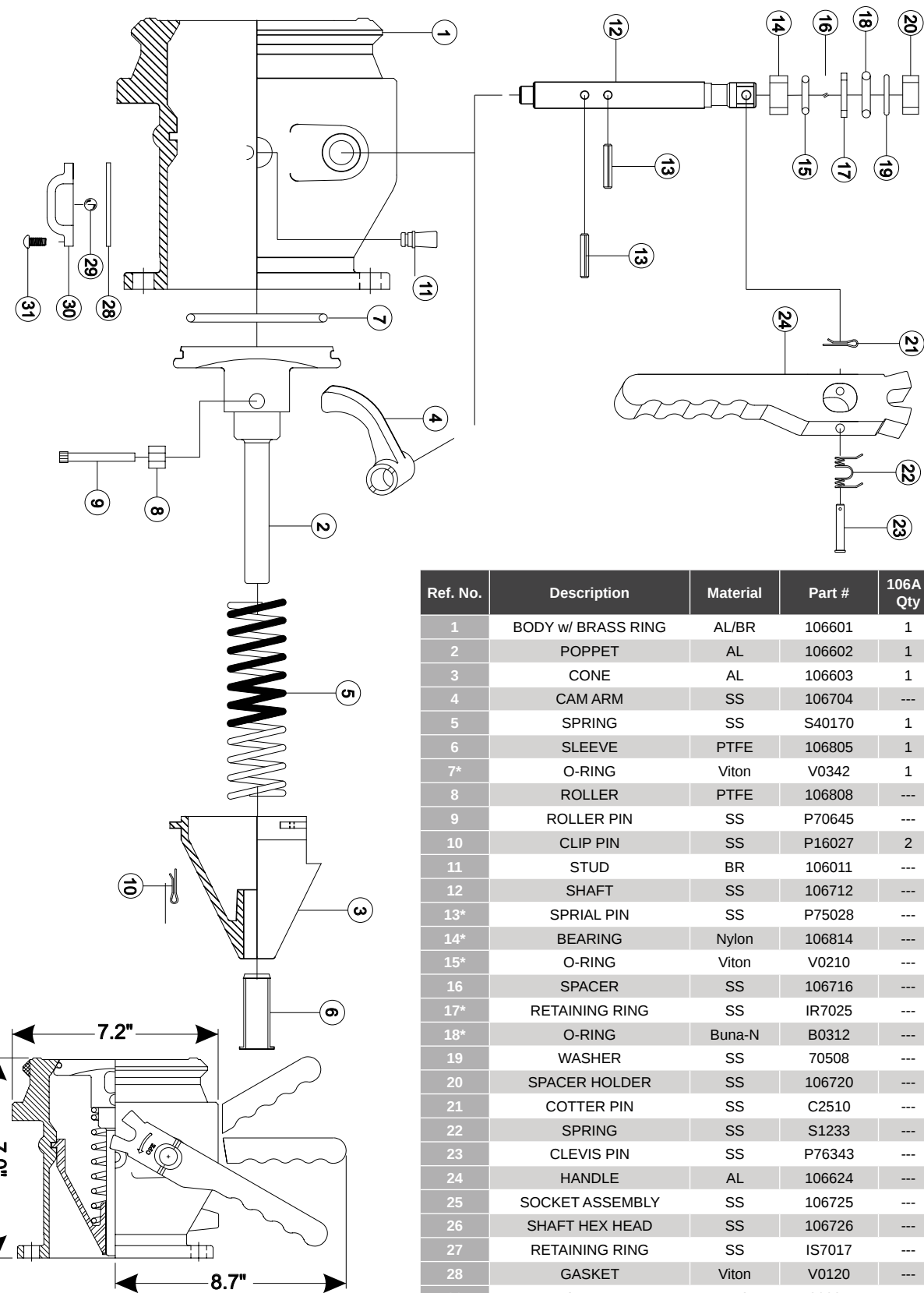
FILL ADAPTER WRENCH



STEEL	
Part #	List
WT-890	



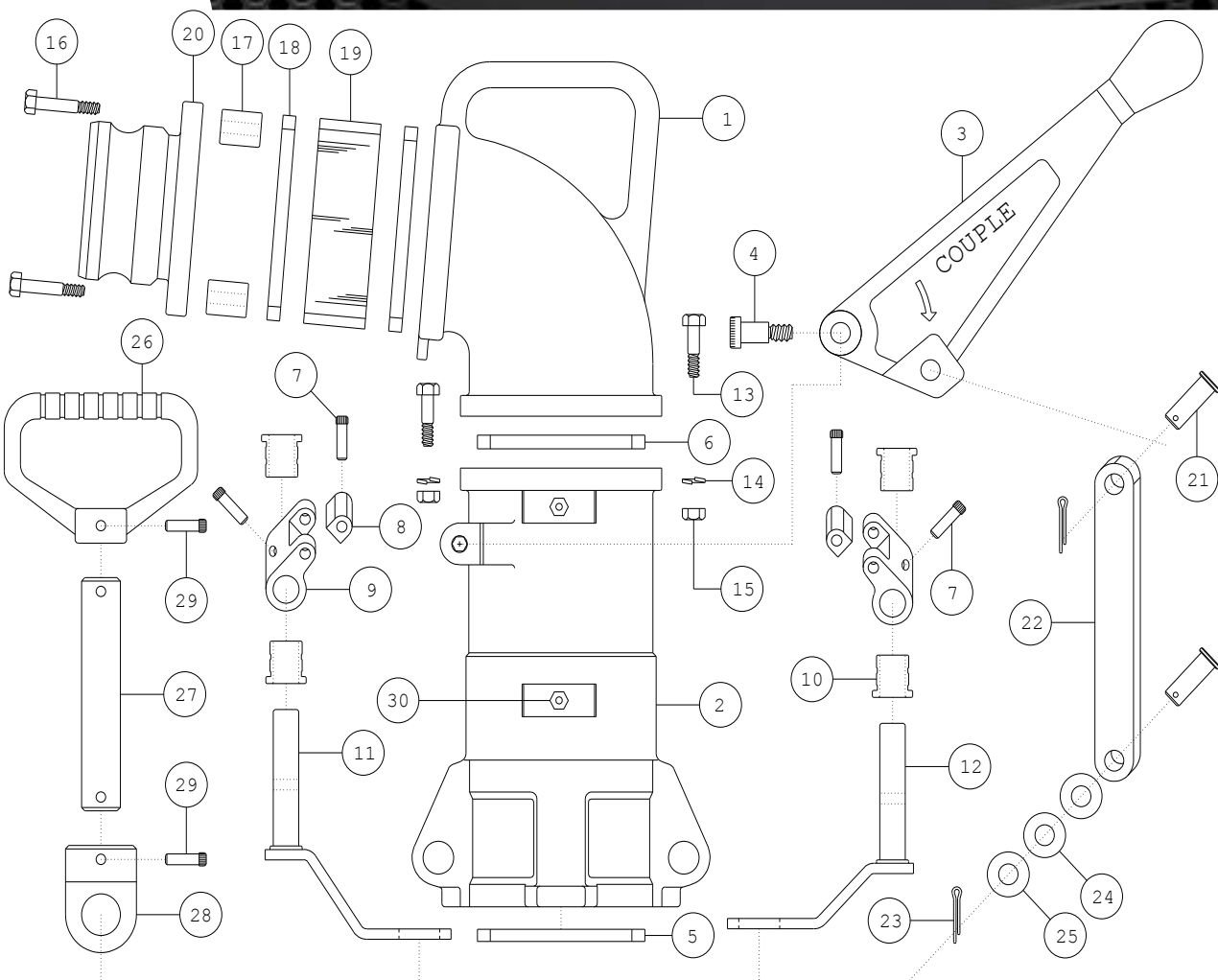
API VALVES - 106AH & 106AHS PARTS LIST



Ref. No.	Description	Material	Part #	106A - Qty	106AH - Qty	106AHS - Qty
1	BODY w/ BRASS RING	AL/BR	106601	1	1	1
2	POPPET	AL	106602	1	1	1
3	CONE	AL	106603	1	1	1
4	CAM ARM	SS	106704	---	1	1
5	SPRING	SS	S40170	1	1	1
6	SLEEVE	PTFE	106805	1	1	1
7*	O-RING	Viton	V0342	1	1	1
8	ROLLER	PTFE	106808	---	1	1
9	ROLLER PIN	SS	P70645	---	1	1
10	CLIP PIN	SS	P16027	2	2	2
11	STUD	BR	106011	---	1	1
12	SHAFT	SS	106712	---	1	1
13*	SPRIAL PIN	SS	P75028	---	2	2
14*	BEARING	Nylon	106814	---	1	1
15*	O-RING	Viton	V0210	---	1	1
16	SPACER	SS	106716	---	1	1
17*	RETAINING RING	SS	IR7025	---	1	1
18*	O-RING	Buna-N	B0312	---	1	1
19	WASHER	SS	70508	---	1	1
20	SPACER HOLDER	SS	106720	---	1	1
21	COTTER PIN	SS	C2510	---	1	1
22	SPRING	SS	S1233	---	1	1
23	CLEVIS PIN	SS	P76343	---	1	1
24	HANDLE	AL	106624	---	1	1
25	SOCKET ASSEMBLY	SS	106725	---	---	---
26	SHAFT HEX HEAD	SS	106726	---	---	---
27	RETAINING RING	SS	IS7017	---	---	---
28	GASKET	Viton	V0120	---	---	1
29	FLOAT BALL	PVC	30031	---	---	1
30	SIGHT GLASS	Acrylic	30030	---	---	1
31	SCREW	SS	73705	---	---	4

\* Repair Kit RK106 Includes REF. NO.: 7, 13, 14, 15, 17 & 18

DROP ELBOW REPAIR - PARTS LIST FOR 918 & 919 ELBOWS



Ref. No.	Description	Material	Part #	Qty
1	Upper Body	Aluminum	29090	1
2	Lower Body	Aluminum	29019	1
3	Handle	Aluminum	29193	1
4	Shoulder screw	Steel Black	11210	1
5	Gasket Fill Adapter	Buna-N	901G	1
---	Gasket Fill Adapter	Viton	901G-V	option
6	Gasket Connect	Buna-N	902G	1
7	Pin	Stainless	76325	4
8	Cam	Stainless	79008	2
9	Cam Arm	Stainless	79009	2
10	Sleeve	Brass	31620	4
11	Left Linkage Arm	Stainless	92211	1
12	Right Linkage Arm	Stainless	92212	1
13	Bolt	Stainless	77938	4
14	Spring Washer	Stainless	77902	4
15	Hex Nut	Stainless	77906	4
16	Bolt	Stainless	77954	4
17	Space Holder	Aluminum	21925	4

Ref. No.	Description	Material	Part #	Qty
18	Gasket	Buna-N	903G	2
19	Sight Glass	Acrylic	900SG	1
20	Inlet Adapter-3A	Aluminum	AF-300AL	1
---	Inlet Adapter-4A	Aluminum	AF-400AL	option
---	Inlet Coupler-3B	Aluminum	BF-300AL	option
---	Inlet Coupler-4B	Aluminum	BF-400AL	option
---	Inlet Male Thread-3" NPT	Aluminum	MTF300AL	option
---	Inlet Male Thread-4" NPT	Aluminum	MTF400AL	option
21	Clevis Pin	Stainless	71232	2
22	Flat Linkage	Stainless	791911	1
23	Cotter Pin	Stainless	72520	2
24	Waved Washer	Stainless	71204	1
25	Flat Washer	Stainless	71203	2
26	"D" Handle	Aluminum	291802	1
27	Rod	Steele Nickle	191803	1
28	Connector	Stainless	791804	1
29	Pin	Stainless	76332	2
30	Grease Fitting	Brass Nickle	30505	2
31	Sight Glass Repair Kit	Includes 16,17,18,19	918SGK	1

TECHNICAL DATA

CORROSION RESISTANCE OF COUPLING MATERIALS

**CAUTION:** The following data has been compiled from generally available sources end should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

RATINGS: 1. Excellent 2. Good3. Fair Conditional x. Not SatisfactoryNOTES: No rationg indicates no data available									
AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Acetate, Solvents, Crude		3				2	1	1	2
Acetate, Solvents, Pure		1	1	1		1	1	1	1
Acetic Acid	X	X	X	2	1	X	2	2	2
Acetic Acid Vapor	X	X		3		X	2	2	3
Acetic Anhydride	X	X		2		X	2	2	2
Acetone	1	1	1	1	1	1	1	1	1
Acetylene	1	2		1		1	1	1	2
Alcohols	1	2		1		1	1	1	1
Aluminum Sulfate	X	3	3	3	1	X	3	2	2
Alums	X	3	2	3	1	X	3	2	2
Ammonia Gas	1	X	3	1	3	1	1	1	X
Ammonium Chloride	1	3		1*		3	3	1	1
Ammonium Hydroxide	2	X		2		1	1	1	3
Ammonium Nitrate	1	X		2		1	1	1	3
Ammonium Phosphate (Ammoniacal)		X				1	1	1	2
Ammonium Phosphate (Neutral)		3				1	1	1	2
Ammonium Phosphate (Acid)		3				3	2	1	2
Ammonium Sulfate	1	3				2	1	1	2
Asphalt	1	2				2	1	1	1
Beer	2	2	1	1		X	1	1	1
Beet SugarLiquors	1	2		1		2	1	1	1
Benzene, Benzol	1	1	1	1	1	1	1	1	1
Benzine (petroleum-naphtha)	1	1		1		1	1	1	1
Borax	2	2				1	1	1	1
Boric Acid	X	3		1		3	2	1	1
Butane, Butylene	1	1	1	1		1	1	1	1
Butadiene		1				1	1	1	1
Calcium Bisulfate		X				X	2	1	X
Calcium Hypochlorite	3	3	3	X	3	X	3	2	3
Cane Sugar Liquors	1	2		1		2	1	1	1
Carbon Dioxide (Dry)	1	1		1		1	1	1	1
Carbon Dioxide (Wet & Aqueous Sol)	2	3		2		2	1	1	2
Carbon Disulfide	2	3		2		2	1	1	3
Carbon Tetrachloride	3	1	2	3	1	1	1	1	1
Chlorine (Dry)	2	2	2	1	2	2	2	2	1
Chlorine (Wet)	X	X	3	X	2	X	X	3	3
Chromic Acid		X	X	X	1	3	2	2	3
Citric Acid	X	3		1		3	X	1	2
Coke Oven Gas	1	3		2		1	1	1	2
Copper Sulfate	X	X		X		1	1	1	3
Core Oils		1	1			1	1	1	1
Cottonseed Oil	1	1	1	1		1	1	1	1
Creosote	2	3		1		1	1	1	1
Ethers	2	1		1		1	1	1	1
Ethylene Glycol	2	2				1	1	1	1
Ferric Chloride	X	X	X	X	1	X	X	X	X
Ferric Sulfate	X	X		X		1	1	1	3
Formaldehyde	2	2		2		1	1	1	1

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AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Formic Acid	X	2		X		X	2	1	2
Freon	3	1	1	1		1	1	1	1
Furfural	1	2		1		1	1	1	1
Gasoline (Sour)	3	3		3		3	1	1	X
Gasoline (Refined)	1	1	1	1		1	1	1	1
Gelatin	1	3		1		1	1	1	1
Glucose	1	1		1		1	1	1	1
Glue	1	3		1		1	1	1	1
Glycerine or Glycerol	1	2		1		1	1	1	1
Hydrochloric Acid	X	X	X	X	1	X	X	X	X
Hydrocyanic Acid	3	X		1		3	1	1	2
Hydrofluoric Acid	X	3	3	X	X	X	X	X	X
Hydrogen Fluoride		3				X	X	3	1
Hydrogen	1	1		1		1	1	1	1
Hyrogen Peroxide	X	X		1		1	2	1	2
Hydrogen Sulfide (Dry)	3	3		2		3	2	1	3
Hydrogen Sulfide (Wet)	3	3		2		3	2	1	3
Lacquers and Lacquer Solvents	3	2		1		1	1	1	1
Lactic Acid	X			3			3	2	1
Lime-Sulfur	2	X		2		1	1	2	
Linseed Oil	1	1		1			1	1	1
Magnesium Chloride	3	3		X		3	2	1	1
Magnesium Hydroxide	1	2		X		1	1	1	1
Magnesium Sulfate	2	2		3		1	1	1	1
Mercuric Chloride	3	X		X		X	X	3	X
Mercury	1	X		X		1	1	1	2
Milk	3	3		1		2	1	1	3
Molasses	2	X		2		2	1	1	1
Natural Gas	1	2		1		1	1	1	1
Nickel Chloride		X		X		X	3	2	2
Nickel Sulfate		3		X		3	2	1	1
Nitric Acid	X	X	X	3	1	2	2	2	X
Oleic Acid	2	3		1		2	2	1	1
Oxalic Acid	3	3		2		3	2	1	1
Oxygen	1	1	1	1		1	1	1	1
Palmitic Acid	1	3		1		2	2	1	1
Petroleum Oils (Sour)		3				3	1	1	X
Petroleum Oils (Refined)	1	1	1	1		1	1	1	1
Phosphoric Acid 25%	3	X		3	3	X	3	1	2
Phosphoric Acid 25-50%	X	X		X	3	X	X	2	2
Phosphoric Acid 50-85%	X	X		X	X	X	X	2	2
Picric Acid	3	X		3		2	1	1	X
Potassium Chloride	2	3		3		3	2	1	1
Potassium Hydroxide	3	X		X		1	1	1	1
Potassium Sulfate	2	2		1		1	1	1	1
Propane	1	1				1	1	1	1
Rosin (Dark)	1	2			1	1	1	1	1
Rosin (Light)		X		1		1	1	1	2



TECHNICAL DATA

CORROSION RESISTANCE OF COUPLING MATERIALS

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RATINGS: 1. Excellent 2. Good		3. Fair Conditional x. Not Satisfactory		NOTES: No rationg indicates no data available					
AGENT	Mall. From Steel	Brass	Bronze	Aluminum	Glass	Stainless 410, 416, 430	Stainless 302, 202, 304, 308	Stainless 316	Monel
Shellac		2		2		1	1	1	1
Sludge Acid		X				X	X	3	2
Soda Ash (Sodium Carbonate)	1	2		X		1	1	1	1
Sodium Bicarbonate	3	1		X		1	1	1	1
Sodium Bisulfate	X	3		3		X	1	1	1
Sodium Chloride	2	3	2	X	1	3	2	1	1
Sodium Cyanide	2	X		X		1	1	1	2
Sodium Hydroxide	3	X	3	X	X	2	2	2	1
Sodium Hypochlorite	X	X		X		X	3	2	3
Sodium Metaphosphate	X	3		1		2	1	1	1
Sodium Nitrate	1	3		1		1	1	1	1
Sodium Perborate	3	3		1		1	1	1	1
Sodium Peroxide	3	3		1		1	1	1	1
Sodium Phosphate (Alkaline)		3				1	1	1	1
Sodium Phosphate (Neutral)		2				1	1	1	1
Sodium Phosphate (Acid)		2				X	2	1	1
Sodium Silicate	1	3		X		1	1	1	1
Sodium Sulfate	1	2		3		1	1	1	1
Sodium Sulfide	1	X				1	1	1	2
Sodium Thiosulfate (Hypo)	3	X		X		1	1	1	2
Stearic Acid	3	3		3		2	2	1	1
Sulfate Liquors		X				1	1	1	2
Sulfur	2	X		2		2	2	1	3
Sulfur Chloride	X	X				X	3	2	2
Sulfur Dioxide (Dry)	2	1		1		1	1	1	1
Sulfur Dioxide (Wet)		X				X	2	1	X
Sulfuric Acid 10%	X	X	3	3		X	X	2	2
Sulfuric Acid 10-75%	X	X	X	X		X	X	X	2
Sulfuric Acid 75-95%	3	X	X	X		3	3	2	3
Sulfuric Acid 95%	2	X	X			2	2	2	X
Surlfurous Acid	X	X		X		X	3	2	X
Tannic Acid	3	3	1	X			1	1	1
Tar	1	2		1		2	1	1	1
Toluene, Toluol	1	1		1		1	1	1	1
Trichlorethylene	3	1		3		1	1	1	1
Turpentine		3		1		3	1	1	1
Varnish	2	2				1	1	1	1
Vegetable Oils	1	2		1		1	1	1	1
Vinegar	3	3		3		3	2	1	2
Water (Acid Mine Water)	3	X		3		2	1	1	3
Water (Fresh)	3	1		1		1	1	1	1
Water (Salt)	3	3	2	X		3	2	2	1
Whiskey	X	2				3	1	1	2
Wines	X	2				3	1	1	2
Xylene, Xylol	2	1		1		1	1	1	1
Zinc Chloride	X	X		X		3	2	1	1
Zinc Sulfate	3	3		3		3	2	1	1

TECHNICAL DATA

OIL & GASOLINE RESISTANCE

Rubber hose is used to convey petroleum products both in the crude and refined stages. The aromatic content of re-fined gasoline is often adjusted to control the octane rating. The presence of aromatic hydrocarbons in this fuel generally has a greater effect on rubber components than do aliphatic hydrocarbons. Aromatic materials in contact with rubber tend to soften it and reduce its physical properties. For long lasting service, the buyer of gasoline hose should inform the hose manufacturer of the aromatic content of the fuel to be handled so that the proper tube compound can be recommended for the specific application.

The effects of oil on rubber depend on a number of factors that include the type of rubber compound, the composition of the oil, the temperature and time of exposure. Rubber compounds can be classified as to their degree of oil resistance based on their physical properties after exposure to a standard test fluid. In this RMA classification, the rubber samples are immersed in IRM 903 oil at 100°C for 70 hours. (See ASTM Method D-471 for a detailed description of the oil and the testing procedure.) As a guide to the user of hose in contact with oil, the oil resistance classes and a corresponding description are listed.

PHYSICAL PROPERTIES AFTER EXPOSURE TO OIL:		
	VOLUME CHANGE MAXIMUM	TENSILE STRENGTH RETAINED
CLASS A (HIGH OIL RESISTANCE).....	+25%	80%
CLASS B (MEDIUM/HIGH OIL RESISTANCE).....	+65%	50%
CLASS C (MEDIUM OIL RESISTANCE).....	+100%	40%

CHEMICAL RECOMMENDATIONS

The materials being handled by flexible rubber hose are constantly increasing in number and diversity. T o assist in the selection of the proper elastomer for the service conditions encountered, the following table has been prepared. The reader is cautioned that it is only a guide and should be used as such, as the degree of resistance of an elastomer with a particular fluid depends upon such variables as temperature, concentration, pressure, velocity of flow, duration of exposure, aeration, stability of the fluid, etc. Also variations in elastomer types and special compounding of stocks to meet specific service conditions have considerable influence on the results obtained. When in doubt, it is always advisable to test the tube compound under actual service conditions. If this is not practical, tests should be devised that simulate service condtions or the hose manufacturer contacted for Recommendations.

The following table lists the more commonly used materials, chemicals, solvents, oils, etc. The recommendation are based on room temperature and pressure conditions normally recommended for the particular type of hose being used. Where conditions beyond this can be met readily, they have been so indicated; where conditions are not normal and cannot be readily met, the hose manufacturer should always be consulted. The table does not imply conformance to the Food & Drug Administration requirements of Federal or State Laws when handling food products.

TABLE OF CHEMICAL, OIL & SOLVENT RESISTANCE OF HOSE:
<b>WARNING:</b> The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer's specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill its intended purpose, and may result in possible damage to property and serious bodily injury.

RESISTANCE RATING	RELASTOMERS/PLASTICS	
<b>A</b> - Good Resistance, usually suitable for service.	<b>NR</b> - Natural Rubber	<b>EPDM</b> - Ethylene-propylene-diene-terpolymer
<b>F</b> - Fair Resistance, the chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.	<b>IR</b> - Isoprene, synthetic	<b>MQ</b> - Dimethyl-polysiloxane
	<b>SBR</b> - Styrene-butadiene	<b>FKM</b> - Fluoracarbon rubber
<b>C</b> - Depends on Condition, moderate service may be possible if chemical exposure is limited or infrequent.	<b>CR</b> -Chloroprene	<b>CM</b> - Chloro-polyethylene
	<b>NBR</b> - Nitrile-butadiene	<b>ECO/CO</b> - Ephichlorohydrin
<b>X</b> -Not recommended, unsuitable for service.	<b>IIR</b> -Isobutene-isoprene	<b>EXLPE</b> - Chloro-sulfonyl-polyethylene
<b>I</b> - Insufficient Information, not enough data available at the time of publication to determine rating.	<b>CSM</b> - Chloro-sulfonyl-polyethylene	

## NOTES

[illegible]This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.