

TANK TRUCK & EQUIPMENT CATALOG

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**SALES AND
COMPLETE
SERVICE
FACILITIES**

**MOUNTING
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CALIBRATING
AND REPAIRS**



**Pacific
Truck Tank *inc.***
PETROLEUM AND PROPANE TRUCKS



7029 Florin-Perkins Rd.
Sacramento, CA 95828
(800) 350-9030
(916) 379-9280



Parts Guidelines

PRICES: Orders will be processed with prices in effect at date of shipment unless otherwise notified. List prices may vary from published manufacturer's prices to provide continuity in discounting. **MINIMUM BILLING:** \$20.00

CREDIT: Orders will be shipped on an open account with prior approved credit status. New accounts are shipped COD until credit is established. Accounts with balances over 60 days will also be shipped COD. Terms are net 15 days.

TAXES: Prices do not include state or local taxes. Taxes will be charged where applicable.

FREIGHT: All prices are FOB shipping point. We normally ship from our warehouse, but we reserve the right to drop ship from other points at our discretion. UPS, Parcel Post and Pacific Truck Tank shipments are sent prepaid and charges will be added to the invoice.

RETURNED GOODS: Returns for credit must be in saleable condition and accompanied by the packing slip or invoice with a note explaining the reason for return. A 20% restocking fee will be charged if parts are not returned within 30 days from invoice date. No restocking fee will be charged if the error is ours.

WARRANTIES: Warranties on merchandise or equipment are made by the manufacturer.



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WET-R-DRI VALVE

TTMA Style

- Lightweight
- Compact
- Versatile

The Betts Wet-R-Dri Valve is designed for handling liquid, gaseous or dry products, and is available in a variety of sizes and models. This space saving valve is lightweight, easily maintained, and has a positive stop in the open and closed position. The detent model has a detent spring and ball which assist in holding the disc in the open and closed position.

STANDARD MODEL

DETENT MODEL

Betts

**STANDARD AND
DETENT MODELS
WITH PARTS LIST**

Size	Standard Model Assembly No.	Wt.	Detent Model Assembly No.	Wt.	Standard Body	Material Disc	Max. Working Pressure
2"	WD200 AL B	2.4	WD201 AL B	2.4	Aluminum	Buna-N	75 PSI
	WD200 GI B	4.6	WD201 GI B	4.6	Grey Iron		
3"	WD300 AL B	3.6	WD301 AL B	3.6	Aluminum	Buna-N	75 PSI
	WD300 GI B	6.9	WD301 GI B	6.9	Grey Iron		
4"	WD400 AL VB	4.5	WD401 AL VB	4.5	Aluminum	Viton	75 PSI
	WD400 GI VB	8.3	WD401 GI VB	8.3	Grey Iron		

NOTE: Standard drilling fits TTMA recommended standards.

Valves are available with the following options. Stainless Steel liners and shafts, grease fittings installed in the drive and bearing shafts, and "E" Coating of aluminum valves (recommended for aluminum valves used in water service).

EMERGENCY VALVES

Aluminum Flat Seat Styles

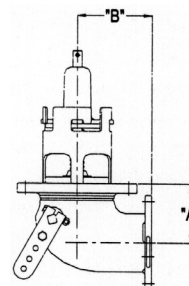
**Air or Cable Operate . Groove or Flange Outlet
Buna, Urethane or Viton Seals**

Betts flat seat style emergency valves combine Betts quality with an economical design. Valves feature aluminum construction with a specially designed seat disc to provide positive sealing. Shear section tested per TTMA RP84 and meets 49CFR178.345.8.

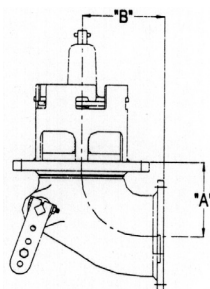
Air Operated valves are provided with an external air cylinder to help prevent gasoline or other products from contaminating the air supply. The air cylinder is hard-coated aluminum with a polished stainless steel shaft. Cylinders have 1/8" NPT port for air connection and are supplied with a fusible plug installed.

Cable operated valves are supplied with a universal lever arm which provides up to 8 cable travel options to work with most operators. Lever arm is "E" Coated to provide exceptional corrosion resistance.

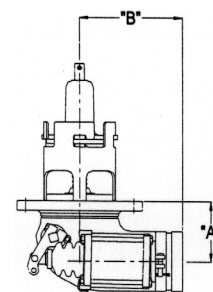
Left-hand valves are available with air cylinder or cable lever arm on opposite side of valve. Add suffix-005 for left hand option. Add suffix-004 for optional screen.



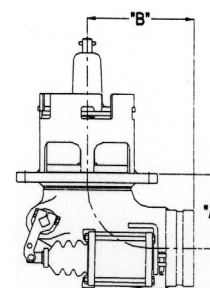
3" Cable/Flanged



4" Cable/Flanged



3" Air/Grooved



4" Air/Grooved

Size	Assembly No.	Air/ Cable	Outlet	Wt.	Dimensions		Inlet Flange		Outlet Flange	
					A	B	B.C.	Holes	B.C.	Holes
3"	EV46672ALB	Air	3" Grv	10.5	3.50"	5.94"	6.25"	6-9/16	NA	NA
	EV46673ALB	Cable	3" Grv	8.2						
	EV46670ALB	Air	3" Flg	10.5	3.50"	4.50"	6.25"	6-9/16	4.88"	8-7/16
	EV46671ALB	Cable	3" Flg	8.2						
4"	EV46435ALB	Air	4" Grv	12.7	4.38"	6.25"	7.25"	8-9/16	NA	NA
	EV46398ALB	Cable	4" Grv	10.4						
	EV46428ALB	Air	4" Flg	12.7	4.38"	5.00"	7.25"	8-9/16	5.88"	8-7/16
	EV46399ALB	Cable	4" Flg	10.4						

TAPERED SEAT STYLE WITH 90° ELBOW

EMERGENCY VALVES Aluminum Tapered Seat Styles

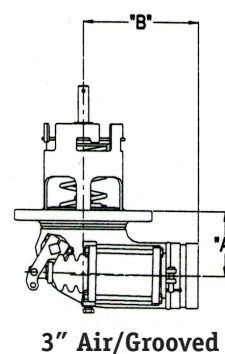
- Air or Cable Operated
- Stainless Trim
- Teflon Encapsulated Seals

Betts tapered seat emergency valves are designed and manufactured to use Teflon encapsulated seals for compatibility with a wide range of products. Body is constructed of aluminum with stainless steel trim. Shear section tested per TTMA RP84 and meets 49CFR178.345-8.

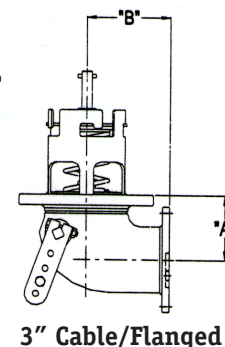
Air Operated valves are provided with an external air cylinder to help prevent gasoline or other products from contaminating the air supply. The air cylinder is hard-coated aluminum with a polished stainless steel shaft. Cylinders have 1/8" NPT port for air connection and are supplied with a fusible plug installed.

Cable operated valves are supplied with a universal lever arm which provides up to 8 cable travel options to work with most operators. Lever arm is "E" Coated to provide exceptional corrosion resistance.

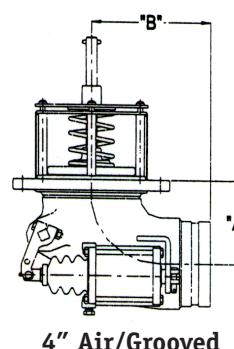
Left-hand valves are available with air cylinder or cable lever arm on opposite side of valve. Add suffix-005 for left hand option. Add suffix-004 for optional screen.



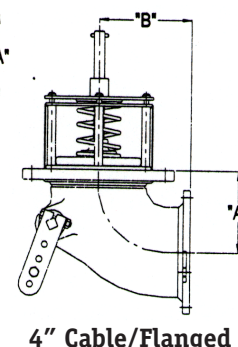
3" Air/Grooved



3" Cable/Flanged



4" Air/Grooved



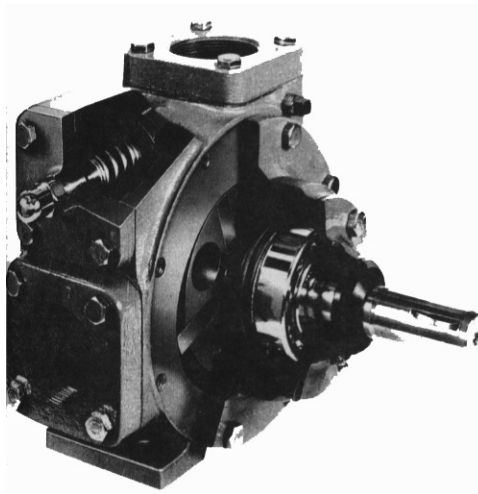
4" Cable/Flanged

Size	*Assembly No.	Air/Cable	Outlet	Wt.	Dimensions		Inlet Flange		Outlet Flange	
					A	B	B.C.	Holes	B.C.	Holes
3"	EV46169ALTS	Air	3" Grv	9.7	3.50"	6.06"	6.25"	6-9/16	N.A.	N.A.
	EV46158ALTS	Cable	3" Grv	7.5						
	EV46152ALTS	Air	3" Flg	9.7	3.50"	4.50"	6.25"	6-9/16	4.88"	8-7/16
	EV46157ALTS	Cable	3" Flg	7.5						
4"	EV46455ALTS	Air	4" Grv	13.5	4.38"	6.25"	7.25"	8-9/16	N.A.	N.A.
	EV46458ALTS	Cable	4" Grv	11.3						
	EV46456ALTS	Air	4-1/2" Grv	13.5	4.38"	6.25"	7.25"	8-9/16	N.A.	N.A.
	EV46459ALTS	Cable	4-1/2" Grv	10.4						
	EV46454ALTS	Air	4" Flg	13.5	4.38"	5.00"	7.25"	8-9/16	5.88"	8-7/16
	EV46457ALTS	Cable	4" Flg	11.3						

TXD And TXSD Series

Durable Pumps for fast unloading and quiet operation

Blackmer TX series pumps have long been popular for loading and unloading a wide range of non-corrosive, non-abrasive industrial fluids and petroleum products such as fuel oil, diesel, kerosene, Avgas, jet fuel and lube oils. Models are offered in 2, 2 1/2, 3 and 4-inch port sizes, with flowrates from 45 - 500 U.S. gpm (170-1890 lpm). Standard construction for the TXD pump models includes Buna-N mechanical seals and head elastomers, Dura-vanes, and double-ended drive shafts on all models except the TX4, which has a single drive shaft. The TX pump series has cast iron construction with grease lubricated ball bearings isolated from the pumpage by cartridge-type mechanical seals. Blackmer manufactures its own mechanical seals to match



the criteria of the application, and Blackmer seals are designed as an integral component of the pump. This unique design isolates the pumpage from the bearings, maintains seal face alignment and maximizes seal flushing for cooling. The result is optimum seal and bearing life.

blackmer
PEOPLE PROVIDING FLOW TECHNOLOGY WORLDWIDE™

**ROTARY-VANE
PUMPS FOR
TANK TRUCKS
AND TRANSPORT**

TXV Series For Asphalts And Viscous Fluids

A tough pump for hard to seal fluids

Blackmer TXV pumps provide high volume, low speed transfer of clean fluids compatible with a cast iron construction. For fluids that do not work well with mechanical seals, a TXV pump is the answer. They are well suited for thick, gooey fluids that can solidify when exposed to the air. Typical applications include: asphalts, greases, lube oils, resins, molasses, bunkered fuels, inks, and adhesives.

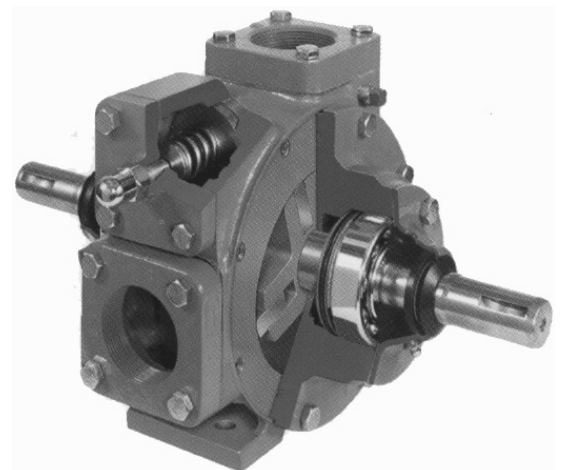
Cartridge lip seals and ball bearing construction provide dependable fluid sealing

The TXV pump is fitted with Teflon lip seals and external ball bearings that provide optimum sealing and shaft alignment. The "V" shaped lip seals make use of internal pressures that provide reliable shaft sealing without the manual adjustments associated with "packed" pump designs.

Higher capacities at slower speeds

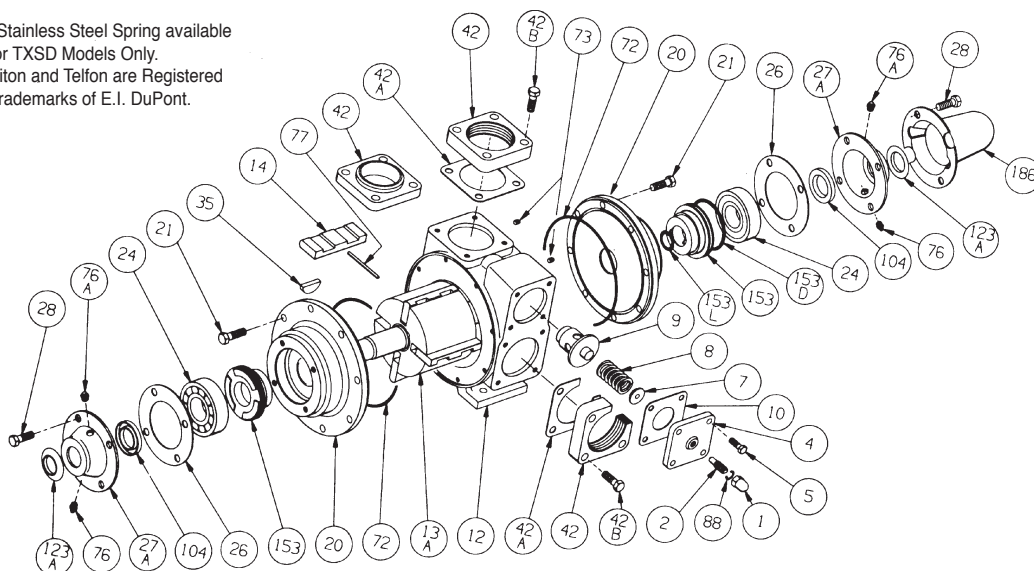
The TXV pump delivers more fluid per revolution than comparably ported gear pumps. And slower operating speeds mean longer service life and reduced maintenance requirements. For example, a Blackmer TXV with 3-inch ports, operating at 640 rpm and 50 PSI (345kPa), typically takes 34 minutes to unload an 8,400 U.S. gallon (31,750 liter) tank. A 3-inch gear type pump operating at 720 rpm typically takes 56 minutes to unload the same payload. High pump unloading rates for quick stops and fast turn arounds can offer big paybacks for the short distance hauler.

**HIGH
TEMPERATURE,
ROTARY-VANE
PUMPS FOR
ASPHALTS AND
VISCOUS FLUIDS**



**PARTS LIST
MODELS TXD2A,
TXSD2A**

¹ Stainless Steel Spring available
for TXSD Models Only.
Viton and Teflon are Registered
Trademarks of E.I. DuPont.



PUMP PARTS LIST - TX(S)D2A MODEL

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.	REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
1	Cap - Relief Valve (R/V)	1	411452	24	Ball Bearing	2	903156
2	Adjusting Screw - R/V	1	431401	26	Gasket - Bearing Cover	2	381406
4	Cover - R/V	1	411401	27A	Bearing Cover	1-2	041431
5	Capscrew - R/V Cover	4	920316	28	Capscrews - Bearing Cover	8	920285
7	Spring Guide - R/V	1	423955	35	Key - Shaft	1	909130
8	Spring - R/V (51-75 psi)	1	471420	42	Flange - 2" NPT	1-2	651411
	Spring - R/V (76-110 psi)(Std.)		471425		Flange - 2" Weld		654405
	Spring - R/V (111-125 psi)		471428	42A	Gasket - Flange	1-2	381421
	SS Spring - R/V (51-75 psi) ¹		471418	42B	Capscrew - Flange		920351
	SS Spring - R/V (76-110 psi) ¹		471427	72	O-Ring - Head (Buna-N)(Std. TXD)	2	701947
	SS Spring - R/V (111-125 psi) ¹		471429		O-Ring - Head (Viton)(Std. TXD)		701914
9	Valve - R/V (Std. TXD)	1	451417		O-Ring - Head (Teflon)		702242
	Valve - R/V (Ni Plated)(Std. TXSD)		451415	73	Gage Plug	2	908198
10	Gasket - R/V Cover	1	531421	76	Grease Fitting	2	317815
12	Cylinder	1	021403	76A	Grease Relief Fitting	2	701992
13A	Rotor & Shaft - Double Ended (Std.)	1	261411	77	Push Rod	2	123905
14	Vane - Duravane (Std.)	4	091419	88	Gasket - R/V Cap	1	701981
	Vane - Bronze		093924	104	Grease Seal	1-2	331918
	Vane - Laminate		091429	123A	Dirt Shield	1-2	701480
20	Head (Std.)	2	031425	186	Shaft Protector	1	341601
	Head with Drain		031426		Air Valve Kit		891454
21	Capscrews - Head	16	920331		Hydraulic Motor Adapter Kit		Optional

MECHANICAL SEALS - TX(S)D2A MODELS

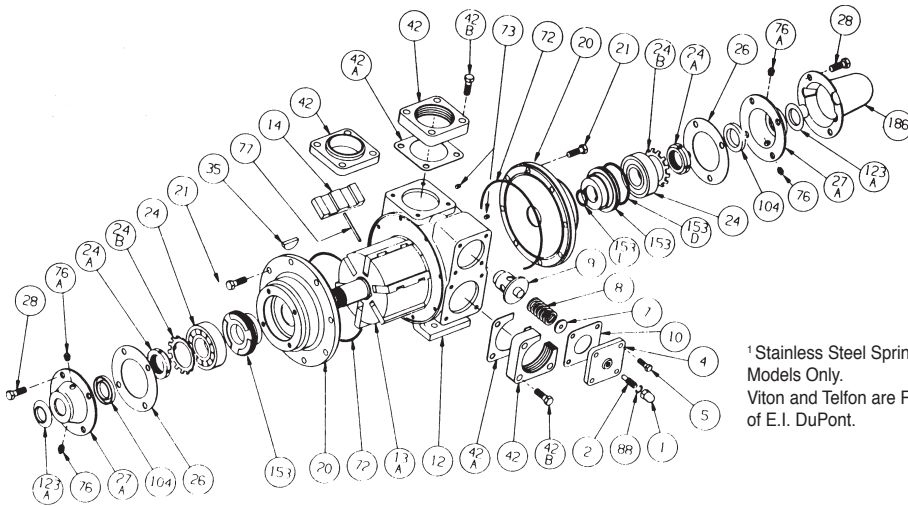
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Std. TXD Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings (INCN)	2	331601
	Mechanical Seal Complete - Std. TXD Cast Iron Stationary Seat, Viton O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (IVCT)		331628
	Mechanical Seal Complete - Cast Iron Stationary Seat, Buna-N O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (INCT)		331602
	Mechanical Seal Complete - Cast Iron Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (IACT)		331673
	Mechanical Seal Complete - Stainless Steel Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (WACT)		331648
	O-Ring - Stationary (Buna-N)		701934
153D	O-Ring - Stationary (Viton)	2	701921
	O-Ring - Stationary (Teflon)		702056
	O-Ring - Rotating (Buna-N)		701922
153L	O-Ring - Rotating (Viton)	2	701980
	Seal Ring - Rotating (Teflon)		**

OPTIONAL HYDRAULIC MOTOR ADAPTOR PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
See Below	Hydraulic Motor Adapter Kit	See Below	891400
26	Gasket - Bearing Cover	1	381817
26A	Gasket - Bearing Cover	1	383940
27B	Bearing Cover/Spacer	1	831400
28A	Capscrew - Bearing Cover/Head	4	920408
34	Coupling	1	906926
34A	Setcrew - Coupling	1	922075
35	Key - Coupling	1	909184
76	Grease Fitting	2	317815
76A	Grease Relief Fitting	2	701992
104	Grease Seal	2	331918
135	Hydraulic Motor Adapter SAE A	2	041803
135A	Capscrew - Adapter/Motor	2 - 4	920510
135B	Capscrew - Adapter/Bearing Cover	6	920331

** Teflon Rotating Seal Ring is not available as a separate part.

**PARTS LIST
MODELS
TXD2-1/2A,
TXSD2-1/2A**



¹ Stainless Steel Spring available for TXSD Models Only.
Viton and Teflon are Registered Trademarks of E.I. DuPont.

PUMP PARTS LIST - TX(S)D2.5A MODELS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.	REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
1	Cap - Relief Valve (R/V)	1	411452	24B	Lockwasher - Bearing	2	903522
2	Adjusting Screw - R/V	1	431401	26	Gasket - Bearing Cover	2	381406
4	Cover - Relief Valve	1	411607	27A	Bearing Cover - Inboard	1-2	041431
5	Capscrew - R/V Cover	4	920316	28	Capscrews - Bearing Cover	8	920285
7	Spring Guide - R/V	1	423955	35	Key - Shaft	1	909130
8	Spring - R/V (41-50 psi)	1	471608	42	Flange - 2" NPT	1-2	651603
	Spring - R/V (51-75 psi)		471631		Flange - 2 1/2" NPT		651611
	Spring - R/V (76-110 psi) (Std.)		471631		Flange - 2 1/2" Weld		651608
	Spring - R/V (111-125 psi)		471614	42A	Gasket - Flange	1-2	381650
	SS Spring - R/V (41-50 psi) ¹		471610	42B	Capscrews - 2" NPT Flange	4-8	920471
	SS Spring - Valve (51-110 psi) ¹		471632		Capscrews - 2 1/2" NPT Flange		920532
	SS Spring - Valve (111-125) ¹		471615		Capscrews - 2 1/2" Weld Flange		920491
9	Valve - R/V (Std. TXD)	1	451623	72	O-Ring - Head (Buna-N)(Std. TXD)	2	701947
	Valve - R/V (Nickel Plated)(Std. TXSD)		451624		O-Ring - Head (Viton)(Std. TXD)		701914
10	Gasket - R/V Cover	1	531603		O-Ring - Head (Teflon)		702242
12	Cylinder - Pump	1	021605	73	Gage Plug	2	908198
13A	Rotor & Shaft Asy. - Double Ended (std.) (Includes Ref. Nos. 24A & 24B)	1	261665	76	Grease Fitting	2	317815
14	Vane - Duravane (Std.)	6	091619	76A	Grease Relief Fitting	2	701992
	Vane - Bronze		091624	77	Push Rod	3	121607
	Vane - Laminate		091627	88	Gasket - R/V Cap	1	701981
20	Head (Std.)	2	031425	104	Grease Seal	1-2	331918
	Head with Drain		031426	123A	Dirt Shield	1-2	701480
21	Capscrews - Head	16	920331	186	Shaft Protector	1	341601
24	Ball Bearing	2	903156		Air Valve Kit		891696
24A	Locknut - Bearing	2	903521		Hydraulic Motor Adapter Kit		Optional

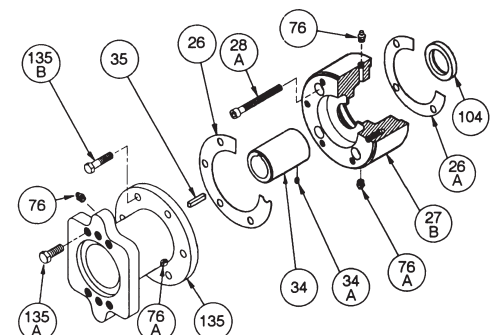
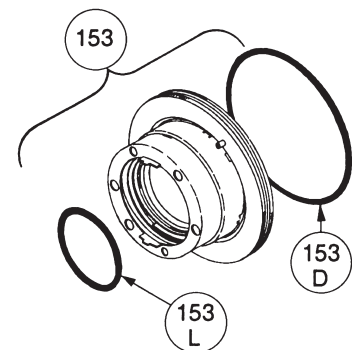
OPTIONAL HYDRAULIC MOTOR ADAPTOR PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
See Below	Hydraulic Motor Adapter Kit	See Below	891400
26	Gasket - Bearing Cover	1	381817
26A	Gasket - Bearing Cover	1	383940
27B	Bearing Cover/Spacer	1	831400
28A	Capscrew - Bearing Cover/Head	4	920408
34	Coupling	1	906926
34A	Setscrew - Coupling	1	922075
35	Key - Coupling	1	909184
76	Grease Fitting	2	317815
76A	Grease Relief Fitting	2	701992
104	Grease Seal	2	331918
135	Hydraulic Motor Adapter SAE A	2	041803
135A	Capscrew - Adapter/Motor	2 - 4	920510
135B	Capscrew - Adapter/Bearing Cover	6	920331

MECHANICAL SEALS - TX(S)D2.5A MODELS

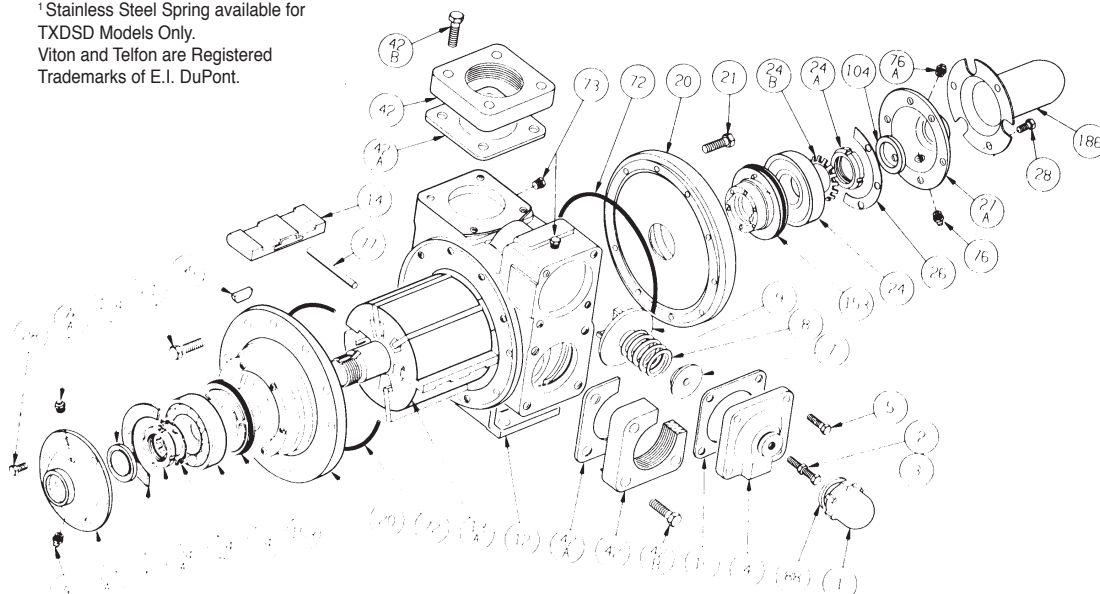
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Std. TXD Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings (INCN)	2	331601
	Mechanical Seal Complete - Std. TXD Cast Iron Stationary Seat, Viton O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (IVCT)		331628
	Mechanical Seal Complete - Cast Iron Stationary Seat, Buna-N O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (INCT)		331602
	Mechanical Seal Complete - Cast Iron Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (IACT)		331673
	Mechanical Seal Complete - Stainless Steel Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (WACT)		331648
153D	O-Ring - Stationary (Buna-N)	2	701934
	O-Ring - Stationary (Viton)		701921
	O-Ring - Stationary (Teflon)		702056
153L	O-Ring - Rotating (Buna-N)	2	701922
	O-Ring - Rotating (Viton)		701980
	Seal Ring - Rotating (Teflon)		**

** Teflon Rotating Seal Ring is not available as a separate part.

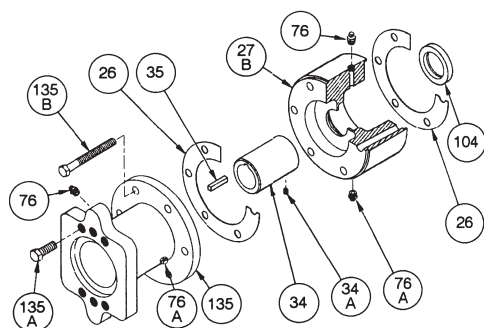
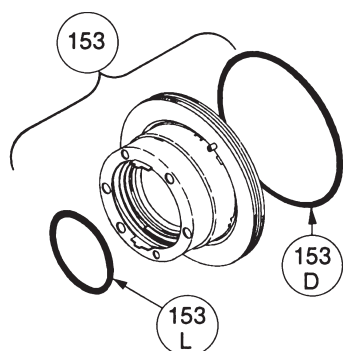


**PARTS LIST
MODELS
TXD3E, TXSD3E**

¹ Stainless Steel Spring available for TXDSD Models Only.
Viton and Teflon are Registered Trademarks of E.I. DuPont.



PUMP PARTS LIST - TX(S)D3E MODELS							
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.	REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
1	Cap - Relief Valve (R/V)	1	413952	24B	Lockwasher - Bearing	2	903524
2	Adjusting Screw - R/V	1	431808	26	Gasket - Bearing Cover	2	381817
3	Locknut - Adjusting Screw	1	922923	27A	Bearing Cover - Inboard	1-2	041815
4	Cover - Relief Valve	1	411807	28	Capscrews - Bearing Cover	12	920285
5	Capscrew - R/V Cover	4	920331	35	Key - Shaft (Std.)	1	909178
7	Spring Guide - R/V	1	421805	42	Flange - 3" NPT	1-2	651803
8	Spring - R/V (51-110 psi)(Std.)	1	471806	42A	Flange - 3" Weld	1-2	655106
	Spring - R/V (111-125 psi)		471809		Gasket - Flange		381816
	SS Spring - R/V (51-110 psi) ¹		471807		Capscrew - NPT Flange		920532
	SS Spring - R/V (111-125 psi) ¹		471808		Capscrew - Weld Flange		920510
9	Valve - R/V (Std. TXD)	1	451807	72	O-Ring - Head (Buna-N)(Std. TXD)	2	701944
	Valve - R/V (Nickel Plated)(Std. TXSD)		451808		O-Ring - Head (Viton)(Std. TXD)		711938
10	Gasket - R/V Cover	1	531803		O-Ring - Head (Teflon)		702233
12	Cylinder	1	021805	73	Gage Plug	2	908198
13A	Rotor & Shaft Asy. - Double Ended (std.) (Includes Ref. Nos. 24A & 24B)	1	261837	76	Grease Fitting	2	317815
14	Vane - Duravane (Std.)	6	091819	76A	Grease Relief Fitting	2	701992
	Vane - Bronze		091804	77	Push Rod	3	121807
	Vane - Laminate		091829	88	Gasket - R/V Cap	1	533908
20	Head	2	031815	104	Grease Seal	1-2	331908
21	Capscrews - Head	20	920369	186	Shaft Protector	1	341801
24	Ball Bearing	2	903172		Air Valve Kit	1-2	891798
24A	Locknut - Bearing	2	903523		Hydraulic Motor Adapter Kit	1-2	Optional



MECHANICAL SEALS - TX(S)D3E MODELS			
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Std. TXD Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings (INCN)	2	331880
	Mechanical Seal Complete - Std. TXSD Cast Iron Stationary Seat, Viton O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (IVCT)		331872
	Mechanical Seal Complete - Cast Iron Stationary Seat, Buna-N O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (INCT)		331882
	Mechanical Seal Complete - Cast Iron Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (INCT)		331873
	Mechanical Seal Complete - Stainless Steel Stationary Seat, Teflon O-Ring, Carbon Seal Face w/ Teflon Seal Ring. (WACT)		331899
	O-Ring - Stationary (Buna-N)		701936
153D	O-Ring - Stationary (Viton)	2	711931
	O-Ring - Stationary (Teflon)		702080
	O-Ring - Rotating (Buna-N)		711912
153L	O-Ring - Rotating (Viton)	2	701962
	Seal Ring - Rotating (Teflon)		**

OPTIONAL HYDRAULIC MOTOR ADAPTOR PARTS			
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
See Below	Hydraulic Motor Adapter Kit	See Below	895138
26	Gasket - Bearing Cover	2	381817
27B	Bearing Cover/Spacer	1	385137
34	Coupling	1	906926
34A	Setscrew - Coupling	1	922075
35	Key - Coupling	1	909184
76	Grease Fitting	2	317815
76A	Grease Relief Fitting	2	701992
104	Grease Seal	1	331908
135	Hydraulic Motor Adapter SAE A	1	041803
135A	Capscrew - Adapter/Motor	2 - 4	920510
135B	Capscrew - Adapter/Bearing Cover	6	920438

** Teflon Rotating Seal Ring is not available as a separate part.

Optic Overfill Top Sensor

Top probes detect the presence of liquid at a preset level.

- Self-checking circuitry for fail-safe operation
- Unique prism design resists shutdown due to condensation, ice and fogging for trouble-free operation
- 2-wire design simplifies installation and maintenance
- Stainless steel hardware for easy maintenance
- Wire connectors included for reliable connections
- Parallel outlet ports save time and money on installation and eliminate junction boxes
- Sensor depth has a 3" range of adjustment – special lengths available
- Probe is rated at 212° F to allow steam cleaning without removing probe from the compartment; probes rated less than 212° F must be removed for steam cleaning



civacon™

OPTIC SENSORS

5-Wire Optic Sensor



The Civacon Liberty™ Optic Replacement Sensors listed here are the replacement part numbers for the sensor only part (stick shaped tube) of our Overfill Detection Sensors. Or, in the case of the Retained Sensor, the whole new assembly part number, as the housing is always included.

Civacon Liberty Optic Replacement Sensors are compatible with the standard API 5-wire optic and thermistor / 2-wire optic signal formats. They are designed to be used both in system configurations with and without an onboard monitor as indicated.

- Fully Compatible Signals to Industry Standards and with competitive sensors.
- Automatic & Continuous Self-Testing Circuitry
- Dependable solid-state electronics
- Instant-Permissive Optic Technology (no warm up)
- Fully compatible with all ethanol & methanol blends
- Withstands pressures up to 25 PSI
- Single-Face Prism resistant condensation & frost
- Highly resistant to sunlight falsing when top loading
- Recessed prism requires no protection
- All Standard Lengths can be easily shortened.

Retain Sensor Features (in addition to above)

- Hard-coated aluminum Body and Threads minimize corrosion and galling
- Powder-coated Housing with Stainless Steel Hardware
- Shear groove protects the tank in the event of under-ride impact



**Optic Retained (Bottom) Sensor
with Weld Bushing**

**ADAPTORS
AND CARGO
ACCESSORIES**

897N API Bottom Loading Adaptor

Civacon's 897 API Adaptors feature a proprietary head design that greatly reduces wear for a longer serviceable life without having to rotate the ring. Our unique design also safeguards against broken or seized-up allen screws.



- Non-opening configuration
- Unique, proprietary head design for superior performance
- Grease fitting provides easy lubrication for simple preventive maintenance
- Duratuff® lever resists corrosion & breaking
- Available with or without sight glass

Cargo Tank Accessories

Civacon offers a complete lineup of accessories to help you get the most out of your investment.



Aluminum API Handles for Bottom Loading Adaptors

- Ergonomic, heavy duty design
- Same rugged performance as standard Duratuff® handle
- Available as a retrofit item, or can be specified on any new API Bottom Loading Adaptor by adding an "A" after each model number ordered.
(e.g. 897-A, 897-BA, 861-A or 861-BA)



875 Dust Cap

The 875 dust cap is a light weight die cast aluminum design constructed for maximum strength. Proprietary coating makes the cap extremely durable. The cap not only seals but also holds pressure and retains its shape if dropped or mishandled.

871 Gravity Coupler

Civacon's 871 Gravity Couplers optimize the connection between 4" API adaptors and a 3" or 4" hose connection, ensuring safe, fast unloads. The 871 has been redesigned with an interior "lip" that makes hook-ups easier.

- Interior "lip" in the 12-o'clock position centers coupler adaptor for solid connection
- Easier for operator to handle
- Available in male adaptor & female coupler configurations
- Available with either Kamlok® coupler or NPT femal threads at the hose connection
- Mates with standard 4" API RP-1004 tank truck adaptors
- Aluminum body with Buna-N seals
- Available with Viton seals – contact Civacon Customer Service for details
- Hose connection end angled at 15° downward for improved drainage
- Model 871ED features a lever to actuate the poppet on
- Model 866 API adaptors



871A-W059 Gravity Coupler Assembly

Civacon's new 871A-W059 combines a redesigned 4" 871A with a matched 634B Aluminum Cap for a complete assembly.

- Slotted cam arms for tamper-proof applications
- Rugged chrome plated chains and heavy duty lugs for durability



Internal Emergency Valves

Internal Valves – also known as emergency valves, shear valves, foot valves – have been designed to minimize the risk in underride collisions. Civacon Internal Valves are engineered with a shear groove that allows the piping to break away cleanly in the event of collision. The valve seat and poppet, however, remain intact so only the liquid in the piping is susceptible to loss.

MaxAir™ Internal Emergency Valve II

Civacon's MaxAir™ internal valves provide superior flow rates – better than 6" valves – and superior real world performance – even at -40°F – for maximum safety and value. All MaxAir™ internal valves are compatible with 4" TTMA sumps and meet HM 183 standards.

- Unique integrated design enables mounting of piston inside tank for better wear, reduced exposure to environment
- No moving parts in the flow path for superior flow rates, faster drops and maximum profits — outperforms 6" valve technology
- Exclusive TSSTM triple seal system protects piston to deliver maximum reliability, minimal maintenance
- Full-opening/full-closing seal disc operation, every time, for faster product delivery
- Cold climate field tested and rated at -40°F, plus 100,000 cycletesting assures real world reliability and maximum value
- Unique quick-exhaust valve bleeds residual air, limiting condensation in the air line; improves operating life
- Optional slotted mounting holes enable valve to align with existing plumbing, simplifying installation
- Pneumatic override emergency relief screw for manual operation in the event of air pressure loss – optional pneumatic override tool available (Part #: 9430)



Universal Internal Emergency Valves

All Civacon universal internal valves are designed to be used with mechanical or pneumatic operators and fit standard 4" TTMA sump applications, while meeting HM83 standards.

- Compatible with all manufacturer's standard mechanical operators
- Reduces backflow problems into adjacent compartments on manifold discharge plumbing
- Optional drain screen and cable mounting bracket sold separately
- Optional slotted mounting holes simplify installation
- Aluminum housing with a choice of seal materials
- Available as a 5" x 4" straight valve or with elbow

VA1050 3" Internal Emergency Valve

The VA1050 3" Emergency Valve is specifically engineered to allow greater flexibility of tank truck design and assembly. The internal air operation cylinder allows maximum utilization of under tank chassis space while the "bellowed body" profile allows higher flow rates when unloading, and lower pressure drop when at the loading rack. The VA1050 is purposely designed for fuel oil, lube oil and heating oil delivery trucks.

- 3" TTMA compact elbow design for greater flexibility of tank truck design
- 3" victaulic pipe connection for close proximity pipe work runs
- External shear groove to TTMA specification
- Internal air cylinder allows simpler pipe work runs – no external linkage
- Air cylinder rated to -40° F
- Pneumatic actuation can be "single acting" or "sequential" to confirm the condition of the valve
- Low pressure drop for higher flow rates
- Viton seals for product compatibility
- Slotted tank flange to ease installation
- Light weight and robust aluminum and stainless steel construction for long service life
- Quick strip for easy maintenance
- Interchangeable components with CivaFlo™ Manifold valves
- Manual override feature included
- Mesh filter screen is available as option



CIVAICON™

**INTERNAL
EMERGENCY VALVES**

**SEQUENTIAL
VAPOR VENTS**

Sequential Vapor Vents



T196 Series Vapor Vents

Civacon's T196 series Sequential Vapor Recovery Vents for 16" manholes have improved flow with less pressure drop. They will retro-fit all existing 3.5" vapor vents and offers best in class features.

- Aluminum construction with Viton seals and SST trim
- Superior safety with Civacon's sequential valve technology
- In case of rollover, poppet opens into the tank to prevent surge pressure leaks & spills from vapor valve
- Lightweight aluminum body
- Valve stroke increased by 50% (1-1/2" total seat opening)
- Increased Spring Tension for a quick, tight closure
- Dual fluorosilicon piston o-ring seals and a new lower shaft seal and wiper protect the air system
- New added external exhaust port for quicker opening and closing of vent's poppet
- Viton GF wetted Gaskets and Seals
- Thread-in Cap Design eliminates snap ring

Dimensions:

Height Closed – 5.59
Height Open – 6.52
Ride Height - 3.70
Length – 8.75

Materials:

Aluminum, Stainless Steel and Viton

Weight:

3.60 lbs.

Temperature Rating:

-40°F to 160°F (-40°C to 71°C)



T195SV Vapor Vent

Civacon's T195SV Vapor Recovery Vent for 20" manholes has improved flow and less pressure drop. It will retro-fit all TTMA flanged vapor vents and improves installation by adding a new rotatable design.

- Improved seals that are compatible with ethanol, methanol, diesel, biodiesel and gasoline
- Rotatable mounting design
- An added exhaust port for quicker opening and closing of the vent's poppet
- Improved cap design for a better seal and the elimination of the old snap-ring system
- Lightweight aluminum body
- Valve stroke increased by 50% (1-1/2" total seat opening)
- Increased Spring Tension for a quick, tight closure
- Dual fluorosilicon piston o-ring seals and a new lower shaft seal and wiper protects the air system
- New added external exhaust port for quicker opening and closing of vent's poppet
- Viton GF Gaskets and Seals
- Thread-in Cap Design eliminates snap ring
- Will fit in place of all TTMA flange mounted vents
- Single o-ring seal to manhole plate minimizes potential mounting leak paths of bolted designs

Dimensions:

Height Closed – 5.62
Height Open – 7.07
Ride Height - 3.75
Length – 9.95

Materials:

Aluminum, Stainless Steel and Viton

Weight:

5.75 lbs.

Temperature Rating:

-40°F to 160°F (-40°C to 71°C)

Kamvalok Dry Disconnects

Kamvalok Dry Disconnects are used on multi-compartment petroleum delivery trucks with an onboard pumping unit. One pump can be used to service multiple compartments by connecting the inlet side of the pump to the compartment which is to be unloaded. The dry disconnects minimize product spillage during hose disconnection.

- Poppeted Adaptor and Coupler minimizes product loss during routine disconnect.
- Built-in valve, no additional valve required.
- Quick disconnect, cam and groove style for ease of use.
- Automatic shut-off with accidental disconnect to minimize product loss.



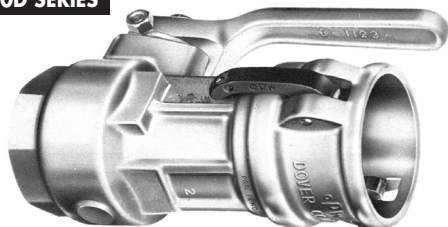
MODEL 1711GC

- Non-poppeted actuating coupler used for gravity drops, with hoses mounted on tank trucks.
- Permits an almost straight flow through.
- Sizes: 2" and 3".

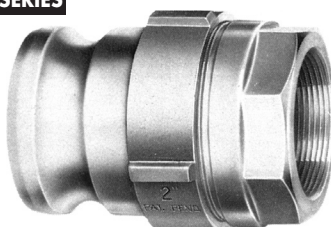
Styles Dry Disconnect Couplings

The Kamvalok Dry Disconnect Coupling continues to be the standard of the industry. It provides automatic closure from both directions-the coupler and the adaptor. It is still the first choice for loading/unloading operations and manifold mixing/blending.

1700D SERIES

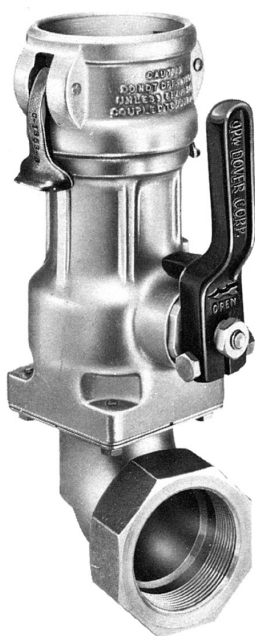


1600AN SERIES



The Kamvalok coupler and adaptor are designed with female threads and can be fitted to either a male pipe end or to a hose fitting. Flanged end adaptors are made for specific operations, including in-plant and transportation.

Transport Series Dry Disconnect Couplings



1711ES-1712ES

Kamvalok Dry Disconnects are used on multi-compartment petroleum, solvent, and chemical product delivery trucks with an onboard pumping unit.

Features:

- Built-in elbow and swivel for freedom of movement when used with a hose on tank trucks.
- Swivel end is 2" female NPT.
- Poppeted Adaptor and Coupler minimizes product loss during routine disconnect.
- Built-in valve, no additional valve required.
- Quick disconnect, cam and groove style for ease of use.
- Automatic shut-off with accidental disconnect to minimize product loss.

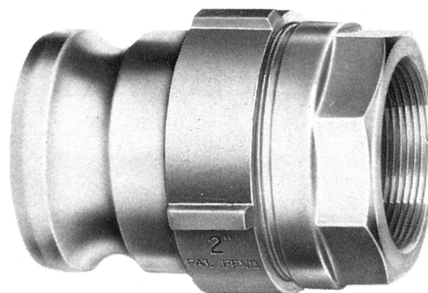
SIZE: 2"

1611AN-1612AN

Features:

- Poppeted adaptor minimizes product loss.
- Built-in valve prevents spillage.
- Automatic shut-off on accidental disconnect.

SIZES: 2" and 3"



civaconTM

DRY DISCONNECTS
MODEL 1711GC

MODELS 1700D
AND 1600AN

MODELS 1711ES-
1712ED AND
1611AN-1612AN



DASHPOT NOZZLE

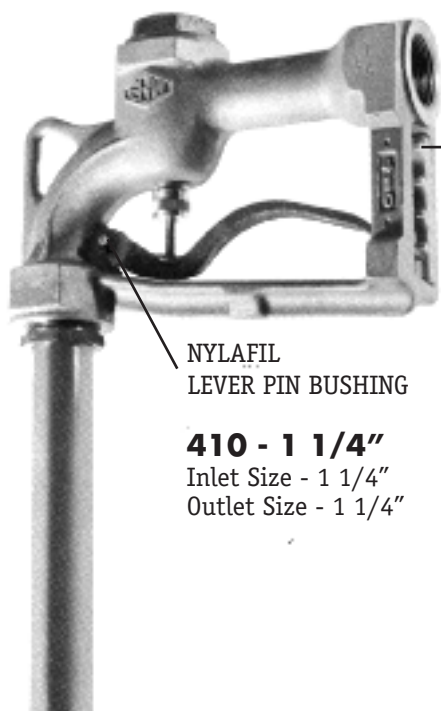
410 "Dashpot" Nozzle For Fuel Oil Delivery

This rugged nozzle features Nylafil hold-open notches and lever pin bushing that resist wear at least five times longer than metal and is unaffected by temperature extremes.

Beefed up nozzle and increased size of the wear lugs make this the most rugged fuel oil nozzle available. Dashpot construction ensures smooth opening, shock-proof closure and maximum flow.

Construction Details:

- Body Aluminum
- Stem Stainless Steel
- Packing Teflon-impregnated Asbestos
- Discs Viton



NYLAFIL
LEVER PIN BUSHING

410 - 1 1/4"

Inlet Size - 1 1/4"

Outlet Size - 1 1/4"

NYLAFIL
HOLD-OPEN
NOTCHES



410 - 1 1/2"

Inlet Size - 1 1/2"

Outlet Size - 1 1/2"

Tubes not included. Must be ordered separately.

WARNING: This is a non-automatic nozzle with a manually operated latch which will shut off automatically. Use should be limited to applications sanctioned by OSHA, State Fire Marshal Codes, and other appropriate regulating bodies and/or safety codes.

DRY-BREAK IITM 2-INCH

Emco Wheaton DRY-BREAK™ Couplers and Adapters are used anywhere spill-free fluid transfer is required.

Coupler

- Cannot be opened until connected to adapter or disconnected until lever is moved to closed position thus eliminating accidental spillage
- Product loss on disconnect virtually eliminated
- Stainless version available with straight ballbearing swivel for kink-free hose connection
- Aluminum version available with straight or 90° integrated ball-bearing swivel for kink-free hose connection
- Easily serviced in the field using the Emco Wheaton Repair Kit Program
- Mates with all existing Emco Wheaton 1.5" and 2" inlet adapters
- Also available in unique 4-notch pattern



Adapter

- Enhanced poppet design allows for better flow characteristics in either direction
- Rear-entry design allows for easy field servicing
- One-piece poppet means fewer components for service
- Mates with all existing Emco Wheaton 1.5" and 2" inlet couplers
- Also available in unique 4-notch pattern



Accessories



Dust Cap for Adapter



Adapter Opener



Dust Plug for Coupler

EMCO®
WHEATON

**COUPLERS AND
ADAPTERS**

1-1/2"-2"

COUPLERS AND ADAPTERS 3"

DRY-BREAK IITM 3-INCH

Coupler

- Cannot be opened until connected to adapter or disconnected until lever is moved to closed position thus eliminating accidental spillage
- Product loss on disconnect virtually eliminated
- Available with straight or 90° integrated ball-bearing swivel for loading arm or kink-free hose connection
- Easily serviced in the field using the Emco Wheaton Repair Kit Program
- Interchangeable with all existing Emco Wheaton 3" inlet adapters



Adapter

- Enhanced poppet design allows for better flow characteristics in either direction
- Rear-entry design allows for easy field servicing
- One-piece poppet means fewer components for service
- Interchangeable with all existing Emco Wheaton 3" inlet couplers



Accessories



Dust Cap for Adapter



Adapter Opener



Dust Plug for Coupler

Hydrapak Oil Cooler

MH Series Hydrapak are designed to be all-in-one hydraulic drive conditioning system. The packages are designed to be small, lightweight, quiet and affordable, allowing operators maximal flexibility in operating use. These systems can be used in conjunction with:

- Dry bulk blower applications
- Bulk feed trucks
- Food grade applications (food oils, corn syrups, etc)
- Chemical applications (detergents, acids, alkaline)
- Gas applications (liquid nitrogen, liquid oxygen)
- Work utility truck applications (lube trucks or hydraulic hand tools)
- Light weight - Carry more liquid in the tank not more oil in the hydraulic system. No need for large oil tanks with expensive hydraulic oil. Larger payload, lower oil costs
- Installation time - Fast assembly and connection of hydraulic systems which reduces installation costs
- Compact design allows you to place your system in a location that makes sense to you
- Flow control valves for uniform flow and maximum air cooling efficiency
- Filter bypass valve to protect the filter from over pressurization
- Micronic filter to clean and extend the use of hydraulic oil and components

Pre-engineered, highly efficient, hydraulic oil cooling package that includes an oil reservoir, cooler, return line filter and system relief valve.

Performance:

- Maximum flow rate: 60 GPM
- Maximum pressure: 3500 psi
- Maximum heat dissipation: 30hp



**HYDRAPAK
MH SERIES**

PETROLEUM HOSES

Redwing Fuel Oil

Redwing Fuel Oil hose is designed for the transfer and delivery of fuel oil and petroleum products in home delivery, commercial, marine, and industrial service.

Lightweight And Flexible For Easy Handling

Redwing Fuel Oil hose is lightweight and flexible. It's made with special synthetic rubber compounds to resist stiffening even in sub-zero temperatures. It reels on and off trucks with ease and its exclusive Chemivic cover slides smoothly over the ground with minimum drag so operators can achieve top production.

Low Overall Cost

Redwing Fuel Oil hose lasts long for a high return on investment. It's made to take rough handling, and is highly resistant to oil, scuffing and abrasion.

Maximum Hose Life

The materials used in Redwing Fuel Oil hose withstand all petroleum based products for long hose service life at low cost.

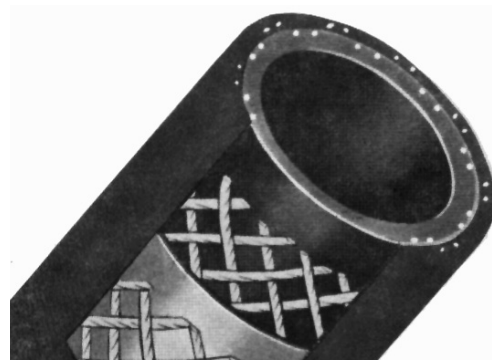
Construction

Tube: Chemigum synthetic rubber (ORS)

Reinforcement: Synthetic cord (braided)

Cover: Red Chemivic synthetic rubber (Smooth Finish) (ORS)

Lengths: Stocked in 100 ft., 125 ft., 135 ft., 150 ft., and 175 ft. lengths. Available in special cut lengths and on reels (with a minimum length of 125 ft.)



SPECIFICATIONS

I.D. x O.D.		MAX. WP		WEIGHT	
IN.	mm	psi	MPa	lb./ft.	kg./m.
1 x 1-1/2	25.4 x 38.1	250	1.7	.580	.862
1-1/4 x 1-51/64	31.8 x 38.1	250	1.7	.720	1.071
1-3/64 x 1-55/64	34.9 x 47.2	250	1.7	.730	1.086
1-1/2 x 2-3/32	38.1 x 53.2	250	1.7	.950	1.414

Fittings: Reattachable or one-time petroleum hose fittings. Flexdrop II hose is recommended for transferring gasoline and other petroleum based products under pumping pressures up to 150 PSI, gravity flow or suction. Maximum aromatic content — 55%.

Red FLEXTRA®

Designed for the transfer of gasoline and other petroleum base products where maximum flexibility is needed. Handles temperatures of — 30° to 200°F.

Sub Zero Flexibility

Red Flextra® is the most flexible Goodyear tank truck hose ever made. Its corrugated design makes handling fast and easy. Its excellent flexibility is a real asset for tight-fill systems.

Unique Lightweight Construction

Easy connection of couplings and easy racking and unracking adds up to high efficiency operations.

Highly Versatile

Red Flextra can be used to handle gasoline, oils, alkalis, diluted chemicals, petroleum base solvents and aqueous solutions. For specific chemical capabilities refer the Chemical Resistant Charts contained in Goodyear *Chemical Transfer Hose* catalog, code 821-947-020.



SPECIFICATIONS

I.D. x O.D.		MAX. WP		BEND RADIUS		WEIGHT	
IN.	mm	psi	MPa	IN.	mm	lb./ft.	kg./m.
2 x 2-7/16	50.8 x 60.4	100	.69	4	102	.95	1.41
2-1/2 x 2-53/64	63.5 x 73.0	100	.69	5	127	1.04	1.55
3 x 3-13/32	76.2 x 86.9	100	.69	6	152	1.42	2.11
4 x 4-17/32	101.6 x 114.8	100	.69	9	229	2.20	3.27

Construction

Tube: Chemigum synthetic rubber (ORS)

Reinforcement: Synthetic fabric with double wire helix

Cover: Red Wingprene, corrugated synthetic rubber (ORS) with white spiral stripe

Lengths: 100 ft.

Fittings: Quick acting, reattachable, or one-time

FLEXDROP™ II Petroleum Drop Hose



SPECIFICATIONS

I.D.		O.D.		MAX. WP.		RADIUS		LENGTH		WEIGHT	
IN.	mm	IN.	mm	psi	MPa	IN.	mm	ft.	m	lb./ft.	kg./m.
2	51.2	2-1/2	63.5	150	1.0	3	76	100	30.5	.96	1.34
3	76.1	3-35/64	90.1	150	1.0	4	102	100	30.5	1.57	2.19
4	102.6	4-37/64	116.3	150	1.0	6	152	100	30.5	2.08	2.90

Light Weight For Easy Handling

Flexdrop™ petroleum drop hose weighs less than a comparable rubber hose. A 20' length of 4" ID weighs under 42 pounds — making it easier for operators to handle.

50% More Flexible

Flexdrop II petroleum drop hose requires less than half the force of comparable products when flexing to its minimum bend radius. Flexdrop II hose's user friendly easy sliding construction makes it easy for operators to maneuver in tight areas. Flexdrop II hose is compounded to remain flexible at temperatures as low as — 40°F or C. Maximum temperature is 160° or 71°C under discharge service only.

Long Service Life

Flexdrop II petroleum drop hose is manufactured with Goodyear's exclusive high grade Chemigum tube to safely handle fuel with aromatic contents up to 55%. For long life, the Pliovic outer helix provides excellent abrasion resistance. Its low coefficient of friction makes it easy for operators to slide and maneuver the hose. Flexdrop II hose's bright red Chemivic cover is highly visible to limit errant hose drive-overs. If the hose is

run over it will not stay crushed, allowing the operator to finish the job. This reduces costly downtime. The red Chemivic cover also offers superior resistance to gasoline, ozone and weathering.

Suitable For Pumping Service

Flexdrop II hose is rated at 150 PSI service with a 4:1 safety factor. This makes it suitable for pumping pressures up to 150 PSI working, gravity flow or medium suction service of up to 23 inches of mercury at ambient temperature.

Economical

For cost conscious consumers, Flexdrop II hose provides high quality, abuse resistant product that is lightweight, slides easily, and easy of operators to handle. Flexdrop II hose is the best value for your investment dollars.

Construction

Tube: Black Chemigum®

Reinforcement: Synthetic fabric — with static wire.

Cover: Red Chemivic with White Pliovic helix.

Branding: Continuous white spiral mylar tape with blue lettering, "Goodyear Flexdrop II Petroleum Drop Hose to 150 PSI".

GOODYEAR

Our Customers Are "1"

PETROLEUM HOSES

**ROTARY BALL
PUMPS**

What Makes Granco Rotary Ball Pumps Run

The secret is the unique, floating Granco rotor. Pivoted in a spherical housing, the rotor provides positive expulsion of fluid from the pump chamber directly into the line of flow. The simplicity of the Granco design provides excellent fluid displacement without the use of gears, blades, vanes, paddles, scoops, pistons, valves or stators.

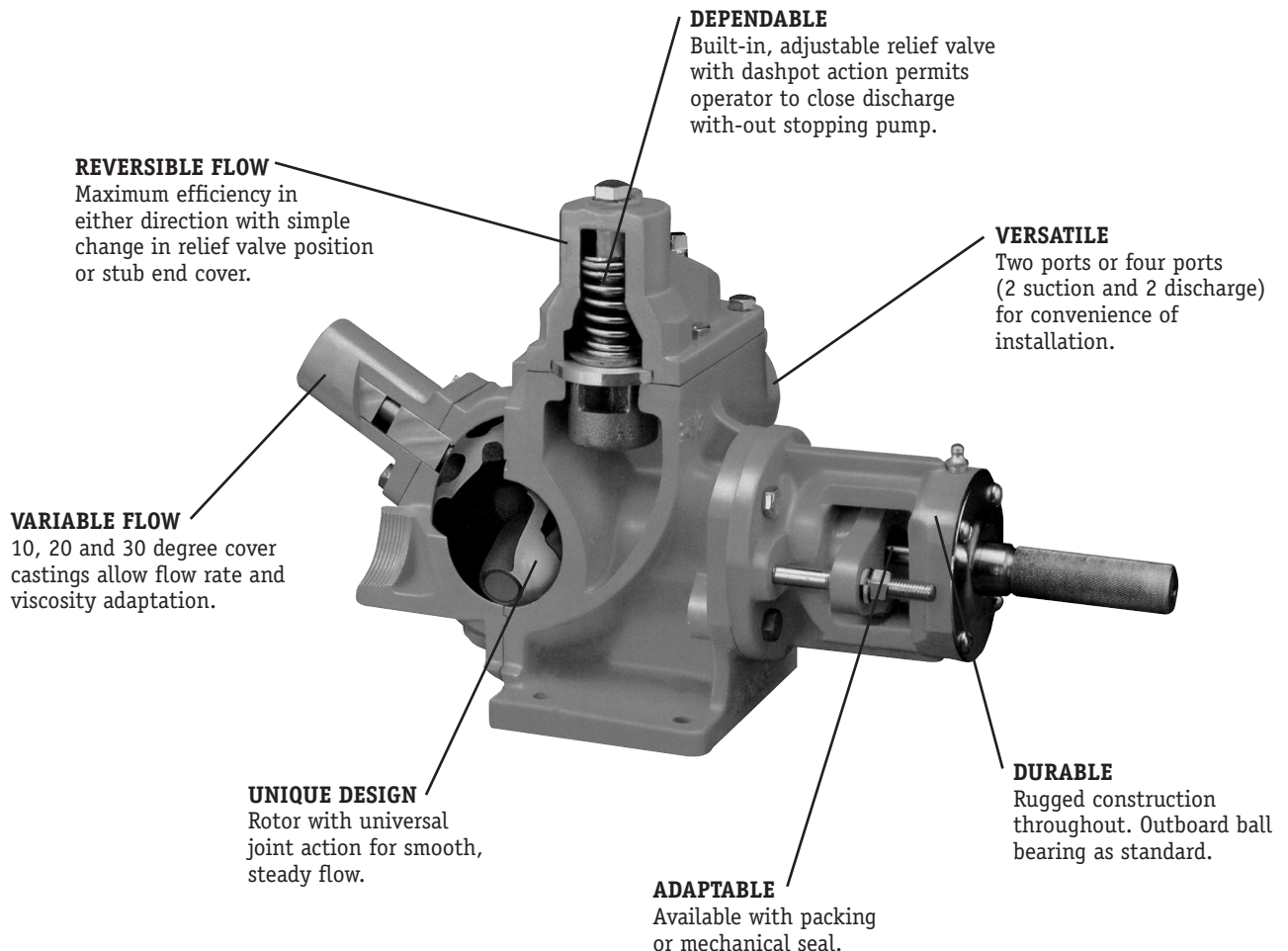
A standard Granco rotary ball pump can move a tremendous varieties of fluids with viscosities ranging from 30 to 1,000,000 SSU without modification of standard clearances. Product ranges include:

- PETROLEUM** - from solvents through crude and lube oils.
- INDUSTRIAL** - from water-based paints through caulking compounds.
- EDIBLE** - from vegetable oils through molasses and peanut butter.

The Granco rotor has four large pumping chambers. These individual chambers are positioned so that incoming fluids flow directly to the heart of the rotor. Since fluids enter and exit the rotor cavities with less friction and less shear, the Granco pump displaces more product with greater efficiency than other designs. Gallon for gallon, Granco pumps will normally deliver more product at the same speed and require less horsepower than other positive displacement pumps.

The performance of a positive displacement pump depends upon maintaining the tolerances of the pumping mechanism. Operating speed attacks these tolerances. The floating Granco rotor minimizes metal to metal contact in the pump. The large rotor cavities allow the Granco pump to operate at lower rpms. These features combine to preserve the pump's original tolerances.

Thus, the Granco pump will run slower and longer and require less ongoing maintenance.



Manual or Powered Rewind Reels to Handle Single 1" through 2" I.D. Hose

Rewind

Choose gear-driven crank rewind or chain and sprocket drive powered by an electric, hydraulic or compressed air motor. A gear-driven mechanism with pinion shaft brake can be specified as auxillary crank rewind on power rewind reels, at extra cost.

Brakes & Locks

Crank rewind reels will be supplied with pinion brake and power rewind reels with a comet brake. Other brake and locking devices may be specified.

Inlet

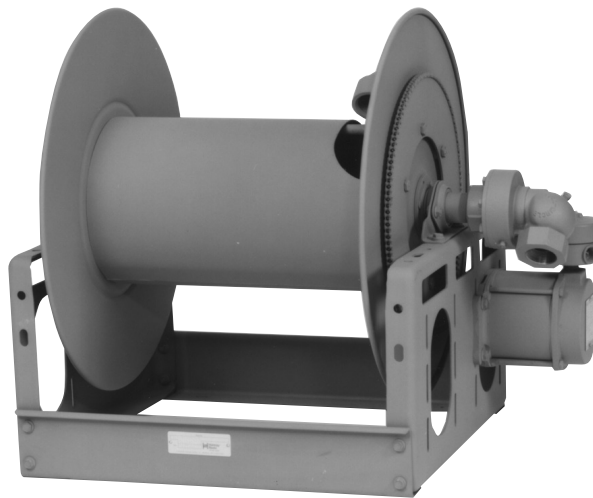
Standard inlet is a 90° ball bearing swivel joint with 1-1/2" female NPT threads and 2" victaulic groove.

Outlet

Standard outlet is a flanged riser with 1-1/2" or 2" female NPT threads. Standard inlet, outlet riser, and hub assembly are steel. These components can be supplied in stainless steel, aluminum, or bronze, at extra cost, to meet special product handling requirements.

Optional Rollers

Rollers may be purchased as accessory items. Specify roller position when ordering. Mounting brackets are necessary.



SERIES 1-1/2"

Operating Pressures & Temperatures

These reels operate at pressures to 600 psi (41 bar) and handle product temperatures from -60° F to +175° F (-51° C to +79° C).

Other sizes and/or threads can be furnished and must be specified.

Alternative Specifications for 2" I.D. Hose

Rewind

For electric rewind choose EP or EPJ option.

Inlet

Standard inlet is a 90° ball bearing swivel joint with 2" female NPT threads.

Outlet

Not available in bronze.

Chain Clutch-Reduction Units

These units are recommended for use on reels with 39" diameter or larger discs and/or increased torque and slower rewind speeds are required. Factory installed when specified or available as an accessory item for field installation.

Reels to operate at other pressures and temperatures can be furnished at extra cost.



SERIES 2"



**PETROLEUM
HOSE REELS**

**PROPANE
HOSE REELS**

Manual or Power Rewind Reels to Handle Single 1" through 1-1/2" I.D. Hose

Rewind

Choose gear-driven crank rewind or chain and sprocket drive powered by an electric, hydraulic or compressed air motor. A gear-driven mechanism with pinion shaft brake can be specified as auxiliary crank rewind on power rewind reels, at extra cost.

Brakes & Locks

Crank rewind reels will be supplied with pinion brake and power rewind reels with a strap brake. Other brake and locking devices may be specified.

Inlet

Standard inlet is a 90° ball bearing swivel joint with 1-1/2" female NPT threads.

Outlet

Standard outlet is a flanged riser with 1-1/2" female NPT threads. Standard inlet, outlet riser, and hub assembly are steel.

Optional Rollers

Rollers may be purchased as accessory items. Specify roller position when ordering. Mounting brackets are necessary.



SERIES PB

Operating Pressures & Temperatures

These reels operate at pressures to 350 psi (24 bar) and handle product temperatures from -40° F to +350° F (-40° C to +177° C).

Other sizes and/or threads can be furnished and must be specified.

Reels to operate at other pressures and temperatures can be furnished at extra cost.

Spring Rewind Reels to Sandle Single 3/4" or 1" I.D. Hose

Rewind

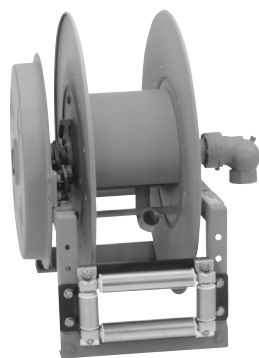
A heavy-duty spring motor provides self-contained rewind power. A non-sparking ratchet assembly locks the reel when the desired length of hose has been payed out. A pull on the hose unlocks the reels and the spring motor retracts the hose. A declutching arbor is provided to prevent damage from reverse winding.

Inlet

Standard inlet is a 90° ball bearing swivel joint with 1" female NPT threads.

Outlet

Standard outlet is 1" female NPT threads.



SERIES SPBN800



SERIES SPB800

Operating Pressures & Temperatures

These reels operate at pressures to 1000 psi (69 bar) and handle product temperatures from -60° F to +175° F (-51° C to +79° C).

Rollers

All models are supplied with a 4-way roller assembly. Roller position must be specified.

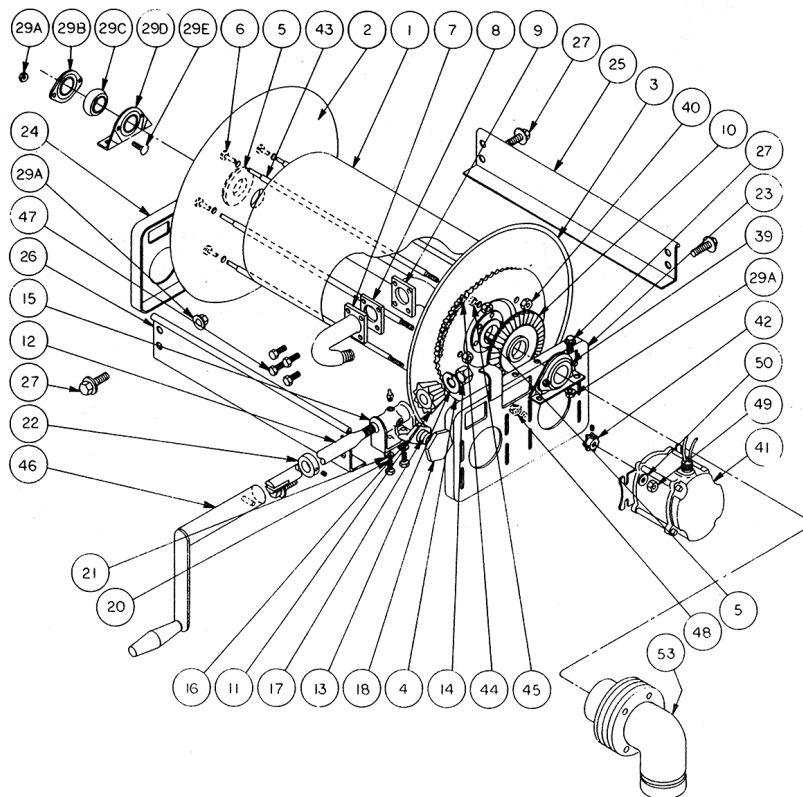
Reels to operate at other pressures and temperatures can be furnished at extra cost.

Hose Stop

A hose stop should be used to prevent damage to rollers and nozzles and to permit adjustment of free hose length.

**CHECK DIMENSIONS AND WEIGHTS
PRIOR TO ORDERING**

1-1/2" HOSE REELS



1-1/2" HOSE REELS WITH TUBE TURN INTERNALS & BALL BEARING SWIVEL JOINTS

DRAWING NO.	PART NAME	PART NO.	DRAWING NO.	PART NAME	PART NO.
1	Drum	9905.3131	21	1/2" Lockwasher	9954.0030
2	Back Disc (19-20)	9903.0821	22	Collar and Set Screw	9914.0351
	Back Disc (23-24)	9903.1121	23	Front Small Pressed Frame (19-20 to 23-24)	9906.0003
	Back Disc (25-26)	9903.1321		Front Large Pressed Frame (25-26 to 30-31)	9906.5031
	Back Disc (28-29)	9903.1521	24	Back Small Pressed Frame (19-20 to 23-24)	9906.0003
	Back Disc (30-31)	9903.1621		Back Large Pressed Frame (25-26 to 30-31)	9906.5031
3	Front Disc (19-20)	9903.0821	25	Back Foot	Specify Model
	Front Disc (23-24)	9903.1121	26	Front Foot	Specify Model
	Front Disc (25-26)	9903.1321	27	3/8" - 16 x 3/4" Spinlock Cap Screw	9904.1201
	Front Disc (28-29)	9903.1521	29A	3/8" - 16 Spinlock Nut	9904.6200
	Front Disc (30-31)	9903.1621	29B	Bearing Holder	9902.2800
4	Disc Sprocket	9910.1423	29C	1" Ball Bearing Insert	9902.1500
5	Washer EH-936.	9965.0015	29D	Bearing Pillow Block	9902.2900
6	Carriage Bolts 3/8" Dia.	Specify Model	29E	3/8" - 16 x 3/4" Carriage Bolt	9904.0201
7	Flanged Riser (1-1/2" FIPT)	9901.3760	39	1-1/2" Front Self-Aligning Bearing Complete	9902.1600
8	Gasket	9965.0021	40	3/8" - 16 Hex Jam Nut	9965.0012
9	Hub (1-1/2")	9901.3240	41	Motor, 12 Volt Explosion-Proof	9915.0003
10	Ring Gear w/Mtg Bolts	9914.0372	42	Motor Sprocket for #35 Chain	9910.1117
11	Pinion Gear	9914.0393	43	3/8" Spacer Pipe	Specify Model
12	Pinion Shaft	9914.0261	44	Length #35 Chain w/Connecting Link	9912.0001
13	3/8" Special Spacer Washer	9954.0003	45	Special Spacers	9954.0016
14	5/8" 18 SAE Hex Nut	9904.5600	46	Crank	9914.0010
15	Side Pinion Bearing w/Grease Fitting	9914.0243	47	5/16" - 18 x 3/4" Hex Head Cap Screw	9904.1101
16	Brake Pad H-3	9914.0433	48	5/16" - 18 x 1" Spinlock Bolt	9904.2102
17	Brake Spring H-31	09914.0451	49	5/16" - 18 HexNut	9904.5100
18	Brake Wheel H-30A	9914.0413	50	5/16" Flat Washer	9954.0006
20	1/2" - 13 x 1" Hex Head Cap Screw	9904.1402	53	1-1/2" HJ Swivel Joint	9930.4210

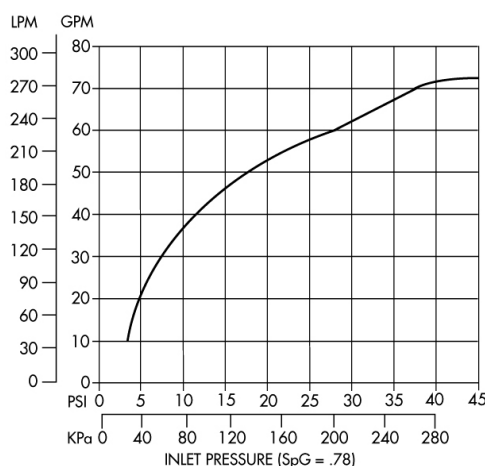
NOZZLE

HUSKY VIII

High Volume Pressure Activated Automatic Nozzle

HUSKY VIII NOZZLE

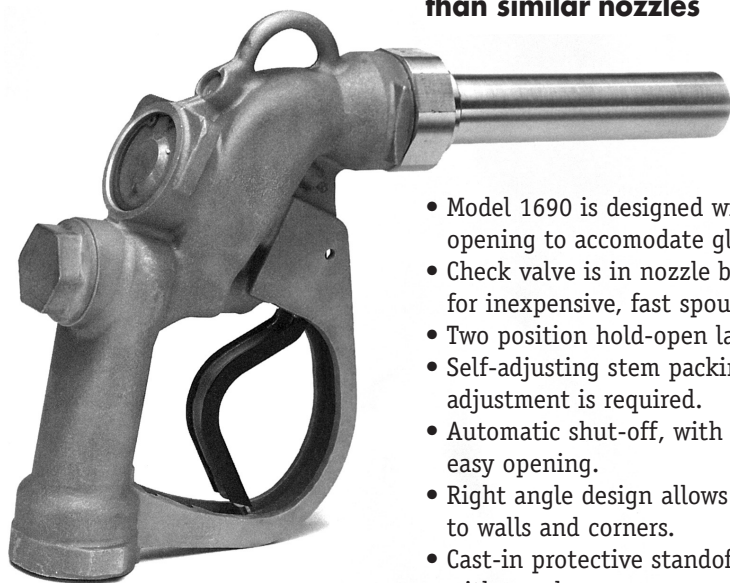
- Automatic shut-off nozzles for Truck Stop and other High Volume applications.
- Husky VIII Nozzle shuts off:
 - when the pump shuts off.
 - when the gas tank is full.
 - when the lever is opened before the pump is turned on.
 - when the leak detector has not completed its test cycle.
- Flow rates up to 75 GPM.
- Pressure shut-off nozzle for unattended self-service and unattended stations.
- Nozzle is equipped with unique Flo-Stop device that shuts off nozzle if it falls from fill tank or raises above the horizontal.
- Spout is reinforced with thick aluminum bushing that retains spout spring and keeps spout from rounding-in-the two leading causes of clicking-off and spit-back spillage. Spout replacement is fast and easy.



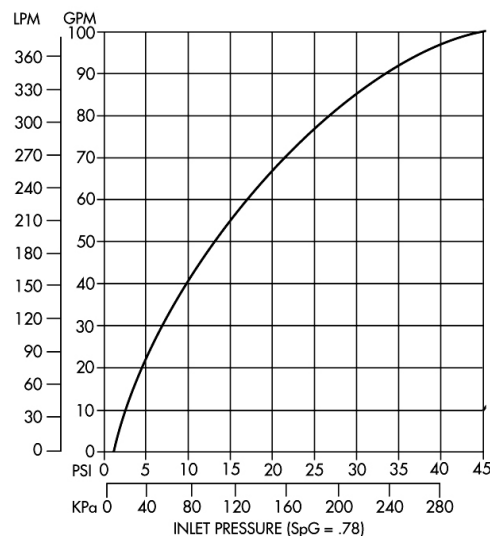
NOZZLE 1690

High Volume Automatic Shut-off Nozzle

Husky Model 1690 provides 100 GPM; 30% lighter than similar nozzles



- Model 1690 is designed with extra large hand opening to accommodate gloves or mittens.
- Check valve is in nozzle body, not the spout, for inexpensive, fast spout replacement.
- Two position hold-open latch.
- Self-adjusting stem packing. No field adjustment is required.
- Automatic shut-off, with dual poppets for easy opening.
- Right angle design allows nozzle to "fit" close to walls and corners.
- Cast-in protective standoffs provide durability with rough usage.



M-Series Meters

M-5 Meter 12 to 60 GPM

- Capacity: 5 to 60 GMP (9 to 227 l./min.).
- Case made of aluminum with metering chamber components of various materials as required for Classes 1, 2, 3, 4, 14, 16 and 30 construction.
- Case made of all 316 stainless steel for Class 8 service.
- Choice of companion flanges with 1 1/2" standard and 2" optional NPT or BSPT threads. Also aluminum or steel welding flanges.

M-15 Meter 40 to 200 GPM

- Capacity: 10 to 200 GMP (38 to 760 l./min.).
- Case made of aluminum with meter element components of various materials as required for Classes 1, 2, 3, 4, 14, 15 and 16 construction.
- Choice of 3" NPT and 3" BSPT connections. Also 3" aluminum or steel welding flanges.

M-7 Meter 20 to 100 GPM

- Capacity: 10 to 100 GMP (38 to 380 l./min.).
- Case made of aluminum with meter element components of various materials as required for Classes 1, 2, 3, 4, 14, 15 and 16 construction.
- Case made of cast iron for Classes 7, 27 and 37 construction.
- Case made of all 316 stainless steel for class 8 construction.
- Case made of all brass for Class 20 construction.
- Choice of companion flanges with 2" standard and 1 1/2" optional NPT or BSPT threads. Also aluminum or steel welding flanges.



MODELS:
M-5, M-7, M-15





**LECTROCOUNT
LCR-II, LECTRO-
COUNT LCR 600,
AND DMS i1000**

A history of unrivaled flow meter accuracy and reliability merges with advanced electronics

The result: a family of unsurpassed products and systems designed to meet - even adapt to - your flow meter and process control instrumentation requirements.

Liquid Controls is recognized throughout the world for its highly accurate and reliable flow meters. As a proven leader in the field of liquid measurement, our engineering, manufacturing and application expertise allow us to provide you with complete integrated solutions that work. For truck-mounted or fixed-site custody transfer applications requiring Weights & Measures-approved accuracy, LC products deliver consistent, error-free, dependable service.

Liquid controls electronics have been widely used in the fluid measurement and control industries for over three decades. Liquid Controls' family of LectroCount electronic registers provide near-perfect metering accuracy and enhanced functions including: automated data collection (e.g., date, time, product selection, delivery quantity), on-site ticket generation, meter linearization, electronic temperature volume compensation, and improved security.



General Technological Highlights:

Multi-Point Calibration

Virtually eliminates deviations in accuracy caused by variations in flow rate. Increases accuracy by improving meter linearity by .2 percent or more over entire flow range.

Multi-Product Calibration

Changes in fluid characteristics can produce variation in meter accuracy (i.e. multiple fluids, variable viscosities, differences in lubricity, etc.). Multi-product calibration capability increases accuracy of a flow meter on multiple fluids by 0.3 percent or more over entire flow range.

Electronic Temperature Volume Compensation (ETVC)

Accurately corrects volume measured to a programmable base temperature. ETVC utilizes an RTD for measuring temperature and is 100 times more responsive than a traditional mechanical temperature compensator.

Electronic Temperature Volume Compensation to API Tables

Eliminates error of a non-linear coefficient of expansion fluid such as LPG as much as 1.8 percent over the range of -40°F to 130°F.

Increased Security of Metrologically Significant Data

LectroCount systems have NIST and Canadian Weights & Measures approved dispensing, recording, printing, calibration and audit trail software and hardware.

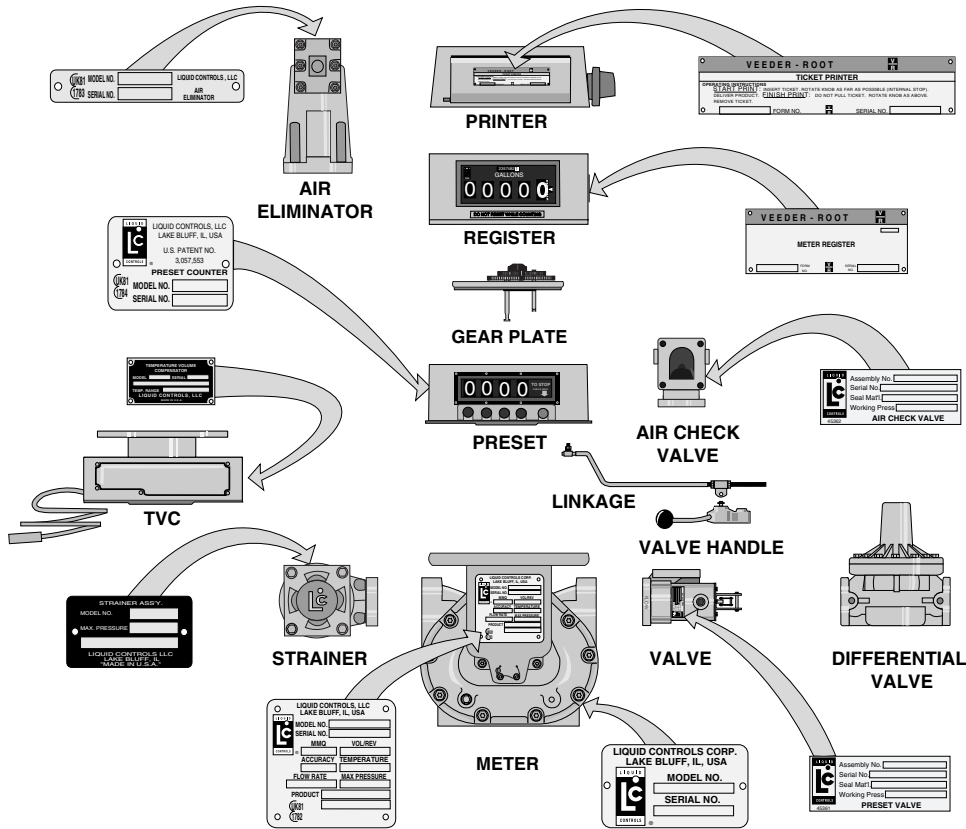
Increased Security of Transaction Record

LectroCount systems control the printing of the ticket/receipt/report irrespective of other peripherals, including third party PC or hand held computers, PLC, Card Lock, POS, RF and other interface devices.

Increased reliability

Highest quality components, state-of-the art manufacturing and ISO 9001 accreditation lead to an extended service life for all LC electronic products.

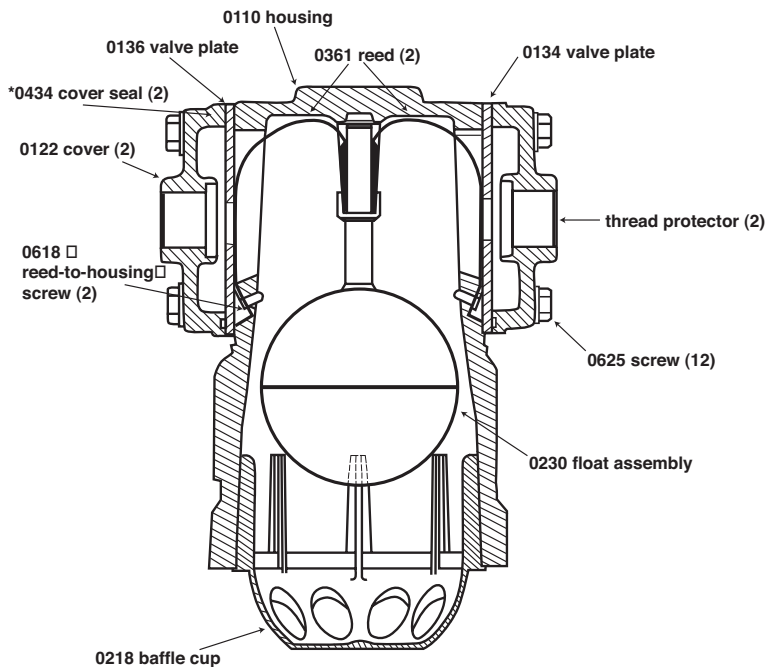
Model Description Chart



Specification and Serial Number Plate Location

NOTE: Meter and accessories are not drawn to scale. Data on the Specification and Serial Number Plates: Model No., Element No., Serial No., Flow Rate, Minimum Measured Quantity, etc., are subject to change.

Aluminum High Mount: Cross Section View



MODEL DESCRIPTION

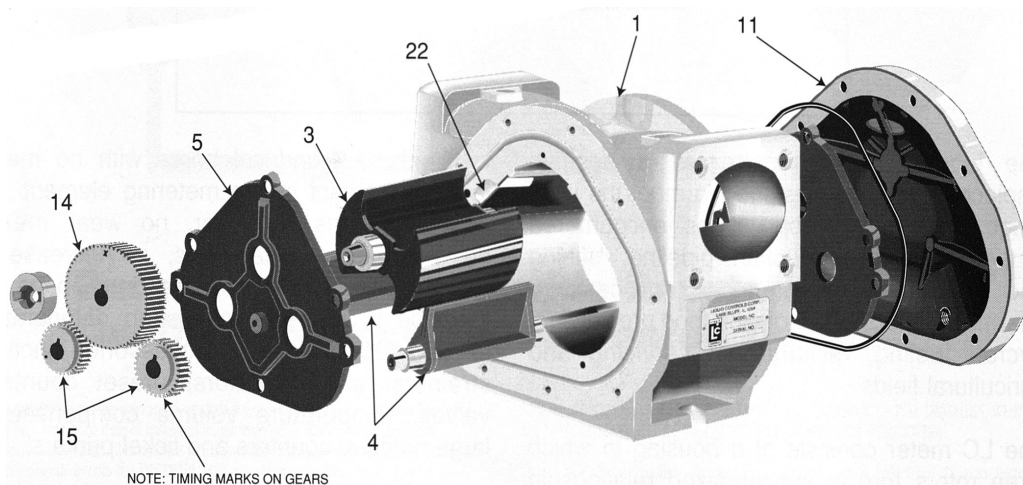
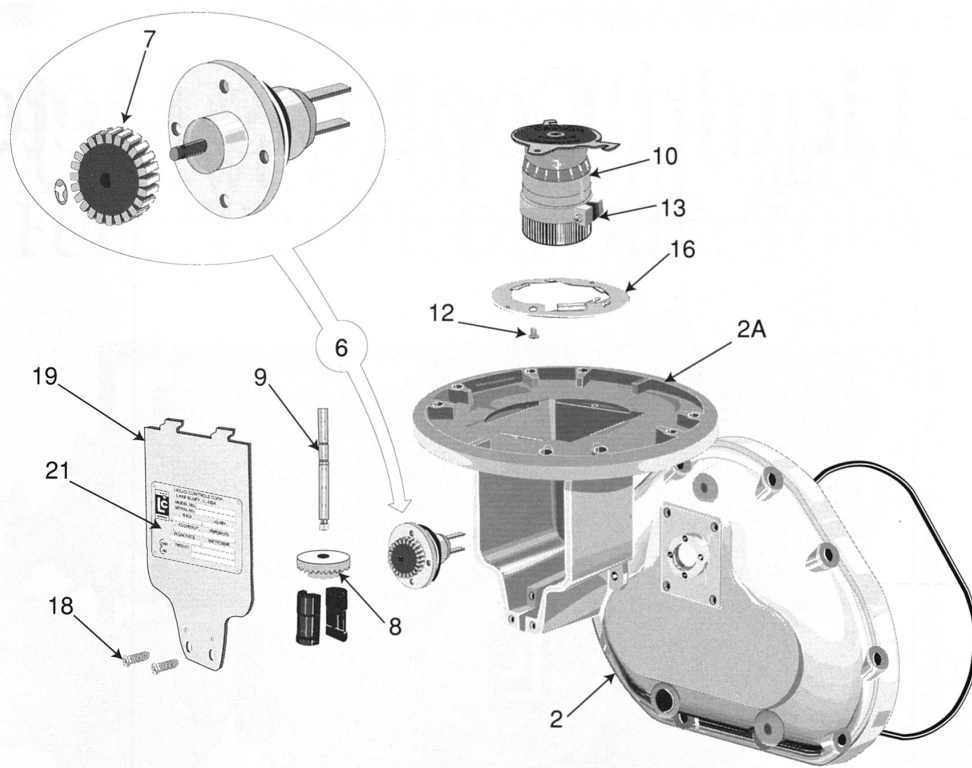
AIR ELIMINATOR



METER COVER

METER HOUSING

Exploded View: M7/MA7/M10



Meter

- | | |
|-------------------------------|-----------------------------|
| 1. Meter Body | 11. Rear Cover |
| 2. Counter End Cover | 12. Adjuster Mounting Screw |
| 2a. Register Mounting Adapter | 13. Adjuster Locking Screw |
| 3. Blocking Rotor | 14. Blocking Rotor Gear |
| 4. Displacement Rotor | 15. Displacement Rotor Gear |
| 5. Bearing Plate | 16. Adjuster Mounting Plate |
| 6. Packing Gland | 18. Adjuster Cover Screws |
| 7. Packing Gland Pinion | 19. Adjuster Cover |
| 8. Adjuster Drive Shaft Gear | 21. Specification Plate |
| 9. Adjuster Drive Shaft | 22. Bleed Hole |
| 10. Adjuster | |

MID:COM 8000

Improves Accuracy and Efficiency

MID:COM 8000 is the workhorse of our product line. It is the ultimate, rugged, easy to use cab mounted computer, printer and data transfer system. Using the SD Data Card the driver has access to 50,000 complete customer records. An easy to follow menu guides the driver through the delivery process. The most popular Software providers offer a interface that provides automatic posting from the data card to your accounts receivables.

Return on Investment

- Electronic Temperature Compensator reduces shrinkage by 1%
- Increases driver efficiency by 10% to 15%
- Reduces meter maintenance by 50%
- Eliminates handwritten tickets and driver pricing errors
- Reduces ticket posting time by 90% and eliminates posting errors
- Eliminates postage costs

E:COUNT

e:count is more than just an electronic counter or register. e:count can be connected to an Epson slip printer, our own impact or our new thermal printer, to provide basic pump and print functions. Our modular design allows a user to upgrade the system by adding components in the cab and leaving the original register, valve and cables to the meter intact. Possible upgrades include all of the current computers, general purpose computers and other common peripheral components.



- Easy mounting and use on any brand or type of meter
- Large easy to read alpha numeric display
- Easy to follow legends for all operations
- Self contained calibration and set-up functions
- Accepts any type of pulse input
- Built in Enduro Switch® control keys (for harsh environments)
- Sealed connectors including power, valve control and remote readout
- Field programmable for custom applications
- Eliminate change gears, adjusters, linkages and other mechanical parts

COM:LINK

This simple button reading system works with the MID:COM 8000 computer system, to greatly reduce the labor involved for fleet fueling or on-site fueling operations. The rugged RF transmitter (wand) and cab mounted receiver send vehicle or equipment identification to the 8000 computer. Each unit being fueled is equipped with a Dallas iButton®. These rugged stainless steel iButtons® come standard with a unique serial number and are also available in a program-mable format. When programmed they can show actual unit identification and can prevent dispensing the wrong fuel by not opening the valve if the wrong fuel is selected.

Using this system keeps the driver at the end of the hose while the 8000 computer keeps track of what fuel and how much went into each unit. Unit identification, date, time and volume are recorded on the data card and a separate roll printer.



MID:COM

MID:COM 8000

E:COUNT &

COM:LINK

CHECK VALVE
MODEL 137

BY-PASS VALVE
MODEL 174

TANK TRUCK
FITTINGS MODELS
203, 203C, 204
AND 204C

Check Valve
137 & 137 B
ANGLE CHECK & BACK PRESSURE VALVE
SINGLE POPPET/SPRING LOADED

FIG 137 - Fitted with a light spring & soft seat and made for standard check valve applications. All brass. Buna-N disc (standard). Teflon and Viton available.

FIG 137B - Fitted with heavy spring & metal seat. Used for "back-pressure" applications. All brass construction.

NOTE: Special pressure settings are available in the 137 & 137B series for an extra charge.

By-Pass Valve
174 BY-PASS VALVE

Used in applications where pressure control is needed such as by-passing a pump in order to reduce the pressure at the outlet. Valve settings are adjustable. Standard setting is 20 PSI with a maximum setting of 75 PSI. Settings are approximate.

All brass construction with stainless steel spring, and teflon packing.

NOTE: FIG 174 is not a "Pressure Regulating" device.

Tank Truck Fittings
203 & 204 SERIES
EMERGENCY VALVES FOR TANK TRUCKS

Traditional style truck tank Emergency Valves. Threaded (NPT) connections. Used for repair and a variety of specialized system designs.

FIG 203 & 204 Options & Description:

- FIG 203 Straight style valve. Brass body and cap, Buna-N disc, Stainless steel spring, and Maleable Iron Handle. Available with Viton or Teflon Disc.
- FIG 203C Same as 203, but with 3" inlet and 2" outlet (3" x 2").
- FIG 204 Same as 203, but "elbow style valve" and Zinc Plated Steel spring in 1 1/2" and 2" size.
- FIG 204C Same as 204, but with 3" inlet and 2" outlet (3" x 2"), and Stainless Steel spring.

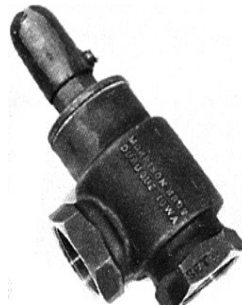


FIG 137/137B
Available with Expansion Relief.
NOTE: pressure settings are approximate.

SIZE	WEIGHT	OPENING PRESSURE
1-1/2"	4.25 lbs	6 PSI
2"	6.25 lbs	8 PSI
3"	13.5 lbs	8 PSI



FIG 174

SIZE	WEIGHT
1-1/2"	7.75 lbs
2"	8.5 lbs



FIG 203



FIG 203 C



FIG 204



FIG 204 C

FIG 203 & 204 Options & Weight
Screen available with all models and sizes for extra charge

SIZE	203 WT	204 WT	203C WT	204C WT
1-1/2"	6.5 lbs	7 lbs	NA	NA
2"	7.5 lbs	8.5 lbs	NA	NA
3" x 2"	NA	NA	9.75 lbs.	10.75

TCS24, CS25 SERIES

The CS24 Series Power Take-Off is a Clutch Shift PTO designed for Allison World® and Caterpillar automatic transmissions

The CS-24 Series PTO is engaged by means of a solenoid activated, wet clutch pack. The engagement solenoid is built into the PTO and installation is simplified by the requirement of only one hose connection. A remote mounted solenoid option is available for a more compact installation.

- Four remote mount output shafts in both keyed and flange types: Versatility for remote pump drives
- S.A.E. "A", "B", "BB", and DIN 5462 direct mount pump options: Fits most popular pumps
- Rotatable direct mount flanges: Allows pump to be positioned for maximum clearance



POWER TAKE-OFF'S

- Compatible with PTO Shaft Extensions for Allison transmissions: Moves the pump mount to the rear of the transmission for large pump clearance
- Patented Muncie drag brake: Prevents shaft rotation in "OFF" mode
- Standard pressure lubrication: No extra cost
- Two assembly arrangements: Allows the PTO to be mounted shaft high or low on either side of the transmission

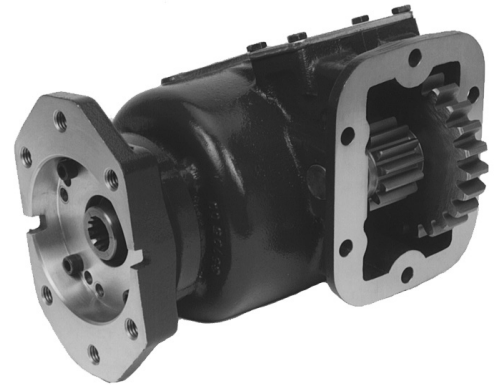
CS6S And CS8S Series Clutch Shift PTOS

For SAE 6 and 8 bolt Automatic And Manual transmissions

Muncie's Electric/Air PTO provides in-dash control power shifting for SAE Allison transmissions and many manual transmissions. The Clutch shift can be hydraulically shifted on Allison, Fuller, Jatco automatic transmissions if air is not available.

Seven internal ratio choices with torques to 350 lb. ft. Six output shaft options for most hydraulic pump connections.

With a maximum of 2500 RPM it can handle higher speeds, higher torque and HP capacities than other designs. Direct mount flanges on all series are 360 degree rotatable with multiple mounting locations for easier pump mounting. Clutch Shift PTOs are provided with complete activation and mounting kits. The CS Series is the only PTO with a patented internal drag brake to assist in the stopping of the disengaged output shaft. Available in both 12- and 24-volt.



ALUMINUM TOOL BOXES

Aluminum Tool Boxes

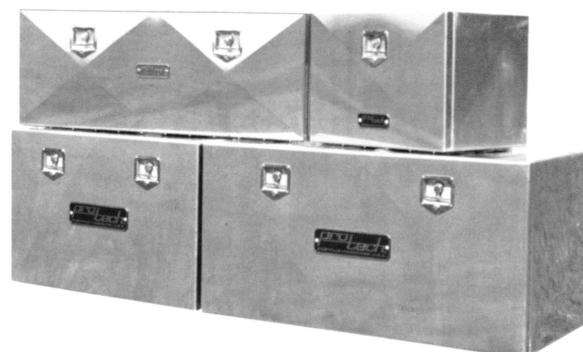
Pro-Tech aluminum boxes are manufactured with high strength, corrosion resistant alloy material to provide top quality appearance, and low maintenance. Aluminum boxes provide security and storage for your equipment, adding minimum weight to your tractor/trailer. Pro-Tech aluminum boxes utilize a neoprene, bulb type seal to keep your equipment clean and dry. Stainless steel, Keyed T-latches are used for long life and security.

WE GLADLY CUSTOM MANUFACTURE BOXES TO YOUR SPECIAL REQUIREMENTS!

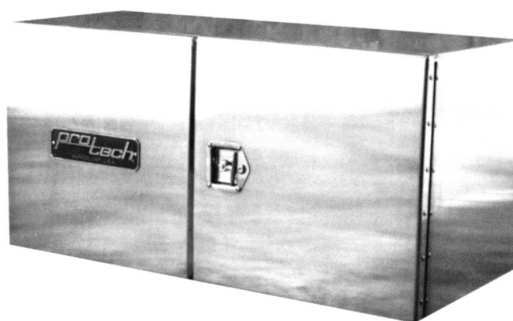
Standard Box Sizes

18" H 18" D	18" H x 18" D x Length
18" H 24" D	18" H x 24" D x Length
24" H 24" D	24" H x 24" D x Length

Standard Lengths: 24", 30", 36", 48", 60"



Aluminum Tool Box



TA-2212

Tool Box, Aluminum 24" Deep x 24" High x 48" Long. Double swing style doors. Double Swing Doors may be ordered on any box over 36" long.

TA-2410

Tool Box, Aluminum 20" Deep x 19" High x 30" Long, Top open.



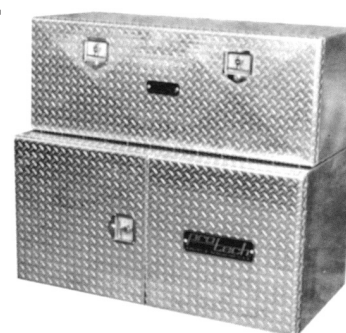
TA-2401

Tool Box, Aluminum 25" Deep x 19" High x 24" Long. Top Open, smooth body, diamond plate lid. Designed to mount between cabguard feet.

Optional Aluminum Diamond Plate Door

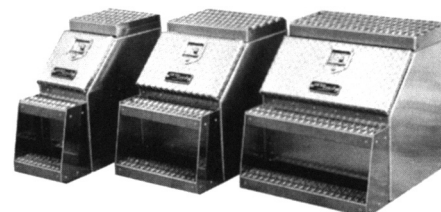
TA-2270D

TA-2212D



Tool boxes shown with optional aluminum diamond plate door installed. Any Pro-Tech box may be ordered with a diamond plate door for a custom appearance and resistance to scratches and scrapes (slight additional charge).

Aluminum Step Boxes



TA-2450 28"D x 25"H x 12"L TA-2460 28"D x 25"H x 18"L TA-2470 28"D x 25"H x 24"L

Pro-Tech Aluminum step boxes provide storage space in conjunction with a frame step. Step boxes have smooth aluminum bodies and aluminum diamond plate doors. Bulb type seals and stainless steel keyed T-latches are standard. 12" and 18" boxes come with built-in mounting brackets, external mounting brackets are required on 24" boxes. Custom sizes are also available! Boxes may be ordered without steps.

Aluminum Fenders

Pro-Tech fenders are manufactured in standard configurations for truck and trailer applications. Variations of single axle, half and full tandems are available in bright aluminum diamond plate, smooth aluminum (with or without stiffening ribs), mild steel and bright stainless steel materials. All standard Pro-Tech fenders are flanged on both edges with rolled, radius ends for extra protection and top quality appearance.

PRO-TECH FENDERS MAY BE CUSTOM MANUFACTURED TO YOUR SPECIAL REQUIREMENTS!

proTech

ALUMINUM FENDERS

Bright Aluminum Diamond Plate OUR SPECIALTY!

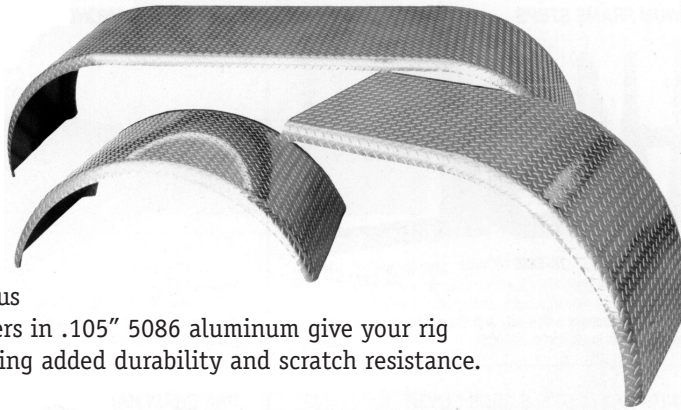
Pictured:

TA-7320 half tandem

TA-7340 full radius, single axle

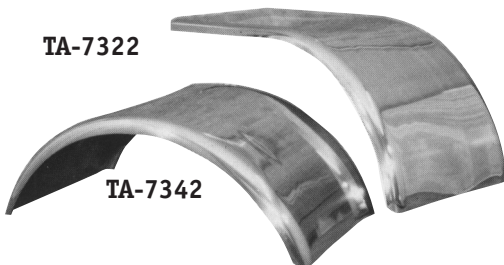
TA-7360 full tandem, double radius

Bright, shiny diamond plate fenders in .105" 5086 aluminum give your rig a custom appearance while providing added durability and scratch resistance.



Smooth, Shiny Aluminum

TA-7322

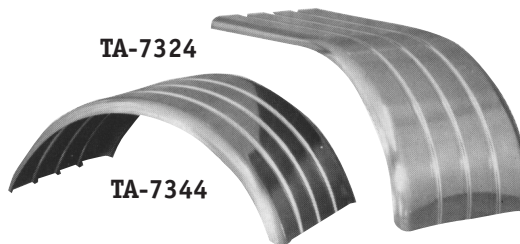


TA-7342

Bright smooth fenders without stiffening ribs. 1/8" thick material for extra strength and show quality appearance. Available in all standard configurations.

Ribbed Aluminum Fenders

TA-7324



TA-7344

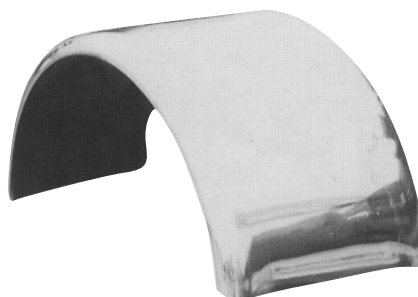
.090" thick, three stiffening ribs for strength. Lightweight aluminum, never needs painting, and require minimum maintenance. Available without ribs but must be special ordered. Available in all standard configurations. 14 Gauge mild steel fenders stocked in three rib style.

Lift Axle Fenders



Full radius, lift-axle fenders available in diamond plate, smooth shiny aluminum and stainless steel in both 16" and 14" widths.

20" Wide Fenders



Full radius and Quarter fenders in a compact 20" wide size. An excellent choice for one-ton, two-ton and mid-range. Available in diamond plate, stainless steel or polished aluminum.



STA-LOK II PARTS B AND C

STA-LOK II New Passive Lock Couplers

PT Coupling, Co., Inc. now has available the best passive locking coupler on the market. The new Sta-Lok II is available in more materials and sizes than any other manufacturer of passive lock couplers. For a reliable and safe connection specify Sta-Lok II.

Available in the following materials sizes 1-1/2" – 5":

- Aluminum
- Carbon Steel
- Brass
- Stainless Steel
- Ductile Iron
- Hard Coat Aluminum
- Polypropylene
- Nylon



Part B STA-LOK II Coupler X Male NPT

Made in U.S.A.

Size Part No.

1"	10BSL2
1.25"	12BSL2
1.5"	15BSL2
2"	20BSL2
2.5"	25BSL2
3"	30BSL2
4"	40BSL2
5"	50BSL2



Part C STA-LOK II Coupler X Hose Shank

Made in U.S.A.

Size Part No.

1"	10CSL2
1.25"	12CSL2
1.5"	15CSL2
2"	20CSL2
2.5"	25CSL2
3"	30CSL2
4"	40CSL2
5"	50CSL2

PART A - Adapter Adapter X Female NPT Thread

Made in U.S.A.



PART A AND E

ADAPTER

PART B, C AND D

COUPLERS

Part No.	E-05A	1/2A	3/4A	10A	12A	15A	20A	25A	30A	40A
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4



PART B - Coupler Coupler X Male NPT Thread

Made in U.S.A.

Part No.	E-05B	1/2B	3/4B	10B	12B	15B	20B	25B	30B	40B
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4

PART C - Coupler Coupler X Hose Shank

Made in U.S.A.



Part No.	E-05C	3/4C	10C	12C	15C	20C	25C	30C	40C
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3



PART D - Coupler Coupler X Female NPT Thread

Made in U.S.A.

Part No.	E-05D	1/2D	3/4D	10D	12D	15D	20D	25D	30D	40D
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4

PART E - Adapter Adapter X Hose Shank

Made in U.S.A.

Part No.	E-05E	1/2E	3/4E	10E	12E	15E	20E	25E	30E	40E
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4





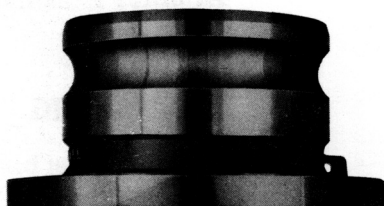
PARTS:

TTFC AND TTFA

TTFC Coupler X Tank Truck Flange

Made in U.S.A.

Part No.	TTF30C	TTF40C	TTF60C
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TTFA Adapter X Tank Truck Flange

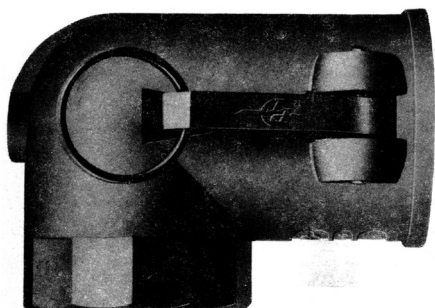
Made in U.S.A.

Part No.	TTF30A	TTF40A	TTF60A
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PART F - Adapter Adapter X Male NPT Thread

Made in U.S.A.

Part No.	E-05F	1/2F	3/4F	10F	12F	15F	20F	25F	30F	40F
Nominal Size	1/2	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4



PART H - Elbow Coupler Coupler X female NPT Thread

Made in U.S.A.

Part No.	10H	12H	15H	20H	25H	30H	40H
Nominal Size	1	1-1/4	1-1/2	2	2-1/2	3	4

PART V - Coupler Dust Cap

Made in U.S.A.

Part No.	E-05V	*3/4V	10V	12V	15V	20V	25V	30V	40V
Nominal Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4



PART W - Coupler Dust Plug

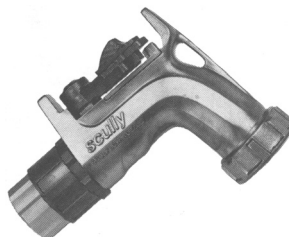
Made in U.S.A.

Part No.	E-05W	*3/4W	10W	12W	15W	20W	25W	30W	40W
Nominal Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4

Sculflow Nozzles

The Most Popular Delivery Nozzles In The World

- The leading choice for light product, high volume deliveries
- Reduced pressure drop allows for faster pumping speeds
- Prevents closing shock to prolong truck equipment life
- Feature leak-proof filling and no drip operation
- Original ball valve design and deadbolt locking handle
- All parts are completely field replaceable



Inlet Style	Inlet Thread	Outlet Thread	Part Number
FEMALE	1 1/4"	UNIFIL	05062
FEMALE	1 1/4"	1 1/4"	05066
FEMALE	1 1/4"	1 1/2"	05070
FEMALE	1 1/2"	UNIFIL	05064
FEMALE	1 1/2"	1 1/4"	05068
FEMALE	1 1/2"	1 1/2"	05072
MALE	1 1/4"	UNIFIL	05100
MALE	1 1/4"	1 1/4"	05096
MALE	1 1/4"	1 1/2"	05098
MALE	1 1/2"	UNIFIL	05106
MALE	1 1/2"	1 1/4"	05102
MALE	1 1/2"	1 1/2"	05104

Description	Part #
Seal kit, no swivel parts	05415
Rebuild kit, seals & mechanical parts, no swivel parts	05416
Handle upgrade kit	11604

Options:

- 5 PSI Anti-Drip Valve
- Without Swivel
- Sightglass On Inlet- Special Chemicals

Nozzle Materials:

- Aluminum Body
- Hard Chrome Plated Brass Valve Ball
- Teflon Ball Seat
- Delrin Ball Follower
- Aluminum & Zinc Swivel Body
- Teflon Swivel Seal
- Nitrile & Viton Seals

Flow Rates:

- Used for deliveries up to 125 GPM

scully

**DELIVERY
NOZZLES
AND NOZZLE
SWIVELS**

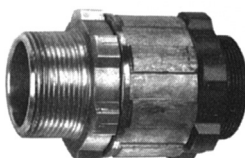
Nozzle Tightfill Hose Swivels

Increased Hose Flexibility and Freedom of Movement

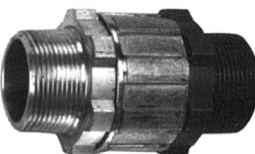
- Advanced ball bearing design allows for easy rotation at all operating pressures.
- No nipple required to attach hose with male style swivels.
- Lightweight aluminum and zinc construction.
- Teflon high recovery seal and shielded bearings for optimum field performance.
- Wide variety of liquid product use.

Inlet Style	Inlet Pipe Size	Male Outlet Thread	Part Number
FEMALE	1 1/4"	COM-A	05815
FEMALE	1 1/4"	1 1/4"	05817
FEMALE	1 1/4"	1 1/2"	05818
FEMALE	1 1/2"	COM-A	05816
FEMALE	1 1/2"	1 1/4"	05819
FEMALE	1 1/2"	1 1/2"	05820
MALE	1 1/4"	COM-A	05865
MALE	1 1/4"	1 1/4"	05863
MALE	1 1/2"	COM-A	05868
MALE	1 1/2"	1 1/4"	05866
MALE	1 1/2"	1 1/2"	05867
FEMALE	1 1/2"	COM-B	05824
FEMALE	2"	COM-B	05826
FEMALE	2"	2" COM-B	05828
MALE	2"	COM-B	05862
MALE	2"	2" COM-B	05874

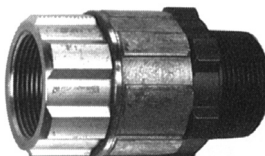
Description	Part #
Seal Kit, to repair two "A" series swivels for Sculflow Nozzle	05859
Seal Kit, to repair two "B" series swivels for Super Nozzle	05860



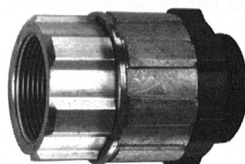
Male COM Swivels



Male Inlet Threads



Female Inlet Threads



Female COM Swivels

**RADIO REMOTE
CONTROL SYSTEMS**

Hose Reel Remote Controls

Radio remote control systems are available for all hose reel Unwind and Rewind operations. Electronic interlock prevents accidental polarity reversal. Weatherproof, pre-wired solenoid relay enclosures are available for all BASE radio systems and electric voltages.

- Reduces back injury and workmans compensation claims
- Allows more deliveries per day
- Available for Electric, Pneumatic and Hydraulic hose reels
- Hose Reel control feature available will all BASE systems

**DUAL AND SINGLE HOSE REEL CONTROL
SYSTEMS AVAILABLE FOR ALL MAKES**



Multi-Diode 12 Volt LEDs

All lamps are equipped with PVC jacketed cable and a molded 2 or 4 conductor male plug. Wiring conforms to FMVSS standards. Cable entry is located on the sides of the lamps for easy plug in to the lamp system. Lamps in this section are either multi-diode 12 volt or single diode Multi-voltage lamps. Multi-diode lamps available in 24 volt upon request.



Betts

**STOP, TAIL,
TURN LAMPS**



PART NO. 40 SERIES - 4 IN. MALE PLUG

402110	Curb Side Turn/Tail Red Shallow Lens	402122	Curb Side Turn Only Amber Shallow Lens
402111	Road Side Turn/Tail Red Shallow Lens	402123	Road Side Turn Only Amber Shallow Lens
402112	Curb Side Stop/Tail Red Shallow Lens		
402113	Road Side Stop/Tail Red Shallow Lens	402134	Curb Side Turn Only Amber Deep Lens
		402135	Road Side Turn Only Amber Deep Lens
402114	Curb Side Turn/Tail Red Deep Lens		
402115	Road Side Turn/Tail Red Deep Lens	402140	Back up Clear Shallow Lens Multi-voltage multi-diode
402116	Curb Side Stop/Tail Red Deep Lens		
402117	Road Side Stop/Tail Red Deep Lens		



PART NO. 40 SERIES - 12 IN. MALE PLUG

402100	Curb Side Turn/Tail Red Shallow Lens	402120	Curb Side Turn Only Amber Shallow Lens
402101	Road Side Turn/Tail Red Shallow Lens	402121	Road Side Turn Only Amber Shallow Lens
402102	Curb Side Stop/Tail Red Shallow Lens		
402103	Road Side Stop/Tail Red Shallow Lens	402124	Curb Side Turn Only Amber Deep Lens
		402125	Road Side Turn Only Amber Deep Lens
402104	Curb Side Turn/Tail Red Deep Lens		
402105	Road Side Turn/Tail Red Deep Lens	402141	Back up Clear Shallow Lens Multi-voltage multi-diode
402106	Curb Side Stop/Tail Red Deep Lens		
402107	Road Side Stop/Tail Red Deep Lens		



PART NO. 45 SERIES - 4 IN. MALE PLUG

452082	Curb Side Turn/Tail Red Shallow Lens	452182	Curb Side Turn Only Amber Shallow Lens
452083	Road Side Turn/Tail Red Shallow Lens	452183	Road Side Turn Only Amber Shallow Lens
452084	Curb Side Stop/Tail Red Shallow Lens		
452085	Road Side Stop/Tail Red Shallow Lens	452186	Curb Side Turn Only Amber Deep Lens
		452187	Road Side Turn Only Amber Deep Lens
452086	Curb Side Turn/Tail Red Deep Lens		
452087	Road Side Turn/Tail Red Deep Lens	452140	Back up Clear Shallow Lens Multi-voltage multi-diode
452088	Curb Side Stop/Tail Red Deep Lens		
452089	Road Side Stop/Tail Red Deep Lens		



PART NO. 45 SERIES - 12 IN. MALE PLUG

452072	Curb Side Turn/Tail Red Shallow Lens	452172	Curb Side Turn Only Amber Shallow Lens
452073	Road Side Turn/Tail Red Shallow Lens	452173	Road Side Turn Only Amber Shallow Lens
452074	Curb Side Stop/Tail Red Shallow Lens		
452075	Road Side Stop/Tail Red Shallow Lens	452176	Curb Side Turn Only Amber Deep Lens
		452177	Road Side Turn Only Amber Deep Lens
452076	Curb Side Turn/Tail Red Deep Lens		
452077	Road Side Turn/Tail Red Deep Lens	452141	Back up Clear Shallow Lens Multi-voltage multi-diode
452078	Curb Side Stop/Tail Red Deep Lens		
452079	Road Side Stop/Tail Red Deep Lens		

Multi-Diode 12 Volt Lamps

56 SERIES SPECIAL PURPOSE

PART NO. 4 IN. MALE PLUG - DOUBLE CONTACT

560263	Curb Side Special Purpose Red Shallow Lens
560264	Road Side Special Purpose Red Shallow Lens
560265	Curb Side Special Purpose Amber Shallow Lens
560266	Road Side Special Purpose Amber Shallow Lens
560267	Curb Side Special Purpose Red Deep Lens
560268	Road Side Special Purpose Red Deep Lens
560269	Curb Side Special Purpose Amber Deep Lens
560270	Road Side Special Purpose Amber Deep Lens



56 SERIES SPECIAL PURPOSE

PART NO. 12 IN. MALE PLUG - DOUBLE CONTACT

560273	Curb Side Special Purpose Red Shallow Lens
560274	Road Side Special Purpose Red Shallow Lens
560275	Curb Side Special Purpose Amber Shallow Lens
560276	Road Side Special Purpose Amber Shallow Lens
560277	Curb Side Special Purpose Red Deep Lens
560278	Road Side Special Purpose Red Deep Lens
560279	Curb Side Special Purpose Amber Deep Lens
560280	Road Side Special Purpose Amber Deep Lens

200 SERIES CLEARANCE OR MARKER LAMPS

PART NO. 4 IN. MALE PLUG - SINGLE CONTACT

211214	Clearance or Marker Red Reflective Lens
211215	Clearance or Marker Amber Reflective Lens



200 SERIES CLEARANCE OR MARKER LAMPS

PART NO. 12 IN. MALE PLUG - SINGLE CONTACT

211216	Clearance or Marker Red Reflective Lens
211217	Clearance or Marker Amber Reflective Lens

56 SERIES CLEARANCE OR MARKER LAMPS

PART NO. 4 IN. MALE PLUG - SINGLE CONTACT

560243	Clearance or Marker Red Shallow Lens
560244	Clearance or Marker Amber Shallow Lens
560245	Clearance or Marker Red Deep Lens
560246	Clearance or Marker Amber Deep Lens



56 SERIES CLEARANCE OR MARKER LAMPS

PART NO. 12 IN. MALE PLUG - SINGLE CONTACT

560247	Clearance or Marker Red Shallow Lens
560248	Clearance or Marker Amber Shallow Lens
560249	Clearance or Marker Red Deep Lens
560250	Clearance or Marker Amber Deep Lens

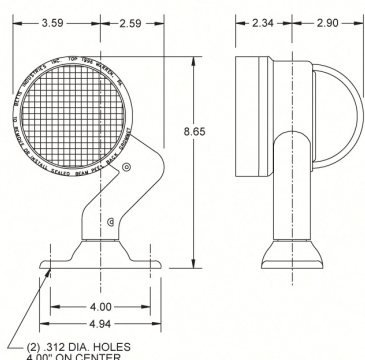


Incandescent and LED Sealed Beam Flood Lamps

Feature a par 36 style bulb available in both incandescent and LED versions. The bulb is held in place with an EPDM retaining ring with the same Snap Seal o-ring sealing characteristics used in all Betts lighting. Bulb versions use a clear 4466 flood or a H7616 halogen spot and a 920234 retaining grommet, LED's use a 920775 LED bulb and a 920734 retaining grommet. This retaining grommet is different than the incandescent version due to the shape of the LED bulb.

For additional bulb protection on the incandescent bulb versions a 920071 retaining grommet has been extended to allow a 920143 clear shallow lens that provides additional protection from bulb breakage. This extended retaining grommet is not available in the LED version.

- Bodies are powder coated aluminum.
- Both horizontal and vertical rotation.
- Available in either a (1) abrasion resistant lead wire for body grounding or a (2) abrasion resistant lead wires for internal or common grounding.

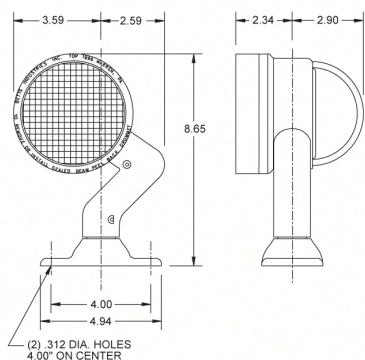


WORKLIGHT WITH (1) LEAD WIRE PART NO. REGULAR GROMMET

315001	Clear, sealed beam flood
315003	Clear, sealed beam flood with 920039 20 amp toggle switch
315005	Clear, halogen spot
315007	Clear, halogen spot with 920039 20 amp toggle switch
315501	Clear, LED flood
315503	Clear, LED flood with 920078 3 amp toggle switch

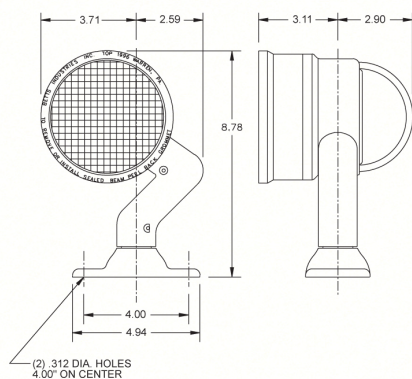


Also available in
white or black



FLOOD WITH (2) LEAD WIRES PART NO. REGULAR GROMMET

325001	Clear, sealed beam flood
325003	Clear, sealed beam flood with 920039 20 amp toggle switch
325005	Clear, halogen spot
325007	Clear, halogen spot with 920039 20 amp toggle switch
325501	Clear, LED flood
325503	Clear, LED flood with 920078 3 amp toggle switch



WORKLIGHT WITH (1) LEAD WIRE PART NO. EXTENDED GROMMET

315009	Clear, sealed beam flood
315010	Clear, sealed beam flood with 920039 20 amp toggle switch
315011	Clear, halogen spot
315012	Clear, halogen spot with 920039 20 amp toggle switch

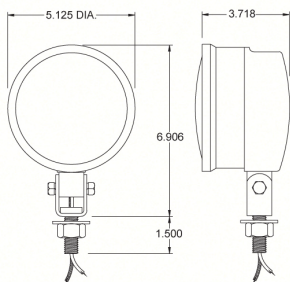
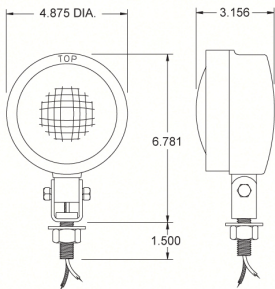
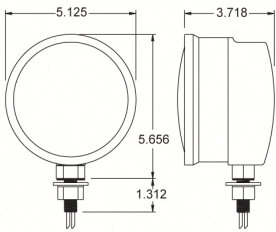
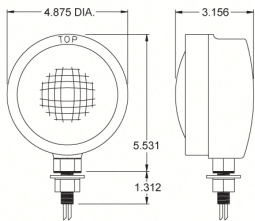
WORKLIGHT WITH (2) LEAD WIRES PART NO. EXTENDED GROMMET

325009	Clear, sealed beam flood
325010	Clear, sealed beam flood with 920039 20 amp toggle switch
325011	Clear, halogen spot
325012	Clear, halogen spot with 920039 20 amp toggle switch



Also available in
white or black

SEALED BEAM WORK LAMPS



Fixed Pedestal and Adjustable Mount Lamps

Work lights are available in either a standard fixed pedestal mount or an adjustable pedestal mount. Pedestal mount sealed beam lamp with either a 9/16" or 13/16" mounting stud. Lamps use a 4466 clear flood, H7616 clear halogen spot, 4415A amber sealed beam held in place with a 920234 retaining grommet. LED lamps using a 920775 LED flood use a 920734 retaining grommet. Lamps come equipped with a abrasion resistant 18 inch pigtail. Adjustable pedestal mount lamps use a 9/16" mounting stud. All mounting hardware is included with lamps.

For additional bulb protection on the incandescent bulb versions a 920071 retaining grommet has been extended to allow a 920143 clear shallow lens that provides additional protection from bulb breakage. This extended retaining grommet is not available in the LED version. Lamp bodies are powder coated aluminum.

Note: LED light utilizes a different retaining grommet than traditional PAR 36 lights due to shape of bulb.



PART NO. 13/16 MOUNTING STUD, REGULAR GROMMET

800014	Clear, sealed beam flood
800015	Amber, sealed beam flood
800018	Clear, sealed beam flood with 920039 20 amp toggle switch
800514	Clear, LED flood
800518	Clear, LED flood with 920078 3 amp toggle switch

PART NO. 9/16 MOUNTING STUD, REGULAR GROMMET

800016	Clear, sealed beam flood
800017	Amber, sealed beam flood
800516	Clear, LED flood

PART NO. 13/16 MOUNTING STUD, EXTENDED GROMMET

800019	Clear, sealed beam flood
800020	Amber, sealed beam flood
800023	Clear, sealed beam flood with 920039 20 amp toggle switch

PART NO. 9/16 MOUNTING STUD, EXTENDED GROMMET

800021	Clear, sealed beam flood
800022	Amber, sealed beam flood

PART NO. ADJUSTABLE STUD MOUNT, REGULAR GROMMET

805001	Clear, sealed beam flood
805002	Amber, sealed beam flood
805003	Clear, sealed beam flood with 920039 20 amp toggle switch
805005	Clear, sealed beam flood with 920420 wire choke seal installed
805006	Amber, sealed beam flood with 920420 wire choke seal installed
805021	Clear, halogen spot
805022	Clear, halogen spot with 920039 20 amp toggle switch
805501	Clear, LED flood
805503	Clear, LED flood with 920078 3 amp toggle switch
805505	Clear, LED flood with 920420 wire choke seal installed

PART NO. ADJUSTABLE STUD MOUNT, EXTENDED GROMMET

805011	Clear, sealed beam flood
805012	Amber, sealed beam flood
805013	Clear, sealed beam flood with 920039 20 amp toggle switch
805014	Clear, sealed beam flood with 920420 wire choke seal installed
805015	Amber, sealed beam flood with 920420 wire choke seal installed
805025	Clear, halogen spot
805026	Clear, halogen spot with 920039 20 amp toggle switch

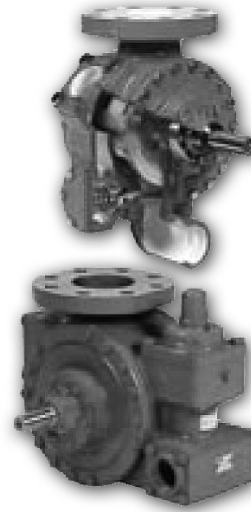
All lamps available in gray, white or black powder coating.

TLGLF Series Flange Mounted Bobtail and Transport Pumps

These sliding vane pumps are perfect for use on LPG truck and transports, and are designed to provide sustained performance, trouble-free operation and simplified maintenance.

TLGLF Series pumps flange-mount directly to a commercial internal control valve, in combination with the tank of a bobtail or transport. Direct mounting eliminates the need for inlet pipes, shut-off valve and external strainer, which can restrict flow and cause vaporization problems. The results are smoother operation, greater reliability and longer pump life.

- Equipped with double-ended drive shaft for clockwise or counter-clockwise rotation
- Auxiliary intake port for emergency unloading of another tank or transport
- Buna-N mechanical seals and Duravanes® for handling LP Gas and Anhydrous Ammonia



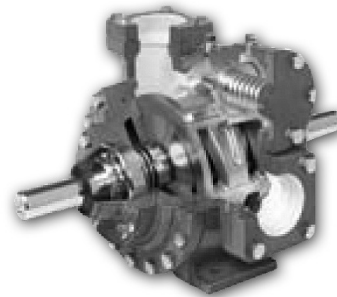
blackmer
PEOPLE PROVIDING FLOW TECHNOLOGY WORLDWIDE™

**MOBILE LPG
AND NH3
TRANSFER PUMPS**

LGL/LGLD Multi-Purpose Transport Pumps

Blackmer designed these rugged pumps for bobtail and transport duty. Engineered to go wherever they are needed, these models are mounted to the truck chassis or to a steel pad welded to the tank. Single or double-ended drive shafts provide flexibility in positioning for clockwise or counter-clockwise shaft rotation. The 3- and 4-inch models can be mounted to a transport in a number of ways, generally near or between the tank landing gear brackets. Truck-mounted pumps are normally driven through a P.T.O. or hydraulic drive system.

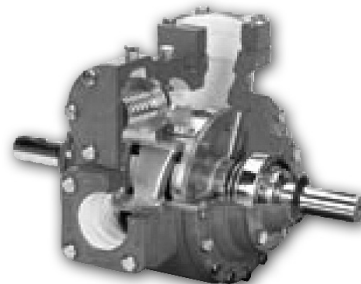
- Buna-N mechanical seals and Duravanes® for handling LP Gas and Anhydrous Ammonia
- All assembled pump units available with or without electric motors



LGLH2 High Pressure Pumps

Based upon Blackmer's industry standard LGLD2 transfer pump, the LGLH2 has the strength to handle the toughest jobs. Capable of feeding a vaporizer in the middle of winter and the exceptional strength to pump from a bobtail to the top of an 8-story building, the LGLH2 has the muscle to get the job done. Its broad LPG/NH3 capabilities include high-capacity fueling, aerosol filling, vaporizer feed and other high differential pressure liquefied gas applications.

- Designed for high differential pressure of 165 psi (11.4 bar)
- Motor speed operation up to 980 rpm
- Dimensionally interchangeable with the LGLD2
- Excellent self-priming and dry run capabilities

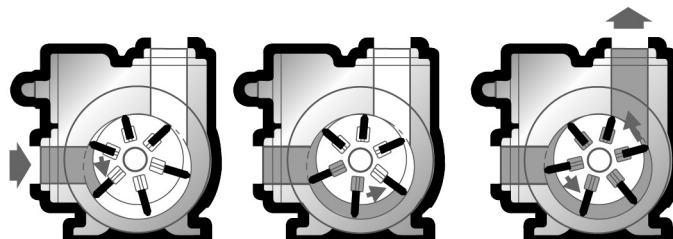


**TRANSPORT
MOUNTED
COMPRESSORS**

Sliding Vane Pumps

Blackmer Mobile LPG Pumps utilize our unique sliding vane design, giving these positive displacement pumps the best combination of sustained high level performance, energy efficiency, trouble free operation and low maintenance cost. All models feature internal relief valve, replaceable casing liner and end discs for easy rebuilding of the pumping chamber if ever required.

- High efficiency pumps require less horsepower, more energy savings
- High capacity at lower speeds means reduced wear
- Self-adjusting vanes keep performance consistently high



Bypass Valves

Suitable for LPG and anhydrous ammonia, differential bypass valves protect pumps and system components from damage caused by excessive pressure. No mobile LPG/NH₃ pump installation is complete or safe without one. There are no small sensing passages to get easily plugged and with only two moving parts, operation is simple and reliable.

Note: Blackmer compressors can also be mounted on transports with direct drive or V-Belt drive. All compressor models are available with or without motors or accessories. Special engine drives, control panels and custom emergency evacuation units can be furnished on a special order basis.



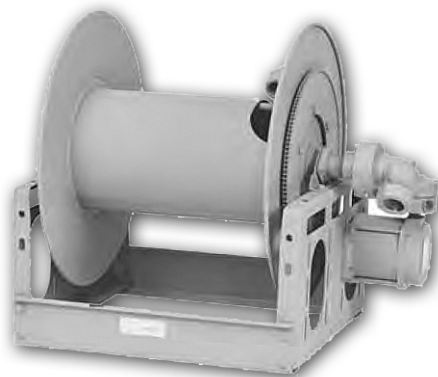
Series PB/DPB For Single 1" Through 1-1/2" I.D. Hose

Hannay Reels offers any size configuration to fit a defined space, and they construct many models of reels with aluminum or stainless steel. Specifically, using 5000 and 6000 Series aluminum and 304 stainless steel in the manufacture of frames, discs, drums and internals as well as other structural components. This type of construction eliminates the need for maintenance repainting and part replacement due to rust or corrosion.

- Series PB are explosion-proof reels.
- New DPB Series reel is direct drive eliminating the use of chain and sprockets.
- Choose gear-driven crank rewind, #40 chain and sprocket drive powered by an electric, hydraulic or compressed air motor or direct drive hydraulic rewind motor.
- Crank rewind reels and direct drive reels supplied with pinion brake.
- Power rewind reels (chain & sprocket driven) supplied with a strap brake. Other brake and locking devices may be specified.
- Standard inlet is 90° ball bearing swivel joint with 1-1/2" female NPT threads.
- Standard outlet is a flanged riser with 1" female NPT threads. Standard inlet, outlet riser, and hub assembly are steel.
- Other sizes and/or threads can be furnished and must be specified.
- Rollers and roller mounting brackets are accessory items. Specify roller position.
- Pressures to 350 psi (24 bar).
- Temperatures from -40° F to +350° F (-40° C to +177° C).
- Consult factory for other pressures and temperatures.
- Chainguard available upon request, must be specified.



SERIES DPB
Direct Drive Hydraulic Rewind



SERIES PB
Electric Rewind Shown



**MANUAL OR
POWER REWIND
REELS**

**POWER
REWIND REELS**

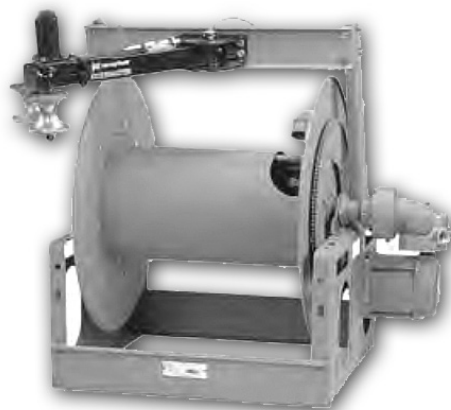
Series PBGMT/PBGMB For Single 1" Or 1-1/2" I.D. Hose

SERIES PBGMT AND PBGMB

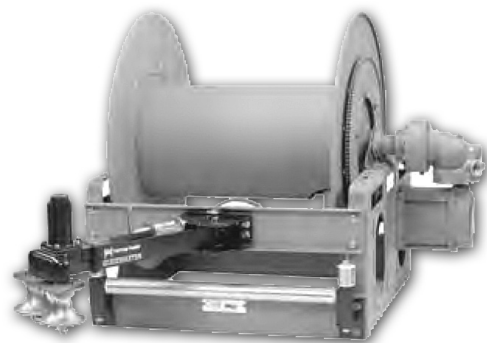
- Choose #40 chain and sprocket drive powered by an electric, hydraulic or compressed air motor or direct drive hydraulic rewind motor.
- Auxiliary crank rewind standard on DPB Series reels. Available on PB Series power rewind reels, at extra cost.
- Direct drive hydraulic rewind reels supplied with pinion brake. Electric powered rewind reels supplied with a strap brake.
- Other brake and locking devices may be specified. (See Ordering & Accessory Guide)
- Standard inlet is 90° ball bearing swivel joint with 1-1/2" female NPT threads.
- Standard outlet is a flanged riser with 1" female NPT threads.
- Standard inlet, outlet riser, hub assembly are steel.
- Other sizes and/or threads can be furnished and must be specified.
- Pressures to 350 psi (24 bar).
- Temperatures from -40° F to +350° F (-40° C to +177° C).
- Consult factory for other pressures and temps.
- Chainguard available upon request, must be specified.

SERIES PBGMB ONLY

- For PBGMB reels the assembly B bottom wind roller is standard.



SERIES PBGMT
with Top-Mounted Guidemaster
Standard Configuration Shown /
Electric Rewind Shown



SERIES PBGMB
with Bottom-Mounted Guidemaster
Electric Rewind Shown

MA™ Series Metering System

LC meters' unique construction results in low pressure drop, delivering superior performance with minimal demand on system pumps. LC meters are dependable in systems with older mechanical registration devices. They minimize wear, contribute to the meters' accuracy and ensure long, reliable service life with significantly lower maintenance and operating costs.

- A new standard for LPG custody transfer accuracy. No metal-to-metal contact provides the longest, most reliable service in the industry.
- Compact, cost efficient package offers greater mounting flexibility.
- Accessories include vapor eliminator and strainer with 100-mesh or 200-mesh screen, diaphragm valve, choice of mechanical or electronic registration with optional temperature /volume compensation.

Capacity (Max. flow rate):

30 GPM to 200 GPM

115 to 760 L/min

Working Pressure Rating:

350 PSI

24 BAR

Connections:

1 1/4", 2", 3" NPT, BSPT or slip
weld companion flanges



**METERS FOR LPG
APPLICATIONS**

ME SERIES

Internal Valve Actuators

All Power Stroke Actuators are supplied with heavy duty DOT approved 1/4" tube inlet quick connect swivel and all necessary hardware for easy installation.

- Stainless Steel all weather bracket design
- Easily field repairable without complete disconnection of internal valve
- Repairable with common automotive parts
- Heavy duty pneumatic actuator with 212o F. eutectic fire protection
- Specifically designed for Fisher® internal valves
- High gloss automotive black coating for models ME206 - ME208SF
- Features the Airstroke® Actuator by Firestone for model ME205 & ME710

Operating Pressure Limits:

Minimum - 20 PSIG

Maximum - 125 PSIG

Recommended - 20-25 PSIG

ACTUATORS

PART NO.	DESCRIPTION	FITS
ME 205	FASTroke Actuator	Fisher® C407 - 1-1/4" Internal Valve
ME 205R	FASTroke Actuator	REGO® A3209R - 1-1/4" Internal Valve
ME 206	Type #9 Power Stroke Actuator	Fisher® C402, C421, C427 2" & 3" Internal Valves
ME 207	Type #9 Power Stroke Actuator	Fisher® C403-24 Series Double Flanged Internal Valve
ME 207SF	Type #9 Power Stroke Actuator	Fisher® C404-24 Series Single Flange Internal Valve
ME 208SF	Type #24 Power Stroke Actuator	Fisher® C404-32 Series Single Flange Internal Valve
ME 710	FASTroke Actuator	REGO® Flowmatic REGO® Flowmatic Three-Way Valve

ACCESSORIES

PART NO.	DESCRIPTION
ME 707	Quick Release Valve - 1/4" FNPT Inlets and Outlets
ME 708	Air Pressure Regulator 0-150 PSI - 1/8" FNPT Gauge Ports - 1/4" FNPT Outlet with Mounting Bracket
ME 709	1/4" FNPT x 1/4" MNPT LP Gas and Air Filter - Aluminum



ME 205



ME 206



ME 207



ME 208SF



ME 710

3" Flanged Internal Valves

Intended for use on bobtail delivery trucks, transport trucks and large storage tanks with 3" flanged connections in directional or bi-directional flow applications. Provides both manual shut-down and excess flow closing in the event the of the piping being seperated from the valve. Can be equipped with manual latch, pneumatic or rotary actuator open/closing devices. All valve models are equipped with a break-away feature in the cast body which permits the pump or piping to shear off in the event of side impact, leaving the valve poppet intact and protecting the tank from catastrophic product loss.

- Durable steel body with cadmium surface plating
- All stainless internal component construction
- One piece threaded packing gland
- Precision machined hard coated stem & stem guide
- Fully retained nitrile seat disc
- Largest variety of excess flow closing values
- Corrosion resistant sleeved flange bolt holes
- Xylan coated corrosion resistant mounting studs
- Roller cam actuation
- Industry's fastest bleed time
- Removable data plate
- Industry's easiest valve to service
- Standard construction utilizes nitrile seals
- Available with Neoprene, Viton®, or Kalrez® seals
- Available with 316 Stainless Steel bodies
- UL LISTED for LPG & NH3 service
- Rulon™ bearings on stem and stub shafts



ME 990S-3F-24



ME 990S-3DF

Marshall Excelsior
— MEC —
Gas Connections

**ME990S-3F-24 &
ME990S-3DF**

**NEXT GENERATION
 SERIES**

2" Globe & Angle Valves

Provides a positive shut-off valve that is highly reliable with full flow performance while permitting bi-directional flow and/or reduced product emissions.

All of the same great features of the original full flow MEC Globe and Angle valves with additional product performance enhancements:

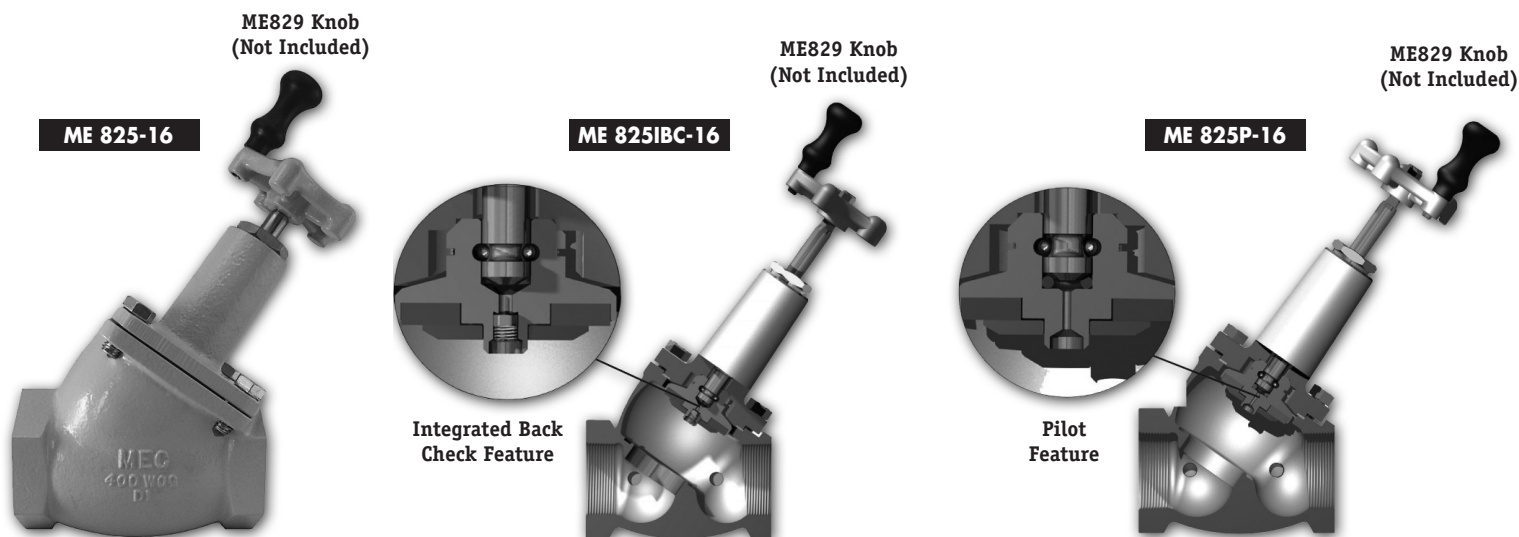
- **Pilot Feature:** (P) These globe and angle valve models incorporate a pilot orifice feature to facilitate pressure equalization in sections of system piping that have bidirectional flow. This greatly reduces the opening torque required and prevents premature wear of the valve seat.
- **Integrated Back Check Feature:** (IBC) These globe and angle valve models incorporate an integrated backcheck feature to allow trapped downstream pressure to automatically bypass to the upstream side of the valve. These valves are designed for systems with flow in one direction, creating a closed loop system that prevents the product from relieving to the atmosphere making for a low emission, more environmentally friendly option.

NEXT GENERATION GLOBE AND ANGLE VALVES

ANGLE NO.	GLOBE NO.	DESCRIPTION	SIDE PORTS	INLET	OUTLET
ME815P-16	ME825P-16	Full Flow Valve with Integrated Pilot Feature	1/4" FNPT	2" FNPT	2" FNPT
	ME828P-16	Full Flow Valve with Integrated Pilot Feature	1/4" FNPT	2" FNPT	3-1/4" M. ACME
	ME824P-16	Full Flow Valve with Integrated Pilot Feature	1/2" FNPT	2" FNPT	2" FNPT
ME815IBC-16	ME825IBC-16	Full Flow Valve with Integrated Back Check	1/4" FNPT	2" FNPT	2" FNPT
	ME828IBC-16	Full Flow Valve with Integrated Back Check	1/4" FNPT	2" FNPT	3-1/4" M. ACME
	ME824IBC-16	Full Flow Valve with Integrated Back Check	1/2" FNPT	2" FNPT	2" FNPT

REPLACEMENT PARTS

PART NO.	DESCRIPTION
ME 815P-16	BRK 2" Angle & Globe Valve with Pilot - Complete Bonnet Assembly
ME 815P-16	SRK 2" Angle & Globe Valve with Pilot - Seal Replacement Kit
ME 815IBC-16	BRK 2" Angle & Globe Valve with Integrated Back Check -Complete Bonnet Assembly
ME 815IBC-16	SRK 2" Angle & Globe Valve with Integrated Back Check - Seal Replacement Kit
ME 815-10/16	HRK 1-1/4", 1-1/2" & 2" Angle & Globe Valve Replacement Handle & Retaining Nut



PATENT PENDING

Turbo-Flo LE Proximity Interlock System

Designed to incorporate Smart Interlock Technology with our Turbo-Flo LE adapter system. Smart Interlock Technology is designed for direct connection to Allison® automatic transmissions through the “auxiliary function range inhibit” or braking systems for manual transmission vehicles. Smart Interlock Technology prevents the vehicle from being operated while the truck is being loaded. This revolutionary system incorporates the industry’s best and most durable sensor - Turck® - which are backed with a lifetime product warranty.

- Molded urethane sensor body housing for durability and maximum sensor protection
- Stainless steel mounting band and hardware
- Supplied standard with Smart Interlock Technology
- Interlock technology features Turck® proximity switch for maximum weather resistance and security against vibration
- Supplied with water tight conduit and necessary wiring hardware to reach 5’ below deck with water tight receptacle plug
- Optional wiring harness cable kits available in 20’ or 30’ lengths



**SMART INTERLOCK
TECHNOLOGY**

PRODUCTS

PART NO.	DESCRIPTION
ME868PIB	Smart Interlock Bracket Kit for ME868 Turbo-Flo LE Series Adapters

ACCESSORIES

PART NO.	DESCRIPTION
MEP801PC/20	20’ Smart Interlock Cable w/ Water Tight Receptacle Plug - Only
MEP801PC/30	30’ Smart Interlock Cable w/ Water Tight Receptacle Plug - Only
MEP801PCK/20	Complete 20’ Smart Interlock Cable Kit w /1 Relay / LED Power Indicator / Inline Fuse
MEP801PCK/30	Complete 30’ Smart Interlock Cable Kit w /1 Relay / LED Power Indicator / Inline Fuse
MEP802PCK/20	Complete 20’ Smart Interlock Cable Kit w /2 Relays / LED Power Indicator / Inline Fuse
MEP802PCK/30	Complete 30’ Smart Interlock Cable Kit w /2 Relays / LED Power Indicator / Inline Fuse
MEP803PCK/20	Complete 20’ Smart Interlock Cable Kit w /3 Relays / LED Power Indicator / Inline Fuse



VENT VALVES

3-1/4" Acme Adapters with Vent Valves

Vent valve purpose is to safely discharge excess vapor and liquid trapped in the line before disconnecting the transfer hose. Commonly used on bobtail and transport vehicles.

- Vent valves available in brass or stainless steel
- Adapters available in brass or zinc plated steel
- 3-1/4" M. Acme x 2" MPT or 2" FPT
- Strainer screens available for brass and steel adapters
- Other configurations available upon request

ACME ADAPTORS WITH VENT VALVES

PART NO.	DESCRIPTION
ME 252J-16	3-1/4" Male Acme x 2" FPT (Brass) with 1/4" FPT and vent hole
ME 252JB-16	3-1/4" Male Acme x 2" FPT (Brass) with brass vent valve
ME 252JS-16	3-1/4" Male Acme x 2" FPT (Brass) with stainless steel vent valve
ME 252SJ-16	3-1/4" Male Acme x 2" FPT (Zinc Plated Steel) with 1/4" FPT and vent hole
ME 252SJB-16	3-1/4" Male Acme x 2" FPT (Zinc Plated Steel) with brass vent valve
ME 252SJS-16	3-1/4" Male Acme x 2" FPT (Zinc Plated Steel) with stainless steel vent valve
ME 503J-16	3-1/4" Male Acme x 2" MPT (Brass) with 1/4" FPT and vent hole
ME 503JB-16	3-1/4" Male Acme x 2" MPT (Brass) with brass vent valve
ME 503JS-16	3-1/4" Male Acme x 2" MPT (Brass) with stainless steel vent valve
ME 503SJ-16	3-1/4" Male Acme x 2" MPT (Zinc Plated Steel) with 1/4" FPT and vent hole
ME 503SJB-16	3-1/4" Male Acme x 2" MPT (Zinc Plated Steel) with brass vent valve
ME 503SJS-16	3-1/4" Male Acme x 2" MPT (Zinc Plated Steel) with stainless steel vent valve



1/4 FPT with
Vent Hole

ME 503J-16



Brass Vent Valve

ME 503JB-16



Stainless Steel
Vent Valve

ME 503JS-16

External Hydrostatic Relief Valves

Designed especially for the protection of piping and shut-off valves where there is a possibility of trapping liquid LP-Gas or anhydrous ammonia. They may be installed in pipelines and hoses located between shut-off valves or in the side boss of Rego® shut-off valves.

REGO®

**3125, 3127, 3129,
SS8001, SS8002,
SS8021 AND
SS8022 SERIES**



**3127 SERIES (.274 ORIFICE)
3125 SERIES (.161 ORIFICE)
3129 SERIES (.386)**



SS8022G

ACCESSORIES

PART NO.	START TO DISCHARGE SETTING PSIG	VALVE BODY MATERIAL	CONTAINER CONNECTION M. NPT	HEIGHT (APPROX.)	WRENCH HEX SECTION	PROTECTIVE CAP	PIPEAWAY ADAPTER OR THREADS
SS8001G	250	Stainless Steel	1/4"	7/8"	11/16"	--	--
SS8002G	250	Stainless Steel	1/2"	7/8"	7/8"	--	--
SS8021G	250	Stainless Steel	1/4"	1-3/8"	11/16"	--	1/4" NPSM Thrds
SS8022G	250	Stainless Steel	1/2"	1-3/8"	7/8"	--	3/8" NPT Thrds
3127G	250	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129G	250	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
3127H	275	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129H	275	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
3127P	300	Brass	1/4"	1-31/32"	1-1/8"	7545-40	--
3129P	300	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
SS8022P	300	Stainless Steel	1/2"	1-3/8"	7/8"	--	3/8" NPT Thrds
3127J	350	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129J	350	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
SS8001J	350	Stainless Steel	1/4"	7/8"	11/16"	--	--
SS8002J	350	Stainless Steel	1/2"	7/8"	7/8"	--	--
SS8021J	350	Stainless Steel	1/4"	1-3/8"	11/16"	--	1/4" NPSM Thrds
SS8022J	350	Stainless Steel	1/2"	1-3/8"	7/8"	--	3/8" NPT Thrds
3127K	375	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129K	375	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
3125L	400	Brass	1/4"	1-9/16"	5/8"	Included	--
3127L	400	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129L	400	Brass	1/2"	2-19/32"	1-1/8"	3129-40P	3129-10*
SS8001L	400	Stainless Steel	1/4"	7/8"	11/16"	--	--
SS8002L	400	Stainless Steel	1/2"	7/8"	7/8"	--	--
SS8021L	400	Stainless Steel	1/4"	1-3/8"	11/16"	--	1/4" NPSM Thrds
SS8022L	400	Stainless Steel	1/2"	1-3/8"	7/8"	--	3/8" NPT Thrds
3127U	450	Brass	1/4"	1-31/32"	7/8"	7545-40	--
3129U	450	Brass	1/2"	2-19/32"	1-1/8"	7545-40	3129-10*
SS8001U	450	Stainless Steel	1/4"	7/8"	11/16"	--	--
SS8002U	450	Stainless Steel	1/2"	7/8"	7/8"	--	--
SS8021U	450	Stainless Steel	1/4"	1"	11/16"	--	1/4" NPSM Thrds

* 1/2" F. NPT outlet connection

A7793A AND A7797A SERIES

Quick-Acting Minimum Loss Hose-End Valves and Dispensing Stations

Designed to vastly reduce the amount of product vented when disconnecting bobtail delivery trucks, dispensing systems and anhydrous ammonia nurse tanks.

These valves provide instant, full-on flow at the flip of a handle. Shutoff is instant and the handle locks for added protection. This "top of the line" hose-end valve is a fully contained unit that does not require additional filling adapters or connectors.



PART NUMBER	INLET CONNECTION (F. NPT)	OUTLET CONNECTION (F. ACME)	LOCKING HANDLE	FLOW AT 1 PSIG (CV) PRESSURE DROP* (GPM/PROPANE)
A7793A	3/4"	1-3/4"	Yes	16.0
A7797A	1"	1-3/4"	Yes	16.0

A7707L AND A7708L SERIES

Quick-Acting Hose-End Valves and Dispensing Stations

Designed to vastly reduce the amount of product vented when disconnecting bobtail delivery trucks, dispensing systems and anhydrous ammonia nurse tanks.

These valves provide instant, full-on flow at the flip of a handle. Shutoff is instant and the handle locks for added protection. This "top of the line" hose-end valve is a fully contained unit that does not require additional filling adapters or connectors.



PART NUMBER	BODY DESIGN	INLET & OUTLET CONNECTION (F. NPT)	LOCKING HANDLE	FLOW AT 1 PSIG PRESSURE DROP (CV) (GPM/PROPANE)**	ACCESSORIES FILLING CONNECTORS**		
					EXTENDED STEEL	COMPACT BRASS	COMPACT STEEL
A7707L	Globe	1"	Yes	18.0	A7575L4	3175A	A3175A
A7708L	Angle	1"	Yes	22.0	A7575L4	3175A	A3175A

7053T, A7553A, AND 7901T SERIES

Quick-Acting Valves for Cylinder Charging Hoses

Designed primarily for use on cylinder charging hoses to provide fast, convenient shut-off and fast opening.

These valves must be installed so that flow through the valve is in the opposite direction to that of a conventional globe valve. This allows the inlet flow to assist in closing the valve, and even more important, helps prevent the valve from being forced open by high pump pressure.



PART NUMBER	INLET CONNECTION (F. NPT)	OUTLET CONNECTION (F. NPT)	BODY MATERIAL	FLOW AT 1 PSIG (CV) PRESSURE DROP* (GPM/PROPANE)
7901T	1/4"	1/4"	Brass	1.95
A7553A	1/4"	1/4"	Ductile Iron	1.95
7901TA	3/8"	3/8"	Brass	1.95
7901TB	1/2"	1/4"	Brass	1.95
7901TC	1/2"	1/2"	Brass	1.95
7053T	1/2"	1/2"	Brass	1.95

Back Pressure Valves for Container or Line Applications

Rego® Back Pressure Check Valves are designed to allow flow in one direction only. The check, normally held in the closed position by a spring, precludes the possibility of flow out of the container. When flow starts into the container, the pressure overcomes the force of the spring to open the check. When the flow stops or reverses, the check closes. Metal-to-metal seats will allow slight leakage after closure. These valves will restrict the escape of container contents in the event of accidental breakage of the piping or fittings.

						PROPANE LIQUID CAPACITY AT VARIOUS DIFFERENTIAL PRESSURES (GPM)			
PART NUMBER		INLET CONNECTION	OUTLET CONNECTION	WRENCH HEX	EFFECTIVE LENGTH	5	10	25	50
BRASS	STEEL	F. NPT	M. NPT	FLATS	(APPROX.)	PSIG	PSIG	PSIG	PSIG
3146	A3146	3/4"	3/4"	1-3/8"	1-15/16"	11	16	25	36
3146S*		3/4"	3/4"	1-3/8"	1-15/16"	11	16	25	36
3176	A3176	1-1/4"	1-1/4"	2"	1-3/8"	28	40	63	89
	A3276BC*	1-1/4"	1-1/4"	2"	2-1/2"	32	45	73	103
	A3186	2"	2"	2-7/8"	2-7/16"	124	175	276	391
	A3187S*	2" M & 1 1/4" F	2" M & 1-1/4" F	2-3/8"	4-3/8"	60	110	225	350
	A3196	3"	3"	4"	3-15/16"	297	420	664	939
	A3198S*	3" M & 2"	F 3" M & 2" F	3-1/2"	3 -1/8"	210	290	400	

Swing-Away Back Pressure Check Valves for Container or Line Applications

Designed to provide protection of a container opening when desired flow is always into the vessel. May also be used in the line applications where flow must be limited to one direction. When used with the appropriate single check filler valve, the combination forms a double check filler valve suitable for use in filling of bulk storage tanks. The swing-away check offers more efficient flow rates than conventional designs. It swivels open vertically to reduce pressure drop across the valve and improves flow rates.

						PROPANE LIQUID CAPACITY AT VARIOUS DIFFERENTIAL PRESSURES (GPM)			
PART NUMBER		INLET CONNECTION	OUTLET CONNECTION	WRENCH HEX	EFFECTIVE LENGTH	5	10	25	50
BRASS	STEEL	F. NPT	M. NPT	FLATS	(APPROX.)	PSIG	PSIG	PSIG	PSIG
6586D	A6586D	2"	2"	2-7/8"	2-7/16"	190	270	420	600

Back Pressure Check Valves for Flanged Installation Applications

Designed to provide high flow capacity and allow more efficient tank filling than conventional designs. The unobstructed throat area reduces flow turbulence through the valve, thereby reducing pressure drop. Large flow channels and spacious side ports assure ample capacity for the most demanding high capacity filling operations. The valve is designed for installation in internally threaded flanges in container bottoms.

PART NUMBER	FLANGE CONNECTION M. NPT	WRENCH HEX FLATS	OVERALL LENGTH	THREADED END TO PORT	PROPANE LIQUID CAPACITY AT VARIOUS DIFFERENTIAL PRESSURES (GPM)			
					5 PSIG	10 PSIG	25 PSIG	50 PSIG
A3400L4	2"	Slotted	5-1/4"	15/16"	223	316	500	707
A3400L6	3"	Slotted	5-9/32"	19/16"	424	600	949	1342

REGO®

**3146 AND 3176
SERIES, A3186,
A3187S, A3196,
AND A3276BC**



**6586D
AND A6586D**



**A3400L4
AND A3400L6**



A9090 SERIES

1" Rotogages® for Large Mobile and Stationary Containers

Rotogages® are designed to provide an accurate determination of LP-Gas or anhydrous ammonia container contents. They mount in a standard 1" NPT coupling on large mobile or stationary containers. To operate the Rotogages®, the vent valve is opened and the dip tube rotated slowly from the container vapor space to the liquid space. The difference in appearance of the discharge indicates when the liquid level is reached. Dial readings then indicate the percentage of product in the container.



Tubes for use with A9090 Series Roto Gauges Cut to length required.

PART NUMBER	SERVICE	CONTAINER SIZE
A9091-18L	LP-Gas	All Sizes
A9091-18LX*	LP-Gas	Over 1200 U.S. gallons
A9091-18N	NH3	All Sizes

* Dial permits higher filling level, per NFPA 58.

SERVICE	PART NUMBER
Up to 48"	A9091-M24.0
Up to 72"	A9091-M36.0
Up to 96"	A9091-M48.0
Up to 120"	A9091-M60.0
Up to 144"	A9091-M72.0

A9091R AND A9092R SERIES

PART NUMBER FOR MOBILE OR STATIONARY CONTAINERS	FOR STATIONARY CONTAINERS ONLY	FOR CONTAINER INSIDE DIAMETER			
		ELLIPSOIDAL HEADS		HEMISPHERICAL HEADS	
		SIDE MOUNTED	END MOUNTED	SIDE MOUNTED	END MOUNTED
A9091R		30"-45"	30"-75"	30"-45"	30"-45"
A9092R		46"-61"	76"-108"	46"-61"	46"-61"
A9093TS*	A9093RS	62"-79"	109"-147"	62"-79"	62"-79"
A9094TS*	A9094RS	80"-99"		80"-99"	80"-99"
A9095TS*	A9095RS	100"-147"		100"-147"	100"-147"

* Supported Design

NOTE: The dip tube must be cut to the required length (1/2" of container inside diameter minus 5-3/4").

2070 SERIES

3/4" Rotogages® for Small Stationary and Mobile LP-Gas Containers

Rotogages® are designed to provide accurate determination of LP-Gas container contents. They may be end or side mounted in a standard 3/4" NPT coupling on stationary or mobile containers. To guarantee accurate measurement, they should not be used on stationary containers that exceed 60" I.D. or on mobile containers, subject to vibration, with an I.D. of more than 24".



PART NUMBER ROTOGAGE®	DIP TUBE	FOR CONTAINERS WITH INSIDE DIAMETER	TANK CONNECTION	VALVE SEAT ORIFICE
2070C0	2071-L25.7	Up to 40"	3/4" M. NPT	No. 54 Drill Size
2070C0	2071-L39.7	Up to 60"	3/4" M. NPT	No. 54 Drill Size

NOTE: The dip tube must be cut to the required length (1/2 of container inside diameter minus 1/2"), when mounted on center line of tank.



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