

Section 7

Pumps, Reels, Meters & Nozzles



Section 7

Pumps, Reels, Meters & Nozzles

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Hydrive 2010 & 2020 Hyrdaulic Cooler



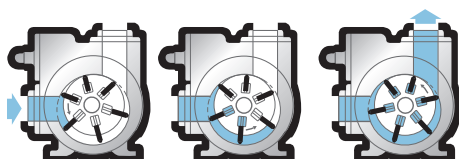
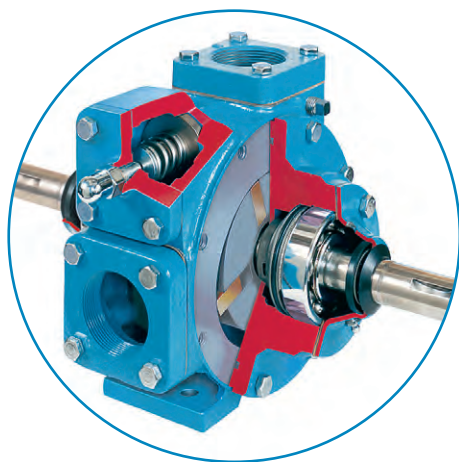
CC20 Eccentric Disc Pump



Enterprise E140 & E170 Compressor



TX & TXD Series Sliding Vane Pumps



How Blackmer's sliding vane action works



Reliability

Durable pumps for fast and quiet operation. Sliding vane design provides sustained performance and trouble free operation.

Unique Features

Adjustable relief valve protects pump from excessive pressure. Optional air operated relief valve offers easy hose and nozzle handling. T-type strainers are available to protect pumping systems from damage caused by welding slag and foreign matter in the piping and tanks.

Sizing Options

Available in 1.5, 2, 2.5, 3, and 4-inch port sizes with flow rates from 10 to 500 U.S. gallons (2 to 113 m³/h) and pressures up to 125 psi (8.6 bar).

Applications

- Fuel oil delivery truck
- Fleet refueling
- Lube oil
- Aviation refuelers
- Transport of:
 - petro chemicals
 - gasoline
 - biofuels
 - solvents
 - and many more



TXD models are equipped with FKM O-rings and Blackmer mechanical seals that are compatible with all biodiesel and ethanol blends. TXD options include corrosion resistant relief valve, pneumatic relief valves and Buna or PTFE elastomers and seals.

Performance Data

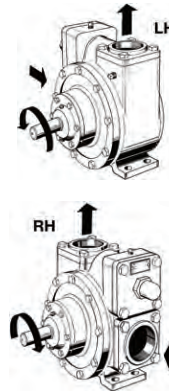
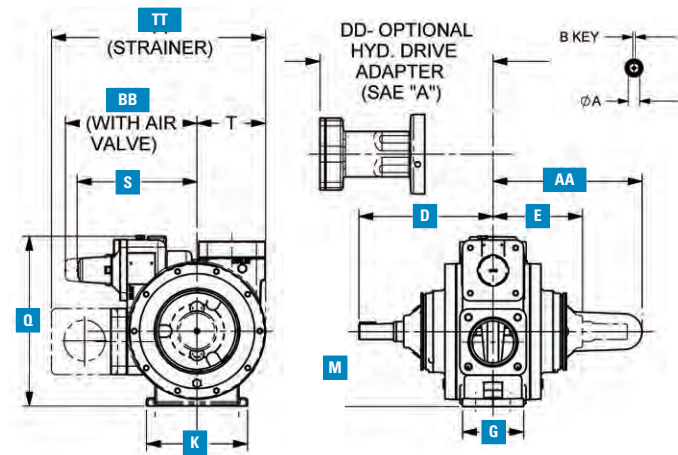
Pump Model	TX1.5			TXD2		TXD2.5		TXD3		TX4	
Rated Pump Speed	780	600	400	640	520	640	520	640	520	500	400
gpm	52	40	25	72	58	120	98	263	211	505	405
L/min	197	151	95	273	220	454	371	995	799	1,911	1,533
m³/h	12	9	6	16	13	27	22	60	48	115	92
hp	2.4	1.9	1.3	3.0	2.5	5.0	3.8	11.1	8.6	18.2	15
kW	1.8	1.4	1.0	2.2	1.9	3.7	2.8	8.3	6.4	13.6	11.2

* Appropriate capacities and horsepower (hp) are based on a 100 ssu (22 cP) fluid at 50 psi (3.4 bar) delivered pressure. Refer to Characteristic Curves for flow rates and torque requirements at other pressures and viscosities.

Maximum Operating Limits

Pump Model	Nominal Flow rate		Pump Speed	Viscosity		Differential Pressure		Working Pressure		Temperature	
	gpm	L/min		ssu	cP	psi	bar	psi	bar	°F	°C
TX1.5	56	212	780	20,000	4,250	125	8.6	175	12.1	300	149
TXD2	87	329	780	20,000	4,250	125	8.6	175	12.1	300	149
TXD2.5	157	594	780	20,000	4,250	125	8.6	175	12.1	300	149
TXD3	270	1,022	640	20,000	4,250	125	8.6	175	12.1	300	149
TX4	505	1,911	500	20,000	4,250	125	8.6	175	12.1	240	116

Dimensions



Pump Rotation

Blackmer TXD models are equipped with a double-ended drive shaft for either clockwise (RH) or counterclockwise (LH) rotation. Standard rotation for the TX1.5 is counterclockwise (LH) when viewed from the drive shaft. Standard rotation for the TX4 model is clockwise (RH).

Options

- Buna or PTFE O-rings
- Pneumatic relief valve
- Hydraulic Motor Adapters
- Strainers

Model		A	B	D	E	G	K	M	Q	S	T	AA	BB	DD		TT	Approx. Weight	
TX1.5	in.	1 ¹ / ₈	1 ¹ / ₄	7 ¹³ / ₁₆	5 ¹ / ₁₆	3 ¹ / ₈	6 ¹ / ₂	4	8 ¹ / ₂	7	3 ⁹ / ₁₆	—	—	10 ³ / ₈		—	61	lbs.
	mm	—	—	198	129	79	165	102	216	178	90	—	—	264		—	28	kg
														1 ¹ / ₄ " HYD Motor Shaft	1" HYD Motor Shaft			
TXD2	in.	1 ¹ / ₈	1 ¹ / ₄	8	5 ¹ / ₄	3 ¹ / ₂	6 ¹ / ₂	4	8 ¹¹ / ₁₆	6 ¹ / ₈	3 ⁷ / ₈	8 ³ / ₄	8 ⁵ / ₁₆	10 ⁷ / ₈	10 ⁹ / ₁₆	12 ¹ / ₈	70	lbs.
	mm	—	—	203	133	89	165	102	221	156	98	222	211	276	268	308	32	kg
TXD2.5	in.	1 ¹ / ₈	1 ¹ / ₄	8 ³ / ₄	6	4 ⁷ / ₈	7	4	9 ⁵ / ₈	6 ¹³ / ₁₆	3 ¹⁵ / ₁₆	9 ¹ / ₂	8 ¹¹ / ₁₆	11 ⁵ / ₈	11 ⁵ / ₁₆	13 ⁵ / ₁₆	94	lbs.
	mm	—	—	222	152	124	178	102	244	173	100	241	221	295	287	338	43	kg
TXD3	in.	1 ¹ / ₈	1 ¹ / ₄	9 ⁵ / ₈	6 ⁷ / ₁₆	4 ³ / ₈	7 ¹ / ₄	5 ³ / ₈	12 ¹³ / ₁₆	8 ⁹ / ₁₆	4 ¹⁵ / ₁₆	10 ¹¹ / ₁₆	9 ⁷ / ₁₆	12 ⁵ / ₈		15 ⁵ / ₈	152	lbs.
	mm	—	—	244	164	111	184	137	325	217	125	271	240	314		391	69	kg
TX4	in.	1 ¹ / ₂	3 ³ / ₈	11	8 ¹ / ₄	7	9 ¹ / ₂	6 ³ / ₈	15 ¹ / ₂	8 ¹ / ₂	6 ³ / ₈	—	—	—		—	295	lbs.
	mm	—	—	279	210	178	241	162	394	217	162	—	—	—		—	134	kg



Process | Energy | Military & Marine

BLACKMER PARTS LIST

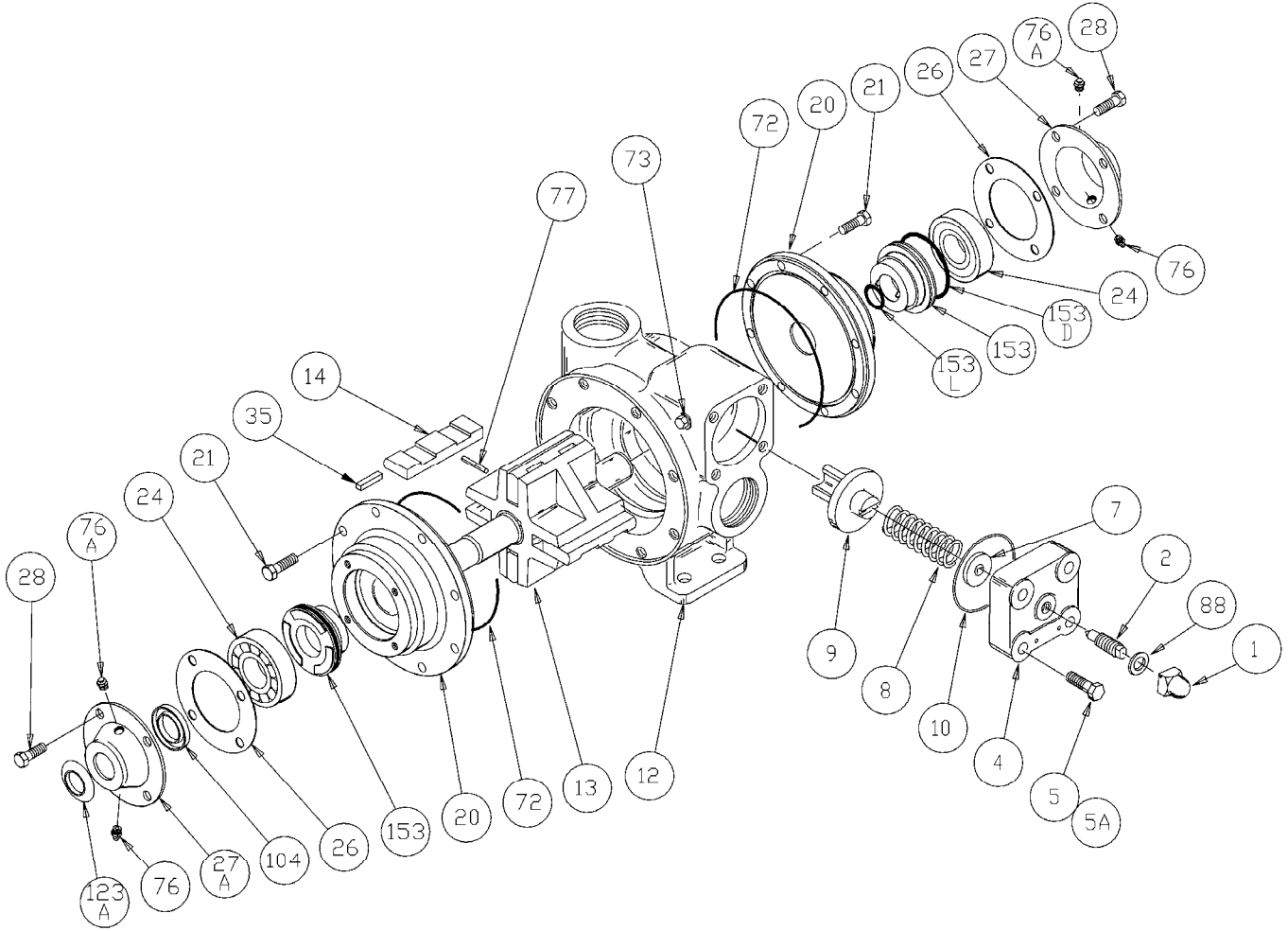
PUMP MODEL: TX1.5

Keep with Instructions 201-A00 for Installation, Operation and Maintenance

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PARTS LIST
201-A01

Section 201
Effective Aug 2013
Replaces Jan 2012



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	411453	21	Capscrews – Head	16	920331
2	Adjusting Screw – R/V	1	431401	24	Ball Bearing	2	¹ 903156
4	Cover – R/V	1	411469	26	Gasket- Bearing Cover	2	¹ 381406
5	Capscrew – R/V Cover	3	920316	27	Bearing Cover – Outboard	1	041433
5A	Capscrew w / Hole – R/V Cover	1	920310	27A	Bearing Cover – Inboard	1	041431
7	Spring Guide – R/V	1	423955	28	Capscrews – Bearing Cover	8	920285
8	Spring – R/V (36-50 psi)	1	471415	35	Key – Shaft Square	1	^{1,2} 909160
	Spring – R/V (51-75 psi)		471420	72	O-Ring – Head (FKM)	2	¹ 702229
	Spring – R/V (76-100 psi) (Std.)		471425		O-Ring – Head (Buna-N)		¹ 702228
	Spring – R/V (101-125 psi)		471428		O-Ring – Head (PTFE)		702230
9	Valve – R/V	1	451416	73	Gage Plug	2	908198
	Valve – R/V (Nickel Plated)		451414	76	Grease Fitting	2	317815
10	O-Ring – R/V Cover (FKM)	1	¹ 702212	76A	Grease Relief Fitting	2	701992
	O-Ring – R/V Cover (Buna-N)		¹ 702211	77	Push Rods	2	¹ 123305
	O-Ring – R/V Cover (PTFE)		702213	88	Gasket – R/V Cap	1	¹ 701981
12	Cylinder	1	021203	104	Grease Seal	1	¹ 331918
13	Rotor & Shaft	1	261205	123A	Dirt Shield	1	¹ 701480
14	Vane – Duravane (Std.)	4	¹ 091219	153	Mechanical Seal	2	See Backside
	Vane – Bronze		093328		Kit – Maintenance, FKM		899179
20	Head	2	031207		Kit – Maintenance, Buna		898949

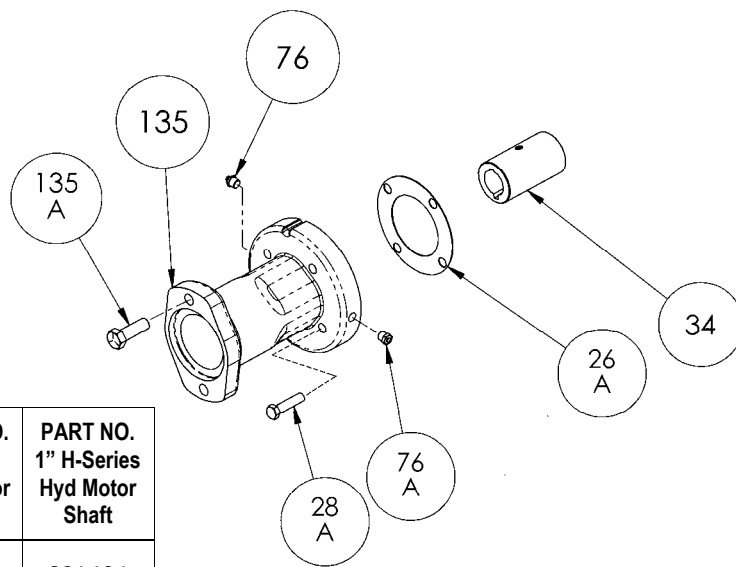
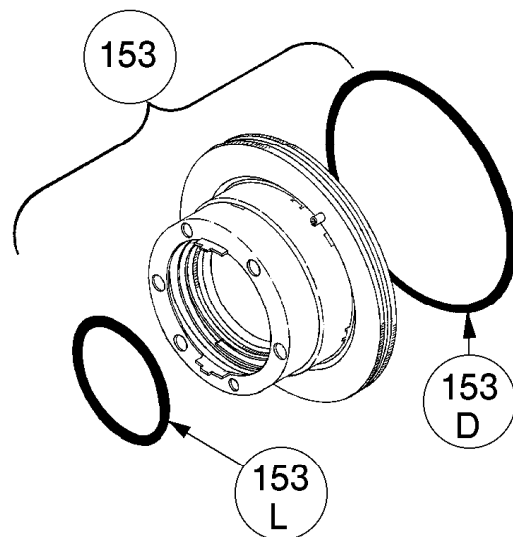
¹ Included in Maintenance Kit ² Maintenance Kit also includes Woodruff Key 909130 previously used

MECHANICAL SEALS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, FKM O-Rings. (IVCV)	2	¹ 331655
	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings. (INCN)		¹ 331601
	Mechanical Seal Complete - Cast Iron Stationary Seat, PTFE O-Ring, Carbon Seal Face w/ PTFE Seal Ring. (IAC)		331673
153D	O-Ring - Stationary (Buna-N)	2	701934
	O-Ring - Stationary (FKM)		701921
	O-Ring - Stationary (PTFE)		702056
153L	O-Ring - Rotating (Buna-N)	2	701922
	O-Ring - Rotating (FKM)		701980
	Seal Ring - Rotating (PTFE)		**

¹ Included in Maintenance Kit

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



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1" Hyd Motor Shaft	PART NO. 1" H-Series Hyd Motor Shaft
See Below	Hydraulic Motor Adapter Kit *	See Below	891205	891464
26A	Gasket – Hydraulic Motor Adapter	1	383940	383940
28A	Capscrew – Hydraulic Motor Adapter / Head	4	920369	920369
34	Coupling w/ Setscrew – for 1" straight key hydraulic motor	1	906966	906966
76	Grease Fitting	1	317815	317815
76A	Grease Relief Fitting	1	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041827	041807
135A	Capscrew – Adapter / Motor	2	920510	920510



BLACKMER PARTS LIST

PUMP MODELS: TXD2A (Double Ended Shafts)

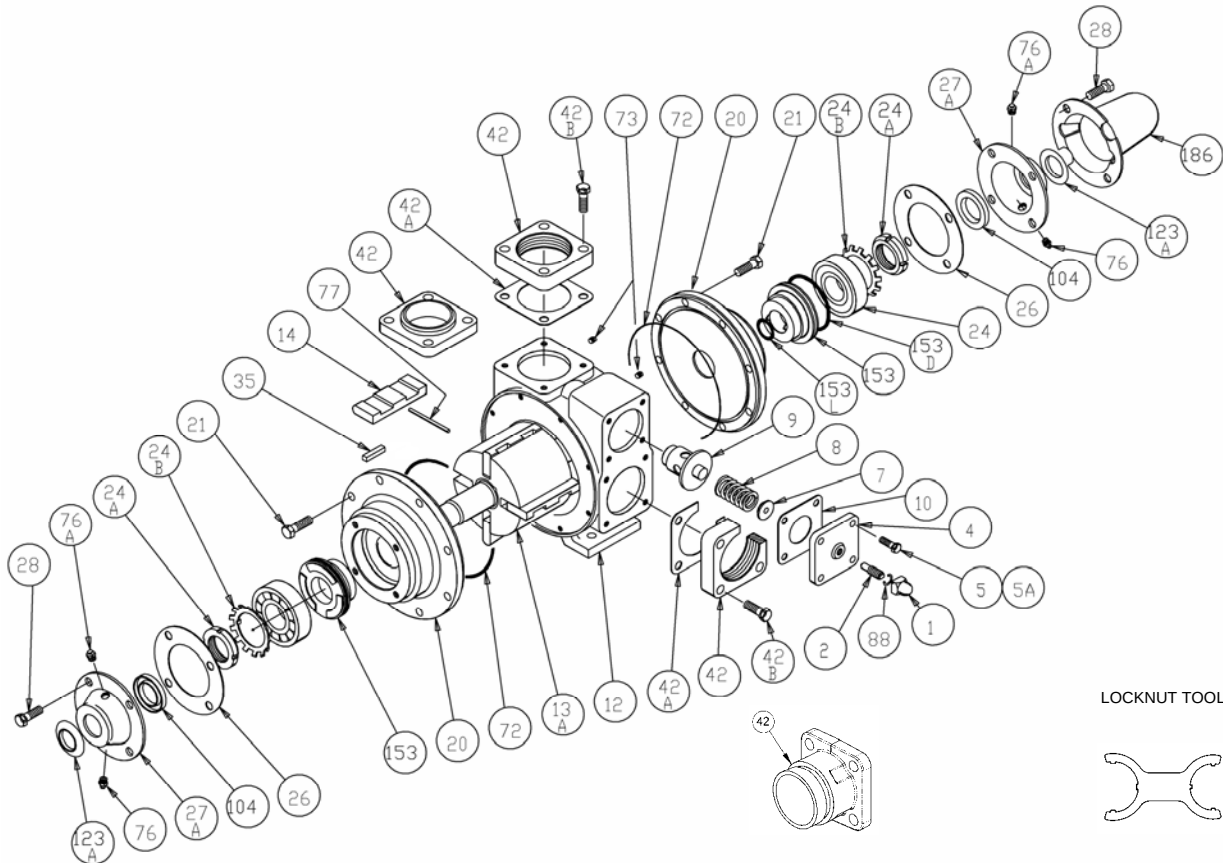
TX2A (Single Ended Shafts)

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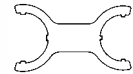
961415
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PARTS LIST
201-A02

Section 201
Effective Mar 2012
Replaces Jan 2012



LOCKNUT TOOL



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	411453	24B	Lock washer - Bearing	2	⁴ 903522
2	Adjusting Screw – R/V	1	431401	26	Gasket – Bearing Cover	1 - 2	¹ 381406
4	Cover – R/V	1	411401	27A	Bearing Cover	1 - 2	041431
5	Capscrew – R/V Cover	3	920316		Bearing Cover – Outboard	0 - 1	041433
5A	Capscrew w / Hole – R/V Cover	1	920310	28	Capscrews – Bearing Cover	8	920285
7	Spring Guide – R/V	1	423955	35	Key – Shaft Square	1	^{1, 6} 909209
8	Spring – R/V (36-50 psi)	1	471415	42 – 42C	Flanges, Flange Gaskets / O-rings, and Flange Capscrews		See Backside
	Spring – R/V (51-75 psi)		471420	72	O-Ring – Head (FKM)		¹ 701914
	Spring – R/V (76-110 psi) (Std.)		471425		O-Ring – Head (Buna-N)	2	¹ 701947
	Spring – R/V (111-125 psi)		471428		O-Ring – Head (PTFE)		702242
9	Valve – R/V ⁵	1	451417	73	Gage Plug	2	908198
	Valve – R/V (Ni Plated)		451415	76	Grease Fitting	2	317815
10	Gasket – R/V Cover	1	¹ 531403	76A	Grease Relief Fitting	2	701992
12	Cylinder	1	021403	77	Push Rod	2	¹ 123905
13A	Rotor & Shaft – Double Ended	1	² 261411	88	Gasket – R/V Cap	1	¹ 701981
	Rotor & Shaft – Single Ended		² 261426	104	Grease Seal	1 - 2	¹ 331918
14	Vane – Duravane	4	¹ 091419	123A	Dirt Shield	1 - 2	¹ 701480
20	Head (Std.)	2	031425	186	Shaft Protector	0 - 1	341601
	Head with Drain		031426		Air Valve Kit		891454
21	Capscrews – Head	16	920331		Tool - Locknut		903091
24	Ball Bearing	2	¹ 903156		Maintenance Kit, FKM		898956
24A	Locknut - Bearing	2	⁴ 903521		Maintenance Kit, Buna		898950

¹ Included in Maintenance Kit

² Includes 24A & 24B

⁴ Earlier models were not fitted with locknuts and lock washers.

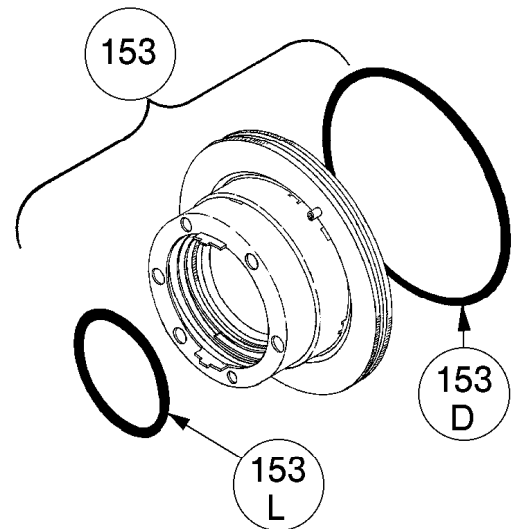
The current rotor / shaft with locknuts and lock washers may be fitted in place of shafts without locknuts and lock washers.

⁵ For Piston Style Air Operated RV see IOM 201-G00, Diaphragm Air RV – 201-F00, DMX Diaphragm RV – 201B-B00.

⁶ Maintenance Kit also includes Woodruff Key 909130 used previously.

MECHANICAL SEALS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, FKM O-Rings, Carbon Seal Face. (IVCV)	2	¹ 331655
	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings. (INCN)		¹ 331601
	Mechanical Seal Complete - Cast Iron Stationary Seat, PTFE O-Ring, Carbon Seal Face w/ PTFE Seal Ring. (IACV)		331673
153D	O-Ring – Stationary (FKM)	2	701921
	O-Ring – Stationary (Buna-N)		701934
	O-Ring – Stationary (PTFE)		702056
153L	O-Ring – Rotating (FKM)	2	701980
	O-Ring – Rotating (Buna-N)		701922
	Seal Ring – Rotating (PTFE)		**

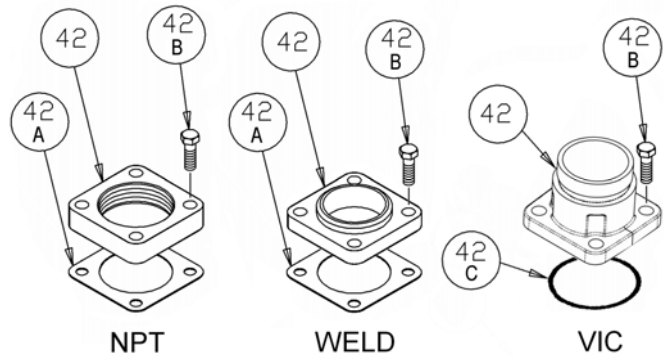


¹ Included in Maintenance Kit

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

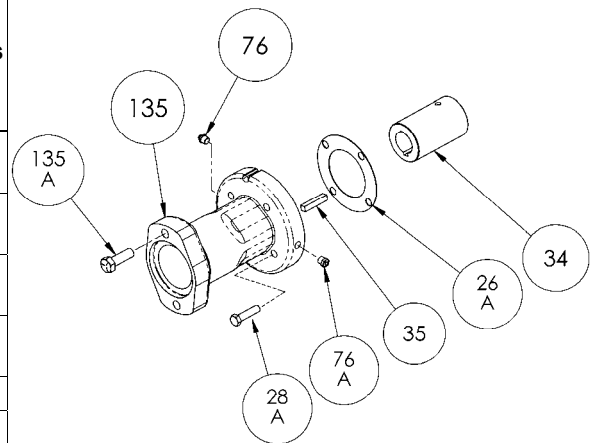
FLANGES

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
42	Flange – 2" NPT	1 – 2	651411
	Flange – 2" Weld		654405
	Flange – 2" Victaulic		654408
42A	Gasket – Flange, NPT and Weld	0 – 2	¹ 381421
42B	Capscrews – 2" NPT Flange	4 – 8	920351
	Capscrews – Victaulic Flanges		920331
42C	O-Ring – Victaulic Flange (Buna-N)	0 – 2	702004
	O-Ring – Victaulic Flange (FKM)		702086
	O-Ring – Victaulic Flange (PTFE)		702078



OPTIONAL HYDRAULIC MOTOR ADAPTER

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-1/4" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft	PART NO. 1" H-Series Hyd Motor Shaft
See Below	Hydraulic Motor Adapter Kit	See Below	891458	891205	891464
26A	Gasket – Hydraulic Motor Adapter	1	383940	383940	383940
28A	Capscrew – Hydraulic Motor Adapter / Head	4	920369	920369	920369
34	Coupling w/ Setscrew – for straight key hyd. motor shaft	1	906967	906966	906966
35	Key – Coupling	1	909184	N/A	N/A
76	Grease Fitting	1	317815	317815	317815
76A	Grease Relief Fitting	1	701992	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041828	041827	041807
135A	Capscrew – Adapter / Motor	2	920510	920510	920510



Blackmer

BLACKMER PARTS LIST

PUMP MODELS: TXD2.5A (Double Ended Shaft)

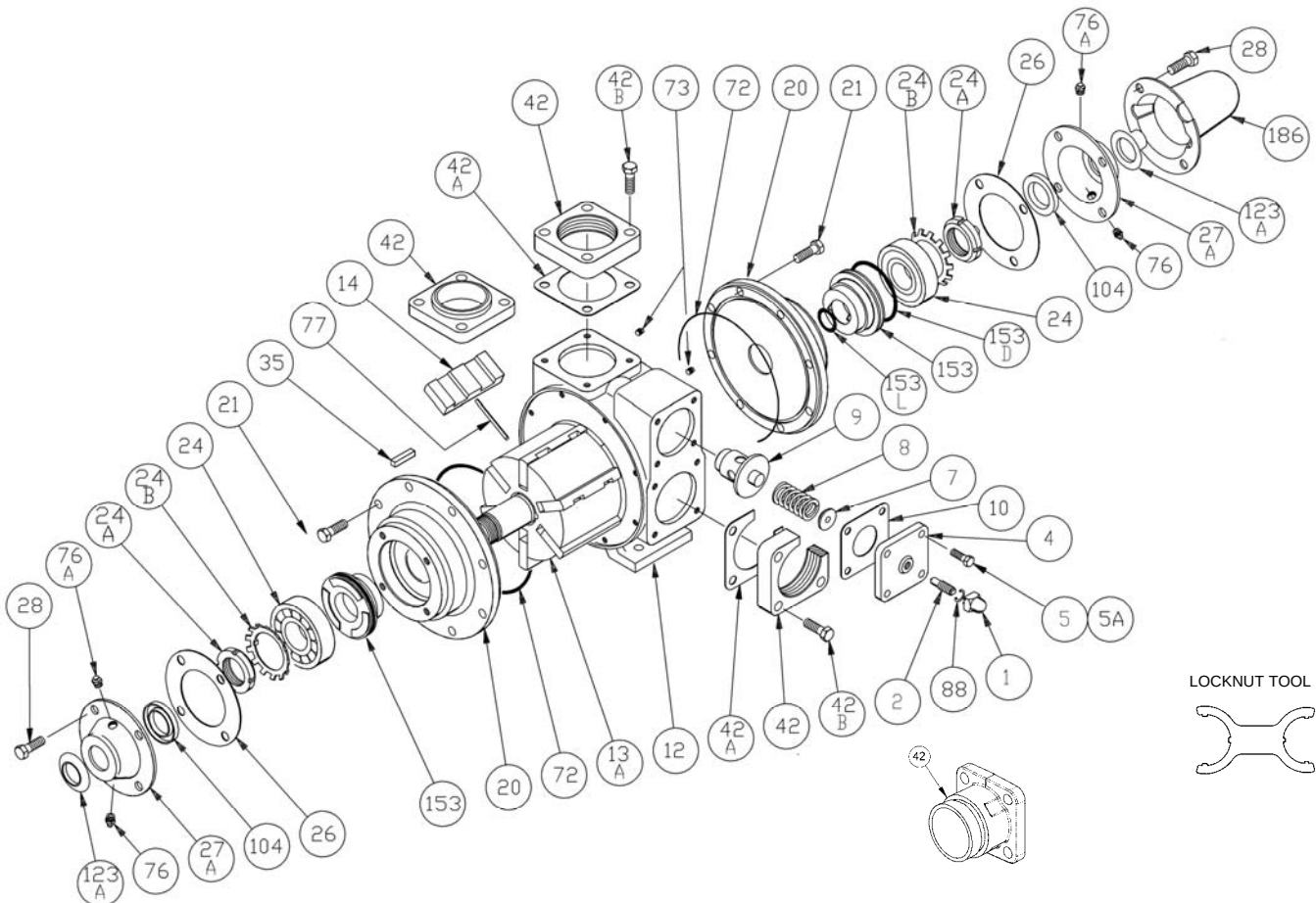
TX2.5A (Single Ended Shaft)

Keep with Instructions 201-A00 for Installation, Operation and Maintenance

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PARTS LIST
201-A03

Section	201
Effective	Aug 2014
Replaces	Jan 2012



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	411453	28	Capscrews – Bearing Cover	8	920285
2	Adjusting Screw – R/V	1	431401	35	Key – Shaft Square	1	^{1,2} 909209
4	Cover – Relief Valve	1	411607	42	Flanges		
5	Capscrew – R/V Cover	3	920316	42A	Gasket – Flange		See Backside
5A	Capscrew w / Hole – R/V Cover	1	920310	42B	Capscrews – Flange		
7	Spring Guide – R/V	1	423955	42C	O-Ring – Victaulic Flanges		
8	Spring – R/V (51-110 psi) (Std.)	1	471631	72	O-Ring – Head (FKM)		¹ 701914
	Spring – R/V (111-125 psi)		471614		O-Ring – Head (Buna-N)	2	¹ 701947
9	Valve – R/V ³	1	451623		O-Ring – Head (PTFE)		702242
	Valve – R/V (Nickel Plated)		451624	73	Gage Plug	2	908198
10	Gasket – R/V Cover	1	¹ 531603	76	Grease Fitting	2	317815
12	Cylinder – Pump	1	021605	76A	Grease Relief Fitting	2	701992
13A	Rotor & Shaft Asy. - Double Ended ⁴	1	261665	77	Push Rod	3	¹ 121607
	Rotor & Shaft Asy. - Single Ended ⁴		261667	88	Gasket – R/V Cap	1	¹ 701981
14	Vane – Duravane	6	¹ 091619	104	Grease Seal	1 - 2	¹ 331918
20	Head (Std.)	2	031425	123A	Dirt Shield	1 - 2	¹ 701480
21	Capscrews – Head	16	920331	186	Shaft Protector	1	341601
24	Ball Bearing	2	¹ 903156		Air Valve Kit – Piston Type (FKM)		891725
24A	Locknut – Bearing	2	903521		Air Valve Kit – Diaphragm Type		891696
24B	Lockwasher – Bearing	2	¹ 903522		Tool - Locknut		903091
26	Gasket – Bearing Cover	2	¹ 381406		Maintenance Kit (FKM)		898957
27A	Bearing Cover	1 - 2	041431		Maintenance Kit (Buna-N)		898951
	Bearing Cover – Outboard, SE shaft	0 - 1	041433				

¹ Included in Maintenance Kit ² Maintenance Kit also includes Woodruff Key 909130 used previously

³ For Piston Style Air Operated RV see IOM 201-G00, Diaphragm Air RV – 201-F00, DMX Diaphragm RV – 201B-B00.

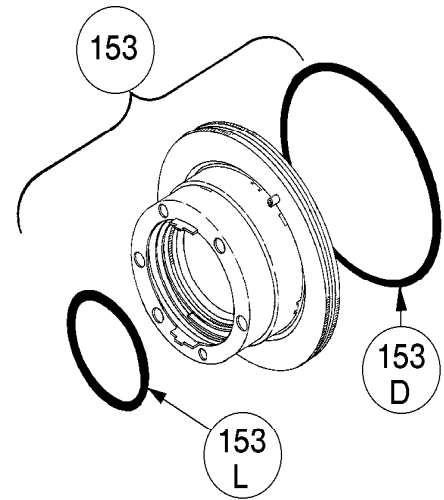
⁴ Includes Ref. Nos. 24A & 24B

MECHANICAL SEALS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, FKM O-Rings. (IVCV)	2	¹ 331655
	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings. (INCN)		¹ 331601
	Mechanical Seal Complete - Cast Iron Stationary Seat, PTFE O-Ring, Carbon Seal Face w/ PTFE Seal Ring. (IACT)		331673
153D	O-Ring - Stationary (FKM)	2	701921
	O-Ring - Stationary (Buna-N)		701934
	O-Ring - Stationary (PTFE)		702056
153L	O-Ring - Rotating (FKM)	2	701980
	O-Ring - Rotating (Buna-N)		701922
	Seal Ring - Rotating (PTFE)		**

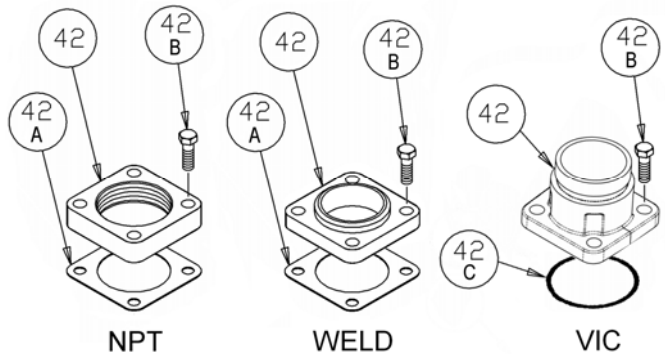
¹ Included in Maintenance Kit

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



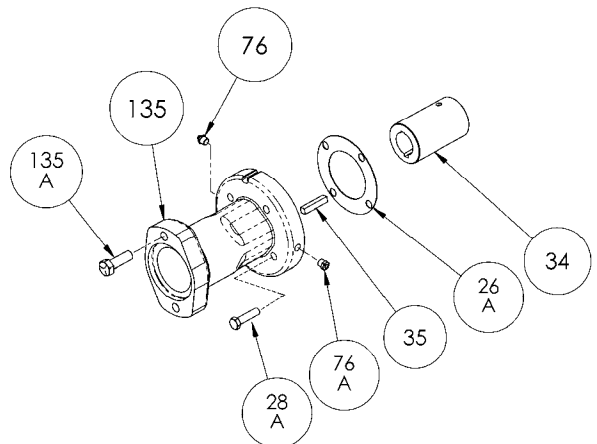
FLANGES

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
42	Flange - 2" NPT	1 - 2	651603
	Flange - 2 1/2" NPT		651611
	Flange - 2 1/2" Weld		651608
	Flange - 2" Victaulic		655116
	Flange - 2 1/2" Victaulic		655117
	Flange - 3" Victaulic		655118
42A	Gasket - Flange, NPT and Weld	0 - 2	¹ 381650
42B	Capscrews - 2" NPT Flange	4 - 8	920471
	Capscrews - 2 1/2" NPT Flange		920532
	Capscrews - 2 1/2" Weld		920491
	Capscrews - Victaulic Flanges		920491
42C	O-Ring - Victaulic Flange (Buna-N)	0 - 2	701925
	O-Ring - Victaulic Flange (FKM)		701924
	O-Ring - Victaulic Flange (PTFE)		702079



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-1/4" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft
	Hydraulic Motor Adapter Kit *		891458	891205
26A	Gasket - Hydraulic Motor Adapter	1	383940	383940
28A	Capscrew - Hydraulic Motor Adapter / Head	4	920369	920369
34	Coupling w/ Setscrew - for straight key hyd. motor shaft	1	906967	906966
35	Key - Coupling	1	909184	N/A
76	Grease Fitting	1	317815	317815
76A	Grease Relief Fitting	1	701992	701992
135	Hydraulic Motor Adapter - SAE A Flange	1	041828	041827
135A	Capscrew - Adapter / Motor	2	920510	920510



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BLACKMER PARTS LIST

PUMP MODELS: TXD3E (Double Ended Shafts)

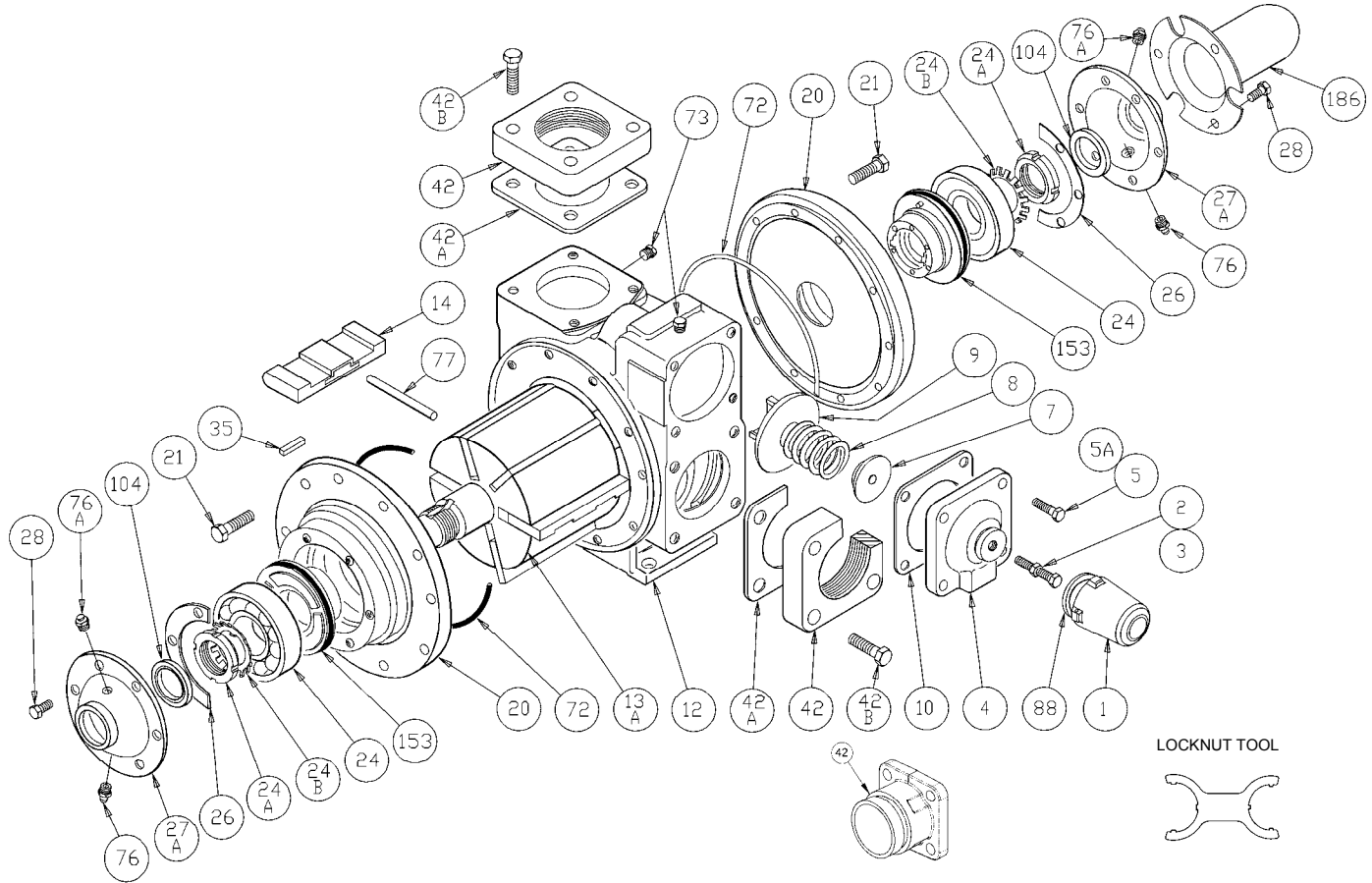
TX3E (Single Ended Shafts)

Keep with Instructions 201-A00 for Installation, Operation and Maintenance

961815
Page 1 of 2

PARTS LIST
201-A04

Section 201
Effective Jan 2012
Replaces Apr 2009



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	413957	26	Gasket – Bearing Cover	2	¹ 381817
2	Adjusting Screw – R/V	1	431808	27A	Bearing Cover	1 - 2	041815
3	Locknut – Adjusting Screw	1	922923		Bearing Cover - Outboard	0 – 1	041817
4	Cover – R/V	1	411807	28	Capscrews – Bearing Cover	12	920285
5	Capscrew – R/V Cover	3	920331	35	Key – Shaft	1	¹ 909178
5A	Capscrew w / Hole – R/V Cover	1	920330	42 – 42C	Flanges, Flange Gaskets / O-rings, and Flange Capscrews		See Backside
7	Spring Guide – R/V	1	421805		O-Ring - Head (FKM)	2	¹ 711938
8	Spring – R/V (51-75 & 76-110 psi) (Std.)	1	471806	72	O-Ring - Head (Buna-N)		¹ 701944
	Spring – R/V (111-125 psi)		471809		O-Ring - Head (PTFE)		702233
9	Valve - R/V ³	1	451807	73	Gage Plug	2	908198
	Valve - R/V (Nickel Plated)		451808	76	Grease Fitting	2	317815
10	Gasket – R/V Cover	1	¹ 531803	76A	Grease Relief Fitting	2	701992
12	Cylinder	1	021805	77	Push Rod	3	¹ 121807
13A	Rotor & Shaft Asy. - Double Ended ²	1	261837	88	Gasket - R/V Cap	1	¹ 533908
	Rotor & Shaft Asy. - Single Ended ²		261839	104	Grease Seal	1 - 2	¹ 331908
14	Vane – Duravane	6	¹ 091819	186	Shaft Protector	0 - 1	341801
20	Head	2	031815		Air Valve Kit		891798
21	Capscrews – Head	20	920369		Tool - Locknut		903091
24	Ball Bearing	2	¹ 903172		Maintenance Kit, FKM		898958
24A	Locknut – Bearing	2	903523		Maintenance Kit, Buna-N		898952
24B	Lockwasher - Bearing	2	¹ 903524				

¹ Included in Maintenance Kit ² Includes ref. Nos. 24A & 24B

³ For Piston Style Air Operated RV see IOM 201-G00, Diaphragm Air RV – 201-F00, DMX Diaphragm RV – 201B-B00.

7-10

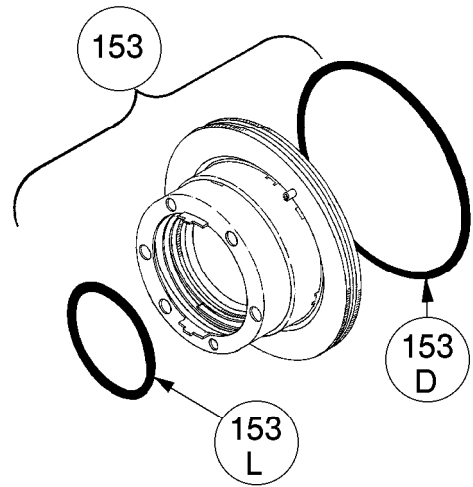
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MECHANICAL SEALS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, FKM O-Rings, Carbon Seal Face. (IVCV)	2	¹ 331883
	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings. (INCN)		¹ 331880
	Mechanical Seal Complete - Cast Iron Stationary Seat, PTFE O-Ring, Carbon Seal Face w/ PTFE Seal Ring. (IACT)		331873
153D	O-Ring - Stationary (FKM)	2	711931
	O-Ring - Stationary (Buna-N)		701936
	O-Ring - Stationary (PTFE)		702080
153L	O-Ring - Rotating (FKM)	2	701962
	O-Ring - Rotating (Buna-N)		711912
	Seal Ring - Rotating (PTFE)		**

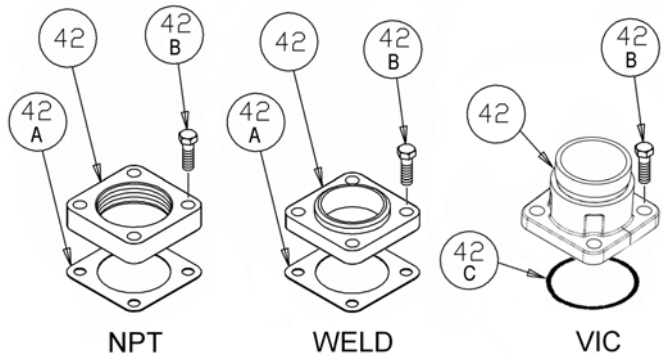
¹ Included in Maintenance Kit

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



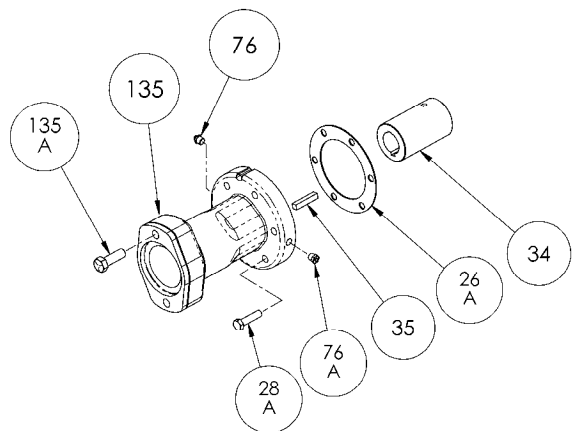
FLANGES

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
42	Flange – 3" NPT	1 – 2	651803
	Flange – 3" Weld		655102
	Flange – 3" Victaulic		655120
42A	Gasket – Flange, NPT and Weld	0 – 2	¹ 381816
42B	Capscrews – NPT Flange	4 – 8	920532
	Capscrews – Weld & Victaulic Flange		920510
42C	O-Ring – Victaulic Flange (Buna-N)	0 – 2	702002
	O-Ring – Victaulic Flange (FKM)		711931
	O-Ring – Victaulic Flange (PTFE)		702080



OPTIONAL HYDRAULIC MOTOR ADAPTER

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-1/4" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft
	Hydraulic Motor Adapter Kit *		895140	895143
26A	Gasket – Hydraulic Motor Adapter	1	381817	381817
28A	Capscrew – Hydraulic Motor Adapter / Head	6	920369	920369
34	Coupling w/ Setscrew – straight key hydraulic motor	1	906967	906990
35	Key – Coupling	1	909184	909184
76	Grease Fitting	1	317815	317815
76A	Grease Relief Fitting	1	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041831	041831
135A	Capscrew – Adapter / Motor	2	920510	920510



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BLACKMER PARTS LIST

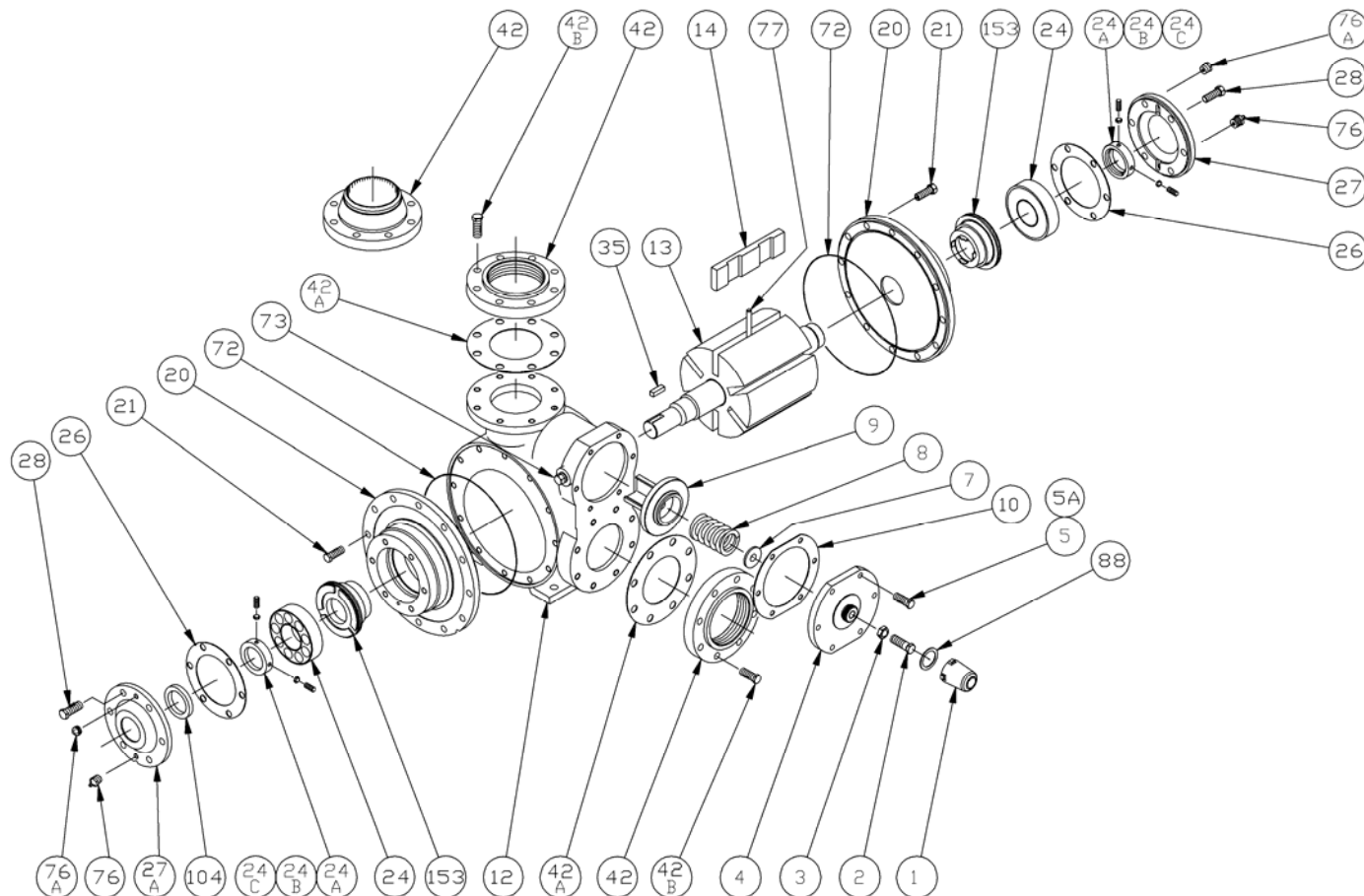
PUMP MODEL: TX4A

Keep with Instructions 201-A00 for Installation, Operation and Maintenance

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PARTS LIST
201-A05

Section 201
Effective Jan 2012
Replaces Jan 2010



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	413957	24C	Jam Nut	4	¹ 922923
2	Adjusting Screw – R/V	1	436307	26	Gasket – Bearing Cover	2	¹ 386950
3	Locknut – Adjusting Screw	1	436355	27	Bearing Cover – Outboard	1	041905
4	Cover – R/V	1	411904	27A	Bearing Cover – Inboard	1	041903
5	Capscrew – R/V Cover	5	920351	28	Capscrews – Bearing Cover	12	920491
5A	Capscrew w / Hole – R/V Cover	1	920348	35	Key – Shaft, Square	1	^{1, 2} 909149
7	Spring Guide – R/V	1	426355	42	Flange – 4" NPT	1-2	651900
8	Spring, Steel – R/V (35-50 psi)	1	476303		Flange – 4" Weld		651905
	Spring, Steel – R/V (51-75 psi)		476310	42A	Gasket – Flange	2	¹ 381903
	Spring, Steel – R/V (76-125 psi)(Std.)		476305	42B	Capscrew – Flange	16	920532
9	Valve – R/V (Std.)	1	456315	72	O-Ring – Head (FKM)	2	¹ 702024
	Valve – R/V (Nickel Plated)		456300		O-Ring – Head (Buna-N)		¹ 702023
10	Gasket – R/V Cover	1	¹ 531903		O-Ring – Head (PTFE)		702093
12	Cylinder	1	021906	73	Gage Plug	2	908198
13	Rotor & Shaft	1	261950	76	Grease Fitting	2	317815
14	Vane – Duravane	6	¹ 091924	76A	Grease Relief Fitting	2	701992
20	Head	2	031908	77	Push Rod	3	¹ 121905
21	Capscrews – Head	24	920510	88	Gasket – R/V Cap	1	¹ 533908
24	Ball Bearing	2	¹ 903182	104	Grease Seal	1	¹ 904190
24A	Lock Collar – Bearing	2	¹ 721937		Kit – Maintenance, FKM		898959
24B	Setscrew	4	¹ 922104		Kit – Maintenance, Buna-N		898953

¹ Included in Maintenance Kit

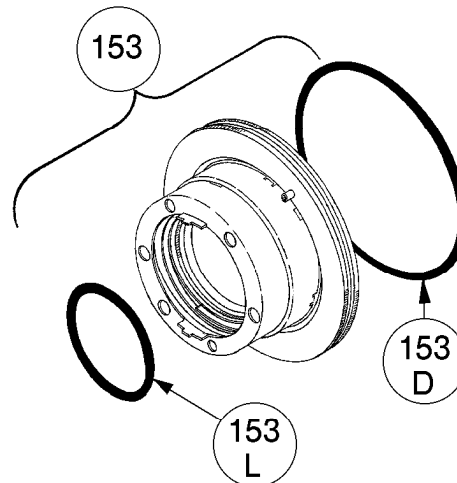
² Maintenance Kit also includes Woodruff Key 909135 used previously.

MECHANICAL SEALS – TX4A MODELS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face w/ FKM O-Rings. (IVCV)	2	¹ 336982
	Mechanical Seal Complete – Cast Iron Stationary Seat, Carbon Seal Face, Buna-N O-Rings. (INCN)		¹ 336958
	Mechanical Seal Complete - Cast Iron Stationary Seat, PTFE O-Ring, Carbon Seal Face w/ PTFE Seal Ring. (IACT)		331973
	Mechanical Seal Complete - Cast Iron Stationary Seat, Bronze Seal Face w/ FKM O-Rings. (IVBV)		336984
153D	O-Ring - Stationary (FKM)	2	711932
	O-Ring - Stationary (Buna-N)		701945
	O-Ring - Stationary (PTFE)		702090
153L	O-Ring - Rotating (FKM)	2	701967
	O-Ring - Rotating (Buna-N)		701933
	Seal Ring - Rotating (PTFE)		**

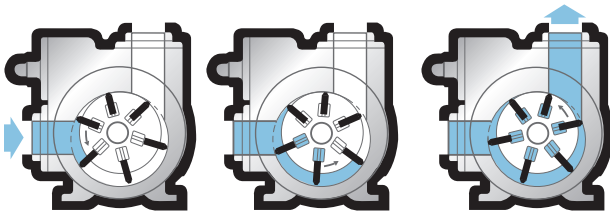
¹ Included in Maintenance Kit

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

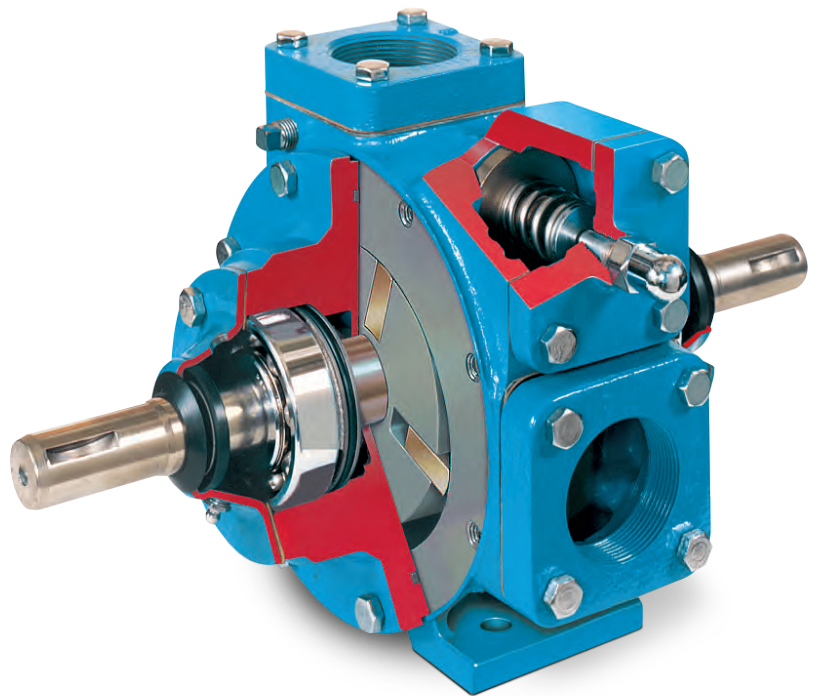




TXD1200 Series High-Speed Sliding Vane Truck Pumps



How Blackmer's sliding vane action works



TXD2 Sliding Vane Pump

Reliability

With pump speeds of up to 1,200 RPM, the durable, high-speed TXD Series truck pumps provide fast and quiet operation, while the sliding vane design offers sustained performance and reliability.

Unique Features

Adjustable relief valve protects pump from excessive pressure. Optional air operated piston-style relief valve offers easy hose and nozzle handling. T-type strainers are available to protect pumping systems from damage caused by welding slag and foreign matter in the piping and tanks.

Sizing Options

Available in 2, 2.5 and 3-inch port sizes with flow rates from 20 to 265 U.S. gallons (4 to 60 m³/H) and pressures up to 125 psi (8.6 bar).

Applications

- Fuel oil delivery truck
- Fleet refueling
- Aviation refuelers
- Transport of:
 - Petro Chemicals
 - Gasoline
 - Diesel Fuel
 - Biofuels
 - Home Heating Oil
 - Solvents
 - And many more

TXD1200 models are equipped with FKM elastomers that make the pump ideal for handling all types of light petroleum products, solvents and all Biodiesel and Ethanol blends.



TXD1200 Series High-Speed Sliding Vane Truck Pumps

Performance Data

Pump Model	TXD1220		TXD1225		TXD1230	
Rated Pump Speed	1100	800	1100	800	800	640
gpm	82	59	130	93	240	185
L/min	310	223	492	352	908	700
m ³ /h	18	13	29	21	54	42
hp	4.2	2.9	6.6	4.7	10.8	8.1
kW	3.1	2.1	4.9	3.5	8.0	6.0

* Appropriate capacities and horsepower (HP) are based on a 100 ssu (22 cSt) fluid at 50 PSI (3.4 bar) delivered pressure. Refer to Characteristic Curves for flow rates and torque requirements at other pressures and viscosities.

Maximum Operating Limits

Pump Model	Nominal Flowrate		Pump Speed	Viscosity		Differential Pressure		Working Pressure		Temperature	
	gpm	L/min	rpm	ssu	cSt	psi	bar	psi	bar	°F	°C
TXD1220	87	329	1200	100	22	125	8.6	175	12.1	300	149
TXD1225	157	594	1200	100	22	125	8.6	175	12.1	300	149
TXD1230	270	1,022	900	100	22	125	8.6	175	12.1	300	149

Pump Rotation

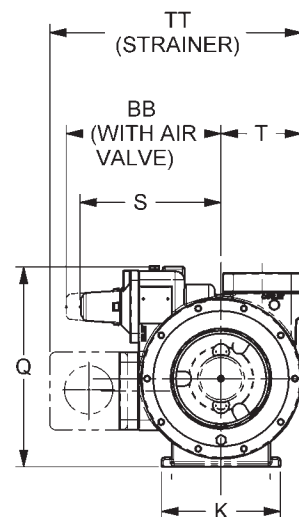
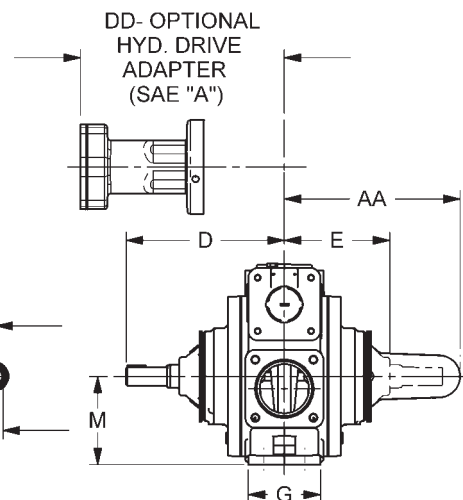
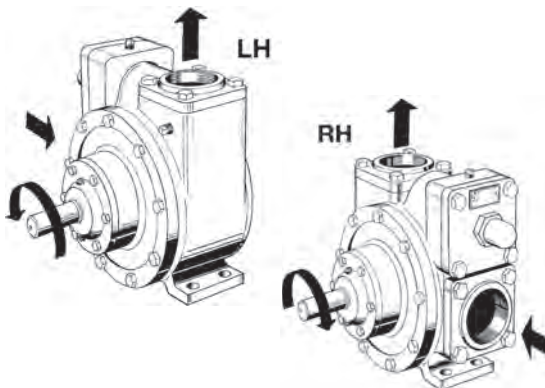
Blackmer TXD models are equipped with a double-ended drive shaft for either clockwise (RH) or counterclockwise (LH) rotation.

Port Sizes

- TXD1220 – 2"
- TXD1225 – 2.5"
- TXD1230 – 3"

Options

- Pneumatic Relief Valve
- Hydraulic Motor Adapters
- Strainers
- Victaulic Flanges



Dimensions

Model		A	B	D	E	G	K	M	Q	S	T	AA	BB	DD		TT	Approx. Wt.	
														1 1/4" HYD Motor Shaft	1" HYD Motor Shaft			
TXD1220	in.	1 1/8	1/4	8	5 1/4	3 1/2	6 1/2	4	8 11/16	6 1/8	3 7/8	8 3/4	8 5/16	10 7/8	10 9/16	12 1/8	70	lbs
	mm	—	—	203	133	89	165	102	221	156	98	222	211	276	268	308	32	kg
TXD1225	in.	1 1/8	1/4	8 3/4	6	4 7/8	7	4	9 5/8	6 13/16	3 15/16	9 1/2	8 11/16	11 5/8	11 5/16	13 5/16	94	lbs
	mm	—	—	222	152	124	178	102	244	173	100	241	221	295	287	338	43	kg
TXD1230	in.	1 1/8	1/4	9 5/8	6 7/16	4 3/8	7 1/4	5 3/8	12 13/16	8 9/16	4 15/16	10 11/16	9 7/16	—	12 3/8	15 3/8	152	lbs
	mm	—	—	244	164	111	184	137	325	217	125	271	240	—	314	391	69	kg



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BLACKMER PARTS LIST

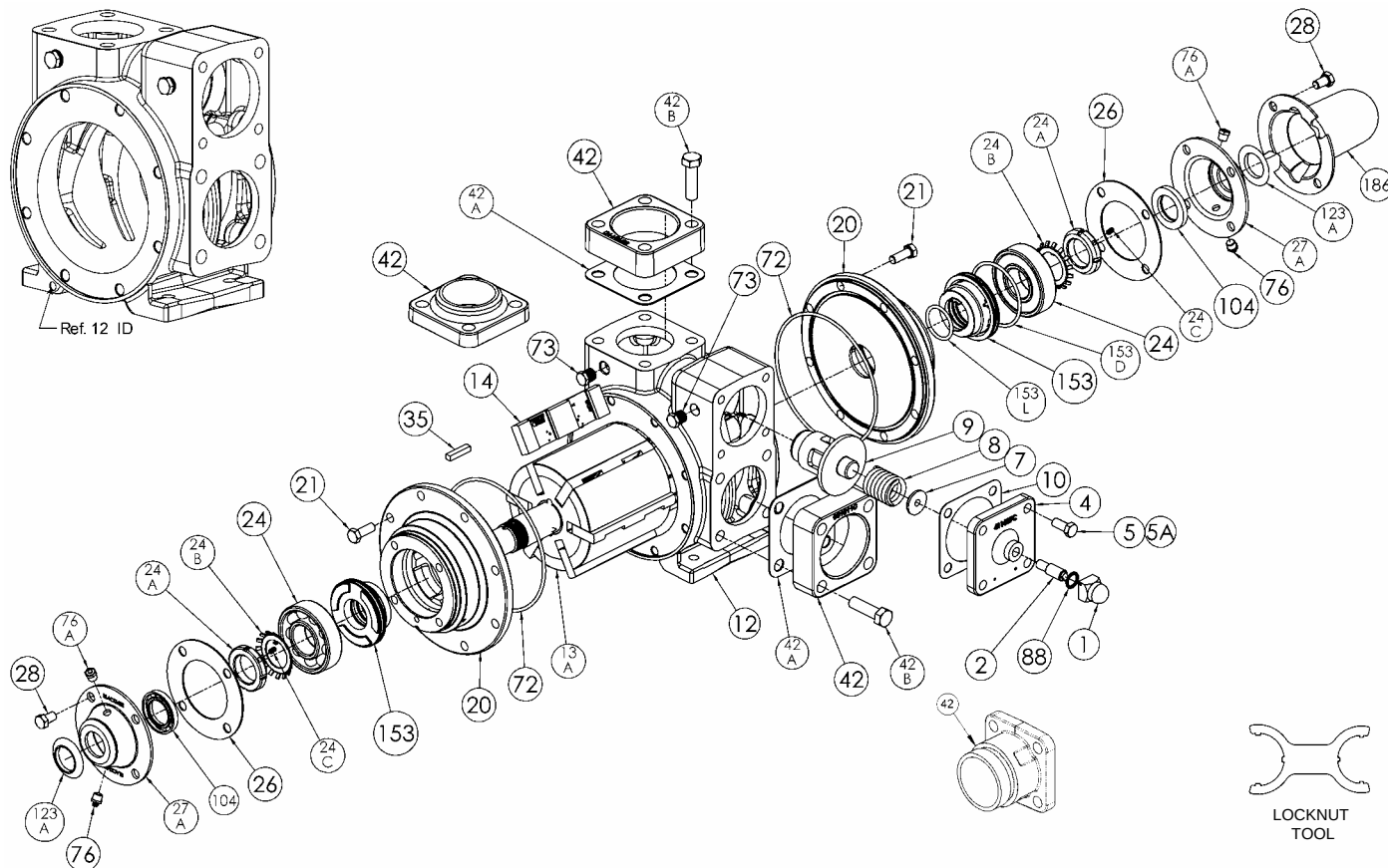
PUMP MODELS: TXD1225A

Keep with Instructions 201-D00 for Installation, Operation and Maintenance

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PARTS LIST
201-D03

Section 201
Effective Dec 2008
Replaces June 2008



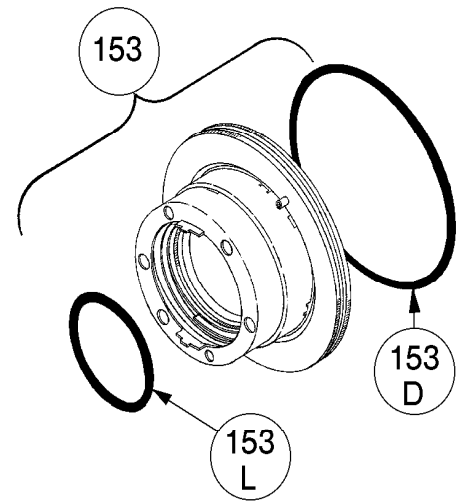
Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	411453	26	Gasket – Bearing Cover	2	¹ 381406
2	Adjusting Screw – R/V	1	431401	27A	Bearing Cover	2	041431
4	Cover – Relief Valve	1	411607	28	Capscrews – Bearing Cover	8	920285
5	Capscrew – R/V Cover	3	920316	35	Key – Shaft	1	¹ 909209
5A	Capscrew w / Hole – R/V Cover	1	920310	42	Flanges		See Backside
7	Spring Guide – R/V	1	423955	42A	Gasket – Flange		
8	Spring – R/V (51-110 PSI) (Std.)	1	471631	42B	Capscrews – Flange		
	Spring – R/V (111-125 PSI)		471614	42C	O-Ring – Victaulic Flanges		
9	Valve – R/V – Standard ³	1	451623	72	O-Ring – Head (FKM)	2	701914
	Valve – R/V – Nickel Plated	1	451624	73	Gage Plug	2	908198
10	Gasket – R/V Cover	1	¹ 531603	76	Grease Fitting	2	317815
12	Cylinder (Note Series 1200 ID mark)	1	021680	76A	Grease Relief Fitting	2	701992
13A	Rotor & Shaft Assembly ²	1	261680	88	Gasket – R/V Cap	1	¹ 701981
14	Vane – Duravane	6	¹ 091619	104	Grease Seal	2	¹ 331918
20	Head	2	031425	123A	Dirt Shield	2	¹ 701480
21	Capscrews – Head	16	920331	186	Shaft Protector	1	341601
24	Ball Bearing	2	¹ 903156		Air Valve Kit – Piston Type (FKM)		891716
24A	Locknut Assembly w/setscrew 24C	2	¹ 903583		Tool - Locknut		903091
24B	Lockwasher – Bearing	2	¹ 903522		Kit – Maintenance (TXD1225A)		899181
24C	Setscrew – Locknut (in 24A)	2	924060				

¹ Included in Maintenance Kit ² Includes Ref. Nos. 24A, 24B, & 24C ³ For Piston Style Air Operated RV see IOM 201-G00.

MECHANICAL SEALS

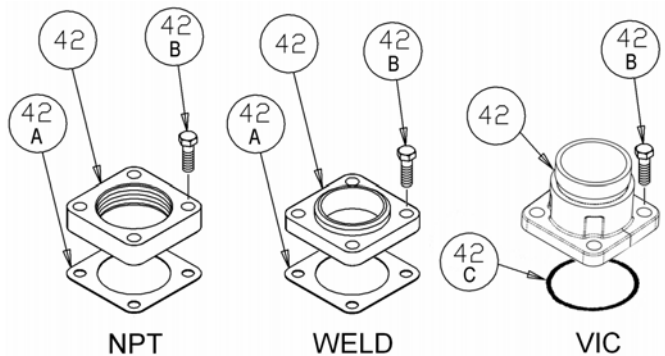
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete - Cast Iron Stationary Seat, Carbon Seal Face, FKM O-Rings. (IVCV)	2	¹ 331655
153D	O-Ring – Stationary (FKM)	2	701921
153L	O-Ring – Rotating (FKM)	2	701980

¹ Included in Maintenance Kit



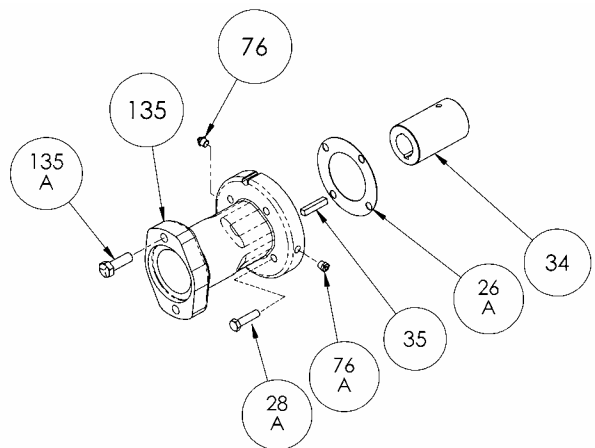
FLANGES

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
42	Flange – 2" NPT	1 – 2	651603
	Flange – 2 ½" NPT		651611
	Flange – 2 ½" Weld		651608
	Flange – 2" Victaulic		655116
	Flange – 2 ½" Victaulic		655117
	Flange – 3" Victaulic		655118
42A	Gasket – Flange, NPT and Weld	0 – 2	¹ 381650
42B	Capscrews – 2" NPT Flange	4 – 8	920471
	Capscrews – 2 ½" NPT Flange		920532
	Capscrews – 2 ½" Weld		920491
	Capscrews – Victaulic Flanges		920491
42C	O-Ring – Victaulic Flange (FKM)	0 – 2	701924



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-¼" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft
	Hydraulic Motor Adapter Kit		891458	891205
26A	Gasket – Hydraulic Motor Adapter	1	383940	383940
28A	Capscrew – Hydraulic Motor Adapter / Head	4	920369	920369
34	Coupling w/ Setscrew – for straight key hyd. motor shaft	1	906967	906966
35	Key – Coupling	1	909184	N/A
76	Grease Fitting	1	317815	317815
76A	Grease Relief Fitting	1	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041828	041827
135A	Capscrew – Adapter / Motor	2	920510	920510



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BLACKMER PARTS LIST

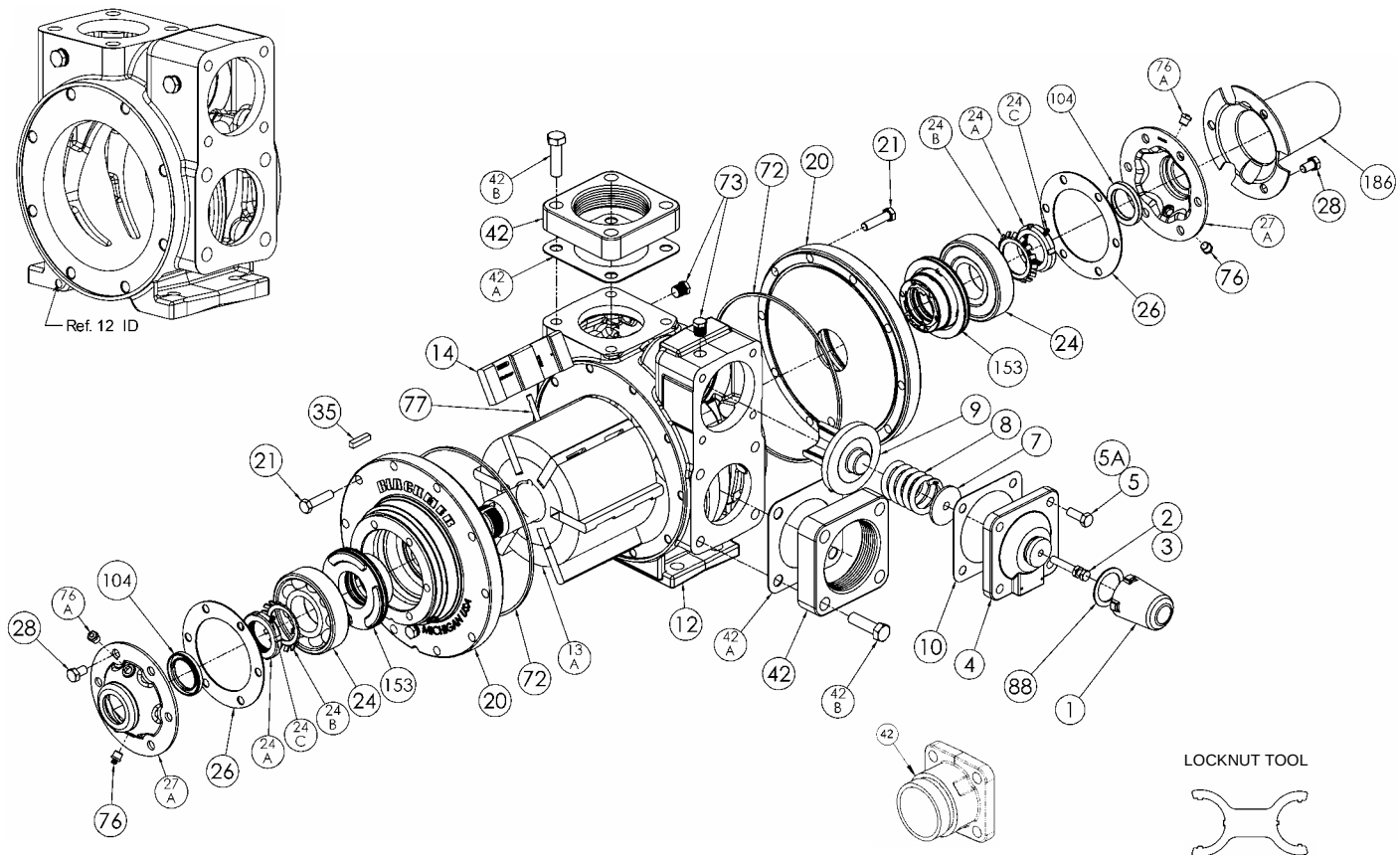
PUMP MODEL: TXD1230A

Keep with Instructions 201-D00 for Installation, Operation and Maintenance

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PARTS LIST
201-D04

Section 201
Effective Oct 2008
Replaces New



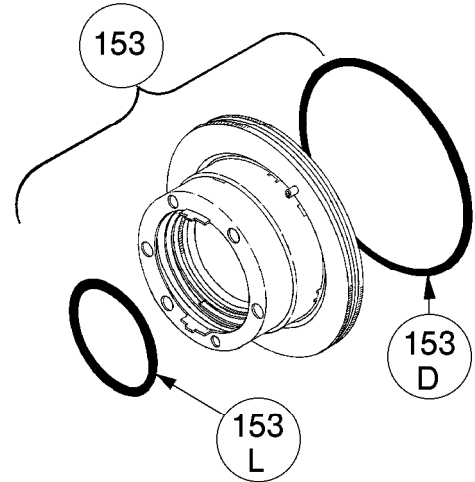
Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	413957	24B	Lockwasher - Bearing	2	¹ 903524
2	Adjusting Screw – R/V	1	431808	24C	Setscrew – Locknut (in 24A)	2	924060
3	Locknut – Adjusting Screw	1	922923	26	Gasket – Bearing Cover	2	¹ 381817
4	Cover – R/V	1	411807	27A	Bearing Cover	2	041815
5	Capscrew – R/V Cover	3	920331	28	Capscrews – Bearing Cover	12	920285
5A	Capscrew w / Hole – R/V Cover	1	920330	35	Key – Shaft	1	¹ 909178
7	Spring Guide – R/V	1	421805	42 –	Flanges, Flange Gaskets / Orings,		See
8	Spring – R/V (51-110 psi)(Std.)	1	471806	42C	and Flange Capscrews		Backside
	Spring – R/V (111-125 psi)		471809	72	O-Ring - Head (FKM)	2	¹ 711938
9	Valve - R/V (Std.)	1	451807	73	Gage Plug	2	908198
	Valve - R/V (Nickel Plated)		451808	76	Grease Fitting	2	317815
10	Gasket – R/V Cover	1	¹ 531803	76A	Grease Relief Fitting	2	701992
12	Cylinder (Note Series 1200 ID mark)	1	021880	77	Push Rod	3	¹ 125110
13A	Rotor & Shaft Asy. - Double Ended ²	1	261881	88	Gasket - R/V Cap	1	¹ 533908
14	Vane – Duravane	6	¹ 091819	104	Grease Seal	2	¹ 331908
20	Head	2	031815	186	Shaft Protector	1	341801
21	Capscrews – Head	20	920369		Air Valve Kit		891798
24	Ball Bearing	2	¹ 903172		Tool - Locknut		903091
24A	Locknut – Bearing (Includes 24C)	2	903582		Kit – Maintenance (TXD1230A)		899182

¹ Included in Maintenance Kit ² Includes ref. Nos. 24A, 24B & 24C

MECHANICAL SEALS

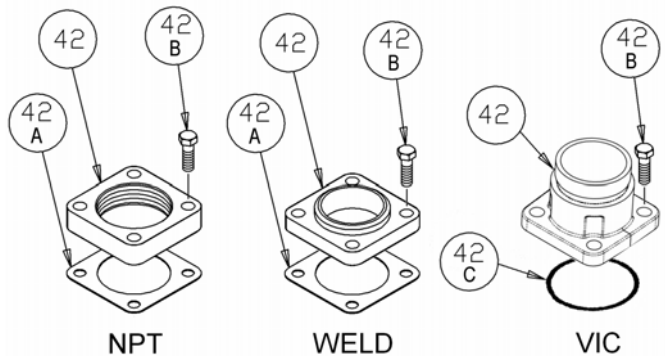
REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete Cast Iron Stationary Seat, FKM O-Rings, Carbon Seal Face. (IVCV)	2	331883
153D	O-Ring - Stationary (FKM)	2	711931
153L	O-Ring - Rotating (FKM)	2	701962

¹ Included in Maintenance Kit



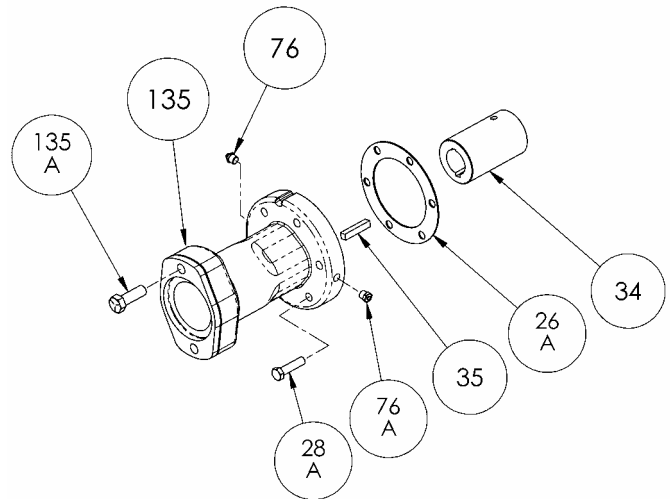
FLANGES

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
42	Flange – 3" NPT	1 – 2	651803
	Flange – 3" Weld		655102
	Flange – 3" Victaulic		655120
42A	Gasket – Flange, NPT and Weld	0 – 2	¹ 381816
42B	Capscrews – NPT Flange	4 – 8	920532
	Capscrews – Weld & Victaulic Flange		920510
42C	O-Ring – Victaulic Flange (FKM)	0 – 2	711931



OPTIONAL HYDRAULIC MOTOR ADAPTER

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
	Hydraulic Motor Adapter Kit *		895140
26A	Gasket – Hydraulic Motor Adapter	1	381817
28A	Capscrew – Hydraulic Motor Adapter / Head	6	920369
34	Coupling w/ Setscrew – for 1.25" straight key hydraulic motor	1	906967
35	Key – Coupling	1	909184
76	Grease Fitting	1	317815
76A	Grease Relief Fitting	1	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041831
135A	Capscrew – Adapter / Motor	2	920510



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STX DEF Series

Stainless Steel Transport Pumps for Diesel Exhaust Fluid (DEF)



STX2A-DEF & STX1220A-DEF



STX3-DEF

Design

Blackmer's STX DEF Series pumps meet or exceed all industry specifications for DEF Aqueous Urea Solutions (AUS32). Made from 316 stainless steel, the pumps feature external ball bearings, non-metallic Duravanes, PTFE elastomers and Blackmer chemical mechanical seals. The design also includes an adjustable relief valve, weld flanges and self-priming capability. The STX3-DEF has a versatile mounting bracket.

Application

Applications include DEF transport and railcar loading and off-loading, as well as DEF tote filling.

The STX3-DEF offers flow rates up to 250 gpm (946 L/min) with differential pressures up to 125 psi (8.6 bar) and maximum speed of 800 rpm. The STX1220A-DEF offers flow rates up to 92 gpm (348 L/min) and maximum speed of 1,200 rpm, and the STX2A-DEF provides flow rates to 60 GPM (227 L/min) and maximum speed of 780 rpm.

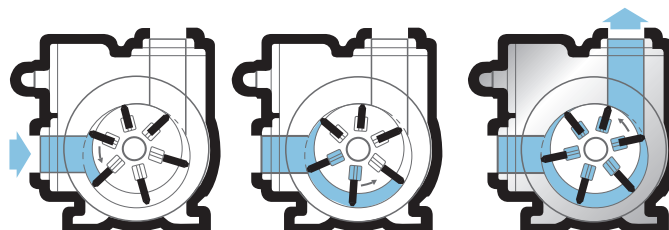
Benefit

Blackmer's STX3-DEF offers fast fluid off-loading. A typical off-loading of a 6,000 gallon (22,700 liter) tanker can be unloaded as quickly as 24 minutes.

Blackmer's non-metallic vanes self-compensate for wear and allow the STX DEF Series pumps to run dry for short periods of time for self-priming and blowing lines clean, with out pump damage.

The STX DEF Series is designed to offer easy maintenance because the internal wear is limited almost completely to the sliding vanes, which can be replaced with ordinary hand tools.

How Blackmer's sliding vane action works



Characteristic Flow Rates

Pump Model	Pump Speed	Pump Capacity @ 50 psid (3.45 bar) with 30 ssu (1 cSt) Fluid			Maximum Fluid Viscosity at rpm Shown	
	rpm	US gpm	L/min	m ³ /h	ssu	cSt
STX2A-DEF	780	50	189	11.3	30	1
	520	30	113	6.8	1,000	210
	350	16	60	3.6	4,600	970
STX1220A-DEF	1,200	82	310	18	100	22
	1,000	72	273	16	100	22
	700	49	185	11	100	22
STX3-DEF	800	250	946	57	500	105
	600	190	719	43	5,000	1,050
	400	125	473	28	20,000	4,250

Pump Horsepower Requirements

Pump Model	Pump Speed	30 ssu (1 cSt) Viscosity		50 ssu (13 cSt) Viscosity	
	rpm	50 psi (3.45 bar)	100 psi (6.9 bar)	50 psi (3.45 bar)	100 psi (6.9 bar)
STX2A-DEF	780	2.4	4.3	—	—
	520	1.5	2.9	1.7	3.1
	350	1	1.9	1.1	2.1
STX1220A-DEF	1,200	4.0	6.9	4.2	7.3
	1,000	3.4	5.6	3.6	6.0
	700	2.3	3.8	2.4	4.1
STX3-DEF	800	9.5	17.5	9.8	17.9
	600	6.7	12.8	6.9	13.2
	400	4.2	8.0	4.3	8.3

Refer to Blackmer Characteristic Curves for flow rates and torque requirements for your specific conditions.

Maximum Operating Limits

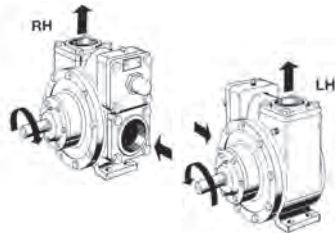
Pump Model	Nominal Flow Rate			Pump Speed	Viscosity		Differential Pressure		Temperature	
	US gpm	L/min	m ³ /h		ssu	cSt	psi	bar	°F	°C
STX2A-DEF	60	227	13.6	780	4,600	970	125	8.6	240	115
STX1220A-DEF	92	348	21	1,200	100	22	125	8.6	240	115
STX3-DEF	250	946	57	800	20,000	4,250	125	8.6	240	115

Pump Dimensions

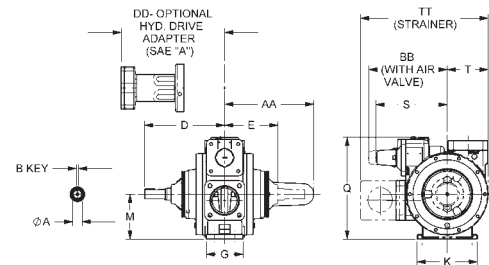
Pump Model		A	B	D	E	G	K	M	Q	S	T	AA	BB	DD		TT	Approx. Weight
														1½" HYD Motor Shaft	1" HYD Motor Shaft		
STX2A-DEF & STX1220A-DEF	in.	1½	¼	8	5¼	3½	6½	4	8⅛	6½	3¾	8¾	8½	10%	10⅞	12½	70 lbs.
	mm	—	—	203	133	89	165	102	221	156	98	222	211	276	268	308	32 kg
Pump Model		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Approx. Weight	
STX3-DEF	in.	—	—	2½	9½	5	11 ⅞	6½	6¼	5¼	3¾	5¾	8	4¾	2¼	132 lbs.	
	mm	35	10	54	242	127	283	155	159	133	95	137	203	118	57	60 kg	

Pump Rotation

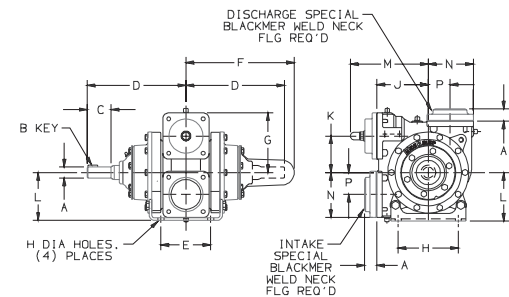
Blackmer's STX pump models are equipped with a double-ended straight-keyed drive shaft for either clockwise (RH) or counterclockwise (LH) rotation.



STX1220A-DEF & STX2A-DEF



STX3-DEF



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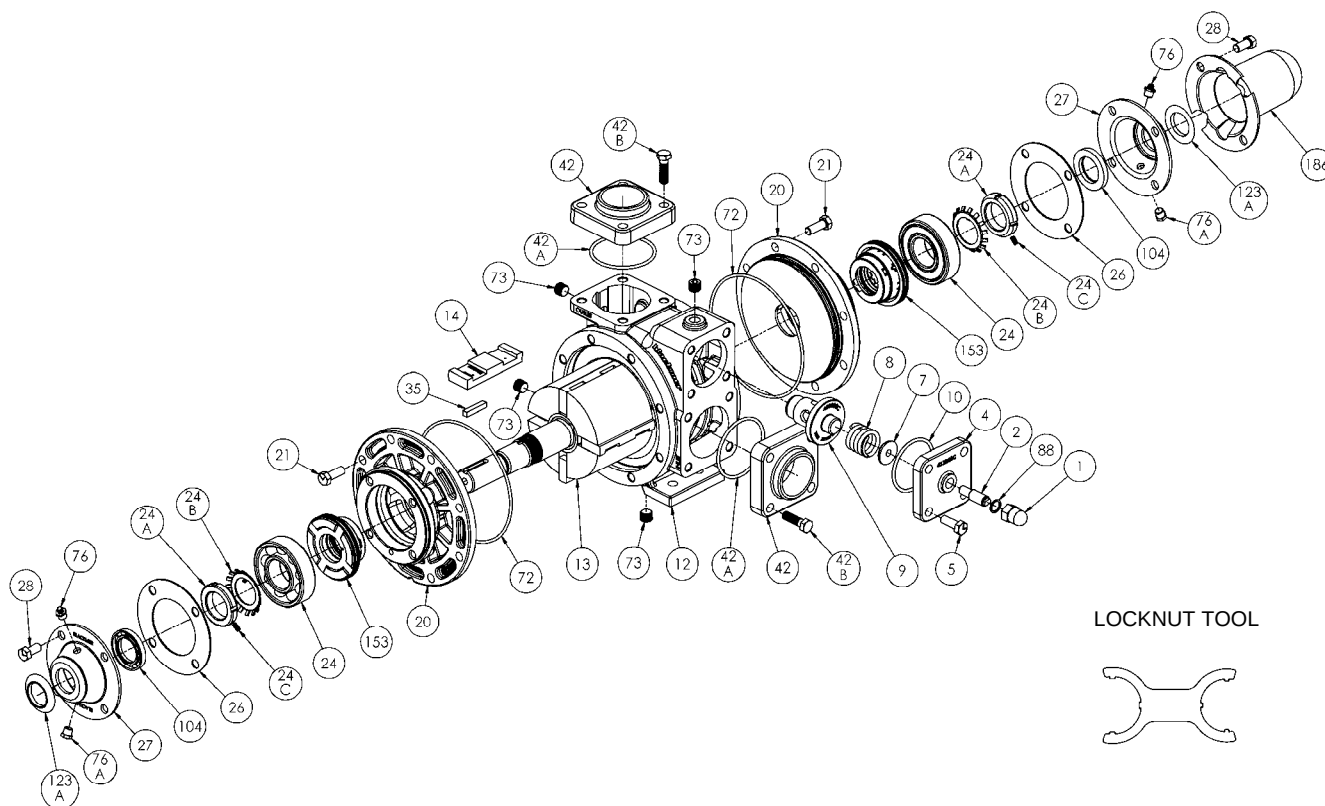
BLACKMER PARTS LIST

MODELS: STX1220A , STX1220A-DEF ¹

Keep with Instructions 203-A00 for Installation, Operation and Maintenance

961830 **PARTS LIST**
Page 1 of 2 **203-A03**

Section 203
Effective Mar 2014
Replaces Mar 2012

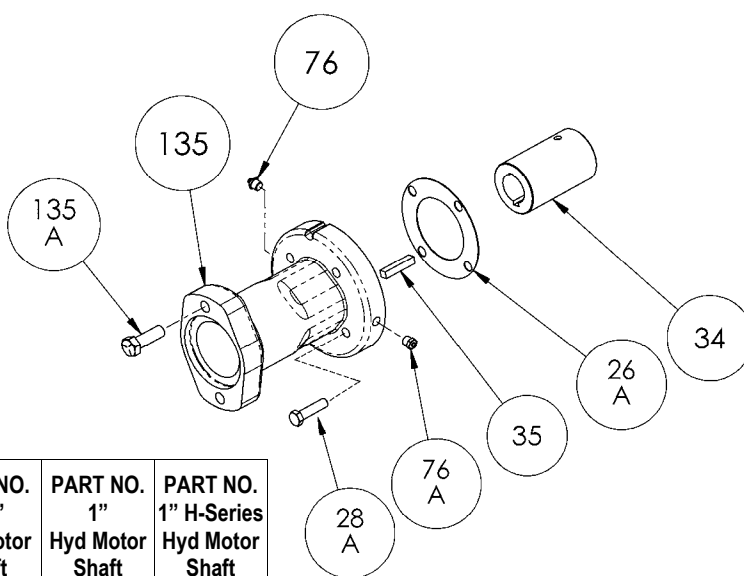
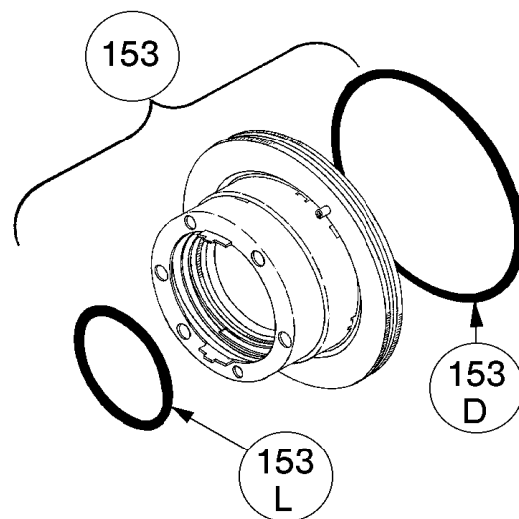


REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.	REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
1	Cap – Relief Valve (R/V)	1	413151	24C	Setscrew – Locknut	2	924060
2	Adjusting Screw – R/V	1	432220	26	Gasket – Bearing Cover	2	381406
4	Cover – R/V	1	412220	27	Bearing Cover	0 – 1	042220
5	Capscrew – R/V Cover	4	920335	28	Capscrew – Bearing Cover	12	920293
7	Spring Guide – R/V	1	423101	35	Key – Shaft	1	909209
8	Spring – R/V (51- 75 psi)	1	471418	42	Flange – 2" Weld	2	651433
	Spring – R/V (76 –110 psi)		471427	42A	O-Ring – Flange, PTFE	2	702056
	Spring – R/V (111-125 psi)		471429	42B	Capscrew – Flange	8	920365
9	Valve – R/V	1	452200	72	O-Ring – Head, PTFE	2	712007
10	O-Ring – R/V Cover, PTFE	1	711999	73	Plug – ¼" NPT	4	908192
12	Cylinder	1	022220	76	Grease Fitting	2	317815
13	Rotor & Shaft	1	262220	76A	Grease Relief Fitting	2	701992
14	Vane – Duravane	4	091419	88	Seal Ring – R/V Cap, PTFE	1	533101
20	Head	2	032220	104	Oil Seal	2	331918
21	Capscrew – Head	20	920335	123A	Dirt Shield	2	701480
24	Bearing	2	903156	153	Mechanical Seal	2	See back
24A	Locknut w/setscrew	2	903583	186	Shaft Protector	1	341601
24B	Lockwasher	2	903522		Tool – Locknut		903091

¹ STX1220A-DEF model requires special cleaning/testing. Consult factory if not familiar with these procedures.

MECHANICAL SEAL

REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete – Silicon Carbide Stationary Seat, PTFE O-Ring, Custom Carbon Rotating Seal Face with PTFE Seal Ring (LACT)	2	332221
153D	O-Ring – Stationary (PTFE)	2	702056
153L	O-Ring – Rotating (PTFE)	2	702109



OPTIONAL HYDRAULIC MOTOR ADAPTER

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-1/4" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft	PART NO. 1" H-Series Hyd Motor Shaft
See Below	Hydraulic Motor Adapter Kit *	See Below	891458	891205	891464
26A	Gasket – Hydraulic Motor Adapter	1	383940	383940	383940
28A	Capscrew – Hydraulic Motor Adapter / Head	4	920369	920369	920369
34	Coupling w/ Setscrew – for straight key hyd. motor shaft	1	906967	906966	906966
35	Key – Coupling	1	909184	N/A	N/A
76	Grease Fitting	1	317815	317815	317815
76A	Grease Relief Fitting	1	701992	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041828	041827	041807
135A	Capscrew – Adapter / Motor	2	920510	920510	920510



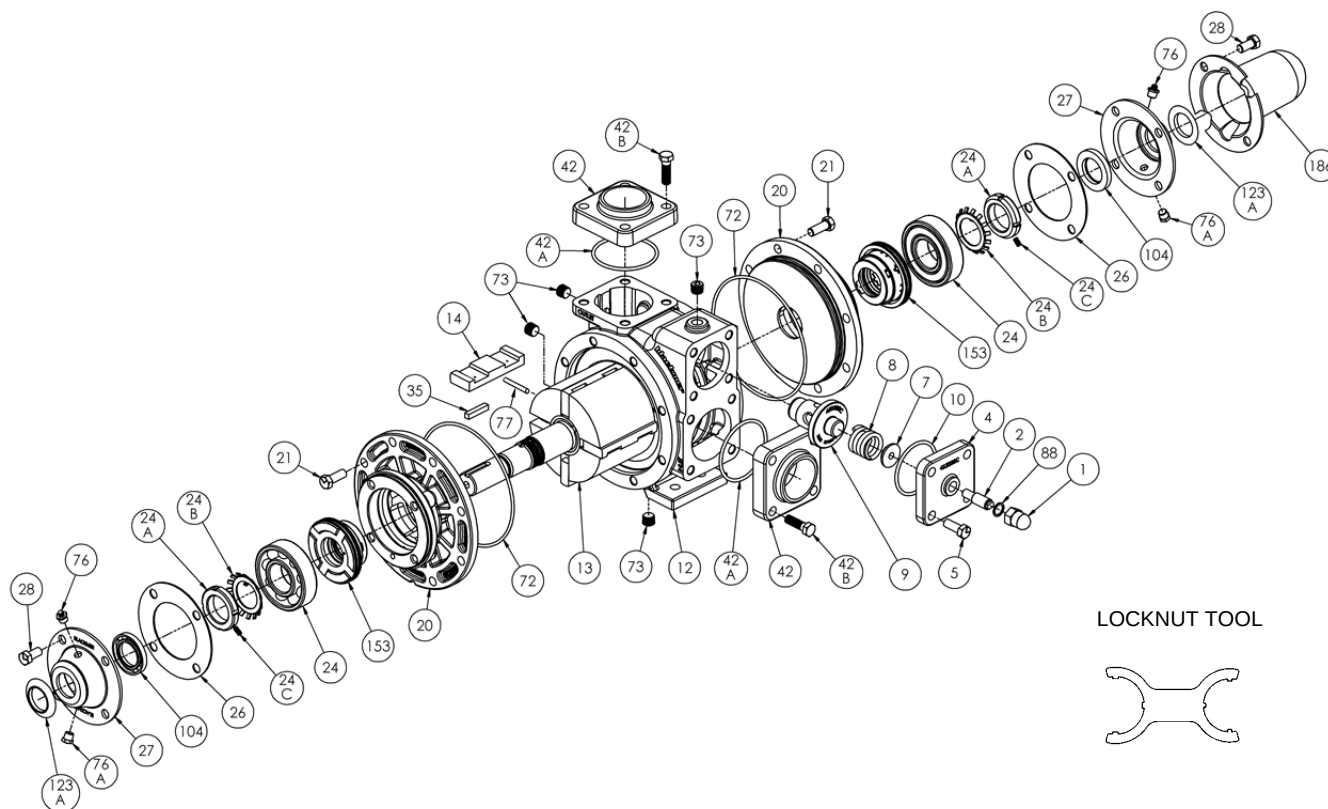
BLACKMER PARTS LIST

MODELS: STX2A , STX2A-DEF ¹

Keep with Instructions 203-A00 for Installation, Operation and Maintenance

961829 **PARTS LIST**
Page 1 of 2 **203-A04**

Section 203
Effective Mar 2014
Replaces Mar 2012

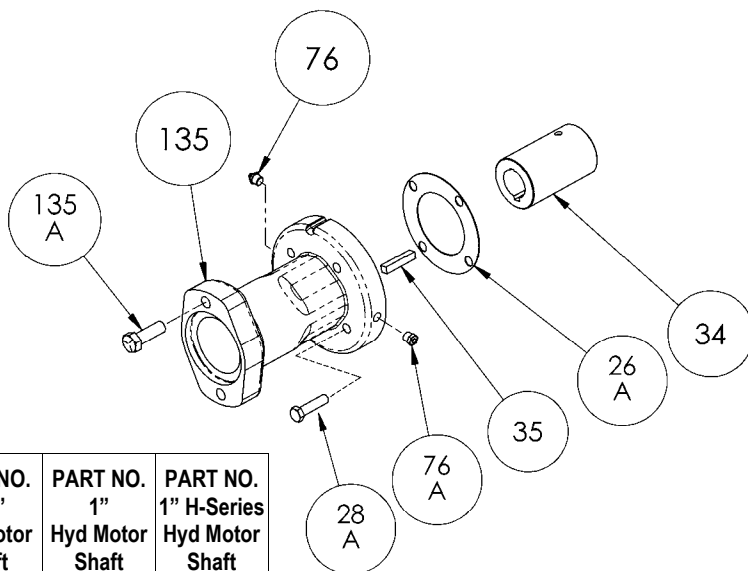
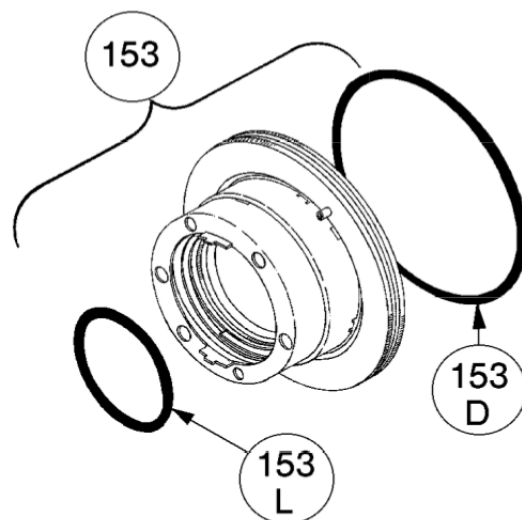


REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.	REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
1	Cap – Relief Valve (R/V)	1	413151	24C	Setscrew – Locknut	2	924060
2	Adjusting Screw – R/V	1	432220	26	Gasket – Bearing Cover	2	381406
4	Cover – R/V	1	412220	27	Bearing Cover	0 – 1	042220
5	Capscrew – R/V Cover	4	920335	28	Capscrew – Bearing Cover	12	920293
7	Spring Guide – R/V	1	423101	35	Key – Shaft	1	909209
8	Spring – R/V (51- 75 psi)	1	471418	42	Flange – 2" Weld	2	651433
	Spring – R/V (76 –110 psi)		471427	42A	O-Ring – Flange, PTFE	2	702056
	Spring – R/V (111-125 psi)		471429	42B	Capscrew – Flange	8	920365
9	Valve – R/V	1	452200	72	O-Ring – Head, PTFE	2	712007
10	O-Ring – R/V Cover, PTFE	1	711999	73	Plug – ¼" NPT	4	908192
12	Cylinder	1	022220	76	Grease Fitting	2	317815
13	Rotor & Shaft	1	262221	76A	Grease Relief Fitting	2	701992
14	Vane – Duravane	4	091419	77	Pushrod	2	123907
20	Head	2	032220	88	Seal Ring – R/V Cap, PTFE	1	533101
21	Capscrew – Head	20	920335	104	Oil Seal	2	331918
24	Bearing	2	903156	123A	Dirt Shield	2	701480
24A	Locknut w/setscrew	2	903583	153	Mechanical Seal	2	See back
24B	Lockwasher	2	903522	186	Shaft Protector	1	341601
					Tool – Locknut		903091

¹ STX2A-DEF model requires special cleaning/testing. Consult factory if not familiar with these procedures.

MECHANICAL SEAL

REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete – Silicon Carbide Stationary Seat, PTFE O-Ring, Custom Carbon Rotating Seal Face with PTFE Seal Ring (LACT)	2	332221
153D	O-Ring – Stationary (PTFE)	2	702056
153L	O-Ring – Rotating (PTFE)	2	702109



OPTIONAL HYDRAULIC MOTOR ADAPTER

REF. NO.	PART NAME	PARTS PER PUMP	PART NO. 1-1/4" Hyd Motor Shaft	PART NO. 1" Hyd Motor Shaft	PART NO. 1" H-Series Hyd Motor Shaft
See Below	Hydraulic Motor Adapter Kit	See Below	891458	891205	891464
26A	Gasket – Hydraulic Motor Adapter	1	383940	383940	383940
28A	Capscrew – Hydraulic Motor Adapter / Head	4	920369	920369	920369
34	Coupling w/ Setscrew – for straight key hyd. motor shaft	1	906967	906966	906966
35	Key – Coupling	1	909184	N/A	N/A
76	Grease Fitting	1	317815	317815	317815
76A	Grease Relief Fitting	1	701992	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041828	041827	041807
135A	Capscrew – Adapter / Motor	2	920510	920510	920510



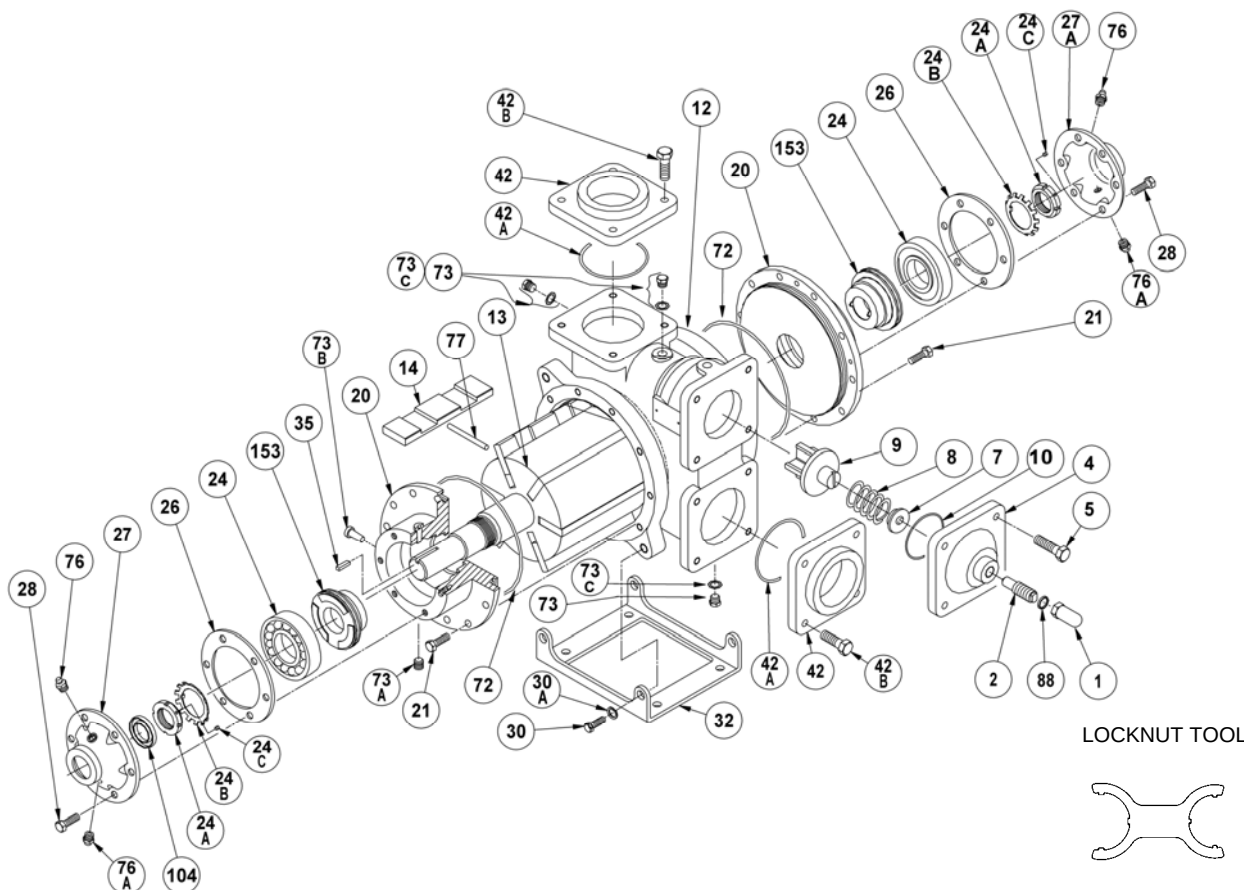
BLACKMER PARTS LIST

MODEL: STX3, STX3-DEF ¹

Keep with Instructions 203-A00 for Installation, Operation and Maintenance

961822 **PARTS LIST**
Page 1 of 2 **203-A01**

Section 203
Effective Dec 2013
Replaces June 2010



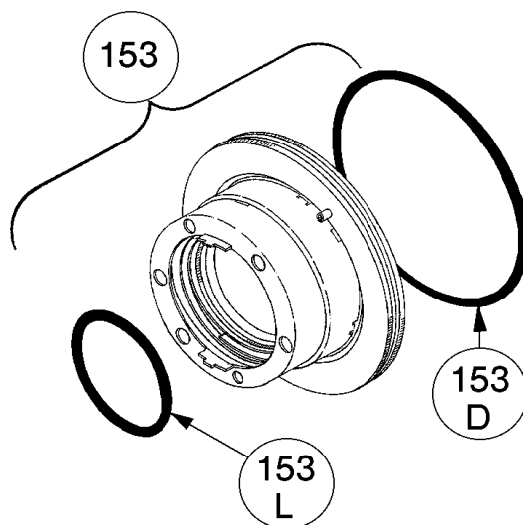
REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.	REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
1	Cap – Relief Valve (R/V)	1	413151	30	Capscrew – Foot Bracket	4	924071
2	Adjusting Screw – R/V	1	433101	30A	Lockwasher – Bracket (12 mm STS)	4	909586
4	Cover – R/V	1	415301	32	Mounting Bracket	1	832225
5	Capscrew – R/V Cover	4	924036	35	Key – Shaft (10mm Metric)	1	909146
7	Spring Guide – R/V	1	423101		Key – Shaft (5/16" Domestic)		909206
8	Spring – R/V (51- 75 psi)	1	471632	42	Flange – 3" Weld	2	652201
	Spring – R/V (76 –110 psi)		471632	42A	O-Ring – Flange, PTFE	2	702101
	Spring – R/V (111-125 psi)		471615	42B	Capscrew – Flange	8	924071
9	Valve – R/V	1	455301	72	O-Ring – Head, PTFE	2	702210
10	O-Ring – R/V Cover, PTFE	1	702079	73	Plug – 1/4" BSPP Hex Head	3	908201
12	Cylinder	1	022225	73A	Pipe Plug – 1/4" NPT Socket Head	2	908192
13	Rotor & Shaft	1	262225	73B	Plug – Weep Hole	4	340000
14	Vane – Duravane	6	094500	73C	Gasket	3	533101
20	Head	2	032227	76	Grease Fitting	2	317815
21	Capscrew – Head	20	924036	76A	Grease Relief Fitting	2	701992
24	Bearing	2	903172	77	Push Rod	3	122225
24A	Locknut w/setscrew	2	903582	88	Seal Ring – R/V Cap, PTFE	1	533101
24B	Lockwasher	2	903524	104	Oil Seal	2	331908
24C	Setscrew – Locknut	2	924060	153	Mechanical Seal	2	332260
26	Gasket – Bearing Cover	2	381817	186	Shaft Protector	1	341801
27	Bearing Cover	0 – 1	042225		Tool – Locknut		903091
28	Capscrew – Bearing Cover	12	924031				

¹ STX3-DEF model requires special cleaning/testing. Consult factory if not familiar with these procedures.

MECHANICAL SEAL

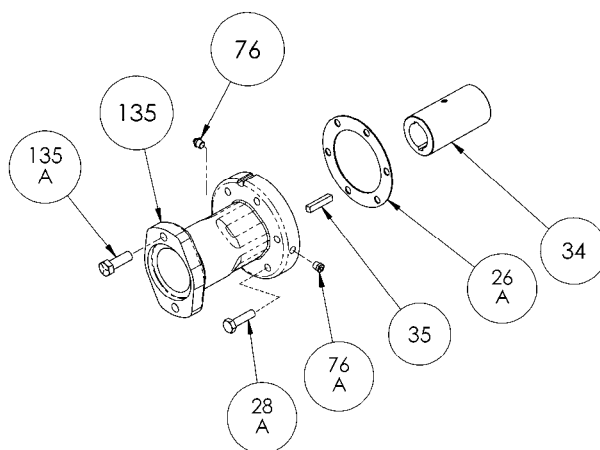
REF. NO.	DESCRIPTION	PARTS PER PUMP	PART NO.
153	Mechanical Seal Complete – Silicon Carbide Stationary Seat, PTFE O-Ring, Custom Carbon Rotating Seal Face with PTFE Seal Ring (LACT)	2	332260
153D	O-Ring – Stationary (PTFE)	2	702080
153L	Seal Ring – PTFE	2	**

** 153L PTFE Seal Ring is not available as a separate part.



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

REF. NO.	PART NAME	PARTS PER PUMP	PART NO.
---	Hydraulic Motor Adapter Kit *	See Below	892228
26A	Gasket – Hydraulic Motor Adapter	1	381817
28A	Capscrew – Hydraulic Motor Adapter / head	6	924037
34	Coupling w/ Setscrew – 1.25" straight key hyd. motor shaft	1	906969
35	Key – Coupling	1	909184
76	Grease Fitting	1	317815
76A	Grease Relief Fitting	1	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041829
135A	Capscrew – Adapter / Motor	2	920510





Transmax TX206A Sliding Vane Transport Pumps

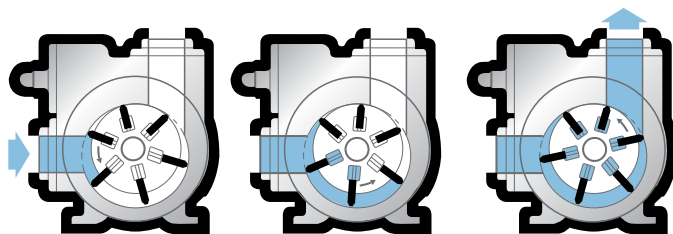


Hydraulic Drive



PTO Drive

How Blackmer's sliding vane action works



Design

The unique open rotor design makes the Transmax highly versatile. The sliding vane design provides sustained high-performance capabilities including self-priming and line clearing.

Application

The TX206A is capable of pumping thin to thick liquids from 30 to 50,000 ssu (7 to 10,500 cP) with sustained performance at rated P.T.O. speeds, maximum 800 rpm.

Benefit

The Transmax is self-priming and capable of line clearing; these benefits are not found with existing gear pumps. Also, the Transmax is specifically designed for easy cleaning. Multiple drain ports allow for proper flushing in a variety of mounting positions.

Hydraulic Drive Options

Blackmer offers fully-integrated hydraulic drive systems including pumps, motors, close coupled hydraulic motor adapters, control valves, P.T.O.'s and coolers.



Transmax TX206A

Sliding Vane Transport Pumps

Characteristic Flow Rates at 75 psi (5.2 bar)

Pump Model	Speed	100 ssu (22 cSt)		10,000 ssu (2,157 cSt)		50,000 ssu (10,500 cSt)	
	rpm	gpm	L/min	gpm	L/min	gpm	L/min
TX206A	400	94	355	104	393	101	382
	500	122	461	131	495	126	477
	600	147	556	157	594	152	575
	700	174	658	184	696	169	639
	800	203	768	206	780	—	—

Note: Optional materials of construction may be required to meet specific application requirements – please refer to Blackmer Material of Construction pages.

For operating limits that exceed those listed – consult factory.

*Standard construction rated at 150°F (66°C).

Optional Pipe Flanges

Pump Model	Description
TX206A	3" NPT 3" Weld

Sales Information and Equipment Application Assistance

Blackmer has a world wide distribution network to assist you in specifying any of our family of pumps, compressors and other equipment for your application.

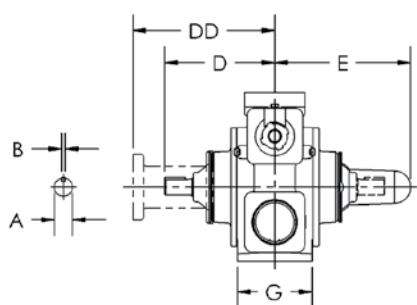
For more information, or to find the distributor nearest to you, please contact us at the telephone, fax or internet address listed below.

Maximum Operating Limits

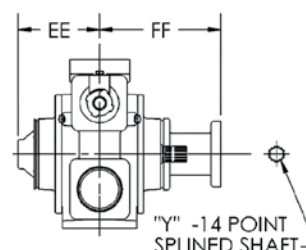
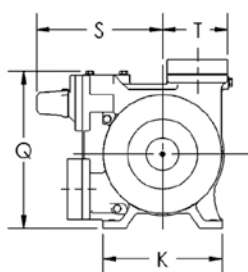
Pump Model	Nominal Flow Rate		Pump Speed	Viscosity		Differential Pressure		Working Pressure		Temperature	
	gpm	L/min	rpm	ssu	cSt	psi	bar	psi	bar	°F	°C
TX206A	206	780	800	50,000	10,500	125	8.62	175	12.06	300	149

Pump Dimensions

Pump Model		A	B	D	E	G	K	Q	S	T	Y	DD	EE	FF	Weight
TX206A	in.	1 ¹ / ₄	5 ⁵ / ₁₆	8 ¹¹ / ₁₆	10 ⁵ / ₈	5 ⁷ / ₈	9 ³ / ₈	12 ³ / ₈	10	5 ¹ / ₈	1 ¹ / ₄	11 ³ / ₁₆	6 ⁷ / ₁₆	9 ⁹ / ₁₆	146 lbs
	mm	—	—	221	270	149	238	314	254	130	32	284	164	243	66 kgs



Keyed Shaft and Hydraulic Drive Option



Splined Shaft Hydraulic Drive Option
(left hand rotation only)



Process | Energy | Military & Marine

BLACKMER PARTS LIST

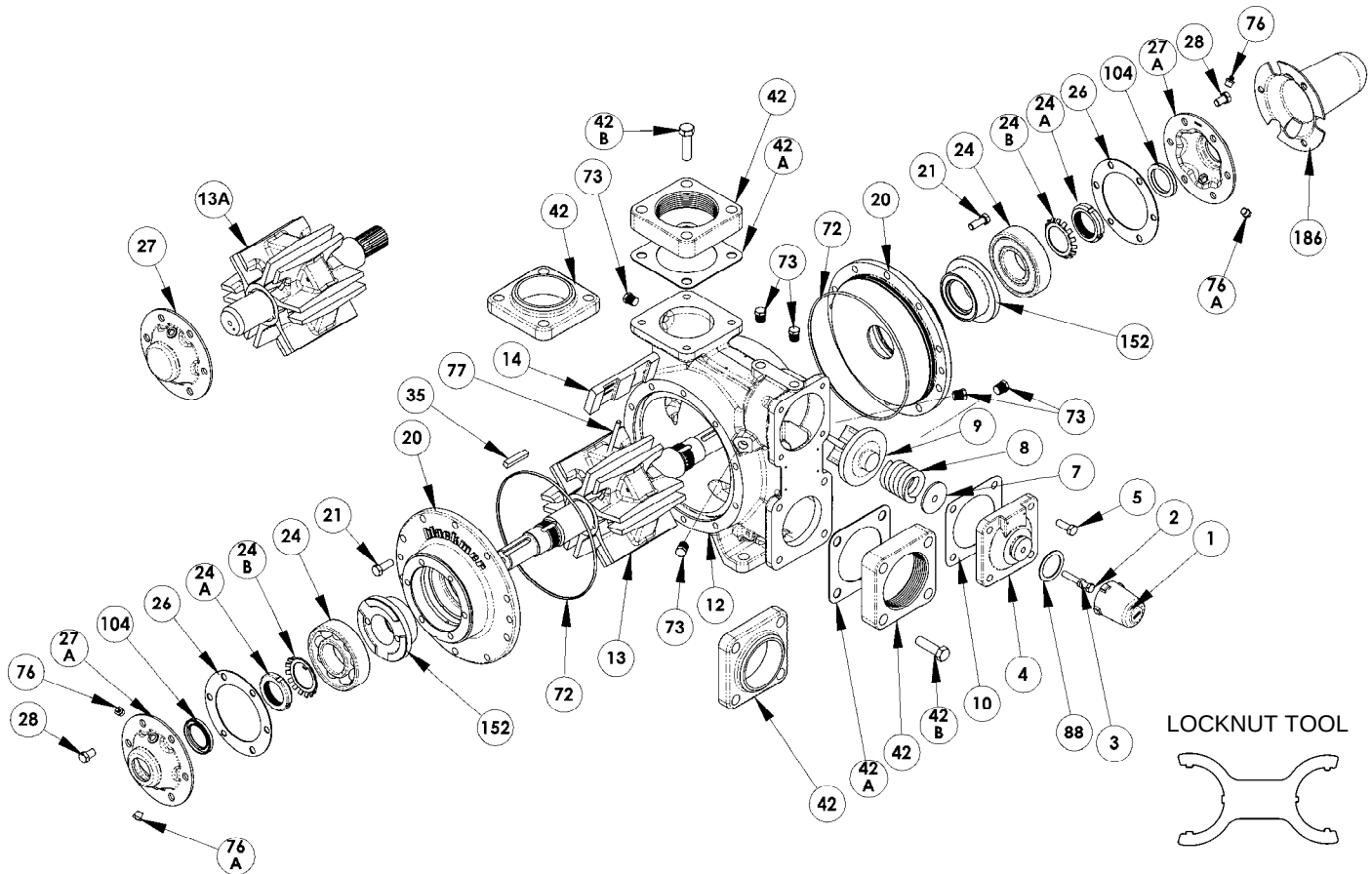
PUMP MODEL: TX206A

Keep with Instructions 205-B00 for Installation, Operation and Maintenance

961817
Page 1 of 2

PARTS LIST
205-B01

Section 205
Effective Sept 2009
Replaces Sept 2007

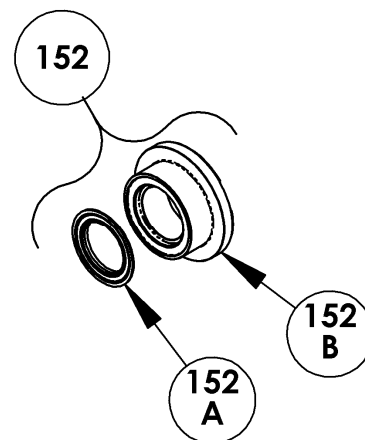


Ref. No.	Description	Parts per Pump	Part No.	Ref. No.	Description	Parts per Pump	Part No.
1	Cap – Relief Valve (R/V)	1	413957	27	Bearing Cover – Outboard, Splined Shaft	0-1	041817
2	Adjusting Screw – R/V	1	431808	27A	Bearing Cover	1-2	041815
3	Locknut – Adjusting Screw	1	922923	28	Capscrew – Bearing Cover	12	920285
4	Cover – R/V	1	411807	35	Key – Shaft	1	909184
5	Capscrew – R/V	4	920331	42	Flange – 3" NPT - Std.	2	651803
7	Spring Guide – R/V	1	421805	42A	Flange – 3" Weld	2	655102
8	SS Spring - R/V (76 -110 psi)-Std	1	471807	42B	Gasket – Flange	2	381816
	SS Spring - R/V (111-125 psi)		471808	42B	Capscrews – NPT Flange	8	920532
9	Valve – R/V (Plated)	1	451808	42B	Capscrews – Weld Flange		920510
10	Gasket – R/V Cover	1	531803	72	O-Ring – Head (FKM) - Std.	2	702121
12	Cylinder	1	021821	72	O-Ring – Head (PTFE)		702235
13	Rotor & Shaft (DE Keyed) ¹	1	261830	73	Plug – ¼" NPT	6	908198
13A	Splined SE Rotor & Shaft - LH Only	1	261831	76	Grease Fitting	2	317815
14	Vane – Duravane	6	091819	76A	Grease Relief Fitting	2	701992
20	Head	2	031872	77	Push Rod	3	121813
21	Capscrew – Head	20	920331	88	Seal Ring – R/V Cap	1	533908
24	Bearing	2	903172	104	Oil Seal	2	331908
24A	Locknut	2	903523	152	Lip Seal Assembly -Std.	2	335221
24B	Lockwasher	2	903524	186	Shaft Protector	0-1	341801
26	Gasket – Bearing Cover	2	381817		Tool – Locknut		903091
					Hydraulic Motor Adapter Kit (SAE A)		See Backside

¹ Includes 24A and 24B.

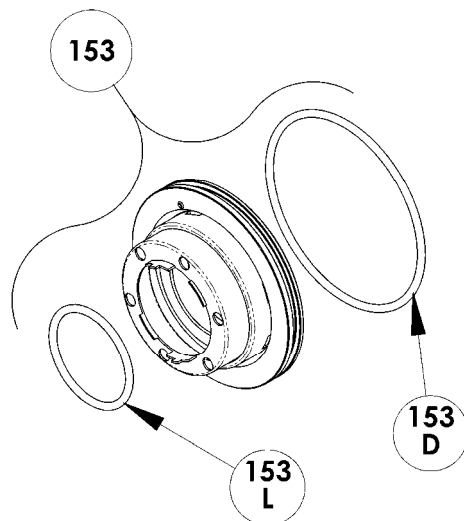
LIP SEAL - STANDARD

Ref. No.	Part Name	Parts Per Pump	Part No.
152	Lip Seal Complete	2	335221
152A	Lip Seal– Stationary (Turcon)	2	331759
152B	Housing - Lip Seal	2	335222



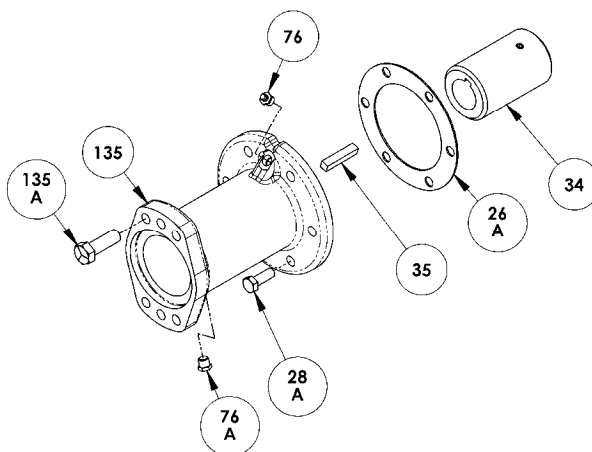
MECHANICAL SEAL - OPTIONAL

Ref. No.	Part Name	Parts Per Pump	Part No.
153	Mechanical Seal Complete – Cast Iron Stationary Seat, Carbon Seal Face, FKM O-Rings. – IVCV	2	331883
153D	O-Ring – Stationary (FKM)	2	711931
153L	O-Ring – Rotating (FKM)	2	701962



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

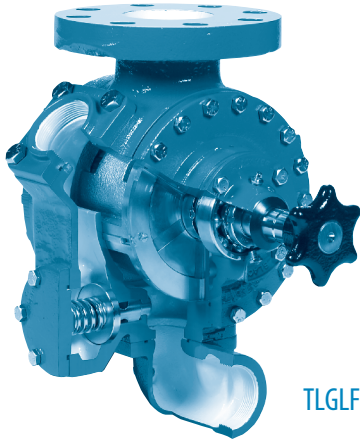
REF. NO.	PART NAME	PARTS PER PUMP	PART NO. STD SHAFT	PART NO. SPLINED SHAFT
See Below	Hydraulic Motor Adapter Kit *	See Below	895141	895142
26A	Gasket – Hydraulic Motor Adapter	1	381817	381817
28A	Capscrew – Hydraulic Motor Adapter / Head	6	920331	920331
34	Coupling w/ Setscrew – 1.25" straight key	1	906970	N/A
	Coupling – 1.25", 14 Point Splined Shaft		N/A	906009
35	Key – Coupling	1	909184	N/A
76	Grease Fitting	1	317815	317815
76A	Grease Relief Fitting	1	701992	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041806	041803
135A	Capscrew – Adapter / Motor	2	920510	920510



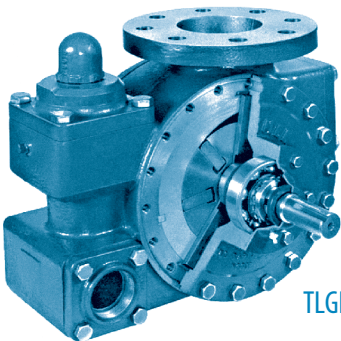


TLGLF3 & TLGLF4 Pumps

Flange Mounted Pumps for Bobtails and Transports



TLGLF3 cutaway



TLGLF4 cutaway

Blackmer TLGLF3 and TLGLF4 pumps are designed to 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 result is smoother operation and longer pump life.

Both models are equipped with a double-ended drive shaft for clockwise or counterclockwise rotation by simply changing position of the pump. Each model also has an auxiliary intake port which can be used for emergency unloading of another tank or transport. In addition, these pumps have an internal relief valve, patented cavitation suppression liners to reduce noise, vibration and wear.

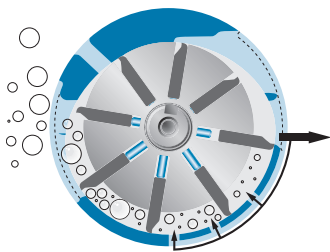
Standard construction materials for both models include Buna-N mechanical seals and Duravanes for handling both LP gas and anhydrous ammonia. The casing liner and end discs are replaceable for easy rebuilding of the pumping chamber if ever necessary.

The TLGLF3 is widely used on bobtails because of its compact mounting arrangement, with a 3-inch ANSI intake flange and 2-inch auxiliary intake and discharge ports. Capacities range from 60 to 129 U.S. gpm (227 to 488 L/min).

The TLGLF4 offers maximum output rates, and fast turnaround time for transports. It is designed with 4-inch ANSI intake flange, a 3-inch auxiliary intake port, and twin 2-inch discharge ports which permit the use of two hoses, if necessary, to reduce pressure loss when unloading into restrictive receiving systems. Capacities range from 200 to 350 U.S. gpm (757–1,325 L/min).

Maximum differential pressure for both models is 125 psi (8.62 bar).

Cavitation Suppression Liners Reduce Noise



Blackmer TLGLF pumps feature noise suppression liners. This patented technology reduces noise at its source by reducing the amount of cavitation in the pump. Reducing the cavitation level also reduces vibration and wear.

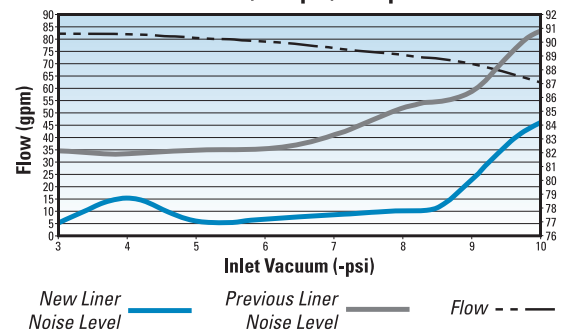
The sudden collapse of vapor bubbles inside the pump is known as cavitation. By allowing a controlled amount of fluid at discharge pressure

to bleed back toward the suction of the pump, the vapor bubbles are collapsed over a longer period time. The net result is less noise, less vibration and less wear.

As shown in the chart, the reduction in noise level can be quite dramatic. Similar noise reductions have been measured in the TLGLF4 pumps.

Patent number: 6,030,191

Flow and Noise vs. Inlet Vacuum
TLGLF3, 125 psi, 640 rpm



Hydraulic Drive Packages

Blackmer offers complete Hydraulic Drive packages for all LPG mobile applications. The Hydrive cooler by Mouvéx®, a Dover® Company, forms the heart of the system. The stainless steel cooler offers up to 26 HP (19.4 kW) of actual heat dissipation. Hydraulic motor adapter kits are available for all Blackmer LPG mobile pumps.

Selection Data

Pump delivery and brake horsepower requirements are listed in the table below for various differential pressures. The same data for all pressures is provided in the performance curves below.

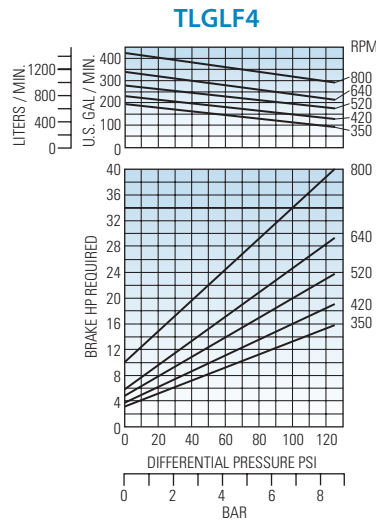
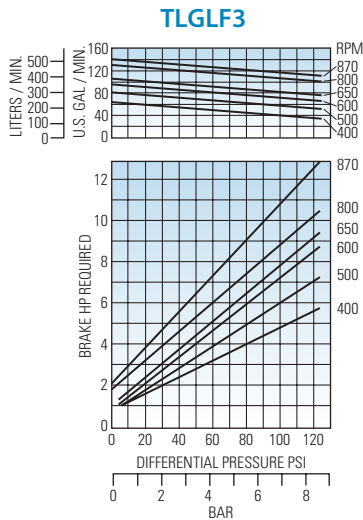
Standard Pump		Pump Speed rpm	Approximate Delivery of Propane at Differential Pressures and Pump Speeds Shown ¹												Maximum Differential Pressure		Maximum Working Pressure ²	
Model	Factory Relief Valve Setting		50 psi (3.45 bar)						100 psi (6.89 bar)						psi	bar	psi	bar
			gpm	L/min	BHp	kW	Torque		gpm	L/min	BHp	kW	Torque					
							ft-lb	Kg-m					ft-lb	Kg-m				
TLGLF3	150 psi (10.34 bar)	870	129	488	6.5	4.8	45.9	6.3	119	450	10.9	8.1	72.5	10	125	8.62	350	24.13
		800	118	446	5.1	3.8	44.2	6.1	107	405	8.7	6.5	69.7	9.6	125	8.62	350	24.13
		650	93	352	4.3	3.2	40.4	5.6	83	314	7.9	5.9	63.7	8.8	125	8.62	350	24.13
		600	85	322	4	3	39.3	5.4	75	284	7.1	5.3	62.2	8.6	125	8.62	350	24.13
		500	70	265	3.6	2.7	37.4	5.2	68	257	6	4.5	61.5	8.5	125	8.62	350	24.13
		400	52	197	2.8	2.1	36.2	5	40	151	4.8	3.6	60.8	8.4	125	8.62	350	24.13
TLGLF4	150 psi (10.34 bar)	800	350	1,325	22	16	143	20	306	1,158	34	25	223	31	125	8.62	350	24.13
		650	280	1,060	15.5	11.6	125.2	17.3	245	927	25.0	18.6	201.9	27.9	125	8.62	350	24.13
		600	260	984	14.3	10.7	125.1	17.3	220	833	23.0	17.2	201.3	27.8	125	8.62	350	24.13
		500	210	795	11.9	8.9	125.0	17.3	170	644	19.0	14.2	199.5	27.6	125	8.62	350	24.13
		400	160	606	9.5	7.1	124.7	17.2	120	454	15.2	11.3	199.5	27.6	125	8.62	350	24.13

¹ Check the pump's delivery and brake horsepower requirements in the performance curves below. See footnote with the curves which explains the factors that can cause delivery to vary.

² Maximum rated working pressure is 350 psi (24.13 bar) for LPG and NH₃ (limited by U.L. and N.F.P.A. 58).

Note: Refer to back cover for external bypass valve information.

Performance Curves



NOTE: Blackmer Characteristic Curves are based on Brake Horsepower (BHp). To determine Motor Horsepower, drive train inefficiencies must be added to the BHp.

These curves are based on approximate delivery rates when handling propane or anhydrous ammonia at 80°F (26.7°C). Line restrictions such as excess flow valves, elbows, etc., will adversely effect deliveries. For propane at 32°F (0°C), actual delivery will be further reduced to about 80% of nominal. Delivery of butane at 80°F (26.7°C) will be 60 to 70% of these values, and may run as low as 35 to 45% at 32°F (0°C). This loss of delivery is not a pump characteristic but is caused by natural thermodynamic phenomena of liquefied gases.

LPG Pump Warranty – One Year Performance Assurance

Should any Blackmer LPG pump (LGL, TLGL, LG and LDF models) or bypass valve fail in the transfer of propane, butane and propane/butane mixture within one (1) year of the original installation or eighteen (18) months after shipment from the factory, regardless of cause (except for intentional or gross misuse), free replacement components will be provided to return the pump to as new performance.

This offer is limited to one claim per installation.

PLEASE NOTE: For the One Year Performance Assurance to be valid, a Blackmer Pump Warranty Registration must be supplied to Blackmer via web registration or postcard.

For additional information, see Blackmer LPG Pump Warranty page #001-004.

Available Companion Flanges and Flanged Elbows

Standard Pump	Discharge	Auxiliary Intake	Intake
TLGLF3	2" NPT Flanged Elbow	2" NPT Flanged	3" 300 lb. ANSI Mounting Flange
	2" NPT Flanged Elbow	2" NPT Flanged Elbow	
	2" Weld Flanged Elbow	2" Weld Flanged	
	2" Weld Flanged Elbow	2" Weld Flanged Elbow	
	Twin 2" NPT Flanges	Blanking Flange	
TLGLF4	Twin 2" NPT Flanges	3" NPT Flanged	4" 300 lb. ANSI Mounting Flange
	Twin 2" Weld Flanges	3" Weld Flanged	
	Twin 2" NPT Flanges	Blanking Flange	
	Twin 2" NPT Flanges	4" Weld Flanged	

BLACKMER PARTS LIST

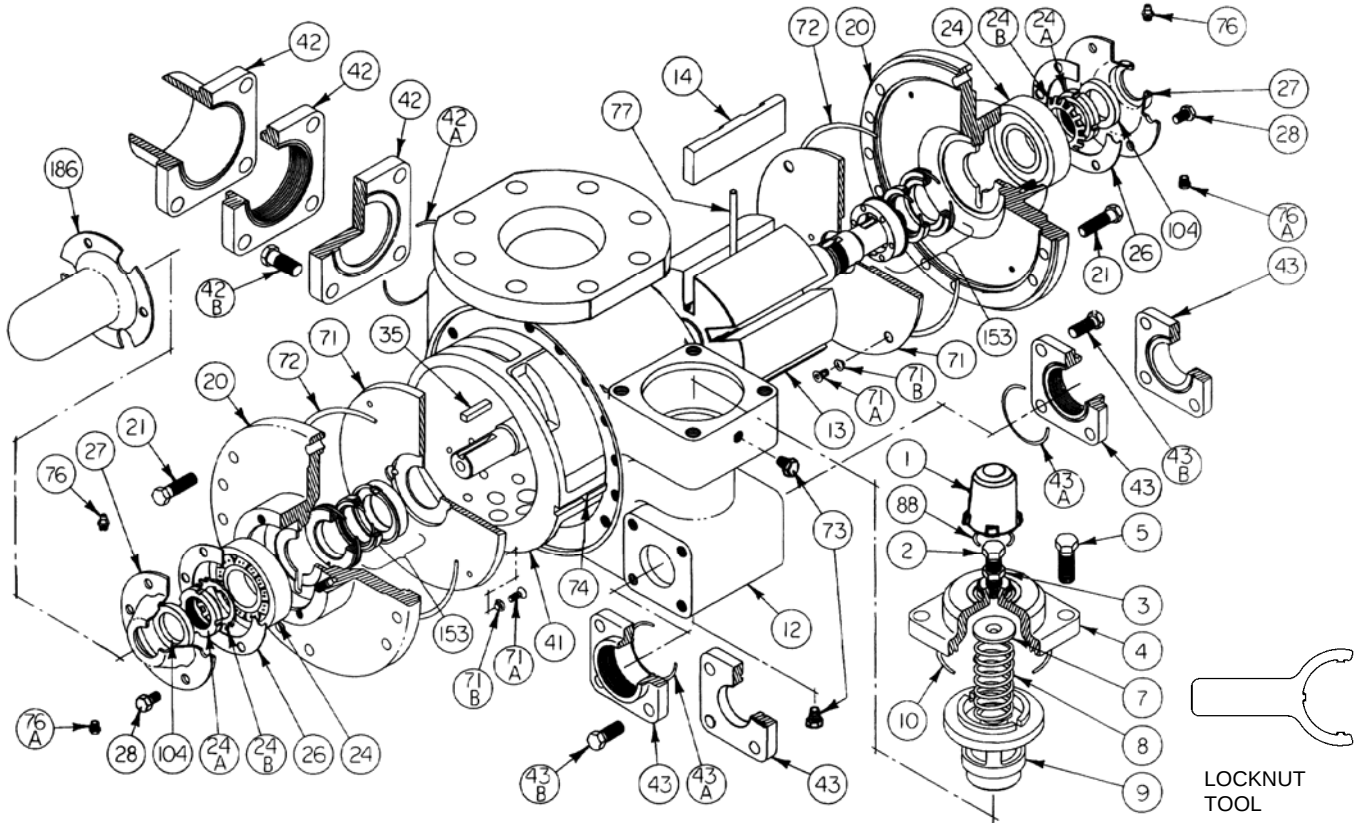
PUMP MODEL: TLGLF4B

962011
Page 1 of 2

PARTS LIST
501-E03

Keep with 501-E00 for Installation, Operation and Maintenance Instructions

Section 501
Effective Jun 2011
Replaces Jan 2010



Ref. No.	Description	Parts Per Pump	Part No.	Ref. No.	Description	Parts Per Pump	Part No.
1	Cap - Relief Valve (R/V)	1	413957	42A	O-Ring – Aux. Inlet Flanges	1	701937
2	Adjusting Screw - R/V	1	436310	42B	Capscrew - 3" NPT Flange	4	920663
3	Locknut - Adjusting Screw	1	432039		Capscrew - 3", 4" Weld Flange; Blank Flange		920640
4	Cover - R/V	1	412001	TWIN DISCHARGE PORT OPTIONS			
5	Capscrews - R/V Cover	4	920663	43	Flange - 2" NPT	2	652010
7	Spring Guide - R/V	1	426355		Flange - 2" Slip-on Weld		652024
8	Spring - R/V	1	¹ 472039	43A	O-Ring - 2" Discharge Flanges	2	¹ 702004
9	Valve - R/V	1	452001	43B	Capscrew - Discharge Flange	8	920491
10	O-Ring - R/V Cover	1	¹ 701946	71	Disc	2	¹ 062039
12	Casing	1	012041	71A	Machine Screw - Disc	8	² 920015
13	Rotor & Shaft Asy. (includes Ref. No. 24A & 24B)	1	² 262041	71B	Lockwasher - Machine Screw	8	² 909634
14	Vane - Duravane	6	¹ 092019	72	O-Ring - Head	2	¹ 702039
20	Head	2	032041	73	Gage Plug	2	908198
21	Capscrews - Head	28	920532	74	Key - Liner	1	² 182040
24	Ball Bearing	2	¹ 903166	76	Grease Fitting	2	317815
24A	Locknut - Bearing	2	² 903541	76A	Grease Relief Fitting	2	701992
24B	Lockwasher - Bearing	2	¹ 903542	77	Push Rod - Composite	3	¹ 122009
26	Gasket - Bearing Cover	2	¹ 385125	88	O-Ring - R/V Cap	1	¹ 701926
27	Bearing Cover	2	041815	104	Grease Seal	2	¹ 331908
28	Capscrews - Bearing Cover	12	920285	186	Shaft, Protector	1	341801
35	Key - Shaft	1	¹ 909183		Tool - Locknut		903092
41	Liner	1	² 182000		Kit – Maintenance		898922
AUXILIARY INLET OPTIONS					Kit – Rebuild		899022
42	Flange - 3" NPT	1	652012	¹ Included in Maintenance Kit and Rebuild Kit			
	Flange - 4" Weld		652005	² Included in Rebuild Kit			
	Flange - 3" Weld		652007				
	Flange - Blank		652000				

7-35

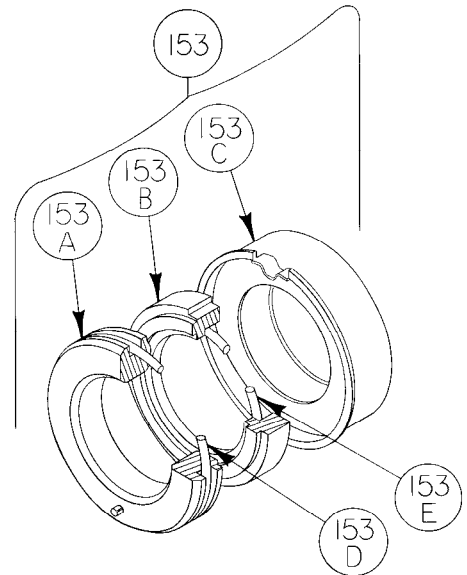
www.wertswelding.com

MECHANICAL SEAL

Ref. No.	Part Name	Parts Per Pump	Part No.
153	Mechanical Seal Assembly	2	¹ 332050
153A	Stationary Seat (Hardened Steel)	2	**
153B	Seal Face (Carbon)	2	**
153C	Jacket Assembly	2	**
153D	O-Ring - Stationary (Buna-N)	2	701934
153E	O-Ring - Rotating (Buna-N)	2	711912

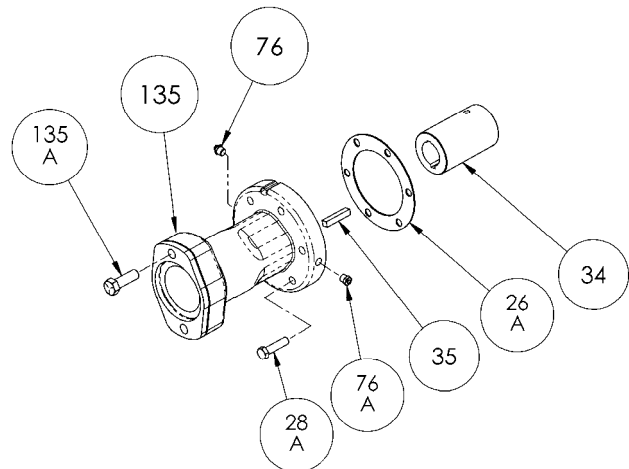
¹ Included in Maintenance Kit and Rebuild Kit

** NOTE: Mechanical Seal Assy. (Ref. 153) is only sold as a complete assembly.
Ref. Nos. 153A, 153B & 153C are not available as separate replacement parts.



OPTIONAL HYDRAULIC MOTOR ADAPTER PARTS

Ref. No.	Part Name	Parts Per Pump	Part No.
See Below	Hydraulic Motor Adapter Kit	See Below	892037
26A	Gasket – Hydraulic Motor Adapter	1	381817
28A	Capscrew – Hydraulic Motor Adapter / Head	6	920369
34	Coupling w/ Setscrew – 1.25" straight key hyd. motor shaft	1	906970
35	Key – Coupling	1	909184
76	Grease Fitting	1	317815
76A	Grease Relief Fitting	1	701992
135	Hydraulic Motor Adapter – SAE A Flange	1	041829
135A	Capscrew – Adapter / Motor	2	920510



BLACKMER PARTS LIST

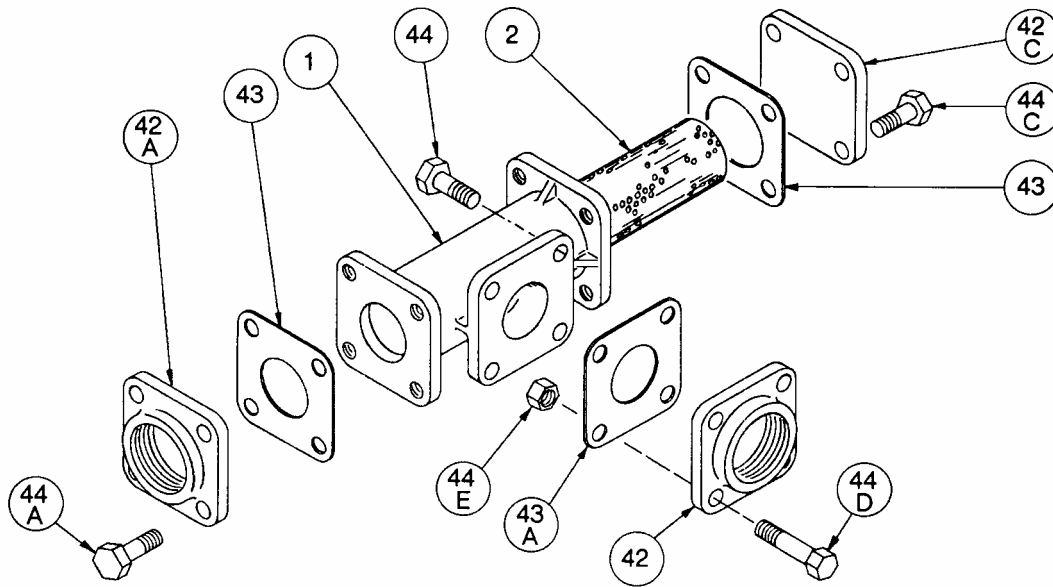
With Installation and Maintenance Instructions

T-TYPE TRUCK PUMP STRAINERS

FOR PUMP SIZES: 2", 2.5", 3"

960326 **PARTS LIST**
Page 1 of 2 **201-B00**

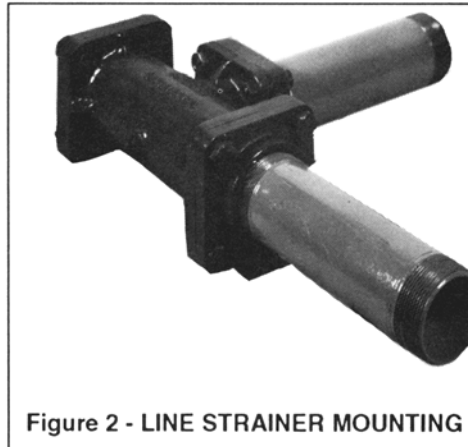
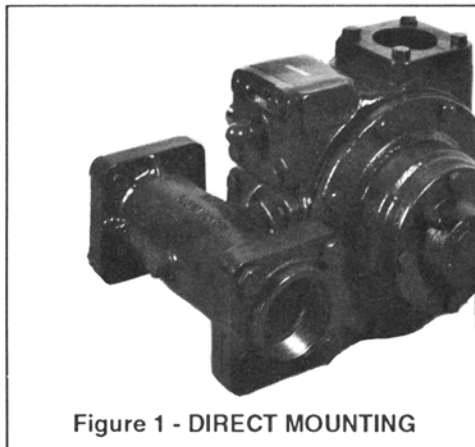
Section	201
Effective	Oct 2006
Replaces	July 2001



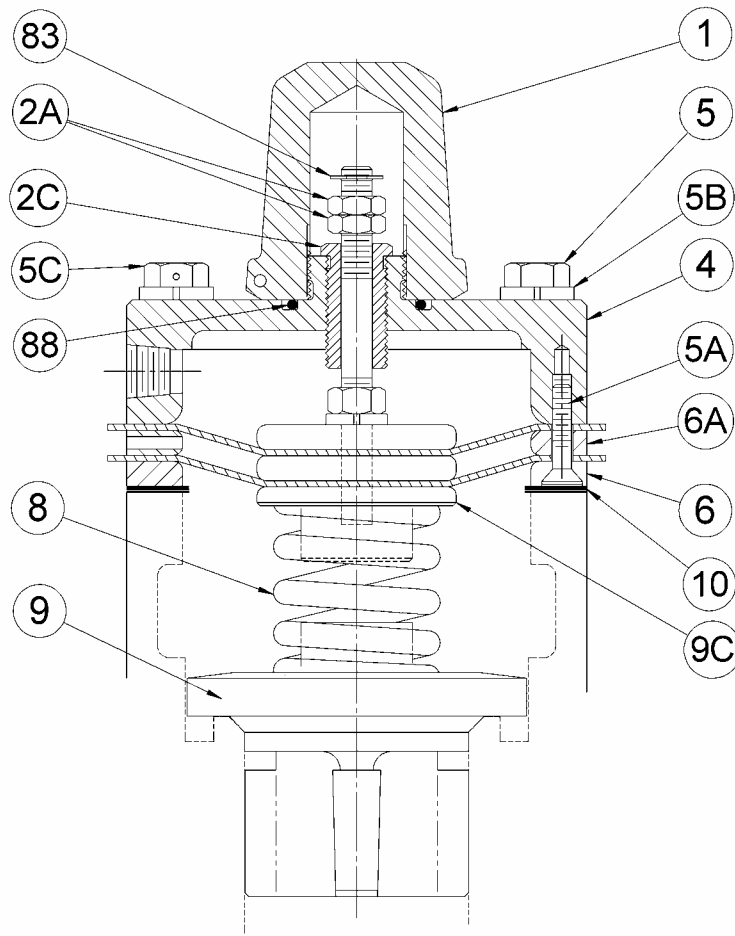
Ref. No.	Description	Qty.	Part No. 2" Size	Part No 2.5" Size	Part No 3" Size
1	Strainer Assembly	1	740053	740056	740061
2	Strainer Basket	1	621608	621612	621801
42	Body Flange - Plain ²	0 - 1	651411	651611	651803
42A	Inlet Flange - Plain	1	651603	651611	651803
42C	Strainer Cover	1	611431	611633	611831
43	Gasket - Inlet Flange, Strainer Cover	2	381650	381650	381816
43A	Gasket - Body Flange	1	381421	381650	381816
44	Capscrew - Strainer Body ¹	0 - 4	920331	920471	920491
44A	Capscrew - 2" Inlet Flange	4	920471	920471	—
	Capscrew - 2 1/2" Inlet Flange		—	920532	—
	Capscrew - 3" Inlet Flange		—	—	920532
	Capscrew - Strainer Cover		920471	920471	920491
44C	Capscrew - Strainer Cover	4	920471	920471	920491
44D	Mounting Bolt - Body Flange ²	0 - 4	920381	920547	920547
44E	Nut - Mounting Bolt ²	0 - 4	922841	922850	922850

¹ For direct pump mounting use Ref. Nos. 43A and 44.

² For intake line mounting use Ref. Nos. 42, 43A, 44D and 44E.



PARTS LIST



REF. NO.	PART NAME	PARTS PER VALVE	TXD2A-AVA PART NO.	TXD2.5A-AVA, TX200B-AVA PART NO.	TXD3E-AVA PART NO.	TXH3A-AVA, PART NO.
1	Cap	1	411754	411754	411754	411753
2A	Locknut	2	922923	922923	922923	922923
2C	Adjustment Bushing	1	501701	501701	501701	501701
4	Cover	1	411406	411703	411705	411703
5	Capscrew	3-4	920444	920444	920444	920239
5A	Machine Screw	2	922216	922216	922216	922216
5B	Lockwasher	4	909649	909649	909649	909693
5C	Capscrew w/ Hole	0-1	920433	920433	920433	—
6	Plate	1	701400	701735	701737	701735
6A	Vent Plate	1	701418	701618	701818	701618
8	Spring	1	471429	471621	471806	471621
9	Valve **	1	451417	451623	451807	451623
9C	Diaphragm Assembly	1	871175	871180	871185	871180
10	Gasket	1	531403	531603	531803	531603
83	Snap Ring	1	903581	903581	903581	903581
88	O-Ring	1	711917	711917	711917	711917
	A/V Conversion Kit **	—	891454	891696	891798	891799

* NOTE: The double diaphragm air valve assembly replaced the single diaphragm assembly in Aug. 1991.

** A/V Conversion Kit includes all above parts EXCEPT the Valve (ref. 9).

PARTS LIST

Fig. 1

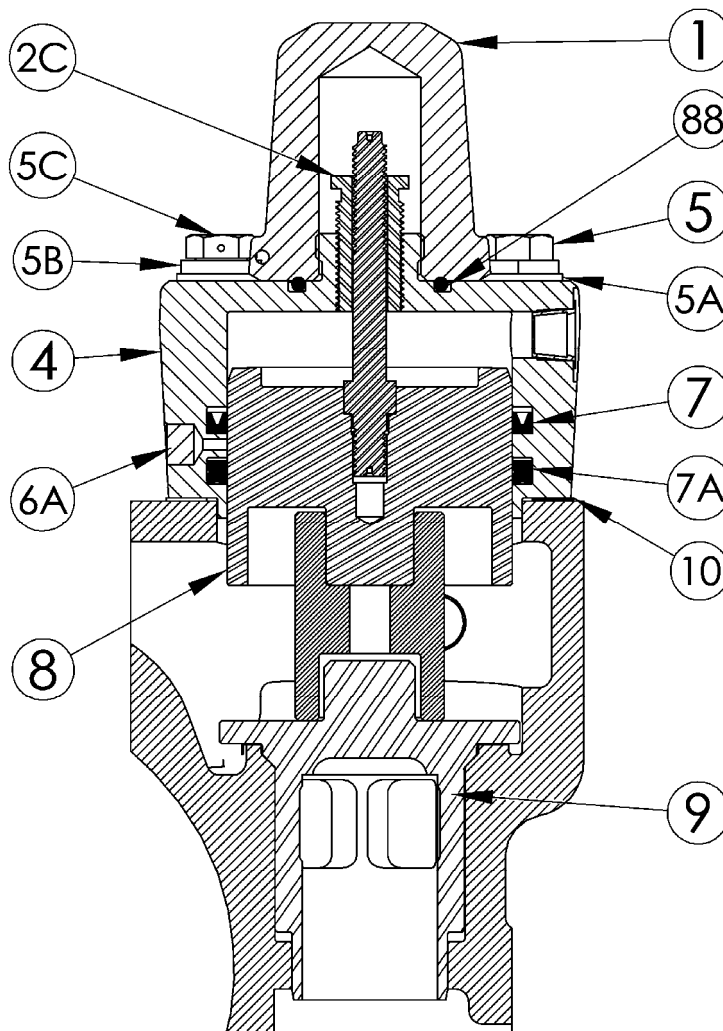


Table 3 PARTS LIST for Piston Air Valve Style 'A'

REF. NO.	PART NAME	PARTS PER VALVE	PART NO.
1	Cap	1	411754
2C	Adjustment Bushing	1	501703
4	Cover	1	411758
5	Capscrew	3	920448
5A	Flat washer	4	909662
5B	Lockwasher	4	909649
5C	Capscrew w/ Hole	1	920465
7	U-cup packing ²	FKM 1	495030
7A	Quad Ring Seal ²	FKM 1	495033
6	Breather vent	1	495029
8	Piston Assembly – includes 1 ea.: Piston, Adjusting Rod, Follower	1	891732
9	Valve ³	1	Standard 451623
	Corrosion Resistant		451624
10	Gasket ²	1	531603
88	O-Ring ²	FKM 1	701979
	Conversion Kit ³	FKM —	891730
	Seal Kit ²	FKM —	891713

¹ Valves prior to May 2009 used two U-Cup packings (7), no Quad Ring Seal (7A) and a different Piston Assembly (8) construction. All parts as listed above may be used in the previous valves

² Parts included in Seal Kit

³ Conversion Kit includes all above parts EXCEPT the Valve (ref. 9).

HYDRAULIC MOTOR ADAPTER INSTALLATION

1. Remove the bearing cover (27A) and gasket (26) from the **inboard** end of the pump. Discard the gasket.
2. For Keyed Couplings:
Apply a light coating of grease to the pump shaft, and install the coupling (34) on shaft with the shaft key aligned in the notch. Lock the coupling into place with the setscrew over the shaft key. Rotate the pump shaft until the key is on top.

For Splined Couplings:

Apply a light coating of grease to the pump shaft, and install the coupling (34) on shaft aligning the splined coupler with the splined shaft. Push the coupler onto the shaft until it comes to a stop.

3. Install a new gasket (26A) and hydraulic motor adapter (135) on the pump head. Install capscrews (28A) through the adapter, torquing to 30-lbs. ft (40 Nm.).
4. To assure proper shaft alignment between the hydraulic motor and pump, install the hydraulic motor adapter (135) to align with the machined pilot/shoulder on the pump head. **NOTE: The head must be replaced if it is not machined with a pilot/shoulder — consult factory.** See Figure 1.
5. Grease the hydraulic motor shaft. Install the coupling key (35) in the hydraulic motor shaft and align the key with the notch in the coupling. Attach the hydraulic motor to the adapter using the adapter/motor capscrews (135A), torquing to 40-lbs. ft (54 Nm.).
6. Apply grease in the hydraulic motor adapter through the grease fitting (76).

Recommended Grease:

Mobil ® - Mobilgrease XHP222
Exxon ® RONEX MP
or equivalent.

7. Attach hydraulic hoses to the hydraulic motor.

PILOT / SHOULDER

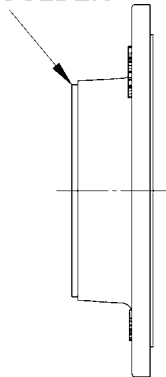
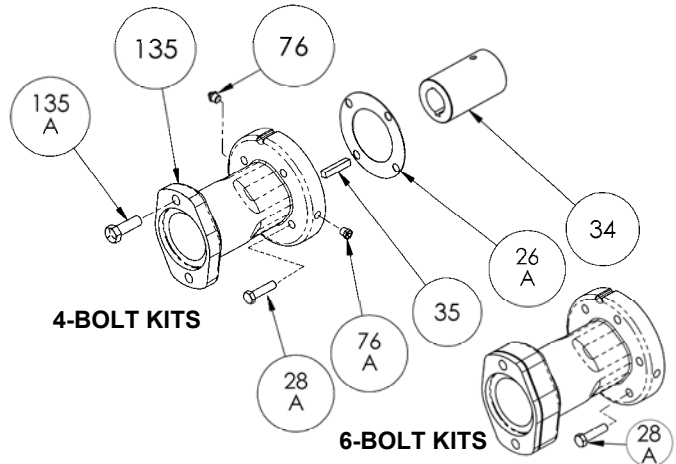


Figure 1

HYDRAULIC MOTOR ADAPTER KITS

Ref. No.	Part Name	Qty.
26A	Gasket- Hydraulic Motor Adapter	1
28A	Capscrew –Adapter / Pump Head	4 / 6
34	Coupling w/ Setscrew	1
35	Key – Coupling	1
76	Grease Fitting	1
76A	Grease Relief Fitting	1
135	Hydraulic Motor Adapter (SAE A flange)	1
135A	Capscrew – Adapter / Motor	2



PUMP MODELS	MOTOR SHAFT DIA.	KIT NO.
4-BOLT KITS		
TX1.5, TXD2A, TXD2.5A, TXD1220, TXD1225, TXV2.5, TXH3C, TLGLF3C STX2, STX1220	1"	891205
TX1.5, TXD2, TXD1220, STX2, STX1220 (For H-series hydraulic motors)	1"	891464
TXD2A, TXD2.5A, TXD1220, TXD1225, TXV2.5B, TXH3C, TLGLF3C STX2, STX1220	1.25"	891458
LGLD2E, CRL2	1.25"	894425
XLWHP3A	1.25"	895150
6-BOLT KITS		
TXD3, TXD1230, TXV3B, LGLD3E, CRL3	1.25"	895140
TXD3, TXD1230, TXV3B, LGLD3E, CRL3	1"	895143
TXH35A	1.25"	892229
TX206A (Keyed Pump Shaft)	1.25"	895141
TX206A (Splined Pump Shaft)	1.25"	895142
STX3	1.25"	892228
LGLD4A, CRL4, TLGLF4B	1.25"	892037

blackmer

Mobile Transfer Equipment

GENERAL PUMP TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE
Reduced Capacity	1. Pump speed too low. 2. Suction valves not fully open. 3. Air leaks in the suction line. 4. Excessive restriction in the suction line (i.e.: undersized piping, too many elbows & fittings, clogged strainer, etc.). 5. Damaged or worn parts. 6. Excessive restriction in discharge line causing partial flow through the relief valve. 7. Relief Valve worn, set too low, or not seating properly. 8. Vanes installed incorrectly (see "Vane Replacement"). 9. Insufficient air pressure to the pneumatic relief valve.
Noise	1. Excessive vacuum on the pump due to: a. Undersized or restricted fittings in the suction line. b. Pump speed too fast for the viscosity or volatility of the liquid. c. Pump too far from fluid source. 2. Running the pump for extended periods with a closed discharge line. 3. Pump not securely mounted. 4. Improper drive line (see "Pump Drive"). 5. Bearings worn or damaged. 6. Vibration from improperly anchored piping. 7. Bent shaft, or drive coupling misaligned. 8. Excessively worn rotor. 9. Malfunctioning valve in the system. 10. Relief valve setting too low. 11. Damaged vanes (see following category).
Damaged Vanes	1. Foreign objects entering the pump. 2. Running the pump dry for extended periods of time. 3. Cavitation. 4. Viscosity too high for the vanes and/or the pump speed. 5. Incompatibility with the liquids pumped. 6. Excessive heat. 7. Worn or bent push rods, or worn push rod holes. 8. Settled or solidified material in the pump at start-up. 9. Hydraulic hammer - pressure spikes. 10. Vanes installed incorrectly (see "Vane Replacement").
Broken Shaft	1. Foreign objects entering the pump. 2. Viscosity too high for the pump speed. 3. Relief valve not opening. 4. Hydraulic hammer - pressure spikes. 5. Pump/driver misalignment. 6. Excessively worn vanes or vane slots. 7. Settled or solidified material in the pump at start-up.
Mechanical Seal Leakage	1. O-rings not compatible with the liquids pumped. 2. O-rings nicked, cut or twisted 3. Shaft at seal area damaged, worn or dirty. 4. Ball bearings overgreased. 5. Excessive cavitation. 6. Mechanical seal faces cracked, scratched, pitted or dirty.
Pump Not Priming	1. Pump not wetted. 2. Worn vanes 3. Suction valve closed. 4. Air leaks in the suction line. 5. Strainer clogged. 6. Suction line or valves clogged or too restrictive. 7. Broken drive train. 8. Pump vapor-locked. 9. Pump speed too low for priming. 10. Relief valve partially open, worn or not seating properly.



(618) 254-6967
Fax # (618) 254-8068
WATS # 800-851-4452

Tank Trailer Sales
Repair - Rebuilding
and Parts Distribution
of Petroleum, Chemical
and Dry Bulk Trailers

**"BLACKMER/MOUVEX AUTHORIZED REPAIR CENTER &
WARRANTY INSPECTION SITE"**

**** Note: Equipment must be clean and free of any and all product ****
DO NOT DISASSEMBLE EQUIPMENT – THIS COULD VOID WARRANTY

- 1) Company Name: _____
- 2) Company Address: _____
- 3) City : _____ State: _____ Zip/Postal Code: _____
- 4) Contact Name: _____
- 5) Phone: _____ Fax: _____ E-Mail: _____
- 6) Pump/Compressor Model: _____
- 7) Serial Number: _____
- 8) Purchased From: _____
- 9) Date Purchased: _____
- 10) Date Installed: _____
- 11) Installed By: _____
- 12) Type of Installation: PTO Shaft ___ Hydraulic Driven ___ Electric Motor ___ Other _____
- 13) Fluid/Gas Transferred: _____
- 14) Equipment Speed: _____ (RPM's) Vacuum Reading = Inlet: _____ Discharge: _____
- 15) Description of Problem: _____

**** THIS COMPLETED FORM MUST ACCOMPANY ALL RETURNED ITEMS ****

400 North Old St. Louis Road • Wood River, Illinois 62095



ENTERPRISE Series Vane Compressor for Liquids to 170 m³/h

Historical partner

From the collaboration between HAMMOND and MOUVEX, the Enterprise series is the result of long experience that stands out today as the vane compressor of reference.

Legendary robustness

The body and rotor are constructed of hard-coated cast iron to withstand harsh environmental and operating conditions, with strength unmatched in the industry.

Corrosion free

The integral anticorrosion coating of the compressor and the check relief valve, combined with stainless steel flanges, guarantee peace of mind.

Quality of the accessories

The new, extra-long inlet connection kit allows for deporting the air filter and insures perfect waterproofing.

E140: 1,000/1,750 rpm  

E170: 1,000/1,600 rpm  

Dimensions: L 490/570 x H 220 x l 220 mm
L 19/23 x H 9 x l 9 in.

Weight: 36 kg (79 lbs.) to 47 kg (104 lbs.)



E140 Vane Compressor
#519782.00



E170 Vane Compressor
#519363.00



**Enterprise Check
Relief Valve**



ENTERPRISE Series Vane Compressors for Liquids to 170 m³/h

Technical Specifications

	E140	E170
Air Delivered m ³ /hr (CFM)	140 (82)	170 (102)
Maximum Continuous Pressure bar-g (PSIG)	2.5 (36)	2.0 (29)
Pressure – 1500 rpm – Kw (HP) Power Absorbed @ Maximum	8.4 (11.3)	10.2 (13.7)
Maximum Speed (rpm)	1,750	1,600

Discharge

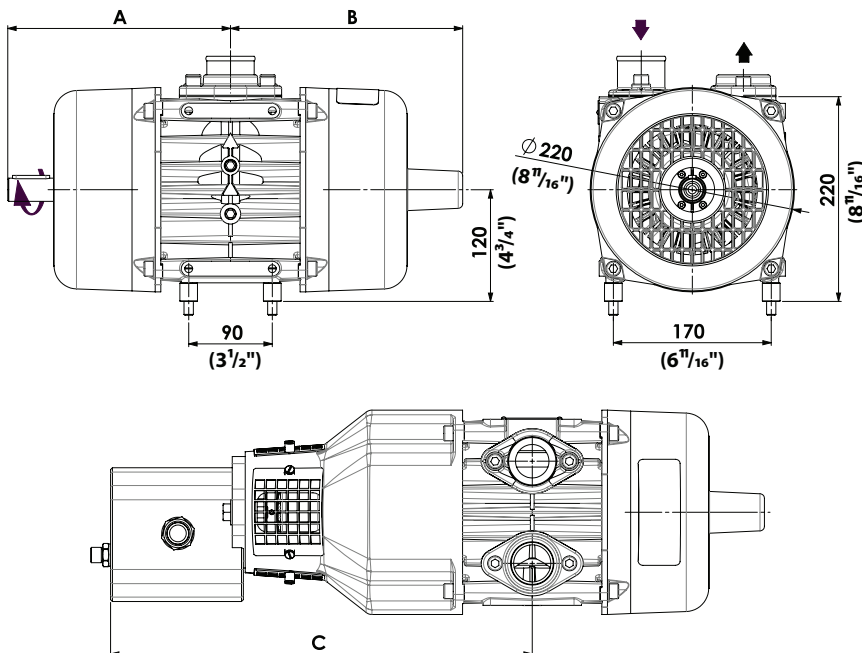
E140	1.5" NPT flange
E170	1.5" NPT flange

Weight

Compressor	lbs.	kg
E140	79	36
E170	104	47

Dimensions

Compressor	A		B		C	
	in.	mm	in.	mm	in.	mm
E140	9 1/2	240	9 7/8	250	17 7/8	454
E170	11	280	11 7/16	290	19 1/2	494



Options and Accessories

The Enterprise Series compressors are available in PTO or Hydraulic Motor drive versions. Accessories available include:



Enterprise Check and Relief Valve
(Delivered with Enterprise Series)



Inlet Connection Kit
(Delivered with Enterprise Series)



Suction Filter (optional)

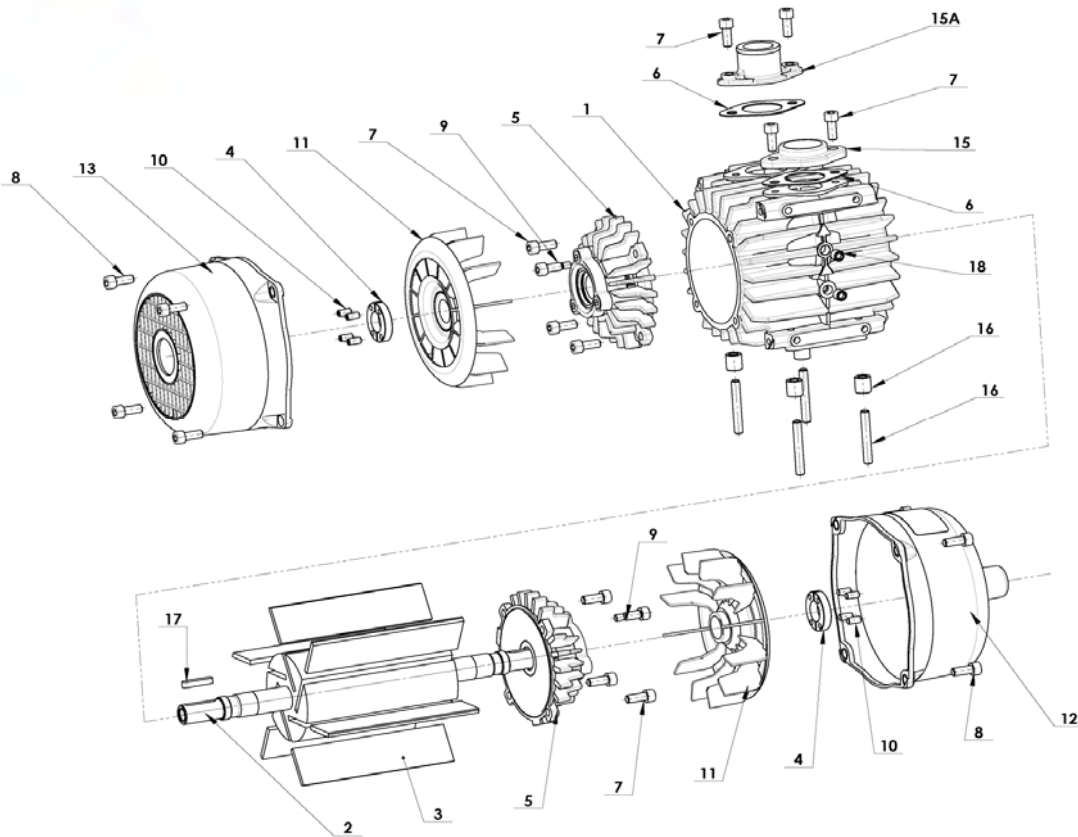


Option: Enterprise with
Hydraulic motor drive adaptor



Hydrive Hydraulic Cooler (optional)

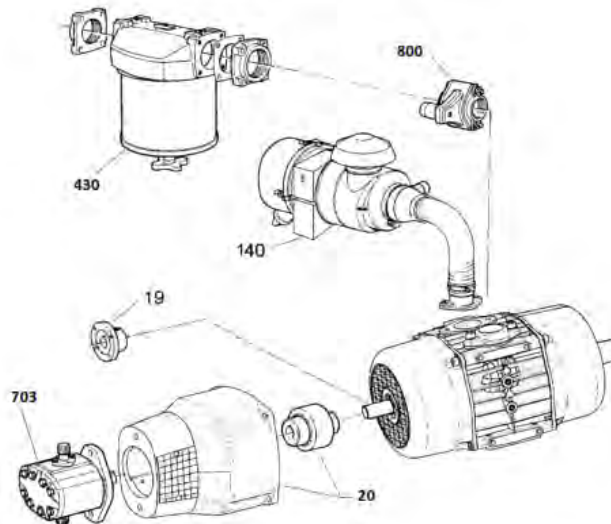
ENTERPRISE E140 - E170



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
1		CASING E140	1	220472
1		CASING E170	1	220467
2		ROTOR E140	1	220480
2		ROTOR E170	1	220482
3		VANE E140	6	220489
3		VANE E170	6	220488
5		SIDE PLATE ASSY	2	313083.01
6		GASKET	2	228065
11A		FAN ASSY	2	351407
	4	SPLIT SLEEVE	2	
	10	SCREW	4	
	11	FAN	1	
12		NO DRIVE END COVER	1	220617
13		DRIVE END COVER	1	220618

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
15		FLANGE 1.5 BSP STAINLESS	1	227474
15		FLANGE 1.5 NPT STAINLESS	1	227473
15A		INLET HOSE CONNECTOR	1	220652
16		STUD KIT	1	313084
	17	KEY	1	
	34	SPACER	4	
	36	ALLEN KEY	1	
	37	ALLEN KEY	1	
	38	WASHER	4	
	39	WASHER	4	
	40	NUT	4	
	41	STUD KIT ENTERPRISE	4	
	42	GASKET	1	
	43	SCREW	2	

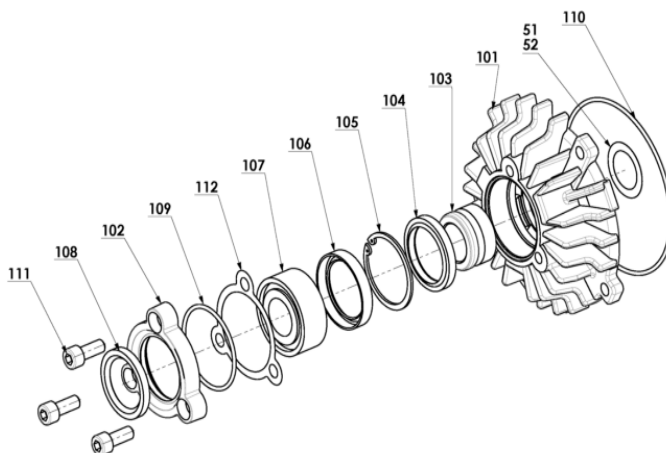
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
73		REPAIR KIT E140	1	313095.01
73		REPAIR KIT E170	1	313094.01
Note: Repair Kit Includes - Blades, Bearings, Seals, Gaskets, Circlips and Shims				



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
19		PTO DRIVE FLANGE SAE 1120	1	313126.01
	17A	KEY	1	
	315	PTO DRIVE FLANGE SAE 1120	1	
20		HYDRAULIC TRUNK (M) KIT	1	313302.00
20		HYDRAULIC TRUNK (2PL) KIT	1	313170.00
	300	HYDRAULIC TRUNK ASSY (304,305A)	1	313106.01
	304	HYDRAULIC TRUNK	1	
	305A	GRID (301,305)	4	315329.00
	301	SCREW	2	
	305	GRID	1	

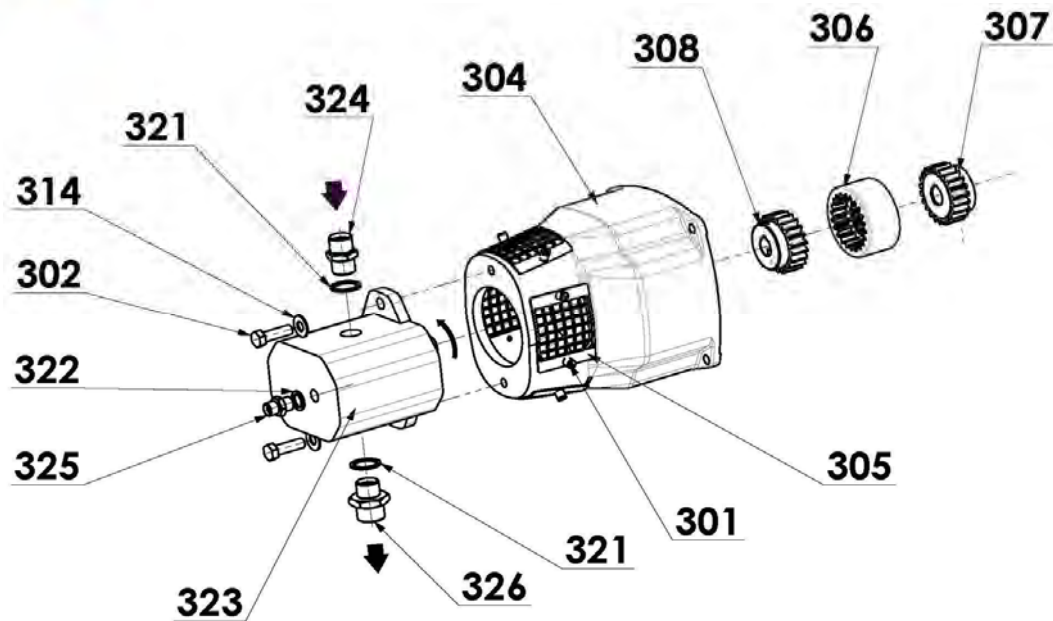
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	302	SCREW	2	
	311	COUPLING (M) D25-24 ASSY	1	313107.00
	311	COUPLING (2PL) D25-D7/8 ASSY	1	313169.00
	314	WASHER	2	
140		AIR FILTER FC4	1	310634.01
430		PRESS. LINE FILTER 5 MICRON	1	316094.00
703		HYD. MOTOR KIT 36CC SAE2B FOR HYD TRUNK KIT (M)	1	313303.00
800		RELIEF VLV 1.5" BSP 2.5 BAR	1	316087.01
800		RELIEF VLV 1.5" NPT 2.5 BAR	1	316318.01
800		RELIEF VLV 1.5" BSP 2 BAR	1	316086.02
800		RELIEF VLV 1.5" NPT 2 BAR	1	316088.02

SIDE PLATE ASSEMBLY



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
5		SIDE PLATE ASSY	2	313083.01
	101	SIDE PLATE	1	
	102	BEARING CAP	1	
	103	SLEEVE	1	
	104	LIP SEAL	1	
	105	CIRCLIPS	1	
	106	LIP SEAL	1	
	107	BALL BEARING	1	
	108	LIP SEAL	1	
	109	SEAL	1	
	110	SEAL	1	
	111	SCREW	3	
	112	SET OF SHIMS	1	

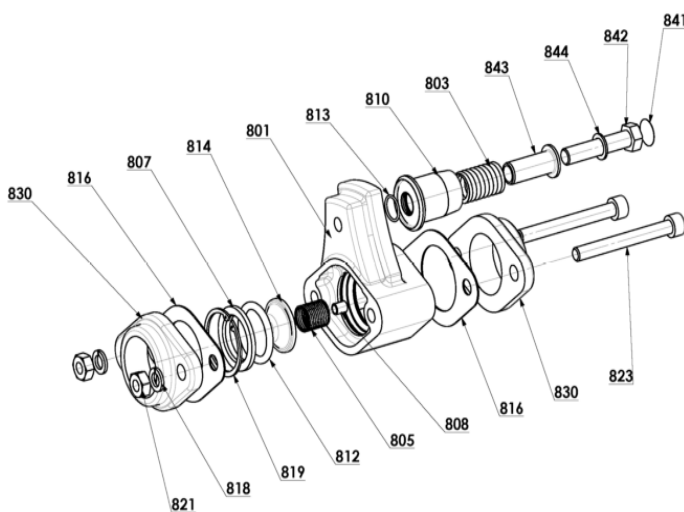
HYDRAULIC TRUNK & HYDRAULIC MOTOR



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
20		HYDRUALIC TRUNK (M) KIT	1	313302
20		HYDRUALIC TRUNK (2PL) KIT	1	313170
	300	HYDRAULIC TRUNK ASSY (304,305A)	1	313106.01
	304	HYDRAULIC TRUNK	1	
	305A	GRID (301,305)	4	315329.00
	301	SCREW	2	
	305	GRID	1	

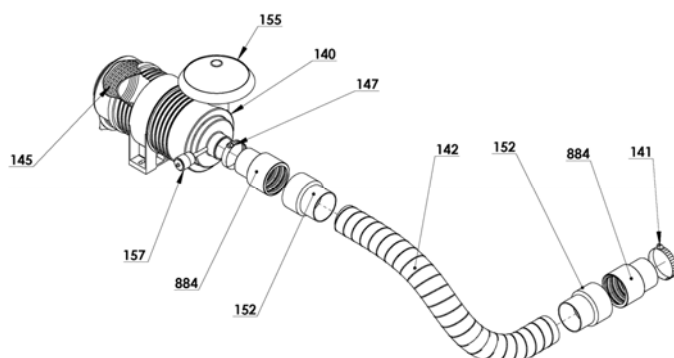
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	302	SCREW	2	
	311	COUPLING (M) D25-D24 ASSY	1	313107.00
	311	COUPLING (2PL) D25-D7/8 ASSY	1	313139.00
	314	WASHER	2	
703		HYD MOTOR KIT 36CC SAE2B FOR TRUNK KIT (M) (321,322,323,324,325,326)	1	313303.00
	323	HYD MOTOR 36CC SAE2B	1	220673

CHECK RELIEF VALVE



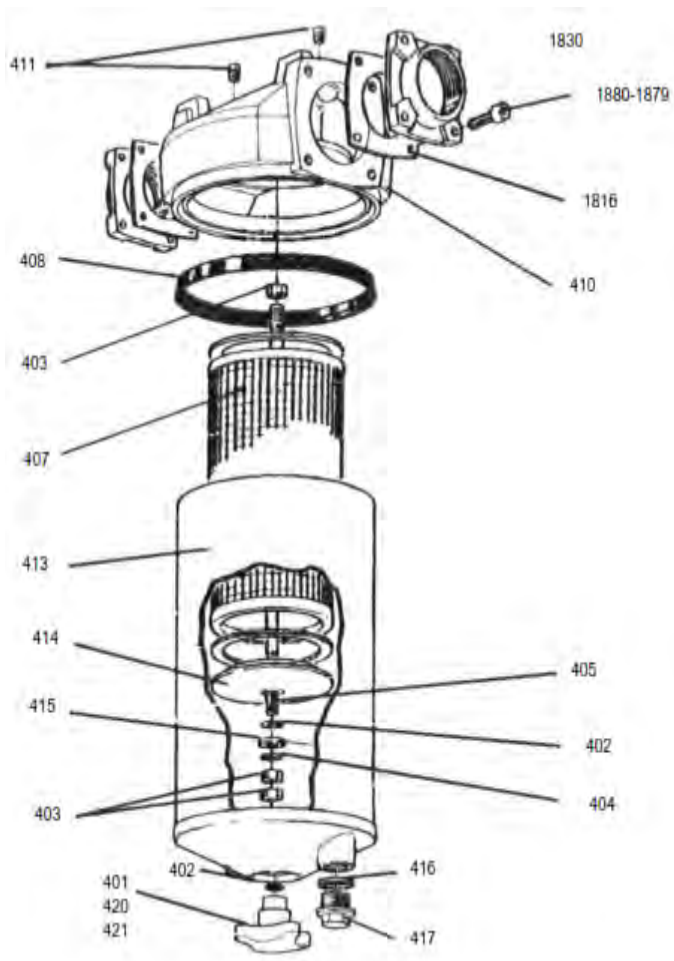
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
800		RELIEF VLV 1.5" BSP 2.5 BAR	1	316087.01
800		RELIEF VLV 1.5" NPT 2.5 BAR	1	316318.01
800		RELIEF VLV 1.5" BSP 2 BAR	1	316086.02
800		RELEIF VLV 1.5" NPT 2 BAR	1	316088.02
	816	GASKET	2	228065

CHECK RELIEF VALVE



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
140		AIR FILTER (145,155,157)	1	310634.01
	145	FILTER ELEMENT FC4	1	220669
	157	RESTRICTION INDICATOR	1	215658
156		SUCTION HOSE KIT 2M (141,142,147,152,884)	1	316690.00
	152	HEAT SHRINKABLE SLEEVE	3	229592

PRESSURE LINE FILTER PLF



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
430		PRESSURE LINE FILTER PLF2 5 MICRONS (400,407,416,417)	1	316094.00
	400	PRESSURE LINE FILTER ASSY (WITHOUT FILTER ELEMENT) (401,402,403,404,405,408,410, 411,413,414,415,420,421)	1	313114.00
	401	HANDLE	1	224614
	408	SEAL	1	220529
	413	SLEEVE N°2	1	220718
	414	COVER	1	220622
	420	SAFETY PIN	1	211196
	421	RING	4	209643
	407	FILTER ELEMENT 5 MICRON	1	220664
	417	PLUG	1	220692
1881		FLANGE KIT 2" BSP FOR PLF2 (STAINLESS STEEL W/ GASKETS & SCREWS FOR PRESSURE LINE FILTER) (1816,1830,1879,1880)	1	315567.00



ENTERPRISE SERIES

OIL-FREE ROTARY COMPRESSORS

Tough Liquid Transport Partner

Our Enterprise compressors are proven workhorses for oil-free high pressure discharge of fluids that can cause problems for cargo pumps. The maximum pressure rating of 36psig (2.5 bar-g) is among the highest available.

Cast for Performance

These compact compressors are constructed of corrosion-resistant, hard coated cast iron to withstand harsh environmental and operating conditions. They address containment concerns, purity standards and evacuation of residual product.

Maintenance Friendly

A patented clamping device allows for easy disassembly and reassembly. The unique blade inspection port on the E106 offers easy inspection without removing the compressor from service. European Patent 0.083.481

The blade can be inspected without disassembling the compressor.



E56

OBSOLETE



E106

□ □ □ □ □ □ □ □



E156

□ □ □ □ □ □ □ □



Enterprise Series Oil-Free Rotary Compressors

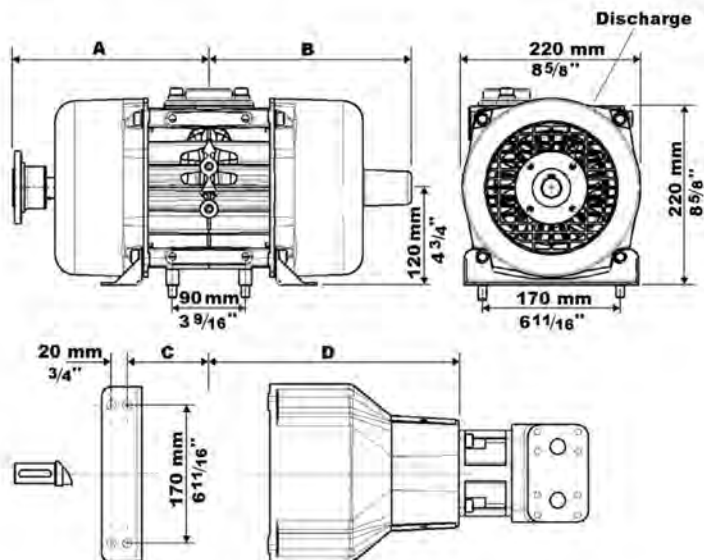
Dimensions

	E56		E106		E156	
	in.	mm	in.	mm	in.	mm
A	7 1/2	190	9 1/2	242	11 1/8	282
B	7 5/8	200	9 7/8	250	11 7/16	290
C	2	50	3 15/16	100	5 1/2	140
D	10 1/8	257	12 1/16	307	13 11/16	348

Note: Shaft diameter on all Enterprise compressors is 25 mm and uses a 8x7x40 mm key.

Discharge

E56	1" BSP, with 1" BSP to 1.5" NPT adapter
E106	1.5" NPT flange
E156	1.5" NPT flange



Weight

E56		E106		E156	
lb	kg	lb	kg	lb	kg
43	19.5	77	35	109	49.5

Technical Specifications

	E56	E106	E156
Air Delivered @ 1,600 rpm – FAD cfm (m ³ /hr)	35 (59)	75 (128)	102 (173)
Maximum Continuous Pressure psig (bar-g)	29 (2.0)	36 (2.5)	29 (2.0)
Power Absorbed @ Maximum Pressure – 1,500 rpm (HP [kw])	6.3 (4.7)	11.3 (8.4)	13.7 (10.2)
Recommended Speed Range	1,000-1,600 rpm		

*SHAFT SIZE 25MM.

Options and Accessories

The Enterprise Series compressors are available in PTO or Hydraulic Motor drive versions. Accessories available include:

- Inlet air filter kit
- Discharge pressure check/relief valve
- PTO drive flange
- Hydraulic motor drive adapter
- Hydraulic drive cooler

Sales Information and Equipment

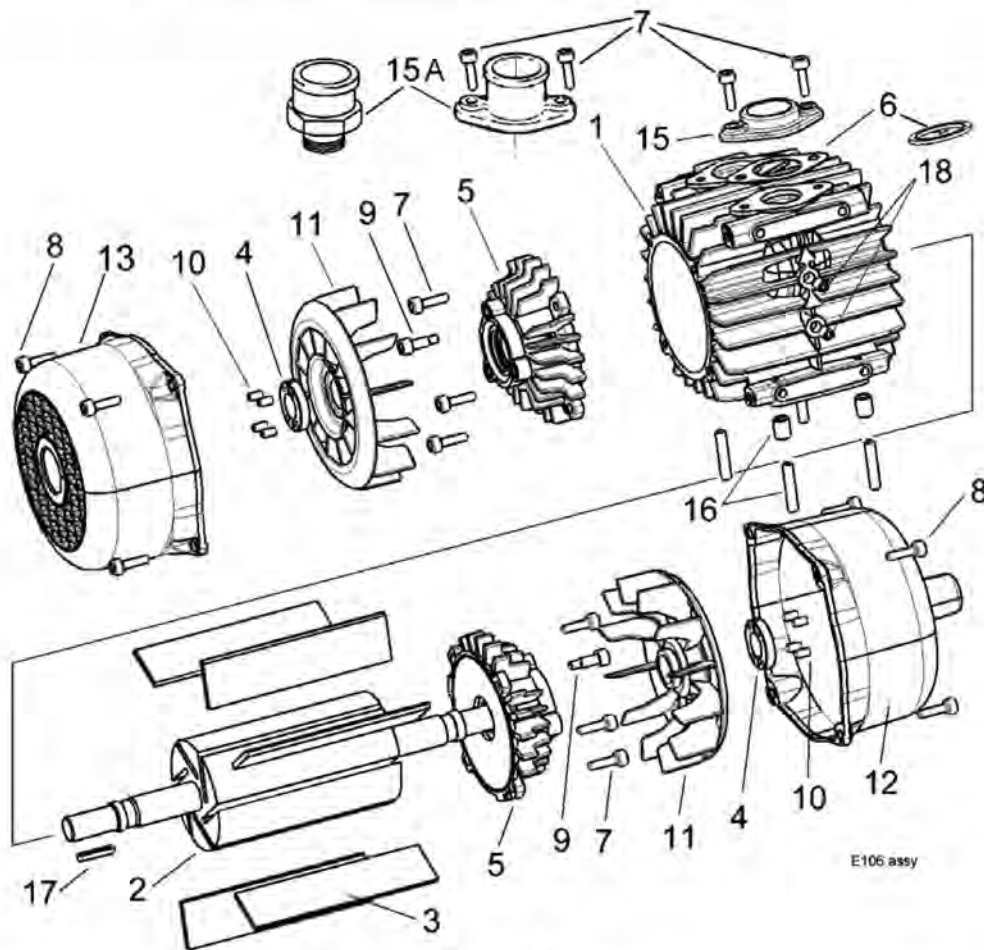
Blackmer has a worldwide distribution network to assist you in specifying any of our family of pumps, compressors and other equipment for your application.

For more information or to find the distribution nearest to you, please contact us at the telephone, fax, or internet address listed below.

BLACKMER ROTARY-VANE COMPRESSOR PARTS LIST

MODELS: E56, E106, E156

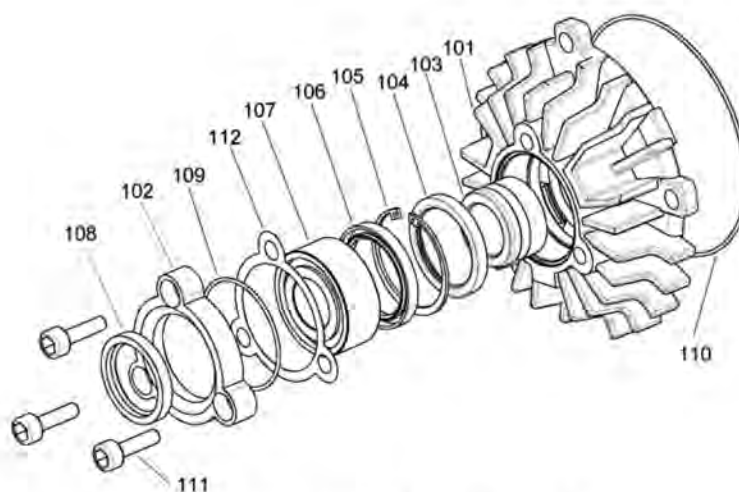
(See Instructions 208-A00 for Installation, Operation and Maintenance)



REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part	REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
1	Body – Plated	E56 1	Y220468		10	Set Screw (M8)	8	Y220608	
		E106 1	Y220472		11	Fan	2	Y220613	
		E156 1	Y220467		12	Cowl (Non-Drive End)	1	Y220617	
2	Rotor	E56 1	Y220479		13	Cowl (Drive End)	1	Y220618	
		E106 1	Y220480		15A	Inlet Filter Flange E106, E156	1	Y220652	
		E156 1	Y220482			Inlet Hose Connector E56	1	Y220651	
3	Blade	E56 6	Y220487	●	15	Outlet Flange BSP E106, E156	1	Y220695	
		E106 6	Y220489	●		Flange - 1 1/2" NPT E106, E156	1	Y220720	
		E156 6	Y220488	●		Adaptor - 1 1/2" NPT E156	1	Y223259	
4	Split Sleeve	2	Y220509		16	Stud Kit E56	1	Y313085.00	
5	Sideplate Assembly	2	Y313083.00				E106, E156	1	Y313084.00
6	Gasket – Flange E106,E156	2	Y207557	●	17	Shaft Key	1	Y220534	
	1" BSP Dowty Seal E56	2	Y219623	●	18	Set Screw (1/4" BSP)	3	Y219521	
7	Capscrew (M10 x 25)	E56 6	Y220568		Not shown	E56 Foot Mounting Bracket. Also requires four 220568 capscrews	2	Y220657	
		E106 10			Not shown	Repair Kit (with Blades, E56		Y313096.01	●
		E156 10					Bearings, Seals, E106		Y313095.01
8	Capscrew (M10 x 20)	8	Y200414			Gaskets & Circlips) E156		Y313094.01	
9	Shoulder Screw (M8)	2	Y220593						

1 : included in the repair kit

2 : included in the stud kit



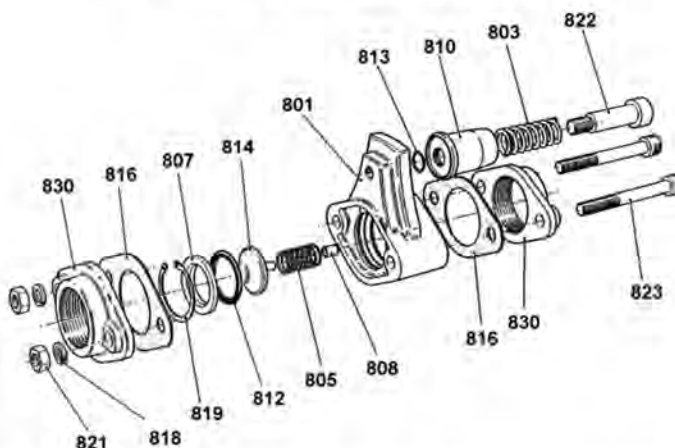
SIDEPLATE ASSEMBLY

REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part	REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
101	Sideplate	1	Y220474		¹ 108	Grease Seal – Bearing Cap	1	Y220524	●
102	Bearing Cap	1	Y220478		¹ 109	O-Ring – Bearing Cap	1	Y220530	●
103	Distance Sleeve	1	Y220508		¹ 110	O-Ring – Sideplate	1	Y220526	●
¹ 104	Lip Seal	1	Y220531	●	111	Capscrew (M10 x 25)	3	Y220568	
¹ 105	Circlip	1	Y220566			Shim (0.023mm - Yellow)	A/R	Y220563	
¹ 106	Grease Seal – Sideplate	1	Y219688	●	¹ 112	Shim (0.036mm - Transparent)	A/R	Y220564	
¹ 107	Bearing	1	Y220515	●		Shim (0.050mm - Blue)	A/R	Y220565	

A/R = As Required

¹ : included in the repair kit

CHECK RELIEF VALVE

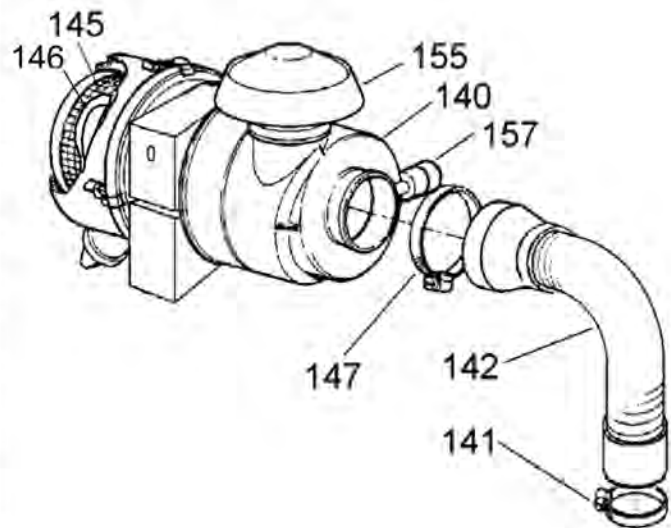


REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part	REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
801	Body – Relief Valve	1	Y220466		814	Check Valve	1	Y220497	
803	Spring (29 psig, 2.0 bar, White, Std.)	1	Y220705		816	Gasket – Flange	2	Y207557	●
	Spring (36 psig, 2.5 bar, Black)		Y220704		² 818	Spring Washer	2	Y217223	
805	Spring	1	Y220707		819	Circlip	1	Y200020	
807	Retaining Ring	1	Y220513		² 821	Nut (M10)	2	Y213727	
808	Bushing	1	Y220502		822	Shoulder Screw	1	Y220569	
810	Relief Valve	1	Y220492		823	Capscrew (M10 x 90)	2	Y220572	
812	O-Ring	1	Y220527	●	830	Flange – 1 1/2" BSP	2	Y220695	
813	O-Ring	1	Y220522	●		Flange – 1 1/2" NPT	2	Y220720	

² : included in the stud kit

INLET FILTER

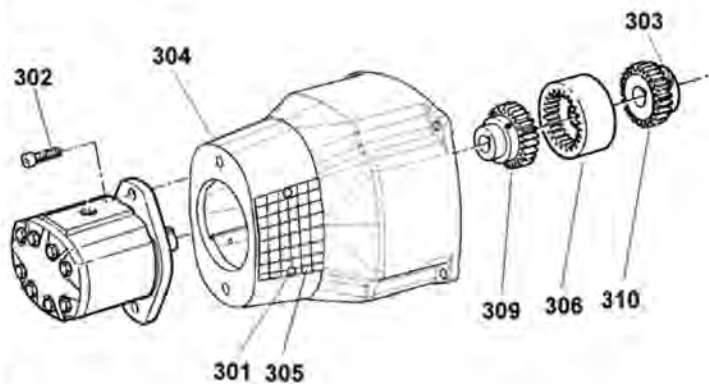
REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
140	Filter Unit E56, E106 E156	1	Y310634 Y312659	
141	Hose Clip	1	Y200915	
142	Flexible Hose E56, E106 E156	1	Y220638 Y220637	
145	Filter Element E56, E106 E156	1	Y220669 Y220666	● ●
146	Safety Element E56, E106 E156	1	Y215638 Y220006	● ●
147	Hose Clip E56, E106 E156	1	Y200915 Y217050	
155	Rain Cap E56, E106 E156	1	Y215636 Y220008	
157	Filter Restriction Indicator	1	Y215658	



HYDRAULIC DRIVE ADAPTOR

REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
301	Self Tapping Screw	4	Y220571	
302	Capscrew (M12 x40)	2	Y200370	
303	Set Screw (M6 x 10)	2	Y220575	
304	Trunk (SAE B)	1	Y220627	
305	Access Plate	2	Y220632	
306	Coupling Sleeve	1	Y220647	
309	Coupling Hub (7/8" Std.) (24 mm)	1	Y220809 220640 *	
310	Coupling Hub (25 mm)	1	Y220644	

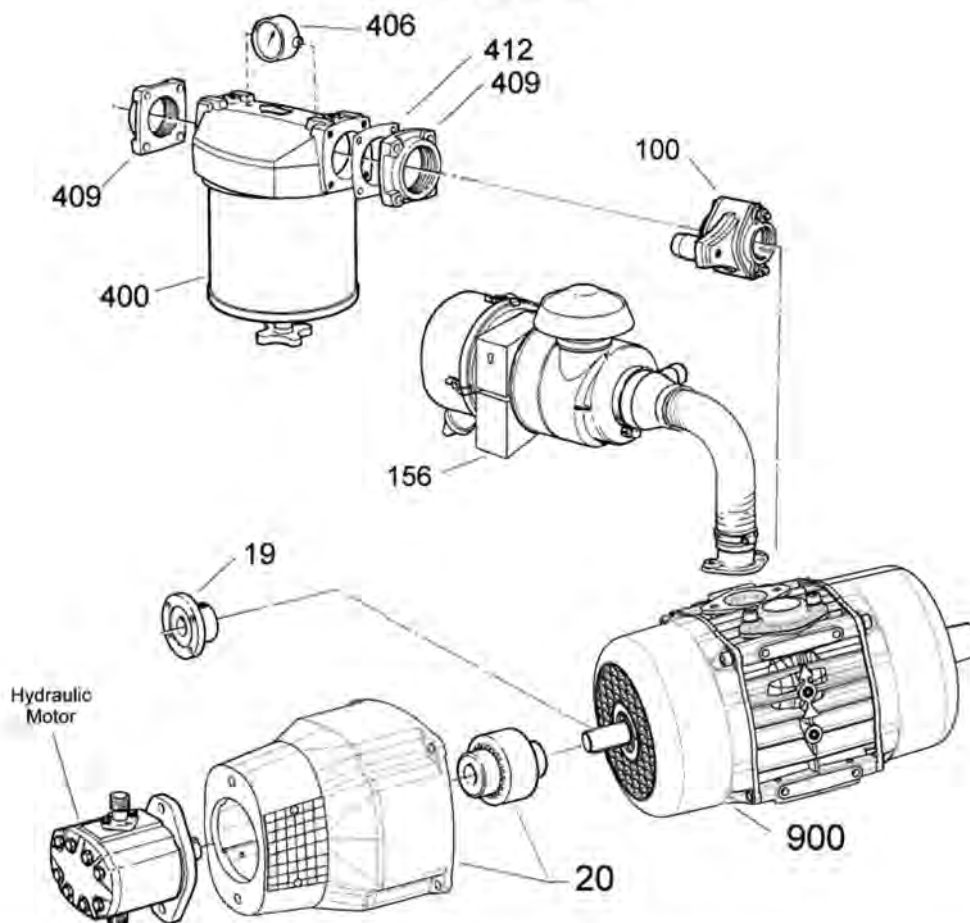
* Not available for sale.



INTERCHANGEABILITY CHART – Model E106 and Discontinued Model E100

DESCRIPTION	STATUS	DESCRIPTION	STATUS
Body - Compressor	Fully Interchangeable	Sideplate Assembly	Fully Interchangeable
Rotor	Fully Interchangeable	Flanges	Fully Interchangeable
Blades	Fully Interchangeable	Gaskets	Fully Interchangeable
Fan	Both Fans & Cowls must be changed as sets.	Shims	Fully Interchangeable
Cowl	Both Fans & Cowls must be changed as sets.	Hydraulic Trunk	New Type Fan must also be installed.

ACCESSORIES



REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part	REF. NO.	DESCRIPTION	QTY.	PART NO.	Wear Part
900	E56 Compressor (with Ref. 19)	1	Y514576.01		20	Hydraulic Motor Drive Adaptor Kit (Hub 24 mm)	1	Y313302.00	
	E106 Compressor (with Ref. 19)	1	Y514687.02			Hydraulic Motor Drive Adaptor (hub 7/8")	1	Y313170.00	
	E156 Compressor (with Ref. 19)	1	Y514423.01		19	Drive Flange - 1100	1	Y313126.00	
	E56 Compressor (with Ref. 20 hub 24 mm)	1	Y514686.01		400	Pressure Line Filter (No. 1 - 5 micron)	1	Y514337.00	
	E106 Compressor (with Ref. 20 hub 24 mm)	1	Y514336.02		406	Differential Pressure Gauge Kit	1	NC *	
	E156 Compressor (with Ref. 20 hub 24 mm)	1	Y514585.01		409	Flange (1 1/2" NPT)	1	Y220720	
	E56 Compressor (with Ref. 20 hub 7/8")	1	Y514976.01			Flange (1 1/2" BSP)		Y220695	
	E106 Compressor (with Ref. 20 hub 7/8")	1	Y514977.02		412	Flange Gasket	2	Y220562	●
	E156 Compressor (with Ref. 20 hub 7/8")	1	Y514978.01						
100	Check Relief Valve (2 bar, 1.5" NPT)	1	Y514352.00						
156	Inlet Filter Kit								
	E56	1	Y313097.00						
	E106	1	Y313097.00						
	E156	1	Y313099.00						

* Not available for sale.



HYDRIVE Series

Hydraulic Cooler, the Mouvex Solution

The **Hydrive** is used on Hydraulic drive for pumps and compressors, it integrates 3 functions:

- Oil tank
- Oil cooler
- Security relief valve

UNIQUE DESIGN

- Compact size allows for easy installation on tractors and trucks with minimal space on chassis rails. The compact design with a low noise level centrifugal fan provides maximum performance and heat dissipation up to 13.5HP (10kW) on 2010 models and 26 HP (20kW) on 2020 models.

BUILT FOR PERFORMANCE

- Constructed from stainless steel materials to withstand the harsh environmental and operation conditions. The light weight cooler with a small hydraulic oil reservoir, reduces the concern and hazard of costly spills.

MAINTENANCE FRIENDLY

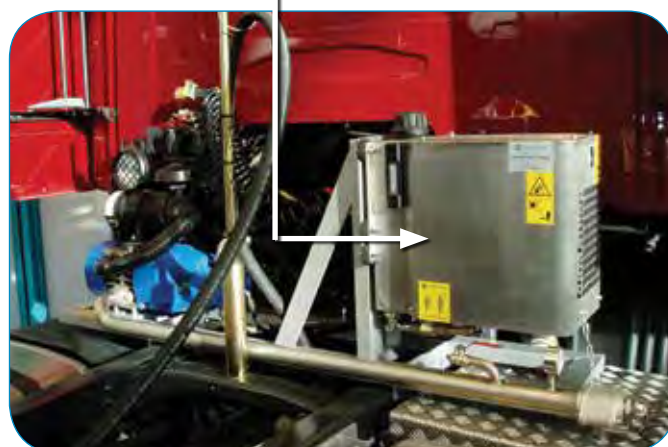
- The easy to read restriction gauge mounted on the front of the Hydrive indicates when the spin-on oil filter should be replaced. Normal hydraulic oil maintenance is made easy with the reservoir drain on the Hydrive tank.

OPTIONS AND ACCESSORIES

- Optional Control Valve on 2010 Models
- Complete Hydraulic System Packages
- Hydraulic motor Adapters for Mouvex-Blackmer Pumps



Fitting under the frame



Fitting on the frame

Up to 200 L/min and 280 bar

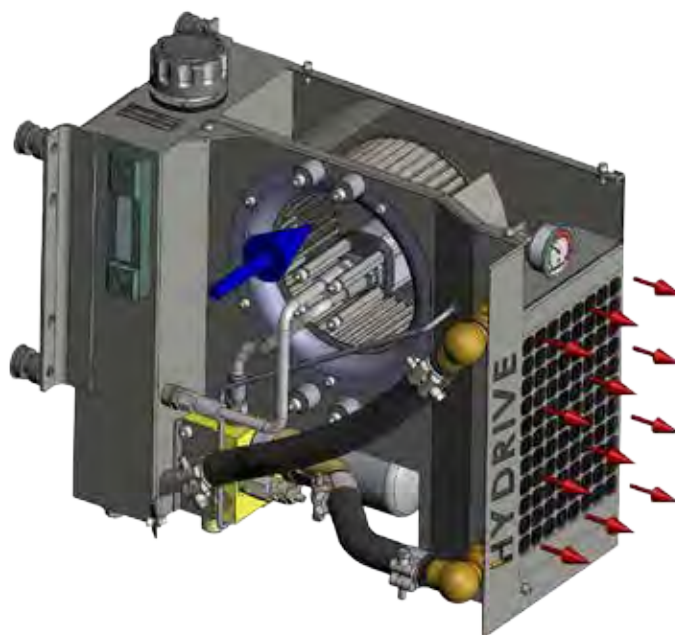


HYDRIVE Series

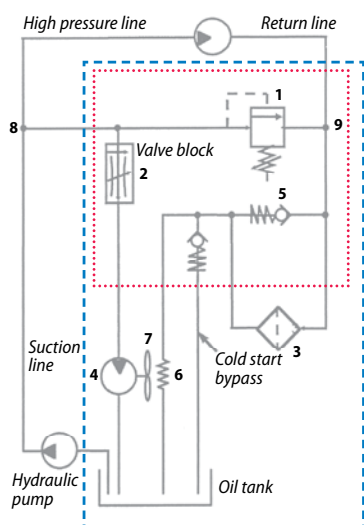
Hydraulic Cooler, the Mouvex Solution

Hydrive 2010

Operations Parameters		
Oil Flow Rate	15 - 32 US GPM	55 - 120 L/min
Circuit Pressure	725 - 4061 PSI	50 - 280 BAR
Fan Speed	2800 RPM	
Return Pressure	15 - 75 PSI	1 - 5 BAR
Heat Dissipation	13,5 HP for 70° F Temp. Rise	10 kW for 40° C Temp. Rise
Fan Motor Flow	1.5 US GPM	5,5 L/min
Weight (dry)	53 lbs	24 kg
Oil Tank Capacity	2.5 US Gallons	10 Liters

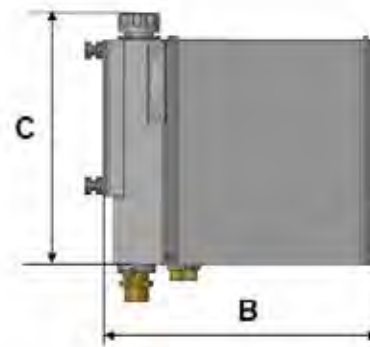


1. Adjustable relief valve
 2. Fan speed control valve
 3. Return line filter
 4. Fan motor
 5. Filter by-pass valve
 6. Oil cooler radiator
 7. Fan
 8. System pressure gauge point
 9. Return pressure gauge point
- Hydrive
- - - Valve block



Hydrive 2020

Operations Parameters		
Oil Flow Rate	15 - 53 US GPM	55 - 200 L/min
Circuit Pressure	725 - 4061 PSI	50 - 280 BAR
Fan Speed	2800 RPM	
Return Pressure	15 - 75 PSI	1 - 5 BAR
Heat Dissipation	26 HP for 70° F Temp. Rise	20 kW for 40° C Temp. Rise
Fan Motor Flow	2.2 US GPM	8,2 L/min
Weight (dry)	77 lbs	35 kg
Oil Tank Capacity	4.5 US Gallons	17 Liters



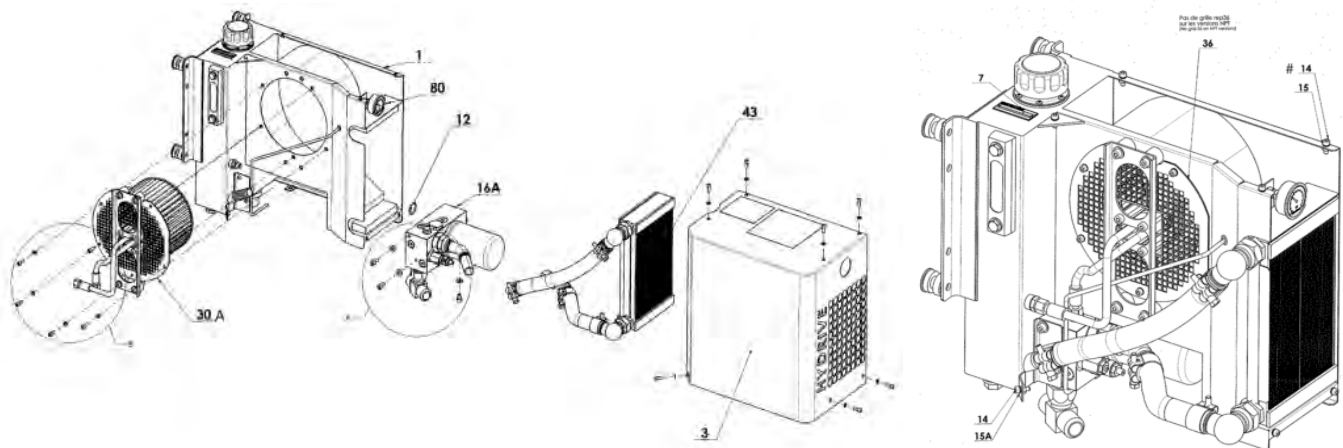
Hydrive	A	B	C
2010	278 mm	526 mm	498 mm
2020	428 mm	559 mm	566 mm

Sales Information and Equipment Application Assistance

- Mouvex has a world wide distribution network to assist you in specifying any of our family of pumps, compressors and other equipment for your application.
- For more information or to find the distributor nearest to you, please contact us as the telephone, fax or internet address listed below.

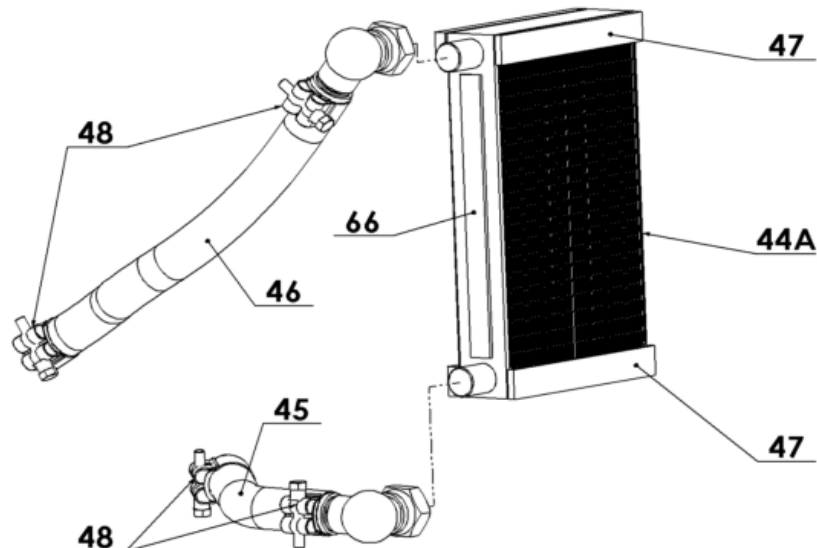


HYDRIVE 2010



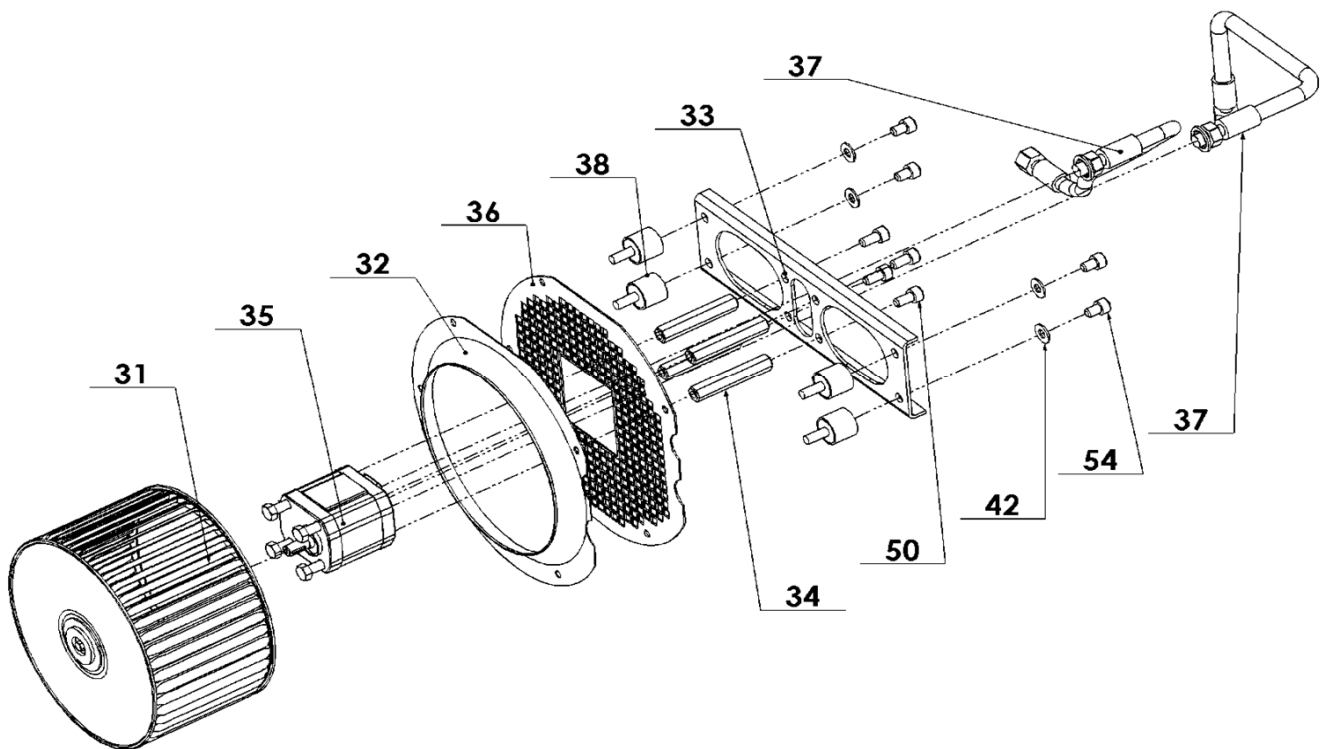
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
1A		TANK & COVER ASSY	1	312147.02
	3	COVER	1	219172
	12	SEAL	1	219931
16A		HYD BLOCK ASSY 170 BAR	1	312148.03
16A		HYD BLOCK ASSY 280 BAR	1	313818.01
30A		RADIAL FAN ASSY	1	315820.00
43		RADIATOR ASSY	1	312152.01
	36	GRID (WITH BSP VERSION)	1	227053
	80	PRESSURE GAUGE ASSY	1	312554.01

RADIATOR



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
43		RADIATOR ASSY	1	312152.01
	44A	RADIATOR	1	315148.00
	45	HOSE	1	219203
	46	HOSE	1	315641.01
	48	HOSE CLAMP	4	228247

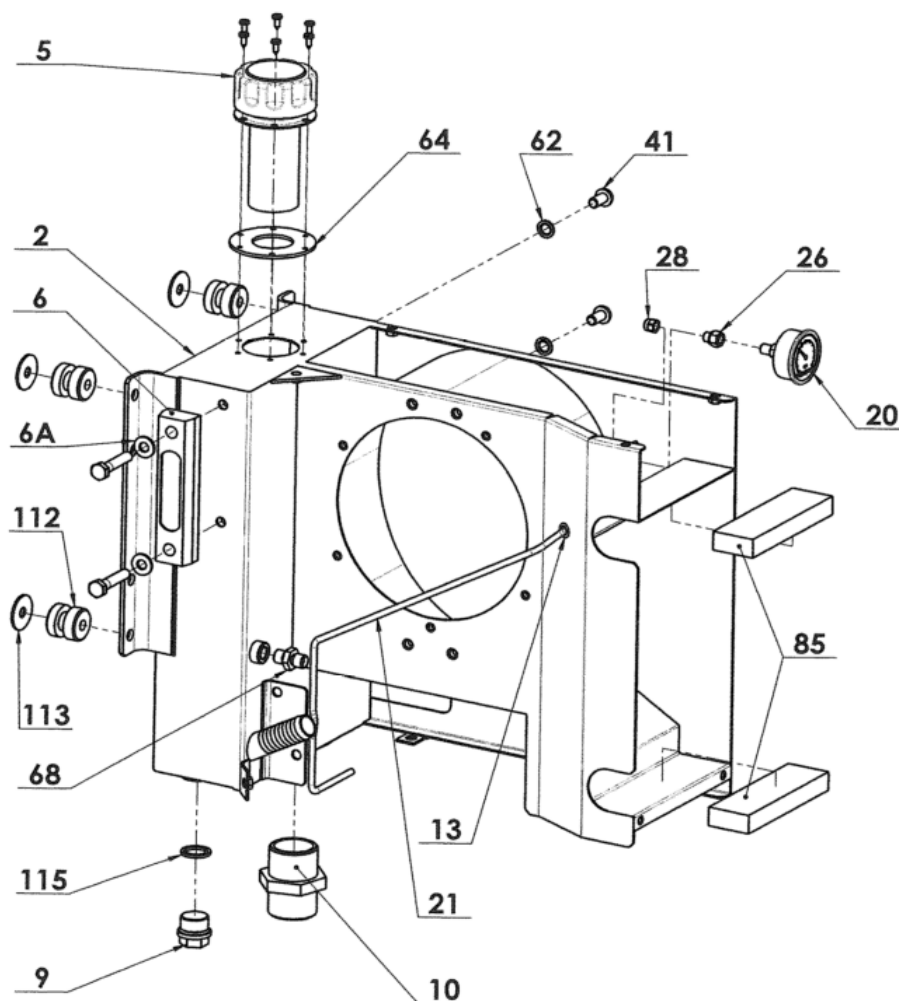
FAN



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
30A		RADIAL FAN ASSY	1	315820.00
	31	RADIAL FAN WITH HUB	1	315240.00
	32	FAN INLET RING	1	219194
	33	MOTOR BRACKET	1	219195
	34	SPACER	4	229544
	35	HYDRAULIC MOTOR	1	219197
	36	GRID (W/ BSP VERSION)	1	227053
	37	HOSE	2	219199
	38	VIBRATION PAD	4	226202
	39	SCREW	5	
	40	WASHER	5	
	42	WASHER	4	
	50	SCREW	4	
	54	SCREW	4	

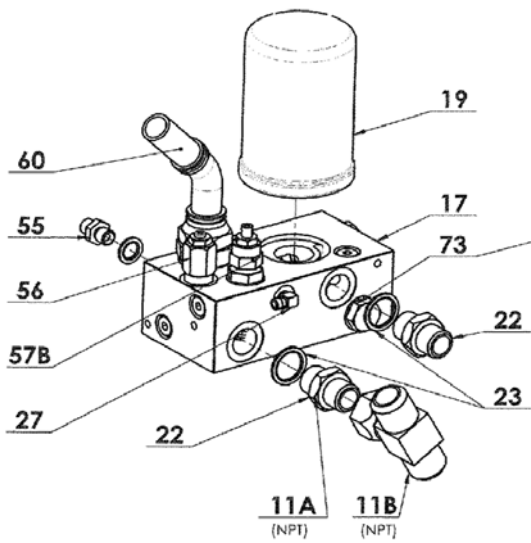
KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
137		FAN VIBRATION PAD KIT	1	314823.00
	34	SPACER	4	229544
	38	VIBRATION PAD	4	226202
	42	WASHER	4	
	54	SCREW	4	

TANK

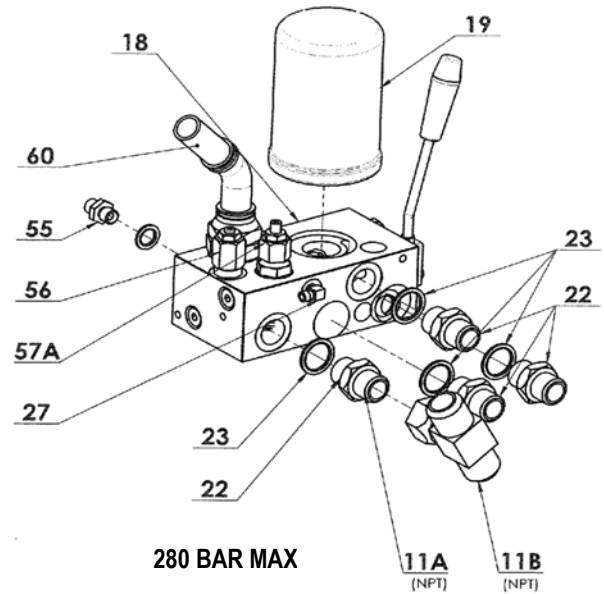


KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.	KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
1A		TANK & COVER ASSY	1	312147.02	10		CONNECTOR BSP	1	219180
	2	TANK	1		10		CONNECTOR NPT	1	219179
	3	COVER	1	219172	114		VIBRATION PAD KIT	1	313652.00
	5	PLUG	1	219809		112	VIBRATION PAD	4	
	6	DIPSTICK & THERMOMETER	1	219175		113	WASHER	4	
	6A	WASHER	2						
	9	MAGNETIC PLUG	1	223770					
	12	SEAL	1	219931					
	13	RUBBER WING	1	205238					
	14	SCREW	7						
	15	WASHER	6						
	15A	WASHER	1						
	41	SCREW	2						
	62	SEAL WASHER	2	219731					
	64	SEAL	1	229123					
	68	CONNECTOR	1	219812					
	115	SEAL WASHER	1	220394					

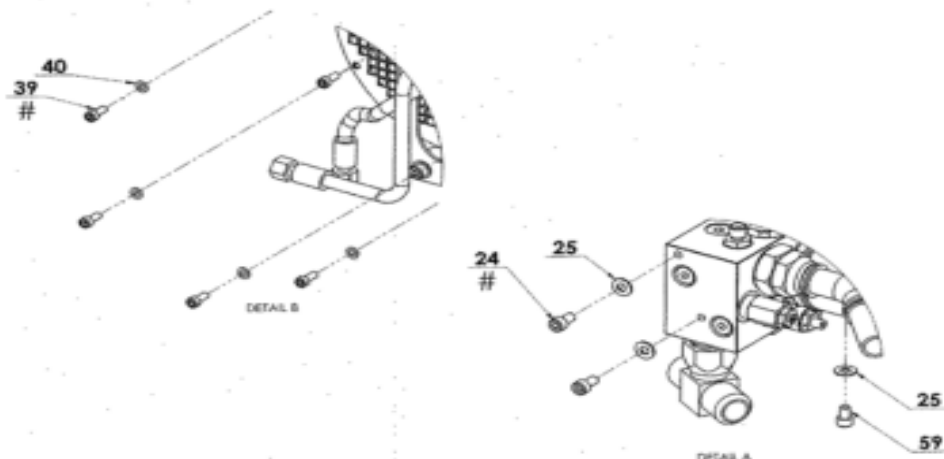
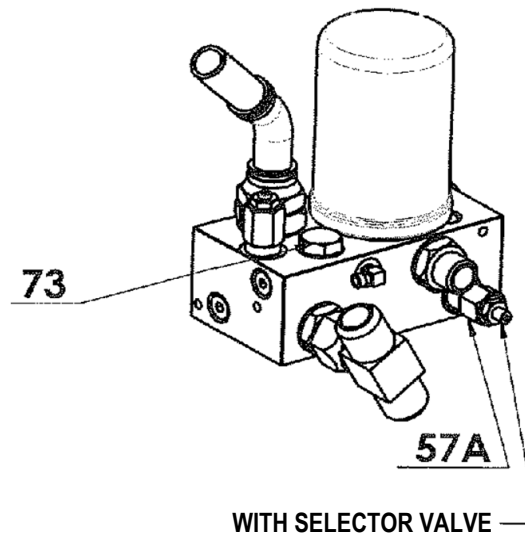
HYDRIVE 2010 HYDRAULIC BLOCK



170 BAR MAX



280 BAR MAX



HYDRIVE 2010 HYDRAULIC BLOCK

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
16A		HYD BLOCK ASSY 170 BAR	1	312148.03
16A		HYD BLOCK ASSY 280 BAR	1	313818.01
	17	HYDRAULIC BLOCK	1	
	19	OIL FILTER	1	219185
	24	SCREW	2	
	25	WASHER	3	
	27	ELBOW 90°	1	219667
	55	CONNECTOR	1	219219
	56	FAN SPEED CONTROL VALVE	1	219221
	57A	RELIEF VALVE 280 BAR	1	219220
	57B	RELIEF VALVE 170 BAR	1	227050
	59	SCREW	1	
	80	PRESSURE GAUGE ASSY (20,21,26,28)	1	312554.01
	20	PRESSURE GAUGE	1	219792
	21	HOSE	1	
	26	CONNECTOR	1	219668
	28	CONNECTOR	1	219666

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
16B		HYD BLOCK 170 BAR	1	312151.02
		W/ SELECTOR VALVE		
16B		HYD BLOCK 280 BAR	1	313819.00
		W/ SELECTOR VALVE		
	18	HYD BLOCK ASSY	1	
		W/ SELECTOR VALVE		
	19	OIL FILTER	1	219185
	24	SCREW	2	
	25	WASHER	3	
	27	ELBOW 90°	1	219667
	55	CONNECTOR	1	219219
	56	FAN SPEED CONTROL VALVE	1	219221
	57A	RELIEF VALVE 280 BAR	1	219220
	57B	RELIEF VALVE 170 BAR	1	227050
	59	SCREW	1	
	80	PRESSURE GAUGE ASSY (20,21,26,28)	1	312554.01
	20	PRESSURE GAUGE	1	219792
	21	HOSE	1	
	26	CONNECTOR	1	219668
	28	CONNECTOR	1	219666

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
11A		CONNECTOR NPT	1	219209
11B		T CONNECTOR NPT	1	225335
22		CONNECTOR BSP	2	219187
22		CONNECTOR BSP	4	219187
22		CONNECTOR NPT	1	219810
22		CONNECTOR NPT	3	219810
23		SEAL WASHER	2	219188
23		SEAL WASHER	4	219188
60		ELBOW	1	219377
72		HYD MOTOR SEAL KIT	1	226913
1114		HYD BLOCK CONV KIT	1	315296.00
		170>280 BAR		
	57A	RELIEF VALVE 280 BAR	1	219220
	73	PLUG	1	227048
1114		HYD BLOCK CONV KIT	1	315297.00
		280>170 BAR		
	57	RELIEF VALVE 170 BAR	1	227050
	73	PLUG	1	227047

Interchangeability Information

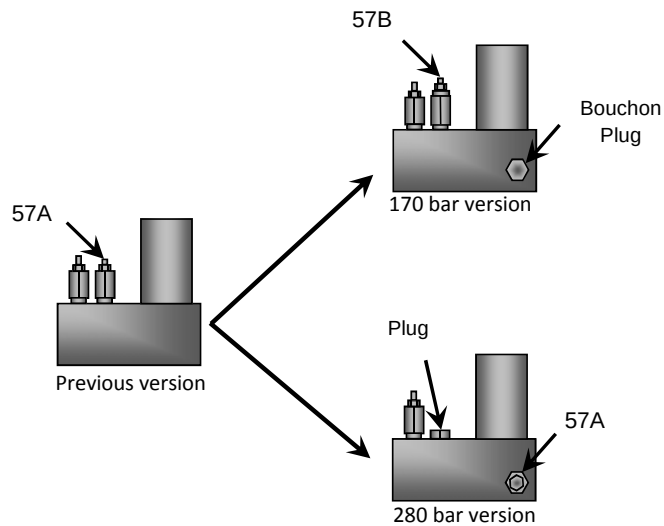
Hydraulic block

The hydraulic block has been upgraded in January 2010 to receive a new relief valve used until 170 bar, where as the previous one is still used but only above 170 bar.

As they are not interchangeable, there are two ports in the new block, the one not used is plugged. In case of replacement of the relief valve, you need first to identify the model.

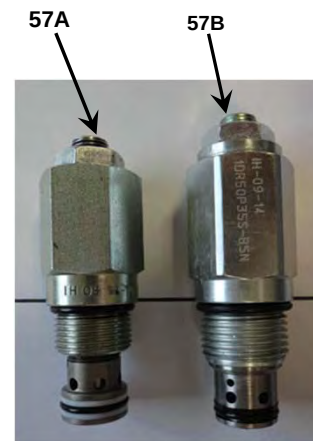
Please consider the following information.

Location of the relief valve



Identification of the relief valve

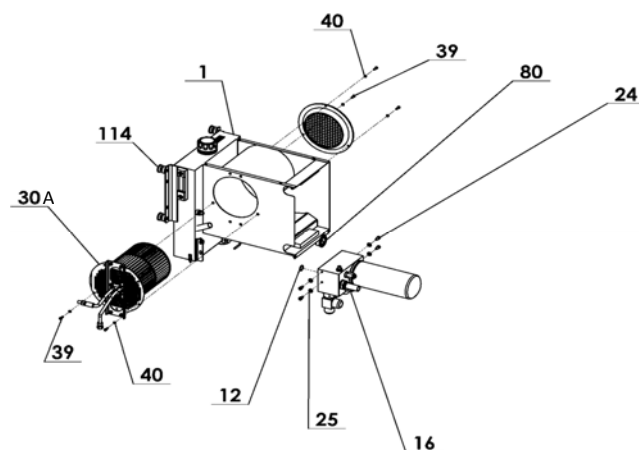
Item	Ref.	Mark
57A	219220	1AR60
57B	227050	1DR50



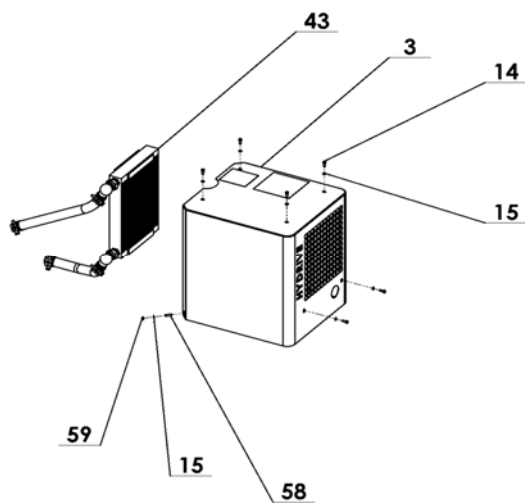
1 AR 60

1 DR 50

HYDRIVE 2020



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
1		TANK & COVER ASSY	1	312329.03
	12	SEAL	1	219931
16		HYDRAULIC BLOCK ASSY	1	312330.01
	24	SCREW	4	
	25	WASHER	4	
	30A	FAN ASSY	1	315819.01
	39	SCREW	5	
	40	WASHER	5	
	80	PRESSURE GAUGE ASSY	1	312554.01
	114	VIBRATION PAD KIT	1	313695.00



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	3	COVER	1	219610
	14	SCREW	6	
	15	WASHER	8	
43		RADIATOR ASSY - 150L	1	312332.01
43		RADIATOR ASSY - 200L	1	316044.00
	58	STUD	2	
	59	NUT	2	

Exploded view diagram of a radiator assembly. The diagram shows a radiator (44A) with two hoses (46 and 45) attached. The hoses have elbows (48) and end fittings (49). The radiator has mounting brackets (47) and a central core (44A).

KIT NO.	KIT PARTS	
44A	RADI	
44A	RADI	
45		

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	44A	RADIATOR - 150L EQUIPPED	1	315420.00
	44A	RADIATOR - 200L EQUIPPED	1	316043.00
	45	HOSE	1	219618
	46	HOSE	1	315642.01
	48	HOSE CLAMP	3	228247
	49	HOSE CLAMP	1	228247

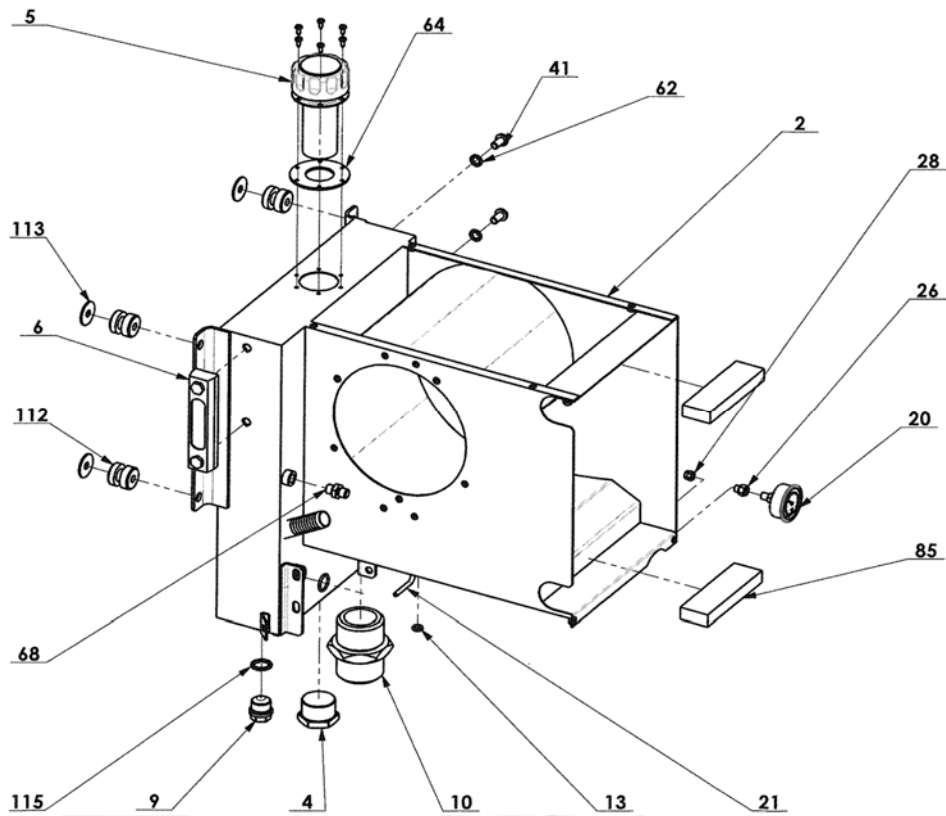
FAN

Pas de grille rep36A
sur les versions NPT
(No grid 36A on NPT version)

KIT NO.	KIT PARTS	DESCRIPTION
	31	RADIAL FAN W/ HUB
	32	FAN INLET RING
	33	MOTOR BRACKET
	34	SPACER
	35	HYDRAULIC MOTOR

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	31	RADIAL FAN W/ HUB	1	315401.00
	32	FAN INLET RING	1	219194
	33	MOTOR BRACKET	1	219195
	34	SPACER	4	229544
	35	HYDRAULIC MOTOR	1	219615
	36	FAN INLET RING	1	219614
	36A	GRID (W/ BSP VERSION)	1	227053
	37	HOSE	2	219199
	38	VIBRATION PAD	4	226202
	39	SCREW	5	
	40	WASHER	5	
	42	WASHER	4	
	50	SCREW	8	
	52	SCREW	1	
	53	WASHER	1	

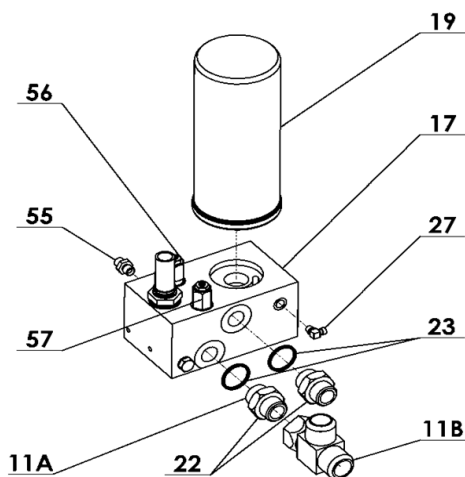
TANK



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	2	TANK	1	
	4	PLUG	1	219807
	5	PLUG	1	219809
	6	DIPSTICK & THERMOMETER	1	219175
	6A	WASHER	2	
	9	MAGNETIC PLUG	1	223770
10		CONNECTOR BSP	1	219621
10		CONNECTOR NPT	1	219620
	13	RUBBER RING	1	205238
	20	PRESSURE GAUGE	1	219792

KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
	21	HOSE	1	
	26	CONNECTOR	1	219668
	28	CONNECTOR	1	219666
	41	SCREW	2	
	62	SEAL WASHER	2	219731
	64	SEAL	1	229123
	68	CONNECTOR	1	219812
	112	VIBRATION PAD	4	
	113	WASHER	4	
	115	SEAL WASHER	1	220394

HYDRAULIC BLOCK



KIT NO.	KIT PARTS	DESCRIPTION	QTY	PART NO.
11A		CONNECTOR NPT	1	219621
11B		T CONNECTOR NPT	1	225336
	17	HYDRAULIC BLOCK	1	
	19	OIL FILTER	1	219612
22		CONNECTOR BSP	2	219622
22		CONNECTOR NPT	1	219806
23		SEAL WASHER	2	219623
	27	ELBOW 90°	1	219667
	55	CONNECTOR	1	219219
	56	FAN SPEED CONTROL VALVE	1	219626
	57	RELIEF VALVE	1	219625



3600GHBV



3700HBRV



4700HBF



4600HBFRV

BASE MOUNTED UNITS

These pumps are available mounted on bases, equipped with couplings and guards and with or ready to receive motors or other types of drives. Some are available with a built-on gear reduction unit that is adjustable for various driver shaft heights.



4717ARV



HI-DRIVE AND LOW-DRIVE UNITS



Roper offers hi-drive and lo-drive units, with both made of the same basic assemblies. Should it be necessary to change the pump from one arrangement to the other, it can be done easily by disassembling the pump and reassembling it as desired.

- Four heavy duty sleeve bearings give positive support to pumping gears and insure long, efficient service.
- Bearing grooves allow circulation of the liquid being pumped for lubrication and control of bearing temperature.
- Outboard drive shaft bearing supports external radial loads and absorbs most thrust loads.

PRECISION-GROUND SHAFTS

- The steel shafts are induction hardened in the bearing and packing areas and are precision ground to exacting standards for maximum life.
- Hardened stainless steel shafts available.

RUGGED HOUSING

- All castings are cast iron.
- Precise manufacturing tolerances provide minimum clearances for maximum pumping efficiency.
- Large, hardened steel dowel pins insure positive alignment between the faceplate, case, and backplate.

MATERIALS OF CONSTRUCTION

Standard Fitted

Housing Cast iron

Gears Hardened iron alloy

Bearings Bronze

Shafts Steel

Available Options

Housing Ductile iron (not available for all sizes)

Gears Bronze or stainless steel (not available for all sizes)

Bearings Iron or carbon

Shafts Stainless steel

All shafts are induction hardened in bearing and packing areas, and precision ground.

SIZES AVAILABLE

3611-3711	.11 Gallons Per Revolution
4611-4711	.11 Gallons Per Revolution
3617-3717	.17 Gallons Per Revolution
4617-4717	.17 Gallons Per Revolution
3622-3722	.23 Gallons Per Revolution
4622-4722	.22 Gallons Per Revolution
3635-3735	.37 Gallons Per Revolution
4638-4738	.38 Gallons Per Revolution
3648-3748	.52 Gallons Per Revolution
3658-3758	.60 Gallons Per Revolution
4658-4758	.58 Gallons Per Revolution

ANGLE PUMPS

Series 3648-3748 offer pump design to provide increased capacity with a smaller pump in physical size—bigger on the inside and smaller on the outside. By placing the gears at a 45° angle, the flow of liquid through the pump is directly from the inlet port into the gear teeth and directly out of the gear teeth into the discharge port, thus improving flow characteristics. The overall dimensions of the pump are smaller than those of other pumps of comparable capacity.

QUIET-RUNNING HELICAL GEARS

- Heat treated cast-iron pumping gears are accurately machined for quiet, efficient operation and long life.

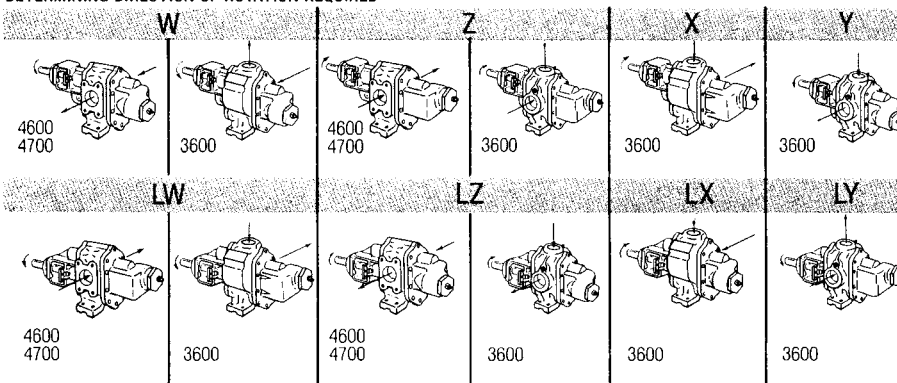
- The pumping gears are keyed to their shafts with a sliding fit and are easily replaced, if it becomes necessary.

- Accurate machining insures proper meshing, and reduces friction and vibration.

LONG-LASTING BEARING SURFACES

- Bearings are special wear-resistant, high-lead bronze. Iron and carbon bearings are available.

DETERMINING DIRECTION OF ROTATION REQUIRED



IDENTIFYING DIRECTION OF ROTATION

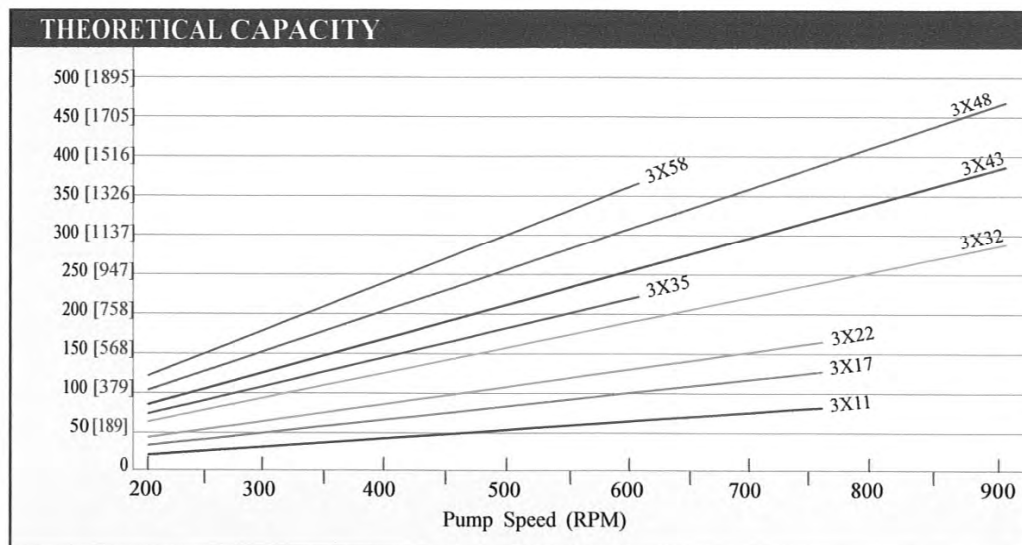
MOUNTING

Hi-Drive Pumps	Lo-Drive Pumps
Y: Clockwise rotation	LY: Clockwise rotation
Z: Counterclockwise rotation	LZ: Counterclockwise rotation
W: Clockwise rotation	LW: Clockwise rotation
X: Counterclockwise rotation	LX: Counterclockwise rotation

PIPING DIRECTION

Piping direction is determined when facing the drive shaft. The diagrams will serve as a helpful basis for you to determine the direction of rotation wanted according to your piping system.

Capacities & Nomenclature



NOMENCLATURE – 3611 GHBFRV			
3	Port Location	3 – Right Angle Ports	
		4 – Straight Through Ports	
6	Seal Option	5 – Triple Lip Seal	
		6 – Packing	
		7 – Mechanical Seal	
		8 – Lip Seal with Ball Bearings	
11	Size	11 – 11 Gal/100 Rev [41.6 L/100 Rev]	35 – 35 Gal/100 Rev [132.5 L/100 Rev]
		17 – 17 Gal/100 Rev [64.4 L/100 Rev]	43 – 43 Gal/100 Rev [162.8 L/100 Rev]
		22 – 22 Gal/100 Rev [83.3 L/100 Rev]	48 – 48 Gal/100 Rev [181.7 L/100 Rev]
		32 – 32 Gal/100 Rev [121.1 L/100 Rev]	58 – 58 Gal/100 Rev [219.6 L/100 Rev]
Configuration*	H	Pump Head without Outboard Ball Bearing	
	HB	Tapped Port Case with Outboard Ball Bearing	
	HBFRV	Flanged Ports with Outboard Bearing	
	HBFRV	Flanged Ports with Outboard Bearing and Relief Valve	
	GHBFRV	Flanged Ports with Outboard Bearing, Relief Valve, and Gear Reducer	
	BH	Tapped Ports, No Outboard Bearing, Mounting for Hyd. Drive or CCD Bracket	
	BHF	Flanged Ports, No Outboard Bearing, Mounting for Hyd. Drive or CCD Bracket	
	BHFRV	Flanged Ports, No Outboard Bearing, Mounting for Hyd. Drive or CCD Bracket, Relief Valve	

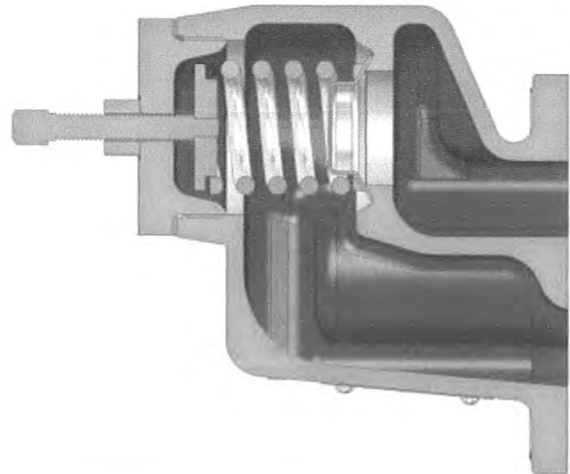
* There are over 40 basic configurations and several thousand custom designs.
Please consult your local Roper Pump distributor to decide which configuration best fits your needs.

Relief Valves & Jacketing

RELIEF VALVE

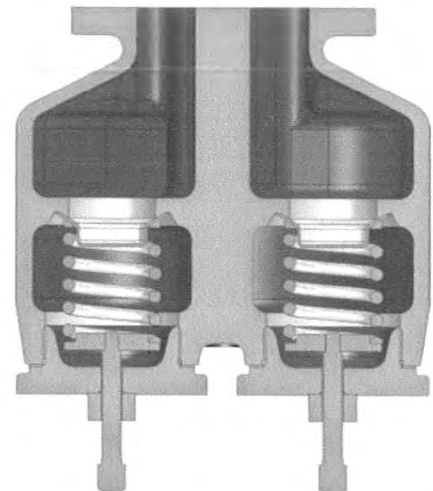
In the event of overpressure situations, our adjustable relief valve protects personnel and equipment by returning liquids to the suction side of the pump. Various spring sizes can be specified to handle a wide range of operating conditions.

Roper Pump's inverted poppet relief valve is designed without close fitting guides that can clog and cause excessive pressures when the valve does not open freely. The valve will provide protection in only one direction of rotation. However it can be positioned easily to either side of the pump to accommodate flow direction.



BI-DIRECTIONAL RELIEF VALVE*

Roper Pump's integral bi-directional pressure relief valve offers reliable protection of your personnel and equipment, regardless of which direction you are pumping. You can reverse flow without disabling pressure relief operability, or compromising operator safety. Based on our rugged and time proven standard relief valves, this offers you a lighter weight, lower cost alternative compared to externally plumbed systems.



**Available on 11, 17 and 22 sizes*

JACKETING**

Whether the fluid to be pumped must be heated, cooled, or maintained at a specific temperature, a jacketed Roper pump will handle difficult-to-pump materials such as Bunker C, molasses, asphalt mixes, refined sugars, creosote, printing ink, and other viscous fluids which require temperature control for satisfactory handling.

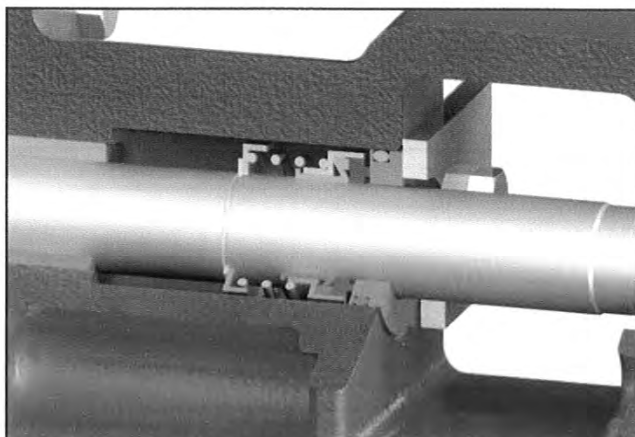
Roper Pump jacketed pumps provide efficient heat transfer to the packing, seal relief valve, bearing areas, and endplates of the pump. The jackets are suitable for use with steam, hot or cold water, heat transfer oil, etc., as heating or cooling mediums.

Jacketing is available on the faceplate only, backplate only, or on both.

***Jacketing is not available on 32, 43 and 48 sizes*

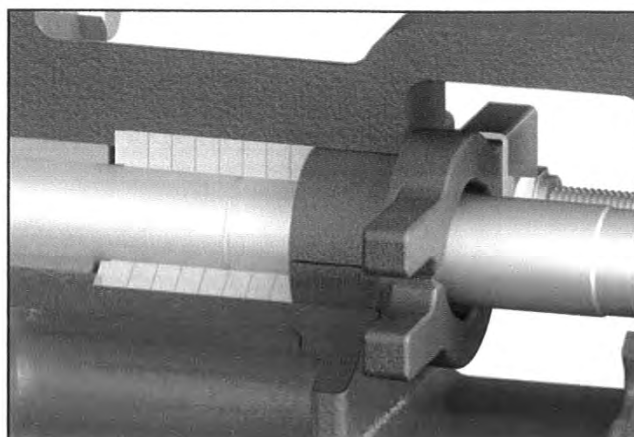


Pump Seals



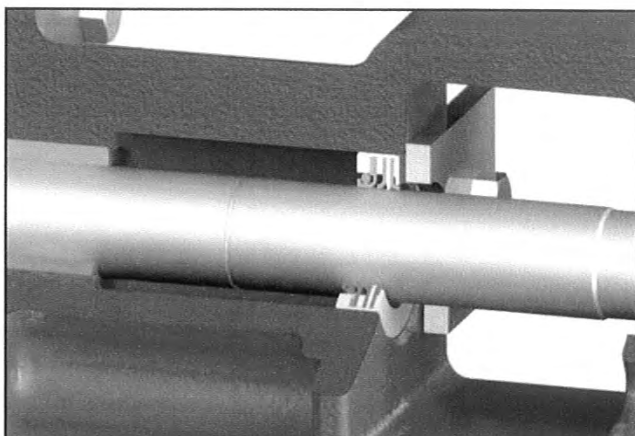
MECHANICAL SEAL

Mechanical seals are for those applications where product leakage is unacceptable. Under proper conditions the mechanical seal has a longer service life than the packed box and does not require adjustment. The standard mechanical seal is an elastomeric bellows type seal. A PTFE wedge seal is also available.



PACKED BOX

Our standard packing is suited for general purpose applications, and is easily replaced with split ring packing. For optimum performance, the gland should be adjusted to allow slight seepage. Standard packing is graphite, with several optional packing materials available for applications involving high temperatures or mildly corrosive liquids, or those requiring compatibility with food products.



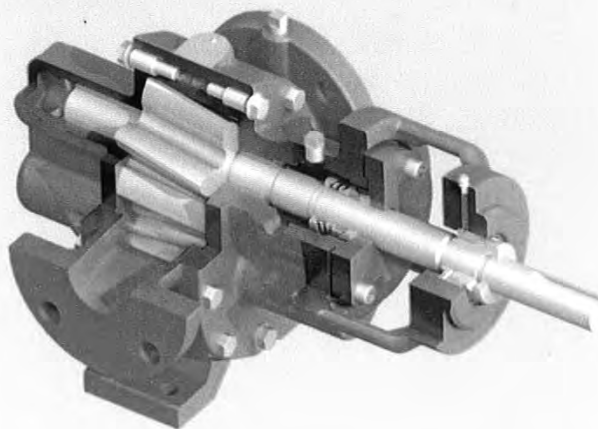
TRIPLE LIP SEAL

Offering the same high degree of sealing reliability as a mechanical seal, triple lip seals are better suited for viscous products that tend to set up while the pump is idle, such as resins, glues and paints. The lips create an effective barrier to product leakage, and will move freely upon resumption of pumping a thickening substance. In cases where extreme circumstances can cause catastrophic failure of mechanical seals, the resilient nature of the triple lip seal makes it relatively immune to sudden failure.

Need More Seal Options?

OUR Z SERIES...

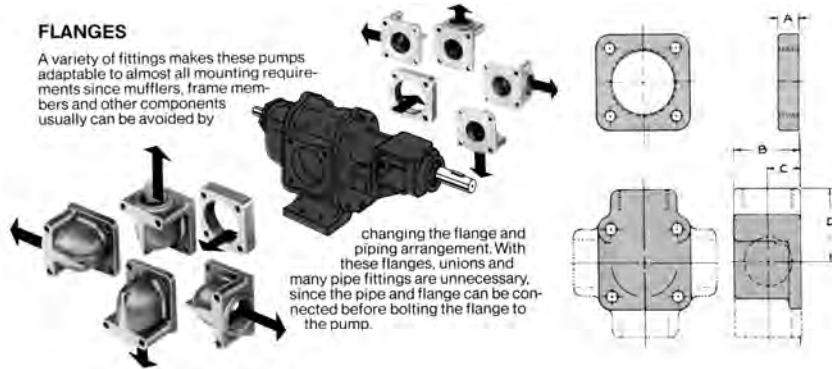
Based on our 3600 Series, the Roper "Z" Series features a larger seal chamber in a two-piece backplate that allows for virtually unlimited options, and facilitates easy seal maintenance. Many parts are interchangeable with the 3600 Series.





FLANGES

A variety of fittings makes these pumps adaptable to almost all mounting requirements since mufflers, frame members and other components usually can be avoided by



changing the flange and piping arrangement. With these flanges, unions and many pipe fittings are unnecessary, since the pipe and flange can be connected before bolting the flange to the pump.

PUMP SIZE	FITTING TYPE	PORT SIZE	ASSEMBLY NUMBER	A	B	C	D
3611, 3711, 4611, 4711	Straight Flanged (Std.)	2"	N14-14	7/8			
	Flanged Elbow*	2"	N14-15		3 1/16	1 1/16	3 1/16
	Flanged Elbow**	2"	N14-16		3 1/16	1 1/16	2 1/2
3617, 3717	Straight Flange (Std.)	2"	N14-17	7/8			
4617, 4717	Straight Flange (Std.)	3"	N14-18	1 1/8			
3617, 3717, 4617, 4717	Flanged Elbow	2"	N14-19		3 1/16	1 1/16	2 7/16
	Flanged Elbow	3"	N14-20		4 1/16	2 3/8	4 7/16
	Straight Flange	2 1/2"	N14-62	1 1/8			
3622, 3722, 3635, 3735* Before S/N 398284	Straight Flange	2"	N14-28	1 1/8			
	Straight Flange	2 1/2"	N14-29	1 1/8			
	Straight Flange (Std.)	3"	N14-30	1 1/8			
	Flanged Elbow	3"	N14-31		4 1/4	2 1/8	4 5/8
	Straight Flange	4"	N14-59	1 5/16			
3635, 3735 *after S/N 398284	Straight Flange (Std.)	3"	N14-76	1 1/8			
	Flanged Elbow	3"	N14-77		4 1/16	2 3/8	4 3/16
4622, 4722, 4638, 4738, 3648, 3748	Straight Flange	2"	N14-57	1 1/8			
	Straight Flange	3"	N14-21	1 1/8			
	Straight Flange (Std.)	4"	N14-22	1 1/8			
	Flanged Elbow	3"	N14-23		4 1/4	2 3/8	4 5/8
	Flanged Elbow	4"	N14-24		5 1/2		
3622SBF, 3722SBF	Straight (With Strainer)	3"	N14-32	1 1/8			
3658, 4658, 3758, 4758	Straight Flange (Std.)	4"	N14-26	1 5/16			

*Vertical piping

**Horizontal piping

Each assembly includes flange, gasket, and bolts

SIZE			300 RPM				400 RPM				500 RPM				600 RPM				700 RPM			
	PSI	SSU	30	100	1000	10,000	30	100	1000	10,000	30	100	1000	10,000	30	100	1000	10,000	30	100	1000	10,000
3611	25	GPM	31	32	33	33	42	43	44		53	54	55		64	65	66		75	76	77	
		HP	9	9	1.1	1.7	1.2	1.2	1.6		1.6	1.6	2.4		2.1	2.1	2.9		2.5	2.5	3.5	
	50	GPM	29	31	33	33	40	42	44		51	53	55		62	64	65		73	75	77	
		HP	1.3	1.3	1.5	1.9	1.9	2.3	2.3		2.4	2.4	3.2		2.9	3.2	3.7		3.5	3.5	4.5	
4611	100	GPM	29	32	33		41	43			51	54			63	65			74	76		
		HP	2.3	2.5	3.1		3.2	3.6			4.0	4.8			4.9	5.7			5.7	6.7		
	125	GPM	27	32	33		39	43			50	54			62	65			72	76		
		HP	2.8	3.0	3.6		3.8	4.2			4.7	5.5			5.9	6.7			6.9	7.9		
3617	25	GPM	46	49	50	51	63	66	67		80	83	84		95	100	101		115	117	118	
		HP	1.0	1.0	1.4	2.3	1.4	1.4	2.1		2.0	2.6	3.0		2.7	2.7	4.1		3.3	3.3	5.3	
	50	GPM	42	47	50	51	59	64	67		76	81	84		93	98	101		111	115	118	
		HP	1.7	1.7	2.1	3.0	2.4	2.4	3.1		3.2	4.2	4.2		4.1	5.2	5.3		5.0	5.0	7.0	
4617	100	GPM	43	49	50		60	66			77	83			94	100			111	117		
		HP	3.1	3.5	4.4		4.3	5.0			5.6	6.6			7.0	8.4			8.4	10.4		
	125	GPM	41	48	50		58	65			75	82			92	99			109	116		
		HP	3.9	4.3	5.2		5.2	5.9			6.7	7.7			8.5	9.9			10.1	12.1		
3622	25	GPM	63	65	66	66	85	87	88		107	109	110		129	131	132		151	153	154	
		HP	1.4	1.4	1.8	2.6	2.4	2.4	3.2		3.0	3.0	4.1		3.5	3.5	4.8		4.5	4.5	6.4	
	50	GPM	61	63	65	66	83	85	87		105	107	109		127	129	131		149	151	153	
		HP	2.4	2.4	2.8	3.6	3.7	3.7	4.5		4.5	4.5	5.6		5.4	5.4	6.7		6.6	6.6	8.5	
4622	100	GPM	61	65	66		83	86			105	108			127	130			149	152		
		HP	2.3	2.7	3.5		3.1	3.6			3.2	3.6			3.2	3.6			3.2	3.6		
	125	GPM	60	64	66		82	86			104	108			126	130			148	152		
		HP	5.3	5.7	6.5		7.4	8.2			9.2	10.3			11.3	12.6			13.5	15.4		
3635	25	GPM	107	108	109	111	144	145	146		181	182	183		218	219	220					
		HP	4.1	4.1	4.4	7.1	6.0	6.0	6.4		8.3	8.3	8.6		11.1	11.1	11.5					
	50	GPM	103	105	107	109	140	142	144		177	179	181		214	216	218					
		HP	5.7	5.7	6.0	8.7	8.2	8.2	8.6		11.0	11.0	11.3		13.8	13.8	14.4					
3735	100	GPM	97	103	107																	
		HP	9.0	9.3	12.0																	
	125	GPM																				
		HP																				
3648	25	GPM	145	148	152	154	197	200	204		249	252	256		301	304	308					
		HP	4.1	4.5	5.4	6.6	6.1	6.6	8.0		9.8	8.1	8.9		10.4	11.4	14.2					
	50	GPM	129	137	144	150	189	196	202		233	241	248		285	293	300					
		HP	8.4	8.8	9.7	10.9	9.2	9.7	11.9		11.9	13.9	14.7		15.0	16.0	19.8					
3748	100	GPM			128	139			160		210	232	243			284	295					
		HP			12.2	13.4			17.1		20.4	22.4	24.3			25.2	27.8					
	125	GPM				135			171		223	239	259			275	291					
		HP				15.6			20.3		22.1	24.7	26.7			32.3	37.0					
3658	25	GPM	176	179	181	183	237	240	242		298	301	303		359	362	364					
		HP	5.6	5.6	6.4	10.3	7.9	8.1	9.6		10.4	11.0	13.3		13.2	14.0	17.6					
	50	GPM	166	174	180	182	227	235	241		288	296	302		349	357	363					
		HP	8.2	8.2	9.0	12.9	11.4	11.6	13.3		14.8	15.4	17.7		18.5	19.4	23.0					
4658	100	GPM			165	177	181		238		299	304				350	360					
		HP			13.6	14.4	16.3		20.1		27.3	28.6				36.0	37.6					
	125	GPM				175	180		236		297	302				358	368					
		HP				17.2	21.1		23.8		31.0	31.0				40.4	43.1					

RV FACEPLATE ASM
(DOES NOT INCLUDE
RV COMPONENTS)

N3-200 BRZ
N3-218 CARBON
N3-201 IRON
N3-634 CRBN/GLASS/TFE

INCLUDES P3-200
AND LONG BRGS (2):
G5-257 BRZ
G5-416 CARBON
G5-266 IRON
G5-860 CRBN/GLASS/TFE

PLAIN FACEPLATE ASM

N3-177 BRZ
N3-226 CARBON
N3-179 IRON
N3-633 CRBN/GLASS/TFE

INCLUDES P3-137
AND LONG BRGS (2):
G5-257 BRZ
G5-416 CARBON
G5-266 IRON
G5-860 CRBN/GLASS/TFE

PKG SET

N43-1 STD
N43-186 TFE IMPREGNATED
N43-151 TFE/GRAPHITE
N43-101 PURE TFE
N43-103 GRAPHITE FILAMENT
N43-170 GARLOCK DSA

MECH SEAL

G4-101 STD
G4-140 FLUOROELASTOMER
G4-65 TFE / VITON O-RING
(REQ MOD BACKPLATE
& D8-443 LOCATOR RING)

RV ASM (SST SPR + BRGS)
(INCLUDES RV FACEPLATE ASM
PLUS SST & STD RV COMPONENTS)

N7-442 BRZ, STD
N7-443 BRZ, HI
N7-309 CARBON, STD
N7-735 CARBON, HI
N7-737 IRON, STD
N7-830 IRON, HI
N7-937 CRBN/GLASS/TFE, STD
N7-938 CRBN/GLASS/TFE, HI

PLAIN FACEPLATE ASM

D11-338 CASE GASKET (2)
D11-339 CASE GASKET, ALUM (3)

RV FACEPLATE ASM

G66-12 PIPE PLUG (2)

RV ONLY

BV USE (2) EACH

D8-348 SPRING GUIDE

P17-110 RV CAP

ADJUSTING SCREW
G62-44 STD
G62-51 SST

D828-41 RV CAP GASKET
LOCK & SEAL NUT
G43-18 STD
G43-65 TFE

BV FACEPLATE ASM

G8-281 RV ADAPTER

D16-16 RV POPPET

RV SPRING
G10-355 STL, STD PRESS
G10-375 STL, HI PRESS
G10-363 SST, STD PRESS
G10-429 SST, HI PRESS

BV FACEPLATE ASM

(INCLUDES RV FACEPLATE ASM
PLUS STL & STD RV COMPONENTS)

N7-901 BRZ, STD
N7-902 BRZ, HI
N7-915 CARBON, STD
N7-916 CARBON, HI
N7-917 IRON, STD
N7-918 IRON, HI

3511-4722 HB, BH, GHB TYPE 3



THE LEADING FORCE IN PUMPING LIQUIDS
WWW.ROPERPUMPS.COM
NOV 2013

(2) G49-24 NOT REQ'D
USE THESE PARTS INSTEAD:
(2) D22-434 STUD
(2) G44-037 NUT
(2) G8-52 WASHER

FLANGE KIT (2 REQ'D)
NOT REQ'D TO
BE SAME FOR BOTH

11 SIZE	N14-14 2" NPT (STD)
N14-14 2" NPT EL (VERT)	N14-16 2" NPT EL (HOR)
17 SIZE	N14-17 2" NPT (STD)
N14-17 2-1/2" NPT	N14-18 3" NPT
N14-18 3" NPT	N14-19 2" NPT EL
N14-19 2" NPT EL	N14-20 3" NPT EL
3x22 SIZE	N14-30 3" NPT (STD)
N14-30 3" NPT	N14-28 2" NPT
N14-28 2" NPT	N14-29 2-1/2" NPT
N14-29 2-1/2" NPT	N14-59 4" NPT
N14-59 4" NPT	N14-31 3" NPT EL
4x22 SIZE	N14-22 4" NPT (STD 4x22)
N14-22 4" NPT	N14-57 3" NPT
N14-57 3" NPT	N14-21 3" NPT EL
N14-21 3" NPT EL	N14-23 4" NPT EL
N14-23 4" NPT EL	EL = 90° ELBOW

DRIVE GEAR, LH

HB / GHB STEEL	HB / GHB SST
P6-276 11 SIZE	D6-528 11 SIZE
P6-274 17 SIZE	D6-672 17 SIZE
P6-278 22 SIZE	D6-630 22 SIZE

FLANGE KIT (2)
(INCLUDES ONE EACH:
FLANGE, GASKET,
HARDWARE)

BACKPLATE ASM

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

**TRIPLE LIP SEAL
DRIVE SHAFT**

HB STEEL	D1-2932 11 SIZE
D1-2935 17 SIZE	D1-2938 22 SIZE
HB SST	D1-2990 11 SIZE
D1-2991 17 SIZE	D1-2992 22 SIZE
HB STEEL	D1-2934 11 SIZE
D1-2937 17 SIZE	D1-2940 22 SIZE
HB SST	D1-3034 11 SIZE
D1-3036 17 SIZE	D1-3036 22 SIZE

IDLER GEAR, RH

STEEL	P6-275 11 SIZE
P6-273 17 SIZE	P6-277 22 SIZE
SST	D6-529 11 SIZE
D6-673 17 SIZE	D6-631 22 SIZE

DRIVE SHAFT
(PKG OR MECH)

HB STEEL	D1-2072 11 SIZE
D1-2073 17 SIZE	D1-1998 22 SIZE
HB SST	D1-2076 11 SIZE
D1-2077 17 SIZE	D1-2027 22 SIZE

DRIVE SHAFT

HB STEEL	D1-2424 11 SIZE
D1-2425 17 SIZE	D1-2426 22 SIZE
HB SST	D1-2592 17 SIZE
D1-2594 22 SIZE	D1-2434 22 SIZE

IDLER SHAFT

STEEL	D1-1098 11 SIZE
D1-1100 17 SIZE	D1-1077 22 SIZE
SST	D1-1099 11 SIZE
D1-860 17 SIZE	D1-1078 22 SIZE

BACKPLATE ASM (BRGS)

HB (P2-144)	N2-403 BRZ
N2-480 CARBON	N2-422 IRON
N2-1355 CRBN/GLASS/TFE	N2-1183 .003" OS BRZ
MOD HB (P2-1398)	(TFE MECH)
N2-1065 BRZ	N2-1067 CARBON
N2-1166 IRON	N2-1290 CRBN/GLASS/TFE
BH (P2-1557)	N2-1312 BRZ
N2-1313 CARBON	N2-1314 IRON
N2-1566 CRBN/GLASS/TFE	MOD BH (TFE MECH)
N/A	GHB (P2-141)
N2-406 BRZ	N2-544 CARBON
N2-424 IRON	N2-1129 IRON
N2-XXXX CRBN/GLASS/TFE	MOD GHB (P2-1397)
(TFE MECH)	N2-1064 BRZ
N2-1073 CARBON	N2-1129 IRON
N2-XXXX CRBN/GLASS/TFE	INCLUDES LONG BRGS (1):
G5-257 BRZ	G5-416 CARBON
G5-266 IRON	G5-860 CRBN/GLASS/TFE
INCLUDES SHORT BRGS (1):	G5-258 BRZ
G5-415 CARBON	G5-267 IRON
G5-859 CRBN/GLASS/TFE	

D8-443 LOCATOR RING (BH ONLY)

G8-246 PACKING WASHER

G17-232 LIP SEAL

LIP SEAL ONLY

D441-755 LOCKNUT (2)

D23-252 SEAL RETAINER

MECH SEAL ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

G44-062 HEX NUT (8)
(22 SIZE ONLY)

IDLER GEAR, RH

D30-9 KEY (2)
D30-32 (GHB & BH)

DRIVE GEAR, LH

D30-9 KEY (2)
D30-32 (GHB & BH)

PACKING ONLY

D42-1 PKG GLAND CLIP (2)

D441-755 LOCKNUT (2)

G40-41 HB BALL BRG

G41-10 RETAINING RING

HB ONLY

G41-76 RETAINING RING

D83-5 GHB LIP SEAL

GHB ONLY

D45-100 GHB SPACER

G41-20 RETAINING RING

G40-147 GHB BALL BRG

G41-76 RETAINING RING

D42-2 SPRING CLIP

P10-178 PKG GLAND

D42-2 SPRING CLIP

G67-043250 SQ HD BOLT (2)

PKG SET

G8-246 PACKING WASHER

G49-037100 HEX HD CAP SCREW (16)

D48-34 DOWEL PIN (4)

G49-24 WASHER HD CAP SCREW (4)

G56-12 PIPE PLUG (2)
(22 SIZE ONLY)

BACKPLATE ASM

G67-043125 SQ HD BOLT (2)

MECH SEAL

G41-76 RETAINING RING

G63-1 LUBE FITTING
(HB ONLY)

CASE

D30-9 KEY (HB)
D30-32 (GHB & BH)

DRIVE SHAFT

D30-9 KEY (2)
D30-32 (GHB & BH)

IDLER SHAFT

RV FACEPLATE ASSEMBLY
(INCLUDES FACEPLATE ASSEMBLY
AND ALL RV COMPONENTS)
BUNA O-RING

STD PRESSURE
N7-487 BRZ STL
N7-534 LUBED BRZ STL

N7-xxx BRZ SST
N7-xxx LUBED BRZ SST

N7-494 CRBN STL
N7-641 LUBED CRBN STL

N7-xxx CRBN SST
N7-xxx LUBED CRBN SST

N7-496 IRON STL
N7-xxx LUBED IRON STL

N7-749 IRON SST
N7-xxx LUBED IRON SST

HI PRESSURE
N7-488 BRZ STL
N7-535 LUBED BRZ STL

N7-xxx BRZ SST
N7-xxx LUBED BRZ SST

N7-495 CRBN STL
N7-642 LUBED CRBN STL

N7-xxx CRBN SST
N7-xxx LUBED CRBN SST

N7-784 IRON STL
N7-xxx LUBED IRON STL

N7-xxx IRON SST
N7-xxx LUBED IRON SST

RV FACEPLATE ASSEMBLY
(INCLUDES FACEPLATE ASSEMBLY
AND ALL RV COMPONENTS)
VITON O-RING

STD PRESSURE
N7-500 BRZ STL
N7-xxx LUBED BRZ STL

N7-xxx BRZ SST
N7-xxx LUBED BRZ SST

N7-570 CRBN STL
N7-xxx LUBED CRBN STL

N7-907 CRBN SST
N7-xxx LUBED CRBN SST

N7-609 IRON STL
N7-795 LUBED IRON STL

N7-xxx IRON SST
N7-xxx LUBED IRON SST

HI PRESSURE
N7-501 BRZ STL
N7-xxx LUBED BRZ STL

N7-xxx BRZ SST
N7-xxx LUBED BRZ SST

N7-571 CRBN STL
N7-xxx LUBED CRBN STL

N7-908 CRBN SST
N7-xxx LUBED CRBN SST

N7-xxx IRON STL
N7-796 LUBED IRON STL

N7-xxx IRON SST
N7-xxx LUBED IRON SST

FACEPLATE ASSEMBLY
PLAIN (P3-675):
N3-477 BRZ
N3-479 LUBED BRZ
N3-478 CRBN
N3-553 LUBED CRBN
N3-480 IRON
N3-xxx LUBED IRON

RV (P3-618):
(DOES NOT INCLUDE RV COMPONENTS)
N3-405 BRZ
N3-443 LUBED BRZ
N3-412 CRBN
N3-554 LUBED CRBN
N3-413 IRON
N3-680 LUBED IRON

RV FACEPLATE ONLY

O-RING
G14-485 BUNA
G69-21 VITON

G49-050600 (2)
HEX HD CAP SCREW

G33-6 RV SEAL NUT

D15-42
ADJUSTING SCREW

D22-122 STUD

G44-050 HEX NUT

RV SPRING (HI REQ BOTH SPRINGS)
STEEL
G10-383 STD
G10-383 + G10-386 HI

G49-050125 (6)
HEX HD CAP SCREW

SST
G10-445 STD
G10-445 + G10-446 HI



THE LEADING FORCE Behind Liquids
www.roperpumps.com

3548, 3648, 3748 BH, HB, GHB TYPE 3

PKG SET
N43-3 STD
N43-187 TFE IMPREGNATED
N43-156 TFE/GRAPHITE
N43-105 PURE TFE
N43-181 GRAPHITE FILAMENT
N43-174 GARLOCK DSA

MECH SEAL
G4-112 STD
G4-142 FLUOROELASTOMER
G4-165 TFE / VITON O-RING
(REQ MOD BACKPLATE
& D8-444 LOCATOR RING OUTBOARD TO SEAL
& DO NOT USE D45-166 SEAL SPACER)

GHB ONLY

D45-166 SEAL SPACER
(HB WITH NON-TFE SEAL ONLY)

G41-5 RETAINING RING

G63-1 LUBE FITTING

G40-31 BALL BEARING

DRIVE SHAFT
PKG/MECH SEAL
BH
D1-2435 STL
D1-2640 SST
HB
D1-2009 STL
D1-2085 SST
GHB
D1-2011 STL
D1-2083 SST

TRIPLE LIP SEAL
BH
D1-2952 STL
D1-3028 SST
HB
D1-2950 STL
D1-3043 SST
GHB
D1-2951 STL
D1-xxxx SST

FLANGE KIT
(TWO KITS REQ'D PER PUMP)
INCLUDES FLANGE, GASKET,
& HARDWARE
N14-57 2" NPT THRU
N14-21 3" NPT THRU
N14-22 4" NPT THRU (STD)
N14-23 3" NPT ELBOW
N14-24 4" NPT ELBOW

DRIVE GEAR, RH
HB & GHB
P6-384 STL
D6-1148 SST
BH
P6-385 STL
D6-xxxx SST

IDLER GEAR, LH
P6-383 STL
D6-1147 SST

G48-49
DOWEL PIN (4)

CASE
P1-481

IDLER SHAFT
D1-2087 STL
D1-2088 SST

KEY
D30-10 STL
D30-203 SST

CASE GASKET (3)
D11-397 STD
D11-493 ALUM

G49-050150
HEX HD CAP SCREW
QTY (16) PUMP WITHOUT RV
QTY (14) PUMP WITH RV

D16-112 RV POPPET (4)

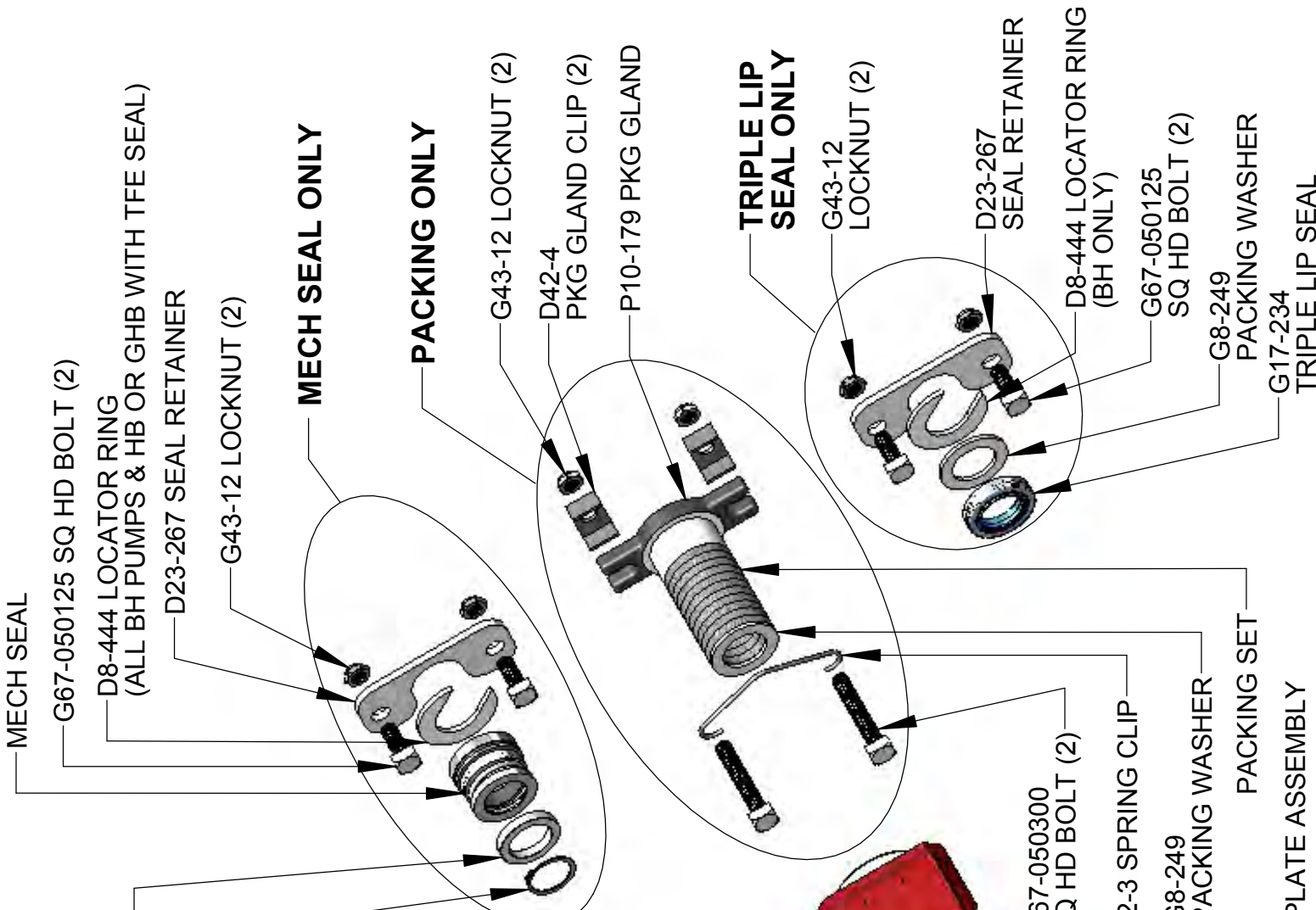
G49-050125 (6)
HEX HD CAP SCREW

D15-42 (2)
ADJUSTING SCREW

G33-6 RV SEAL NUT (2)

RV SPRING (HI REQ BOTH SPRINGS - FOUR TOTAL)
STEEL
(2) G10-383 STD
(2) G10-383 + (2) G10-386 HI

SST
(2) G10-445 STD
(2) G10-445 + (2) G10-446 HI



BEARINGS:
(INCLUDED IN BACKPLATE AND
FACEPLATE ASSEMBLIES)

LONG BRG
(QTY ONE IN BACKPLATE)
(QTY TWO IN FACEPLATE)
G5-265 BRZ
G5-466 CARBON
G5-269 IRON

SHORT BRG
(QTY ONE IN BACKPLATE ONLY)
G5-264 BRZ
G5-465 CARBON
G5-270 IRON

BV ASSEMBLY
(INCLUDES FACEPLATE ASSEMBLY
AND ALL RV COMPONENTS)
VITON O-RING

STD PRESSURE
N7-957 BRZ STL
N7-958 BRZ SST
N7-959 CRBN STL
N7-960 CRBN SST
N7-961 IRON STL
N7-962 IRON SST

HI PRESSURE
N7-963 BRZ STL
N7-964 BRZ SST
N7-965 CRBN STL
N7-966 CRBN SST
N7-967 IRON STL
N7-968 IRON SST

BACKPLATE ASSEMBLY

BH (P2-1558)
N2-1340 BRZ
N2-1445 LUBED BRZ
N2-1341 CRBN
N2-1669 LUBED CRBN
N2-1342 IRON
N2-xxxx LUBED IRON

MOD BH (TFE MECH) N/A

HB (P2-1359)
N2-1036 BRZ
N2-1039 LUBED BRZ
N2-1037 CRBN
N2-1224 LUBED CRBN
N2-1038 IRON
N2-1432 LUBED IRON

MOD HB (P2-1402)
(TFE MECH)

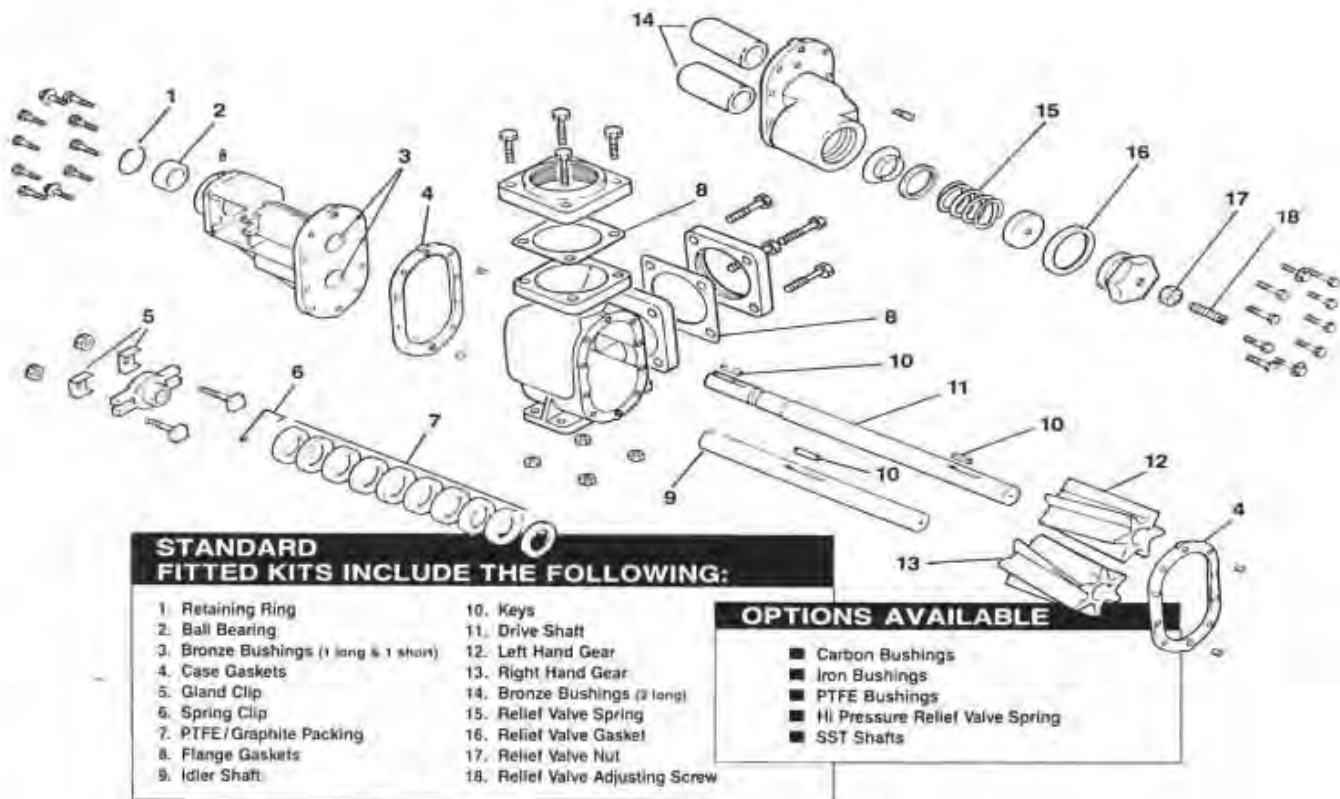
N2-1075 BRZ
N2-xxxx LUBED BRZ
N2-1082 CRBN
N2-xxxx LUBED CRBN
N2-1230 IRON
N2-xxxx LUBED IRON

GHB (P2-1360)

N2-1040 BRZ
N2-1602 LUBED BRZ
N2-1041 CRBN
N2-1641 LUBED CRBN
N2-1042 IRON
N2-1675 LUBED IRON

MOD GHB (P2-1403)
(TFE MECH)

N2-1076 BRZ
N2-xxxx LUBED BRZ
N2-1182 CRBN
N2-xxxx LUBED CRBN
N2-1427 IRON
N2-xxxx LUBED IRON



Pump Model	Standard Fitted Kit Number	Carbon Bushings	Iron Bushings	PTFE Bushings	Hi Pressure RV Spring	Stainless Steel Shafts
3611	N44-188	N44-189	N44-190	N44-191	N44-196	N44-192
3617	N44-172	N44-173	N44-174	N44-175	N44-180	N44-176
3622	N44-133	N44-134	N44-135	N44-136	N44-141	N44-137
3648	N44-149	N44-150	N44-151	N/A	N44-155	N44-152
3658	N44-322					

**“Why take the risk? Why discard the warranty?
Ensure all your parts are genuine Roper parts!”**

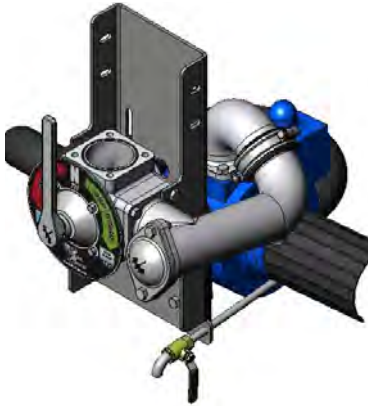
**Roper Rebuild Kits Include All Major
Parts Required To Rebuild Your Pump**

Eff. 1/01



SPS pump systems offer a safe, simple driver friendly interface that improves driver safety and protects the environment. Our systems mount to pumps from leading manufacturers creating an engineered pump system. SPS systems are easy to install and operate. We do not manufacture the pump.

SPSVRS - V3N VANE SYSTEM KIT Made in the U.S.A.



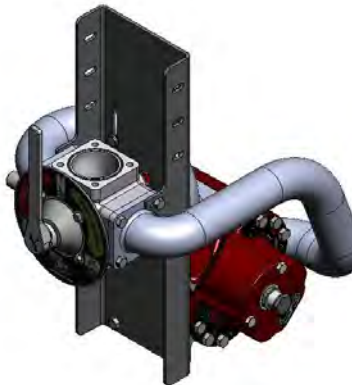
Item #	Part Name
SPS100414	SPSVRS-V3N VANE SYS KIT

Select this model for refined liquid products in the combustible and flammable categories - Diesel, gasoline, avgas, alcohol, biodiesel, fuel additives, all lubricant oils, etc. and where high performance is required, up to 240 Gpm, truck mounted, curb side.

Compatible with 3 inch Blackmer TDX3E vane pump or equivalent.



SPSZR - G4N GEAR SYSTEM KIT Made in the U.S.A.



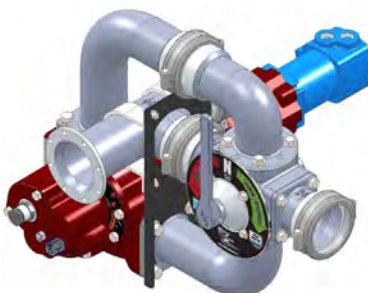
Item #	Part Name
SPS100415	SPSZR-G4N GEAR SYS KIT

Select this model for unrefined or highly viscous liquid products in the combustible and flammable categories - Crude oil, fracking fluids, asphalts and tars where ultra-high performance is required, up to 400 Gpm, shaft or hydraulic drive, truck mounted, driver's or curbside.

Compatible with 4 inch Roper 3648 gear pump or equivalent.



SPSZR - G4NTM GEAR SYSTEM KIT Made in the U.S.A.



Item #	Part Name
SPS100456	SPSZR-G4NTM GEAR SYS KIT

Select this model for unrefined or highly viscous liquid products in the combustible and flammable categories - Crude oil, fracking fluids, asphalts and tars where ultra-high performance is required, up to 400 Gpm, hydraulic drive, trailer mounted. Can be configured for driver's side or curbside operation.

Compatible with 4 inch Roper 3648 gear pump or equivalent.



A wide range of pump system configurations are possible by selecting optional fittings for the inlet and outlet ports of the pump system.



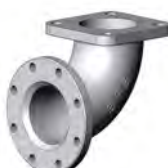
Item #	Part Name	Description
SPS100052	SPS30VG ALUM FLG X GRV	3 inch Victaulic Groove X Flange, Aluminum



Item #	Part Name	Description
SPS100025	SPS30A ALUM FLG X ADAPT	3 inch Male Cam & Grv X Flange, Aluminum



Item #	Part Name	Description
SPS100026	SPS30NPTM ALUM FLGXNPTM	3 inch Male NPT X Flange, Aluminum



Item #	Part Name	Description
SPS100419	SPS30TTF ELBOW ALUM FLG	3 inch TTF Round Flange X Flange Elbow, Aluminum



Item #	Part Name	Description
☎	Crossover, 3 inch	Crossover, 3 inch



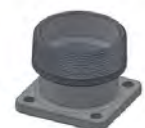
Item #	Part Name	Description
SPS100048	SPS30VG ELBOW AL FLG X GRV (Vane Crossover)	SPS30VGX ELBOW AL FLG X GRV
SPS100086	SPS30VGX ELBOW AL FLG X VG (Extended Length)	SPS30VGX ELBOW AL FLG X GRV



Item #	Part Name	Description
SPS100416	SPS40VG ALUM FLG X GRV	4 inch Victaulic Groove X Flange, Aluminum



Item #	Part Name	Description
SPS100417	SPS40A ALUM FLG X ADAPT	4 inch Male Cam & Grv X Flange, Aluminum



Item #	Part Name	Description
SPS100418	SPS40NPTM AL FLG X NPTM	4 inch Male NPT X Flange, Aluminum



Item #	Part Name	Description
SPS100361	SPS40VG ELBOW AL FLG X GRV	4 inch Victaulic Groove X Flange Elbow, Aluminum



Item #	Part Name	Description
SPS100420	SPS40A ELBOW AL FLG X ADAPT	4 inch Male Cam & Grv X Flange Elbow, Aluminum



Item #	Part Name	Description
SPS100386	SPS40NPTM ELBOW AL NPTM	4 inch Male NPT X Flange Elbow, Aluminum



Item #	Part Name	Description
☎	Crossover 4 inch	Crossover 4 inch



Item #	Part Name	Description
SPS100385	SPS40TTF ELBOW ALUM FLG	4 inch TTF Round Flange X Flange Elbow, Aluminum

Item #	Part Name	Description
SPS100002	SPS 4-Way Valve, Aluminum	SPS 4-Way Valve, Aluminum (Truck Mount System)
SPS100408	SPS 4-Way Valve, Aluminum	SPS 4-Way Valve, Aluminum (Trailer Mount System)



**1500AC
1.5" STATIONARY TRANSFER
PUMP**



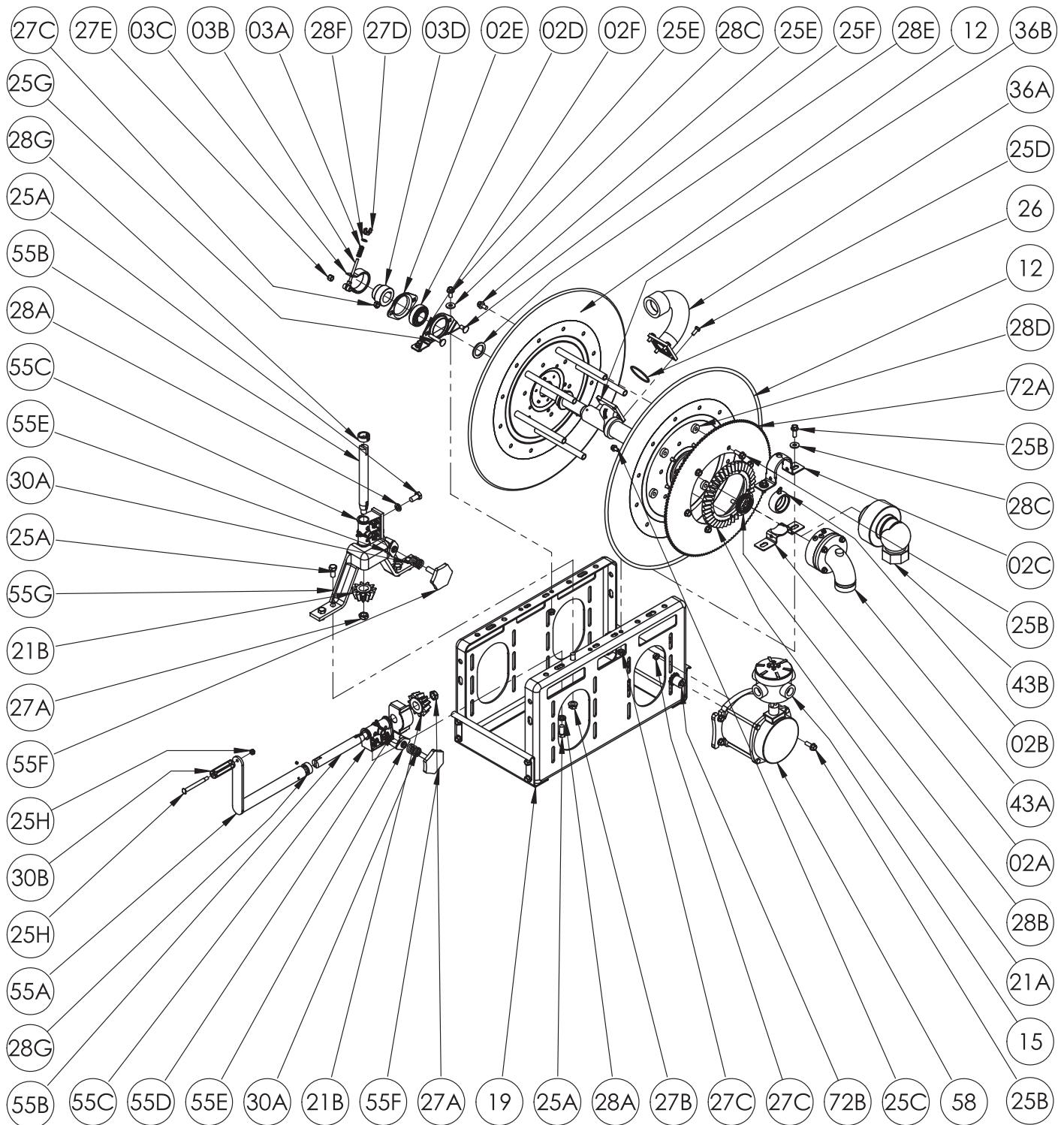
**2000
2" STATIONARY TRASFER
PUMP**



**CUSTOM MODELS
AVAILABLE!**



**M1500
1.5" MOBILE TRANSFER
PUMP**



PARTS LIST
ISO-18
1 1/2" Hose Reel

When ordering parts

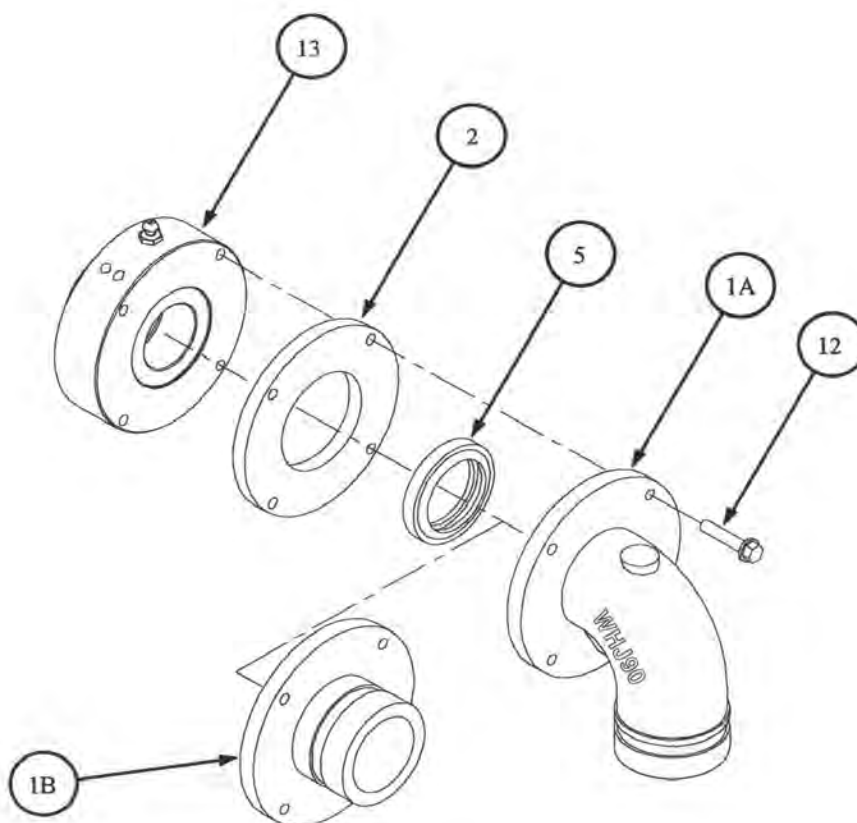
BE SURE TO SPECIFY COMPLETE MODEL NUMBER and SERIAL NUMBER OF REEL.

USE PART NUMBER!

Item No.	Description	PART NUMBER	Quantity
1	Drum, 10-1/2" Diameter (Specify Model)	9905.3131	1
2	Front Disc, 19-20 Series	9903.0821	1
2	Front Disc, 23-24 Series	9903.1121	1
2	Front Disc, 25-26 Series	9903.1321	1
2	Front Disc, 26-27 Series	9903.1421	1
2	Front Disc, 28-29 Series	9903.1521	1
2	Front Disc, 30-31 Series	9903.1621	1
3	Back Disc, 19-20 Series	9903.0821	1
3	Back Disc, 23-24 Series	9903.1121	1
3	Back Disc, 25-26 Series	9903.1321	1
3	Back Disc, 26-27 Series	9903.1421	1
3	Back Disc, 28-29 Series	9903.1521	1
3	Back Disc, 30-31 Series	9903.1621	1
4	Front Frame (Up to 23-24)	9906.0031	1
4	Front Frame (Up to 30-31)	9906.5031	1
6	Back Frame (Up to 23-24)	9906.0031	1
6	Back Frame (Up to 30-31)	9906.5031	1
7	Front Foot (Specify Model)	9907.3000	1
9	Back Foot (Specify Model)	9907.3000	1
11	1-1/2" Flange Hub Only (Specify Model)	9901.3640	1
12	1-1/2" FNPT Iron Pipe Riser Only	9901.3760	1
13	EH-936 Washer	9965.0015	2
16	3/8"-16 Carriage Bolt w/Nut	Specify Model	6
17	3/8" Spacer Pipes (Specify Model)	9904.3200	6
18	Back Bearing Complete	9902.1400	1
18A	Self-Aligning Pillow Block, Back	9902.2900	1
18B	Self-Aligning Bearing Holder, Back	9902.2800	1
19	Back Bearing Insert Only	9902.1500	1
20	Front Bearing Complete	9902.1610	1
20A	Bearing Holder (Bottom Strap), Front	9902.2950	1
20B	Bearing Holder (Top Strap), Front	9902.2955	1
21	Front Bearing Insert Only (With Grease Fitting)	9902.1700	1
22	Ring Gear, H-26 (Up to 25-26)	9914.0372	1
22	Ring Gear, H-28	9914.0382	1
23	Pinion Gear, H-27 (Up to 25-26)	9914.0393	1
23	Pinion Gear, H-29	9914.0404	1
23A	Gear Guard	9914.0618	1
24	5/8"-18 SAE Hex Nut (ESNA)	9904.5600	1
25	Pinion Shaft (Specify Model)	9914.0250	1
27	Side Pinion Bearing	9914.0243	1
28	Collar & Set Screw	9914.0351	1
29	Crank Handle, H-18 Complete	9914.0011	1
29A	Hand Crank Handle	9914.0506	1
29B	Hand Crank Handle Bolt w/Nut	9914.0511	1
30	Brake Pad, H-3	9914.0433	1
31	Vertical Rewind Bracket	9914.0233	1
32	Brake Spring, H-31	9914.0451	1
33	Brake Wheel	9914.0413	1
34A	Comet Brake Hub	9947.0038	1
34B	Comet Brake Strap only	9947.0091	1
34C	Comet Brake Tention Adjuster (Bolt, Spring, Washer, Wing Nut)	9947.0092	1
35	112T35 Disc Sprocket	9910.1321	1
35	138T35 Disc Sprocket	9910.1423	1
35	180T35 Disc Sprocket	9910.1526	1
36	Chain, #35	Specify Model	1
38	Motor Sprocket, 11T35 x 1-5/16	9910.1118	1
41	Motor, 12 Volt Explosion-Proof	9915.0003	1
42	1-1/2" 90 Deg. FxF Swivel Joint (STANDARD; Not for LPG) (Buna-N)	9930.4210	1
42	1-1/2" 90 Deg. FxFvic Swivel Joint (viton seals)	9930.4220	1
42	1-1/2" 90 Deg. FxF Swivel Joint (for LP GAS Applications)	9930.0531	1
50	Gasket	9965.0021	1
59	Sprocket Spacer	9954.0017	6
103A	5/16"-18 x 1/2" Hex Head Bolt	9904.1101	9
103B	3/8"-16 x 3/4" Carriage Bolt w/Nut (w/o Comet Brake)	9904.0201	2
103B	3/8"-16 x 2" Carriage Bolt w/Nut (w/Comet Brake)	9947.0093	1
103C	3/8"-16 x 3/4" Spinlock Bolt	9904.2201	12
103D	3/8"-16 x 1" Spinlock Bolt	9904.2202	4
103E	3/8"-16 Spinlock Nut	9904.6200	16
103F	1/2"-13 x 1" Hex Head Bolt	9904.1402	6
103G	1/2" Lock Washer	9954.0030	6
103H	1/2"-13 Hex Nut	9904.5400	4
103J	3/8"-16 ESNA Nut	9904.5201	1

6M HP 5-08

H-623-P
Rev. 5



PARTS LIST
ISO-194
WHJ Ball Bearing Swivel Joints For 1-1/2" & 2" I.D. Reels

When ordering parts
BE SURE TO SPECIFY COMPLETE MODEL NUMBER and SERIAL NUMBER OF REEL.
USE PART NUMBER!

<u>Drawing No.</u>	<u>Description</u>	<u>PART NUMBER</u>	<u>Quantity</u>
ISO-194-1A	Inlet Fitting 90° 1-1/2" FIPT x 2" VICT.....	9938.0001	1
ISO-194-1A	Alum Inlet Fitting 90° 1 1/2" FIPT x 2" VICT	9938.0007	1
ISO-194-1A	Inlet Fitting 90° 2" FIPT	9938.0005	1
ISO-194-1B	Inlet Fitting 180° 1-1/2" FIPT x 2" VICT.....	9938.0004	1
ISO-194-1B	Alum Inlet Fitting 180° 1 1/2" FIPT x 2" VICT	9938.0002	1
ISO-194-1B	Inlet Fitting 180° 2" FIPT	9938.0006	1
ISO-194-2	P53A-00010 Packing Ring	call factory	1
ISO-194-5A	1-1/2" PK-1 Buna-N Pkg.....	9936.0642	1
ISO-194-5B	1-1/2" PK-1V Viton Pkg	9936.0641	1
ISO-194-12	5/16"-18 x 1-1/4" Hex Head Capscrew	9904.1103	4
ISO-194-13A	WHJ Bearing Assembly (1-1/2")	9938.0030	1
ISO-194-13B	WHJ Bearing Assembly (1 1/2") Alum	9938.0031	1
ISO-194-13C	WHJ Bearing Assembly (2")	9938.0032	1

10M HP 5-06w (1/8 fold)
2M HP 3-06 (1/2 fold)

H-9801-WHJ
Rev. 5

SWIVEL JOINTS, RISERS, HUB ASSEMBLIES

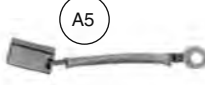
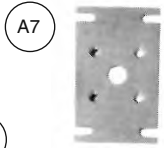
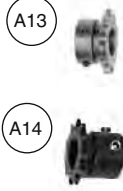
				<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>
                				C1	9927.8138	1/2" 90° MxF BP Super Swivel
				C2	9929.8538	1" 90° FxF BP Super Swivel
				C4	9927.8151	1/2" 90° MxF Super Swivel (FxF also Avail.) 9927.8551
				C5	9929.8551	1" 90° FxF Super Swivel (Buna)
				C6	Specify	Super Swivel Repair Kit (Specify Size)
				C7	9930.4210	1-1/2" 90° FxFxV Swivel (WHJ1590)
				C8	9930.4610	1-1/2" Straight FxFxV Swivel (WHJ15180)
				C9	9936.0642	1-1/2" PK-1 BUNA-N Packing (Merkel)
				C10	9930.5703	1-1/2" Straight Victaulic H-5 Joint
				C11	9936.0659	H-5C Rope Packing Seal for H-5 Joint
				C12	9929.0501	1" 90° Full Circle Swivel
				C13	9930.0531	1-1/2" 90° FxF Full-Circle Swivel
				C14	9901.1600	1" FIPT Iron Welded Hub Assembly (Specify Model)
				C15	9901.3760	1-1/2" FIPT Iron Flanged Riser
				C16	9965.0024	O-Ring for 1-1/2" Risers (2-5/8" Diam.)
				C16	9965.0025	O-Ring for 3" Risers (3-3/4" Diam.)
				C17	9901.2840	1-1/2" Hub Assy Complete (Specify Model)

BEARINGS

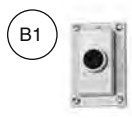
				<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>
      				E3	9902.1200	1/2" S.A. Ball Bearing Complete
				E4	9902.1300	1/2" S.A. Ball Bearing Insert
				E5	9902.1400	1" S.A. Ball Bearing Complete
				E6	9902.1500	1" S.A. Ball Bearing Insert
				E7	9902.1610	1-1/2" S.A. Bronze Bearing Complete (E-coated)
				Not Shown	9902.1620	1-1/2" S.A. Bronze Bearing Complete (304 S.S.)
				E8	9902.1700	1-1/2" S.A. Bronze Bearing Insert
				E9	9902.1730	1" S.A. Bronze Bearing insert

Note - photos shown not actual size.

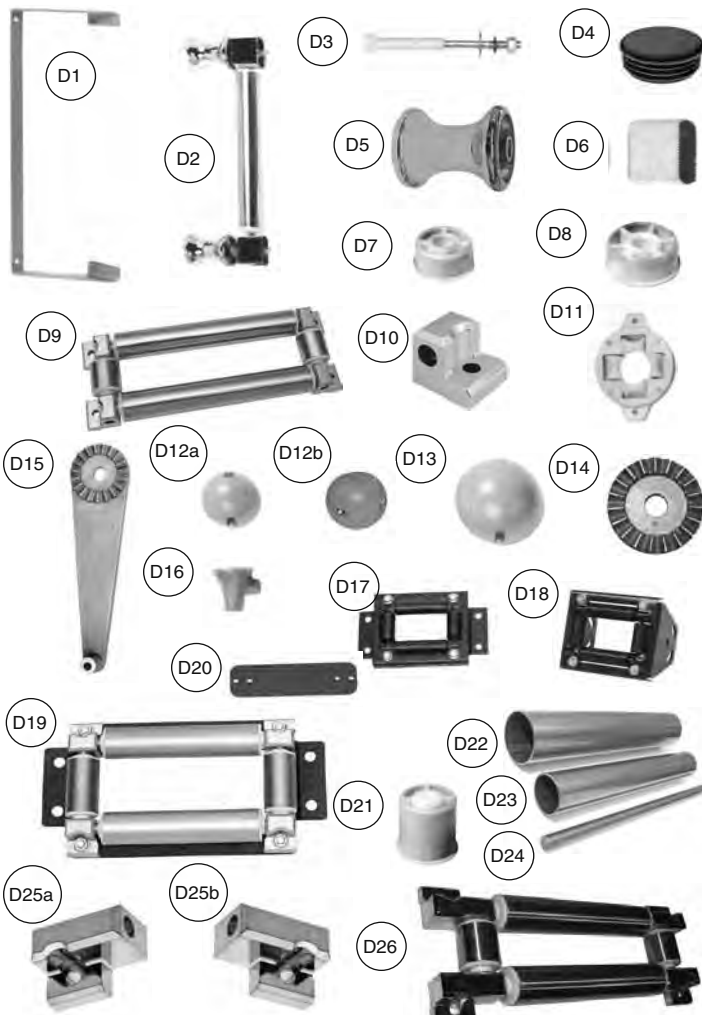
MOTORS, SPROCKETS, CHAIN

			ITEM	PART	DESCRIPTION
                 			A1	9915.0042	12 Volt Flange Mount Non-Exp-Proof Motor
			A2	9915.0003	12 Volt Flange Mount Explosion-Proof Motor
			A3	9915.0014	12 Volt Base Mount Explosion-Proof Motor
			A5	9916.0071	Pair of Brushes for 12 Volt Non-Exp-Proof Motor (#572008)
			A6	9916.0070	Two Pairs of Brushes for 12 Volt Explosion Proof Motor (#572000)
			A7	9923.0008	Flange Mount Motor Plate for Non-Exp-Proof Motor
			A8	9923.0006	P66A-00090 Motor Mounting Plate Right Angle for Non-Exp-Proof Motor
			A9	9912.0001	10' Length #35 Chain w/Connecting Link
			A9	9912.0002	10' Length #40 Chain w/Connecting Link
			A10	9912.0010	Connecting Link for #35 Chain
			A10	9912.0009	Connecting Link for #40 Chain
			A11	9910.1423	138T35 Disc Sprocket, 16-5/8" Diameter (E-Coated)
			A12	9910.3128	146T40 Disc Sprocket, 23-1/2" Diameter (E - coated)
			Not Shown	9910.1321	112T35 Disc Sprocket, 13-3/8" Diameter (E-coated)
			A13	9910.1116	11T35 Motor Sprocket, 3/4" Long
			A14	9910.1117	11T35 Motor Sprocket, 1-1/16" Long
			A15	9910.1118	11T35 Motor Sprocket, 1-5/16" Long
			A16	9910.1119	11T35 Motor Sprocket, 1-3/4" Long
			A17	9910.2219	Disc & Sprocket for Caliper Brake (#35 Chain)
			Not Shown	9910.2100	Disc & Sprocket for Caliper Brake (#40 Chain)
			A18	Specify	Molded Chain Guard (left or right)

SWITCHES AND ELECTRICAL

			ITEM	PART	DESCRIPTION
            			B1	9917.0001	Red Dot EXPB-2A Switch (12 Volt)
			B2	9917.0014	Red Dot Internal Switch
			B4	9917.0061	Red Dot 5-Port Round Junction Box/Cover
			B5	9917.0062	#6 Wire Nut (For Red Dot Junction Box)
			B6	9917.0063	Insulated "Bug" Connector
			B7	9917.0025	12 Volt Solenoid (Diode-Suppressed)
			B8	Specify	SDLM Circuit Breaker (Specify Amperage)
			B9	9917.0024	CB-2 Mounting Bracket (for Circuit Breaker)
			B10	9917.0006	Push-Button 12 Volt Switch (Less Cap)
			B11	9917.0008	Rubber Cap (For Push Button Switch)
			B12	9917.0200	EPS-1 Switch (Used with Guidemaster)
			B13	9917.0207	EPS-2 Mounting Bracket (Used with EPS-1)
			B14	9917.0208	Extension Bracket for EPS-2

ROLLER ASSEMBLIES, CABLE GUIDES, HOSE STOPS

			<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>
			D1	Specify	Top Wind FH-3 Mtg. Brkt. (Specify Model)
			D2	9939.0042	FH-3 Roller & Spool Assy. (Specify Model)
			D3	9940.0012	FH-307 Delrin-Over-Steel Step Bolt
			D4	9940.0002	FH-309-P Black Plastic Cap
			D5	9940.0005	FH-301 Spool
			D6	9940.0006	FH-302 Block
			D7	9940.0007	FH-303-15 (1.5") Trunnion Bearing
			D8	9940.0008	FH-303-2 (2") Trunnion Bearing
			D9	9939.0062	Utility Hose Roller Assy. "C" (Spec. Model)
			D10	9940.0076	EH-650 Mounting Block (Plated)
			D11	9939.0003	EH-714 Roller Assembly
			D12a	9922.0111	HS-3 Hose Stop (Specify OD of Hose)
			D12b	9922.0200	HS-35 Hose Stop For Single Hose (Specify OD of Hose)
			Not Shown	9922.0210	HS-35 Hose Stop For Twin Hoses (Specify OD of Hose)
			D13	9922.0012	HS-45 Hose Stop (Specify OD of Hose)
			D14	9951.0009	GR-4A Guide Arm Positioner
			D15	9951.0010	GR-4 Guide Arm
			D16	9951.0012	GR-5 Scoop Cable Guide
			D17	Specify	"R200" Series Roller Assembly
			D18	Specify	"N200" Series Roller Assembly
			D19	Specify	"R300" Series Roller Assembly
			D20	Specify	Roller Mounting Arm (2) per reel (For "N" Series Spring Reels)
			D21	9940.0016	FH-303 1 1/2" Trunnion Bearing (New Style) (No Through Hole)
			D22	9940.0010	FH-305 2" SST Roller Tubing
			D23	9940.0003	1 1/2" SST Roller Tubing
			D24	9940.0009	FH-304 Roller Rod
			D25a	9940.0071	LEFT HAND roller mounting block (plated)
			D25b	9940.0072	RIGHT HAND roller mounting block (plated)
			D26	9939.1062	Assy C2 Roller with 1 1/2" Diam. Roller (Style 2) (Specify Model)

GUIDEMASTER PARTS AND BRACKETS

			<u>ITEM</u>	<u>PART</u>	<u>DESCRIPTION</u>
			G1	9945.0026	GM Ball Bearing (For GM-609 Roller)
			G2	9945.0044	GM-108 Ball Bearing (For GM-109 Roller)
			G3	9945.0019	GM-609 Roller w/GM Bearing
			G5	9944.0040	GM-700 Guide Arm Body Assy w/Mtg. Yoke
			G6	9945.0009	GM Mounting Yoke w/Bronze Bushing
			G7	9945.0011	GM Oil-Impregnated Bronze Bushing
			G8	9945.1001	GM Roller Body w/Mtg. Bolts
			G10	9945.1005	GM Roller Mtg. Bolts
			G11	9945.1003	Pinlock assy for GM 700
			G12	9945.1004	GM Roller Bolt Mounting Plate
			G15	9945.0035	GM Cross Member Assembly (3 Pieces) (Specify Model)
			G16	9945.0036	GM Bottom-Wind Brackets (Pair)
			G17	9945.0037	GM Top-Wind Brackets (Pair)
			G18	9939.0069	Assy. "B" Roller for Bottom-Wind Guidemaster Reels (specify model)

REWIND ASSEMBLIES, BRAKES, RATCHETS

REWIND ASSEMBLIES, BRAKES, RATCHETS			
ITEM	PART	DESCRIPTION	
F1	Specify	30° Rewind Bracket (specify right or left)	
F2	9914.0233	Vertical Rewind Bracket Only	
F3	9914.0372	H-26 Ring Gear	
F4	9914.0382	H-28 Ring Gear	
F5	9914.0393	H-27 Pinion Gear	
F6	9914.0403	H-29 Pinion Gear	
F7	Spec. Model	Pinion Shaft	
F8	9914.0351	Pinion Shaft Collar	
F9	9914.0618	Pinion Gear Guard (E-Coated)	
F10	9914.0243	H-2A Pinion Shaft Bearing	
F11	9914.0413	H-30A Brake Wheel	
F12	9914.0451	H-31 Brake Spring	
F13	9914.0433	H-3 Brake Pad	
F14	9914.0011	H-18 Hand Crank	
F15	9947.0020	Air Caliper Brake	
Not Shown	9947.0001	Manual Caliper Brake	
F16	9947.0024	Pair of Brake Pads (For Air Caliper Brake)	
F18	9947.0036	Comet Brake Strap Only (IV Style)	
F19	9947.0038	Comet Brake Iron Hub (IV Style)	
F21	9922.0015	Ratchet Wheel (new 2 position)	
F22	9965.0030	PL-1 Pinlock	
F23	9965.0036	PL-4 Pinlock with Extended Mounting Ears	
F24	9947.0090	Comet Brake Assembly (Bearing Mounted Style)	
Not Shown	9947.0043	Comet Brake Assembly (Bearing Mounted Style with Stub Shaft)	
F25	9947.0130	Cam Lever Drag Brake Kit 3-Position Lever (including mounting hardware)	
Not Shown	9922.0008	Ratchet Locking Spring	
F26	9922.0301	Left Hand Pawl & Pin (304 SST)	
F27	9922.0302	Right Hand Pawl & Pin (304 SST)	
F28	9922.0311	Left Hand Ratchet Locking Assy for HGR, SCR, SGCR, Reverse N-Series	
F29	9922.0312	Right Hand Ratchet Locking Assy for N-series	
F30	9922.0321	Left Hand Ratchet Locking Assy for Rollform Reels	
F31	9922.0322	Right Hand Ratchet Locking Assy for Reverse Rollform Reels	

ACCESSORIES

Operating Switches for Electric Rewind Reels



9917.0004

90030 sealed push-button momentary contact switch with rubber cap for 12 or 24 volt **D.C.** service.



P15A-00130

P15A-00130 Universal mounting bracket for EPS-1 switch.



9917.00200

EPS-1 explosion-proof cable momentary contact switch for remote control or for permanent mounting in the most convenient location. Supplied with 6 ft. of 3-wire cable, self-sealing fitting and terminals. Must be used with solenoid. (12 volt only)



P15A-00170

P15A-00170 Mounting bracket for use with Guidemaster.



PB-1

PB-1 switch non-explosion-proof, 115v momentary contact switch.



9917.0001

EXPB-2A explosion-proof, push-button momentary contact switch for **D.C.** service only. Must be used with solenoid.

EXPBC-2B For use with **A.C.** motors.

To Order: Specify Part Number.

Circuit Breakers

Must be used with all D.C. electric rewind motors.

SDLM Manual Reset. Push-button must be pressed firmly to reset. Several amperage ratings are available to suit specific application.

CB-2 Mounting bracket for SDLM Breaker.



50 AMP - 9917.0021
70 AMP - 9917.0022



9917.0024

To Order: Specify SDLM and give Model Number of reel motor. Specify CB-2 bracket, if required.

ACCESSORIES

Rewind Motors



**Base mount E.P.
Electric Motor**



**Face mount E.P.
Electric Motor**



**Face mount Non-E.P.
DC Motor**
(Shown with optional
mounting plate part no.
9923.0008)

Hydraulic Motors are reversible type. No other hydraulic components are furnished with the reel. A 4-way, three position control valve with motor spool is recommended but is **not** supplied.



Compressed Air Motors are supplied with a fingertip control valve with integral backpressure relief, and with flexible air line from control valve to rewind motor. We recommend using a lubricator and filter with air rewind motors, not supplied.



Electric Motors are reversible type for A.C. or D.C. operation. **Circuit breaker must be used with all D.C. electric motors.**

Note: All accessories for the above motors are available, but must be ordered separately.

Note: Standard motor voltages available. 12v. and 24v. D.C., 115v. A.C., 230v. A.C. single phase and 3-phase motors available on special order.

Rewind Assemblies for Gear-Driven Crank Rowind Reels

These assemblies are used to change the pinion shaft position on gear-drive crank rewind reels to meet space restrictions or for greater operator convenience. Units can be factory-installed, when specified with reel order, or supplied in kit form for field installation.

Assemblies are complete with drag-brake assembly, pinion, gear guard, brake handle and fasteners. Fits standard mounting holes on reel frame.

To Order: Specify Rewind Position for parts order or factory installation.



**Horizontal
rewind unit**



30° rewind unit

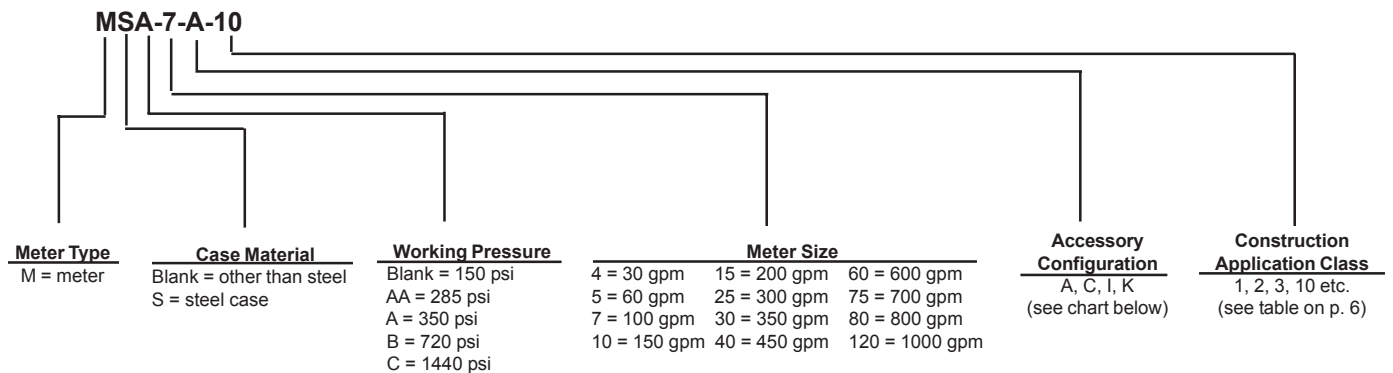


Vertical rewind unit



Model Numbering System

Model number coding description



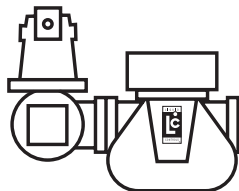
Standard accessory configurations A, C, I, K

M / MA - 7 - A
A = Meter with counter



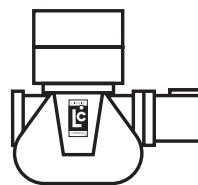
Optional Accessories:
Printer, Strainer

M / MA - 7 - C
C = Meter with counter, strainer and air eliminator



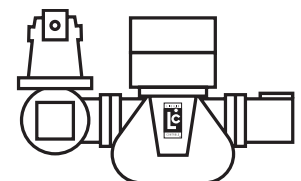
Optional Accessories:
Printer

M / MA - 7 - I
I = Meter with counter, preset counter and preset valve



Optional Accessories:
Printer, Strainer

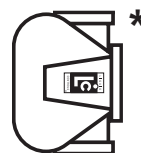
M / MA - 7 - K
K = Meter with counter, preset counter and preset valve, strainer and air eliminator



Optional Accessories:
Printer

Mounting arrangements

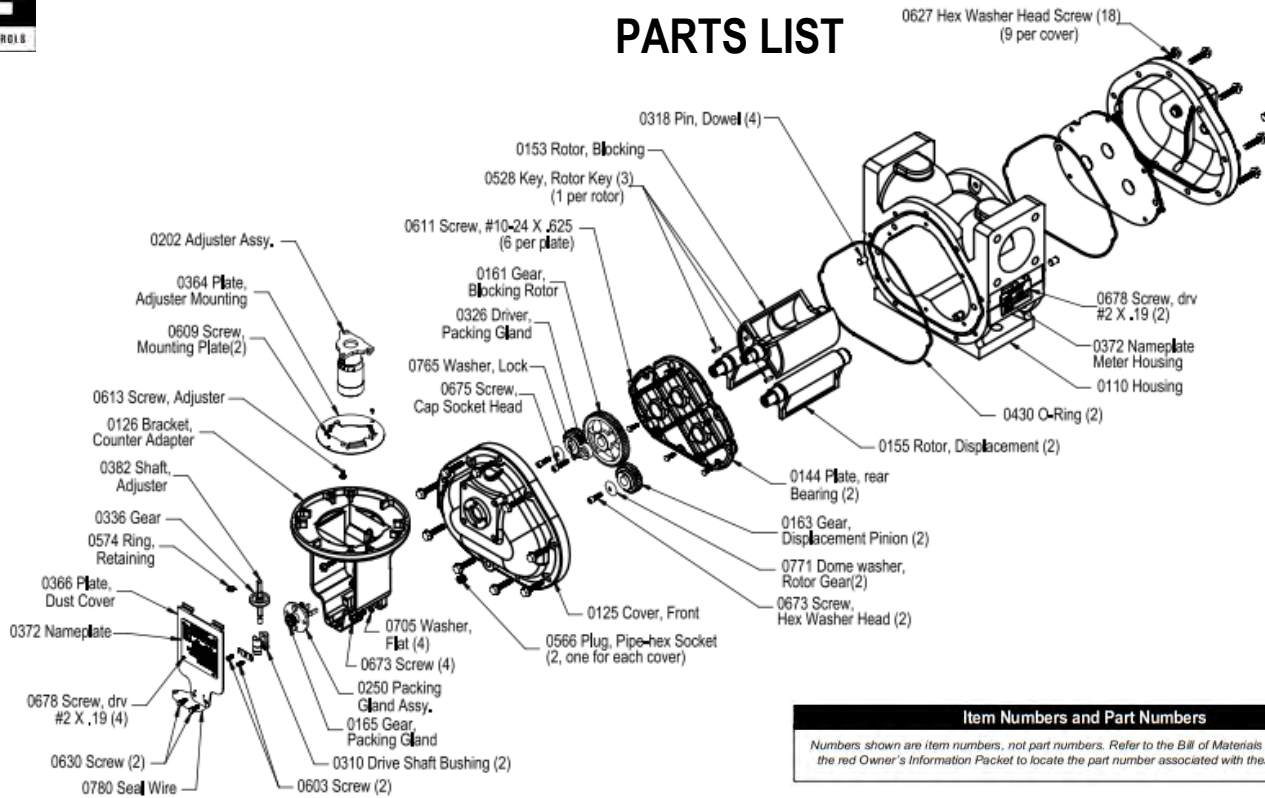
LC meters may be mounted in a variety of configurations, as shown below. Do not position the meter on its side, i.e., with cover plate face down or up.



* ONLY AVAILABLE ON DIRECT MOUNT PULSER MODELS OR MODELS LESS RESET COUNTER.

Note: regardless of meter mounting configurations, accessories such as the air/vapor eliminator must always be mounted in a vertical orientation to permit proper operation of the float-actuated apparatus.

M-5 METER PARTS LIST



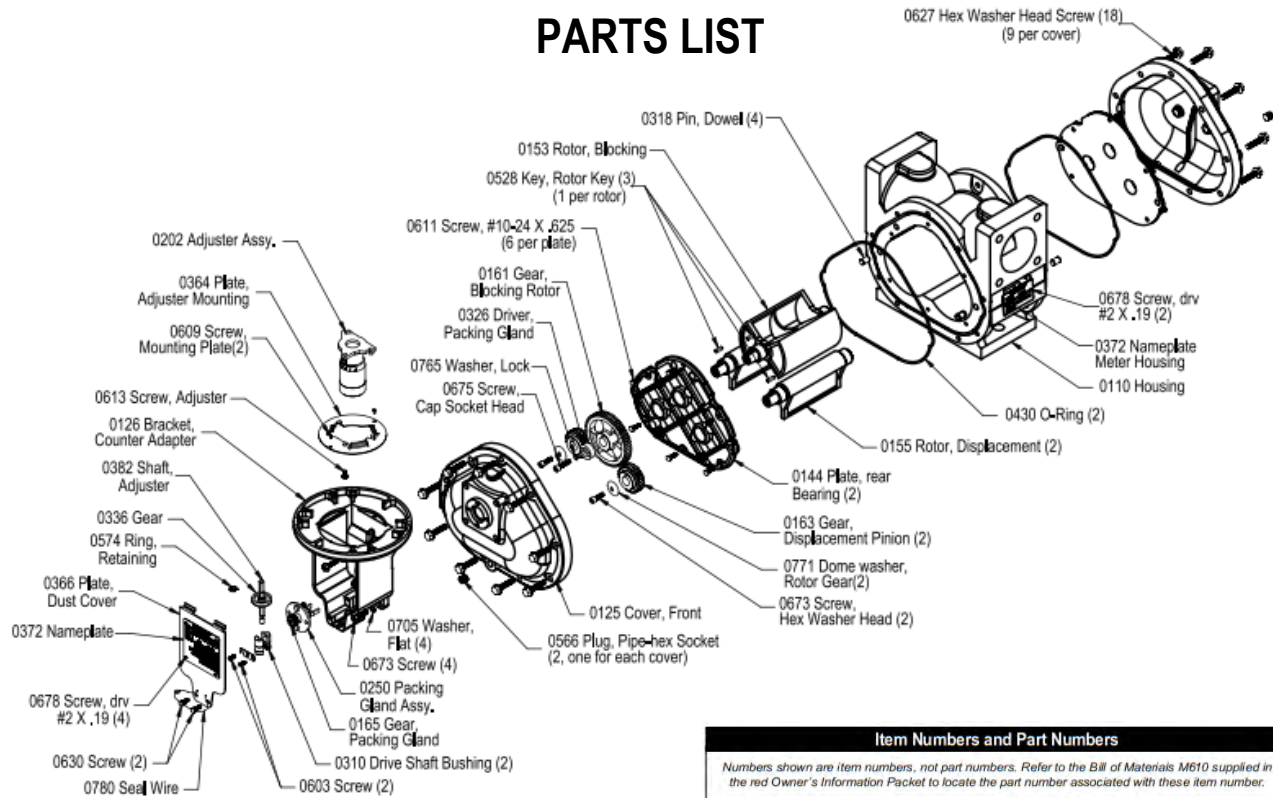
Item Numbers and Part Numbers

Numbers shown are item numbers, not part numbers. Refer to the Bill of Materials M610 supplied in the red Owner's Information Packet to locate the part number associated with these item number.

ITEM #	PART #	QTY	DESCRIPTION
0110	48271	1	HOUSING
0144	47671	1	FRONT BEARING PLATE
0146	47670	1	REAR BEARING PLATE
0153	48079	1	BLOCKING ROTOR ASSY
0155	48078	2	DISPLACEMENT ROTOR ASSY
0161	48090	1	BLOCKING GEAR
0163	48089	2	DISPLACEMENT PINION GEAR
0318	40665	4	DOWEL PIN
0342	501016	1	OUTPUT GEAR
0343	48257	1	OUTPUT PINION
0575	48277	1	LOCK WASHER
0611	09079	8	SCREW (#10-24 X .625)
0635	48275	1	SHOULDER SCREW (.25 DIA.)
0672	09110	4	SCREW (#8-32 X .640)
0771	48319	3	LOCK WASHER (.25)
0772	48345	3	STAINLESS STEEL KEY
0372	49444	1	NAMEPLATE
0678	00306	2	DRIVE SCREW FOR NAMEPLATE
0200	48403	1	PARTS MANUAL
0773	09029	1	FLAT WASHER, .180 I.D.
COVER SEAL			
0430	09278	2	O-RING, BUNA-N - STANDARD
0463	06856	1	O-RING (.88 ID BUNA-N)
END COVERS			
0123	48272	1	COVER, FRONT
0125	48273	1	COVER, REAR
0566	06790	2	PIPE PLUG, (.250-18 NPT)
0627	09080	18	SCREW (.312-18 X 1.375)
ADJUSTER			
0202	49403	1	ADJUSTER ASSY-STANDARD
PACKING GLAND			
0250	49403	1	PACKING GLAND ASSY (1:1 & 2:1 PINION GEARS) BUNA - STANDARD
0165	48283	1	PINION GEAR, PM, NS, 1:1, 24-TOOTH-STANDARD
0165	48284	1	PINION GEAR, PM, NS, 2:1, 12-TOOTH-OPTIONAL

ITEM #	PART #	QTY	DESCRIPTION
FACE GEAR			
0336	40122	1	FACE GEAR, DELRIN, 1:1-STANDARD
0336	40818	1	FACE GEAR, DELRIN, 2:1-OPTIONAL
0336	42907	1	FACE GEAR, SS, 2:1, 12-TOOTH-OPTIONAL
0336	42909	1	FACE GEAR, SS, 1:1, 24-TOOTH-OPTIONAL
DRIVE SHAFT			
0310	41786	2	BUSHING, DRIVE SHAFT
0382	48287	1	ADJUSTER SHAFT
0574	02188	1	RETAINING RING, (.025)
DUST COVER			
0366	49390	1	COVER ADJUSTOR PLATE
0630	09093	1	SCREW (10-32 X .50)
0780	48864	1	SEAL WIRE KIT
GEAR PLATE			
	G1127	1	1/10 GALLON 1:1, 2%, W/O PRESET-STANDARD
	G1622	1	WHOLE LITERS, 2:1, 2%, W/O PRESET-OPTIONAL
	G1623	1	WHOLE LITERS, 2:1, TVC, 2%, W/O PRESET-OPTIONAL
FLANGE ASSEMBLY			
	A2138	2	NI/UL BUNA/ 1-1/2" NPT-STANDARD
	06854	2	O-RING, BUNA-STANDARD
ELBOW ASSEMBLY			
	A1070	2	M5/2 BOLT, ALUM/BUNA - 1.5", 46 DEG.-STANDARD
	09117	2	O-RING, BUNA-STANDARD
COUNTER			
	D1111	1	1/10 GALLONS-STANDARD
	D1147	1	WHOLE LITERS-OPTIONAL
COUNTER ASSEMBLY ADAPTOR			
0126	49434	1	COUNTER ADAPTOR BRACKET
0375	48208	1	RETAINING SPRING
0603	06845	2	SCREW (#10-24 X .375)
0673	09084	4	SCREW (.250-20 X 1")
0705	06743	4	FLAT WASHER

M-7 METER PARTS LIST



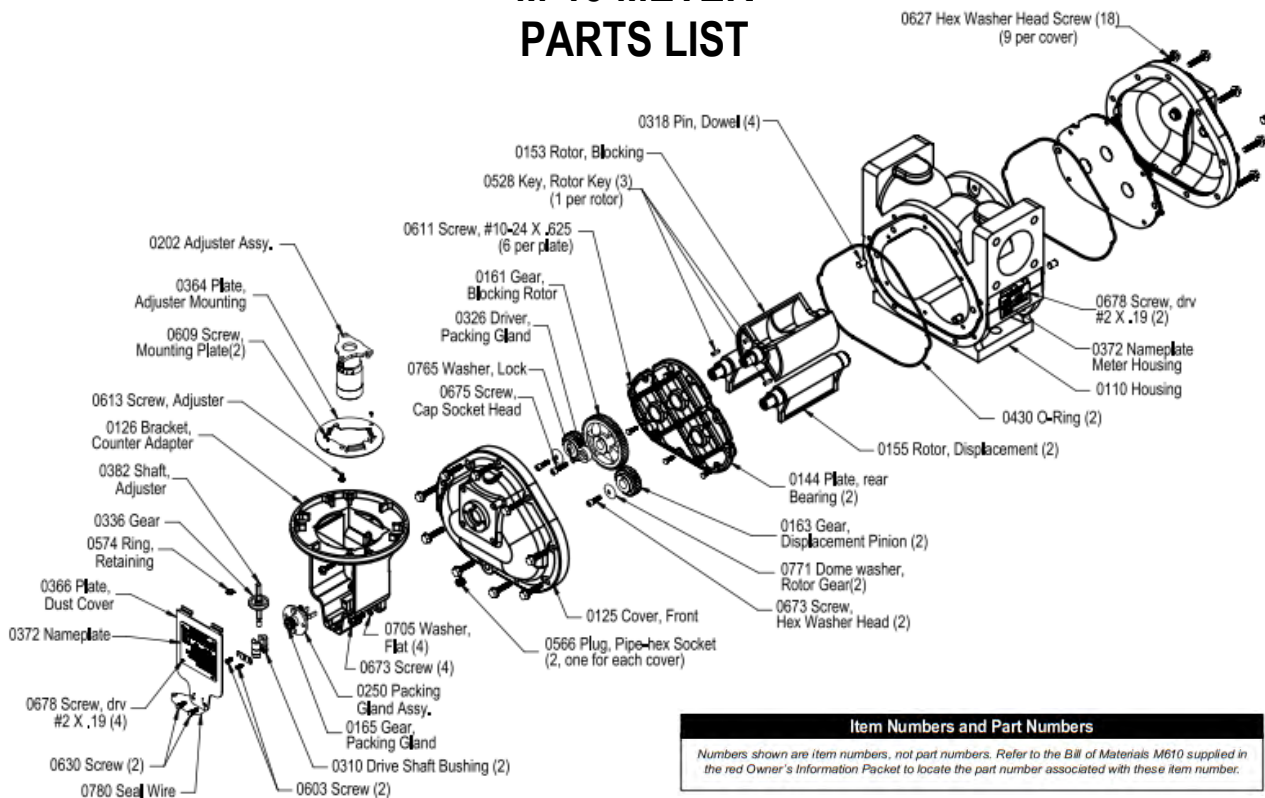
Item Numbers and Part Numbers

Numbers shown are item numbers, not part numbers. Refer to the Bill of Materials M610 supplied in the red Owner's Information Packet to locate the part number associated with these item number.

ITEM #	PART #	QTY	DESCRIPTION
0110	49445	1	HOUSING
0144	41804	2	BEARING PLATE
0153	48306	1	ROTOR, ASSY, BLOCKING
0155	48366	2	ROTOR, ASSY, DISPLACEMENT
0161	47646	1	GEAR, BLOCKING ROTOR - CLASS 1
0161	47633	1	GEAR, BLOCKING ROTOR - CLASS 2
0163	47647	2	PINION GEAR - CLASS 1
0318	40665	4	DOWEL PIN
0326	48756	1	DRIVER, PACKING GLAND
0528	48332	3	KEY, STAINLESS STEEL
0611	09079	10	SCREW (#10-24 X .625)
0673	09027	2	SCREW (.25-20 X .75 LG)
0675	07483	1	SCREW (.25-20 X 1.00 LG)
0765	06174	1	LOCK WASHER (.25)
0771	48348	2	ROTOR GEAR WASHER (.25 ID X .75 OD SST)
0372	4944	1	NAMEPLATE
0678	00306	2	DRIVE SCREW FOR NAMEPLATE
0200	48496	1	PARTS MANUAL
0163	47634	2	PINION GEAR - CLASS 2
COVER SEAL			
0430	09258	2	O-RING, BUNA-N (6.25 ID)-STANDARD
0463	06856	1	O-RING (.88 ID BUNA-N)
0430	06940	2	O-RING, VITON (6.25 ID)-OPTIONAL
0463	06191	1	O-RING (.88 ID VITON)
0430	07241	2	O-RING, PTFE (6.19 ID)-OPTIONAL
0463	06024	1	O-RING (.88 ID PTFE)
END COVERS			
0123	48301	1	COVER, FRONT
0125	48302	1	COVER, REAR
0566	06790	2	PIPE PLUG, (.250-18 NPT)
0627	09080	20	SCREW (.312-18 X 1.375)
ADJUSTER			
0202	49403	1	ADJUSTER ASSY - STANDARD
0202	49405	1	ADJUSTER (HIGH TEMPERATURE) - OPTIONAL
PACKING GLAND			
0250	48616	1	KIT (1:1 & 2:1 PINION GEARS) BUNA-STANDARD
0250	48617	1	KIT (1:1 & 2:1 PINION GEARS) VITON-OPTIONAL
0250	48618	1	KIT (1:1 & 2:1 PINION GEARS) PTFE-OPTIONAL
0165	48284	1	PINION GEAR, PM, NS, 2:1, 12-TOOTH-STANDARD
0165	48283	1	PINION GEAR, PM, NS, 1:1, 24-TOOTH-OPTIONAL

ITEM #	PART #	QTY	DESCRIPTION
FACE GEAR			
0336	40818	1	FACE GEAR, DELRIN, 2:1 - STANDARD
0336	40122	1	FACE GEAR, DELRIN, 1:1 - OPTIONAL
0336	42907	1	FACE GEAR, SS, 2:1, 12-TOOTH - OPTIONAL
0336	42909	1	FACE GEAR, SS, 1:1, 24-TOOTH - OPTIONAL
DRIVE SHAFT			
0310	41786	2	BUSHING, DRIVE SHAFT
0382	48287	1	ADJUSTER SHAFT
0574	02188	1	RETAINING RING, (0.25)
DUST COVER			
0366	49390	1	COVER ADJUSTER PLATE
0630	09093	1	SCREW (10-32 X .50)
0780	48864	1	SEAL WIRE KIT
GEAR PLATE			
	G2132	1	1/10 GALLON, 2:1, W/O PRESET-STANDARD
	G2129	1	1/10 GALLON, 2:1, W/ PRESET-STANDARD
	G2106	1	WHOLE GALLON, 2:1, TVC, W/O PRESET-OPTIONAL
	G2112	1	WHOLE GALLON, 2:1, W/O PRESET-OPTIONAL
	G2681	1	WHOLE LITERS, 2:1, W/O PRESET-OPTIONAL
	G2682	1	WHOLE LITERS, 2:1, TVC, W/O PRESET-OPTIONAL
	G2105	1	WHOLE GALLON, 2:1, TVC, W/ PRESET-OPTIONAL
	G2109	1	WHOLE GALLON, 2:1, W/ PRESET-OPTIONAL
	G2680	1	WHOLE LITERS, 2:1, W/ PRESET-OPTIONAL
FLANGE ASSEMBLY			
	A2210	2	ALUM/BUNA/2" NPT- STANDARD
0420	06854	2	O-RING, BUNA - STANDARD
0420	7025	2	O-RING, VITON - OPTIONAL
0420	06664	2	O-RING, PTFE - OPTIONAL
COUNTER			
	D111	1	1/10 GALLONS-STANDARD
	D1131	1	WHOLE GALLONS-OPTIONAL
	D1147	1	WHOLE LITERS-OPTIONAL
COUNTER ASSEMBLY ADAPTOR			
0126	49434	1	COUNTER ADAPTOR BRACKET
0375	48208	1	RETAINING SPRING
0603	06845	2	SCREW (#10-24 X .375)
0673	09084	4	SCREW (.250-20 X 1")
0705	06743	4	FLAT WASHER

M-15 METER PARTS LIST



Item Numbers and Part Numbers

Numbers shown are item numbers, not part numbers. Refer to the Bill of Materials M610 supplied in the red Owner's Information Packet to locate the part number associated with these item number.

ITEM #	PART #	QTY	DESCRIPTION
0110	501154	1	HOUSING, ALUMINUM
0144	46732	2	BEARING PLATE
0611	09079	12	BEARING PLATE SCREW (#10-24 X .625)
0318	40864	4	DOWEL PIN
0153	501026	1	ROTOR, BLOCKING, M15 ALUMINUM MACHINED
0155	501028	2	ROTOR, DISPLACEMENT, M15 ALUMINUM MACHINED
0161	47419	1	GEAR, BLOCKING ROTOR (CLASS1)
0161	47421	1	GEAR, BLOCKING ROTOR (CLASS 2 & 3)
0163	47420	2	GEAR PINION, DISPLACEMENT ROTOR, SS (CLASS 1)
0163	47422	2	GEAR PINION, DISPLACEMENT ROTOR, SS (CLASS 2&3)
0528	501030	3	KEY FOR BLOCKING & DISPLACEMENT ROTORS
0673	09170	2	SCREW, .250-20 X .750" SOCKET HEAD CAP, 316 SST
0675	07483	1	SCREW, .250-20 X 1" HEX SOCKET HEAD CAP, 316 SS
0771	48348	2	WASHER, ROTOR GEAR
0765	06174	1	LOCK WASHER
0326	48756	1	DRIVER FOR PACKING GLAND
0372	49444	1	NAMEPLATE
0678	00306	2	DRIVER SCREW #2 X .19 TYPE "U"
COVER SEAL			
0430	09200	2	O-RING, BUNA-N, STANDARD
0430	09320	2	O-RING, VITON, OPTIONAL
0430	09321	2	O-RING, PTFE, OPTIONAL
END COVERS			
0123	501033	1	COVER, FRONT (M15/M25)
0125	501034	1	COVER, REAR (M15/M25)
0125	501143	1	COVER, REAR (M15 WITH POD PULSER)
0627	09080	18	END COVER SCREW (5/16-18 X 1-3/8)
0566	06790	2	PLUG, ONE FOR EACH COVER (1/4-18 NPT)
ADJUSTER			
0202	49403	1	ADJUSTER ASSEMBLY - STANDARD
0202	49405	1	ADJUSTER (HIGH TEMPERATURE) - OPTIONAL
0364	42660	1	ADJUSTER MOUNTING PLATE
0609	00362	2	SCREW, MOUNTING PLATE (6-32 X 1/4")
0613	07063	1	SCREW, ADJUSTER
PACKING GLAND			
0250	48616	1	KIT (1:1 & 2:1 PINION GEARS) BUNA-N -STANDARD
0250	48617	1	KIT (1:1 & 2:1 PINION GEARS) VITON - OPTIONAL
0250	48618	1	KIT (1:1 & 2:1 PINION GEARS) PTFE - OPTIONAL
0165	48283	1	PINION GEAR, PM, 1:1, 24-TOOTH - STANDARD
0165	48284	1	PINION GEAR, PM, 2:1, 12-TOOTH - OPTIONAL

ITEM #	PART #	QTY	DESCRIPTION
FACE GEAR			
0336	40122	1	FACE GEAR, DELRIN, 1:1, 24-TOOTH - STANDARD
0336	40818	1	FACE GEAR, DELRIN, 2:1, 12-TOOTH - OPTIONAL
0336	42909	1	FACE GEAR, SS, 1:1, 24-TOOTH - OPTIONAL
0336	42907	1	FACE GEAR, SS, 2:1, 12-TOOTH - OPTIONAL
DRIVE SHAFT			
0574	02188	1	RETAINING RING (0.250)
0310	41786	2	BUSHING, DRIVE SHAFT
0382	48287	1	ADJUSTER SHAFT
DUST COVER			
0366	49390	1	DUST COVER PLATE
0630	09093	2	SCREW, DUST COVER (10-32 X .50)
0850	42053	1	LABEL
GEAR PLATE			
	G3126	1	WHOLE GALLON, 2:1, W/O PRESET - STANDARD
	G3125	1	WHOLE GALLON, 2:1, W/ PRESET -STANDARD
	G3124	1	WHOLE GALLON, 2:1, TVC, W/O PRESET - OPTIONAL
	G3517	1	WHOLE LITERS, 1:1, W/O PRESET - OPTIONAL
	G3123	1	WHOLE GALLON, 2:1, TVC, W/ PRESET - OPTIONAL
	G3516	1	WHOLE LITERS, 1:1, W/ PRESET - OPTIONAL
FLANGE ASSEMBLY			
	A3230	2	CAST IRON/ BUNA/ 3" NPT - STANDARD
0435	40871	2	NITRILE RUBBER - STANDARD
COUNTER			
	D1131	1	WHOLE GALLON - STANDARD
	D1147	1	WHOLE LITERS - OPTIONAL
COUNTER ASSEMBLY ADAPTOR			
0126	49434	1	COUNTER BRACKET
0673	09084	4	SCREW, COUNTER BRACKET (1/4-20 X 1")
0705	06743	4	FLAT WASHER (.265 ID)
0603	06845	2	SCREW FOR DRIVE SHAFT BUSHING (10-24 X 3/8")
0375	48208	1	RETAINING SPRING



AIR ELIMINATOR

MODEL #A8180

PART #	DESCRIPTION
501024*	FLOAT ASSY W/O FLOAT GUIDE
43778	VALVE PLATES (2)
48571	REEDS (2)
42823	COVER SEALS (2)

MODEL #A8197

PART #	DESCRIPTION
501088*	FLOAT ASSY
43778	VALVE PLATES (2)
48571	REEDS (2)
42823	COVER SEALS (2)



STRAINER ASSEMBLIES

2" STRAINER BODY #A2340

PART #	DESCRIPTION
06854	FLANGE O-RING
06844	CAP O-RING
06847	AIR ELIMINATOR O-RING
49425	STRAINER HOUSING

3" STRAINER BODY #A3340

PART #	DESCRIPTION
40871	FLANGE GASKET
06798	CAP O-RING
06847	AIR ELIMINATOR O-RING
4849	STRAINER HOUSING

HIGH CAPACITY STRAINER ASSEMBLY



2" HIGH CAPACITY STRAINER ASSY

DESCRIPTION	PART #
HOUSING, HI-CAP	N/A
STRAINER COVER	42987
O-RING, BUNA	06847
O-RING, BUNA	06798
O-RING, BUNA	06854
SCREW, .5-13 X 1.5 (4)	06057
FLAT WASHER (4)	04685
SCREW, .375-16 X 1.25 (4)	04444
FLAT WASHER (4)	04498
NAMEPLATE	N/A
SCREW, #2 X .19 (2)	003065
PIPE PLUG, .250-18 NPT	4417



FLANGES

PART #	DESCRIPTION
A2210	2" FLANGE



2" STRAINER BASKET

PART #	DESCRIPTION
A2430	40 MESH
A2433	20 MESH

3" STRAINER BASKET

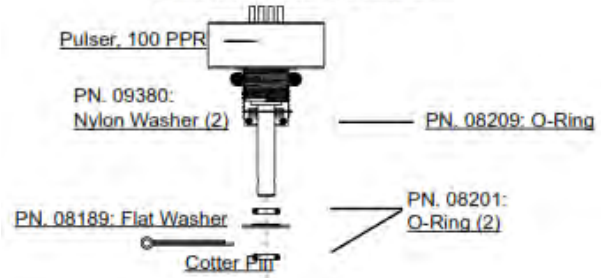
PART #	DESCRIPTION
A3430	40 MESH



LCR-II REGISTER

LCR-II REGISTER	
PART #	DESCRIPTION
70471	SELECTOR SWITCH KNOB
81819	SWITCH PLATE
81915	LCD DISPLAY ASSY
818352	ENCLOSURE COVER ASSY

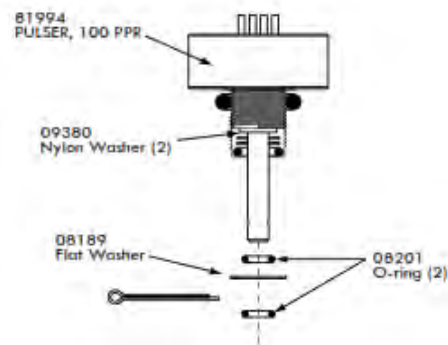
PN. 82597: Pulser Field Install Kit



LCR-600 REGISTER

LCR-600 REGISTER	
PART #	DESCRIPTION
70471	SELECTOR SWITCH KNOB
84048	LCR 600 SWITCH PLATE
84065	ENCLOSURE COVER ASSY

PN. 82597: Pulser Field Install Kit



**LAP PAD
#E40301**



EPSON SLIP PRINTER
CALL FOR INFORMATION

TOTAL CONTROL SYSTEMS

"The Standard of Measurement"



METER CONFIGURATION SELECTION

XXX	XX	XXX	XXX	X	X	DESCRIPTION	
						METER TYPE	SIZE
682	15					Piston Positive Displacement	1-1/2" = 50 GPM (189 LPM)
700	15					Rotary Positive Displacement	1-1/2" = 60 GPM (227 LPM)
	20						2" = 100 GPM (380 LPM)
	25						2" = 150 GPM (567 LPM)
	30						3" = 200 GPM (760 LPM)
	35						3" = 300 GPM (1135 LPM)
	40						4" = 500 GPM (1893 LPM)
	45						4" = 600 GPM (2271 LPM)
						TYPE	
		SP				Standard Petroleum	
		SPA				Standard Petroleum (Aviation Fuel)	
		SPD				Standard Petroleum (Ductile Iron)	
		IP				Industrial Products ¹	
		IC				Industrial Products with Carbon Graphite Bearings ¹	
		AF				All Ferrous	
		SS				Stainless Steel	
		SSD				Stainless Steel (Diesel Exhaust Fluid/Adblue) ²	
						COMPONENT CONFIGURATION	
			2			Meter and Register	
			3			Meter, Register and Printer	
			4			Meter, Register and Air Eliminator/Strainer	
			4R			Meter, Register and Air Eliminator/High Volume Strainer ^{1 2}	
			4S			Meter, Register and Electronic Air Eliminator/Strainer ¹	
			4V			Meter, Register and Electronic Air Eliminator/High Volume Strainer ^{1 2}	
			5			Meter, Register and Strainer	
			6			Meter, Register, Printer and Air Eliminator/Strainer	
			6R			Meter, Register, Printer and Air Eliminator/High Volume Strainer ^{1 2}	
			7			Meter, Register, Printer and Strainer	
			8			Meter, Register and Preset Valve	
			9			Meter, Register, Printer and Preset Valve	
			10			Meter, Register, Preset Valve and Air Eliminator/Strainer	
			10R			Meter, Register, Preset Valve and Air Eliminator/High Volume Strainer ^{1 2}	
			10S			Meter, Register, Preset Valve and Electronic Air Eliminator/Strainer ¹	
			10V			Meter, Register Preset Valve and Electronic Air Eliminator/High Volume Strainer ^{1 2}	
			11			Meter, Register, Printer, Preset Valve and Air Eliminator/Strainer	
			11R			Meter, Register, Printer, Preset Valve and Air Eliminator/High Volume Strainer ^{1 2}	
			12			Meter, Register, Preset Valve and Strainer	
			13			Meter, Register, Printer, Preset Valve and Strainer	
						METER ORIENTATION	
				A		Meter Assembly with Veeder Root Registration	
				B		Meter Assembly less Veeder Root Registration	
				C		Meter Assembly and Drive Coupler for use with Mid:Com, Veeder Root, Liquid Controls, Liquip, etc.	
				D		Meter Assembly with a Direct Mount Pulse Transmitter in 9 to 24 VDC Standard; 5 VDC Optional	
				E		Meter Assembly with TCS 3000 Electronic Registration – 75 Degree Mount	
				F		Meter Assembly with TCS 3000 Electronic Registration – 90 Degree Mount	
				G		Meter Assembly with Direct Mount Pulse Transmitter and TCS 3000 Electronic Registration – Remote Mount	
						REGISTRATION	
				X		NO REGISTER	
				G		1/1 U.S. Gallons (WHOLE)	
				T		1/10 U.S. Gallons (TENTHS)	
				L		1/1 Liters	
				E		1/10 Liters	
				D		1/1 Dekaliters	
				I		1/1 Imperial Gallons	
				P		1/1 Pounds	
				C		1/1 Cubic Meters	

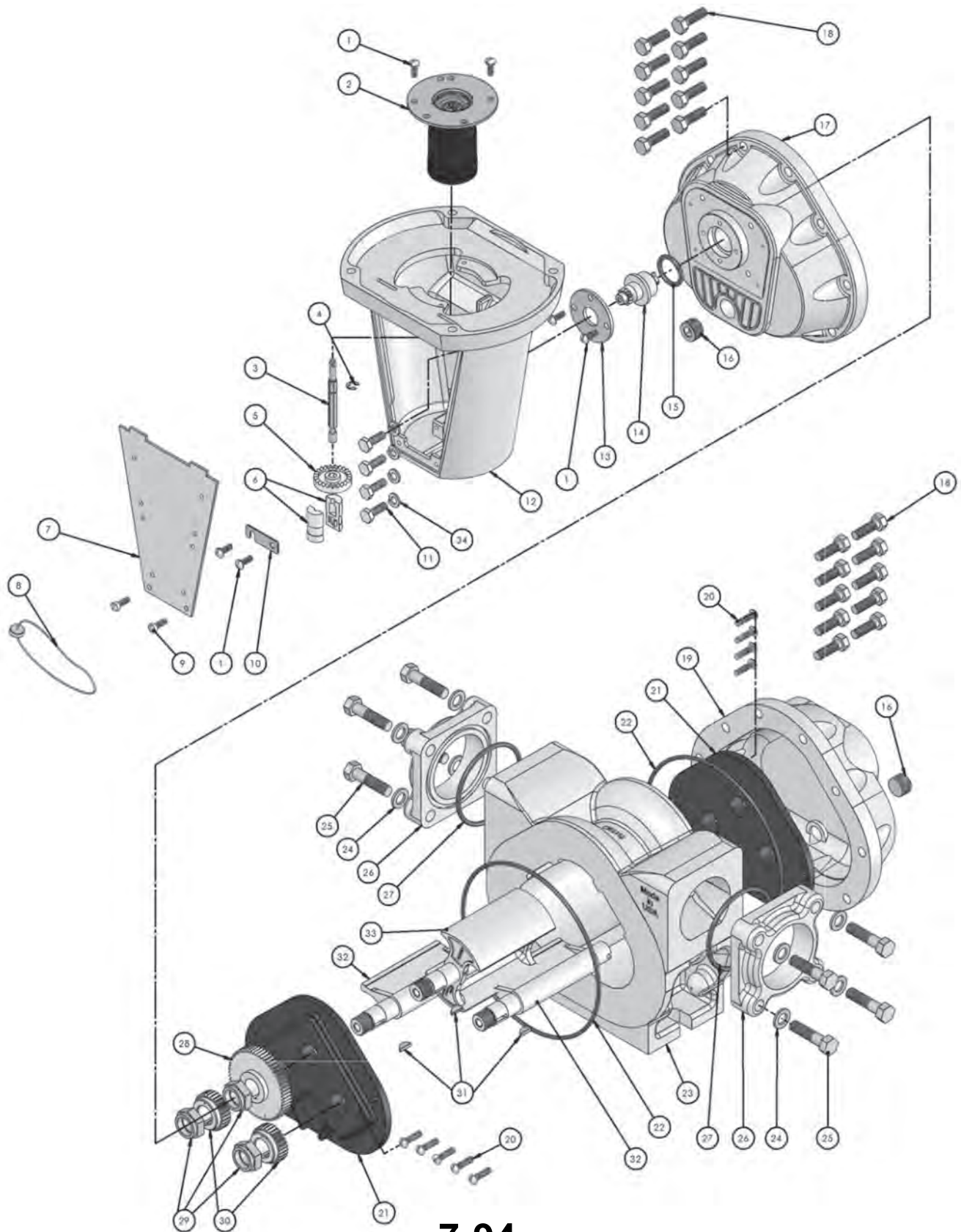
(ADD OPTIONS ONLY AS NEEDED TO THE COMPLETE MODEL NUMBER FROM ABOVE)

						X	XX	ADDER DESCRIPTION
								PULSE TRANSMITTER
						-		NONE
						1		Register Mount 1:1 Dry Reed Pulser UL (Meter Orientation A)
						2		Register Mount 10:1 Dry Reed Pulser UL (Meter Orientation A)
						3		Register Mount 100:1 Solid State Pulser UL (Meter Orientation A)
						4		Register Mount 100:1 Solid State Pulser ATEX (Meter Orientation A)
								OPTIONS
						-		NONE
						A		Air Differential Check Valve ^{1 2}
						C		Back Pressure Check Valve (Spring Loaded Wafer Type)
						T		Automatic Temperature Compensation (ATC) Kit: RTD Temperature Probe & Thermowell

¹ 700 ROTARY FLOW METER ONLY

² NOT AVAILABLE WITH METER TYPE SSD (DIESEL EXHAUST FLUID/ADBLUE)

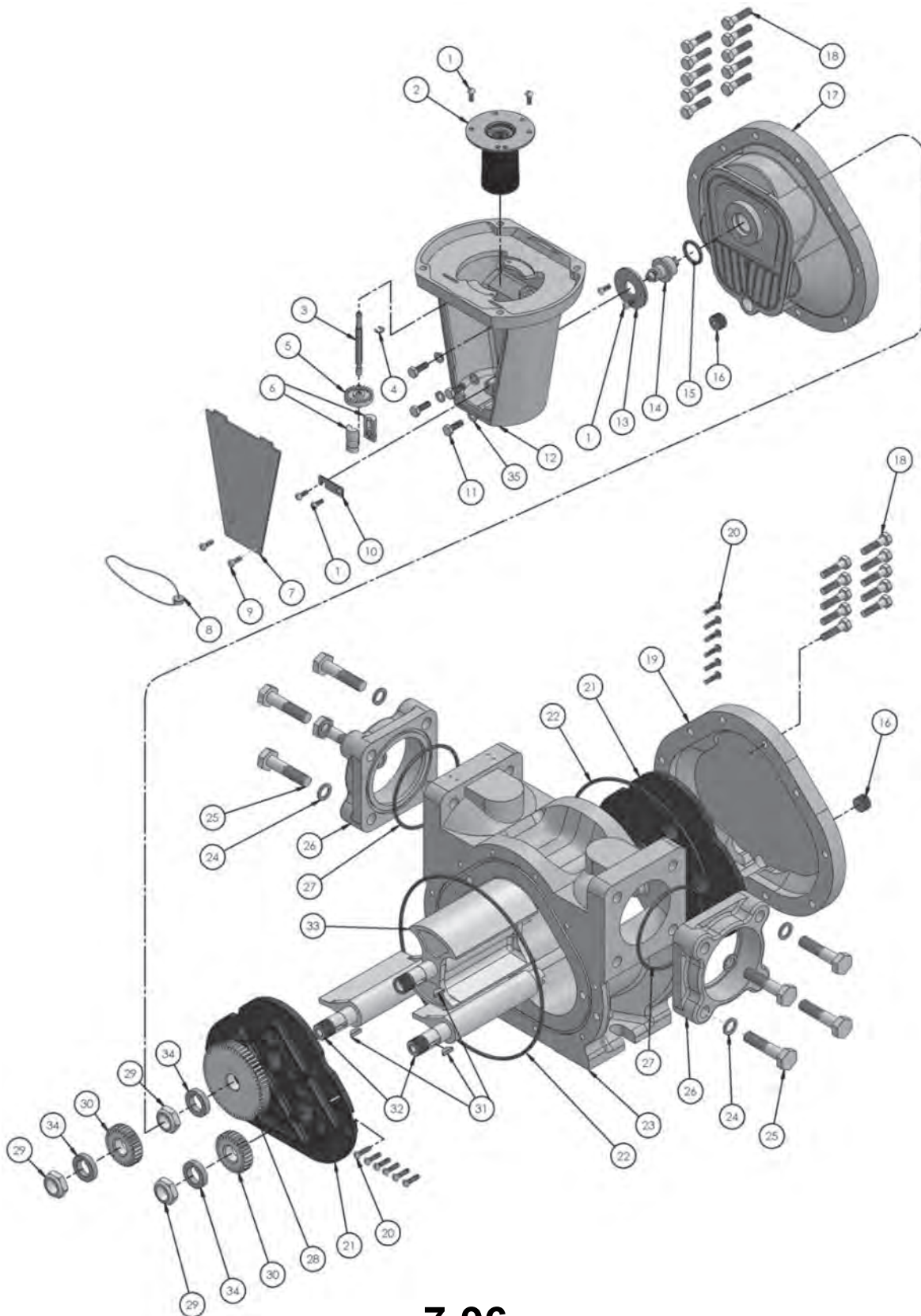
700-20 / 700-25 Meter Assembly



700-20 / 700-25 Meter Assembly

Item	Description	Qty	700-20								700-25	
			SP	SPA	SPD	IP	IC	AF	SS	SSD	SPA	SPD
1	Round Head Screw	6	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279
2	Adjuster Assembly	1	700100	700100	700100	700100	700100	700100	700100	700100	700100	700100
3	Drive Shaft	1	700019	700019	700019	700019	700019	700019	700019	700019	700019	700019
4	E-Ring	1	700016	700016	700016	700016	700016	700016	700016	700016	700016	700016
5	Acetal Face Gear	1	700018	700018	700018	700018	700018	700018	700018	700018	700018	700018
6	Acetal Bushing	2	700020	700020	700020	700020	700020	700020	700020	700020	700020	700020
7	Adjuster Cover Plate	1	700017	700017	700017	700017	700017	700017	700017	700017	700017	700017
8	Seal Wire	1	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849
9	Drilled Head Screw	2	700042	700042	700042	700042	700042	700042	700042	700042	700042	700042
10	Drive Shaft Retainer	1	700022	700022	700022	700022	700022	700022	700022	700022	700022	700022
11	Head Mount Screw	4	700040	700040	700040	700040	700040	700040	700040	700040	700040	700040
12	Register Support	1	700200	700200	700200	700200	700200	700200	700200	700200	700200	700200
13	Packing Retaining Plate	1	700015	700015	700015	700015	700015	700015	700015	700015	700015	700015
14A	2:1 Packing Capsule Assy., STD	1	700150	700150	700155	700155	700155	700155	700155	700350	700150	700155
14B	1:1 Packing Capsule Assy.	1	700170	700170	700175	700175	700175	700175	700175	-	700170	700175
15	Packing O-ring	1	700009	700009	700010	700010	700010	700010	700010	700809	700009	700010
16	Plug	2	700024	700024	700024	700024	700024	700024	700024	700024	700024	700024
17	Front Cover	1	702500	702500	702503	702500	702500	702503	702502	702524	702500	702503
18A	Cap Screw	16	700026	700026	700026	700026	700026	700026	700026	700026	700026	700026
18B	Drilled Cap Screw	4	D700026	D700026	D700026	D700026	D700026	D700026	D700026	D700026	D700026	D700026
19	Rear Cover	1	702550	702550	702553	702550	702550	702553	702552	702572	702550	702553
20	Round Head Screw	10	702014	702014	702014	702014	702014	702014	702014	702014	702014	702014
21	Bearing Plate	2	702230	702235	702235	702230	702225	702225	702225	702231	702225	702225
22	Cover O-ring	2	702001	702001	702002	702002	702002	702002	702002	702801	702001	702002
23	Housing	1	702110	702110	702120	702110	702110	702120	702125	702114	702110	702120
24	Flat Washer	8	702018	702018	702018	702018	702018	702018	702018	702018	702018	702018
25A	Cap Screw	4	702017	702017	702017	702017	702017	702017	702017	702017	702017	702017
25B	Drilled Cap Screw	4	702017D	702017D	702017D	702017D	702017D	702017D	702017D	702017D	702017D	702017D
26A	Flange, 2" NPT	2	702600	702600	702601	702600	702600	702601	702602	702602P	702600	702601
26B	Flange, 2" BSPT	2	702603	702603	702611	702603	702603	702611	702612	702612P	702603	702611
27	Flange O-ring	2	702012	702012	702013	702013	702013	702013	702013	702812	702012	702013
28	Blocking Gear	1	702351	702351	702351	702351	702351	702351	702350	702353	702351	702351
29	Rotor Lock Nut	3	702010	702010	702010	702010	702010	702010	702020	702020	702010	702010
30	Displacement Gear	2	702451	702451	702451	702451	702451	702451	702450	702453	702451	702451
31	Rotor Key	3	702008	702008	702008	702008	702008	702008	702008	702008	702008	702008
32	Displacement Rotor	2	702405	702405	702422	702410	702410	702415	702415	702424	702405	702422
33	Blocking Rotor	1	702305	702305	702322	702310	702310	702315	702315	702324	702305	702322
34	Lock Washer	4	700071	700071	700071	700071	700071	700071	700071	700071	700071	700071

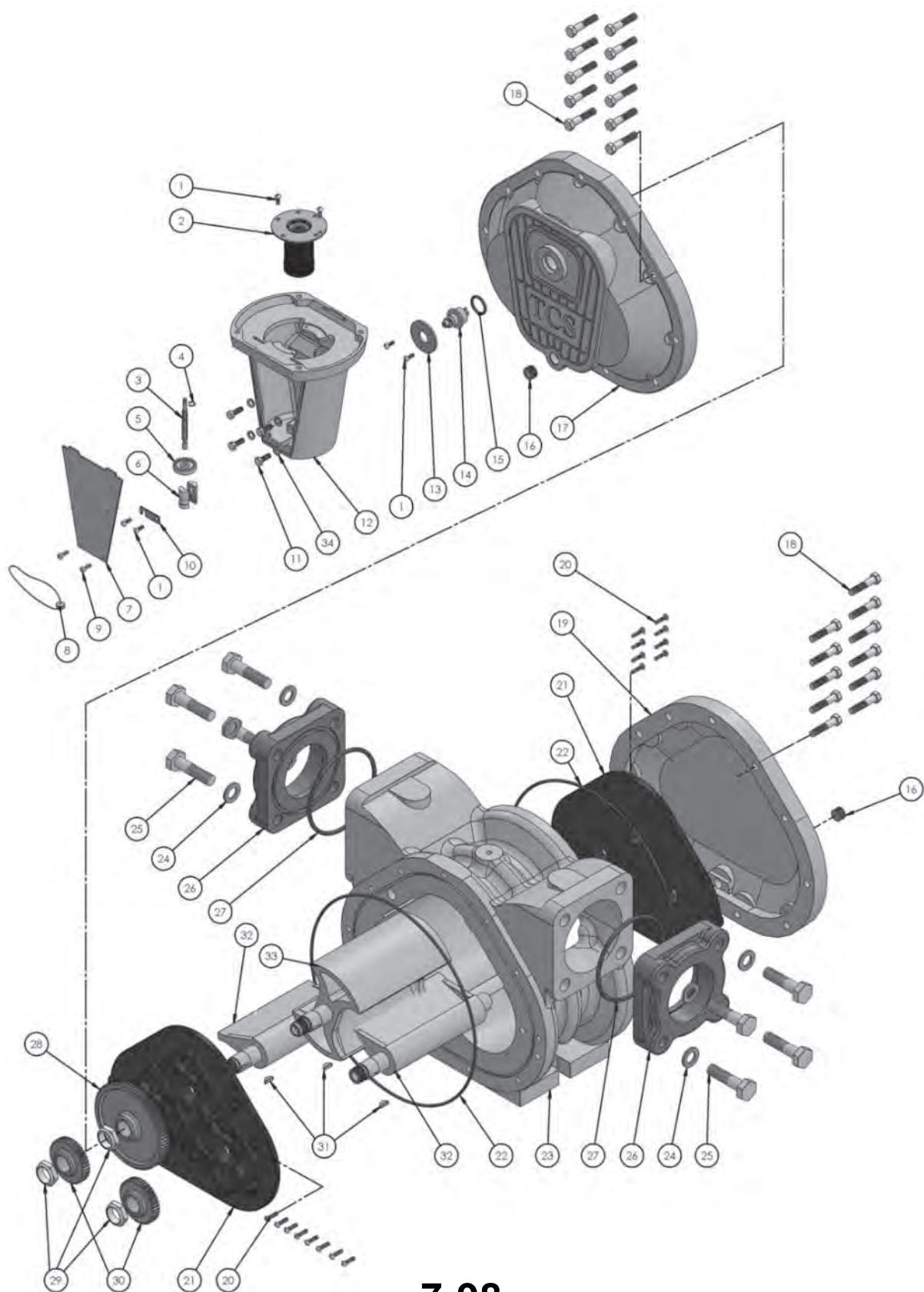
700-30 / 700-35 Meter Assembly



700-30 / 700-35 Meter Assembly

Item	Description	Qty	700-30						700-35	
			SP	SPA	SPD	IP	IC	AF	SPA	SPD
1	Round Head Screw	6	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279
2	Adjuster Assembly	1	700100	700100	700100	700100	700100	700100	700100	700100
3	Drive Shaft	1	700019	700019	700019	700019	700019	700019	700019	700019
4	E-Ring	1	700016	700016	700016	700016	700016	700016	700016	700016
5	Acetal Face Gear	1	700018	700018	700018	700018	700018	700018	700018	700018
6	Acetal Bushing	2	700020	700020	700020	700020	700020	700020	700020	700020
7	Adjuster Cover Plate	1	700017	700017	700017	700017	700017	700017	700017	700017
8	Seal Wire	1	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849
9	Drilled Head Screw	2	700042	700042	700042	700042	700042	700042	700042	700042
10	Drive Shaft Retainer	1	700022	700022	700022	700022	700022	700022	700022	700022
11	Head Mount Screw	4	700040	700040	700040	700040	700040	700040	700040	700040
12	Register Support	1	700200	700200	700200	700200	700200	700200	700200	700200
13	Packing Retaining Plate	1	700015	700015	700015	700015	700015	700015	700015	700015
14A	2:1 Packing Capsule Assy.	1	700150	700150	700155	700155	700155	700155	700150	700155
14B	1:1 Packing Capsule Assy.	1	700170	700170	700175	700175	700175	700175	700170	700175
15	Packing O-ring	1	700009	700009	700010	700010	700010	700010	700009	700010
16	Plug	2	700024	700024	700024	700024	700024	700024	700024	700024
17	Front Cover	1	703500	703500	703503	703500	703500	703503	703500	703503
18A	Cap Screw	16	703016	703016	703016	703016	703016	703016	703016	703016
18B	Drilled Cap Screw	4	703016D	703016D	703016D	703016D	703016D	703016D	703016D	703016D
19	Rear Cover	1	703550	703550	703553	703550	703550	703553	703550	703553
20	Round Head Screw	12	702014	702014	702014	702014	702014	702014	702014	702014
21	Bearing Plate	2	703230	703235	703235	703230	703225	703225	703225	703225
22	Cover O-ring	2	703001	703001	703002	703002	703002	703002	703001	703002
23	Housing	1	703110	703110	703113	703110	703110	703113	703110	703113
24	Flat Washer	8	703018	703018	703018	703018	703018	703018	703018	703018
25	Cap Screw	8	703017	703017	703017	703017	703017	703017	703017	703017
26A	Flange, 3" NPT	2	703600	703600	703613	703600	703600	703613	703600	703613
26B	Flange, 3" BSPT	2	703603	703603	703611	703603	703603	703611	703603	703611
27	Flange O-ring	2	703012	703012	703013	703013	703013	703013	703013	703013
28	Blocking Rotor Gear	1	703351	703351	703351	703350	703350	703350	703351	703351
29	Rotor Lock Nut	3	703010	703010	703010	703010	703010	703010	703010	703010
30	Displacement Rotor Gear	2	703451	703451	703451	703450	703450	703450	703451	703451
31	Rotor Key	3	703008	703008	703008	703008	703008	703008	703008	703008
32	Displacement Rotor	2	703405	703405	703422	703410	703410	703425	703405	703422
33	Blocking Rotor	1	703305	703305	703322	703310	703310	703325	703305	703322
34	Gear Spacer	3	703355	703355	703355	703355	703355	703355	703355	703355
35	Lock Washer	4	700071	700071	700071	700071	700071	700071	700071	700071

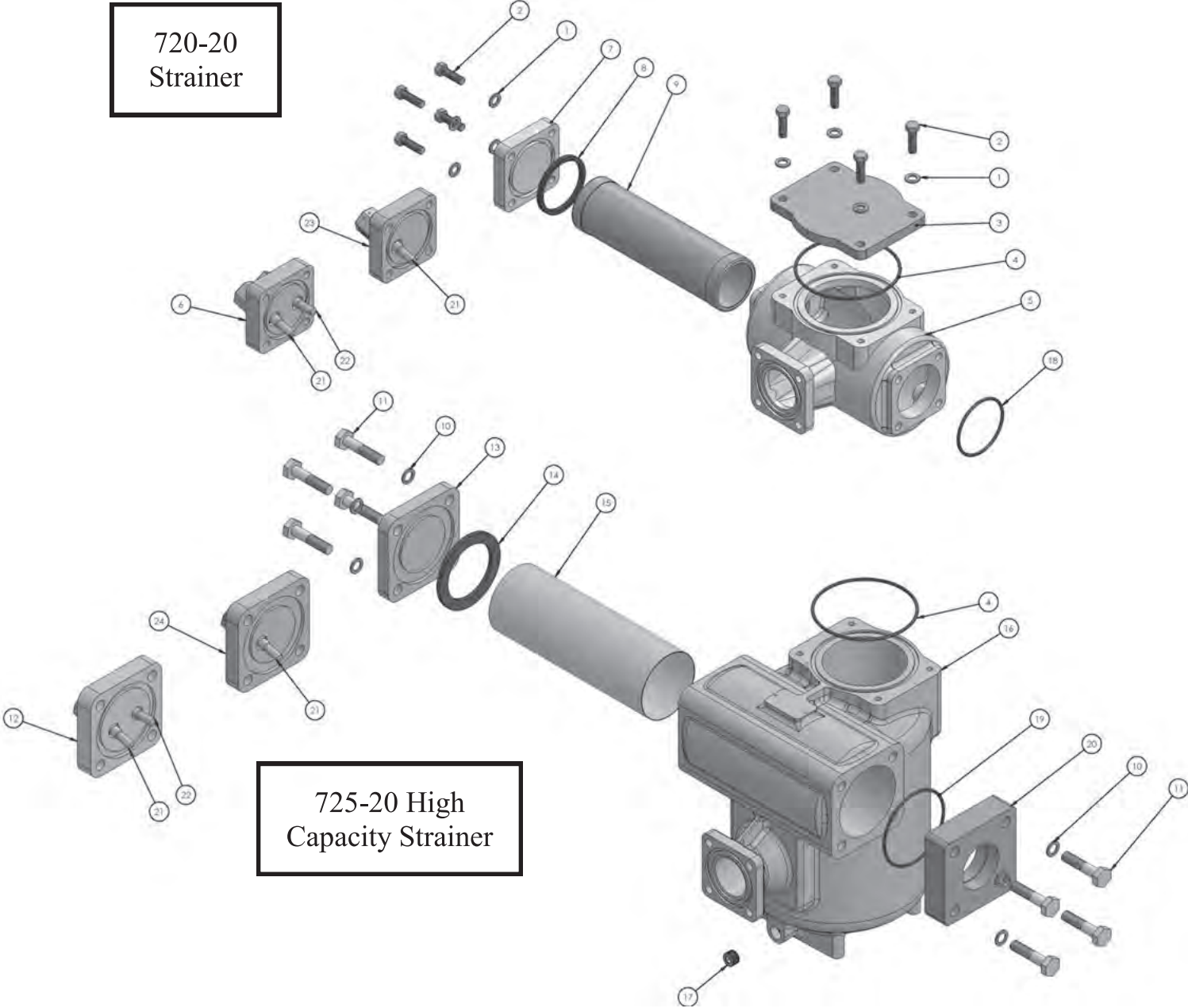
700-40 / 700-45 Meter Assembly



700-40 / 700-45 Meter Assembly

Item	Description	Qty	700-40						700-45	
			SP	SPA	SPD	IP	IC	AF	SPA	SPD
1	Round Head Screw	8	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279	1-128279
2	Adjuster Assembly	1	700100	700100	700100	700100	700100	700100	700100	700100
3	Drive Shaft	1	700719	700719	700019	700719	700719	700019	700719	700019
4	E-Ring	1	700016	700016	700016	700016	700016	700016	700016	700016
5A	Acetal Face Gear, 2:1 Packing	1	700018	700018	700018	700018	700018	700018	700018	700018
5B	Acetal Face Gear; 1:1 Packing	1	700048	700048	700048	700048	700048	700048	700048	700048
6	Acetal Bushing	2	700020	700020	700020	700020	700020	700020	700020	700020
7	Adjuster Cover Plate	1	700617	700617	700017	700617	700617	700017	700617	700017
8	Seal Wire	1	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849	1-118849
9	Drilled Head Screw	2	700042D	700042D	700042D	700042D	700042D	700042D	700042D	700042D
10	Drive Shaft Retainer	1	700022	700022	700022	700022	700022	700022	700022	700022
11	Head Mount Screw	4	700040	700040	700040	700040	700040	700040	700040	700040
12	Register Support	1	700201	700201	700200	700201	700201	700200	700201	700200
13	Packing Retaining Plate	1	700015	700015	700015	700015	700015	700015	700015	700015
14A	2:1 Packing Capsule Assy.	1	700150	700150	700155	700155	700155	700155	700150	700155
14B	1:1 Packing Capsule Assy.	1	700170	700170	700175	700175	700175	700175	700170	700175
15	Packing O-ring	1	700009	700009	700010	700010	700010	700009	700010	700009
16	Plug	2	700024	700024	700024	700024	700024	700024	700024	700024
17	Front Cover	1	706500	706500	704503	706500	706500	704503	706500	704503
18A	Cap Screw	18	704016	704016	704016	704016	704016	704016	704016	704016
18B	Drilled Cap Screw	4	704016D	704016D	704016D	704016D	704016D	704016D	704016D	704016D
19	Rear Cover	1	704550	704550	704553	704550	704550	704553	704550	704553
20	Round Head Screw	16	704014	704014	704014	704014	704014	704014	704014	704014
21	Bearing Plate	2	704230	704235	704235	704230	704225	704225	704225	704225
22	Cover O-ring	2	704001	704001	704071	704002	704002	704002	704001	704071
23	Housing	1	704110	704110	704113	704110	704110	704113	704110	704113
24	Flat Washer	8	704018	704018	704018	704018	704018	704018	704018	704018
25A	Cap Screw	4	704017	704017	704017	704017	704017	704017	704017	704017
25B	Drilled Cap Screw	4	704017D	704017D	704017D	704017D	704017D	704017D	704017D	704017D
26A	Flange; 4" NPT	2	704600	704600	704613	704600	704600	704613	704600	704613
26B	Flange; 4" BSPT	2	704603	704603	704812	704603	704603	704812	704603	704812
27	Flange O-ring	2	704012	704012	704072	704013	704013	704013	704012	704072
28	Blocking Rotor Gear	1	704350	704350	704350	704350	704350	704350	704350	704350
29	Rotor Lock Nut	3	704010	704010	704010	704010	704010	704010	704010	704010
30	Displacement Rotor Gear	2	704450	704450	704450	704450	704450	704450	704450	704450
31	Rotor Key	3	704008	704008	704008	704008	704008	704008	704008	704008
32	Displacement Rotor	2	704405	704405	704422	704410	704410	704425	704405	704422
33	Blocking Rotor	1	704305	704305	704322	704310	704310	704325	704305	704322
34	Lock Washer	4	700071	700071	700071	700071	700071	700071	700071	700071

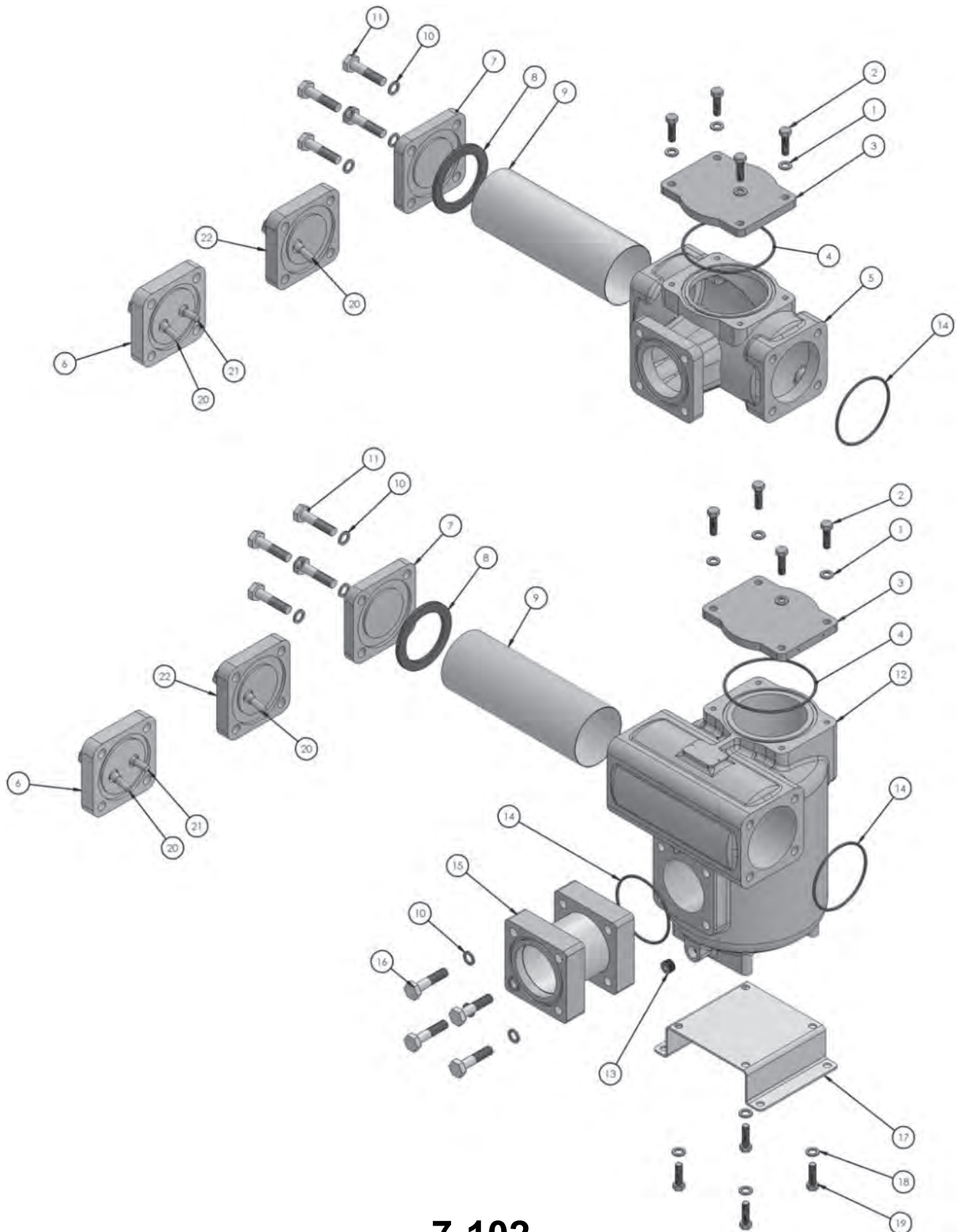
720-20 Strainer / 725-20 High Capacity Strainer Assembly



720-20 Strainer / 725-20 High Capacity Strainer Assembly

Item	Description	Qty	720-20						725-20
			SP	SPD	IP	AF	SS	SSD	SP
1	Flat Washer	8	702018	702018	702018	702018	702018	702018	702018
2A	Cap Screw	6	700054	700054	700054	700054	700054	700054	700054
2B	Drilled Cap Screw	2	700054D	700054D	700054D	700054D	700054D	700054D	700054D
3	Strainer Cover, Optional	1	740041	740042	740041	740042	740042	-	740041
4	Top Seal O-ring	1	740009	740019	740019	740019	740019	740809	740009
5	Strainer Housing	1	742021	742022	742021	742022	742023	P742023	-
6	Basket Cover, Two 1/2" NPT Ports	1	742055	742056	742055	742056	742057	-	-
7	Basket Cover, STD	1	742050	742052	742050	742052	742053	P742053	-
8	Seal Ring	1	742003	742004	742004	742004	742004	742803	-
9A	0.050 Strainer Basket, STD	1	-	-	742005	742005	742005	-	-
9B	40M Strainer Basket, STD	1	742010	742010	-	-	-	P742010	-
9C	80M Strainer Basket	1	742015	742015	-	-	-	-	-
9D	100M Strainer Basket	1	742025	742025	-	-	-	-	-
10	Flat Washer	8	-	-	-	-	-	-	703018
11A	Cap Screw	4	-	-	-	-	-	-	703017
11B	Drilled Cap Screw	4	-	-	-	-	-	-	703017D
12	Basket Cover, Two 1/2" NPT Ports	1	-	-	-	-	-	-	743055
13	Basket Cover, STD	1	-	-	-	-	-	-	743050
14	Seal Ring	1	-	-	-	-	-	-	743003
15A	40M Strainer Basket, STD	1	-	-	-	-	-	-	743010
15B	80M Strainer Basket	1	-	-	-	-	-	-	743015
15C	100M Strainer Basket	1	-	-	-	-	-	-	743025
16	High Capacity Strainer Housing	1	-	-	-	-	-	-	745021
17	Plug	1	-	-	-	-	-	-	700024
18	Flange O-ring	1	702012	702072	702013	702013	702013	702812	-
19	Flange O-ring	1	-	-	-	-	-	-	703012
20A	Flange; 3" x 2" NPT	1	-	-	-	-	-	-	703615
20B	Flange; 3" x 2" BSPT	1	-	-	-	-	-	-	703616
21	3/8" x 1/2" NPT Thermowell	1	740300	740400	740300	740400	740400	-	740300
22	1/2" x 1/2" NPT Thermowell	1	740305	740405	740305	740405	740405	-	740305
23	Basket Cover, One 1/2" NPT Port	1	742155	742156	742155	742156	742157	-	-
24	Basket Cover, One 1/2" NPT Port	1	-	-	-	-	-	-	743155

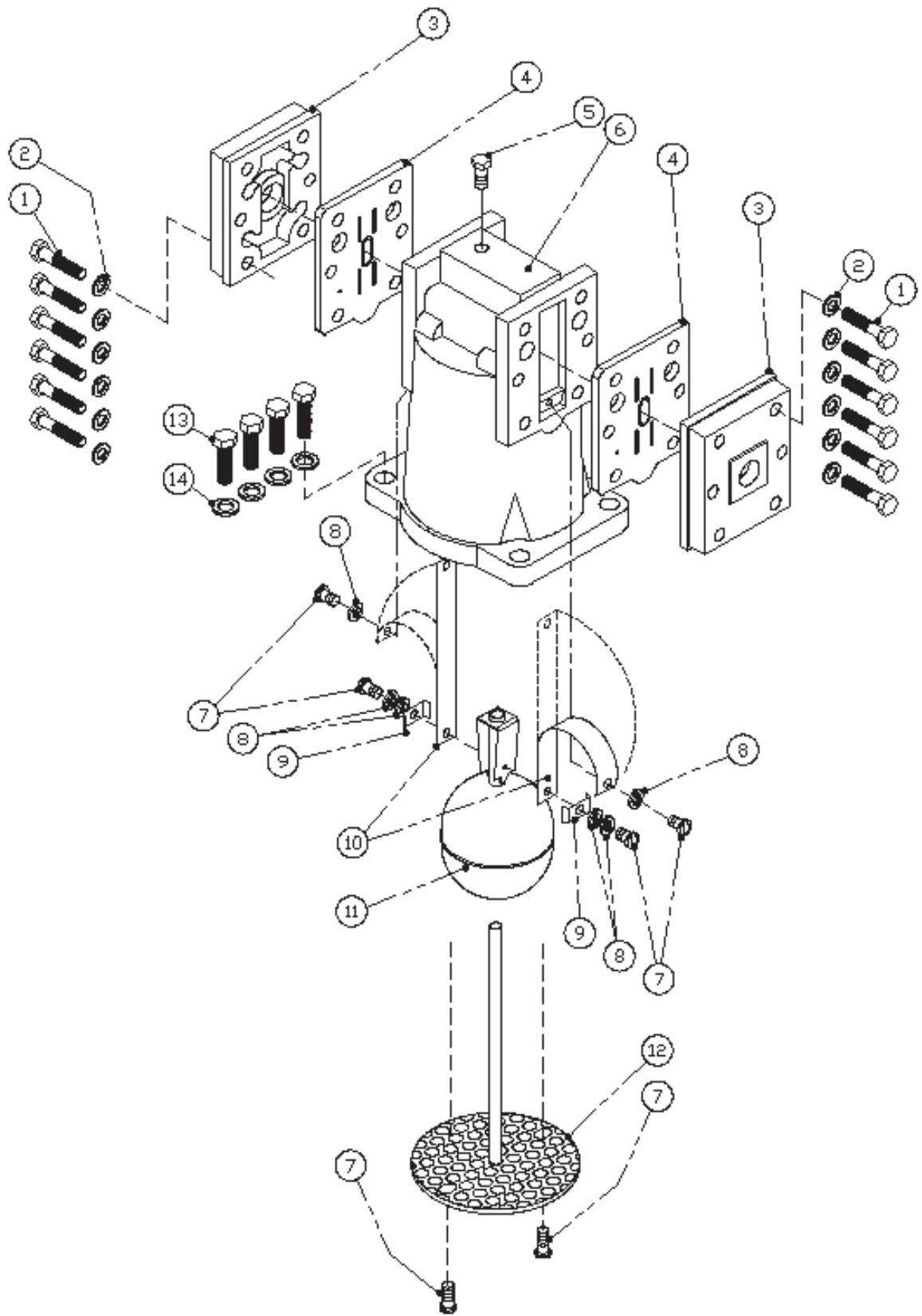
720-30 Strainer & 725-30 High Volume Strainer Assembly



720-30 Strainer & 725-30 High Volume Strainer Assembly

Item	Description	Qty	720-30				725-30
			SP	SPD	IP	AF	SP
1	Flat Washer	8	703018	703018	703018	703018	703018
2A	Cap Screw	2	703017	703017	703017	703017	703017
2B	Drilled Cap Screw	2	703017D	703017D	703017D	703017D	703017D
3	Strainer Cover, Optional	1	740041	740042	740041	740042	740041
4	Top Seal O-ring	1	740009	740019	740019	740019	740009
5	Strainer Housing	1	743021	743023	743021	743023	-
6	Basket Cover, Two 1/2" NPT Ports	1	743055	743256	743055	743256	743055
7	Basket Cover, STD	1	743050	743053	743050	743053	743050
8	Seal Ring	1	743003	743004	743004	743004	743003
9A	0.050 Strainer Basket, STD	1	-	-	743005	743005	-
9B	40M Strainer Basket, STD	1	742310	743010	-	-	743010
9C	80M Strainer Basket	1	743015	743015	-	-	743015
9D	100M Strainer Basket	1	743025	743025	-	-	743025
10	Flat Washer	8	-	-	-	-	703018
11A	Cap Screw	2	-	-	-	-	703017
11B	Drilled Cap Screw	2	-	-	-	-	703017D
12	High Capacity Strainer Housing	1	-	-	-	-	745031
13	Plug	1	-	-	-	-	700024
14	Flange O-ring	1	703012	703013	703013	703013	703012
15	Strainer Adapter	1	-	-	-	-	745038
16	Cap Screw	4	-	-	-	-	753012
17	Foot Mounting Bracket	1	-	-	-	-	745025
18	Ring Washer	4	-	-	-	-	745006
19	Cap Screw	4	-	-	-	-	745005
20	3/8" x 1/2" NPT Thermowell	1	740305	740405	740305	740405	740305
21	1/2" x 1/2" NPT Thermowell	1	740300	740400	740300	740400	740300
22	Basket Cover, One 1/2" NPT Port	1	743155	743156	743155	743156	743155

730 Air Eliminator Assembly; SP and SPD



730 Air Eliminator Assembly; SP and SPD

Item	Description	Qty	730-20	
			SP	SPD
1	Cap Screw	12	740050	740050
2	Ring Washer	12	740051	740051
3	Outlet Cover	2	740010	740016
4	Encapsulated Valve Plate	2	740205	740205
5	Plug	1	2-126146D	2-126146D
6	Air Eliminator Housing	1	740020	740022
7	Screw	4	740030	740030
8	Split Lock Washer	4	740017	740017
9	Retaining Clip	2	740012	740012
10	Reed Valve	2	740007	740007
11	Float Assembly	1	740013	740013
12	Diffuser and Shaft Assembly	1	740035	740035
13	Flat Washer	4	702018	702018
14	Cap Screw	4	700054	700054

NOZZLES



PART NUMBER	DESCRIPTION
1290	1-1/2" AUTO NOZZLE



PART NUMBER	DESCRIPTION
NENL	3/4" UNL ELITE NOZZLE BLK
NM1	1" DIESEL NOZZLE GREEN



Franklin Fueling Systems

PART NUMBER	DESCRIPTION	TUBE PART #
410-300-03	1-1/4" NOZZLE VITON W/O TUBE	491-100-01
410-401-03	1-1/2" NOZZLE W/O TUBE	491-101-01



PART NUMBER	DESCRIPTION
2000-3	1-1/4" X 1-1/4" PHILLY NOZZLE
2000-6	1-1/4" X 1-1/2" PHILLY NOZZLE
2000-7	1-1/2" X 1-1/2" PHILLY NOZZLE



SWIVELS

EBW



HUSKY



MORRISON BROS.



PART NUMBER	DESCRIPTION
EBW	
465-101-01	1-1/4" X 1-1/4" ALUM
465-102-01	1-1/2" X 1-1/2" ALUM
HUSKY	
5235	1-1/4" X 1-1/4" MXF ALUM
5240	1-1/4" X 1-1/2" FXM ALUM
5266	1-1/2" X 1-1/2" MXF ALUM
MORRISON BROS.	
122ALV0400-AS	2" ALUM
122BRV0200-AS	1-1/4" BRASS
122BRV0300-AS	1-1/2" BRASS