

PARTS MANUAL

Hydra-Cell[®]

INDUSTRIAL PUMPS

IMPORTANT

Record your pump model number and serial number here for easy reference:

Model No. _____

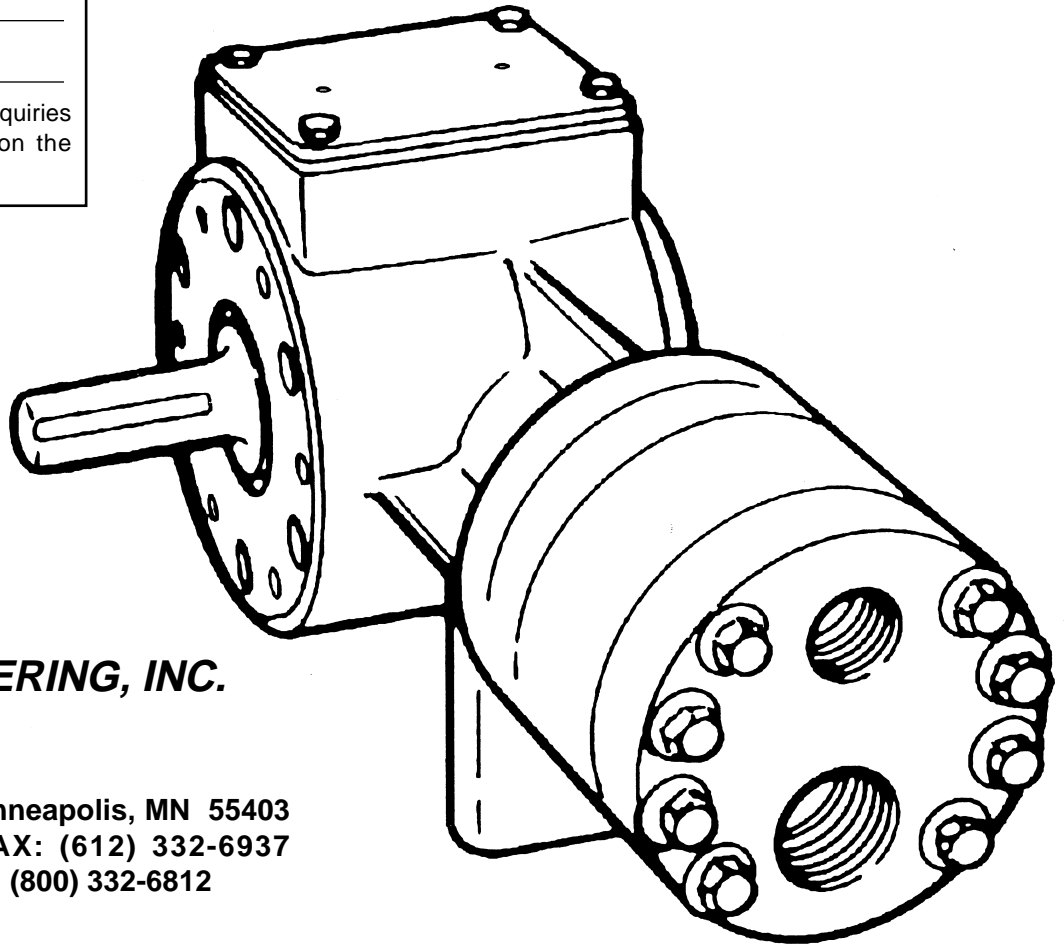
Serial No. _____

Date of Purchase _____

When ordering parts or making inquiries about this pump, please mention the model and serial numbers.

MODELS:

F-20, F-21, F-22



WANNER ENGINEERING, INC.

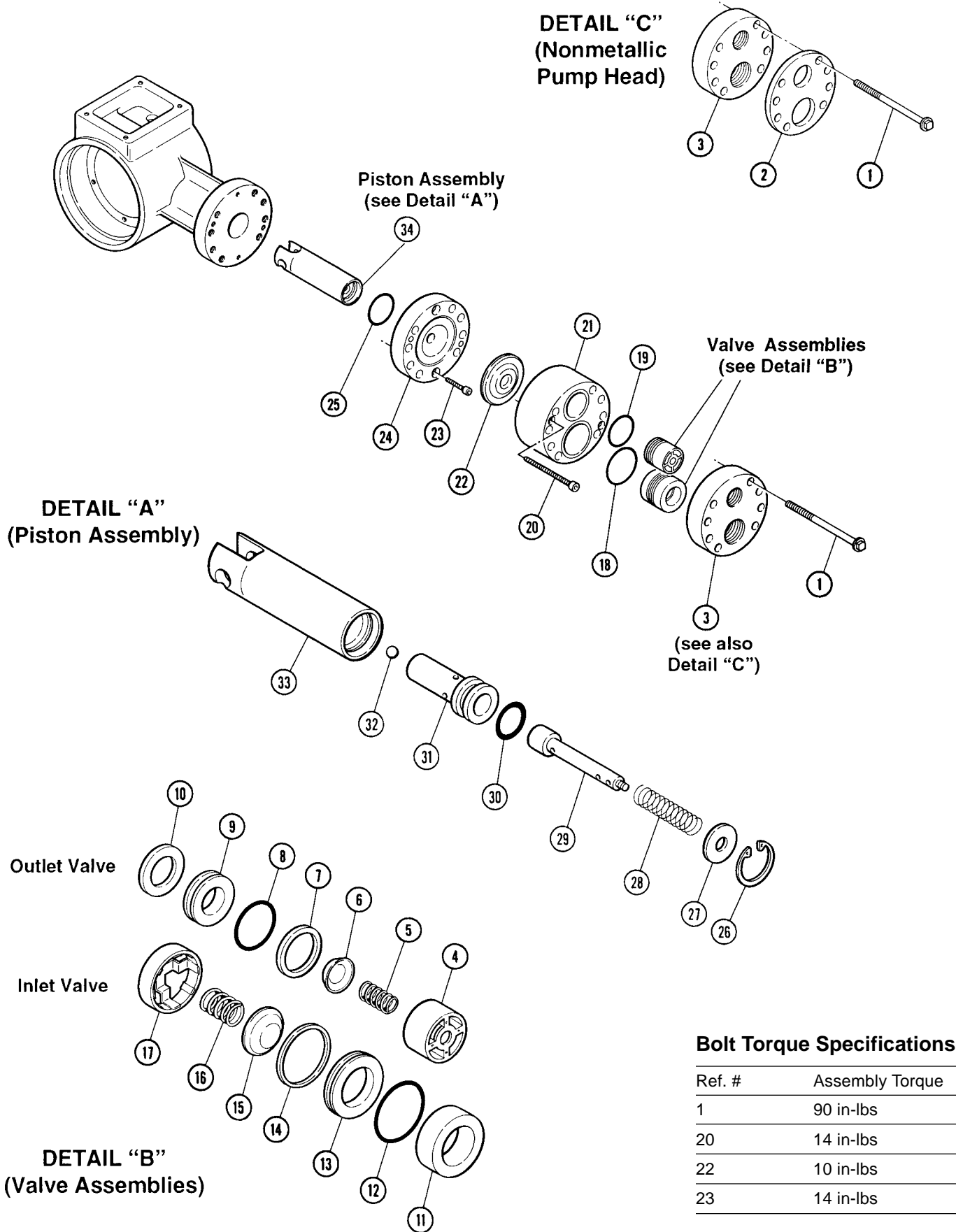
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Document Fax Back System (510) 745-0440

F-20/F-21/F-22 Fluid End

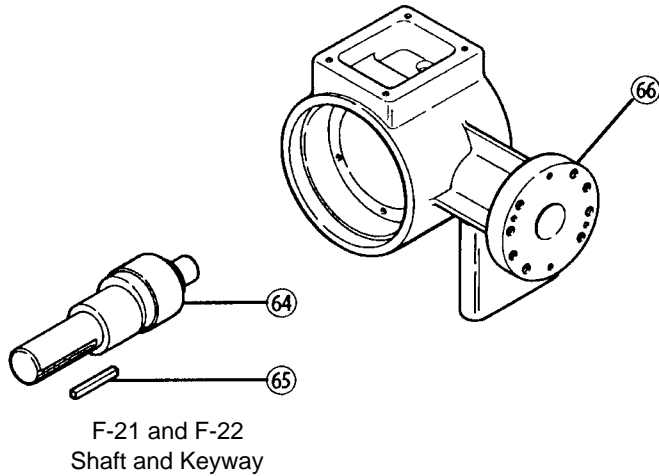


F-20/F-21/F-22 Fluid End

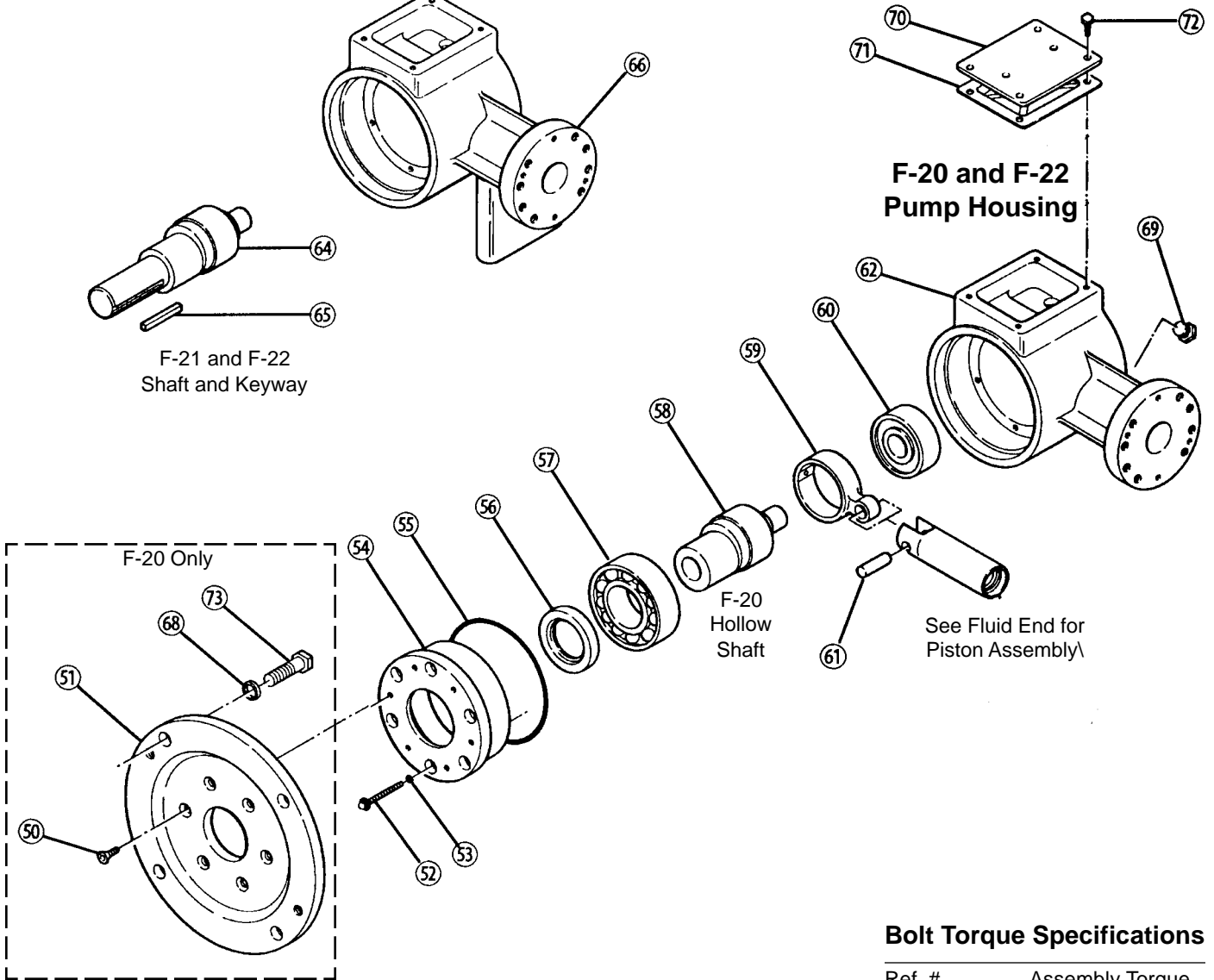
Ref #	Part Number	Description	Quantity/ Pump	Ref #	Part Number	Description	Quantity/ Pump
1	G20-024-2010	Bolt, hex-head	8	14	D10-092-2110	Tetra Seal, inlet, Buna	1
2	F20-100-1010	Plate, manifold support (nonmetallic heads)	1		D10-092-2111	Tetra Seal, inlet, Viton	1
	F20-100-1011	Plate, manifold support, painted (nonmetallic heads)	1		D10-092-2112	Tetra Seal, inlet, Neoprene	1
3	F20-004-1010	Manifold, brass, NPT	1		D10-092-2113	Tetra Seal, inlet, EPDM	1
	F20-004-1012	Manifold, 316 SST, NPT	1		D10-092-2118	Tetra Seal, inlet, Teflon	1
	F20-004-1017	Manifold, nickel alloy C series, NPT	1	15	D10-021-1010	Inlet Valve, 17-7 SST, stamped HT	1
	F20-004-1050	Manifold, polypropylene, NPT	1		D10-021-1011	Inlet Valve, Nitronic	1
	F20-004-1053	Manifold, Kynar, NPT	1		D10-021-1016	Inlet Valve, Tungsten Carbide	1
4	D03-023-1010	Retainer, outlet valve spring, 17-7 SST	1		D10-021-1017	Inlet Valve, Hastelloy C	1
	D03-023-2310	Retainer, outlet valve spring, Celcon	1		D10-021-3300	Inlet Valve, ceramic	1
	D03-023-2316	Retainer, outlet valve spring, Nylon	1	16	D10-022-3113	Valve Spring, inlet, Hastelloy C	1
	D03-023-2317	Retainer, outlet valve spring, polypropylene	1		D10-022-3114	Valve Spring, inlet, Elgiloy	1
	D03-023-2318	Retainer, outlet valve spring, Kynar	1	17	D10-023-1010	Retainer, inlet valve spring, 17-7 SST	1
5	D03-022-3113	Valve Spring, outlet, Hastelloy C	1		D10-023-2314	Retainer, inlet valve spring, Celcon	1
	D03-022-3114	Valve Spring, outlet, Elgiloy	1		D10-023-2316	Retainer, inlet valve spring, Nylon	1
6	D03-021-1002	Outlet Valve, 17-7 SST	1		D10-023-2317	Retainer, inlet valve spring, polypropylene	1
	D03-021-1011	Outlet Valve, Nitronic	1		D10-023-2319	Retainer, inlet valve spring, Kynar	1
	D03-021-1016	Outlet Valve, Tungsten Carbide	1	18	F20-074-2110	O-ring, inlet manifold, Buna	1
	D03-021-1017	Outlet Valve, Hastelloy C	1		F20-074-2111	O-ring, inlet manifold, Viton	1
	D03-021-3300	Outlet Valve, ceramic	1		F20-074-2112	O-ring, inlet manifold, Neoprene	1
7	D03-092-2110	Tetra Seal, outlet, Buna	1		F20-074-2113	O-ring, inlet manifold, EPDM	1
	D03-092-2111	Tetra Seal, outlet, Viton	1		F20-074-2118	O-ring, inlet manifold, Kynar	1
	D03-092-2112	Tetra Seal, outlet, Neoprene	1	19	F20-073-2110	O-ring, outlet manifold, Buna	1
	D03-092-2113	Tetra Seal, outlet, EPDM	1		F20-073-2111	O-ring, outlet manifold, Viton	1
	D03-092-2118	Tetra Seal, outlet, Teflon	1		F20-073-2112	O-ring, outlet manifold, Neoprene	1
8	D03-035-2112	O-ring, outlet valve seat, Neoprene	1		F20-073-2113	O-ring, outlet manifold, EPDM	1
	D03-035-2113	O-ring, outlet valve seat, EPDM	1		F20-073-2118	O-ring, outlet manifold, Kynar	1
	D03-035-2118	O-ring, outlet valve seat, Teflon	1	20	G20-029-2010	Cap Screw, socket-head	2
	D25-046-2120	O-ring, outlet valve seat, Buna	1	21	F20-003-1010	Valve Plate, brass	1
	D25-046-2121	O-ring, outlet valve seat, Viton	1		F20-003-1012	Valve Plate, 316 SST	1
9	D03-020-1001	Valve Seat, outlet, 316 SST	1		F20-003-1017	Valve Plate, nickel alloy C series	1
	D03-020-1002	Valve Seat, outlet, 17-4 SST	1		F20-003-1050	Valve Plate, polypropylene	1
	D03-020-1016	Valve Seat, outlet, Tungsten Carbide	1		F20-003-1053	Valve Plate, Kynar	1
	D03-020-1017	Valve Seat, outlet, Hastelloy C	1	22	D03-018-1212	Diaphragm, Neoprene	1
	D03-020-3300	Valve Seat, outlet, ceramic	1		D03-018-1213	Diaphragm, EPDM	1
10	D03-125-2310	Washer, outlet dampening, Celcon	1		D03-018-1215	Diaphragm, Viton-XT	1
	D03-125-2316	Washer, outlet dampening, Nylon	1		D03-018-1218	Diaphragm, Teflon	1
	D03-125-2317	Washer, outlet dampening, polypropylene	1		D03-018-1220	Diaphragm, Buna-N-XS	1
	D03-125-2318	Washer, outlet dampening, Kynar	1	23	G20-088-2010	Cap-Screw, socket-head	2
11	D10-125-2310	Washer, inlet dampening, Celcon	1	24	F20-002-1010	Diaphragm Plate	1
	D10-125-2316	Washer, inlet dampening, Nylon	1	25	D03-075-2110	O-ring, diaphragm plate, Buna	1
	D10-125-2317	Washer, inlet dampening, polypropylene	1	26	D03-048-2210	Snap Ring	1
	D10-125-2318	Washer, inlet dampening, Kynar	1	27	D03-049-1000	Washer	1
12	D11-035-2110	O-ring, inlet valve seat, Buna	1	28	D03-045-3110	Spring, sleeve valve	1
	D11-035-2111	O-ring, inlet valve seat, Viton	1		D03-045-3111	Spring, sleeve valve for Teflon diaphragm	1
	D11-035-2112	O-ring, inlet valve seat, Neoprene	1	29	D03-044-1000	Valve Plunger	1
	D11-035-2113	O-ring, inlet valve seat, EPDM	1	30	D03-034-2110	O-ring, valve cylinder, Buna	1
	D11-035-2118	O-ring, inlet valve seat, Teflon	1	31	D03-043-1000	Valve Cylinder	1
13	D10-020-1010	Valve Seat, inlet, 17-4 SST, HT	1	32	D10-015-3010	Ball	1
	D10-020-1011	Valve Seat, inlet, 316 SST	1	33	D03-014-1004	Piston	1
	D10-020-1016	Valve Seat, inlet, Tungsten Carbide	1	34	D03-014-1210	Piston Assembly	1
	D10-020-1017	Valve Seat, inlet, Hastelloy C	1				
	D10-020-3300	Valve Seat, inlet, ceramic	1				

F-20/F-21/F-22 Hydraulic End

F-21 Pump Housing



F-20 and F-22 Pump Housing



Bolt Torque Specifications

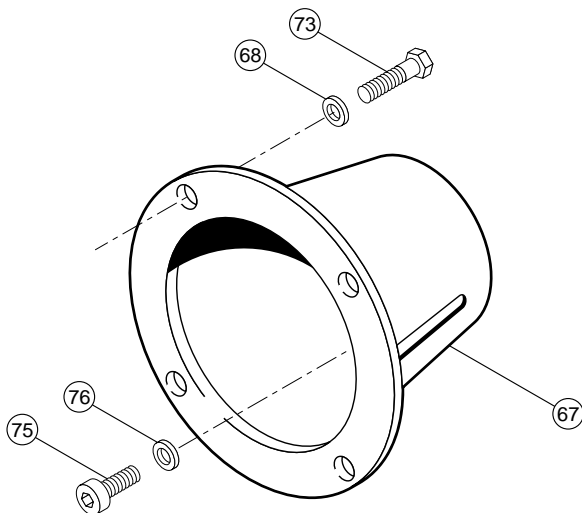
Ref. #	Assembly Torque
50	35 in-lbs
52	14 in-lbs
72	10 in-lbs
75	35 in-lbs

F-20/F-21/F-22 Hydraulic End

Ref #	Part Number	Description	Quantity/ Pump
50	G20-089-2010	Screw, flat-head	6
51	F20-120-1010	Flange	1
52	G20-086-2010	Cap Screw, hex-flange-head	6
53	F20-036-2110	O-ring, back cover screws, Buna	6
54	G20-131-1010	Cover	1
55	F20-037-2110	O-ring, cover, Buna	1
56	F20-031-2110	Seal, Buna	1
57	D03-010-2910	Back Bearing	1
58	F20-009-1002	Hollow Shaft, 56C direct drive, 5/8" ID, close-coupled, 0.73 GPM @ 1750 RPM	1
	F20-009-1003	Hollow Shaft, 56C direct drive, 5/8" ID, close-coupled, 1.00 GPM @ 1750 RPM	1
	F20-009-1011	Hollow Shaft, 56C direct drive, 5/8" ID, close-coupled, 0.33 GPM @ 1750 RPM	1
	F20-009-1018	Hollow Shaft, 56C direct drive, 5/8" ID, close-coupled, 0.55 GPM @ 1750 RPM	1
	F20-009-1067	Hollow Shaft, 56C direct drive, 5/8" ID, close-coupled, 0.20 GPM @ 1750 RPM	1
59	D03-132-1000	Connecting Rod	1
60	F20-010-2910	Front Bearing	1

Ref #	Part Number	Description	Quantity/ Pump
61	D03-133-1000	Pin	1
62	G20-001-1010	Pump Housing	1
64	F21-009-1002	Crank Shaft, shaft-driven, 5/8" OD 0.73 GPM @ 1750 RPM	1
	F21-009-1003	Crank Shaft, shaft-driven, 5/8" OD 1.00 GPM @ 1750 RPM	1
	F21-009-1011	Crank Shaft, shaft-driven, 5/8" OD 0.33 GPM @ 1750 RPM	1
	F21-009-1018	Crank Shaft, shaft-driven, 5/8" OD 0.55 GPM @ 1750 RPM	1
	F21-009-1067	Crank Shaft, shaft-driven, 5/8" OD 0.20 GPM @ 1750 RPM	1
65	D10-085-2210	Key, shaft	1
66	G21-001-1010	Pump Housing	1
67	A04-005-1200	F-21 and F-22 Pump/Motor Adapter Kit for NEMA 56C-145TC Frame Motors (See kit description below)	
68	D10-048-2010	Lockwasher, 3/8"	4
69	D10-038-2210	Plug, drain	1
70	F20-105-1010	Cover, oil reservoir	1
71	F20-091-1010	Diaphragm, oil reservoir	1
72	G20-090-2010	Cap Screw, hex-head	4
73	D10-029-2010	Cap Screw, hex-head, 3/8-16 x 1"	4

F-21/F-22 Pump/Motor Adapter Kit for NEMA 56C-145TC Frame Motors (Complete Kit: Part No. A04-005-1200)



Ref #	Part Number	Description	Quantity/ Kit
67	F20-121-1010	Extended Flange Accessory	1
68	D10-048-2010	Lockwasher, 3/8"	4
73	D10-029-2010	Cap Screw, hex-head, 3/8-16 x 1"	4
75	G20-101-2010	Cap Screw, socket-head	6
76	G20-050-2010	Lockwasher	6

F-20/F-21/F-22 Replacement Parts Kits

TO ORDER REPLACEMENT PARTS KIT: A Replacement Parts Kit contains 11 digits corresponding to customer-specified design options.

1	2	3	4	5	6	7	8	9	10	11
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Digit	Order Code	Description
1-3		Pump Configuration
	F20	For all F-20, F-21 and F22 Pumps
4		Kit Designator
	K	Complete Fluid End Kit
	D	Diaphragm Kit
	V	Valve Kit (diaphragm not included)
5-6		Pump Head Version
	52	Pump Head Version
7		Diaphragm & O-ring Material
	E	EPDM
	G	Viton®-XT
	J	Teflon®
	P	Neoprene
	T	Buna-N-XS
8		Valve Seat Material
	C	Ceramic
	D	Tungsten Carbide
	H	17-4 PH Stainless Steel
	S	316 Stainless Steel
	T	Hastelloy® C
	X	Not included in Diaphragm Kit
9		Valve Material
	C	Ceramic
	D	Tungsten Carbide
	H	17-7 PH Stainless Steel
	N	Nitronic 50
	T	Hastelloy® C
	X	Not included in Diaphragm Kit
10		Valve Springs
	E	Elgiloy®
	T	Hastelloy® C
	X	Not included in Diaphragm Kit
11		Valve Spring Retainers
	C	Celcon
	H	17-7 PH Stainless Steel
	M	Kynar®
	P	Polypropylene
	Y	Nylon
	X	Not included in Diaphragm Kit

Kit Contents

Part Number*	Description	Qty	Kit Designator		
			K	D	V
D03-018-__	Diaphragm	1	•	•	
F20-073-__	O-ring, outlet manifold	1	•	•	
F20-074-__	O-ring, inlet manifold	1	•	•	
D03-035-__	O-ring, outlet valve seat	1	•		•
D03-020-__	Valve seat, outlet	1	•		•
D03-021-__	Valve, outlet	1	•		•
D03-022-__	Valve spring, outlet	1	•		•
D03-092-__	Tetra seal, outlet	1	•		•
D03-023-__	Retainer, outlet valve spring	1	•		•
D03-125-__	Washer, outlet dampening	1	•		•
D11-035-__	O-ring, inlet valve seat	1	•		•
D10-020-__	Valve seat, inlet	1	•		•
D10-021-__	Valve, inlet	1	•		•
D10-022-__	Valve spring, inlet	1	•		•
D10-092-__	Tetra seal, inlet	1	•		•
D10-023-__	Retainer, inlet valve spring	1	•		•
D10-125-__	Washer, inlet dampening	1	•		•
A01-113-3400	Threadlocker	1	•	•	•

* Last four digits of part numbers with __ refer to specific material of construction.



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