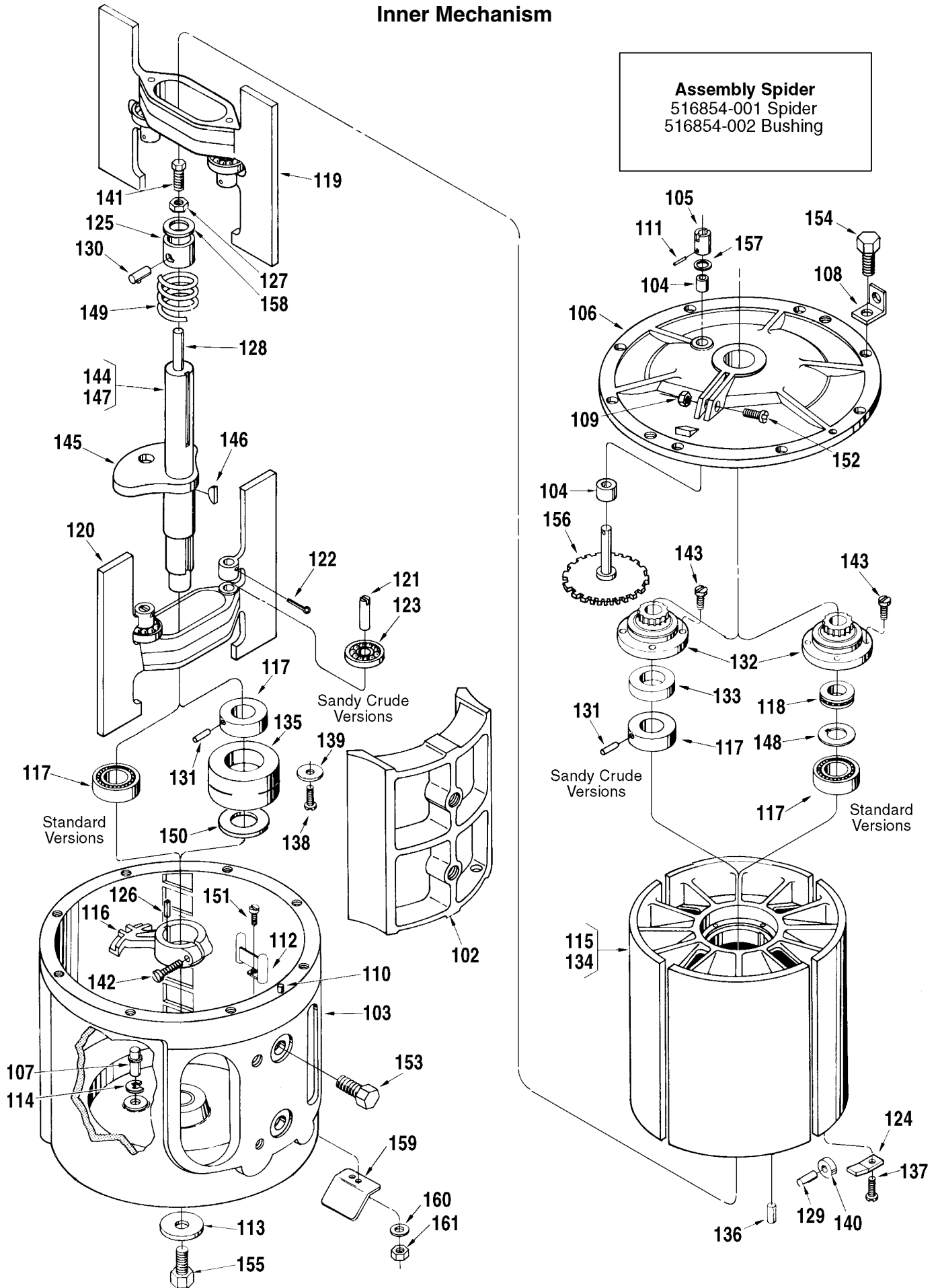


# Inner Mechanism

**Assembly Spider**  
 516854-001 Spider  
 516854-002 Bushing



Item	Description	Qty.	E3-A1, S1	E3-A3, S3, S5	E3-S6, S7
1	Adapter, Calibrator Adjusting Stem.....	1	512372-001	512372-001	512372-001
2	Adapter, Counter.....	1	511946-001	511946-001	515755-001
3	Blank, Snap In .....	1	.....	.....	015533-401
4	+ Calibrator:				
	Standard.....	1	512059-001	512059-001	512059-001
	With ATC (Standard) .....	1	512060-001	512060-001	512060-001
	@1 With ATC (Special Temp. or API).....	1	516130-	516130-	516130-
	Dummy Calibrator .....	1	516105-001	516105-001	516105-001
5	Cap:				
	Standard.....	1	.....	641746-401	.....
	NACE .....	1	.....	645238-401	.....
6	Clamp, Oil Tube.....	1	003905-001	003905-001	003905-001
7	+ Coupling, Drive .....	1	072103-001	072103-001	072103-001
8	Coupling, Drive:				
	S6.....	1	.....	.....	518321-001
	S7.....	1	.....	.....	518321-004
9	Coupling, Input.....	1	014356-001	003821-001	005969-001
10	Coupling, Jackshaft.....	1	.....	514633-001	514633-001
11	Cover, Knob .....	1	003553-001	003553-001	003553-001
12	Cover, Outer Housing:				
	S7 Only, Standard .....	1	.....	.....	516017-001
	S7 Only, Teflon.....	1	.....	.....	516017-099
	All Others, Standard.....	1	512225-091	513299-091	515902-001
	All Others, Teflon .....	1	512225-099	513299-099	515902-099
	S7 Only, NACE.....	1	.....	.....	551433-001
	All Others, NACE.....	1	551737-001	551625-001	552035-001
	S1,A1, S3, A3, S5, NACE (5/8" thick flange).....	1	552742-001	552796-001	.....
13	Bushing.....	1	519882-002	.....	.....
14	Pin, Groove.....	1	641007-001	.....	.....
15	Shaft, Calibrator Drive .....	1	003775-001	.....	.....
16	Shaft, Idler Pinion .....	1	512077-001	.....	.....
17	Eyebolt.....	2	644974-402	644974-404	643877-401
18	Fitting, Grease .....	1	.....	006408-001	.....
19	Flange, Packing .....	1	010171-001	.....	.....
20	Flange, Temperature Well Plug .....	1	011941-001	011941-001	012026-001
21	Gasket .....	1	060341-001	060341-001	060341-001
22	Gasket, Cover Plate.....	1	003834-001	003834-001	003834-001
23	+ Gasket, O-Ring:				
	A1, S1, A3, S3, S5, S6 Buna .....	1	512278-001	512278-001	515976-001
	S7 Buna .....	1	.....	.....	516018-001
	A1, S1, A3, S3, S5, S6 Viton.....	1	512278-002	512278-002	515976-002
	S7 Viton.....	1	.....	.....	516018-002
	A1, S3, A3, S3, S5, S6 EPR .....	1	512278-004	512278-004	515976-003
	A1, S1, A3, S3, S5, S6 Teflon .....	1	645842-403	645842-403	645842-408
24	+ Gasket, Packing Gland .....	1	010173-001	.....	.....
25	@2 Gear, Calibrator Drive:				
	U.S. Gallons .....	1	514632-001	514632-001	514632-001
	U.S. Gallons, LPG .....	1	514632-001	515045-001	515045-001
	Imperial Gallons .....	1	514773-001	514773-001	514773-001
	Imperial Gallons, LPG.....	1	514773-001	515047-001	515047-001
	Dekalitres .....	1	514774-001	514774-001	514774-001
	Dekalitres, LPG .....	1	514774-001	515049-001	515049-001
26	Bushing, LPG .....	1	504653-001	504653-001	504653-001
27	Bushing, Standard and All Iron.....	1	013372-001	013372-001	013372-001
28	Pin:				
	Standard .....	2	003325-001	003325-001	003325-001
29	@2 Gear, Double:				
	U.S. Gallons, All .....	1	072477-001	.....	.....
	Imperial Gallons, All .....	1	072491-001	.....	.....
	Dekalitres, All .....	1	072485-001	.....	.....
30	Pin .....	2	001126-001	.....	.....
31	@2 Gear, Intermediate Pinion:				
	U.S. Gallons .....	1	.....	514615-001	514615-001
	U.S. Gallons, LPG .....	1	.....	515044-001	515044-001
	Imperial Gallons .....	1	.....	514771-001	514771-001
	Imperial Gallons, LPG.....	1	.....	515046-001	515046-001

Item	Description	Qty.	E3-A1, S1	E3-A3, S3, S5	E3-S6, S7
	Dekalitres .....	1	.....	514772-001	514772-001
	Dekalitres, LPG .....	1	.....	515048-001	515048-001
32	Bushing, LPG Gears.....	1	.....	512797-001	512797-001
33	@2 Gear, Jackshaft Pinion:				
	U.S. Gallons .....	1	.....	514614-001	514614-001
	U.S. Gallons, LPG .....	1	.....	515043-001	515043-001
	Imperial Gallons .....	1	.....	514614-001	514614-001
	Imperial Gallons, LPG .....	1	.....	515043-001	515043-001
	Dekalitres .....	1	.....	514614-001	514614-001
	Dekalitres, LPG .....	1	.....	515043-001	515043-001
34	Bushing, LPG Gears.....	1	.....	512797-001	512797-001
35	@2 Gear, Single .....	1	072478-001	.....	.....
36	Pin .....	2	001126-001	.....	.....
37	R+ @3 Gland, Packing:				
	Buna-N .....	1	.....	513644-001	515849-001
	Viton .....	1	.....	.....	.....
	Teflon.....	1	009535-001	513644-002	515849-002
	Brass.....	1	008934-002	.....	.....
	NACE .....	1	551728-001	551178-001	551439-001
39	Housing, Gear:				
	LPG .....	1	.....	514649-002	514649-002
	Standard and All Iron .....	1	.....	514649-001	514649-001
40	Bushing:				
	LPG .....	1	.....	514835-001	514835-001
	Standard and All Iron .....	1	.....	519882-001	519882-001
41	Dowel.....	1	.....	003628-001	003628-001
42	Housing:				
	A1 and A3 Standard .....	1	512198-001	512198-001	.....
	S1, S3, S6 Standard .....	1	552778-001	552778-001	515903-001
	S1, S3, S6 Teflon.....	1	552778-099	552778-099	515903-099
	S5 and S7 Standard.....	1	.....	514210-001	516016-001
	S1, S3, S6 NACE .....	1	551618-001	551618-001	552038-001
	S5 and S7 NACE.....	1	.....	551707-001	551430-001
	S3 NACE (18 bolt holes) .....	1	.....	552799-001	.....
	A1 NACE .....	1	552940-001	.....	.....
	A3 NACE .....	1	.....	552840-001	.....
	S5 NACE .....	1	.....	552807-001	.....
43	Lubrication Assembly.....	1	.....	514659-001	.....
44	Nipple:				
	Standard.....	1	.....	641111-404	.....
	NACE .....	1	.....	645185-401	.....
45	Nut, Eyebolt, 1/2"-13.....	2	006399-002	006399-002	.....
46	Nut, Hex:				
	S6 (3/4"-10) .....	18	.....	.....	642138-406
	S7 (1"-8) .....	20	.....	.....	640261-001
	S3, A3 and S5 NACE (3/4"-10) .....	18	.....	644411-402	.....
47	+ O-Ring, Packing Gland:				
	Buna-N .....	1	.....	640173-023	640888-001
	Viton .....	1	.....	640894-403	640894-001
	EPR.....	1	.....	641560-408	641560-401
	Teflon.....	1	.....	641754-407	641754-409
48	Oiler .....	1	006588-001	006588-001	006588-001
49	Pin, Counter Drive Coupling .....	1	006028-002	006028-002	006028-002
50	Pin, Cotter, 1/16 x 3/8" .....	2	006303-001	.....	.....
51	Pin, Cotter, 1/16 x 3/4" .....	1	006132-001	.....	.....
52	Pin, Cotter, 1/16 x 1/2" .....	1	001095-401	.....	.....
53	Pin, Cotter, 1/16 x 3/8" .....	1	.....	009825-400	009825-400
54	Pin, Groove, 1/16 x 1/2" .....	1	.....	006054-002	006054-002
55	Pin, Groove, 5/64 x 5/8" .....	1	.....	009593-400	009593-400
56	Pin, Groove, 3/16 x 3/8" .....	2	.....	641007-401	.....
57	Pin, Groove, Outer Cover:				
	S7 Only .....	2	.....	.....	641719-401
	All Others .....	2	640985-401	640985-401	641719-401
58	Pin, Input Coupling .....	1	006053-002	006317-002	006053-002

Item	Description	Qty.	E3-A1, S1	E3-A3, S3, S5	E3-S6, S7
59	Plate, Caution: .....	1	006571-001	006571-001	006571-001
60	Plate, Cover .....	1	003440-001	003440-001	003440-001
61	Plate, Gland Lubrication .....	1	.....	.....	515873-001
62	+ Plate, Thrust Bearing .....	2	001111-001	.....	.....
63	Plug, Pipe:				
	Standard.....	1	006073-002	.....	.....
	NACE .....	1	645242-405	.....	.....
64	Plug, Pipe:				
	Standard.....	1	006505-002	006505-002	006505-002
	NACE .....	1	645242-402	645242-402	645242-402
65	Plug, Pipe .....	1	.....	003497-402	006393-002
66	Plug, Pipe:				
	Standard.....	1	006878-002	006878-002	006878-002
	NACE .....	1	645242-403	645242-403	645242-403
68	Plug, Temperature Well .....	1	012025-001	012025-001	012025-001
69	Ring, Snap .....	1	512066-001	512066-001	512066-001
70	+ Retainer, Ball:				
	Standard.....	1	070360-002	.....	.....
	All Iron .....	1	070360-001	.....	.....
71	Screw, #10-32 x 1/2" .....	2	006764-002	.....	.....
72	Screw, #6-32 x 5/16" .....	2	006048-002	006048-002	006048-002
73	Screw, #10-24 x 3/4", Drilled.....	2	006481-003	006481-003	006481-003
74	Screw, #10-32 x 3/8" .....	2	006045-002	006045-002	006045-002
75	Screw, #10-32 x 7/8" .....	2	640835-001	640835-001	640835-001
76	Screw, Adapter to Cover:				
	S7 Only .....	2	.....	.....	642019-413
	S6 Only .....	2	.....	.....	642019-414
	All Others .....	1	009563-400	065075-003	.....
76A	* Screw, Adapter to Cover, Drilled Security Function	1	009563-401	.....	.....
77	Screw, Gear Housing, 5/16-18 x 5/8" .....	2	.....	009813-400	009813-400
78	Screw, Cap, Packing Gland:				
	5/16-18 x 1-1/4" .....	2	.....	006511-002	.....
	7/16-14 x 1-1/2" .....	4	.....	.....	006410-002
79	Screw, Cap, Innermech:				
	Standard, 1/2-13 x 2-1/4" .....	2	.....	.....	640580-001
	Standard, 1/2-13 x 2" .....	2	646134-401	646134-401	.....
	NACE .....	2	645182-401	645182-401	645182-402
80	Screw, Cap, Outer Cover:				
	A1, S1 (9/16-12 x 1") .....	20	640975-406	.....	.....
	A3, S3, S5 (9/16-12 x 1-1/2") .....	20	.....	640975-407	.....
	S6 (3/4-10 x 4-1/4") .....	18	.....	.....	641068-405
	S7 (1-13 x 2-1/4") .....	20	.....	.....	642226-405
	S1 NACE (9/16-12 x 1-3/4") .....	20	640975-403	.....	.....
	A1 NACE (9/16-12 x 2") .....	20	640975-404	.....	.....
	S3, A3, S5 NACE (3/4-10 UNC-2A) .....	18	.....	645846-401	.....
81	Screw, Drive, #2 x 1/8" .....	8	009880-400	009880-400	009880-400
82	Screw, Set, Gear Housing.....	1	.....	009469-400	009469-400
83	Screw, Temperature Well Flange:				
	5/16-18 x 1" .....	2	060133-002	060133-002	.....
	5/16-18 x 3/4" .....	4	.....	.....	006409-001
84	+ Seal, Lead, and Wire .....	3	001627-400	001627-400	001627-400
85	+ Shaft, Calibrator Drive Gear .....	1	.....	515341-001	515341-001
86	+ Shaft, Jack (Upper) .....	1	512116-001	514634-002	514634-002
87	+ Shaft, Link Assembly .....	1	512069-001	515346-001	515866-001
88	Shaft.....	1	512068-002	.....	.....
89	Pin .....	2	065217-402	065217-402	065217-402
90	Stem, Adjusting Assembly .....	1	009838-001	009838-001	009838-001
91	Ball .....	2	006427-001	006427-001	006427-001
92	Plate, Base .....	1	003552-001	003552-001	003552-001
93	Plate, Retainer .....	1	003556-001	003556-001	003556-001
94	Spring, Knob .....	2	003557-001	003557-001	003557-001
95	Stem, Adjusting .....	1	003551-001	003551-001	003551-001
96	Stud, Gear Shaft .....	1	.....	514370-001	514370-001
97	Tube, Oil.....	1	514658-001	514658-001	514658-001
98	Washer, Jackshaft:				

Item	Description	Qty.	E3-A1, S1	E3-A3, S3, S5	E3-S6, S7
	1/16" .....	1	001125-002	.....	.....
	3/16" .....	1	001125-001	.....	.....
99	Washer, Idler Pinion Shaft .....	1	003599-001	.....	.....
100	Washer, Inner Mechanism .....	2	065309-002	065309-002	533103-001
101	Washer, Gear:				
	A3, S3, S5 .....	2	.....	641985-402	.....
	S6 and S7 .....	3	.....	.....	641985-402
	S3 and S5 NACE.....	2	.....	641985-401	.....

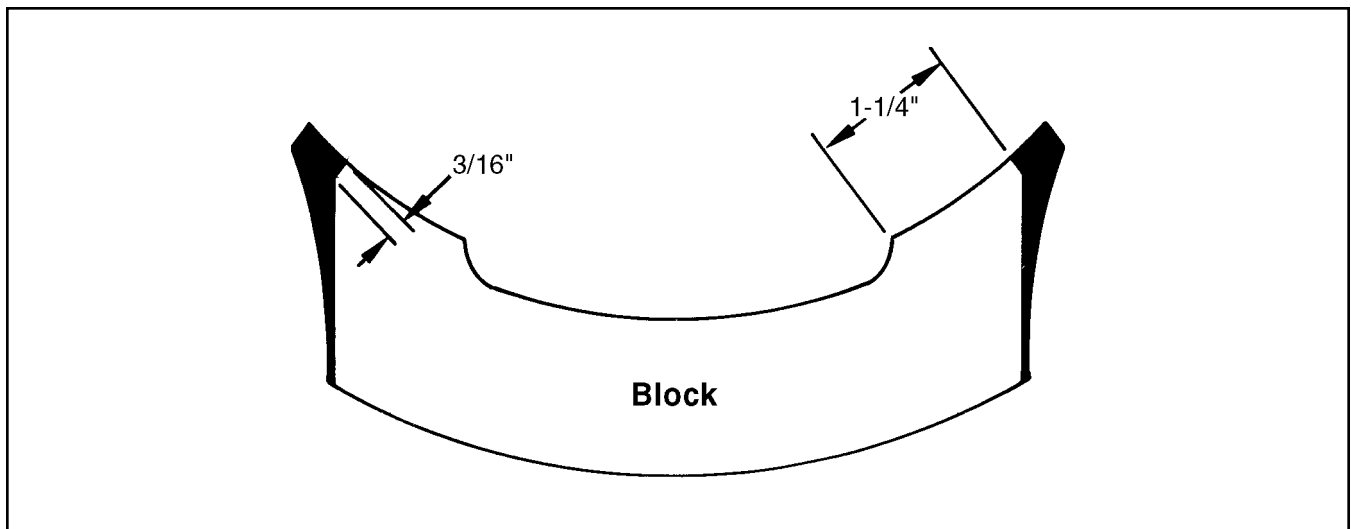
**Inner Mechanism**

Item	Description	Qty.	Part Number
102	@4 Block:		
	Current Style .....	1	538361-001
103	Body.....	1	512071-001
104	+ Bushing, Jackshaft:		
	Standard and All Iron .....	2	519882-001
	LPG .....	2	512796-001
	Sandy Crude .....	2	535920-001
105	+ Coupling, Drive .....	1	512064-002
106	Cover, Inner (Includes Item 104):		
	Standard and All Iron .....	1	516455-001
	LPG .....	1	516455-002
	Sandy Crude .....	1	536101-001
	Sandy Crude With All Iron .....	1	512054-004
107	Dowel, Locating Arm.....	1	512115-001
108	Lug, Lift.....	2	512002-001
109	Nut, 5/16"-18, Hex, Shakeproof .....	1	009552-400
110	Pin, Groove, 3/16 x 3/4" .....	1	007900-400
111	Pin, Groove, 5/64 x 5/8" .....	1	009593-400
112	Pitot Tube .....	1	072186-001
113	Plate.....	1	512714-001
114	Ring, Retaining .....	1	064150-001
115	@4 Rotor and Blade Assembly (Current Style):		
	Standard.....	1	515705-001
	All Iron .....	1	515705-002
	LPG .....	1	515705-003
	Sandy Crude .....	1	553615-001
	Sandy Crude With All Iron Trim .....	1	553615-002
116	Arm, Locating.....	1	523293-002
117	+ Bearing, Rotor:		
	Standard and All Iron.....	2	516108-001
	LPG .....	2	516108-002
	Sealed Carbon Steel .....	2	516108-003
	Sandy Crude (Inner Sleeve Bearing).....	2	553529-001
118	+ Bearing, Thrust (Not Used on Sandy Crude):		
	Standard and All Iron.....	1	009589-001
	LPG .....	1	504819-001
119	+ Blade, Upper:		
	Standard .....	1	008898-001
	All Iron .....	1	009453-054
	LPG .....	1	504806-001
	Sandy Crude.....	1	008898-004
	Sandy Crude With All Iron Trim.....	1	009453-003
120	+ Blade, Lower:		
	Standard .....	1	008899-001
	All Iron .....	1	009453-054
	LPG .....	1	504807-001
	Sandy Crude.....	1	008899-004
	Sandy Crude With All Iron Trim.....	1	009454-003
121	@7 Pin, Blade Roller .....	2	003449-001
122	Pin, Cotter:		
	Sandy Crude .....	2	640780-001
	All Others.....	2	006308-001

Item	Description	Qty.	Part Number
123	Roller, Blade:		
	Standard and All Iron.....	2	065109-001
	LPG .....	2	644412-402
	Sealed Carbon Steel .....	2	643597-401
@7	Sandy Crude Versions.....	2	553530-001
124	Clamp, Rotor Cover Roller.....	8	011226-001
125	Collar, Thrust Bearing .....	1	512047-001
126	Key.....	1	512722-001
127	Nut, Adjusting Screw .....	1	006835-002
128	Pin, Adjusting Screw Extension .....	1	512279-001
129	Pin, Rotor Cover Roller.....	4	002034-001
130	Pin, Thrust Bearing Collar.....	1	008166-001
131	Pin, Bearing (Sandy Crude Trim Only):		
@9	Previous Style .....	2	551795-001
	Current Style .....	2	553528-001
132	Plate, Rotor Gear:		
	Sandy Crude Versions.....	1	551801-001
	All Others .....	1	512049-001
133	@5 Bearing, Sleeve (Sandy Crude Trim Only).....	1	551789-001
134	Rotor, Sub-Assembly:		
	Sandy Crude Versions.....	1	552706-001
	High Temperature or LPG .....	1	008096-042
	All Others .....	1	008096-002
135	@5 Bearing, Sleeve (Sandy Crude Trim Only).....	1	551793-001
136	Dowel.....	9	001636-001
137	Screw, 1/4-20 x 7/8".....	8	006100-002
138	Screw, #10-32 x 3/8" (Sandy Crude Trim Only) .....	4	006045-002
139	Washer (Sandy Crude Trim Only).....	4	006929-001
140	Roller, Rotor Cover:		
	LPG Trim .....	4	514750-001
	Sandy Crude .....	4	553531-001
	All Others .....	4	011227-001
141	Screw, Adjusting .....	1	002351-001
142	Screw, Locating Arm, 5/16-18 x 1-1/4":		
	Sandy Crude Trim.....	1	643668-403
	All Others .....	1	006511-002
143	Screw, Rotor Gear Plate, 1/4-20 x 1-1/8".....	4	640992-401
144	@4 Shaft and Cam Assembly:		
	Sandy Crude Trim.....	1	538426-002
	All Others (Current Style).....	1	538426-001
	All Others (Previous Style) .....	1	512285-001
145	@4 Cam:		
	Sandy Crude Trim.....	1	538360-003
	All Others (Current Style) .....	1	538360-001
	All Others (Previous Style) .....	1	003524-001
146	Key.....	1	005535-800
147	Shaft .....	1	512042-001
148	Spacer, Bearing (Not Used on Sandy Crude Trim).....	1	512144-001
149	Spring .....	1	003525-002
150	Washer (Sandy Crude Trim Only).....	1	643127-407
151	Screw, #10-32 x 1-3/8".....	2	008312-401
152	Screw, 5/16-18 x 1-1/4".....	1	006325-002
153	Screw, Cap, 1/2-13 x 1" .....	2	010525-400
154	Screw, Inner Cover to Body, 5/16-18 x 1" .....	8	006140-002
155	Screw (Nylock).....	1	641044-401
156	Shaft, Jack, and Gear:		
	Sandy Crude Trim.....	1	512282-003
	All Others .....	1	512282-001
157	Washer:		
	Sandy Crude (Standard and All Iron).....	1	553623-001
	All Others .....	1	643249-001
158	Washer, Special.....	1	642495-406
159	Cover, Pitot .....	1	512723-001
160	Lockwasher.....	2	642482-406
161	Nut, #10-32.....	2	001723-400

Item	Description	Qty.	Part Number
Inner Mechanism General Assembly Numbers			
	Standard .....		538476-091
	All Iron.....		538476-092
	LPG.....		538476-093
	Sandy Crude Trim (Tungsten Carbide).....		553533-091
	Sandy Crude, All Iron Trim .....		553533-092

- + Recommended stock.
- R Indicates change since last revision.
- @1 When ordering, include temperature range, specific or API gravity, API table used, and meter gearing.
- @2 Only standard gearing is listed. For additional gearing combinations, see Gear Train Bulletin AB01023.
- @3 See Form No. P0605.\* for component parts.
- @4 In 1976, a change in design was made to the block and cam of the 3" meter. To ensure proper operation, a current style block must be used with a current style cam. Either current or previous style block can be used with the previous style cam. The shaded area below represents the dimensions of the previous style.
- @5 Contact Smith Parts Operation for proper installation instructions as bearing must be bonded in place.
- R@6 If replacing old style (without counterbore) Inner Bearing Sleeve Item #131 (553528-001) must also be ordered.
- @7 Not recommended for old style Sandy Crude blades. Item #119 and #120 should also be replaced.
- @8 Use P/N: 035002-501 (wire) as required to retain roll pin.
- @9 To be used with old style Inner Bearing Sleeve (without counterbore opposite of retainer hole).
- \* The latest edition is indicated by a 2-digit postscript (e.g., .01, .02, etc.).



The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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