



Parts Manual

70E Roll Clamp

Serial Numbers 664661 through 664668

Manual Number 667441 R1

cascade[®]

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HOW TO USE THIS MANUAL

Introduction

This manual illustrates service replacement parts for standard production Cascade 70E Roll Clamp.

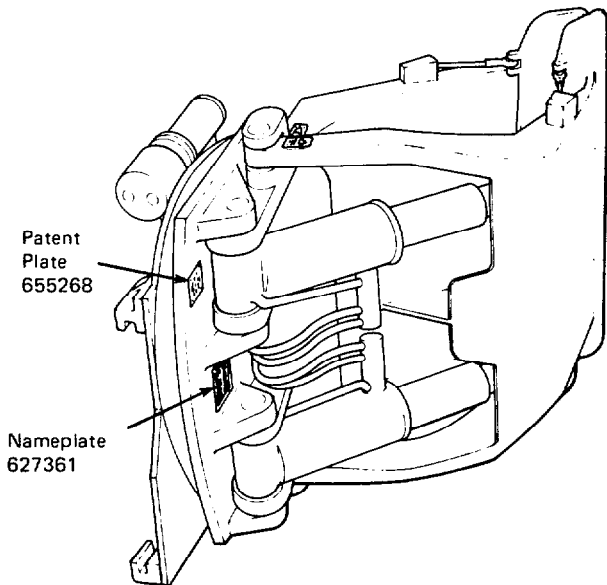
The parts manuals for attachments designed by the Application Engineering Department have an A.E.D. designation on the cover of the manual.

This standard attachment manual is not interchangeable with an A.E.D. Manual since it does not reflect the special engineering of an A.E.D. attachment.

To locate a service replacement part for a standard attachment follow the steps below.

1. Locate Nameplate

The nameplate is attached on the left side of the top arm frame. If the nameplate is missing, all necessary information is stamped into the frame at the same location.



2. Note the Serial Number

Record the six-digit Serial Number. See the example.

3. Refer to Serial Number Index

Locate your Serial Number in the Serial Number Index on the following page.

IMPORTANT: DO NOT USE THIS MANUAL TO ORDER PARTS FOR AN A.E.D. ATTACHMENT. Contact Cascade Corporation to obtain the correct parts manual. You must supply the serial number and all additional equipment numbers to order the correct manual.

4. Ordering

RETAIL CUSTOMERS—Cascade Service Replacement Parts and Service Literature are sold through authorized lift truck dealers. To order, contact the lift truck dealer of your choice.

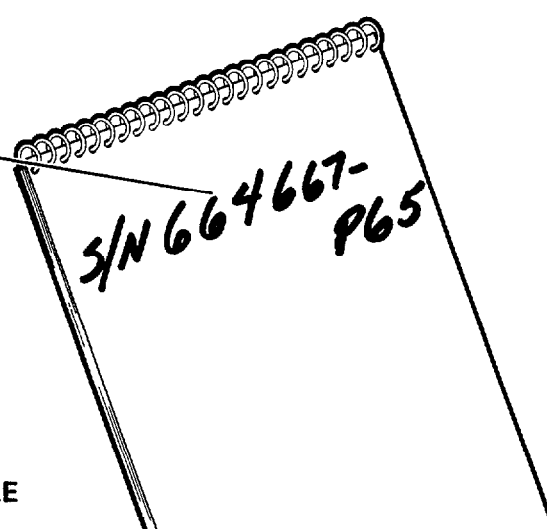
LIFTTRUCK DEALERS—To order Service Replacement Parts or Service Literature, contact:

Cascade Parts Depot
2501 Sheridan Avenue
Box 360
Springfield, Ohio 45505
(513) 322-1199
Telex: 205413

5. For Your Convenience

... we have supplied a parts ordering log located on the last page. Use this log as a permanent record of parts ordered from this manual.

A detailed view of a nameplate for a Cascade Lift Truck Attachment. The nameplate is rectangular with rounded corners and a black background with white text. At the top left is the Cascade logo. The text reads: 'cascade® LIFT TRUCK ATTACHMENT'. Below this are fields for 'SERIAL NUMBER' (664667 - P - 65) and 'CATALOG NUMBER' (70E - RC - 02C). There are three rows for 'ADDITIONAL EQUIPMENT'. Below these is the 'ATTACHMENT CAPACITY' section with boxes for 'POUNDS AT' and 'INCH LOAD CENTER'. At the bottom, it says 'FOR SERVICE AND PARTS LITERATURE CONTACT cascade® corporation 503 6661511 PORTLAND, OREGON U.S.A.'.



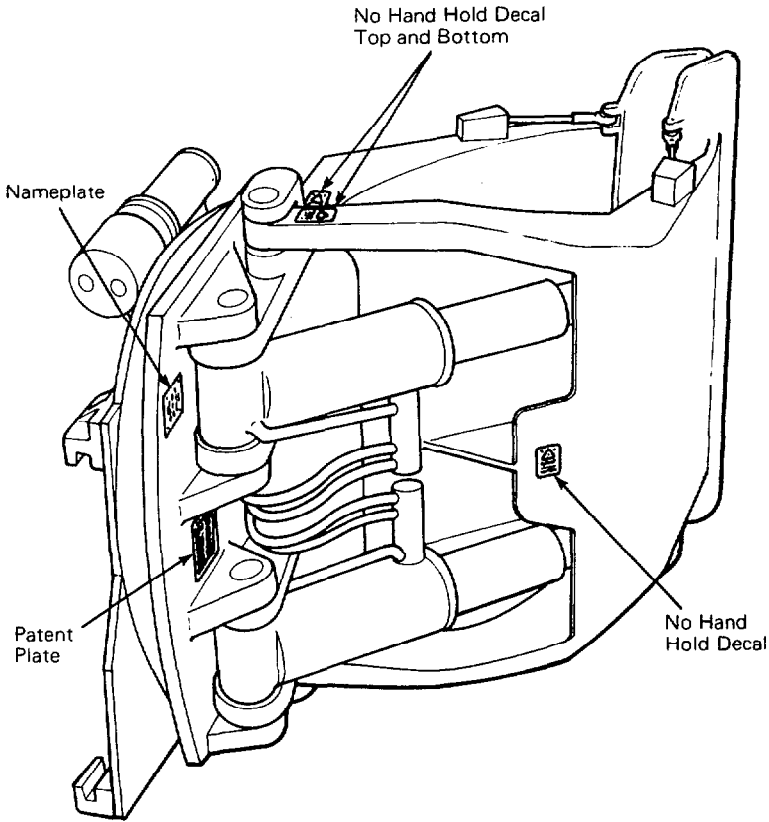
EXAMPLE

Serial Number Index

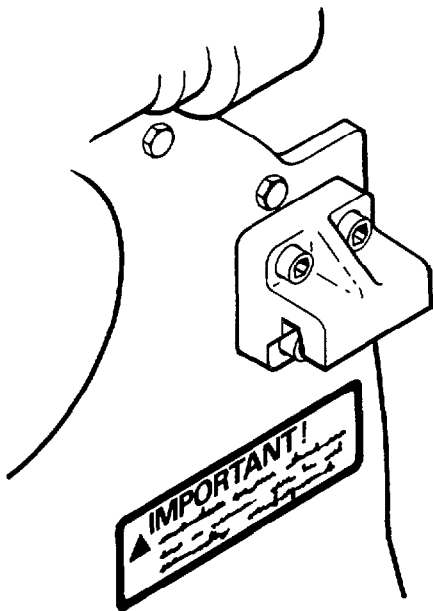
Serial Number	Model	Frame Group Page	Drive Group Page	Rotator Drive Motor Page	Check Valve Group Page	Revolving Conn. Page	Clamp Cylinder Page	Swing Cylinder Page	Control Group Page	Junction Block Page	Clamp Arm Page	Swing Arm Page	Mounting Group Page
664661	70E	1	2	3	4	5	6	8	9/10	12	13	14	15
664662	70E	1	2	3	4	5	6	8	9/10	12	13	14	15
664663	70E	1	2	3	4	5	6	8	9/10	12	13	14	16
664664	70E	1	2	3	4	5	6	8	9/10	12	13	14	16
664665	70E	1	2	3	4	5	7	8	9/10	12	13	14	15
664666	70E	1	2	3	4	5	7	8	9/10	12	13	14	15
664667	70E	1	2	3	4	5	7	8	9/10	12	13	14	16
664668	70E	1	2	3	4	5	7	8	9/10	12	13	14	16

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Safety Decals

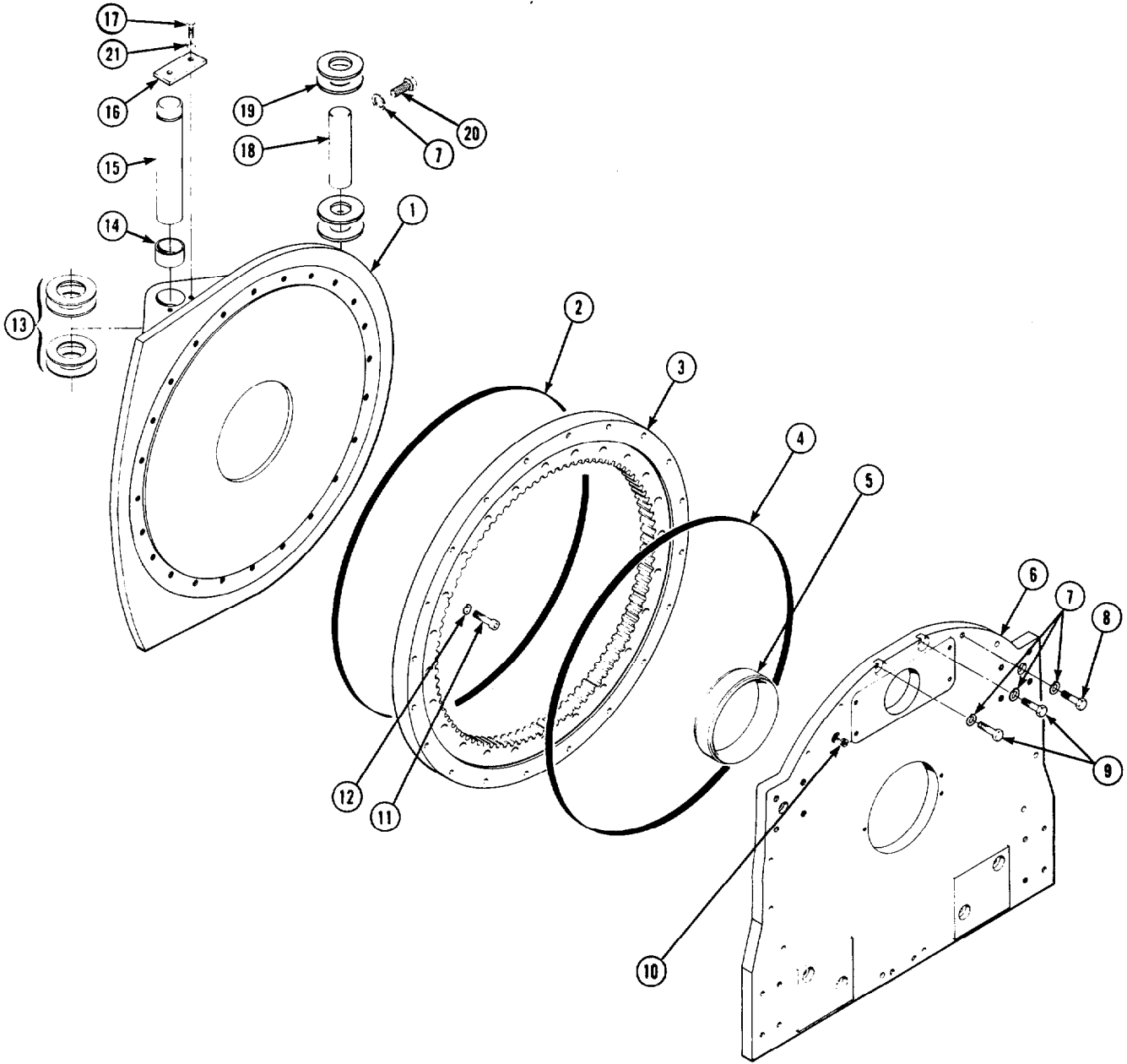


QTY.	PART NO.	DESCRIPTION
5	656038	No Hand Hold Decal



QTY.	PART NO.	DESCRIPTION
1	665368	Important Decal

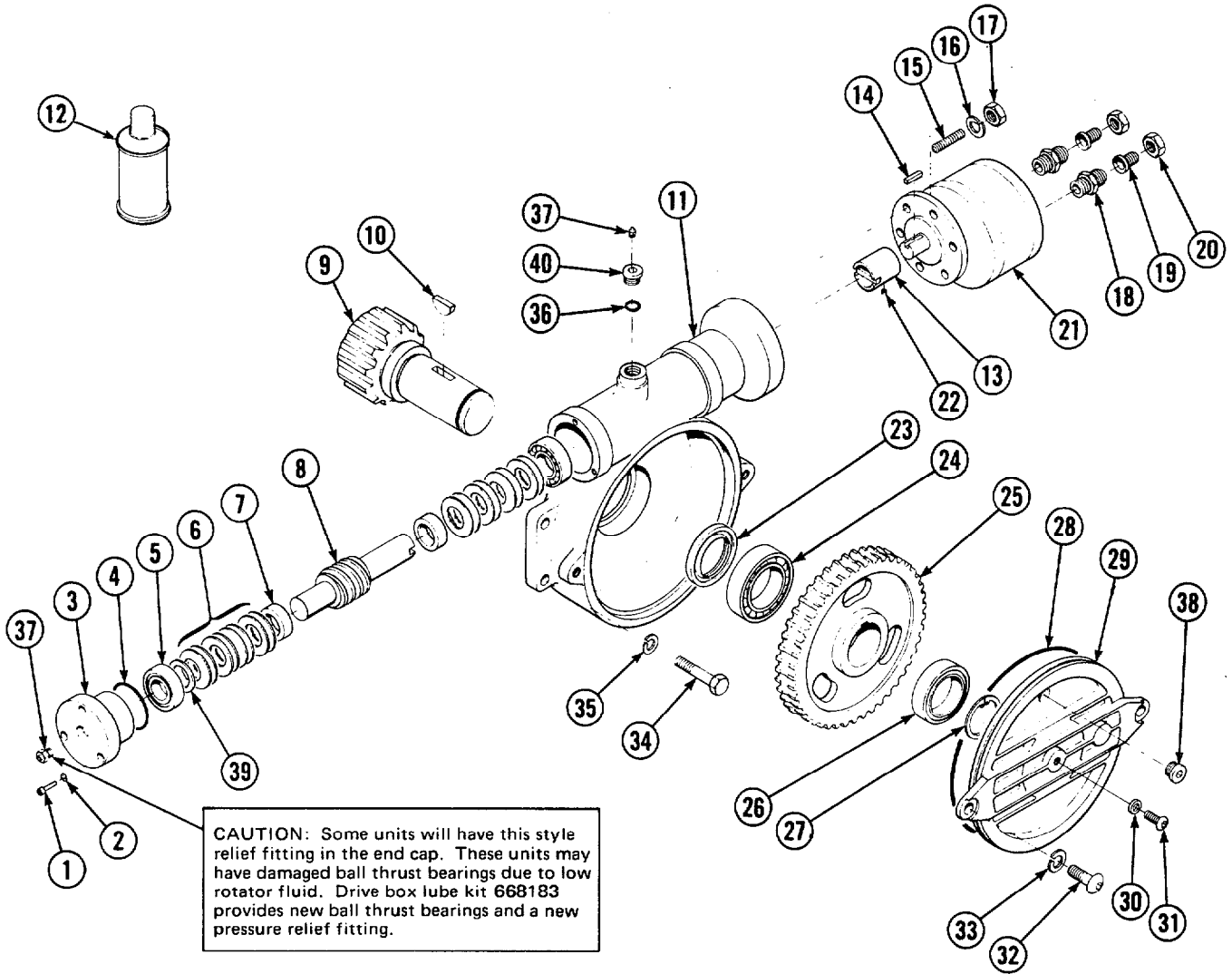
Rotator Frame Group



70E							
REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
		664669	Group Assembly	12	24	6455	Lockwasher
1	1	664676	Revolving Frame	13	16	664689	Shim
2	1	664683	Seal	● 14	4	665500	Bushing
3	1	662726	Bearing Assembly	15	2	664692	Pin
4	1	664684	Seal	16	4	664693	Keeper
5	1	664687	Seal	17	8	4880	Capscrew, 1/2 NCx1.00 GR8
6	1	664685	Baseplate	18	1	665118	Pin
7	23	6290	Lockwasher	19	4	664690	Shim
8	16	636408	Capscrew, 1/2 NCx2.00 GR5	20	1	3661	Capscrew, 1/2 NCx3.00
9	4	636407	Capscrew, 1/2 UNCx1.50 GR5	21	8	6393	Washer
10	1	6605	Pipe Plug				
11	24	4509	Capscrew, 1/2 NCx2.00				

● Included in Bushing Service Kit 665738

Drive Group Assembly



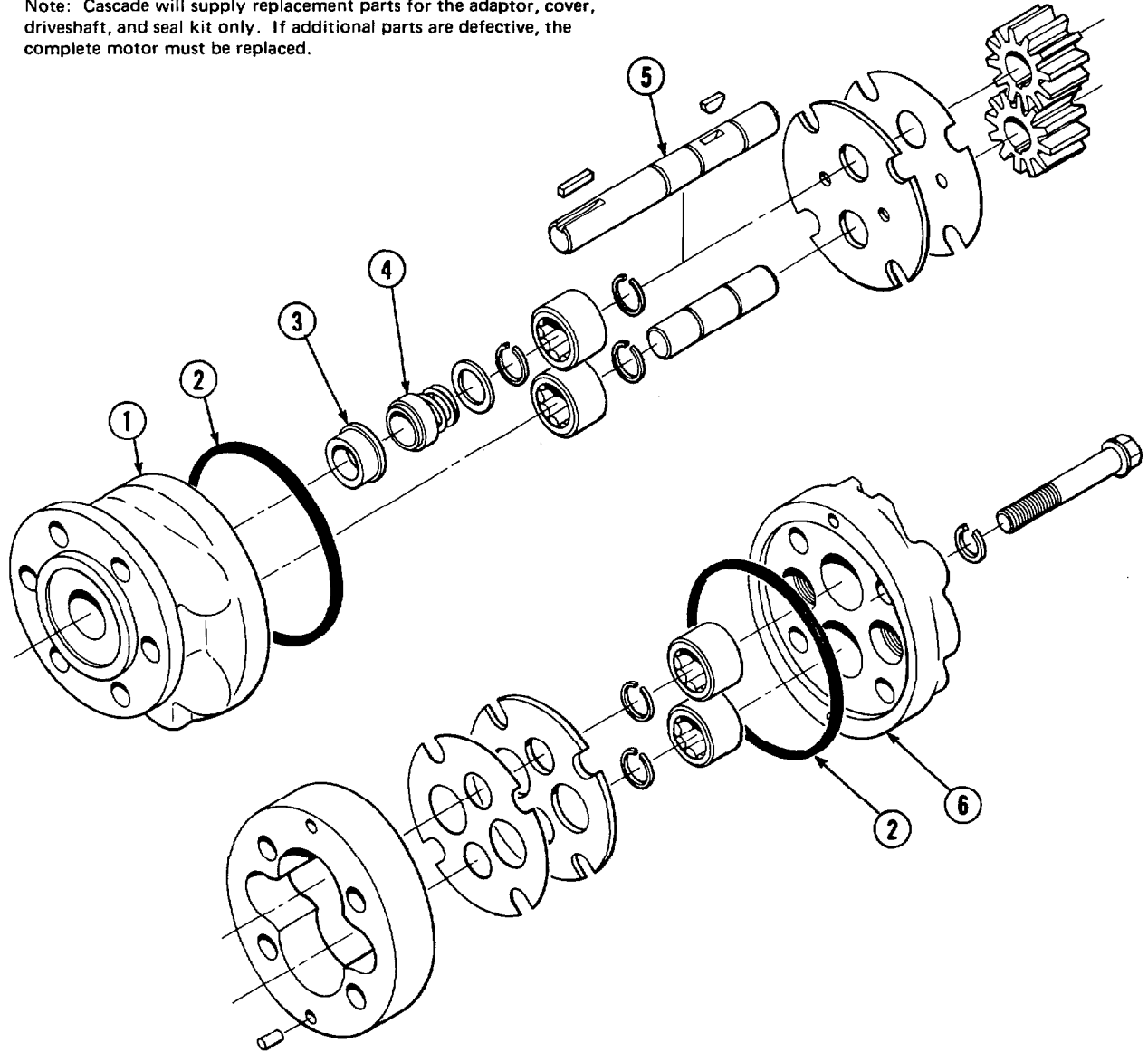
CAUTION: Some units will have this style relief fitting in the end cap. These units may have damaged ball thrust bearings due to low rotator fluid. Drive box lube kit 668183 provides new ball thrust bearings and a new pressure relief fitting.

70E							
REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
		662725	Drive Group w/2MO28 Motor	21	1	14322	2MO28 Motor
		662727	Drive Assembly	22	1	5206	Setscrew
1	3	4441	Cap screw, 1/4 NCx1.0	23	1	662737	Seal
2	3	6370	Lockwasher	24	1	662739	Bearing
3	1	669211	End Cap	25	1	625430	Worm Gear
4	1	2787	O-Ring	26	1	13662	Bearing
5	2	13663	Bearing	27	1	7204	Snap Ring
6	16	655645	Spring Washer	28	1	2833	O-Ring
7	2	662748	Small Spacer	29	1	668143	Cover
8	1	655597	Worm	30	1	603680	Seal
9	1	665571	Pinion	31	1	4874	Cap screw, 3/8 NCx.5 GR 8
10	1	13654	Woodruff Key	32	2	4884	Cap screw, 5/8 NCx1.0 GR 8
11	1	662948	Gear Case	33	2	6292	Lockwasher
12	1	656300	Gear Box Lube -48oz.	34	4	3655	Cap screw, 1/2 NCx1.5
13	1	655598	Coupling Assembly	35	4	6290	Lockwasher
14	1	625434	Key	36	1	643375	O-Ring
15	6	610392	Stud	37	1	644010	Relief Fitting
16	6	6288	Lockwasher	38	1	609455	Plug
17	6	5702	Nut, 3/8 NF	39	2	667988	Thrust Washer
18	2	2313	Reducer	40	1	668154	Plug
19	2	2671	Adapter				
20	2	2618	Nut				

■ See page 3 for Motor breakdown

Rotator Drive Motor

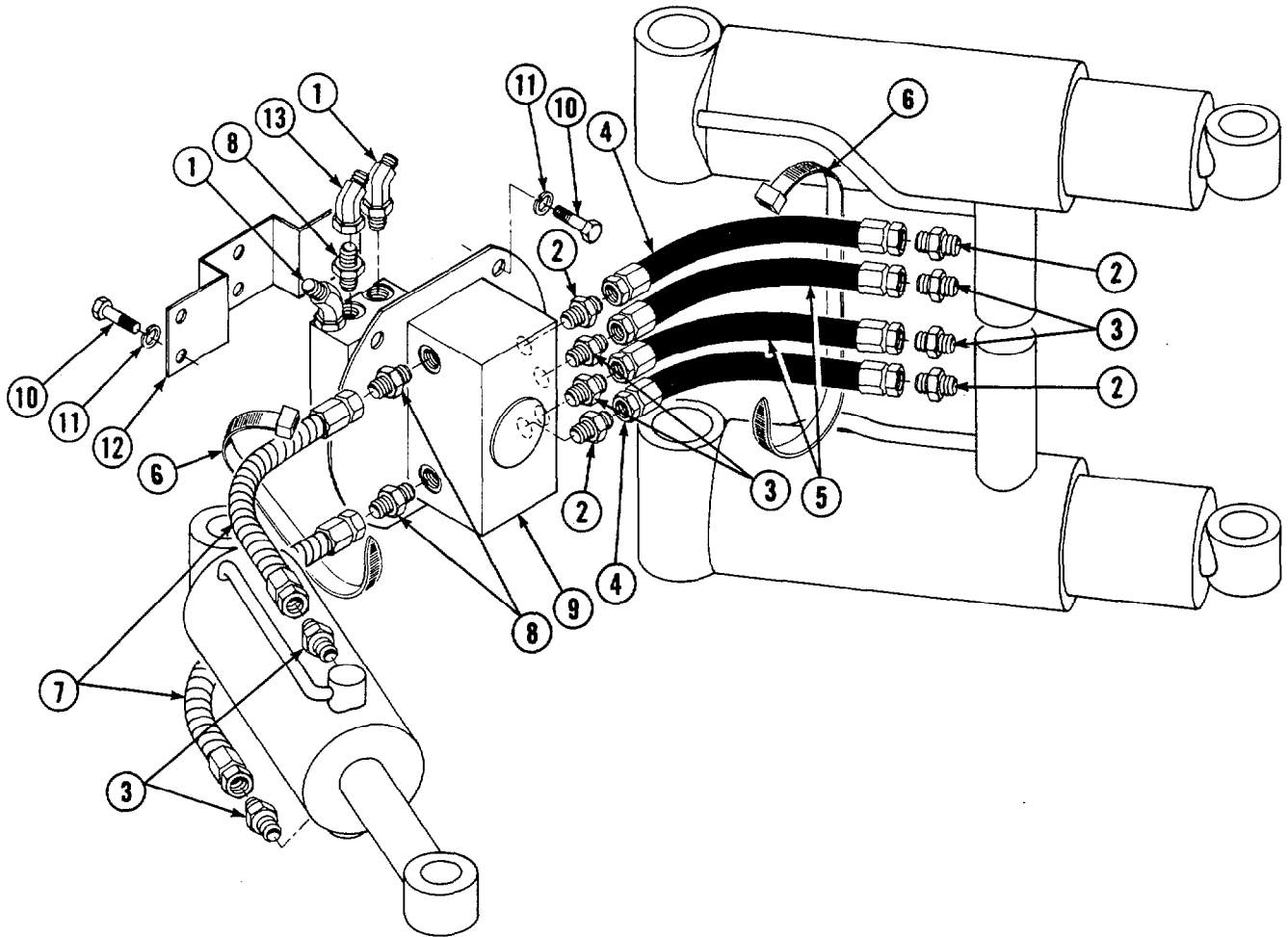
Note: Cascade will supply replacement parts for the adaptor, cover, driveshaft, and seal kit only. If additional parts are defective, the complete motor must be replaced.



70E			
REF. NO.	QTY.	PART NO.	DESCRIPTION
		14322	Motor
1	1	660020	Adapter
2	2	•	O-Ring
3	1	•	Seal Seat
4	1	•	Seal Assembly
5	1	659996	Drive Shaft
6	1	659999	Cover
		660024	Seal Kit

•Included in Seal Kit 660024

Check Valve Group

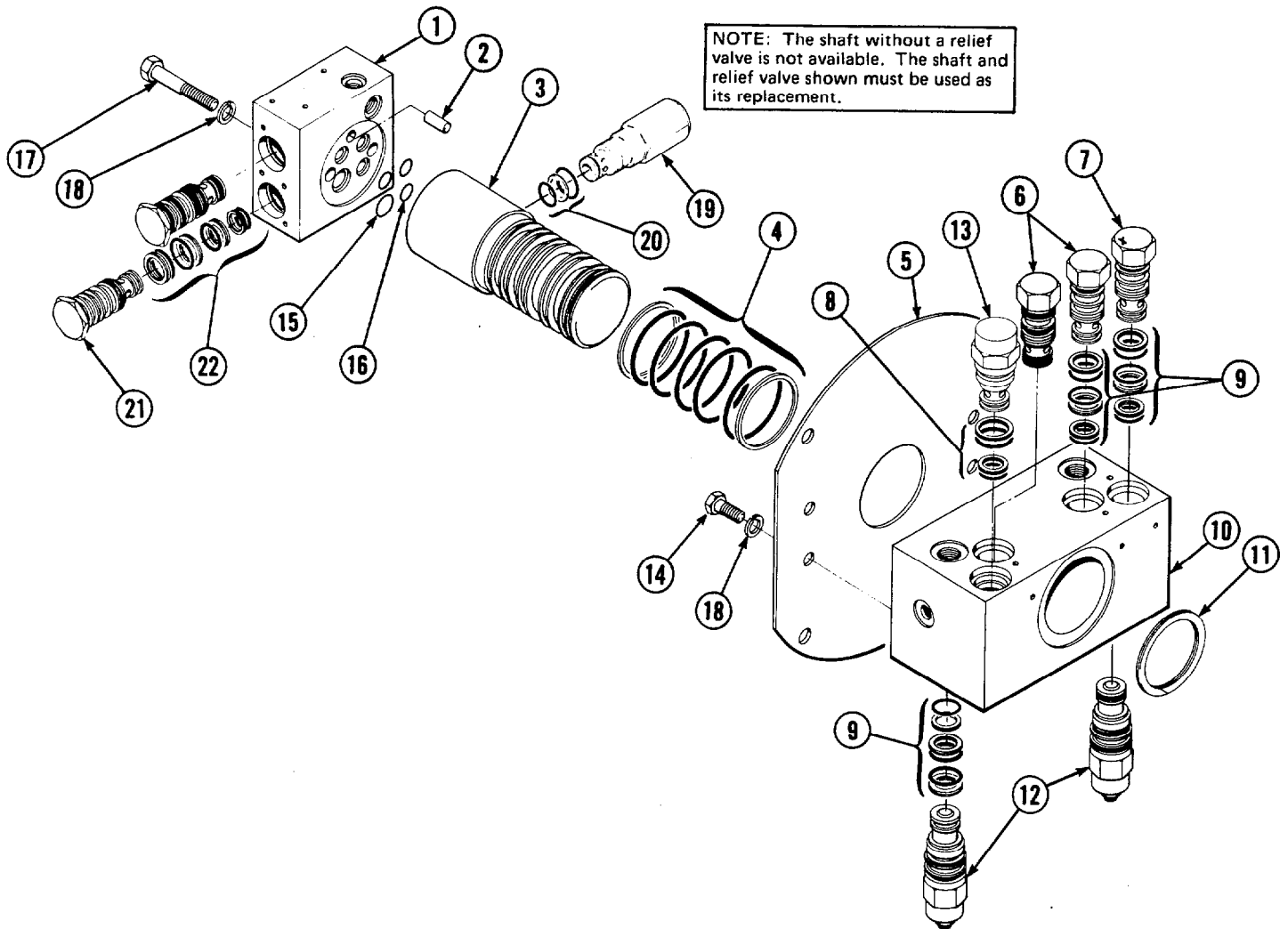


70E			
REF	QTY	PART NO.	DESCRIPTION
		664673	Check Valve Group
1	2	611303	Elbow Str. Thd.
2	4	601377	Connector
3	6	604511	Connector
4	2	664966	Hose
5	2	664964	Hose
6	2	649086	Cable Tie
7	2	665711	Hose
8	3	661288	Connector
● 9	1	664720	Revolving Connection Assy.
10	7	3601	Capscrew, 3/8 NC x .75
11	7	6288	Lockwasher
12	1	664756	Bracket
13	1	605230	Swivel Elbow

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● See page 5 for parts breakdown.

Revolving Connection



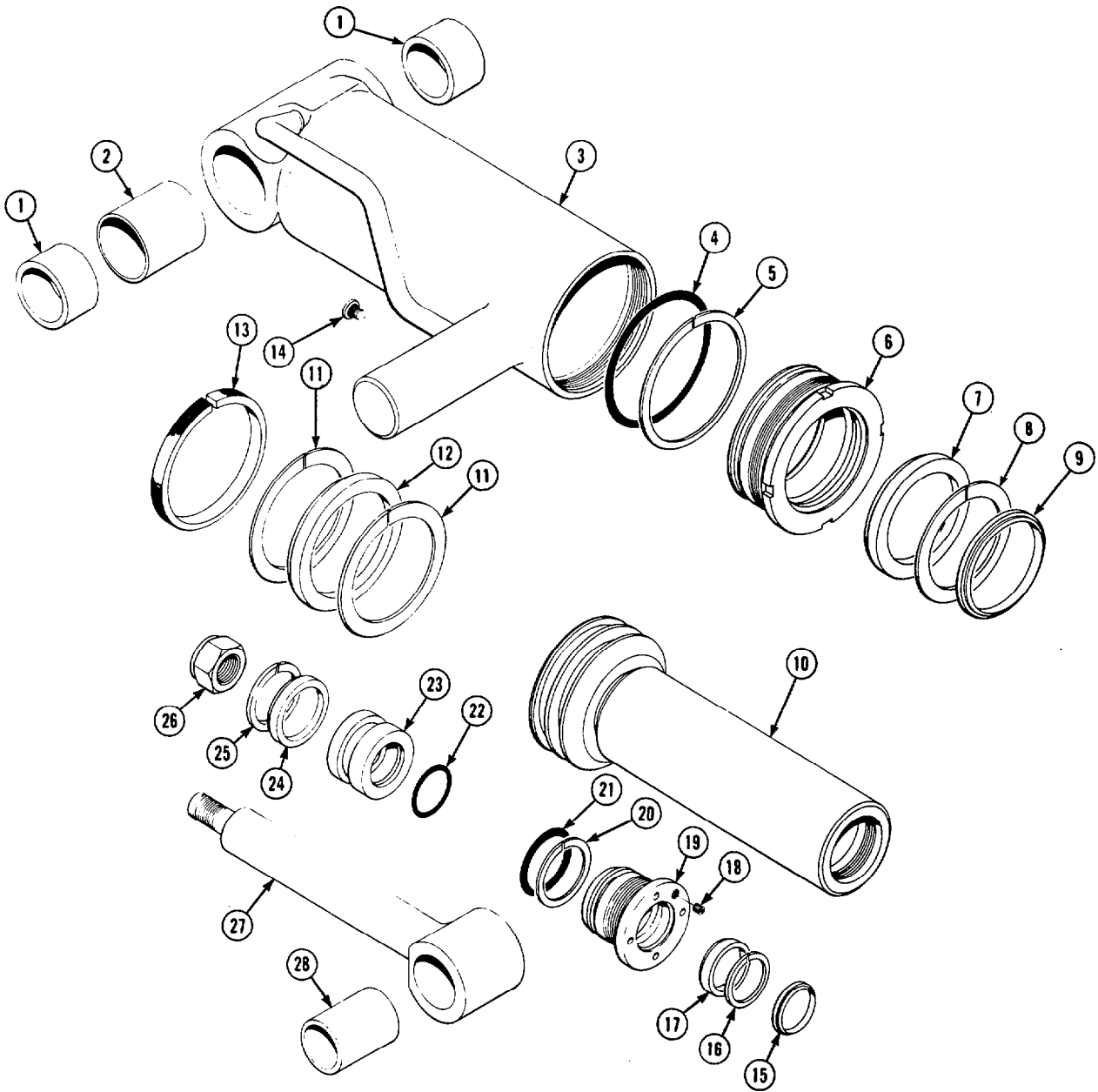
NOTE: The shaft without a relief valve is not available. The shaft and relief valve shown must be used as its replacement.

70E			
REF	QTY	PART NO.	DESCRIPTION
		664720	Revolving Connection
1	1	664724	Fixed Valve Assembly
2	1	611211	Dowel
3	1	664722	Shaft
4	1	664924	Shaft Seal Kit
5	1	664726	Plate
6	2	665097	Check Valve
7	1	664945	Check Valve
8	1	664923	Seal Kit
9	5	656223	Seal Kit
10	1	664721	Revolving Valve Body
11	1	7213	Snap Ring
12	2	667536	Overcenter Valve
13	1	664725	Relief Valve
14	4	3600	Capscrew
15	3	643335	O-Ring
16	1	643338	O-Ring
17	2	3610	Capscrew, 3/8 NC x 2.75
18	6	6288	Lockwasher
19	1	667078	Relief Valve
20	1	667510	Seal Kit
21	2	664727	Check Valve
22	2	664922	Seal Kit

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Clamp Cylinder Converter Unit



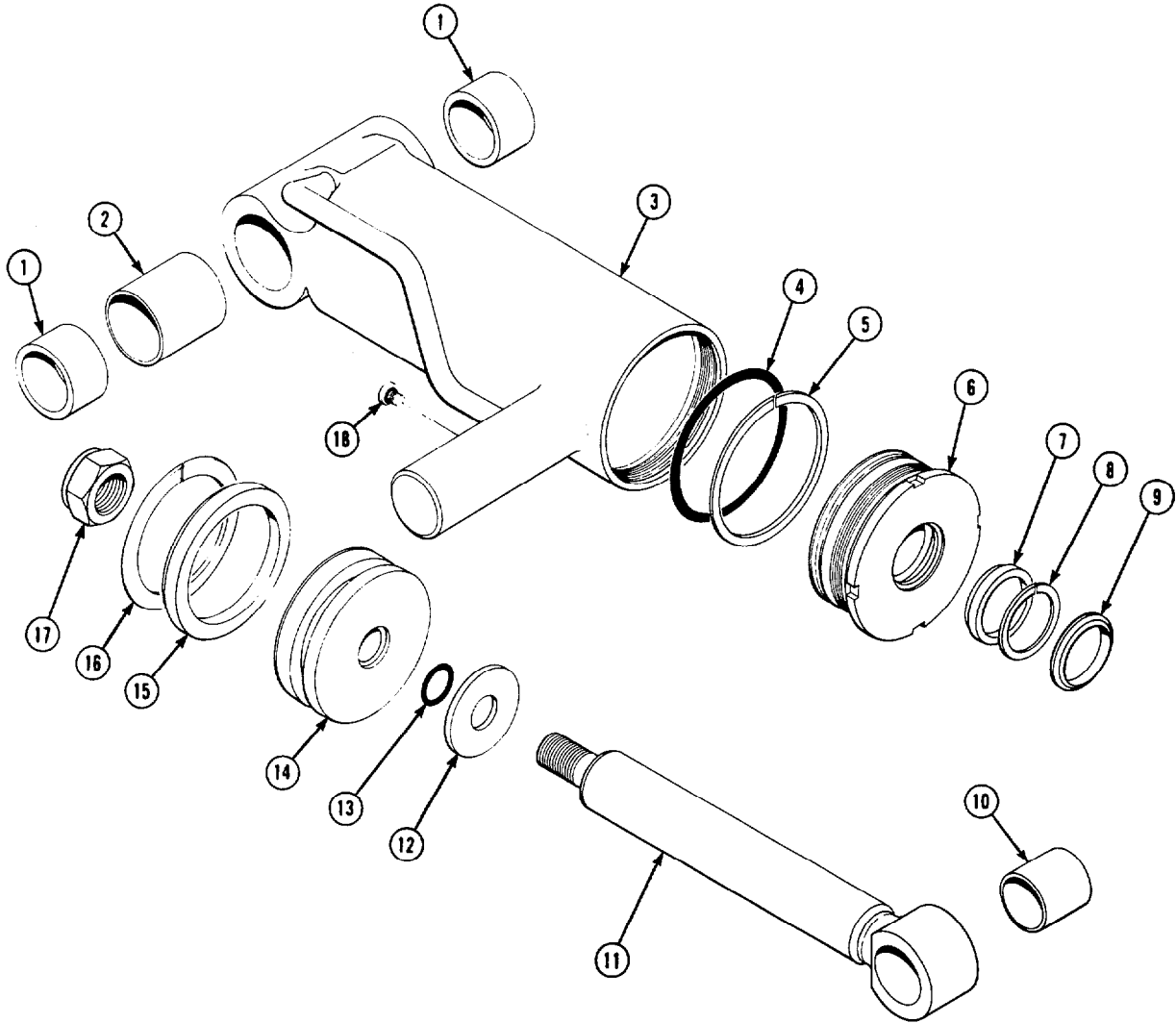
70E

REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
		664670	Clamp Cylinder Assembly	● 16	1	638248	Nylon Ring
◆ 1	2	665500	Bushing	● 17	1	662453	Seal
◆ 2	1	664694	Spacer	● 18	1	4953	Setscrew
3	1	664699	Outer Shell	● 19	1	664935	Retainer
● 4	1	2809	O-Ring	● 20	1	615136	Back-Up Ring
● 5	1	615152	Back-Up Ring	● 21	1	2793	O-Ring
6	1	664708	Retainer	● 22	1	2785	O-Ring
● 7	1	662464	Seal	● 23	1	664698	Piston
● 8	1	638224	Nylon Ring	● 24	1	637565	Nylon Ring
● 9	1	636862	Wiper Ring	● 25	1	662458	Seal
10	1	664930	Plunger	● 26	1	5884	Nut
● 11	2	636692	Nylon Ring	● 27	1	664706	Rod
● 12	1	662466	Seal	◆ 28	1	665501	Bushing
● 13	1	664929	Bearing			665129	Seal Service Kit
14	1	604510	Plug			665740	Bushing Service Kit
● 15	1	636855	Wiper Ring				

- ◆ Included in Bushing Service Kit 665740
- Included in Seal Service Kit 665129



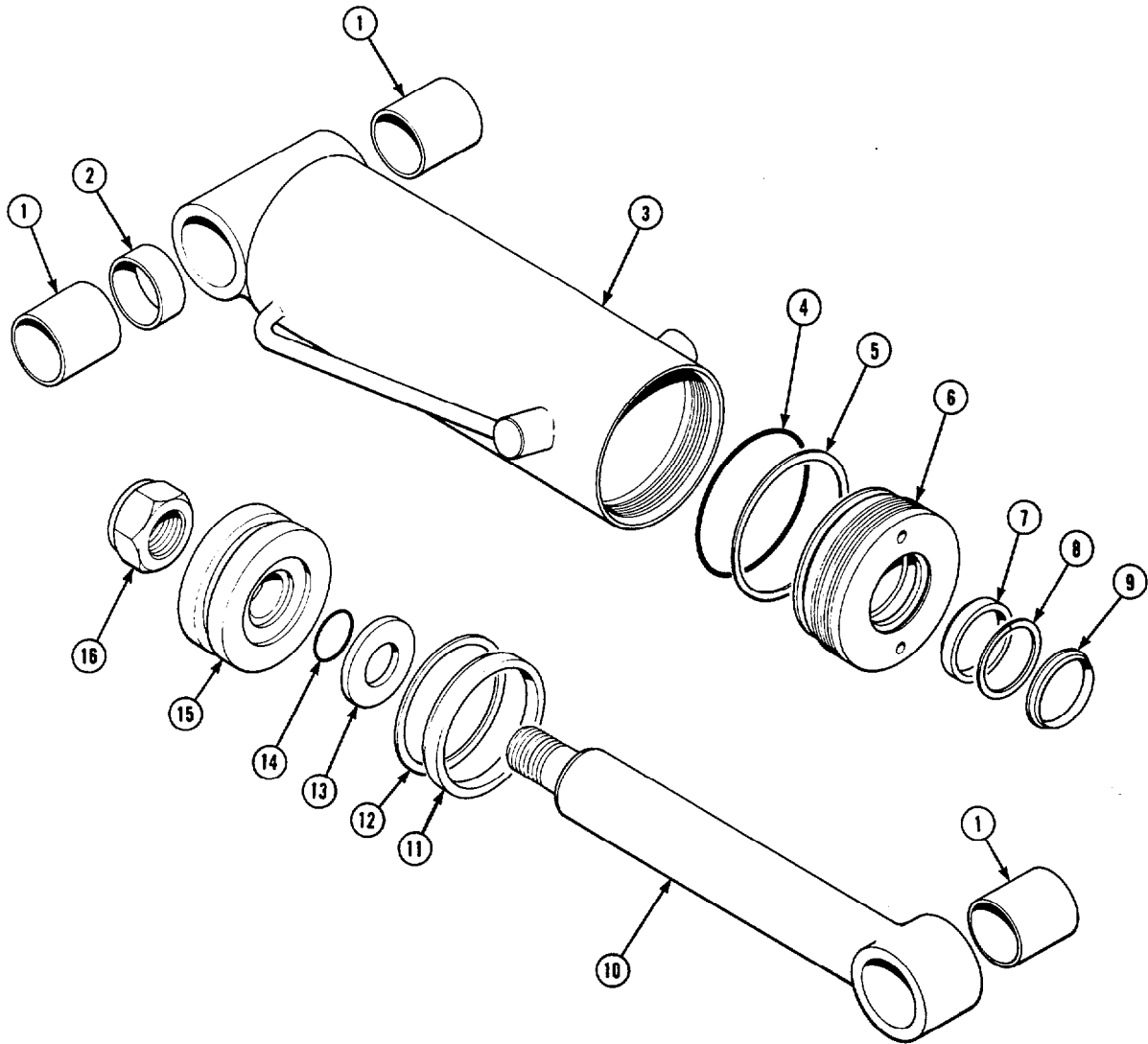
Clamp Cylinder Mill Unit



70E							
REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
		664672	Clamp Cylinder Assembly	11	1	664754	Rod
◆ 1	2	665500	Bushing	12	1	664753	Washer
◆ 2	1	664694	Spacer	● 13	1	2718	O-Ring
3	1	664699	Shell	14	1	664752	Piston
● 4	1	2809	O-Ring	● 15	1	662466	Seal
● 5	1	615152	Back-Up Ring	● 16	1	636692	Nylon Ring
6	1	664755	Retainer	17	1	663642	Nut
● 7	1	662455	Seal	18	1	604510	Plug
● 8	1	636701	Nylon Ring			665131	Seal Service Kit
● 9	1	624572	Wiper			665740	Bushing Service Kit
◆ 10	1	665501	Bushing				

- ◆ Included in Bushing Service Kit 665740
- Included in Seal Service Kit 665131

Swing Cylinder

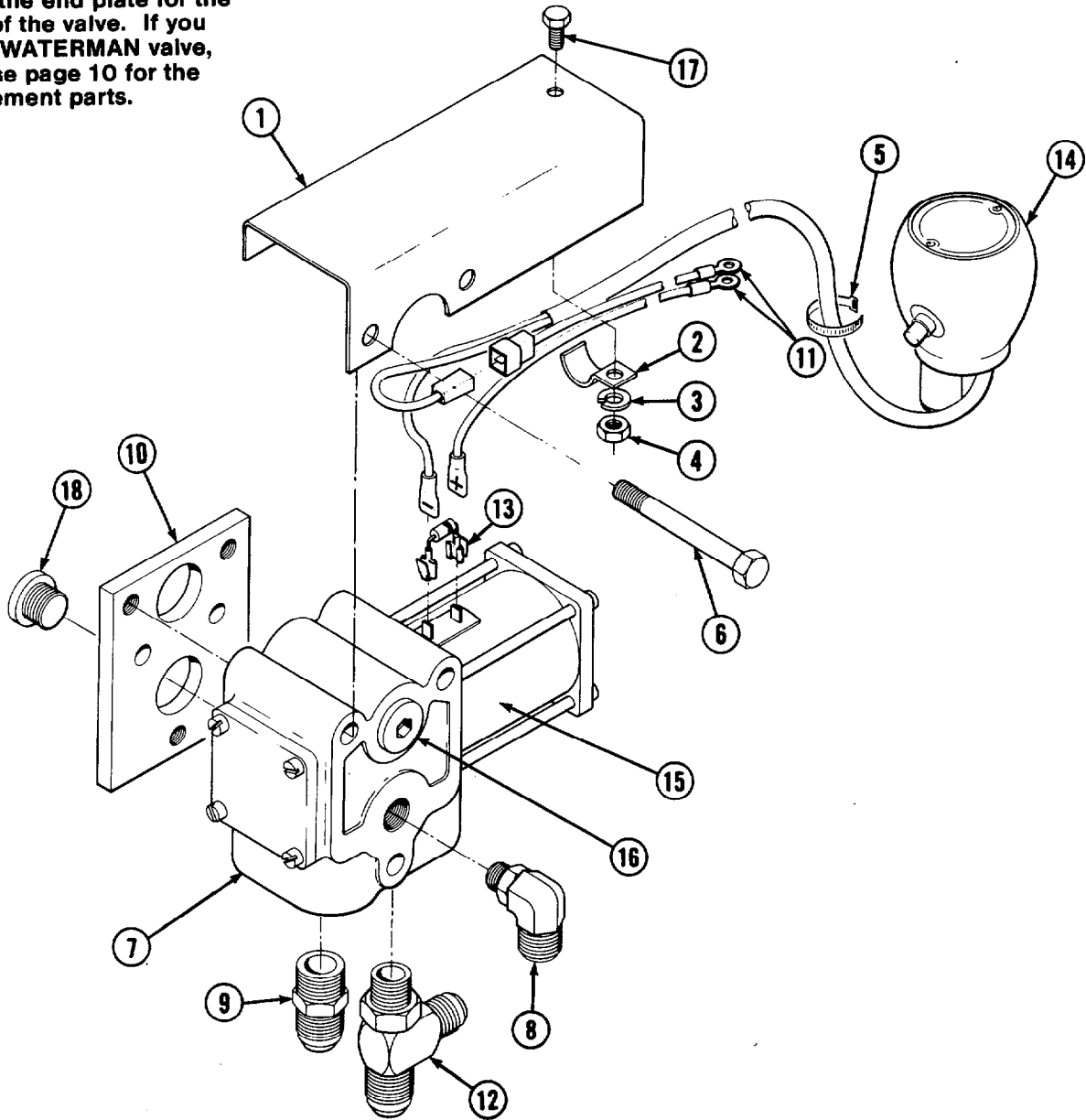


70E							
REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
		664671	Swing Cylinder Assembly	10	1	664711	Rod
◆ 1	3	665501	Bushing	● 11	1	662462	Seal
◆ 2	1	664719	Spacer	● 12	1	638295	Nylon Ring
3	1	664713	Shell Assembly	● 13	1	664753	Washer
● 4	1	2801	O-Ring	● 14	1	2718	O-Ring
● 5	1	615144	Nylon Ring	15	1	664710	Piston
6	1	664717	Retainer	16	1	663642	Nut
● 7	1	662453	Seal			665130	Seal Service Kit
● 8	1	638248	Nylon Ring			665739	Bushing Service Kit
● 9	1	636855	Wiper				

- ◆ Included in Bushing Service Kit 665739
- Included in Seal Service Kit 665130

Control Group Racine Solenoid Valve

Check the end plate for the name of the valve. If you have a WATERMAN valve, then use page 10 for the replacement parts.



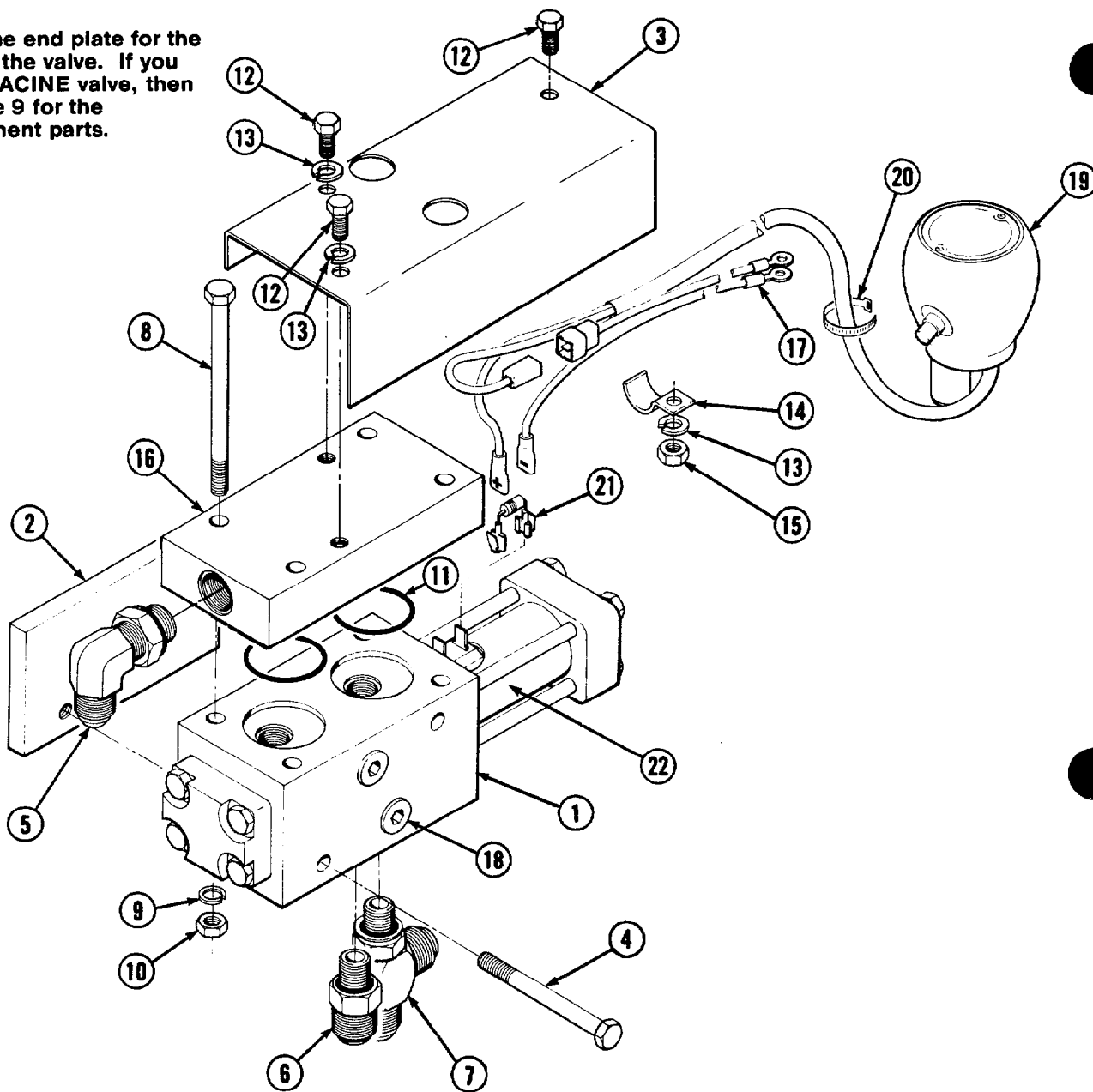
70E							
REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		665111	Control Valve Assembly-12V	8	1	651303	Fitting
		665088	Control Valve Assembly-24V	9	1	601377	Fitting
		665089	Control Valve Assembly-36V	10	1	664967	Mounting Plate
		665090	Control Valve Assembly-48V	11	1	665083	Cord Assembly
1	1	665005	Cover	12	1	610402	Tee Fitting
2	1	665112	Clip	13	1	669432	Diode Assembly
3	1	6286	Lockwasher	14	1	●665075	Knob Assembly
4	1	5900	Nut, 1/4 NC		1	665044	Solenoid Coil-12V
5	1	665249	Tie		1	665045	Solenoid Coil-24V
6	3	3610	Capscrew, 3/8 NC x 2.75	15	1	665046	Solenoid Coil-36V
	1	665040	Solenoid Valve -12V		1	665047	Solenoid Coil-48V
7	1	665041	Solenoid Valve -24V	16	2	602580	Plug
	1	665042	Solenoid Valve -36V	17	1	3551	Capscrew, 1/4/NC x .5
	1	665043	Solenoid Valve -48V	18	1	604510	Plug

● See page 11 for parts breakdown.

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Control Group Waterman Solenoid Valve

Check the end plate for the name of the valve. If you have a RACINE valve, then use page 9 for the replacement parts.



70E

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		665880	Control Valve Assembly-12V	10	4	5901	Nut
		665881	Control Valve Assembly-24V	11	2	2716	O-Ring
		665882	Control Valve Assembly-36V	12	3	3551	Capscrew, 1/4 NC x .50
		665883	Control Valve Assembly-48V	13	3	6286	Lockwasher
1	1	665886	Solenoid Valve-12V	14	1	625112	Clip
	1	665887	Solenoid Valve-24V	15	1	5900	Nut, 1/4 NC
	1	665888	Solenoid Valve-36V	16	1	665890	Manifold
	1	665889	Solenoid Valve-48V	17	1	665083	Cord Assembly
2	1	665885	Mounting Plate	18	3	604510	Plug
3	1	665884	Cover	19	1	665075	Knob Assembly
4	2	3562	Capscrew, 1/4 NC x 2.75	20	1	665249	Tie
5	1	601250	Fitting	21	1	669432	Diode Assembly
6	1	662187	Fitting	22	1	611458	Solenoid Coil-12V
7	1	665879	Fitting		1	611460	Solenoid Coil-24V
8	4	3589	Capscrew, 5/16 NC x 4.0		1	611461	Solenoid Coil-36V
9	4	6287	Lockwasher		1	614097	Solenoid Coil-48V

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• See Page 11 for parts breakdown.

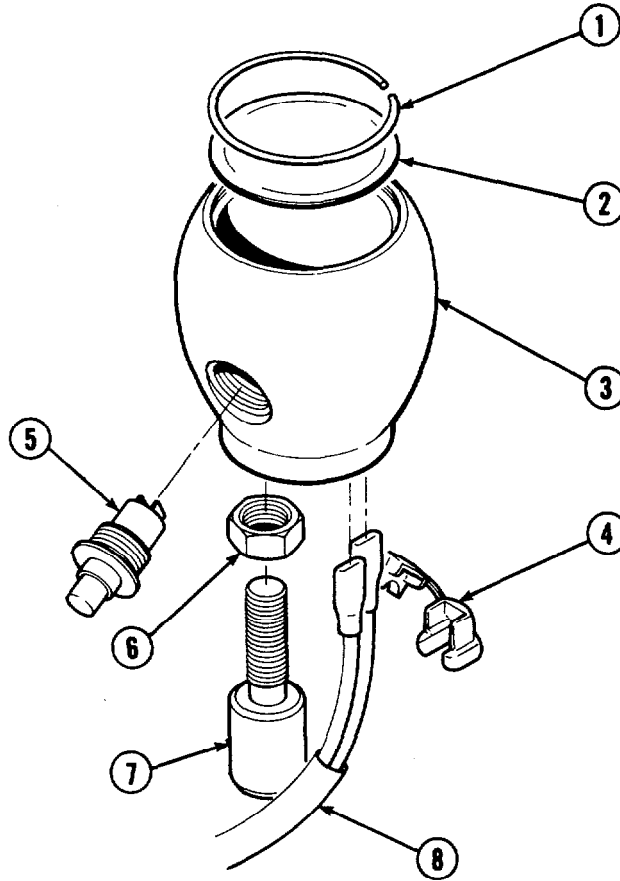


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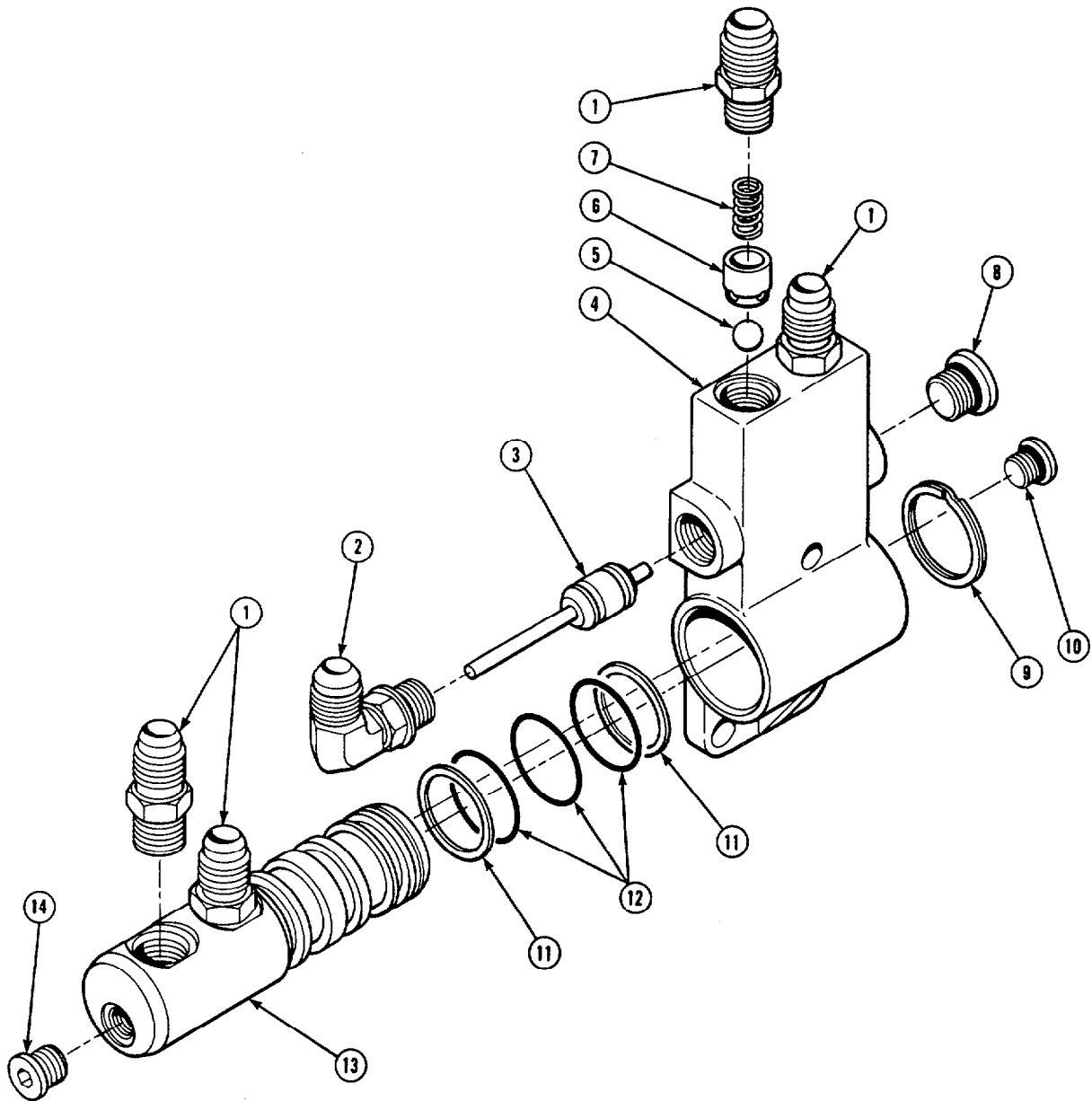
Control Knob



70E			
REF	QTY	PART NO.	DESCRIPTION
		665075	Knob Assembly
1	1	665250	Snap Ring
2	1	665006	Cover
3	1	665012	Knob
4	1	665076	Strain Relief
5	1	665004	Switch
6	1	5902	Nut
7	1	665081	Adapter, 3/8 NF
	1	672087	Adapter, 1/2 NC
8	1	665077	Cable Assembly

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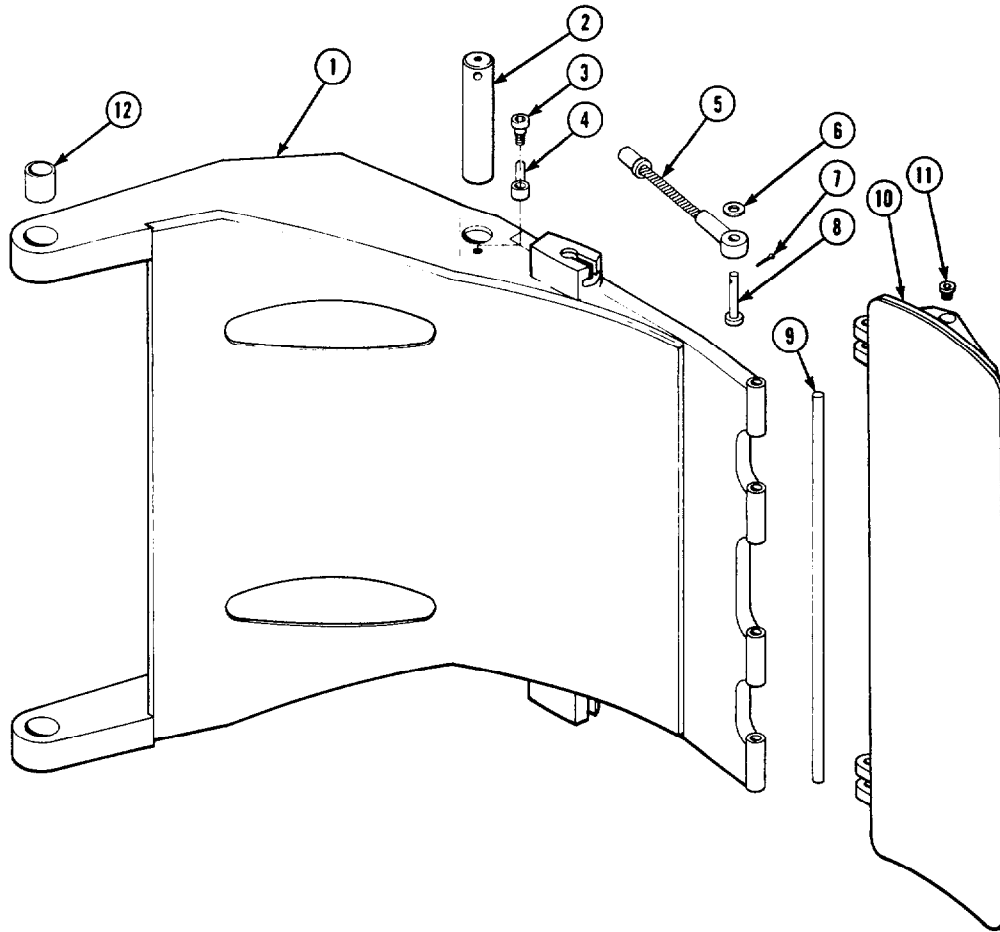
Junction Block



70E			
REF. NO.	QTY.	PART NO.	DESCRIPTION
		665098	Junction Block
1	4	601377	Fitting
2	1	601250	Fitting
3	1	665105	Plunger
4	1	646034	Body
5	2	7017	Ball
6	2	647277	Spacer
7	2	631808	Spring
8	1	602580	Plug
9	1	7194	Snap Ring
10	2	609234	O-Ring Plugs
•11	2	671754	Back-Up Ring
•12	3	654926	O-Ring
13	1	646032	Shaft
14	1	609455	O-Ring Plug
		646340	Seal Kit

•Included in Seal Kit 646340

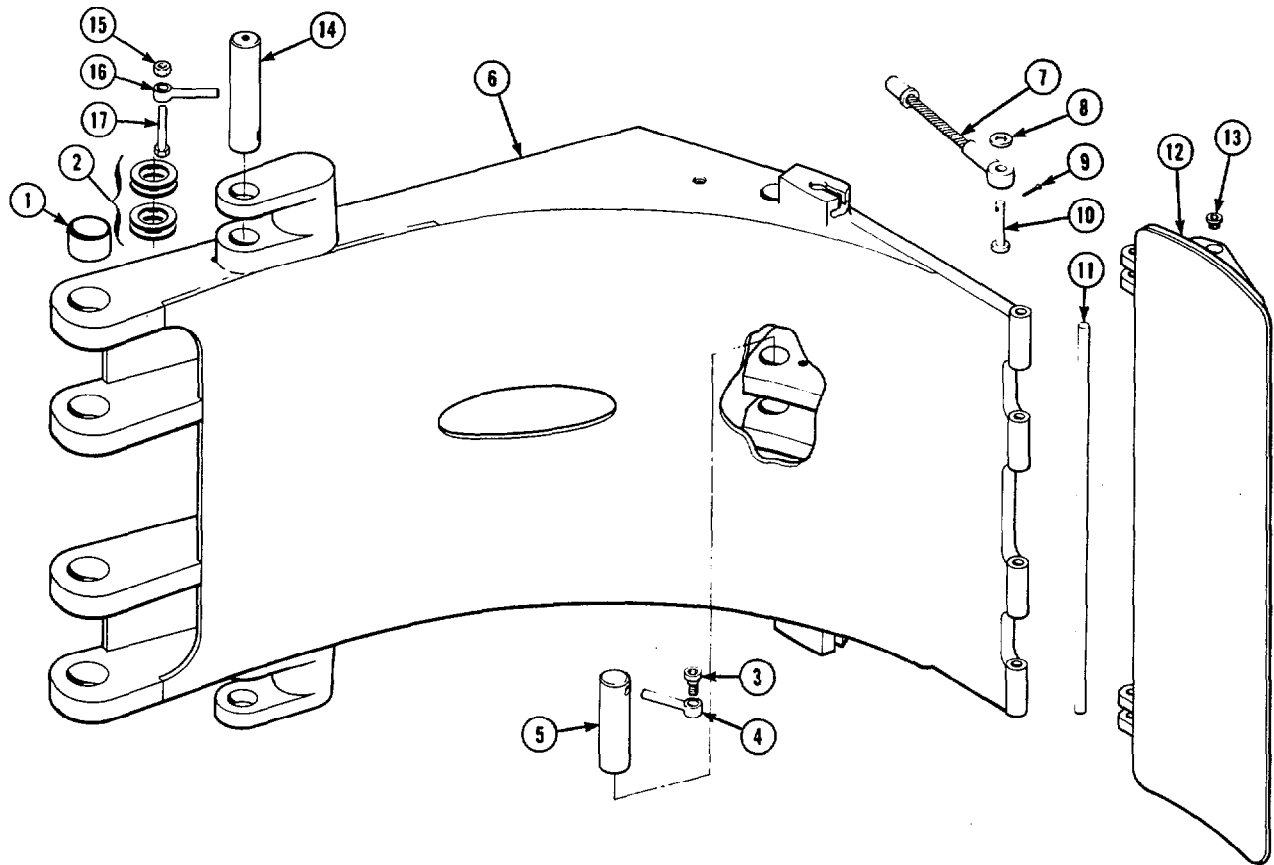
Clamp Arm Assembly



70E			
REF. NO.	QTY.	PART NO.	DESCRIPTION
		664674	Clamp Arm Assembly
1	1	664728	Clamp Arm
2	2	664691	Pin
3	2	651090	Shoulder Bolt
4	2	659376	Eye Bolt
5	2	664740	Cable Assembly
6	2	6234	Washer
7	2	6519	Cotter Pin
8	2	664741	Clevis Pin
9	1	664739	Contact Plate Pin
■ 10	1	668025	Contact Plate
11	2	602580	Plug
● 12	2	665501	Bushing

- Included in Bushing Service Kit 665741
- Replacement Algrip Contact Surface 645502

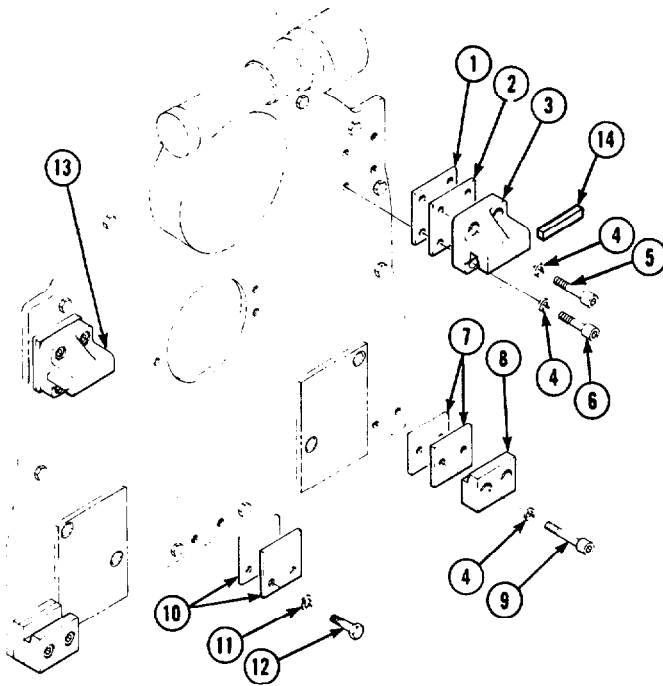
Swing Arm Assembly



70E			
REF. NO.	QTY.	PART NO.	DESCRIPTION
		664675	Swing Arm Assembly
• 1	4	665500	Bushing
2	8	664690	Shim
3	1	651090	Shoulder Bolt
4	1	659376	Eye Bolt
5	1	664751	Pin
6	1	664742	Swing Arm
7	2	664740	Cable Assembly
8	2	6234	Washer
9	2	6519	Cotter Pin
10	2	664741	Clevis Pin
11	1	664739	Contact Plate Pin
■ 12	1	668025	Contact Plate
13	2	602580	Plug
14	2	665118	Cylinder Pin
15	2	665707	Nut, 1/2 NC
16	2	650590	Eye Bolt
17	2	640699	Capscrew, 1/2 NCx2.75 GR5

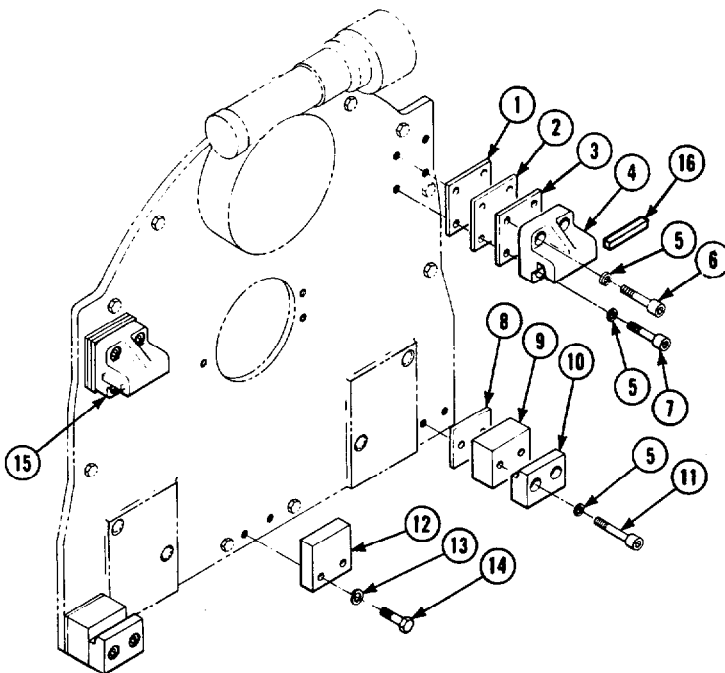
- Included in Bushing Service Kit 665738
- Replacement Algrip Contact Surface 645502

Mounting Group



70E - Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		662721	Mounting Group
1	2	630519	Spacer
2	2	650089	Spacer
3	1	625452	Hook
4	12	6447	Lockwasher
5	4	607087	Capscrew, 5/8 NC x 2.0 GR 8
6	4	607086	Capscrew, 5/8 NC x 1.75 GR 8
7	4	627369	Spacer
8	2	622126	Hook
9	4	607089	Capscrew, 5/8 NC x 2.5 GR 8
10	2	630520	Spacer
11	2	6292	Lockwasher
12	2	3709	Capscrew, 5/8 NC x 1.5
13	1	662743	Hook
14	1	669344	Stop Block Kit

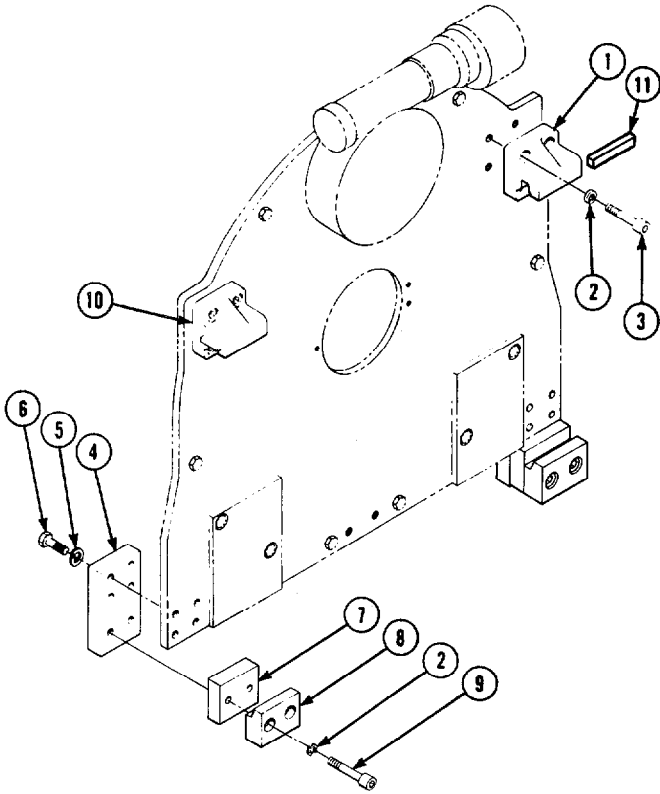
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70E-Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		662722	Mounting Group
1	2	650089	Spacer
2	2	661496	Spacer
3	2	630519	Spacer
4	1	625452	Hook
5	12	6447	Lockwasher
6	4	607089	Capscrew, 5/8 NC x 2.5 GR8
7	4	607088	Capscrew, 5/8 NC x 2.25 GR8
8	2	640499	Spacer
9	2	632904	Spacer
10	2	622126	Hook
11	4	607095	Capscrew, 5/8 NC x 4.5 GR8
12	1	662745	Spacer
13	2	6292	Lockwasher
14	2	3714	Capscrew, 5/8 NC x 2.75
15	1	662743	Hook
16	1	669344	Stop Block Kit

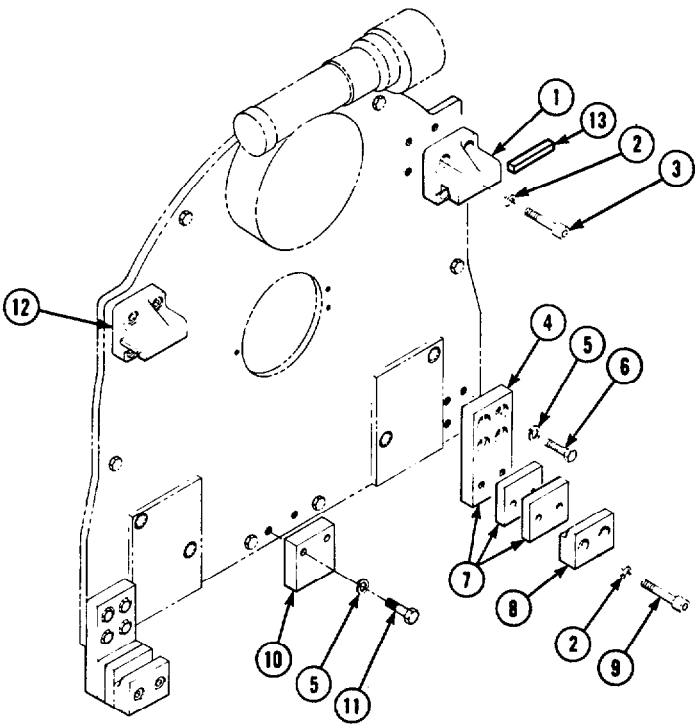
2176g

Mounting Group



70E - Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		662723	Mounting Group
1	1	650093	Hook
2	12	6448	Lockwasher
3	8	607103	Capscrew, 3/4 NC x 1.5 GR 8
4	2	662749	Extension
5	8	6292	Lockwasher
6	8	638601	Capscrew
7	2	662750	Spacer
8	2	638750	Hook
9	4	607110	Capscrew, 3/4 NC x 3.25 GR 8
10	1	666019	Hook
11	1	669344	Stop Block Kit

2176h



70E - Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		662724	Mounting Group
1	1	650093	Hook
2	12	6448	Lockwasher
3	8	607103	Capscrew, 3/4 NC x 1.5 GR 8
4	2	662749	Extension
5	10	6292	Lockwasher
6	8	638601	Capscrew
7	4	659582	Spacer
8	2	638750	Hook
9	4	607109	Capscrew, 3/4 NC x 2.0 GR 8
10	1	650094	Spacer
11	2	3713	Capscrew, 5/8 NC x 2.0 GR 5
12	1	666019	Hook
13	1	669344	Stop Block Kit

2176h

Recommended Spare Parts List

PART NO.	DESCRIPTION	ATTACHMENTS SERVICED		
		1-5	6-19	20-50
FRAME GROUP				
674692	Pin	2	4	6
665118	Pin	0	4	6
665500	Bushing	4	8	16
664689	Shim	0	12	24
664690	Shim	0	12	24
CLAMP ARM				
664691	Pin	2	4	6
664728	Arm	0	0	1
668025	Contact Plate	0	2	4
SWING ARM				
664751	Pin	2	4	6
664690	Shim	2	8	24
665118	Pin	2	4	6
665500	Bushing	4	8	16
664742	Arm	0	0	1
668025	Contact Plate	0	2	4
DRIVE GROUP				
662727	Drive Group Without Motor	0	1	2
14322	Motor	0	1	2
665571	Pinion	1	1	2
655597	Worm	0	1	2
13663	Bearing	2	2	4
625430	Worm Gear	1	1	2
662739	Bearing	1	1	2
13662	Bearing	1	1	2
7204	Snap Ring	2	2	4
2833	O-Ring (Cover Seal)	1	1	2
655645	Spring Washer	1	2	4
662737	Pinion Seal	1	2	4
656300	Gear Box Lube 48 oz.	1	2	2
REVOLVING CONNECTION				
665097	Check Valve	1	2	4
664945	Check Valve	1	2	4
656223	Seal Kit	1	2	4
664727	Check Valve	1	2	4
664922	Seal Kit	1	2	4
664725	Check Valve	1	2	4
664923	Seal Kit	1	2	4
667536	Overcenter Valve	1	2	4
664924	Shaft Seal Kit	2	4	8
664720	Revolving Conn.	0	1	2
ACCESSORIES				
665098	Junction Block	2	4	6
646340	Seal Kit	2	4	6
COMPLETE RACINE SOLENOID VALVE				
665040	12V	0	1	2
665041	24V	0	1	2
665042	36V	0	1	2
665043	48V	0	1	2
RACINE SOLENOID COILS				
665044	12V	As Req'd.	As Req'd.	As Req'd.
665045	24V	As Req'd.	As Req'd.	As Req'd.
665046	36V	As Req'd.	As Req'd.	As Req'd.
665047	48V	As Req'd.	As Req'd.	As Req'd.
665006	Control Knob Cover	0	1	2
CYLINDERS (MILL UNIT)				
665131	Clamp Cylinder Service Kit	1	2	4
664672	Clamp Cylinder	0	1	2
665130	Swing Cylinder Service Kit	1	2	4
664671	Swing Cylinder	0	1	2
CYLINDERS (CONVERTER UNIT)				
665129	Clamp Cylinder Service Kit	1	2	4
664670	Clamp Cylinder	0	1	2
665130	Swing Cylinder Service Kit	1	2	4
664671	Swing Cylinder	0	1	2
PUBLICATIONS				
667442	Service Manual	1	1	1
PAINT-CASCADE YELLOW				
668209	12 oz. Aerosol Can	1	1	1

2176i

Do you have questions you need answered right now? Call your nearest Cascade Parts Department.

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