



# Parts Manual

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## 77F Paper Roll Clamp

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Serial Numbers 682286 through 682325

Manual Number 685861

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# How To Use This Manual

## Introduction

This manual illustrates service replacement parts for standard production Cascade 77F 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.

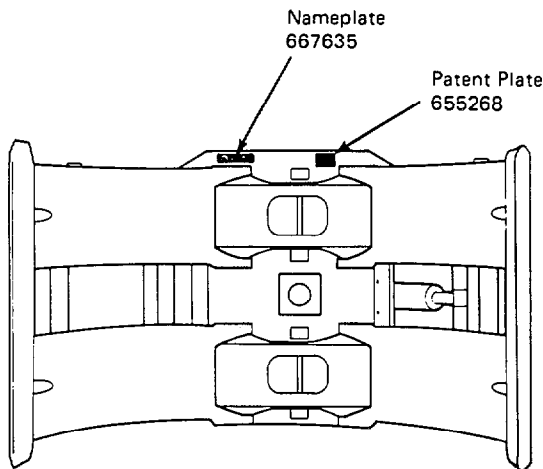
To locate a service replacement part for a standard attachment, follow these steps.

### 1. Locate the Nameplate

The nameplate is attached to the right front of the 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

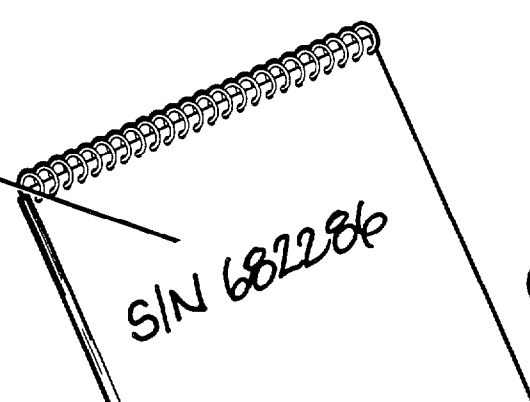
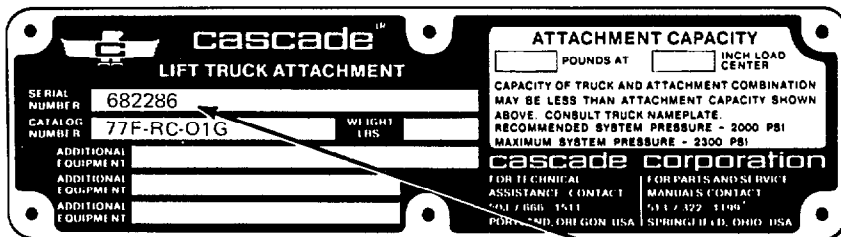
**Retail Customers** - Cascade Service Replacement Parts and Service Literature are sold through authorized lift truck dealers. To order, contact the lift truck dealer of your choice.

**Lift Truck Dealers Try SNAP** (Sales Network Access Program). This program will allow dealers to order parts or get price and availability through your present computer. Call 513-322-1199 for information. Or to order Service Replacement Parts and Service Literature, contact:

Cascade Parts Depot  
2501 Sheridan Avenue  
P.O. Box 360  
Springfield, Ohio 45505  
Telephone: 513-322-1199  
Telex: 279563  
FAX: 513-325-9270

### 5. Parts Log

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.

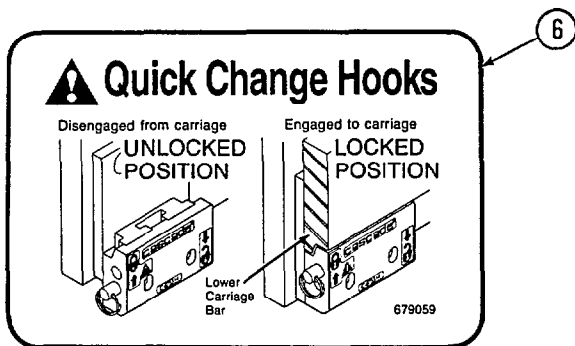
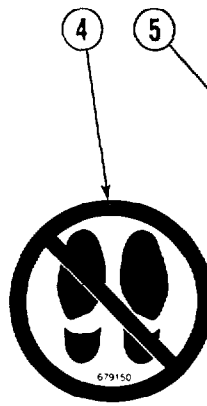
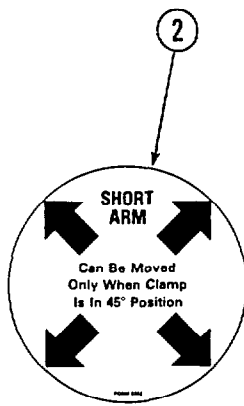
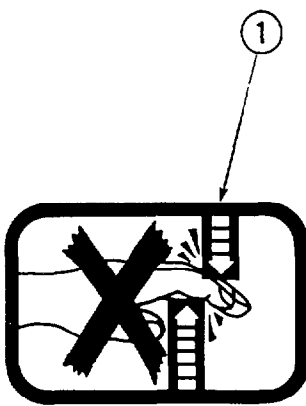
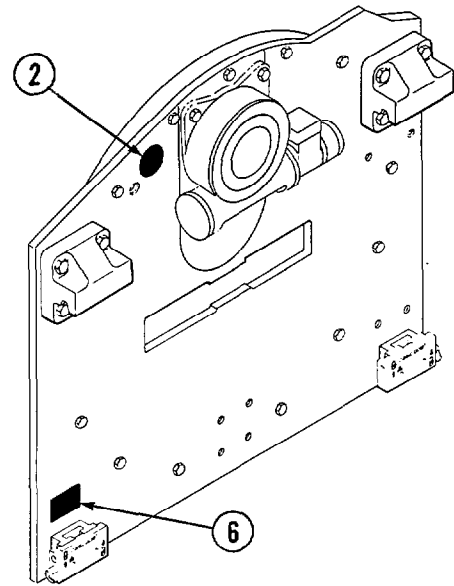
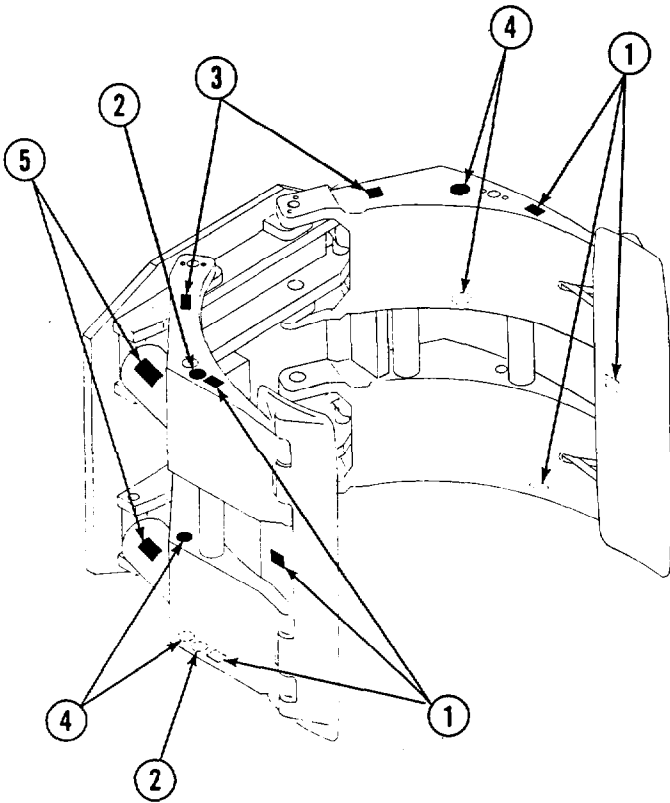


# Serial Number Index

Serial Number	Maximum Handling Capacity	Frame Group Page	Common Components Page	Drive Group Page	Hosing Group Page	Cylinders Page	Arms Page	Bumper Group Page	Mounting Group Page	Solenoid Group Page	180° Stop Group Page
682286	60"	1	2	4	7	10,11	13,14	—	18	21	22
682287	60"	1	2	4	7	10,11	13,14	—	17	21	22
682288	60"	1	2	4	7	10,11	13,14	—	20	21	22
682289	60"	1	2	4	7	10,11	13,14	—	19	21	22
682290	60"	1	2	4	7	10,11	13,14	—	—	21	22
682291	60"	1	2	4	6	11,12	13,14	—	18	21	22
682292	60"	1	2	4	6	11,12	13,14	—	17	21	22
682293	60"	1	2	4	6	11,12	13,14	—	20	21	22
682294	60"	1	2	4	6	11,12	13,14	—	19	21	22
682295	60"	1	2	4	6	11,12	13,14	—	—	21	22
682296	72"	1	2	4	7	10,11	13,14	—	18	21	22
682297	72"	1	2	4	7	10,11	13,14	—	17	21	22
682298	72"	1	2	4	7	10,11	13,14	—	20	21	22
682299	72"	1	2	4	7	10,11	13,14	—	19	21	22
682300	72"	1	2	4	7	10,11	13,14	—	—	21	22
682301	72"	1	2	4	6	11,12	13,14	—	18	21	22
682302	72"	1	2	4	6	11,12	13,14	—	17	21	22
682303	72"	1	2	4	6	11,12	13,14	—	20	21	22
682304	72"	1	2	4	6	11,12	13,14	—	19	21	22
682305	72"	1	2	4	6	11,12	13,14	—	—	21	22
682306	60"	1	3	4	7	10,11	13,15	16	18	21	22
682307	60"	1	3	4	7	10,11	13,15	16	17	21	22
682308	60"	1	3	4	7	10,11	13,15	16	20	21	22
682309	60"	1	3	4	7	10,11	13,15	16	19	21	22
682310	60"	1	3	4	7	10,11	13,15	16	—	21	22
682311	60"	1	3	4	6	11,12	13,15	16	18	21	22
682312	60"	1	3	4	6	11,12	13,15	16	17	21	22
682313	60"	1	3	4	6	11,12	13,15	16	20	21	22
682314	60"	1	3	4	6	11,12	13,15	16	19	21	22
682315	60"	1	3	4	6	11,12	13,15	16	—	21	22
682316	72"	1	3	4	7	10,11	13,15	16	18	21	22
682317	72"	1	3	4	7	10,11	13,15	16	17	21	22
682318	72"	1	3	4	7	10,11	13,15	16	20	21	22
682319	72"	1	3	4	7	10,11	13,15	16	19	21	22
682320	72"	1	3	4	7	10,11	13,15	16	—	21	22
682321	72"	1	3	4	6	11,12	13,15	16	18	21	22
682322	72"	1	3	4	6	11,12	13,15	16	17	21	22
682323	72"	1	3	4	6	11,12	13,15	16	20	21	22
682324	72"	1	3	4	6	11,12	13,15	16	19	21	22
682325	72"	1	3	4	6	11,12	13,15	16	—	21	22

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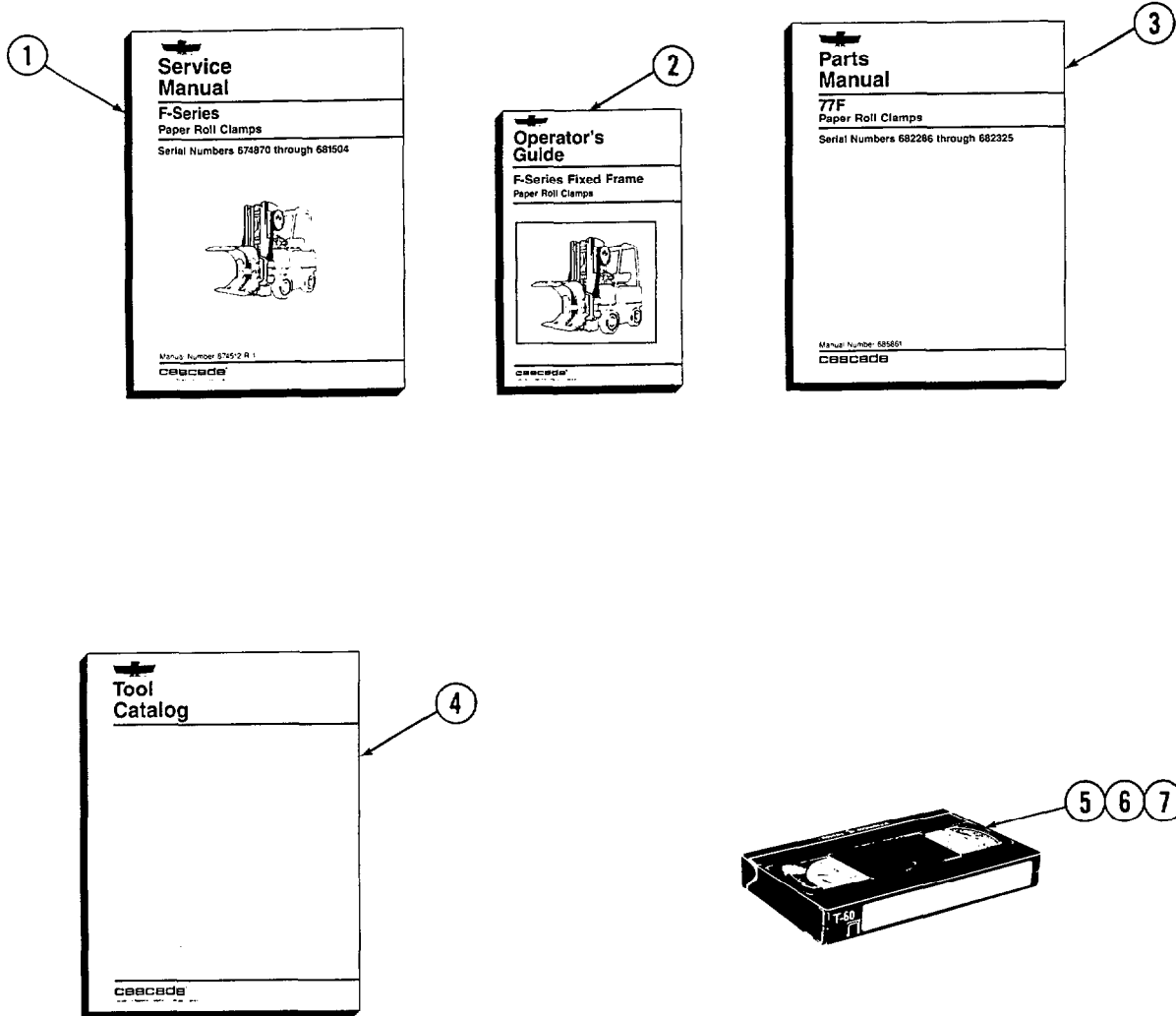
# Safety Decals



77F			
REF	QTY	PART NO.	DESCRIPTION
1	6	665595	No Hand Hold Decal
2	3	660269	Short Arm Rotation Position Decal
3	4	656038	Caution Decal
4	4	679150	No Step Decal
5	4	665677	Trapped Pressure Decal
6	1	679059	Quick Change Hook Decal

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# Publications



77F		
REF	PART NO.	DESCRIPTION
1	674512	Service Manual
2	674509	Operator's Guide – Fixed Frame
3	685861	Parts Manual
4	679929	Tool Catalog
5	677542	Driver Training Video – 3/4"
	677555	Driver Training Video – VHS
	677556	Driver Training Video – Beta
6	678362	Troubleshooting Video – 3/4"
	678363	Troubleshooting Video – VHS
	678364	Troubleshooting Video – Beta
7	680666	Servicing Cylinders – 3/4"
	680664	Servicing Cylinders – VHS
	680665	Servicing Cylinders – Beta

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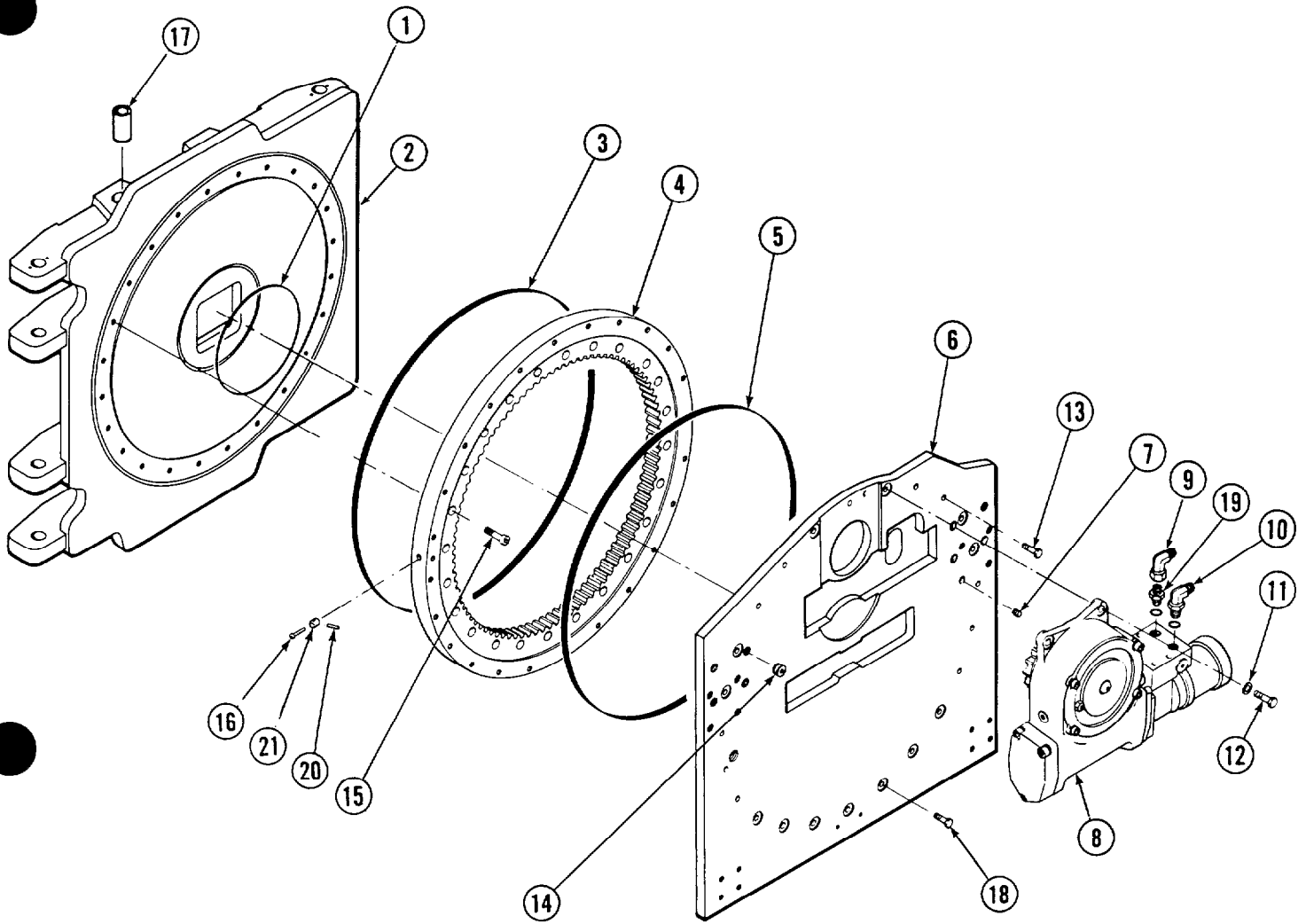
# Recommended Spare Parts List

77 Paper Roll Clamps				
PART NO.	DESCRIPTION	ATTACHMENTS SERVICED		
		1-5	6-15	16-25
675007	<b>FRAME GROUP</b> Bushing	8	16	16
660200	<b>COMMON COMPONENTS</b> Shim	8	16	16
● 673385	Pin	1	2	2
675022	Drive Pin	4	8	8
● 673379	Pin	1	2	2
	Pin	1	2	2
	Shim	16	32	32
675608	<b>DRIVE GROUP</b> Worm	0	1	2
670556	Pinion	0	1	2
670581	Bearing	0	1	2
7214	Snap Ring	2	4	4
643423	O-Ring	1	2	2
675329	Drive Motor	0	1	1
675343	Drive Motor Service Kit	1	2	2
668184	Sealant	1	2	2
675638	Bearing Service Kit	1	2	2
675637	Bearing Service Kit	1	2	2
656300	Gear Box Lube	1	2	2
681585	<b>REVOLVING CONNECTION</b> Shaft Service Kit	1	2	2
555725	<b>SHORT AND LONG ARM CYLINDER</b> Cylinder Service Kit	2	4	4
667516	Check Valve Service Kit	2	4	4
674993	<b>SHORT AND LONG ARM</b> Pin	2	4	4
674962	Contact Pad	0	1	2
670704	<b>STOP KIT</b> Stop Kit	1	2	2
685660	<b>PAINT</b> 12 oz. Aerosol Can Heritage White	1	2	2
678236	12 oz. Aerosol Can Cascade Black	1	2	2
668209	12 oz. Aerosol Can Cascade Yellow	1	2	2
685861	<b>PUBLICATIONS</b> Parts Manual	1	1	1
674512	Service Manual	1	1	1
674509	Operator's Guide - Fixed Frame	1	1	1
679929	Tool Catalog	1	1	1
★	<b>VIDEOS</b> Paper Roll Clamp Troubleshooting	1	1	1
★	Servicing Cascade Cylinder	1	1	1
★	Driver Training	1	1	1

● See specific parts page for part number. ★ See page iii for part number.

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# Frame Groups



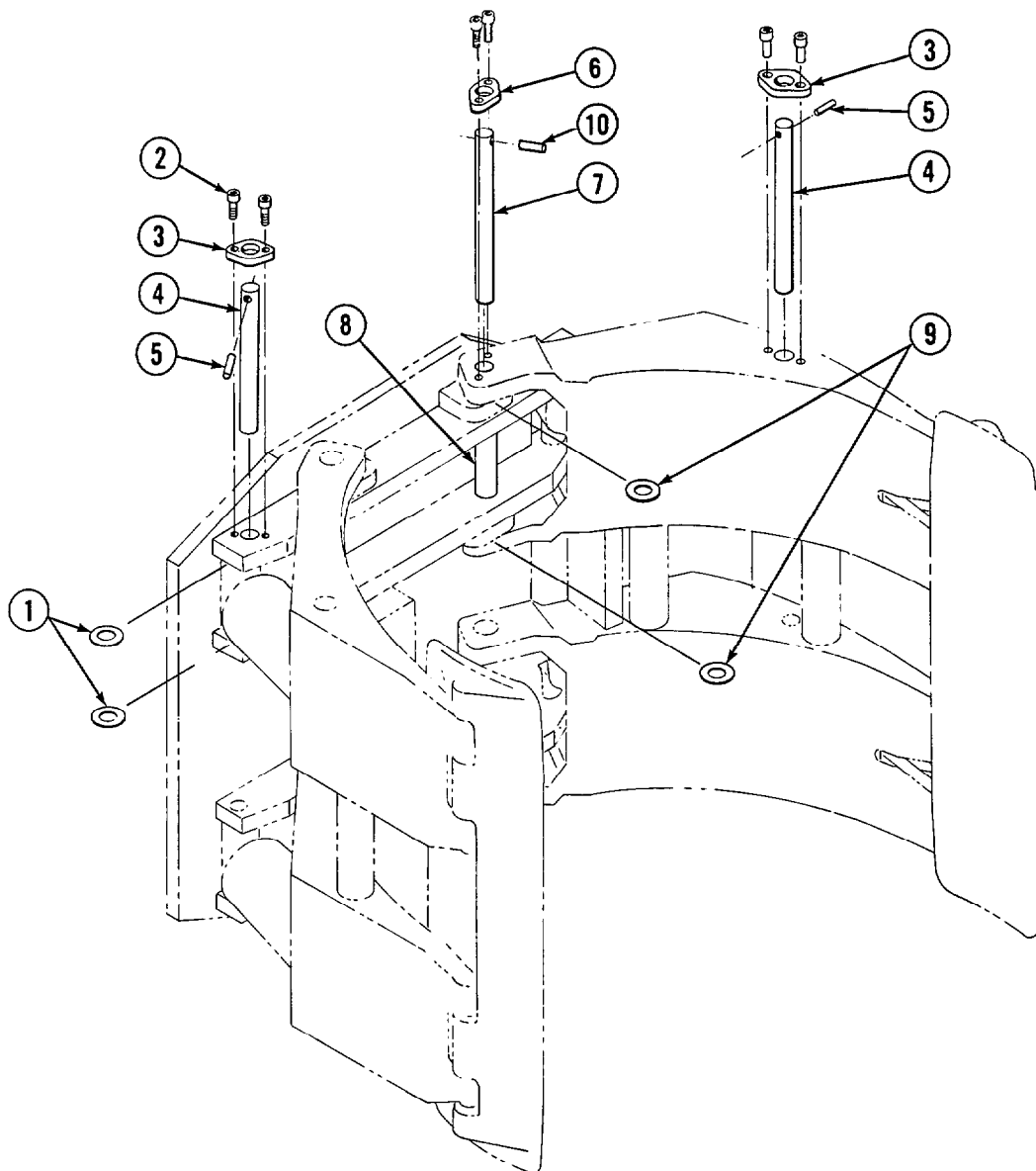
## 77F

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		682202	Frame Group	11	4	6290	Lockwasher, 1/2 ID
1	1	670931	Seal	12	4	661742	Capscrew, 1/2 NC x 1.25 GR5
2	1	◆ 682437	Faceplate	13	11	670682	Capscrew
3	1	670515	Seal	14	1	6605	Plug
■ 4	1	672830	Bearing Assembly	15	24	677707	Capscrew
5	1	670516	Seal	16	1	7401	Grease Fitting
6	1	678381	Baseplate	17	8	675007	Bushing
7	8	631385	Plug	18	13	678395	Capscrew
● 8	1	675639	Drive Group	19	1	601377	Fitting, 8-8
9	1	605761	Fitting, 8-8	20	1	670681	Drive Pin
10	1	601250	Fitting, 8-8	21	1	670680	Plug
					1	685842	Bearing Service Kit, (Items 4 & 15)

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- Includes items 3 and 5.
- See page 4 for replacement parts breakdown.
- ◆ Includes item 17.

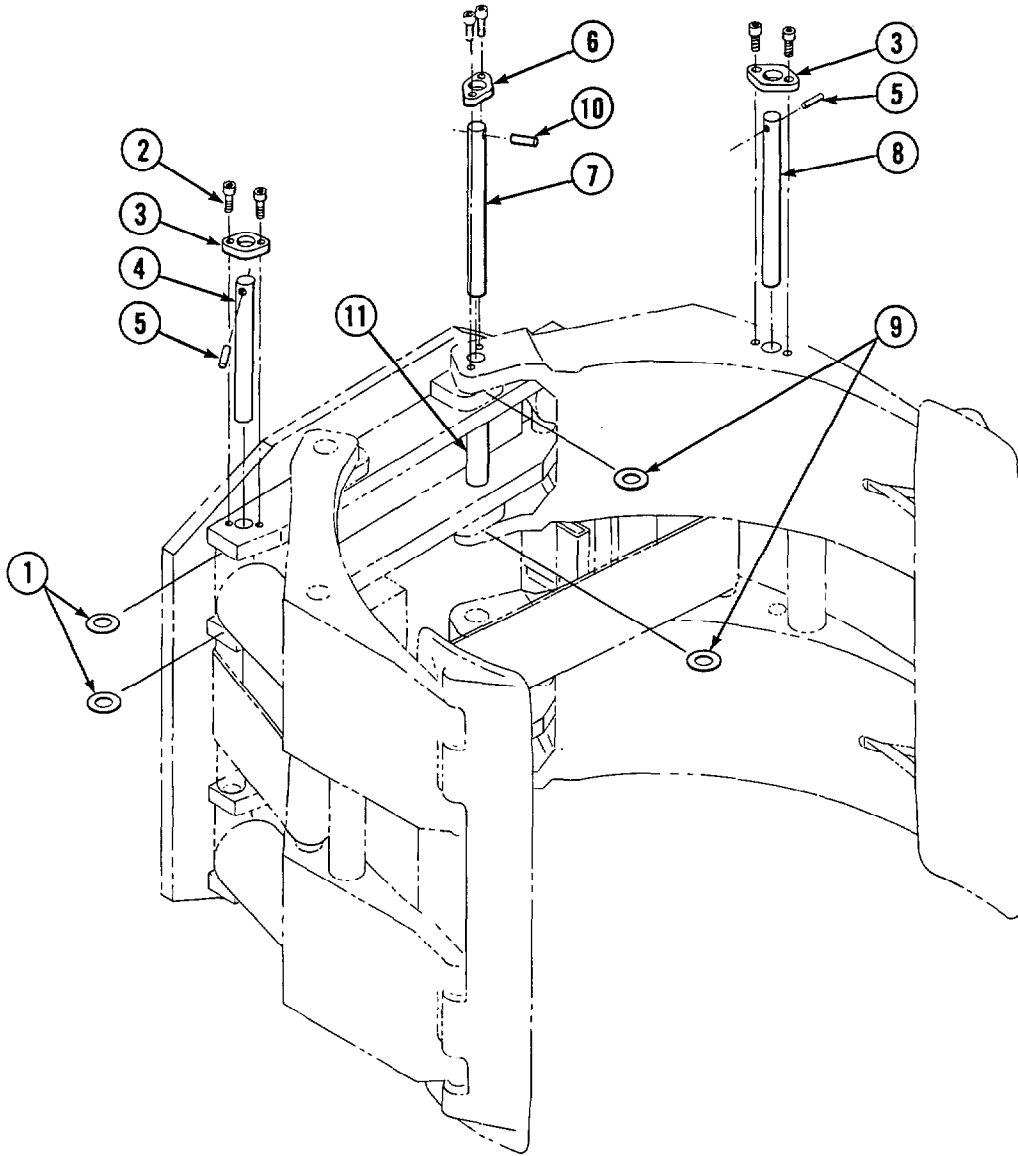
# Common Components Group



77F			
REF	QTY	PART NO.	DESCRIPTION
		680637	Components Group
1	8	660200	Shim
2	24	4466	Capscrew, 3/8 NC x .50 GR8
3	8	674828	Retainer
4	8	676088	Pin
5	8	673385	Drive Pin
6	4	674830	Retainer
7	4	675022	Pin
8	4	681673	Spacer
9	16	673379	Shim
10	4	675086	Drive Pin

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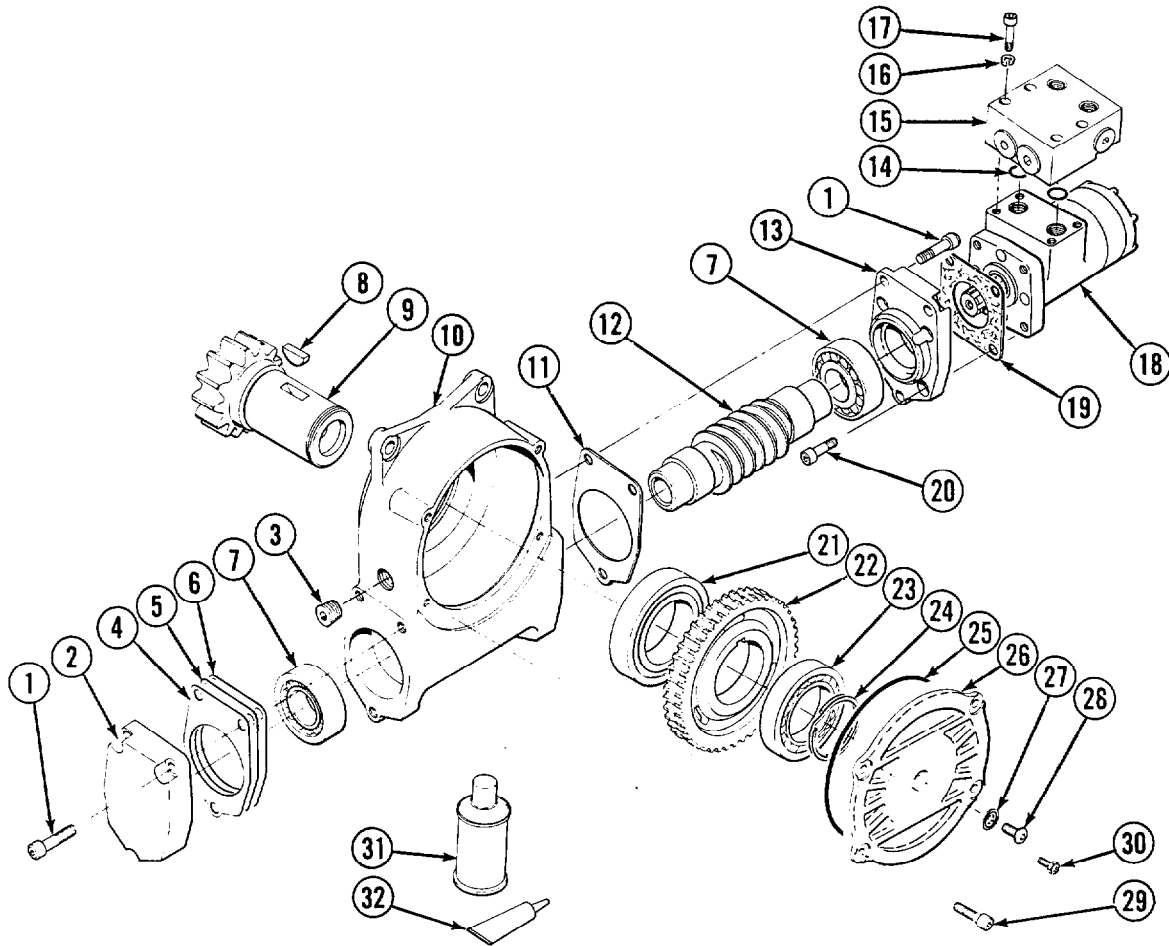
# Common Components Group with Adjustable Bumper



<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		674943	Components Group
1	8	660200	Shim
2	24	4466	Capscrew, 3/8 NC x .50 GR8
3	8	674828	Retainer
4	4	675018	Pin
5	8	673385	Drive Pin
6	4	674830	Retainer
7	4	675022	Pin
8	4	675020	Pin
9	16	673379	Shim
10	4	675086	Drive Pin
11	4	681673	Spacer

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# Drive Group



## 77F

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		675639	Drive Group with Motor	★ 18	1	675329	Drive Motor
		◆ 675633	Drive Group without Motor	19	1	670575	Gasket
1	6	607071	Capscrew, 7/16 NC x 1.0 GR8	20	4	4688	Capscrew, 3/8 NC x .75 GR8
2	1	676855	Cover	21	1	670580	Bearing
3	1	6609	Plug	22	1	675609	Worm Gear
4	●	670574	Shim – .010" (Brown)	23	1	670581	Bearing
5	●	671757	Shim – .015" (Pink)	24	1	7214	Snap Ring
6	●	671758	Shim – .020" (Yellow)	25	1	643423	O-Ring
7	2	670579	Bearing	26	1	670567	Cover
8	1	670582	Key	27	1	672350	Seal
9	1	670556	Pinion	28	1	4874	Capscrew, 3/8 NC x .50 GR8
10	1	670565	Housing	29	4	671535	Capscrew
11	1	670574	Shim – .010" (Brown)	30	1	644010	Relief Fitting
12	1	675608	Worm	31	1	656300	Gear Box Lube - 48 oz.
13	1	670570	Adapter	32	1	668184	Sealant
14	2	2705	Seal			670578	Shim Service Kit, (Items 4, 5, 6 & 32)
★ 15	1	670549	Check Valve			675637	Bearing Service Kit, (Items 21 & 32)
16	4	6444	Lockwasher			675638	Bearing Service Kit, (Items 4–7 & 32)
17	4	607059	Capscrew, 5/16 NC x 1.75 GR8			675343	Motor Service Kit, (Items 4, 14, 18, 19, & 32)

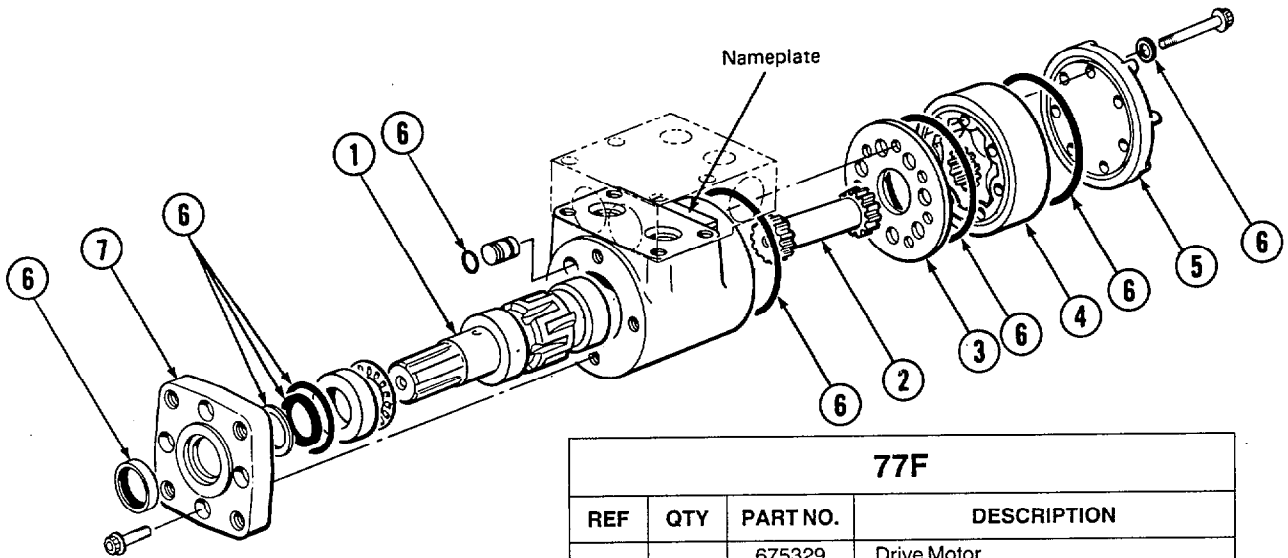
● Quantity as required.

★ See page 5 for replacement parts breakdown.

◆ Includes all items except 15–18.

3053c-196 10

# Drive Motor



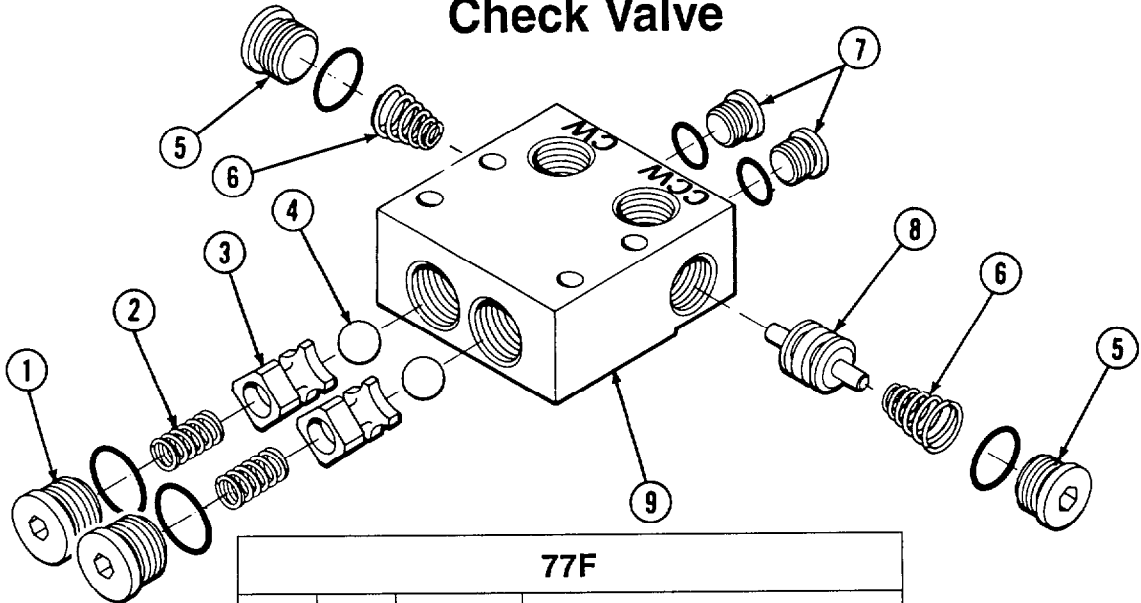
77F			
REF	QTY	PART NO.	DESCRIPTION
		675329	Drive Motor
1	1	675478	Shaft
2	1	675477	Drive
3	1	675479	Spacer Plate
*4	1	675480	Geroter Set (101-1768-007)
	1	685075	Geroter Set (101-1768-009)
5	1	675482	End Cap
6	1	675394	Service Kit
*7	1	685089	Flange (101-1768-007)
	1	685090	Flange (101-1768-009)

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\*See Nameplate under valve for correct part number of Geroter Set and Flange.

Cascade provides service replacement parts for the listed parts only. Due to cost, if other parts need replacement, the complete drive motor should be replaced.

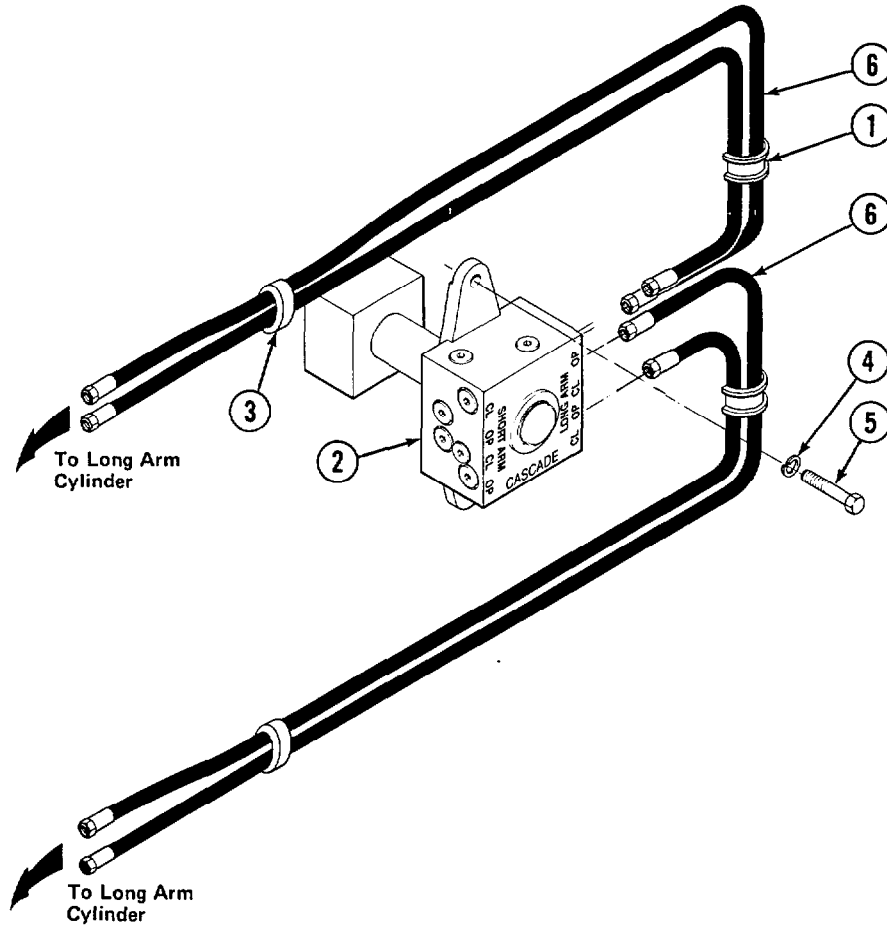
# Check Valve



77F			
REF	QTY	PART NO.	DESCRIPTION
		670549	Check Valve Assembly
1	2	609453	Plug
2	2	670552	Spring
3	2	670551	Guide
4	2	7020	Ball
5	2	602580	Plug
6	2	670554	Spring
7	2	604510	Plug
8	1	670553	Spool
9	1	670550	Body

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# Hosing Group Fixed Short Arm

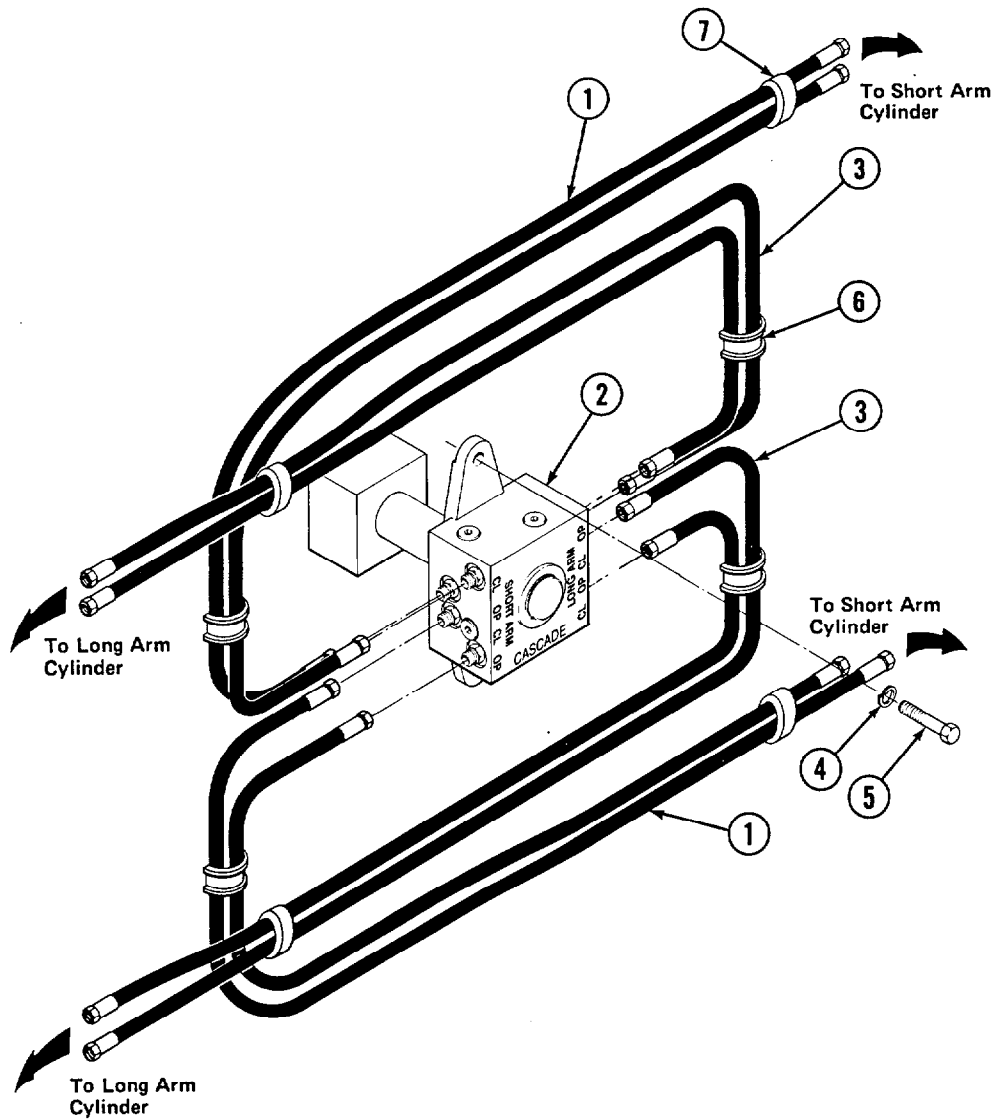


77F			
REF	QTY	PART NO.	DESCRIPTION
		■682204	Hosing Group – 60" and 72" Roll
1	2	680114	Insert
● 2	1	681327	Revolving Connection
3	2	673417	Segment
4	2	6288	Lockwasher
5	2	3603	Capscrew, M10x30-8.8
6	4	680239	Hose

- See page 8 for replacement parts breakdown.
- Maximum clamp handling capacity.

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# Hosing Group Positioned Short Arm

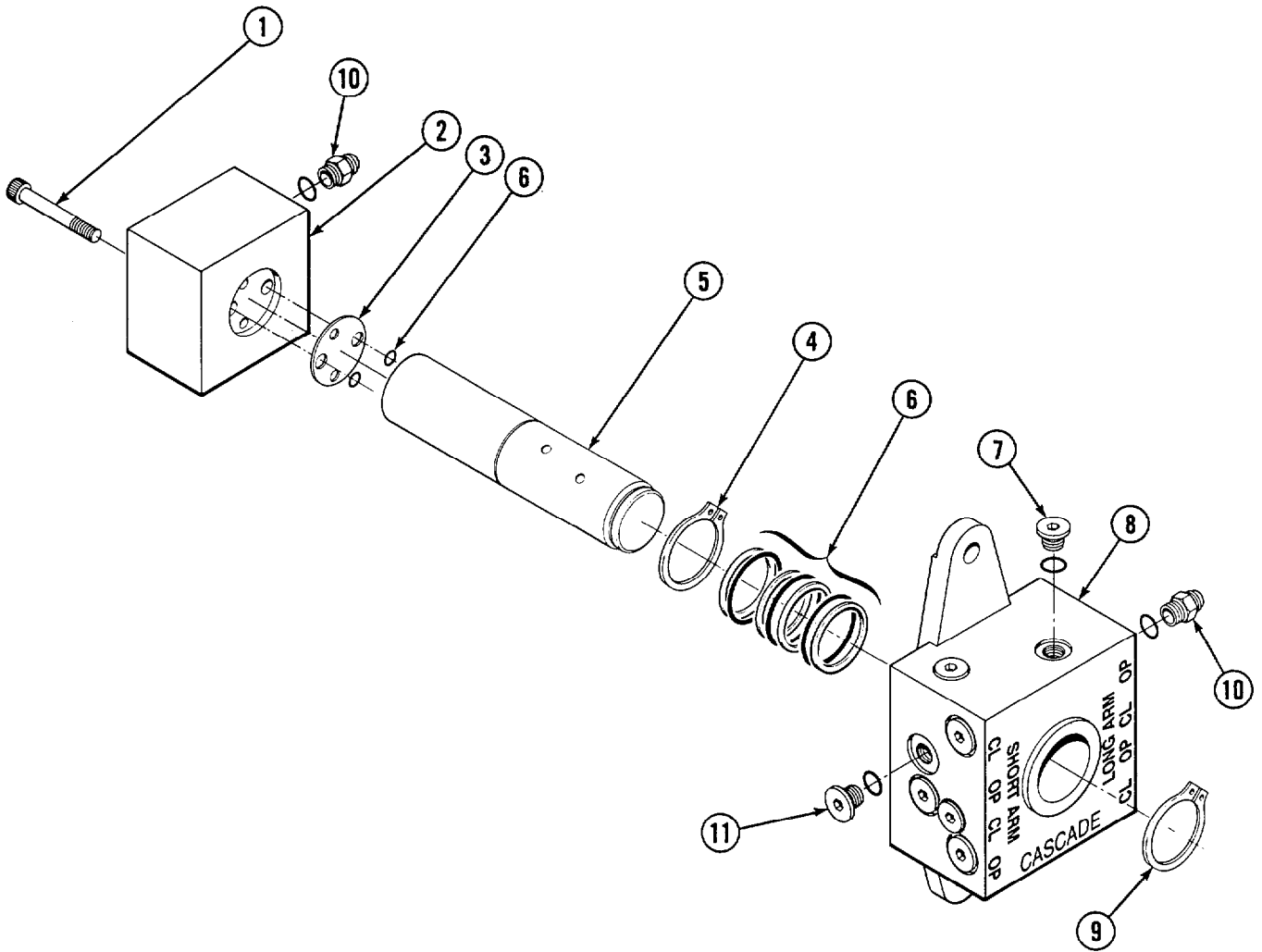


77F			
REF	QTY	PART NO.	DESCRIPTION
		682203	Hosing Group
1	4	680238	Hose
● 2	1	681281	Revolving Connection
3	4	680239	Hose
4	2	6288	Lockwasher
5	2	3603	Capscrew, M10x30-8.8
6	4	680114	Insert
7	4	673417	Segment

● See page 9 for replacement parts breakdown.

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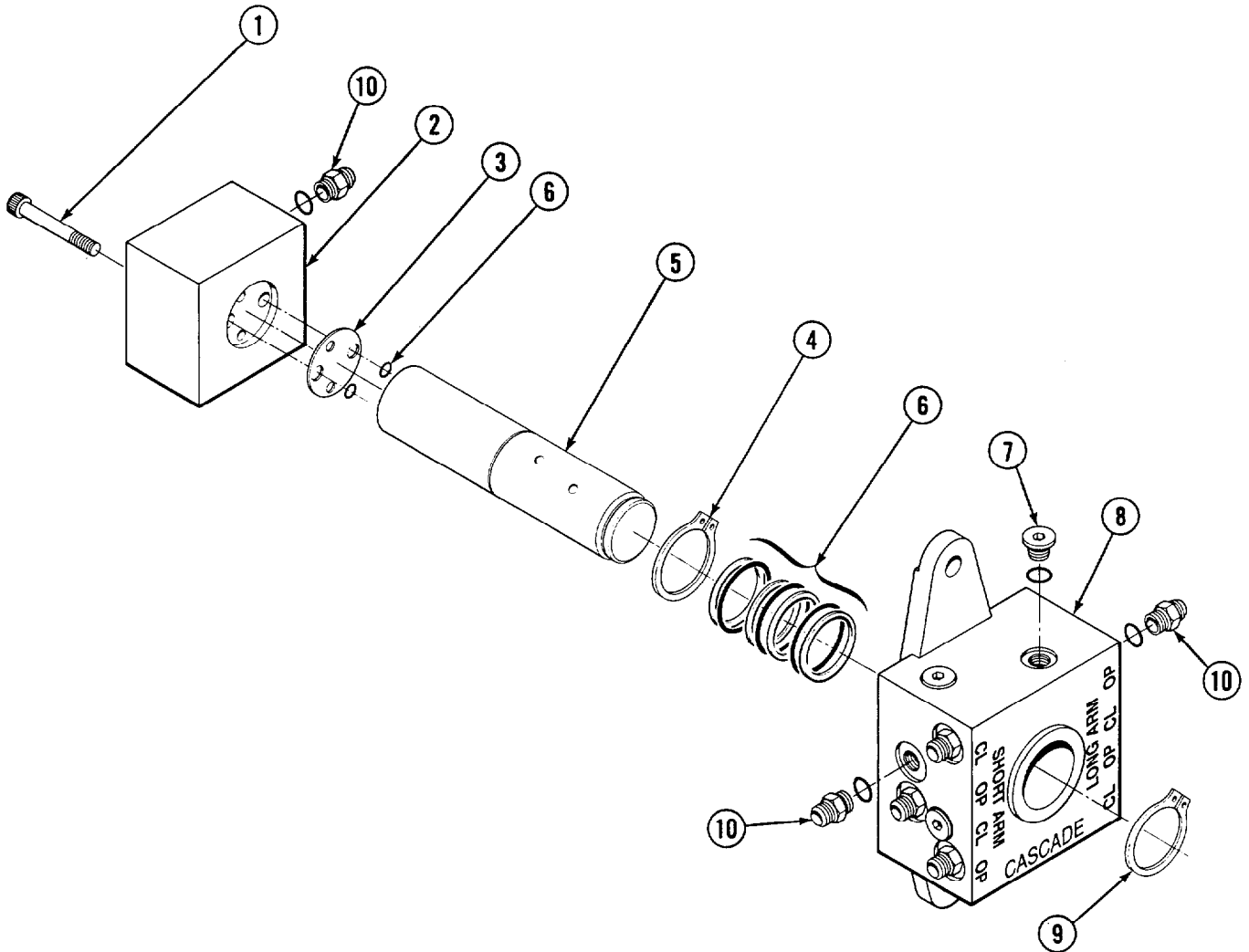
# Revolving Connection Fixed Short Arm



<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		681327	Revolving Connection
1	2	768798	Capscrew, M8 x 45-8.8
2	1	681285	End Block
3	1	681593	Shim
4	1	7341	Snap Ring
5	1	681284	Shaft
6	1	681585	Service Kit
7	6	663694	Plug
8	1	681282	Body
9	1	3138	Snap Ring
10	6	604511	Fitting, 6-6
11	4	604510	Plug, 6

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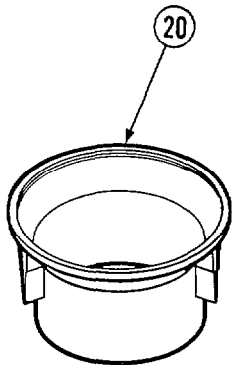
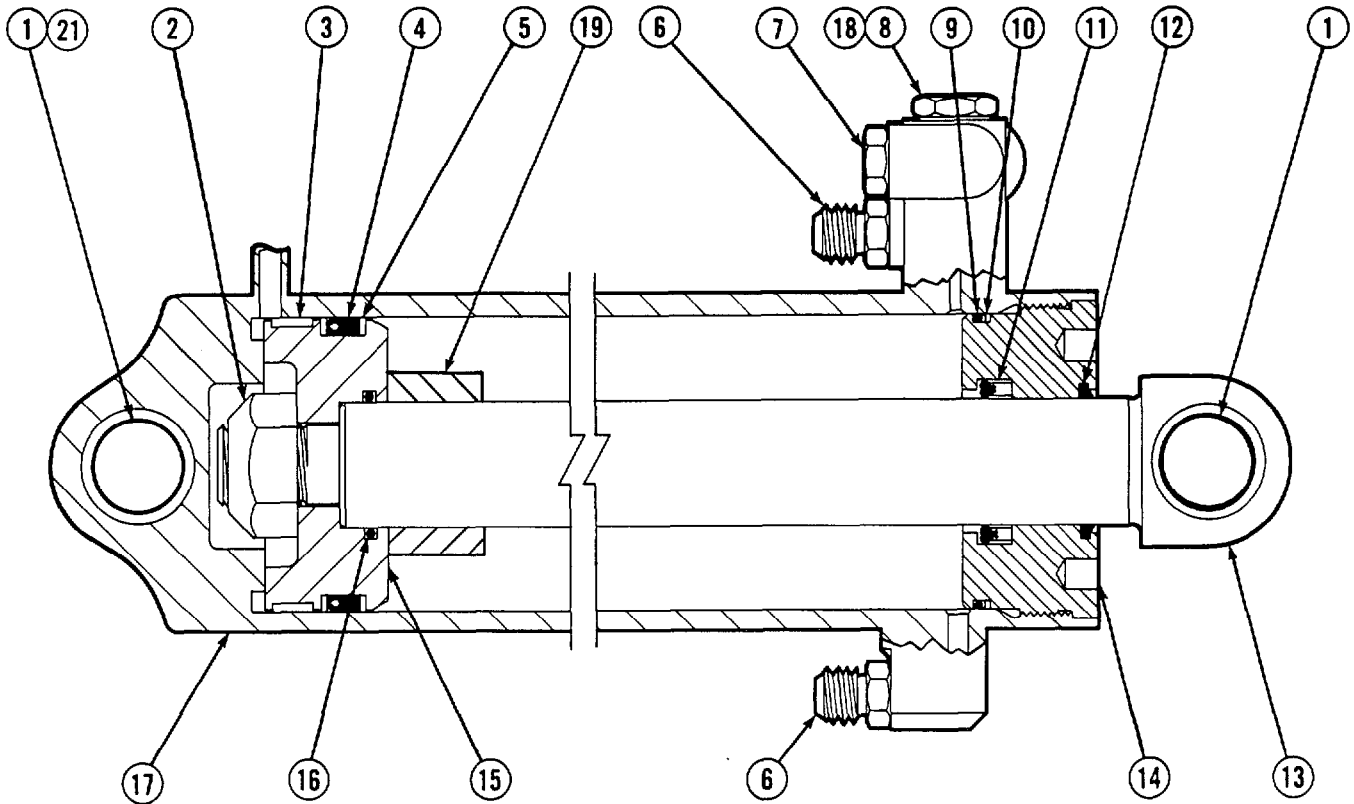
# Revolving Connection Positioned Short Arm



77F			
REF	QTY	PART NO.	DESCRIPTION
		681281	Revolving Connection
1	2	768798	Capscrew, M8 x 45-8.8
2	1	681285	End Block
3	1	681593	Shim
4	1	7341	Snap Ring
5	1	681284	Shaft
6	1	681585	Service Kit
7	6	663694	Plug
8	1	681282	Body
9	1	3138	Snap Ring
10	10	604511	Fitting, 6-6

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# Short Arm Cylinder Positioned Short Arm



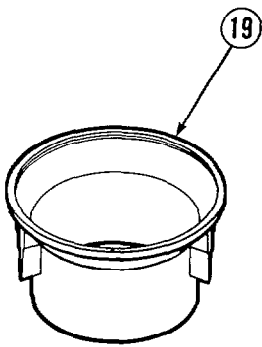
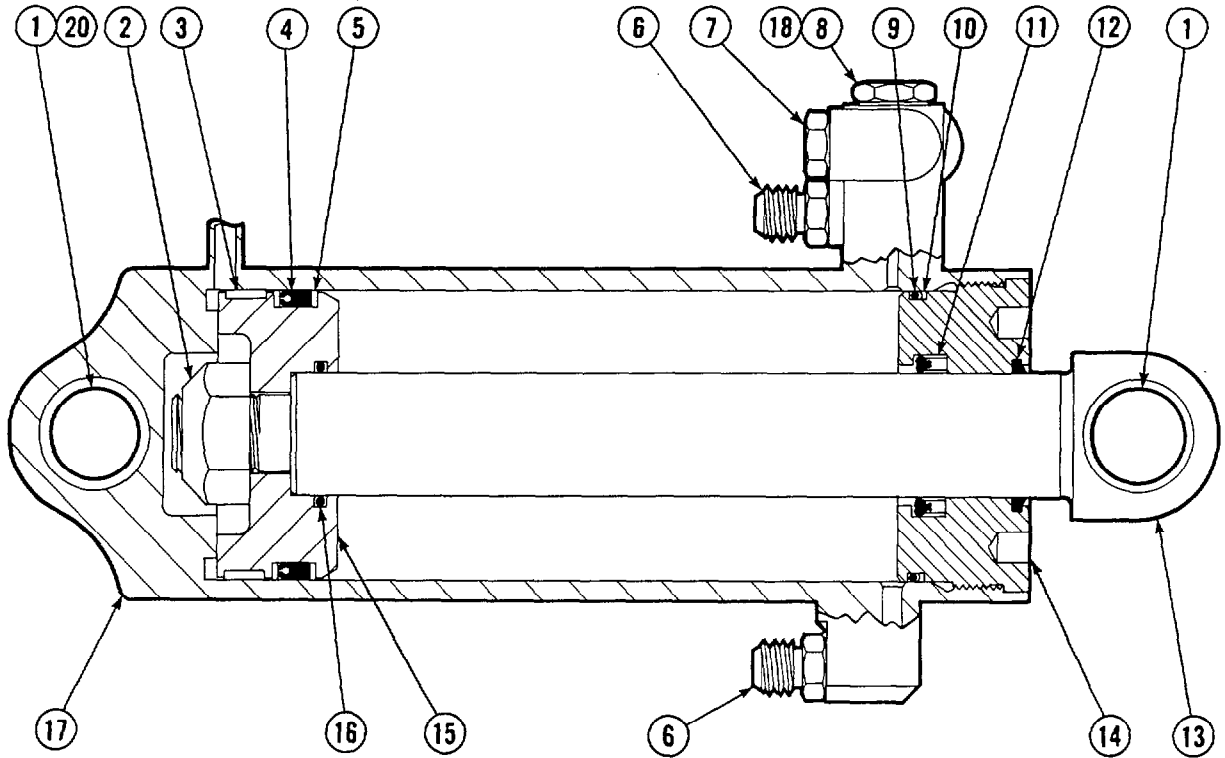
77F				
REF	QTY	60" Roll □	72" Roll □	DESCRIPTION
		PART NO.	PART NO.	
		557363	557360	Cylinder Assembly
1	3	674843	674843	Bearing
2	1	667990	667990	Nut
● 3	1	660769	660769	Bearing
● 4	1	557446	557446	Seal
● 5	2	638295	638295	Ring - Nylon
6	2	604511	604511	Fitting, 6-6
7	1	556852	556852	Fitting, 6
8	1	557212	554278	Check Valve
● 9	1	2801	2801	O-Ring
● 10	1	615144	615144	Back-up Ring
● 11	1	554598	554598	Seal
● 12	1	628047	628047	Wiper
13	1	557393	557390	Rod
14	1	555724	555724	Retainer
15	1	557389	557389	Piston
● 16	1	2722	2722	O-Ring
17	1	555741	555741	Shell
18	1	667516	667516	Check Valve Service Kit
19	1	—	555774	Spacer
● 20	1	672910	672910	Seal Loader Kit
21	1	558835	558835	Spacer
		555725	555725	Service Kit

● Included in Service Kit 555725.

□ Maximum clamp handling capacity.

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# Long Arm Cylinder

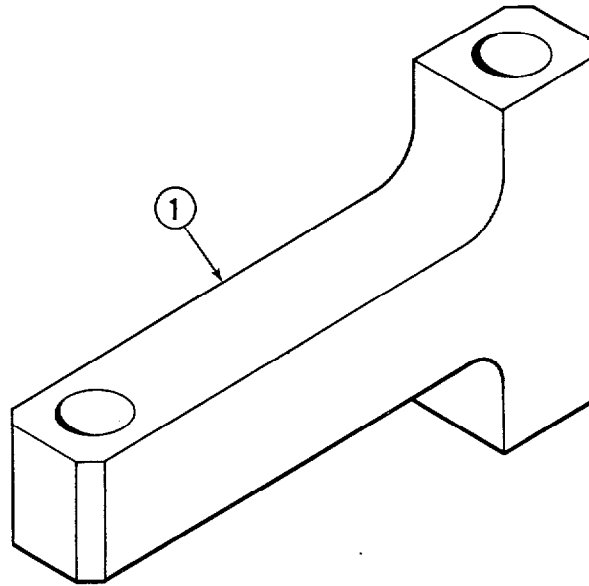


77F			
REF	QTY	60"/72" Roll □	
		PART NO.	DESCRIPTION
		557380	Cylinder Assembly
1	3	674843	Bearing
2	1	667990	Nut
● 3	1	660769	Bearing
● 4	1	557446	Seal
● 5	2	638295	Ring - Nylon
6	2	604511	Fitting, 6-6
7	1	556852	Fitting, 6
8	1	557212	Valve
● 9	1	2801	O-Ring
● 10	1	615144	Back-up Ring
● 11	1	554598	Seal
● 12	1	628047	Wiper
13	1	557399	Rod
14	1	555724	Retainer
15	1	557389	Piston
● 16	1	2722	O-Ring
17	1	555718	Shell
18	1	667516	Service Kit
● 19	1	672910	Seal Loader Kit
20	1	558835	Spacer
		555725	Service Kit

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- Included in Service Kit 555725.
- Maximum clamp handling capacity.

# Short Arm Link, Fixed Short Arm

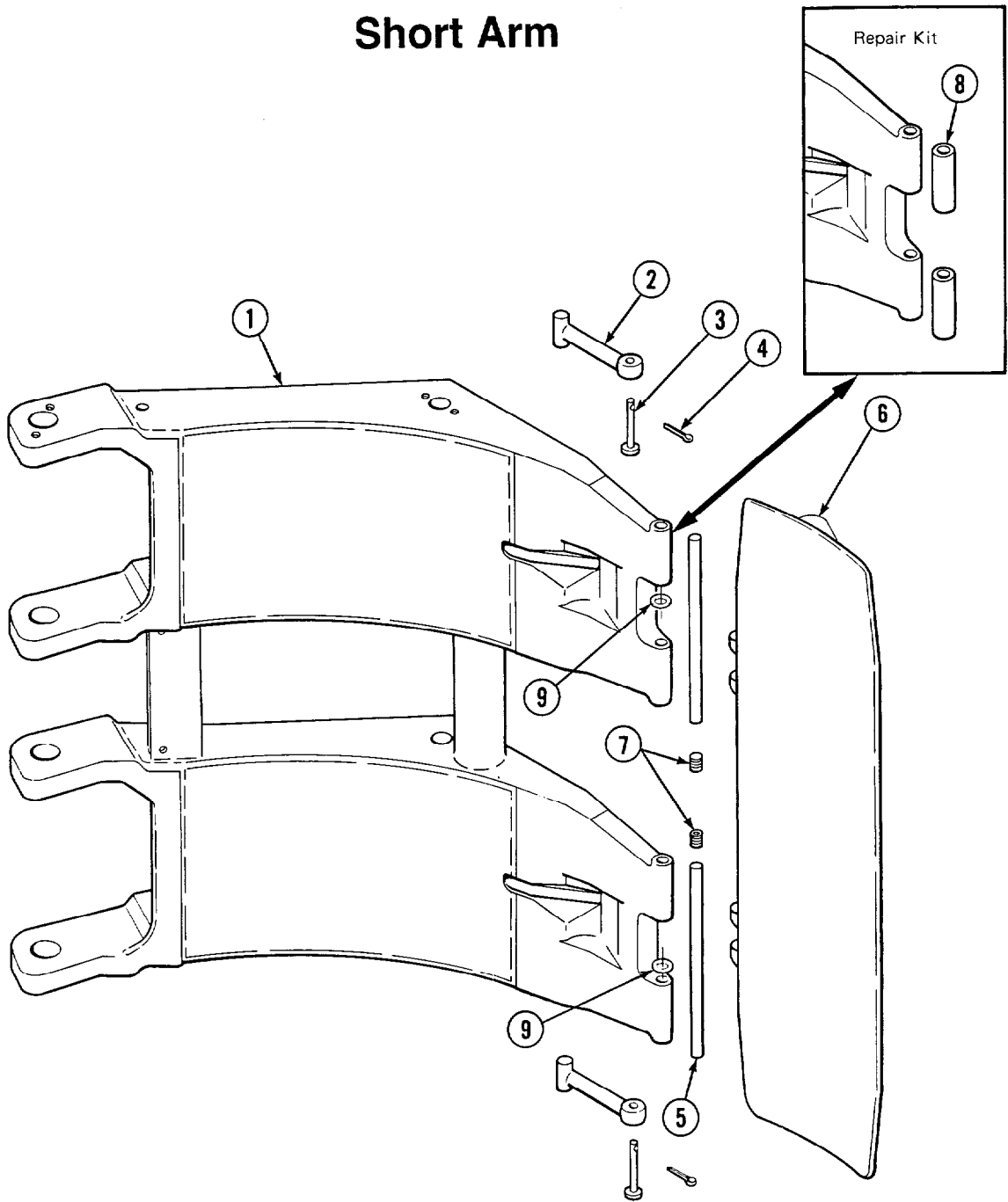


77F			
REF	QTY	PART NO.	DESCRIPTION
1	2	675098	Link - 60" Roll □
	2	675099	Link - 72" Roll □

□ Maximum clamp handling capacity.

3053-202-10

# Short Arm

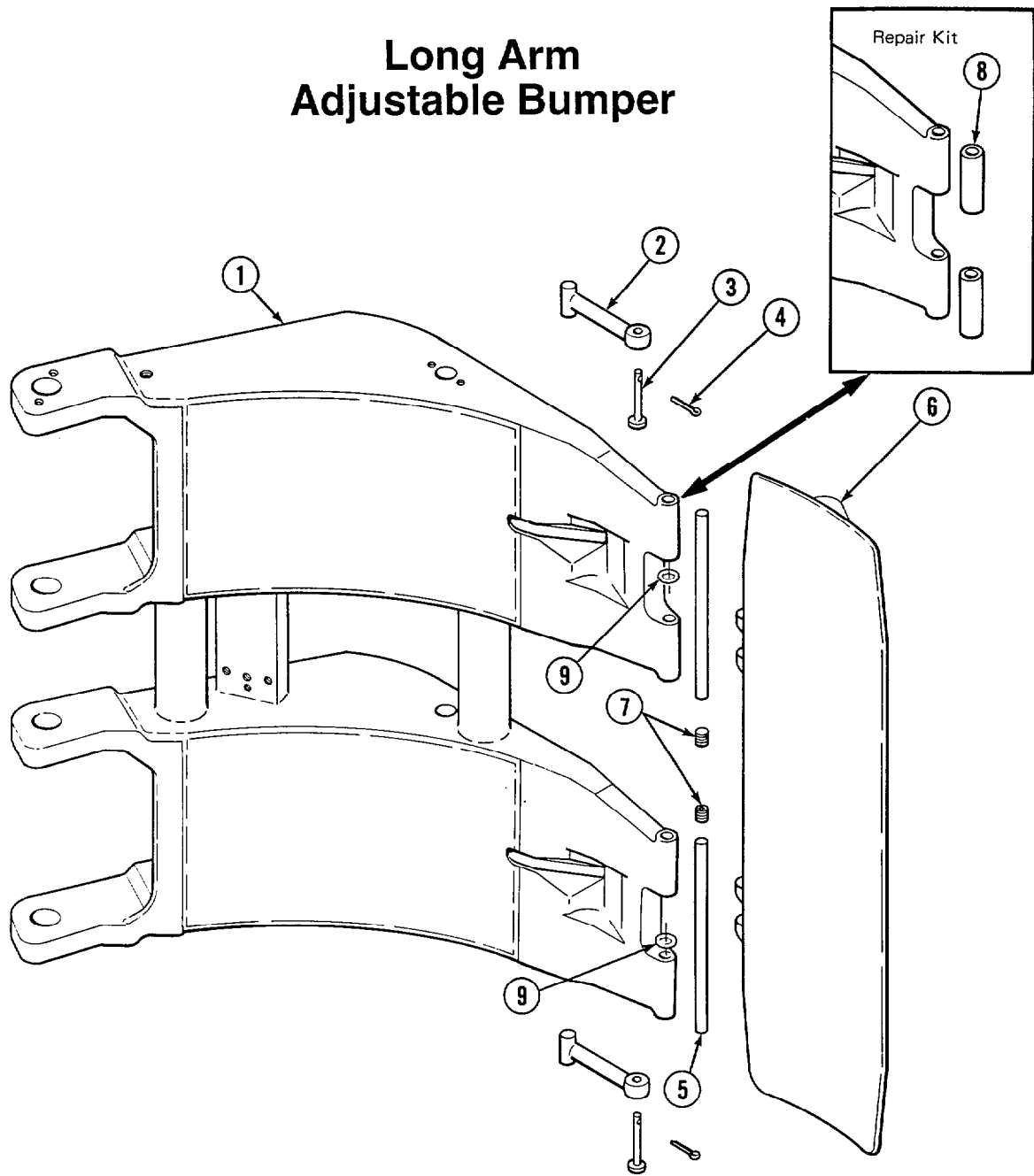


77F				
REF	QTY	60" Roll	72" Roll	DESCRIPTION
		PART NO.	PART NO.	
		678536	678543	Arm Assembly
1	1	678537	678544	Arm
2	2	674994	674994	Link
3	2	682978	682978	Clevis Pin
4	2	6525	6525	Cotter Pin
5	2	674993	674993	Pin
6	1	674962	674962	Contact Pad
7	2	6609	6609	Plug
8	1	676810	676810	Arm Tip Repair Kit
9	•	667225	667225	Washer

- Maximum clamp handling capacity.
- Quantity as required.

3053;203'10

# Long Arm Adjustable Bumper

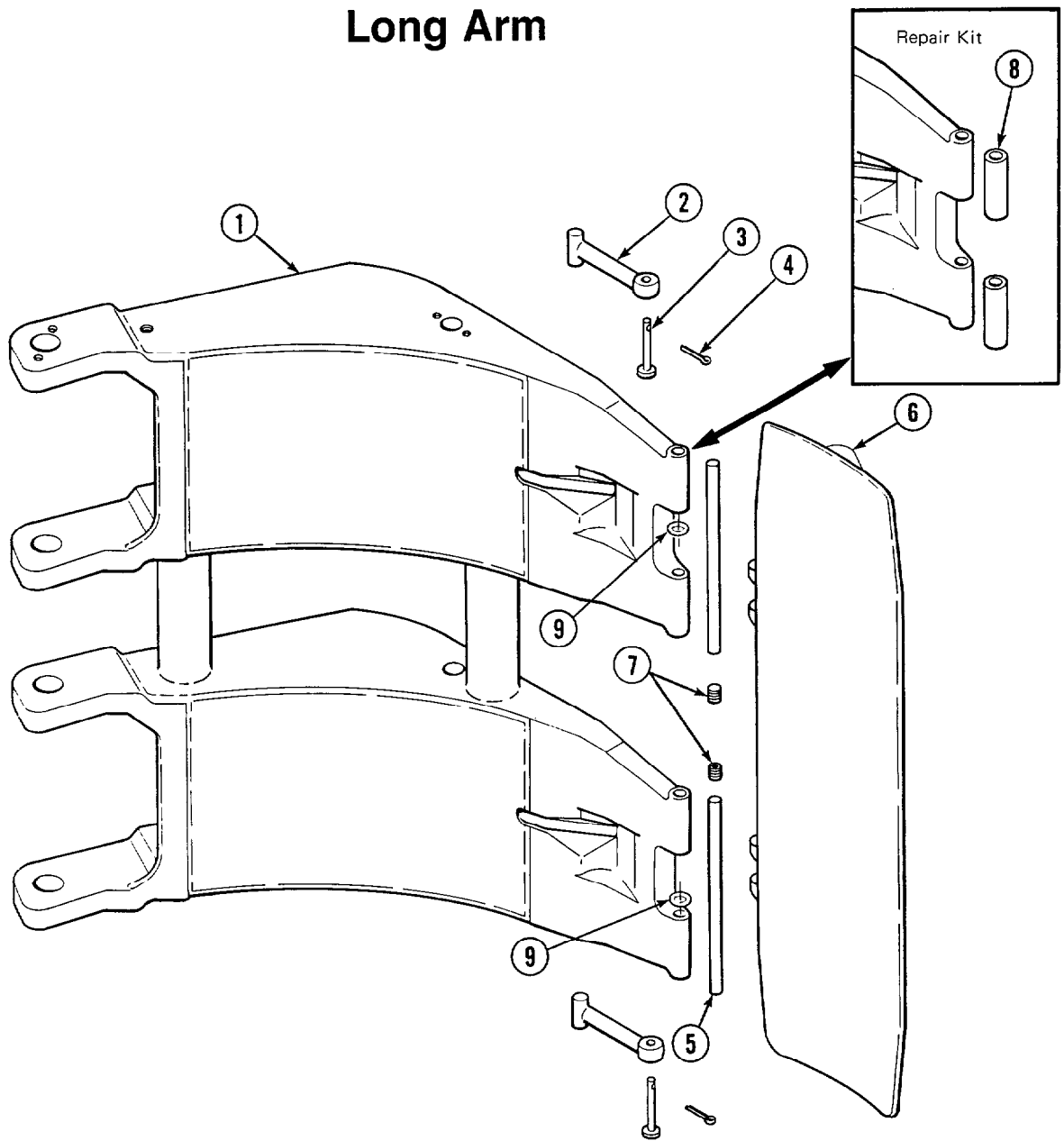


77F				
		60" Roll □	72" Roll □	
REF	QTY	PART NO.	PART NO.	DESCRIPTION
		674947	675093	Arm Assembly
1	1	674970	675096	Arm
2	2	674994	674994	Link
3	2	682978	682978	Clevis Pin
4	2	6525	6525	Cotter Pin
5	2	674993	674993	Pin
6	1	674962	674962	Contact Pad
7	2	6609	6609	Plug
8	1	676810	676810	Arm Tip Repair Kit
9	•	667225	667225	Washer

□ Maximum clamp handling capacity.  
 • Quantity as required.

30530-208-10

# Long Arm

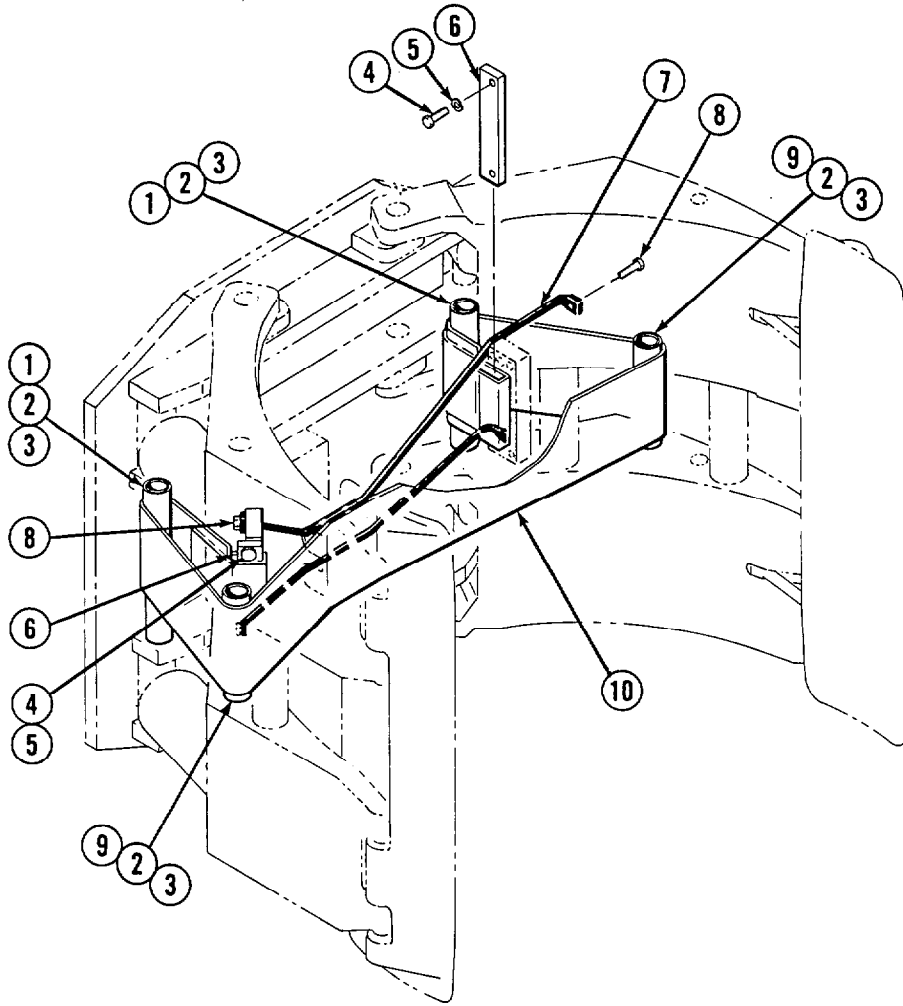


77F				
		60" Roll □	72" Roll □	
REF	QTY	PART NO.	PART NO.	DESCRIPTION
		680475	680477	Arm Assembly
1	1	680479	680483	Arm
		674994	674994	Link
2	2	682978	682978	Clevis Pin
3	2	6525	6525	Cotter Pin
4	2	674993	674993	Pin
5	2	674962	674962	Contact Pad
6	1	6609	6609	Plug
7	2	676810	676810	Arm Tip Repair Kit
8	1	667225	667225	Washer
9	●			

3053o 208 10

- Maximum clamp handling capacity.
- Quantity as required.

# Adjustable Bumper Group Option



77F			
REF	QTY	PART NO.	DESCRIPTION
		675034	Bumper Group - 60" Roll□
		675035	Bumper Group - 72" Roll□
1	2	675027	Roller
2	8	674041	Bearing
3	12	660200	Shim
4	4	3655	Capscrew, 1/2 NC x 1.5
5	4	6455	Lockwasher, 1/2 ID
6	2	674850	Bar
7	2	676419	Tie Down
8	4	3577	Capscrew, 5/16 NC x 1.0
9	2	675026	Roller
10	1	675030	Belt - 60" Roll□
	1	675031	Belt - 72" Roll□

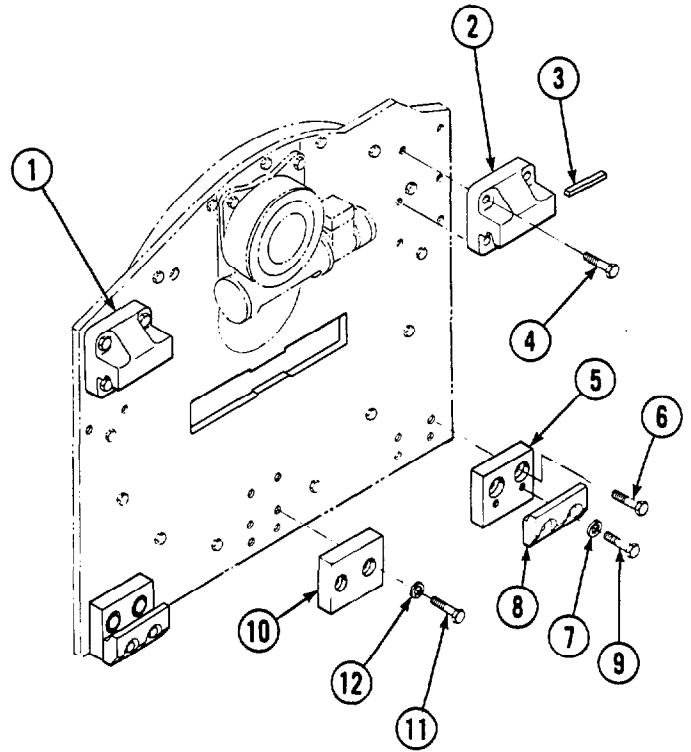
□ Maximum clamp handling capacity.

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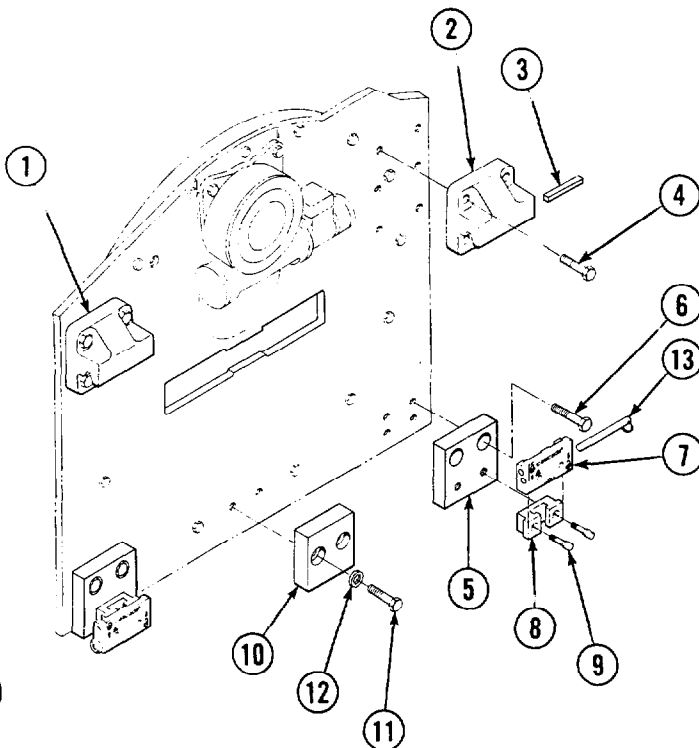
# Bolt-On Mounting Group

77F Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		678502	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	667765	Capscrew
5	2	675080	Spacer
6	4	673387	Capscrew
7	4	667225	Washer, 5/8 ID
8	2	675969	Lower Hook
9	4	674252	Capscrew
10	1	675081	Spacer
11	2	4472	Capscrew, 3/8 NC x 1.5 GR8
12	2	6372	Lockwasher, 3/8 ID

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# Quick Change Mounting Group



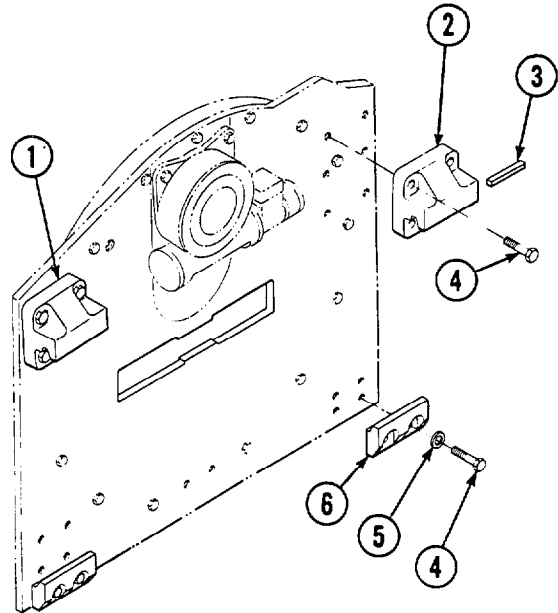
77F Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		678941	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	667765	Capscrew
5	2	675080	Spacer
6	4	673387	Capscrew
7	2	675957	Hook
8	2	675958	Guide
9	4	678940	Capscrew
10	1	675081	Spacer
11	2	4472	Capscrew, 3/8 NC x 1.5 GR8
12	2	6372	Lockwasher, 3/8 ID
13	2	678832	Pin

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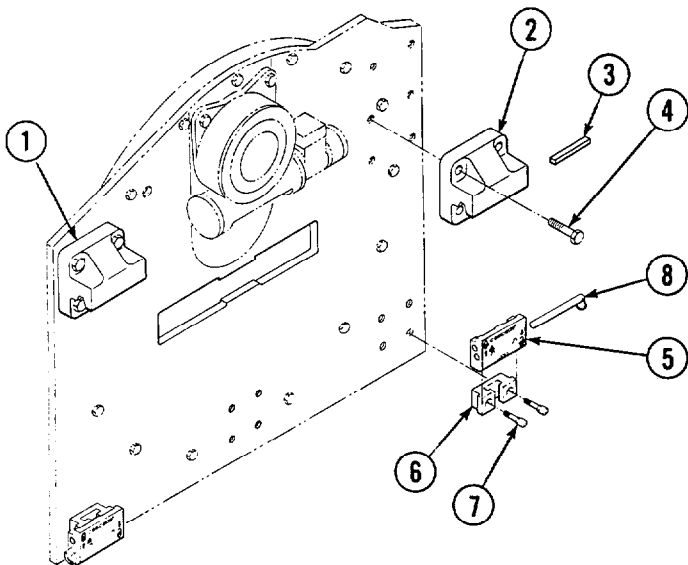
# Bolt-On Mounting Group

77F Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		678501	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	12	667765	Capscrew
5	4	667225	Washer, 5/8 ID
6	2	675969	Lower Hook

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# Quick Change Mounting Group



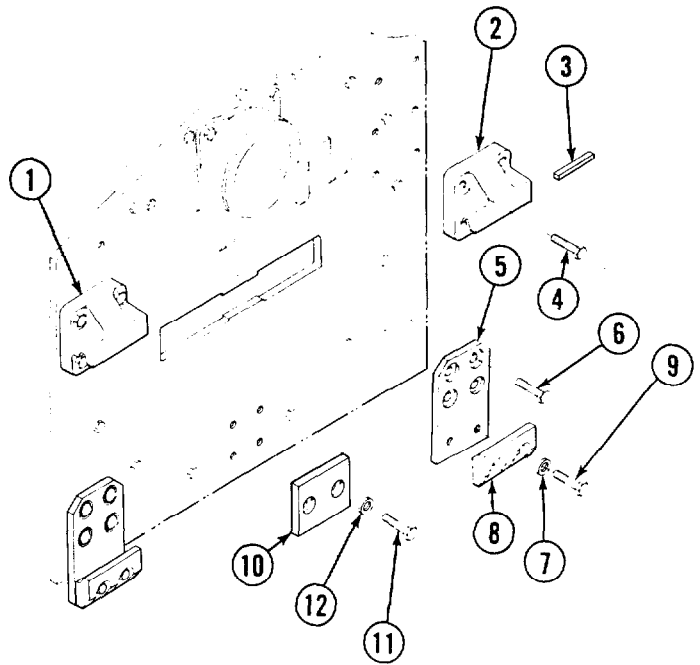
77F Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		678944	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	667765	Capscrew
5	2	675957	Hook
6	2	675958	Guide
7	4	678942	Capscrew
8	2	678832	Pin

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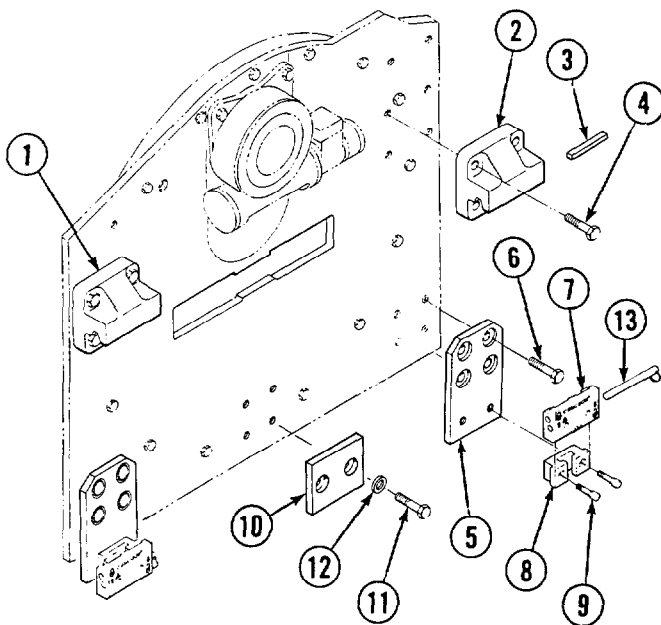
# Bolt-On Mounting Group

77F Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		678504	Mounting Group
1	1	675062	Upper Hook-L.H.
2	1	675061	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	675078	Capscrew
5	2	675082	Extension
6	8	673387	Capscrew
7	4	670692	Washer, 13/16 ID
8	2	679832	Lower Hook
9	4	675079	Capscrew
10	1	675081	Spacer
11	2	4472	Capscrew, 3/8 NC x 1.5 GR8
12	2	6372	Lockwasher, 3/8 ID

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# Quick Change Mounting Group



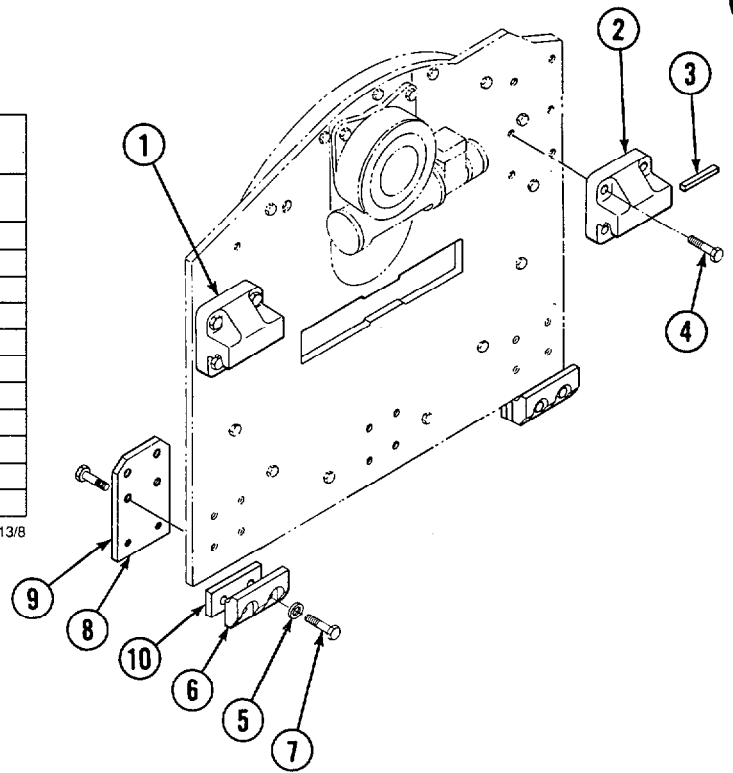
77F Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		679838	Mounting Group
1	1	675062	Upper Hook-L.H.
2	1	675061	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	675078	Capscrew
5	2	678378	Extension
6	8	673387	Capscrew
7	2	679829	Hook
8	2	679830	Guide
9	4	607105	Capscrew
10	1	675081	Spacer
11	2	4472	Capscrew, 3/8 NC x 1.5 GR8
12	2	6372	Lockwasher, 3/8 ID
13	2	679831	Pin

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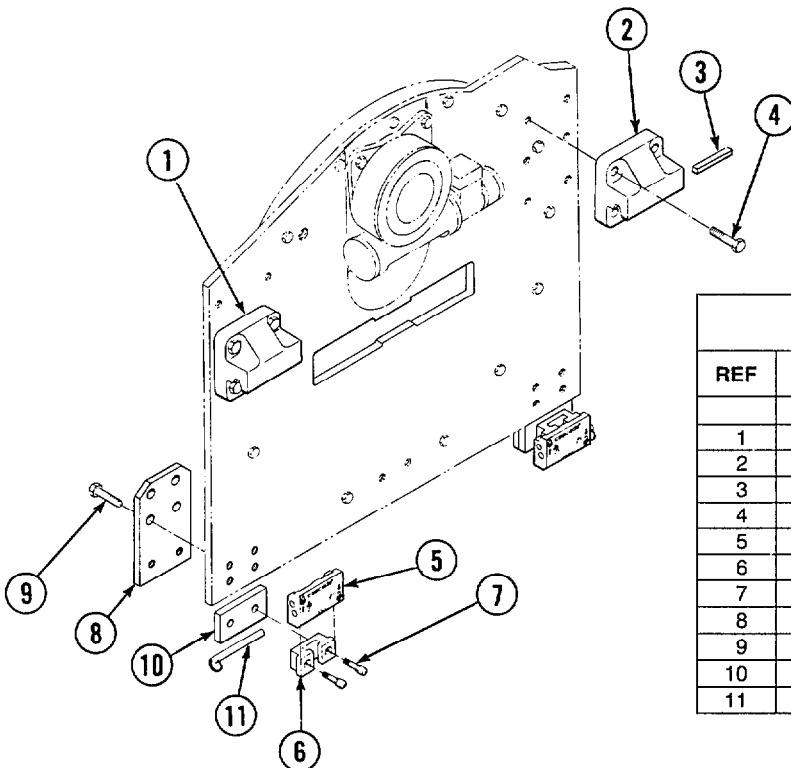
# Bolt-On Mounting Group

77F Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		678503	Mounting Group
1	1	675060	Upper Hook-L.H.
2	1	675059	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	670693	Capscrew
5	4	670692	Washer, 13/16 ID
6	2	679832	Lower Hook
7	4	675091	Capscrew
8	2	675082	Extension
9	8	673387	Capscrew
10	2	675083	Spacer

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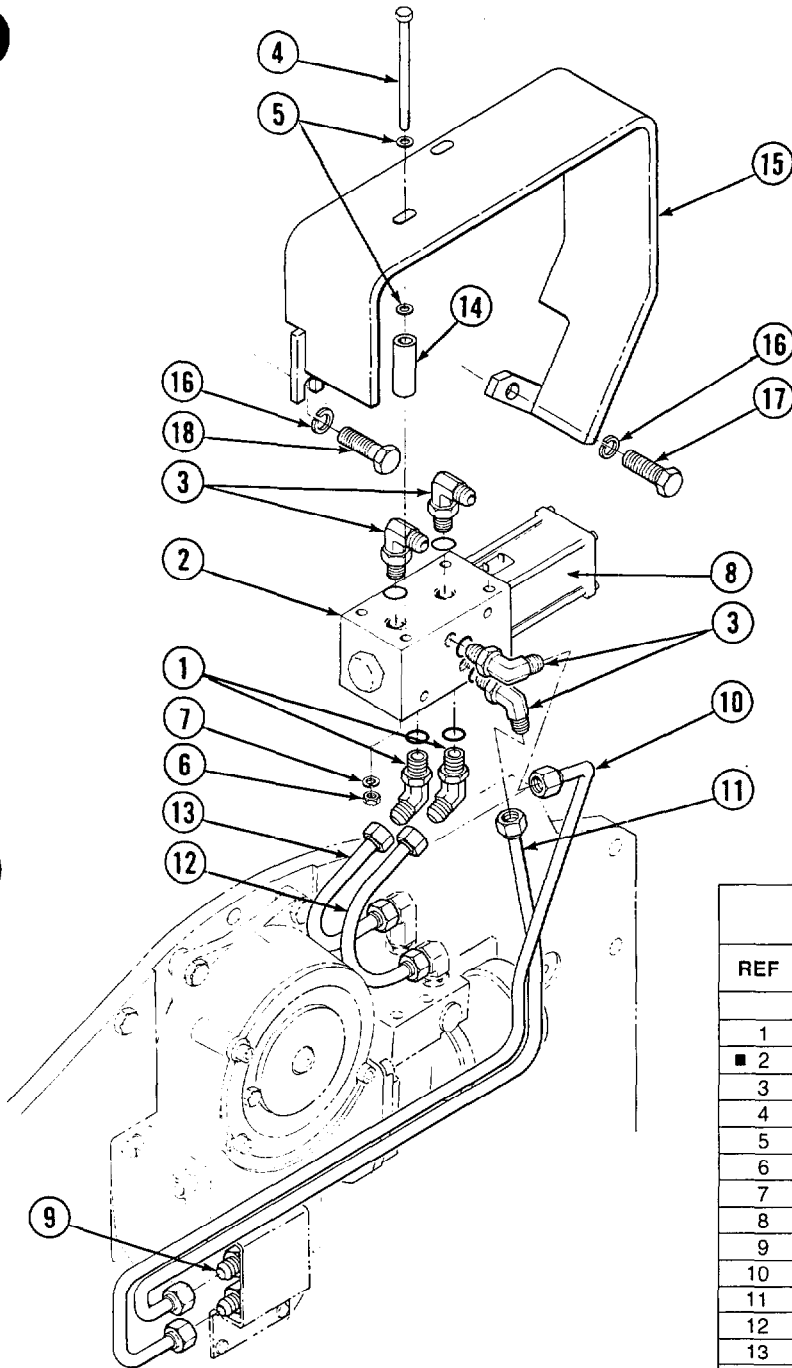
# Quick Change Mounting Group



77F Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		679837	Mounting Group
1	1	675060	Upper Hook-L.H.
2	1	675059	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	670693	Capscrew
5	2	679829	Hook
6	2	679830	Guide
7	4	607109	Capscrew
8	2	678378	Extension
9	8	673387	Capscrew
10	2	675083	Spacer
11	2	679831	Pin

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# Solenoid Adaption Option

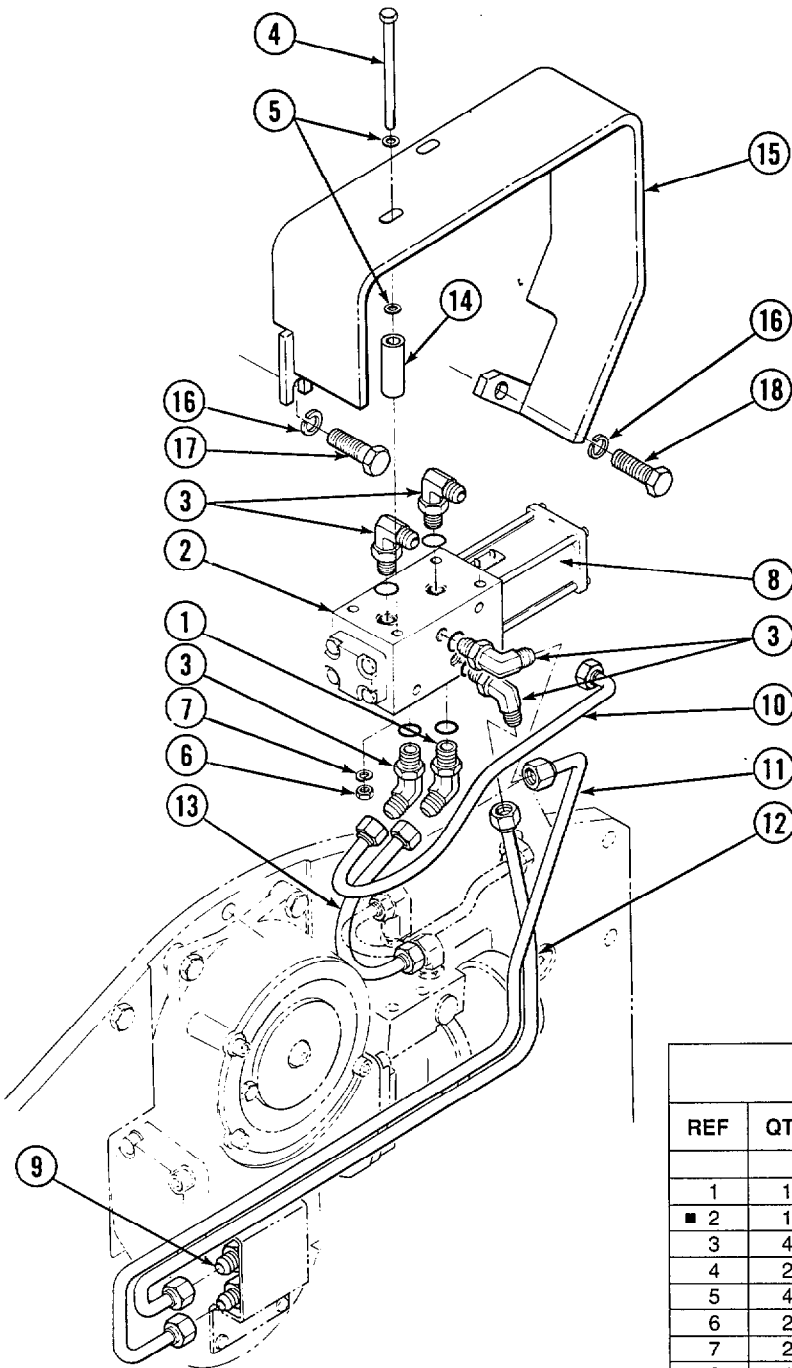


77F			
REF	QTY	PART NO.	DESCRIPTION
		676818	Solenoid Adaption Group
1	2	651302	Fitting, 8-6
■ 2	1	●	Solenoid Valve
3	4	651303	Fitting, 8-6
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16 ID
6	2	15251	Nut, 5/16 NC
7	2	6287	Lockwasher, 5/16 ID
8	1	●	Coil
9	2	604511	Fitting, 6
10	1	676820	Tube
11	1	676821	Tube
12	1	676822	Tube
13	1	676823	Tube
14	2	665115	Tube
15	1	677592	Guard
16	2	6290	Lockwasher, 1/2 ID
17	1	633523	Capscrew, 1/2 NC x 2.5 GR5
18	1	636408	Capscrew, 1/2 NC x 2.0 GR5

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- See page 23 for replacement parts breakdown.
- Includes item 8.

# Solenoid Adaption Option for 180° Stop Group

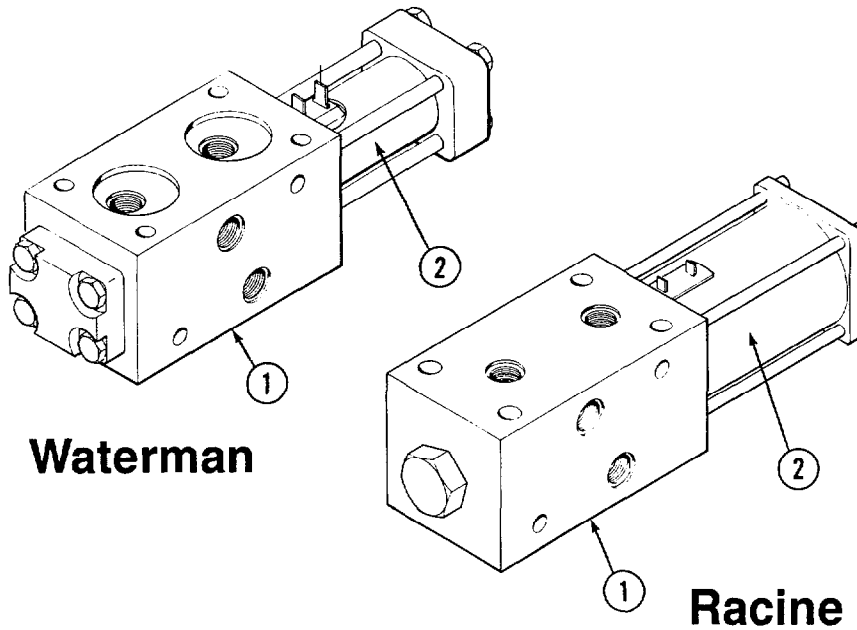


77F			
REF	QTY	PART NO.	DESCRIPTION
		676819	Solenoid Adaption Group
1	1	651302	Fitting, 8-6
■ 2	1	●	Solenoid Valve
3	4	651303	Fitting, 8-6
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16 ID
6	2	15251	Nut, 5/16 NC
7	2	6287	Lockwasher, 5/16 ID
8	1	●	Coil
9	2	604511	Fitting, 6
10	1	677729	Tube
11	1	676820	Tube
12	1	676821	Tube
13	1	676822	Tube
14	2	665115	Tube
15	1	677592	Guard
16	2	6290	Lockwasher, 1/2 ID
17	1	633523	Capscrew, 1/2 NC x 2.5 GR5
18	1	636408	Capscrew, 1/2 NC x 2.0 GR5

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- See page 23 for replacement parts breakdown.
- Includes item 8.

# Solenoid Valves



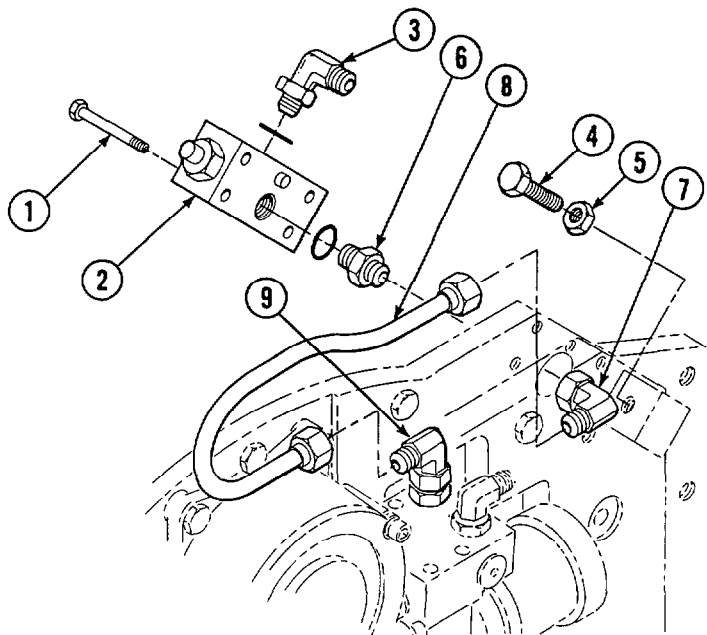
**Note:** Racine and Waterman Solenoid Valve assemblies are interchangeable as a unit. Coils must match valve.

REF	QTY	Waterman PART NO.	Racine PART NO.	DESCRIPTION
• 1	1	614089	614089	Solenoid Valve – 12V
	1	614091	614091	Solenoid Valve – 24V
	1	614092	614092	Solenoid Valve – 36V
	1	614093	614093	Solenoid Valve – 48V
	1	614094	—	Solenoid Valve – 72V
2	1	611458	665044	Coil – 12V
	1	611460	665045	Coil – 24V
	1	611461	665046	Coil – 36V
	1	614097	665047	Coil – 48V
	1	614098	—	Coil – 72V
	1	685072	685012	Seal Kit

• Includes item 2.

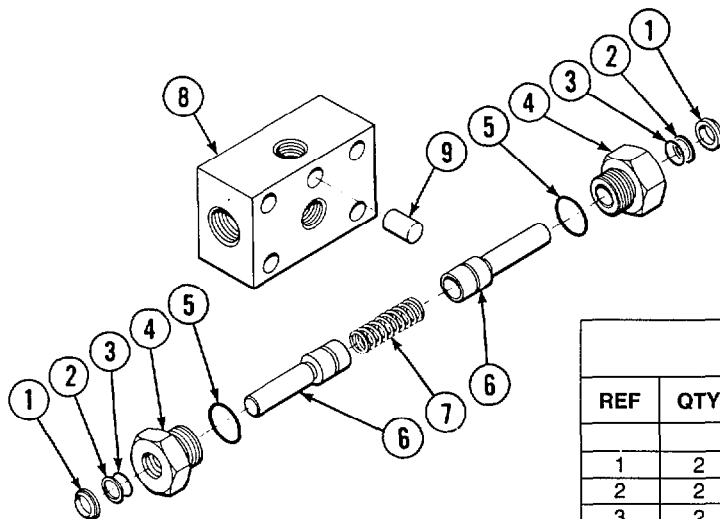
30532-01.1 1/0

# 180° Stop Group



77F			
REF	QTY	PART NO.	DESCRIPTION
		670703	Stop Group.
1	4	670544	Capscrew
2	1	670537	Stop Valve Assembly
3	1	651303	Fitting, 6-8
4	2	3710	Capscrew, 5/8 NC x 1.75
5	2	5932	Nut, 5/8 NC
6	1	662187	Fitting, 6-8
7	1	605761	Fitting, 6-8
8	1	670702	Tube Assembly
9	1	601377	Fitting, 8-8

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# Stop Valve

77F			
REF	QTY	PART NO.	DESCRIPTION
		670537	Stop Valve Assembly
1	2	670541	Wiper Ring
2	2	615006	Back-up Ring
3	2	2702	O-Ring
4	2	670540	Gland
5	2	2841	O-Ring
6	2	670539	Plunger
7	1	670542	Spring
8	1	670538	Body
9	1	611210	Pin

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