



# Parts Manual

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## 77F Paper Roll Clamps

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Serial Numbers 675414 through 675467

Manual Number 676424

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# HOW TO USE THIS MANUAL

## Introduction

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

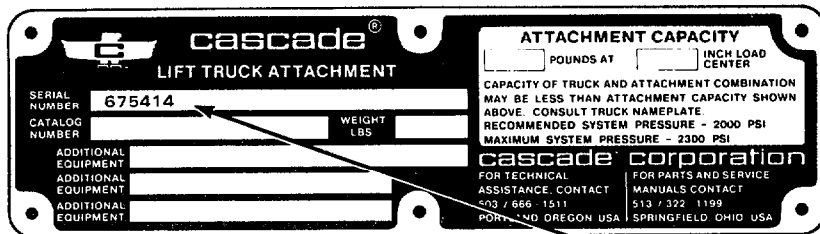
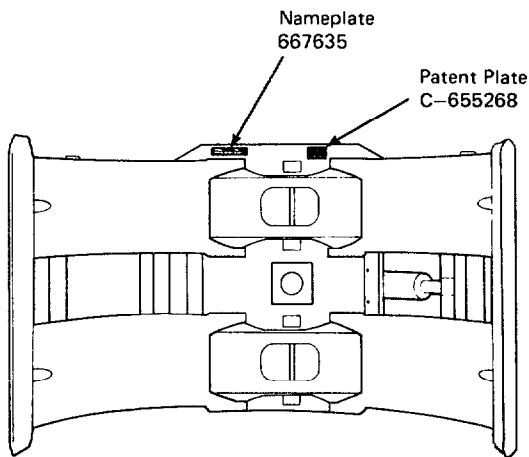
The parts manuals for attachments designed by the Application Engineering Department have an A.E.D. designation on the cover of the manual.

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 the Nameplate

The nameplate is attached to the top 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.** To order Service Replacement Parts or Service Literature, contact:

Cascade Parts Depot  
2501 Sheridan Avenue  
P.O. 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.



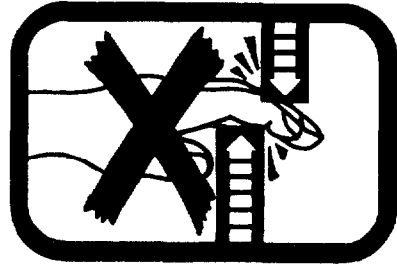
# Serial Number Index

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 Adaption Page	180° Stop Group Page
675414	60"	1	2	4	7	13, 14	16, 17	—	20	22, 24, 25	27
675415	60"	1	2	4	7	13, 14	16, 17	—	20	22, 24, 25	27
675416	60"	1	2	4	7	13, 14	16, 17	—	21	22, 24, 25	27
675417	60"	1	2	4	7	13, 14	16, 17	—	21	22, 24, 25	27
675419	60"	1	2	4	6	12, 14	16, 17	—	20	22, 24, 25	27
675420	60"	1	2	4	6	12, 14	16, 17	—	20	22, 24, 25	27
675421	60"	1	2	4	6	12, 14	16, 17	—	21	22, 24, 25	27
675422	60"	1	2	4	6	12, 14	16, 17	—	21	22, 24, 25	27
675424	72"	1	2	4	7	13, 14	16, 17	—	20	22, 24, 25	27
675425	72"	1	2	4	7	13, 14	16, 17	—	20	22, 24, 25	27
675426	72"	1	2	4	7	13, 14	16, 17	—	21	22, 24, 25	27
675427	72"	1	2	4	7	13, 14	16, 17	—	21	22, 24, 25	27
675429	72"	1	2	4	6	12, 14	16, 17	—	20	22, 24, 25	27
675430	72"	1	2	4	6	12, 14	16, 17	—	20	22, 24, 25	27
675431	72"	1	2	4	6	12, 14	16, 17	--	21	22, 24, 25	27
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675435	60"	1	2	4	7	13, 14	16, 17	18	20	22, 24, 25	27
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675442	72"	1	2	4	7	13, 14	16, 17	18	20	22, 24, 25	27
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675444	72"	1	2	4	7	13, 14	16, 17	18	21	22, 24, 25	27
675445	72"	1	2	4	7	13, 14	16, 17	18	21	22, 24, 25	27
675446	72"	1	2	4	6	12, 14	16, 17	18	20	22, 24, 25	27
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675460	60"	1	3	4	8	12, 14, 15	16, 17	19	20	22, 24, 25	27
675461	60"	1	3	4	8	12, 14, 15	16, 17	19	20	22, 24, 25	27
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675464	72"	1	3	4	8	12, 14, 15	16, 17	19	20	22, 24, 25	27
675465	72"	1	3	4	8	12, 14, 15	16, 17	19	20	22, 24, 25	27
675466	72"	1	3	4	8	12, 14, 15	16, 17	19	21	22, 24, 25	27
675467	72"	1	3	4	8	12, 14, 15	16, 17	19	21	22, 24, 25	27



# Safety Decals

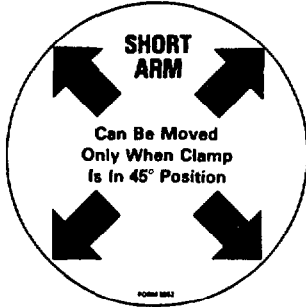
Rotation Indicator Tape  
Part No. 675353



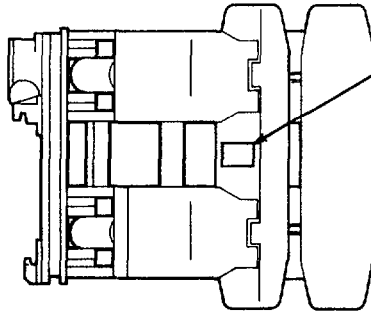
Part No. 665595  
Arms Top and Bottom  
(4 Places)

Part No. 660269\*  
Arm Top and Bottom  
(2 Places)

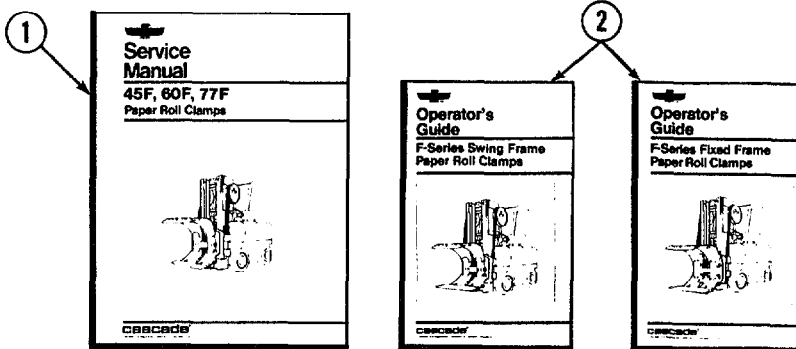
\* For clamps with moveable short arm.



Part No. 656038  
Both Contact Pads  
Arms Top and Bottom  
(6 Places)



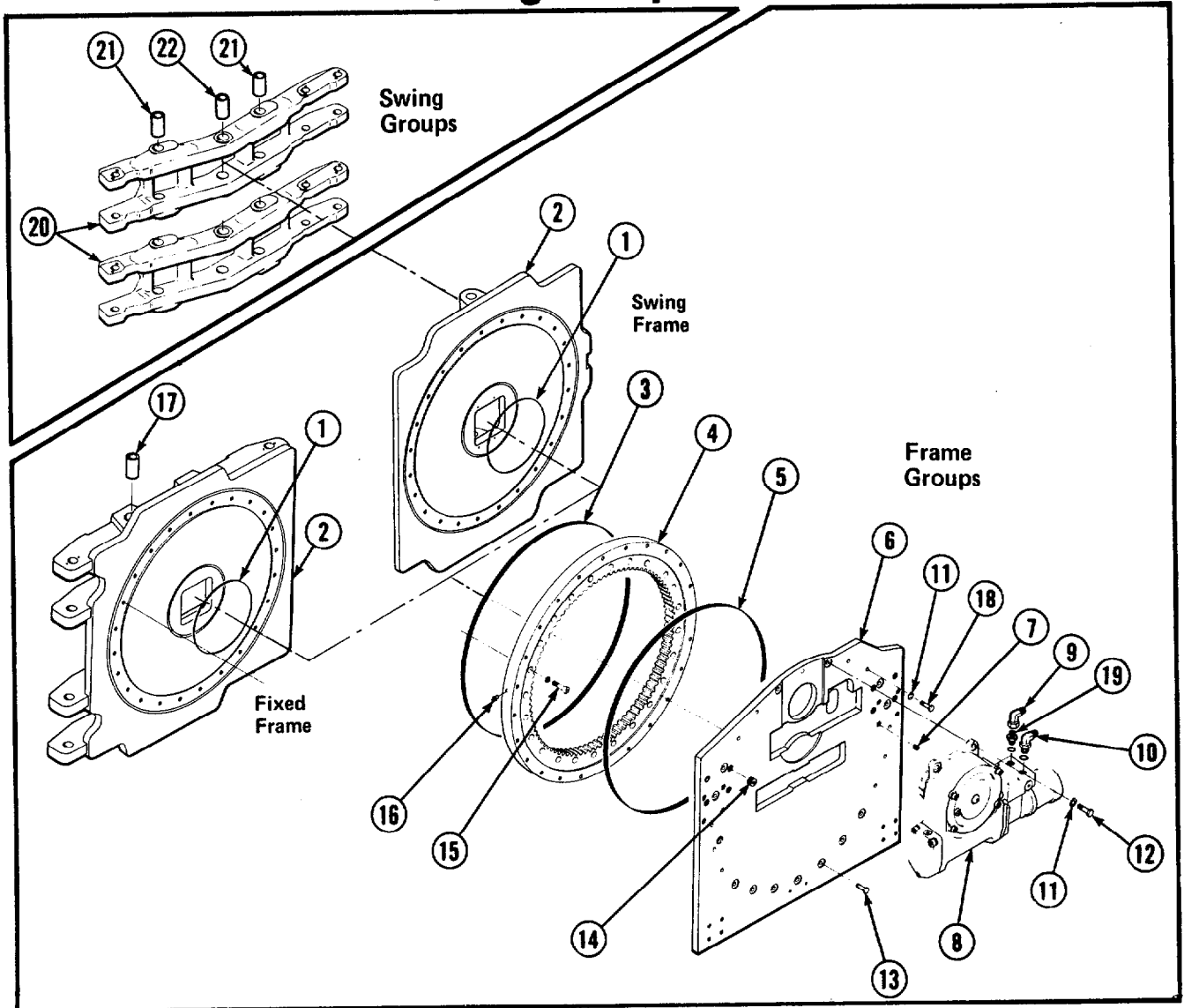
# Publications



77F		
REF	PART NO.	DESCRIPTION
1	674512	Service Manual
2	674509	Operator's Guide — Fixed Frame
	676268	Operator's Guide — Swing Frame



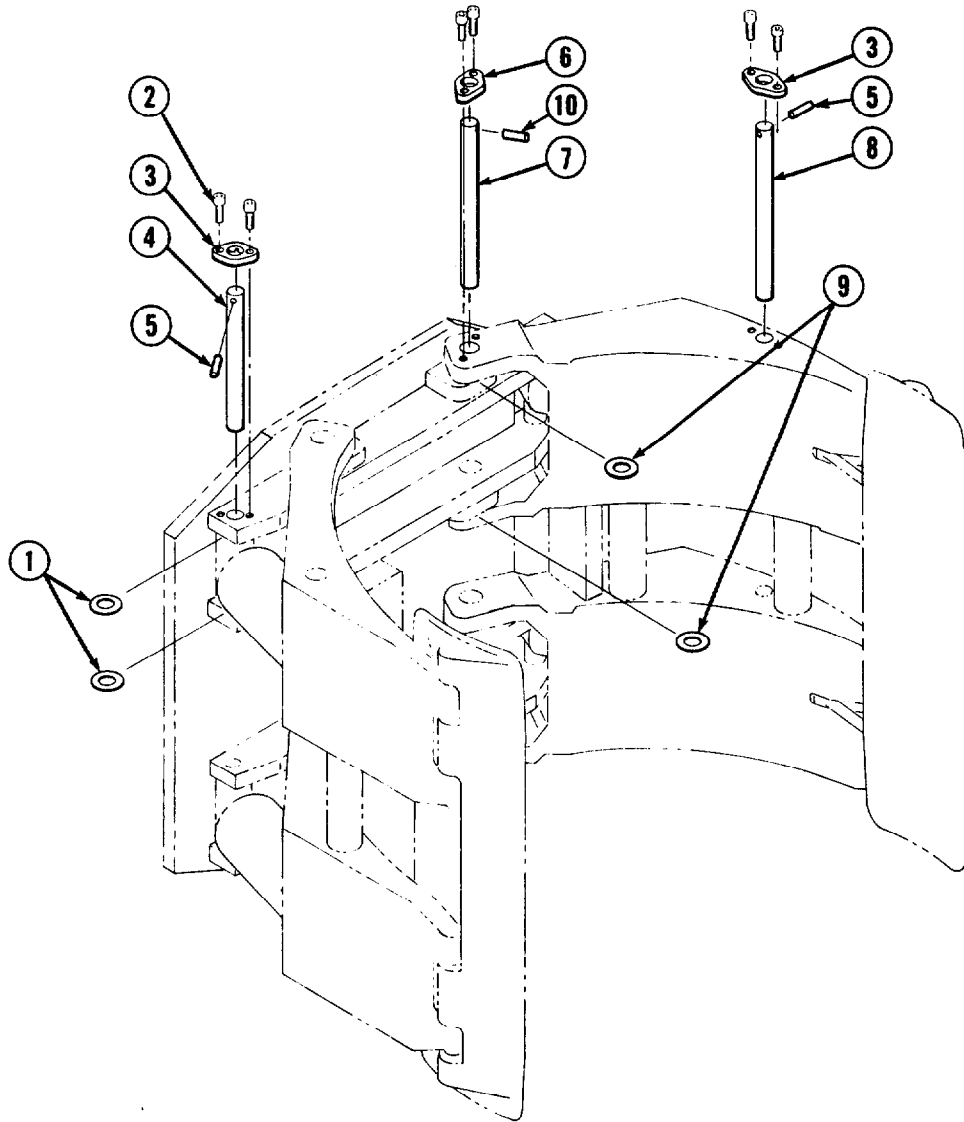
# Frame Groups Swing Groups



77F							
REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		‡ 674941	Frame Group, Fixed	10	1	601250	Fitting, 8-8
		‡ 674940	Frame Group, Swing	11	17	6290	Lockwasher, 1/2 ID
		★ 674944	Swing Group - 60" Roll ●●	12	4	661742	Capscrew, 1/2 NC x 1.25 GR5
		★ 675124	Swing Group - 72" Roll ●●	13	11	670682	Capscrew, 1/2 NC x 1.50 GR5
1	1	670931	Seal	14	1	6605	Plug
	1	675005	Faceplate, Fixed	☆15	24	617254	Capscrew, 1/2 NC x 1.5 GR8
	1	674976	Faceplate, Swing	16	1	7401	Grease Fitting
	1	670515	Seal	17	8	675007	Bushing
☆■ 4	1	672830	Bearing Assembly	18	13	636408	Capscrew, 1/2 NC x 2.00 GR5
	1	670516	Seal	19	1	601377	Fitting, 8-8
	1	674980	Baseplate		1	674963	Swing Frame - 60" Roll ●●
	8	631385	Plug		1	675130	Swing Frame - 72" Roll ●●
● 8	1	675639	Drive Group	21	8	675008	Bushing
9	1	605761	Fitting, 8-8	22	4	675006	Bushing

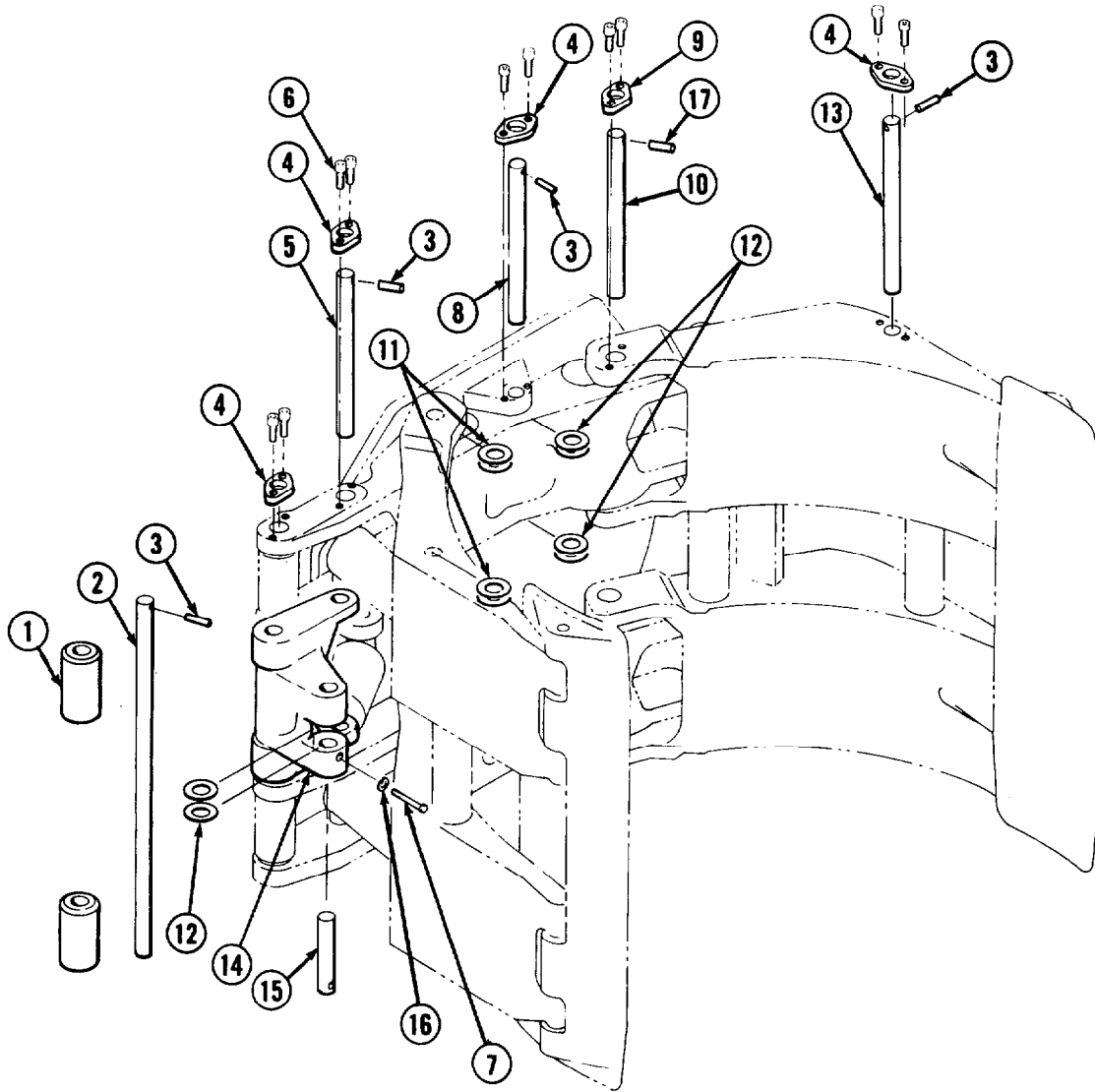
- Includes items 3 and 5.
- See page 4 for replacement parts breakdown.
- ☆ Included in Bearing Service Kit 672482.
- ‡ Includes items 1 through 19.
- ★ Includes items 20, 21, and 22.
- Maximum clamp handling capacity.

# Common Components Group Fixed Frame



77F			
REF	QTY	PART NO.	DESCRIPTION
		674943	Components Group
1	8	660200	Shim
2	24	4468	Capscrew, 5/16 NC x 2.25
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

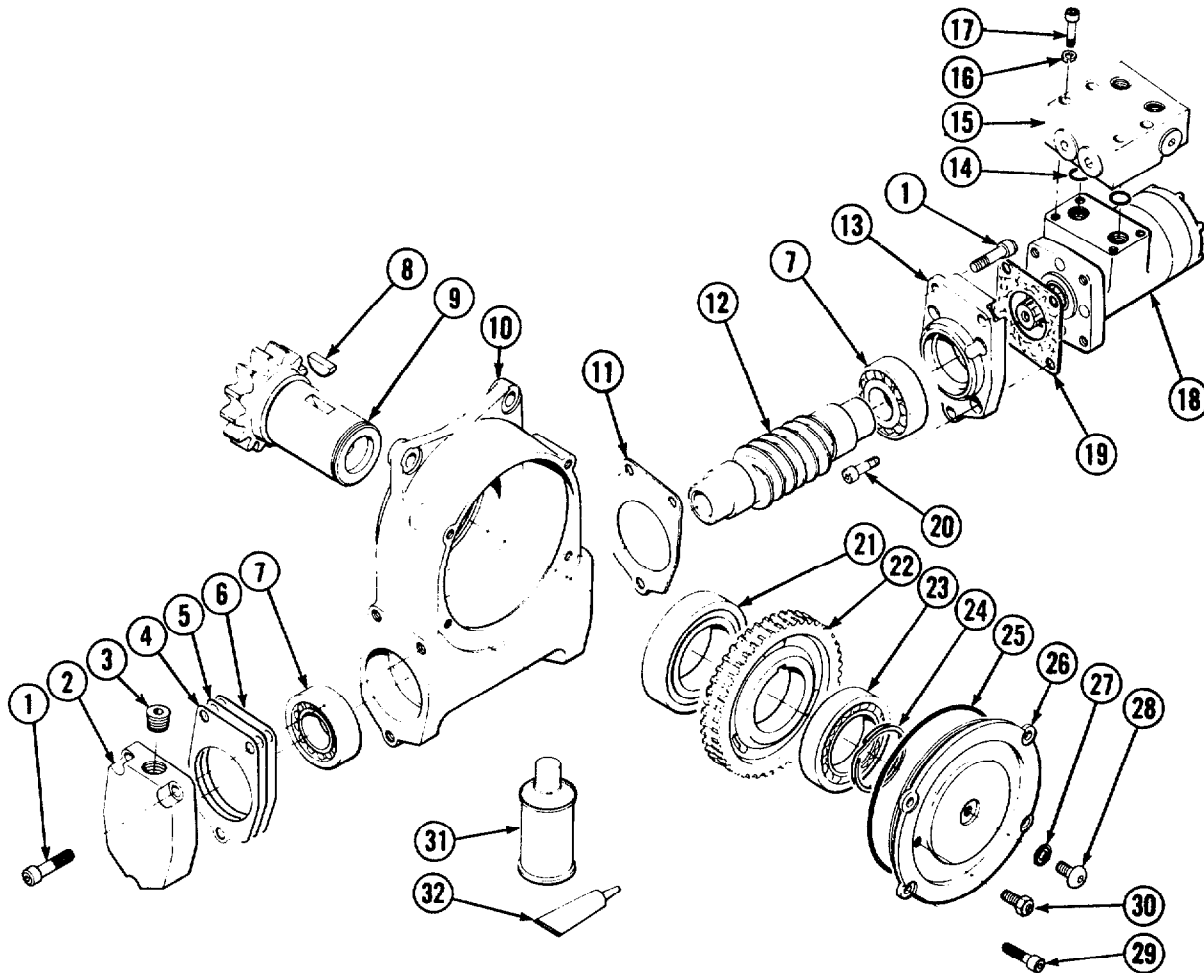
# Common Components Group Swing Frame



77F			
REF	QTY	PART NO.	DESCRIPTION
		674942	Components Group
1	2	675024	Roller
2	1	675021	Pin
3	11	673385	Drive Pin
4	11	674828	Retainer
5	4	675018	Pin
6	30	4468	Capscrew, 3/8 NC x .75
7	2	643518	Capscrew, 5/16 NC x 2.25
8	2	675019	Pin
9	4	674830	Retainer
10	4	675022	Pin
11	16	673379	Shim
12	16	660200	Shim
13	4	675020	Pin
14	1	674965	Swing Casting
15	2	675023	Pin
16	2	6287	Lockwasher, 5/16 ID
17	4	675086	Drive Pin



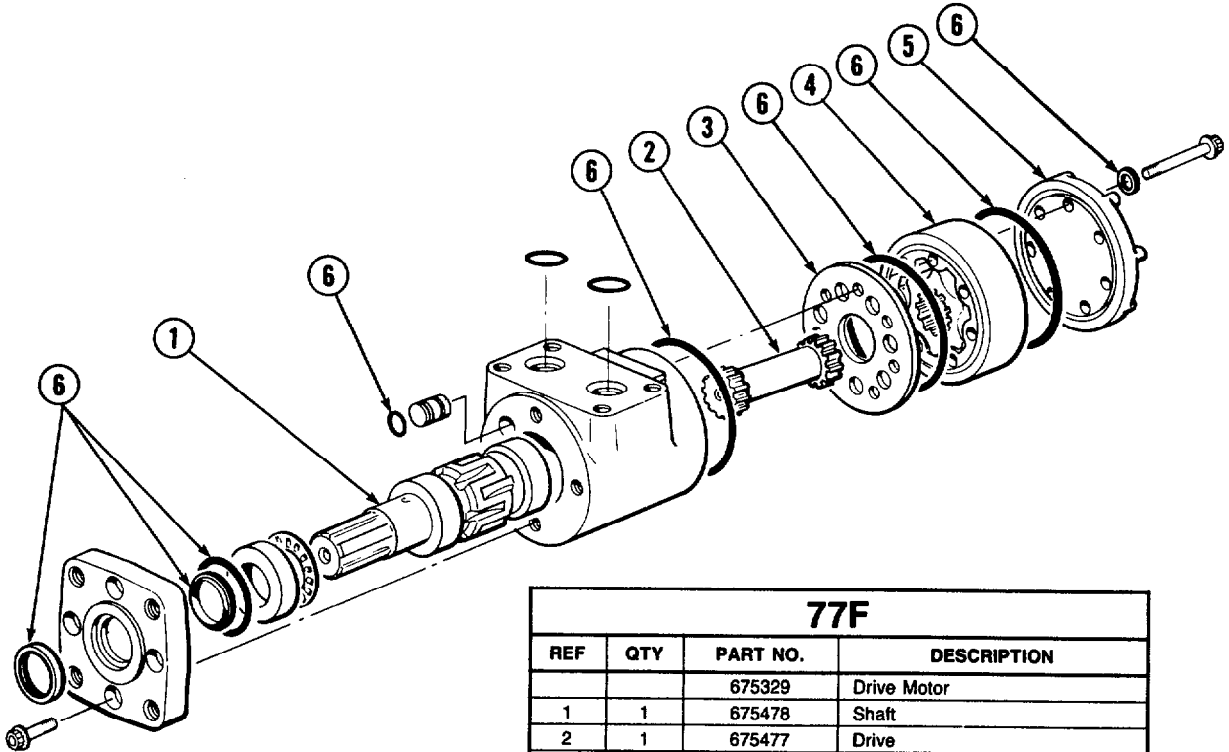
# Drive Group



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	4468	Capscrew, 3/8 NC x .75
2	1	670572	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	603680	Seal
9	1	670556	Pinion	28	1	4874	Capscrew, 3/8 NC x .50 GR8
10	1	670565	Housing	29	4	671535	Capscrew, 5/16 NC x .75
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
☆15	1	670549	Check Valve			675637	Bearing Service Kit
16	4	6444	Lockwasher, 5/16 ID			675638	Bearing Service Kit
17	4	607059	Capscrew, 5/16 NC x 1.75 GR8			●●675631	Drive Box Service Kit

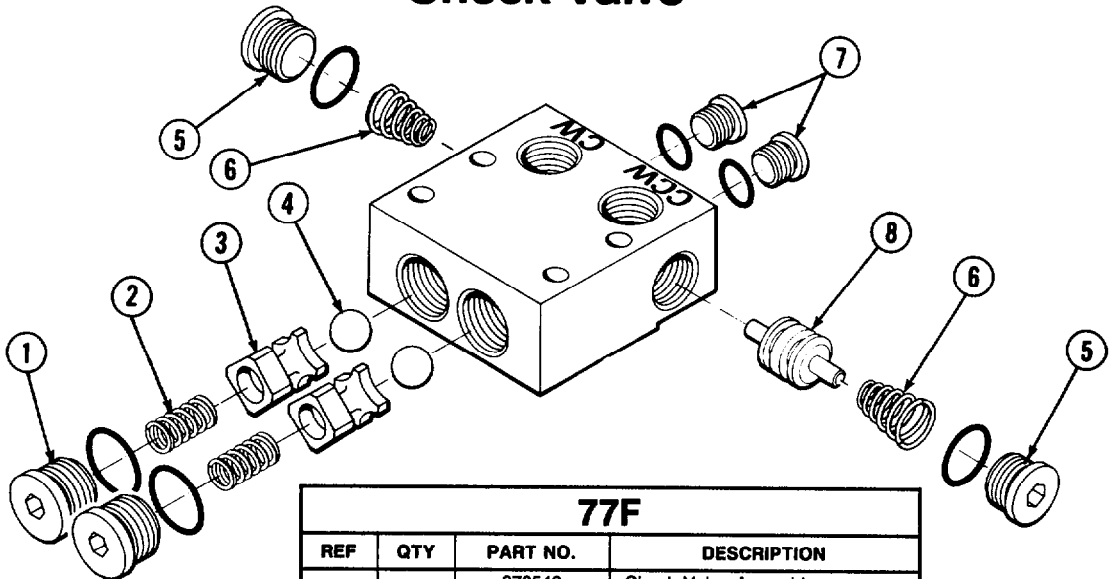
- Quantity as required.
- Included in Bearing Service Kit 675637.
- ‡ Included in Bearing Service Kit 675638.
- ★ Included in Shim Service Kit 670578.
- ☆ See page 5 for replacement parts breakdown.
- † Does not include items 15, 17 and 18.

# 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	Gerotor Set
5	1	675482	End Cap
6	1	675474	Service Kit

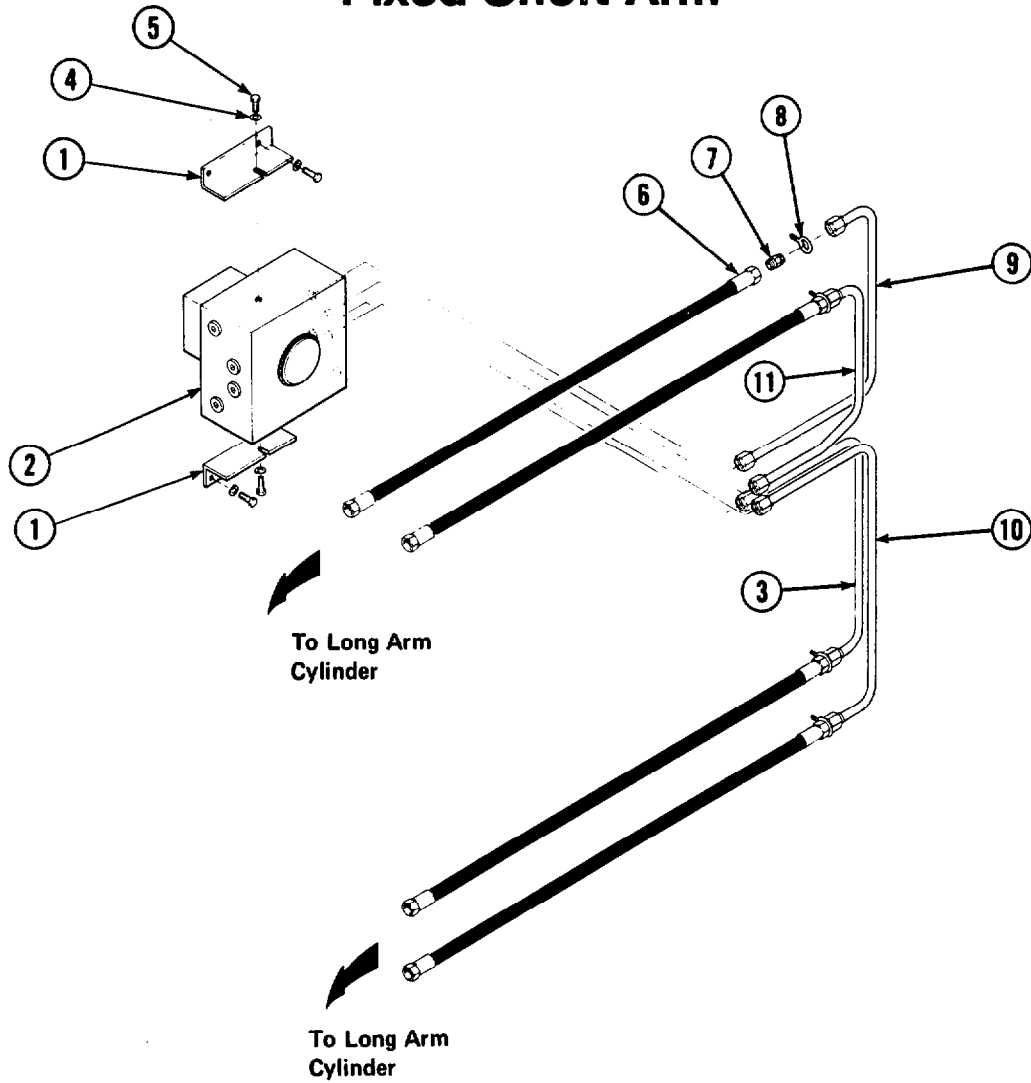
# Check Valve



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	673989	Spring
7	2	604510	Plug
8	1	670553	Spool
9	1	670550	Body



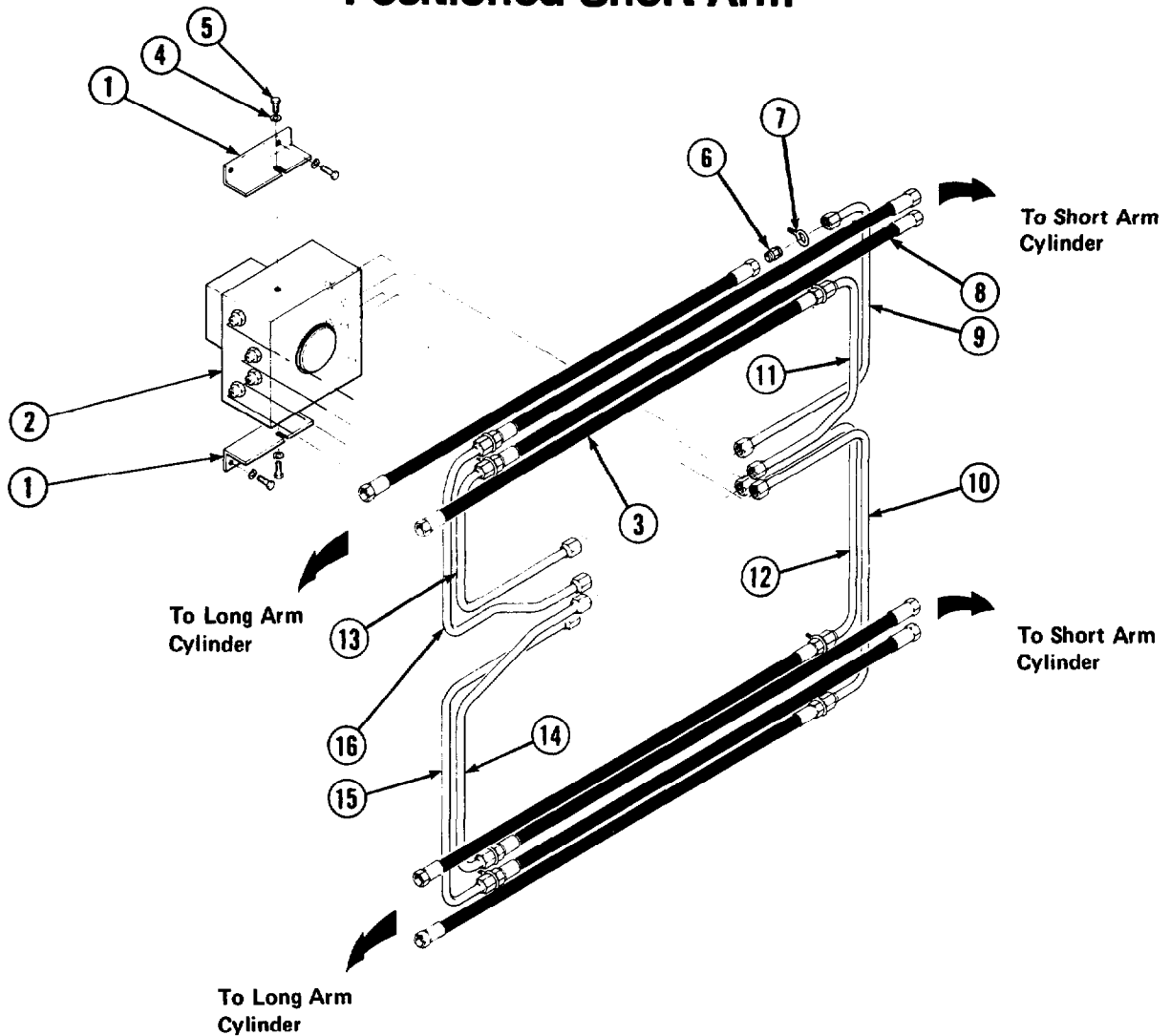
# Fixed Frame Hosing Group Fixed Short Arm



77F			
REF	QTY	PART NO.	DESCRIPTION
		674938	Hosing Group - 60" Roll ■
		674939	Hosing Group - 72" Roll ■
1	2	674742	Angle
●2	1	674951	Revolving Connection
3	1	675040	Tube
4	6	6288	Lockwasher, 3/8 ID
5	6	3600	Capscrew, 3/8 NC x .62
6	4	675057	Hose - 60" Roll ■
	4	675068	Hose - 72" Roll ■
7	4	2347	Fitting, 6-6
8	4	674743	Eye Bolt
9	1	675043	Tube
10	1	675041	Tube
11	1	675042	Tube

- See page 9 for replacement parts breakdown.
- Maximum clamp handling capacity.

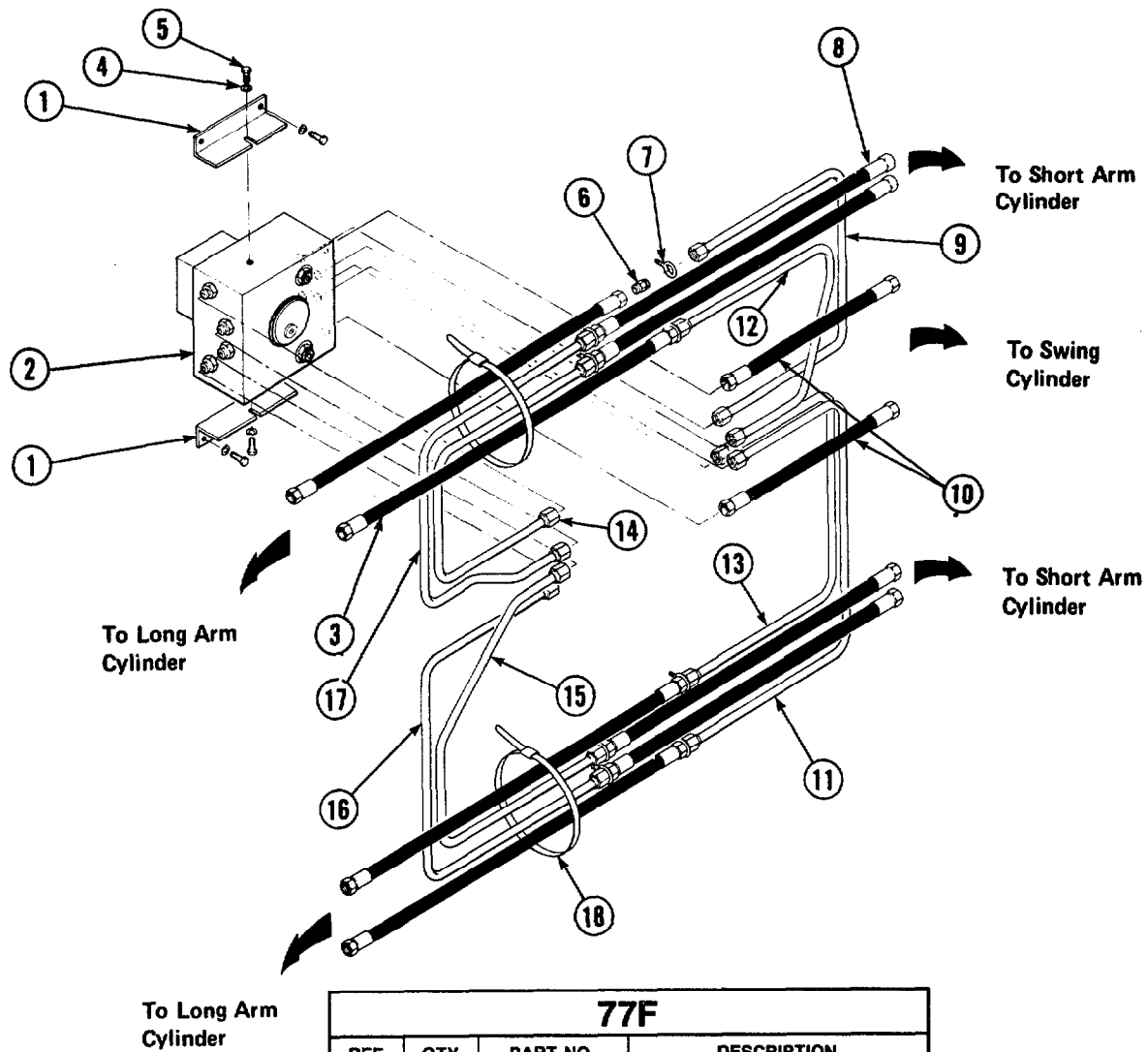
# Fixed Frame Housing Group Positioned Short Arm



77F			
REF	QTY	PART NO.	DESCRIPTION
		674936	Hosing Group - 60" Roll ■
		674937	Hosing Group - 72" Roll ■
1	2	674742	Angle
●2	1	674950	Revolving Connection
3	4	675057	Hose - 60" Roll ■
	4	675068	Hose - 72" Roll ■
4	6	6288	Lockwasher, 3/8 ID
5	6	3600	Capscrew, 3/8 NC x .62
6	8	2347	Fitting, 6-6
7	8	674743	Eyebolt
8	4	675056	Hose - 60" Roll ■
	4	675067	Hose - 72" Roll ■
9	1	675043	Tube
10	1	675041	Tube
11	1	675042	Tube
12	1	675040	Tube
13	1	675039	Tube
14	1	675037	Tube
15	1	675036	Tube
16	1	675038	Tube

● See page 10 for replacement parts breakdown.  
 ■ Maximum clamp handling capacity.

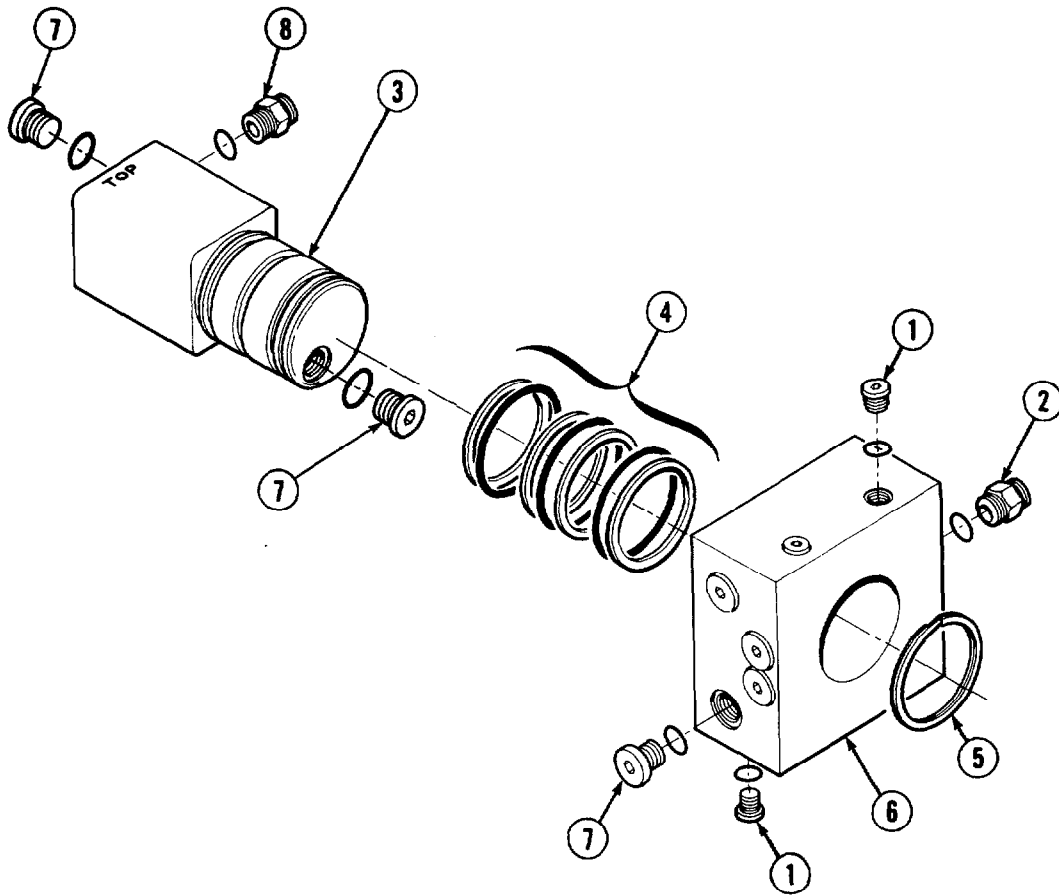
# Swing Frame Hosing Group



77F			
REF	QTY	PART NO.	DESCRIPTION
		674934	Hosing Group - 60" Roll ■
		674935	Hosing Group - 72" Roll ■
1	2	674742	Angle
●2	1	674949	Revolving Connection
3	4	675054	Hose - 60" Roll ■
	4	675085	Hose - 72" Roll ■
4	6	6288	Lockwasher, 3/8 ID
5	6	3600	Capscrew, 3/8 NC x .62
6	8	2347	Fitting, 6-6
7	8	674743	Eyebolt
8	4	675053	Hose - 60" Roll ■
	4	675084	Hose - 72" Roll ■
9	1	675051	Tube
10	2	675055	Tube
11	1	675049	Tube
12	1	675050	Tube
13	1	675048	Tube
14	1	675047	Tube
15	1	675045	Tube
16	1	675044	Tube
17	1	675046	Tube
18	2	649086	Cable Tie

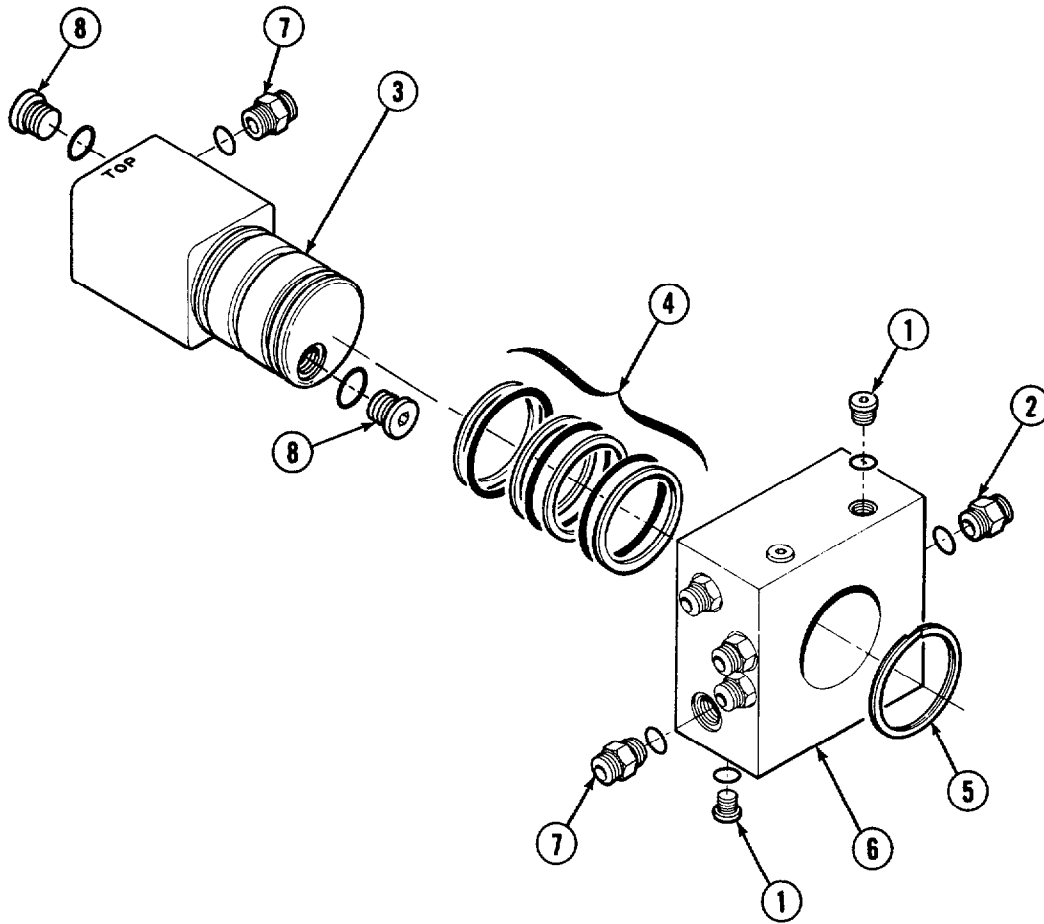
● See page 11 for replacement parts breakdown.  
 ■ Maximum clamp handling capacity.

# Fixed Frame Revolving Connection Fixed Short Arm



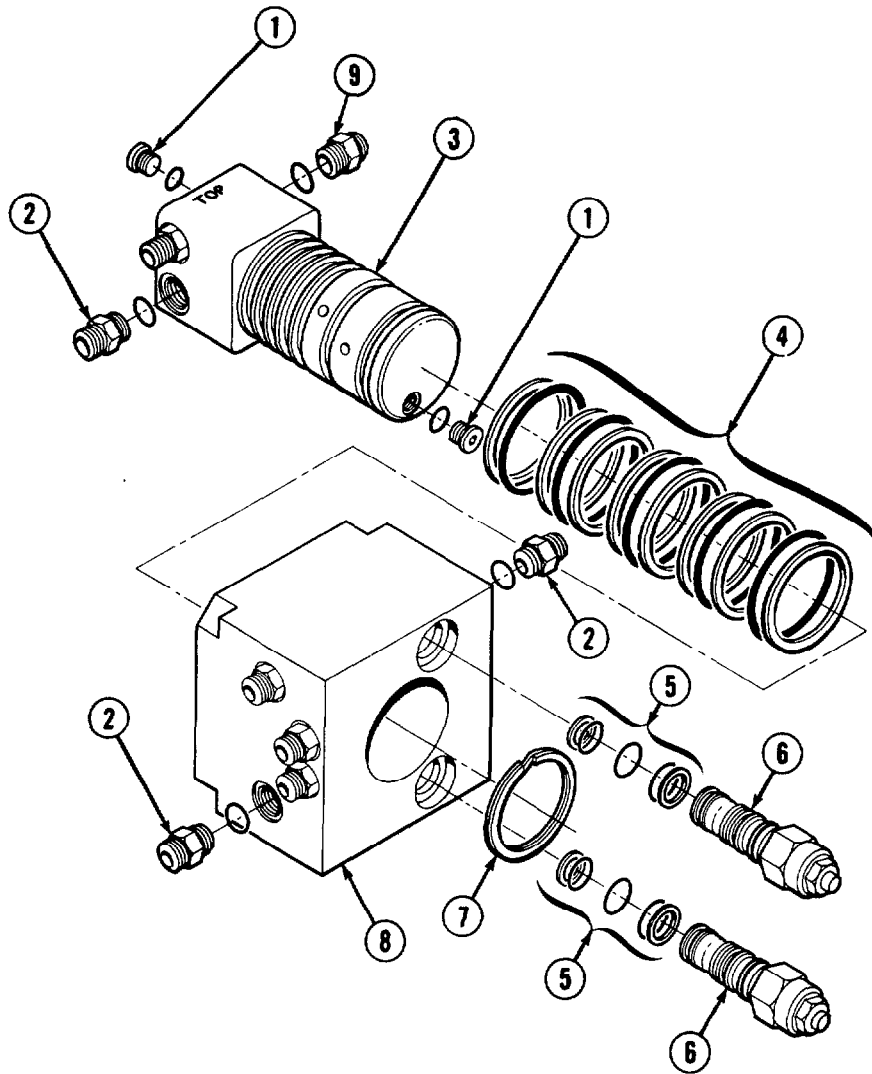
<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		674951	Revolving Connection
1	4	609234	Fitting, 4
2	4	604511	Fitting, 6-6
3	1	675075	Shaft
4	1	674956	Service Kit
5	1	7215	Snap Ring
6	1	675076	Body
7	6	604510	Fitting, 6
8	2	601377	Fitting, 8-8

# Fixed Frame Revolving Connection Positioned Short Arm



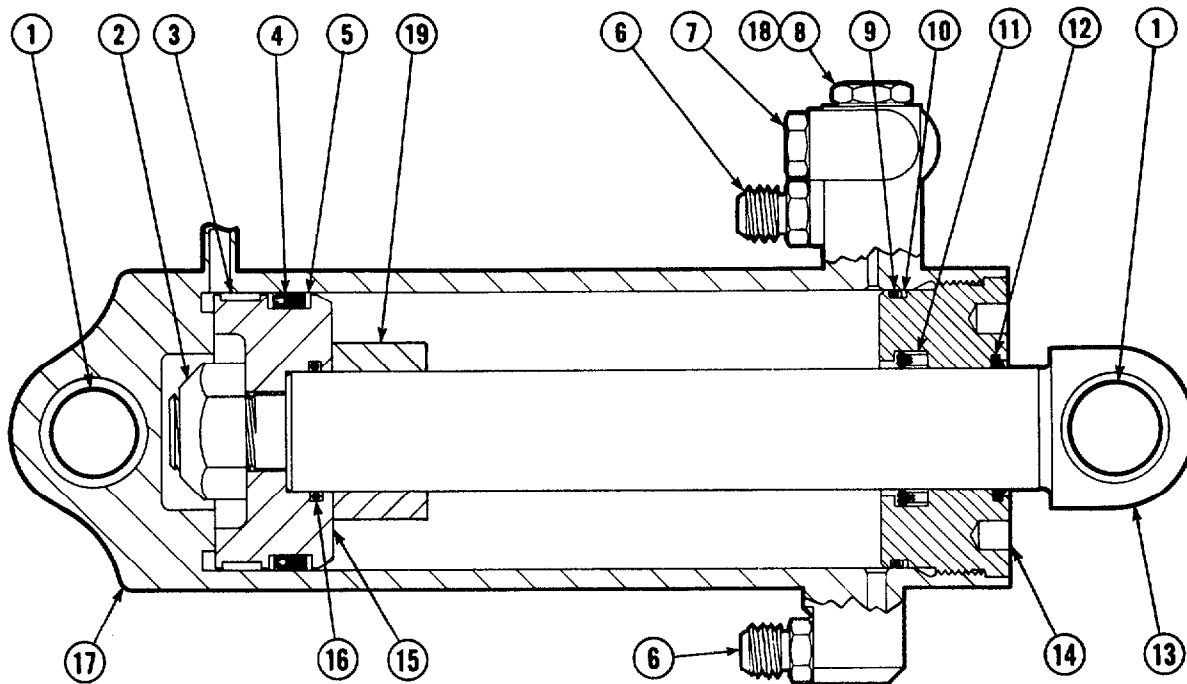
<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		674950	Revolving Connection
1	4	609234	Fitting, 4
2	8	604511	Fitting, 6-6
3	1	675075	Shaft
4	1	674956	Service Kit
5	1	7215	Snap Ring
6	1	675076	Body
7	2	601377	Fitting, 8-8
8	2	604510	Fitting, 6

# Swing Frame Revolving Connection

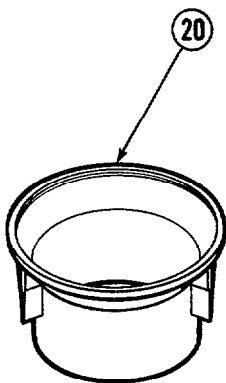


77F			
REF	QTY	PART NO.	DESCRIPTION
		674949	Revolving Connection
1	4	604510	Fitting, 6
2	12	604511	Fitting, 6-6
3	1	674984	Shaft
4	1	674955	Service Kit
5	2	667516	Service Kit
6	2	674732	Valve
7	1	7215	Snap Ring
8	1	674996	Body
9	2	601377	Fitting, 8-8

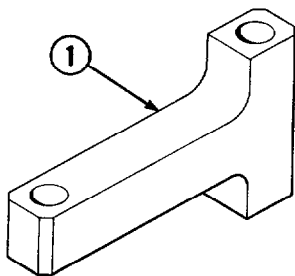
# Short Arm Cylinder Swing Frame



77F				
REF	QTY	60" Roll ■	72" Roll ■	DESCRIPTION
		PART NO.	PART NO.	
		555689	555759	Cylinder Assembly
1	3	674843	674843	Bearing
2	1	667991	667991	Nut
●3	1	660769	660769	Bearing
●4	1	555727	555727	Seal
●5	2	638295	638295	Backup Ring
6	2	604511	604511	Fitting, 6-6
7	1	611314	611314	Fitting, 6
8	1	554278	554278	Check Valve
●9	1	2801	2801	O-ring
●10	1	615144	615144	Backup Ring
●11	1	554598	554598	Seal
●12	1	628047	628047	Wiper
13	1	555771	555773	Rod
14	1	555724	555724	Retainer
15	1	555723	555723	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
		555725	555725	Service Kit



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

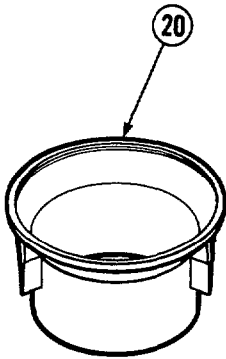
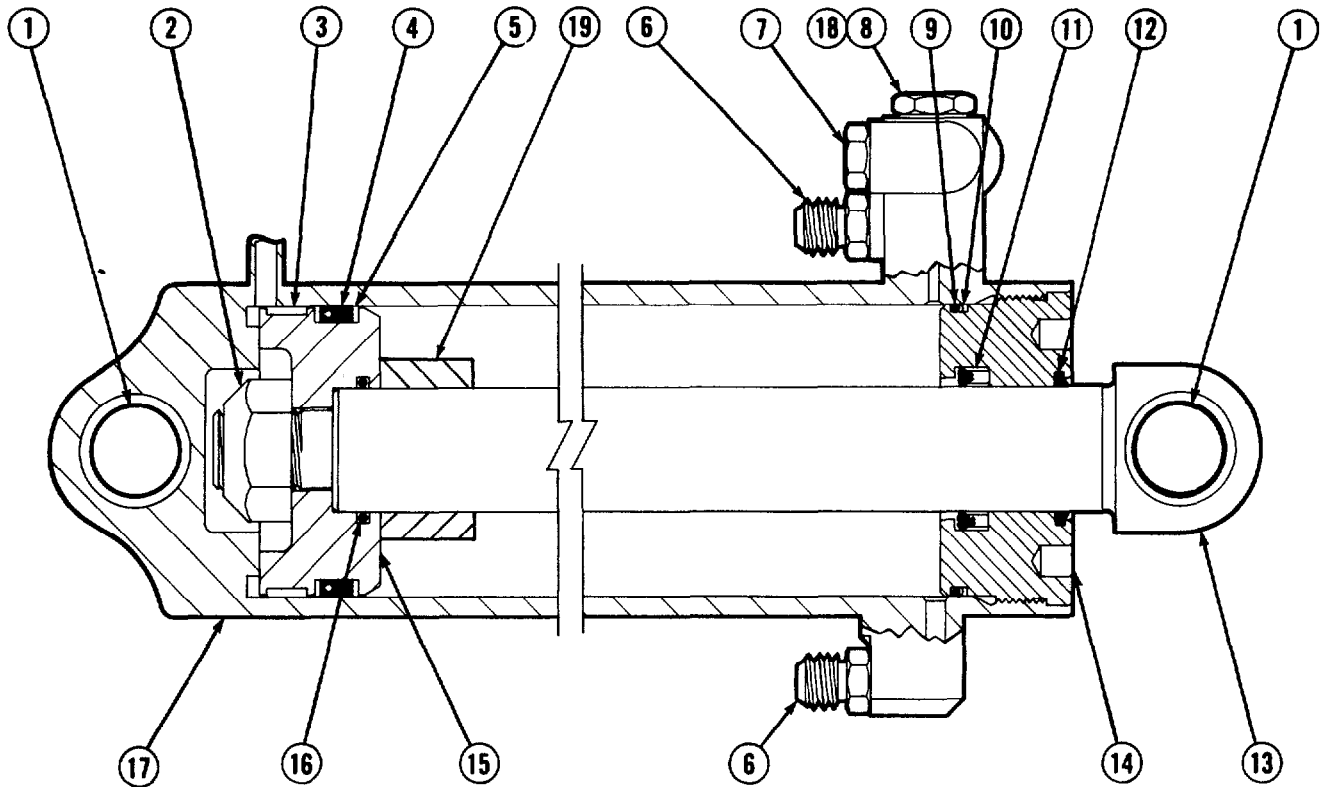


## Short Arm Link, Fixed Short Arm

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

- Maximum clamp handling capacity.

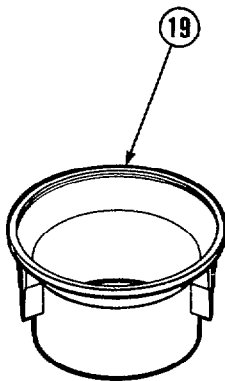
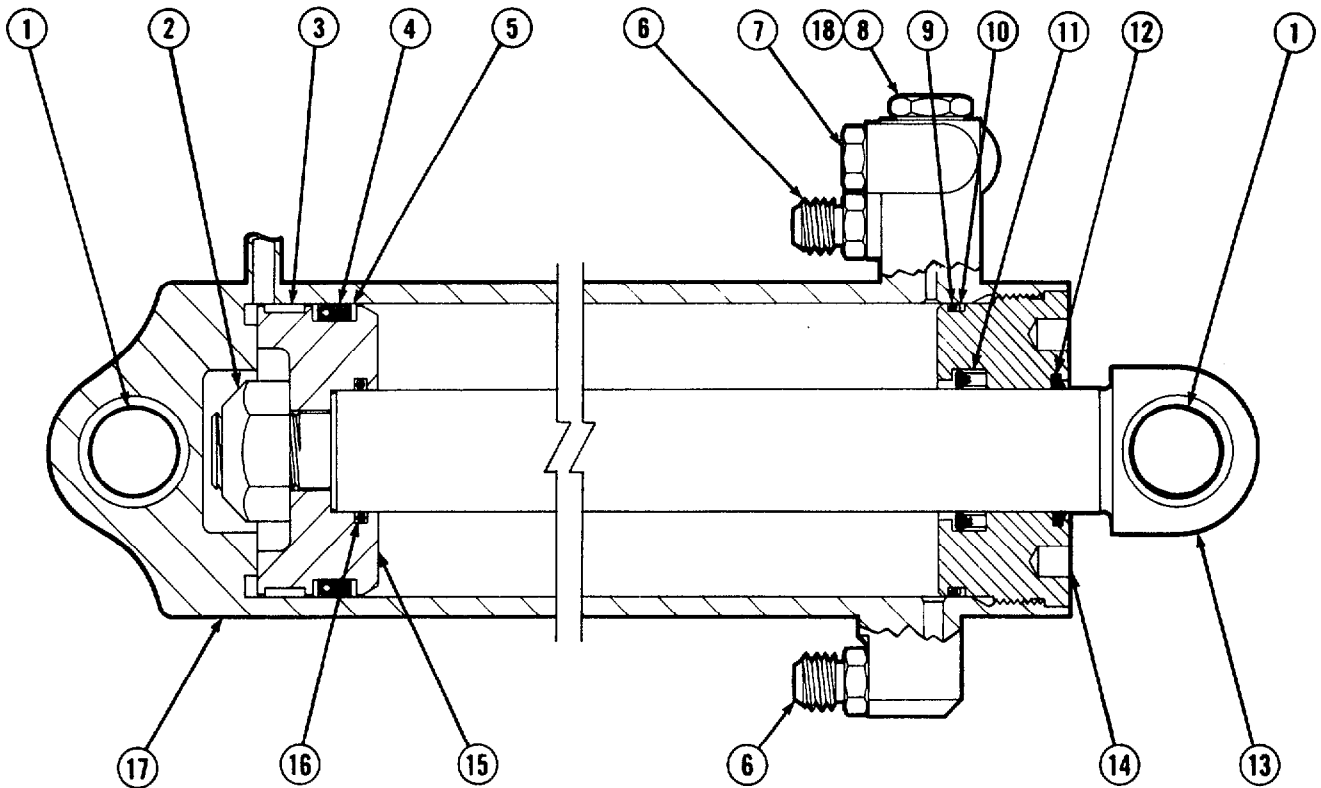
# Short Arm Cylinder Fixed Frame – Positioned Short Arm



<b>77F</b>				
REF	QTY	60" Roll ■	72" Roll ■	DESCRIPTION
		PART NO.	PART NO.	
		555690	555758	Cylinder Assembly
1	3	674843	674843	Bearing
2	1	667991	667991	Nut
●3	1	660769	660769	Bearing
●4	1	555727	555727	Seal
●5	2	638295	638295	Backup Ring
6	2	604511	604511	Fitting, 6-6
7	1	611314	611314	Fitting, 6
8	1	554278	554278	Check Valve
●9	1	2801	2801	O-ring
●10	1	615144	615144	Backup Ring
●11	1	554598	554598	Seal
●12	1	628047	628407	Wiper
13	1	555742	555772	Rod
14	1	555724	555724	Retainer
15	1	555723	555723	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
		555725	555725	Service Kit

● Included in Service Kit 555725.  
 ■ Maximum clamp handling capacity.

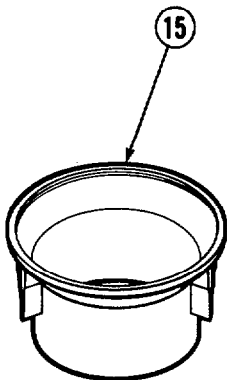
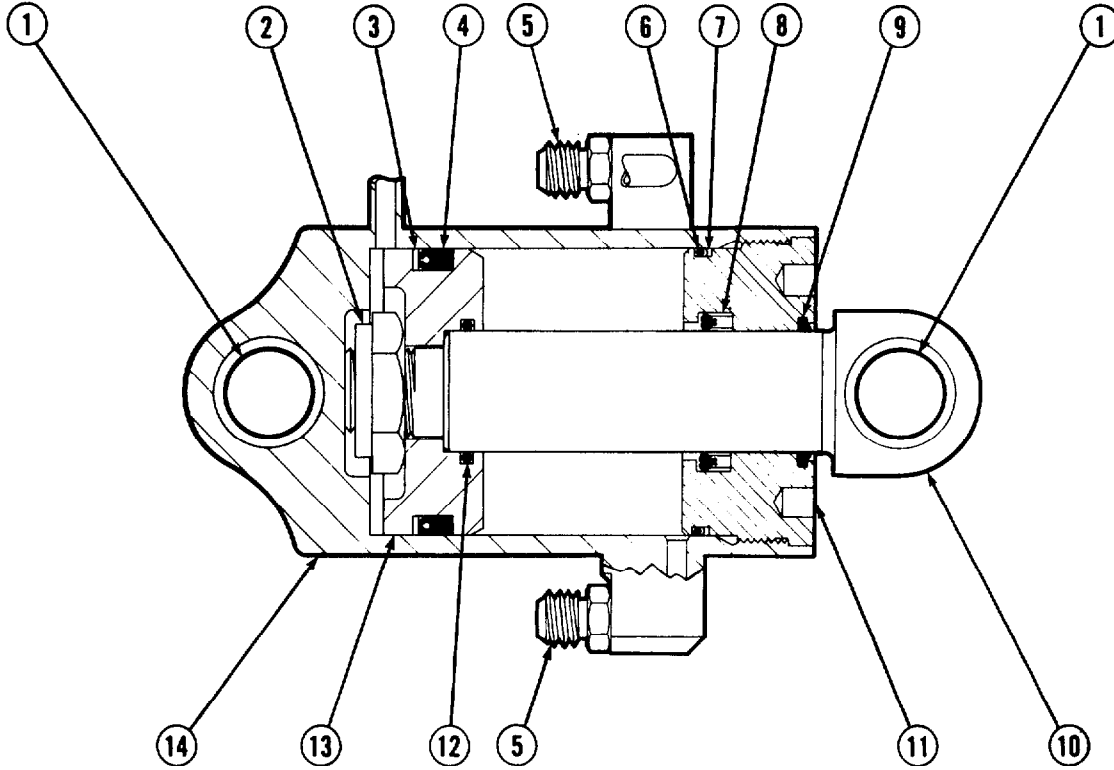
# Long Arm Cylinder Fixed/Swing Frame



77F			
REF	QTY	PART NO.	DESCRIPTION
		555691	Cylinder Assembly
1	3	674843	Bearing
2	1	667991	Nut
●3	1	660769	Bearing
●4	1	555727	Seal
●5	2	638295	Backup Ring
6	2	604511	Fitting, 6-6
7	1	611314	Fitting, 6
8	1	554278	Valve
●9	1	2801	O-ring
●10	1	615144	Backup Ring
●11	1	554598	Seal
●12	1	628047	Wiper
13	1	555719	Rod
14	1	555724	Retainer
15	1	555723	Piston
●16	1	2722	O-ring
17	1	555718	Shell
18	1	667516	Check Valve Service Kit
19	1	672910	Seal Loader
		555725	Service Kit

● Included in Service 555725.

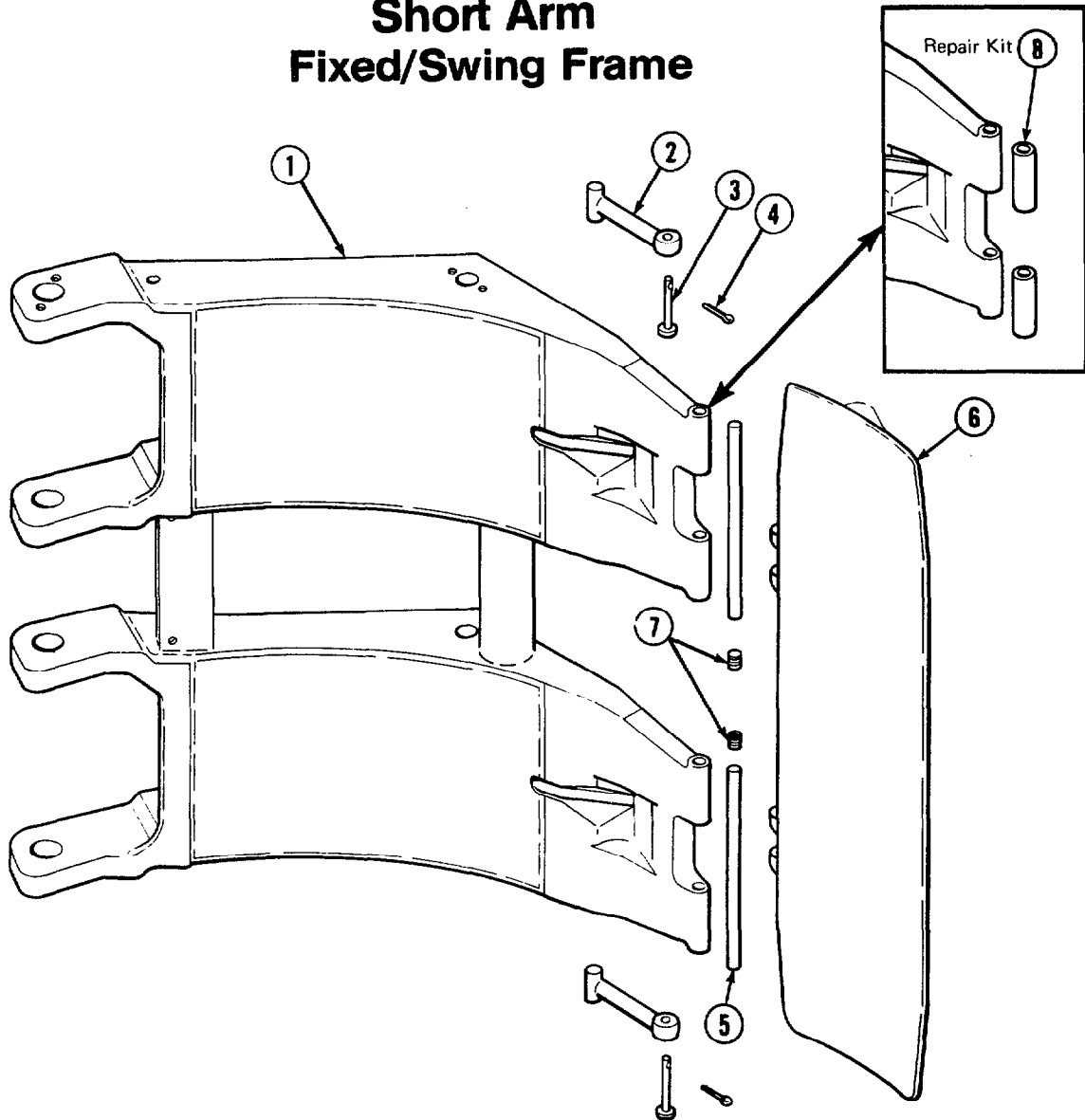
# Swing Cylinder Swing Frame



<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		555688	Cylinder Assembly
1	3	674843	Bearing
2	1	555010	Nut
●3	1	638295	Backup Ring
●4	1	555727	Seal
5	2	604511	Fitting
●6	1	2801	O-ring
●7	1	615144	Backup Ring
●8	1	554598	Seal
●9	1	628047	Wiper
10	1	555777	Rod
11	1	555724	Retainer
●12	1	2722	O-Ring
13	1	555723	Piston
14	1	555776	Shell
15	1	672910	Seal Loader
		555725	Service Kit

● Included in Service Kit 555725.

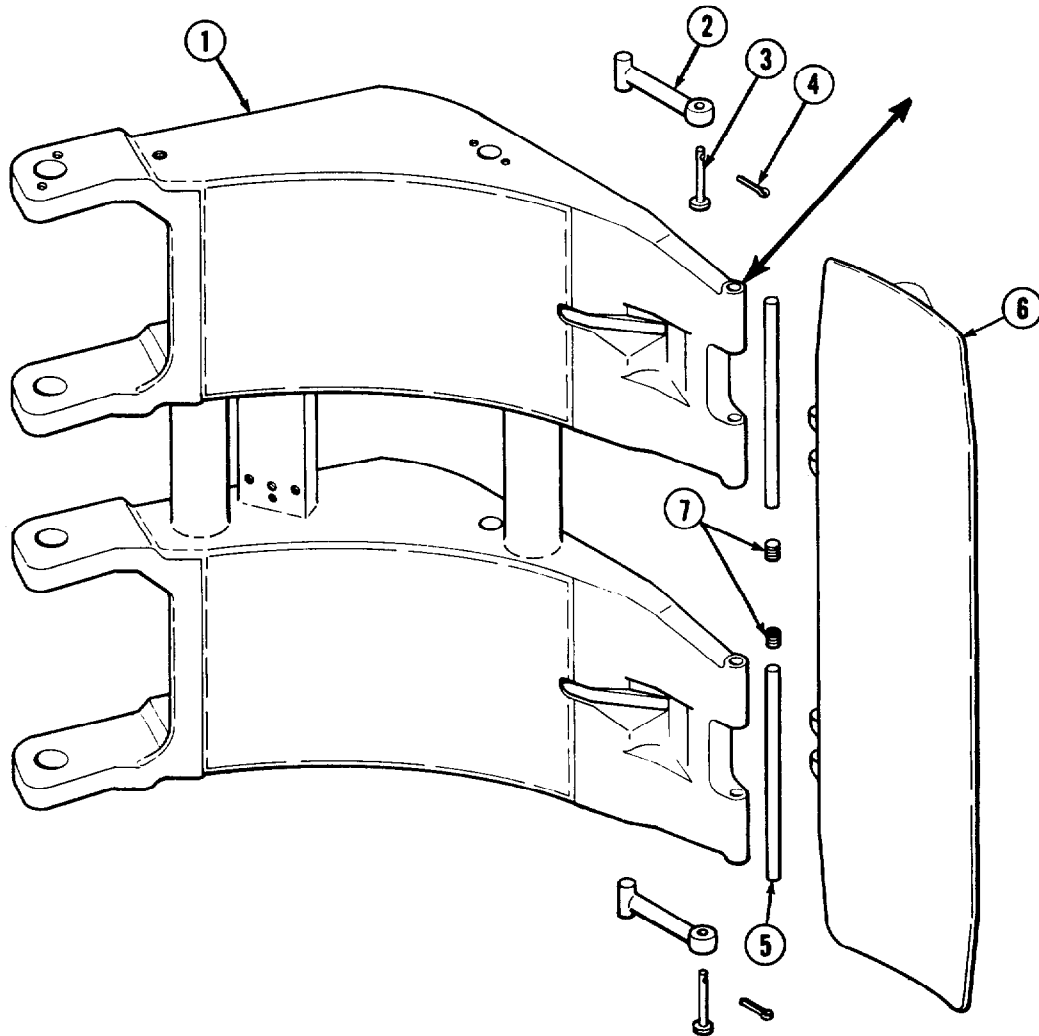
# Short Arm Fixed/Swing Frame



77F				
REF	QTY	60" Roll	72" Roll	DESCRIPTION
		PART NO.	PART NO.	
		674945	675092	Arm Assembly
1	1	674967	675095	Arm
2	2	674994	674994	Link
3	2	673378	673378	Clevis Pin
4	2	6517	6517	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

■ Maximum clamp handling capacity.

# Long Arm Fixed/Swing Frame

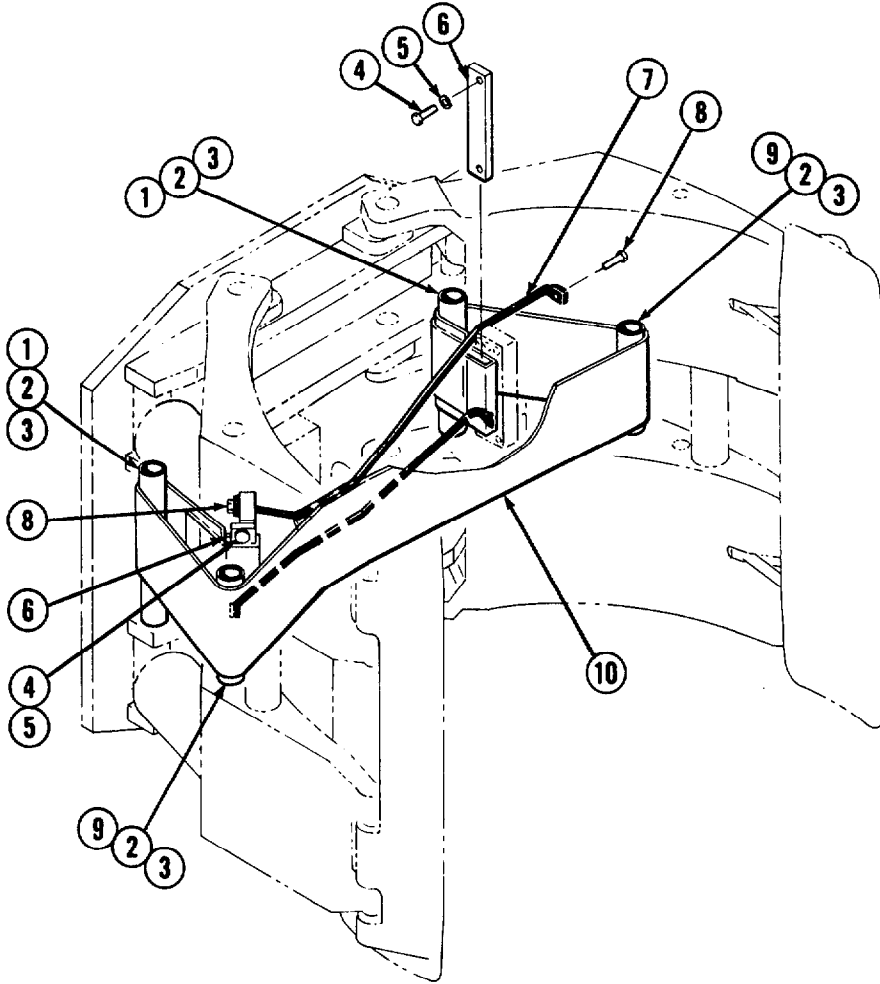


<b>77F</b>						
REF	QTY	Fixed Frame		Swing Frame		DESCRIPTION
		60" Roll ■	72" Roll ■	60" Roll ■	72" Roll ■	
		PART NO.	PART NO.	PART NO.	PART NO.	
		674947	675093	674946	675094	Arm Assembly
1	1	674970	675096	674973	675097	Arm
2	2	674994	674994	674994	674994	Link
3	2	673378	673378	673378	673378	Clevis Pin
4	2	6517	6517	6517	6517	Cotter Pin
5	2	674993	674993	674993	674993	Pin
6	1	674962	674962	674962	674962	Contact Pad
7	2	6609	6609	6609	6609	Plug
8	1	676810	676810	676810	676810	Arm Tip Repair Kit

■ Maximum clamp handling capacity.



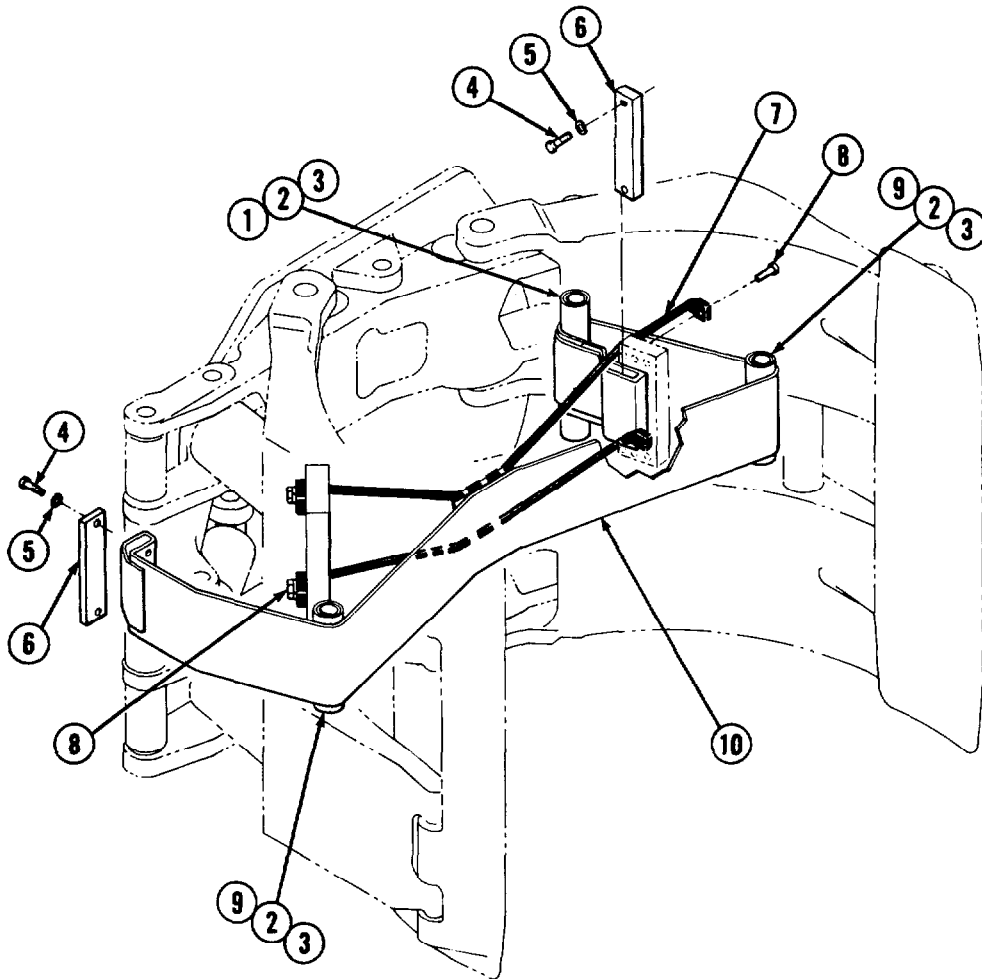
# Adjustable Bumper Group Option Fixed Frame



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	675025	Tie Down
8	4	669351	Capscrew
9	2	675026	Roller
10	1	675030	Belt - 60" Roll ■
	1	675031	Belt - 72" Roll ■

■ Maximum clamp handling capacity.

# Adjustable Bumper Group Option Swing Frame

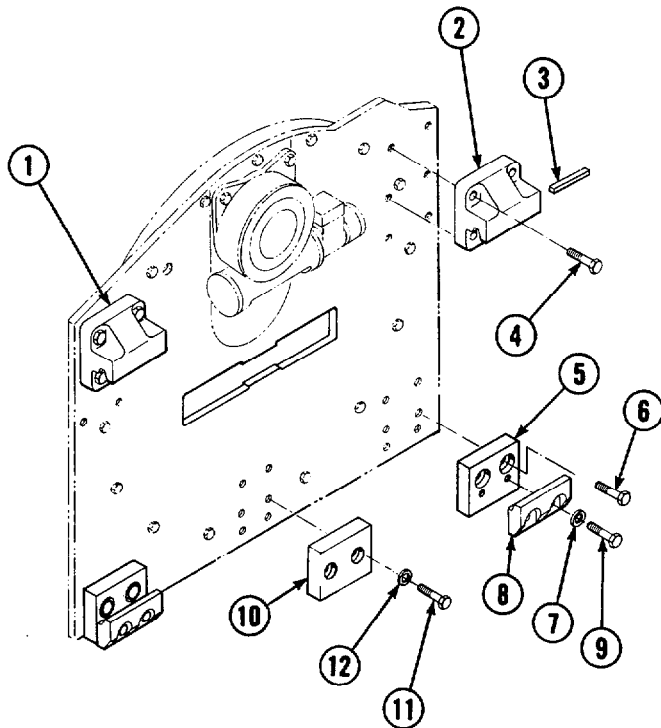
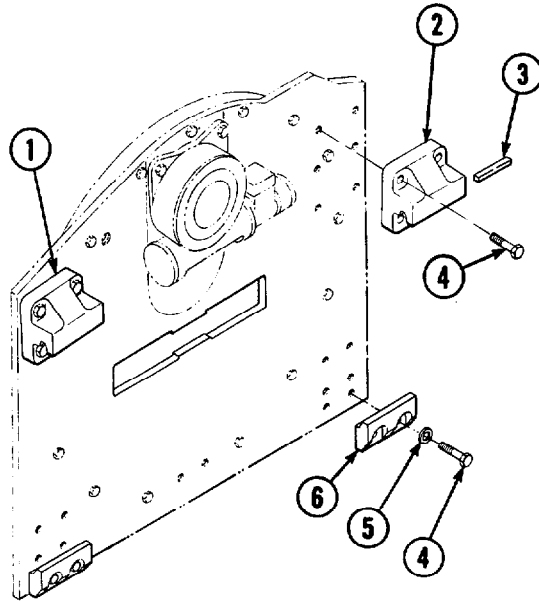


<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		675032	Bumper Group - 60" Roll ■
		675033	Bumper Group - 72" Roll ■
1	1	675027	Roller
2	6	674041	Bearing
3	6	660200	Shim
4	4	3655	Capscrew, 1/2 NC x 1.5
5	4	6455	Lockwasher, 1/2 ID
6	2	674850	Bar
7	2	675025	Tie Down
8	4	669351	Capscrew
9	2	675026	Roller
10	1	675028	Belt - 60" Roll ■
	1	675029	Belt - 72" Roll ■

■ Maximum clamp handling capacity.

# Mounting Groups

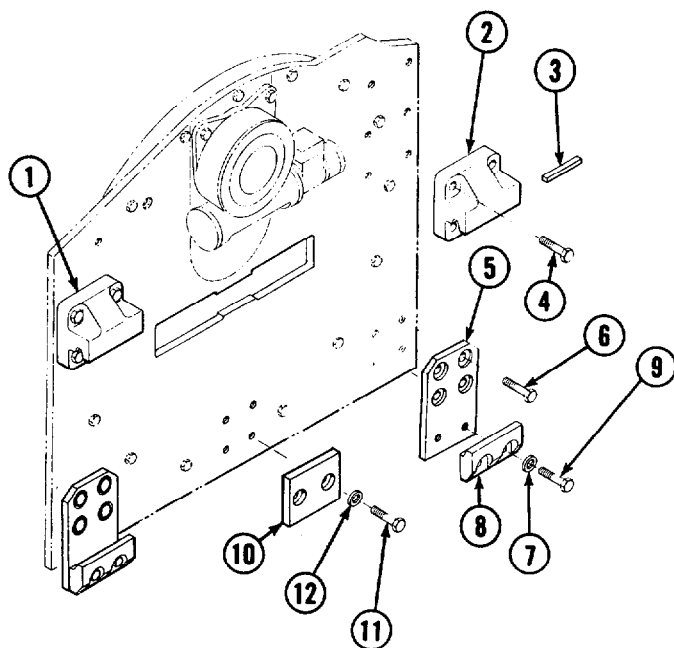
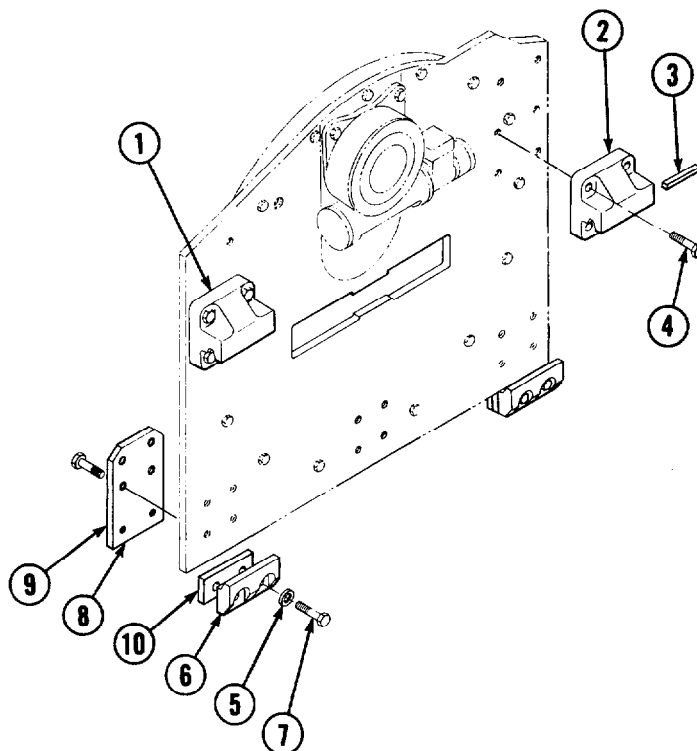
77F Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		675070	Mounting Group
1	1	670684	Upper Hook - L.H.
2	1	670685	Upper Hook - R.H.
3	1	670704	Stop Kit
4	12	667765	Capscrew, 5/8 NC x 1.50 GR5
5	4	667225	Washer, 5/8 ID
6	2	667371	Lower Hook



77F Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		675071	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, 5/8 NC x 1.50 GR5
5	2	675080	Spacer
6	4	673387	Capscrew, 5/8 NC x 1.75 GR5
7	4	667225	Washer, 5/8 ID
8	2	667371	Lower Hook
9	4	674252	Capscrew, 5/8 NC x 2.75 GR5
10	1	675081	Spacer
11	2	3605	Capscrew, 3/8 NC x 1.5
12	2	6317	Lockwasher, 3/8 ID

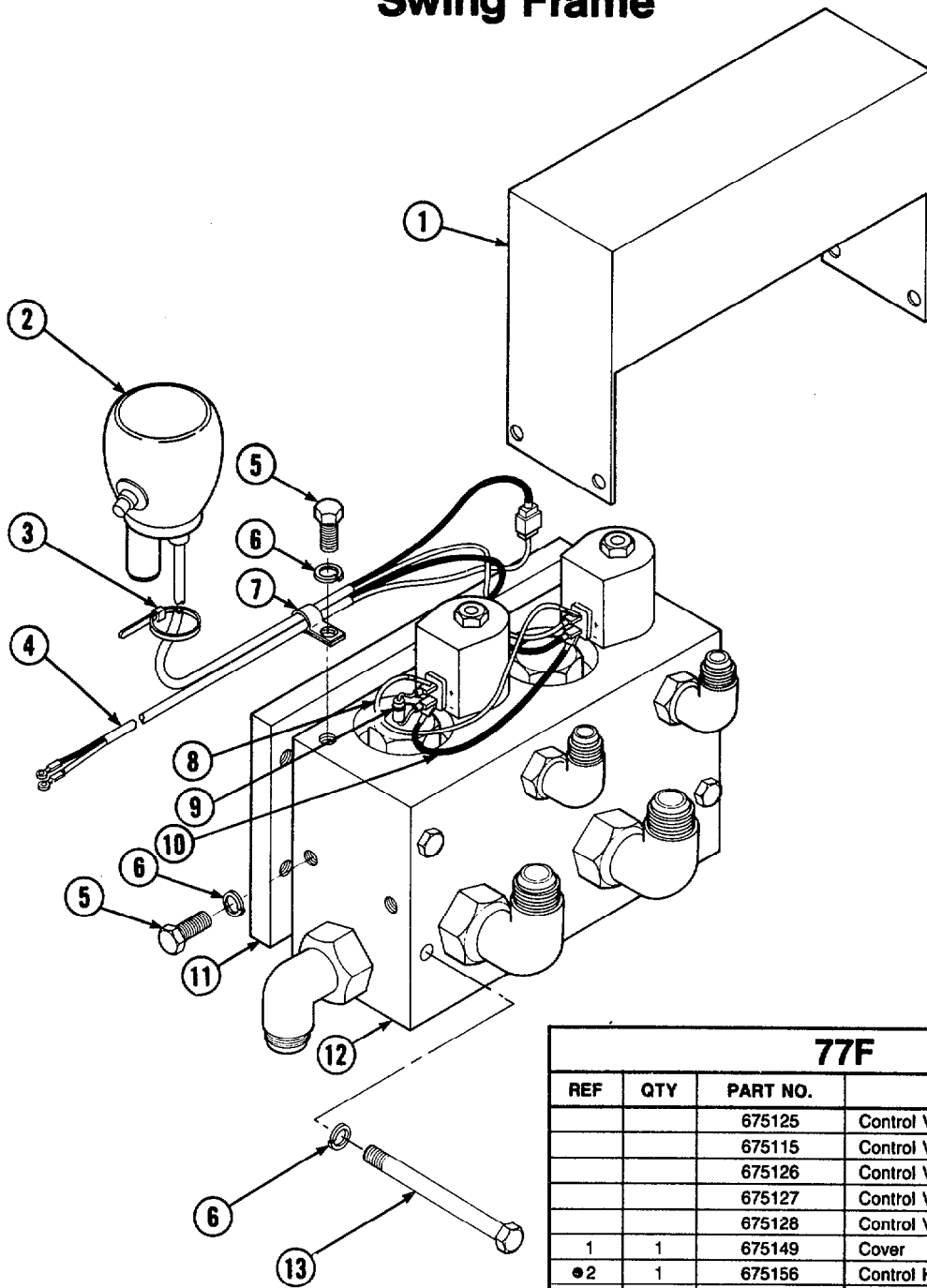
# Mounting Groups

77F Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		675072	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, 3/4 NC x 1.75 GR5
5	4	670692	Washer, 13/16 ID
6	2	670694	Lower Hook
7	4	675091	Capscrew, 3/4 NC x 3.00 GR5
8	2	675082	Extension
9	8	673387	Capscrew, 5/8 NC x 1.75 GR5
10	2	675083	Spacer



77F Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		675073	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, 3/4 NC x 1.5 GR5
5	2	675082	Extension
6	8	673387	Capscrew, 5/8 NC x 1.75 GR5
7	4	670692	Washer, 13/16 ID
8	2	670694	Lower Hook
9	4	675079	Capscrew, 3/4 NC x 2.0 GR5
10	1	675081	Spacer
11	2	4472	Capscrew, 3/8 NC x 1.5
12	2	6317	Lockwasher, 3/8 ID

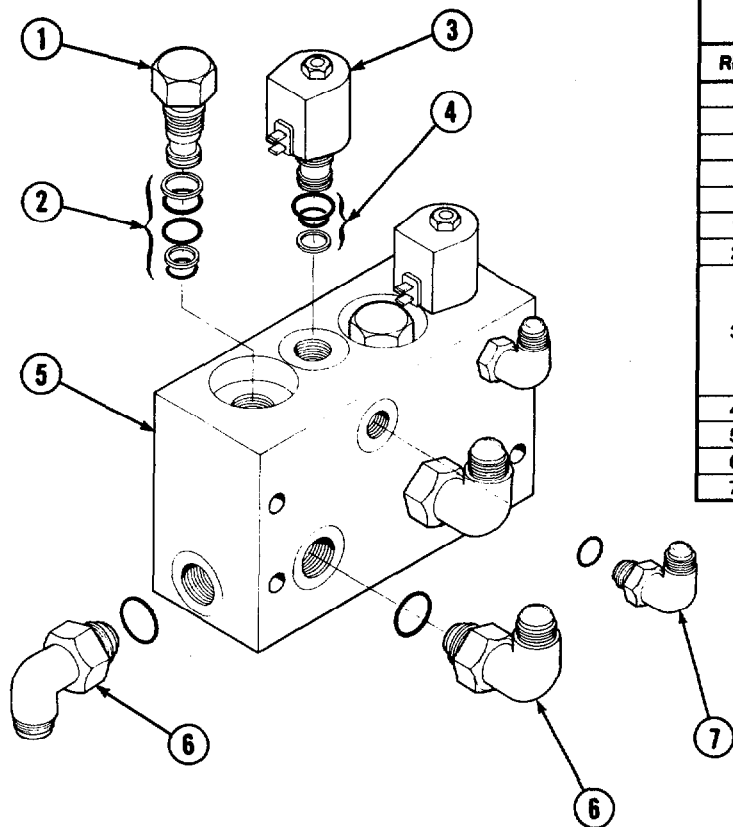
# Solenoid Valve Group Swing Frame



77F			
REF	QTY	PART NO.	DESCRIPTION
		675125	Control Valve Group - 12 V
		675115	Control Valve Group - 24 V
		675126	Control Valve Group - 36 V
		675127	Control Valve Group - 48 V
		675128	Control Valve Group - 72 V
1	1	675149	Cover
● 2	1	675156	Control Knob
3	1	665249	Tie
4	1	675077	Cord
5	5	3550	Capscrew, 1/4 NC x .375
6	8	6257	Lockwasher, 1/4 ID
7	1	675148	Clamp
8	1	675153	Wire - White
9	1	669432	Diode
10	1	675154	Wire - Black
11	1	675152	Plate
● 12	1	675136	Solenoid Valve Assy. - 12 V
	1	675137	Solenoid Valve Assy. - 24 V
	1	675138	Solenoid Valve Assy. - 36 V
	1	675139	Solenoid Valve Assy. - 48 V
	1	675140	Solenoid Valve Assy. - 72 V
13	3	3563	Capscrew, 1/4 NC x 3.00

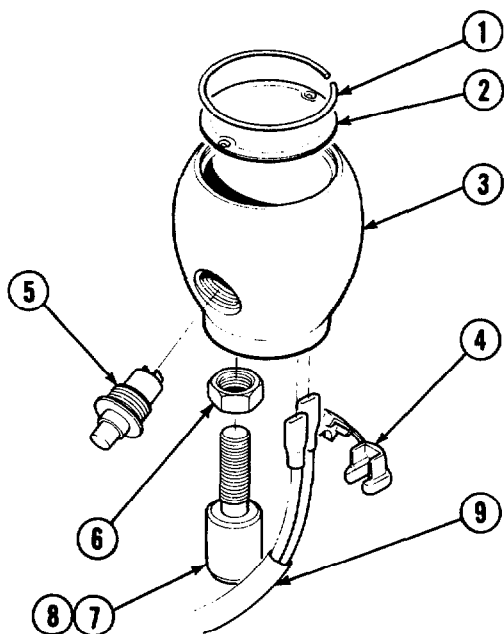
● See page 23 for parts breakdown.

# Solenoid Valve Swing Frame



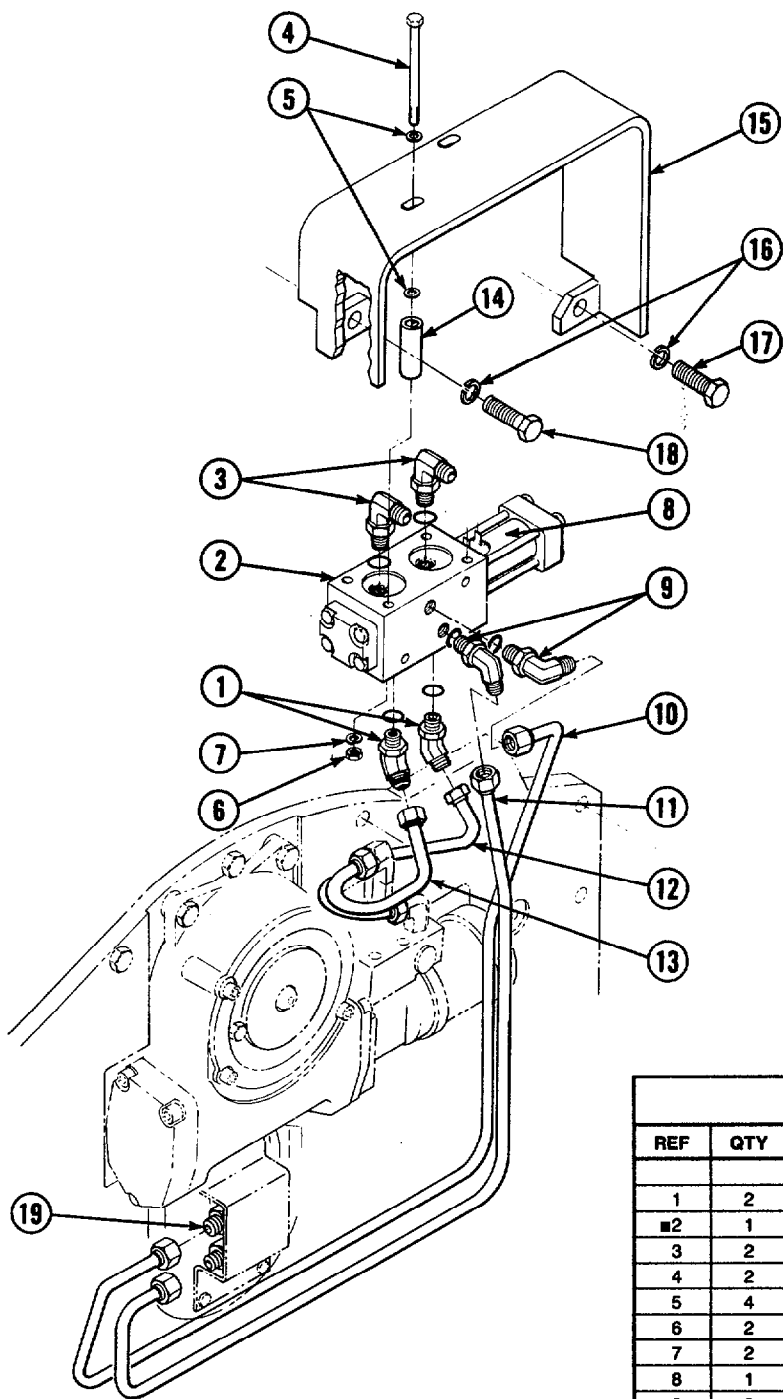
77F			
REF	QTY	PART NO.	DESCRIPTION
		675136	Solenoid Valve Assy. - 12 V
		675137	Solenoid Valve Assy. - 24 V
		675138	Solenoid Valve Assy. - 36 V
		675139	Solenoid Valve Assy. - 48 V
		675140	Solenoid Valve Assy. - 72 V
1	2	661816	Check Valve
2	2	656223	Service Kit
3	2	675142	Solenoid Valve - 12 V
	2	675143	Solenoid Valve - 24 V
	2	675144	Solenoid Valve - 36 V
	2	675145	Solenoid Valve - 48 V
	2	675146	Solenoid Valve - 72 V
4	2	676777	Service Kit
5	1	675147	Valve Body
6	4	601250	Fitting, 8-8
7	2	601676	Fitting, 6-6

# Control Knob



77F			
REF	QTY	PART NO.	DESCRIPTION
		675156	Control Knob
1	1	665250	Snap Ring
2	1	675131	Cover
3	1	665012	Knob
4	1	665076	Strain Relief
5	1	665004	Switch
6	1	5902	Nut, 3/8 NC
7	1	665081	Adapter, 3/8 NC
8	1	672087	Adapter, 1/2 NC
9	1	665077	Cable Assembly

# Solenoid Adaption Option Fixed Frame



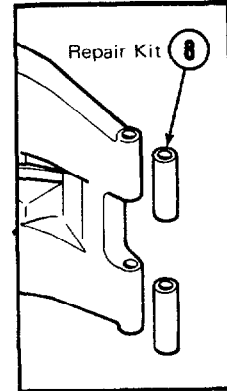
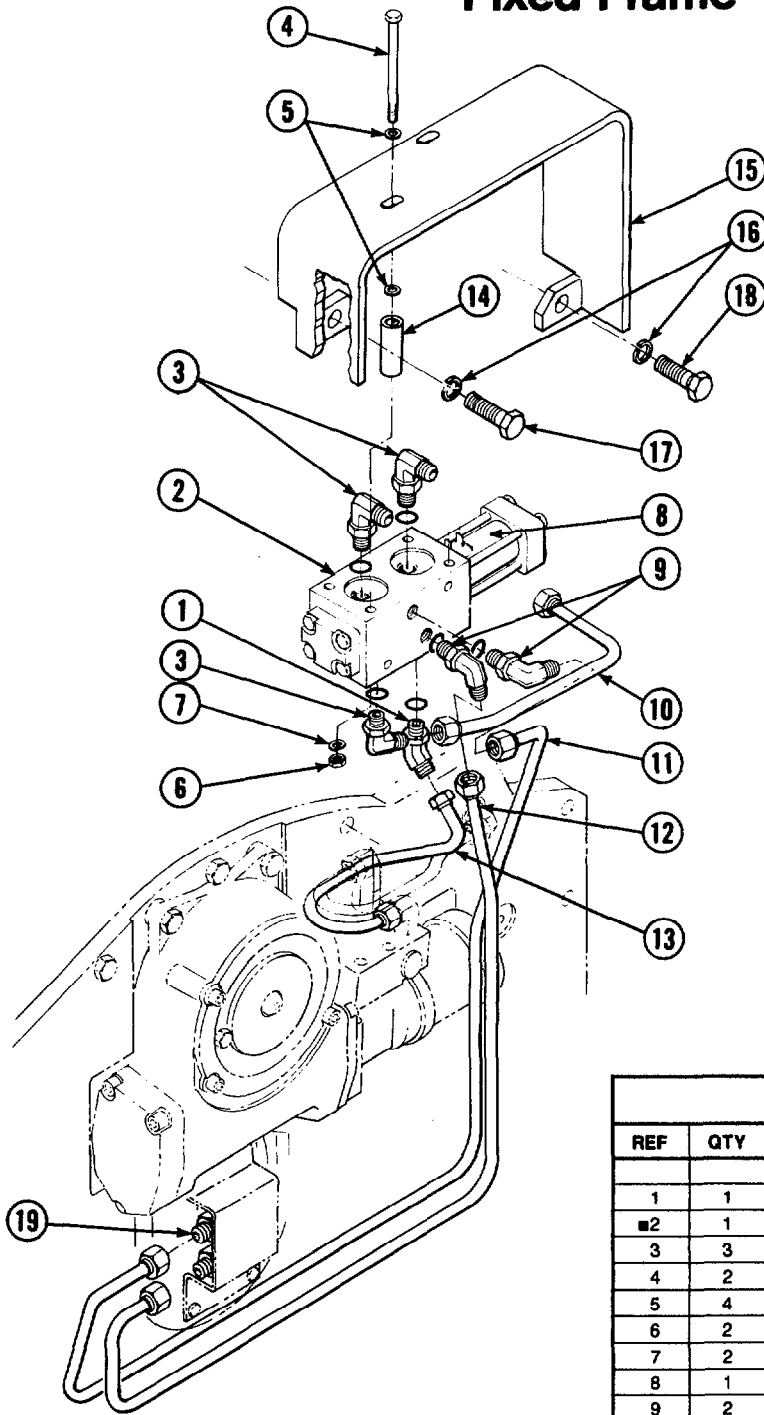
<b>77F</b>			
REF	QTY	PART NO.	DESCRIPTION
		676818	Solenoid Adaption Group
1	2	651302	Fitting
■2	1	•	Solenoid Valve
3	2	651303	Fitting
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16 ID
6	2	15251	Nut, 5/16
7	2	6287	Lockwasher, 5/16 ID
8	1	•	Coil
9	2	651303	Fitting
10	1	676820	Tube
11	1	676821	Tube
12	1	676822	Tube
13	1	676823	Tube
14	2	665115	Tube
15	1	675411	Guard
16	2	6290	Lockwasher, 1/2 ID
17	1	601854	Capscrew, 1/2 NC x 1.0
18	1	636408	Capscrew, 1/2 NC x 2.0
19	2	601377	Fitting

\*See page 26.

■Includes item 8.



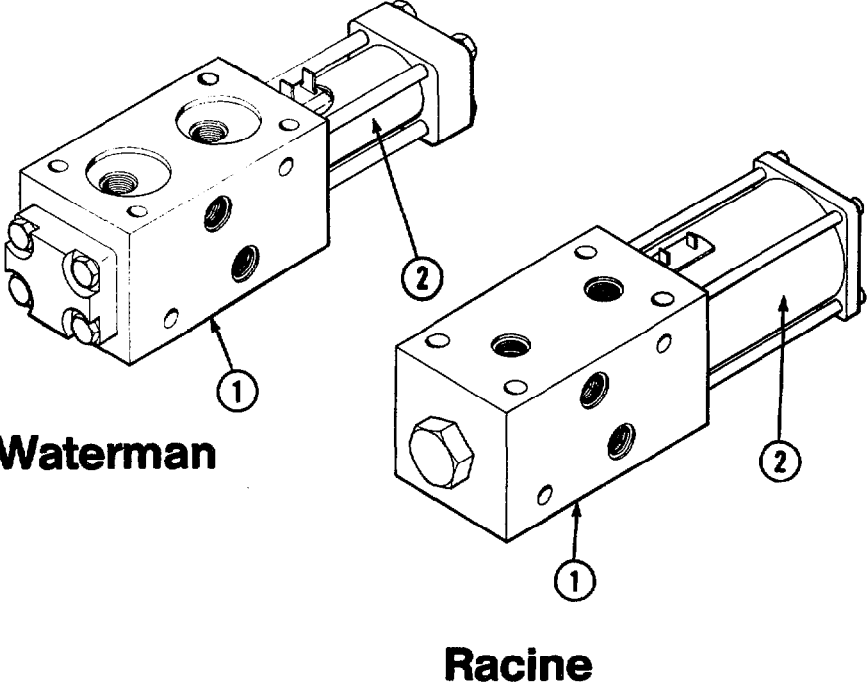
# Solenoid Adaption Option for 180° Stop Group Fixed Frame



77F			
REF	QTY	PART NO.	DESCRIPTION
		676819	Solenoid Adaption Group
1	1	651302	Fitting
2	1	•	Solenoid Valve
3	3	651303	Fitting
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16 ID
6	2	15251	Nut, 5/16
7	2	6287	Lockwasher, 5/16 ID
8	1	•	Coil
9	2	651303	Fitting
10	1	671518	Tube
11	1	676820	Tube
12	1	676821	Tube
13	1	676822	Tube
14	2	665115	Tube
15	1	675411	Guard
16	2	6290	Lockwasher, 1/2 ID
17	1	601854	Capscrew, 1/2 NC x 1.0
18	1	636408	Capscrew, 1/2 NC x 2.0
19	2	601377	Fitting

\*See page 26.  
 ■Includes item 8.

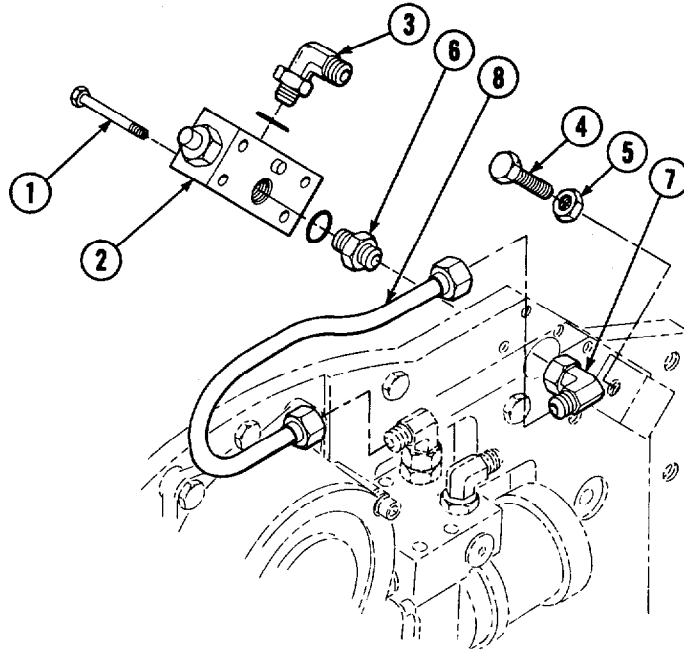
# Solenoid Valves for Fixed Frame Option



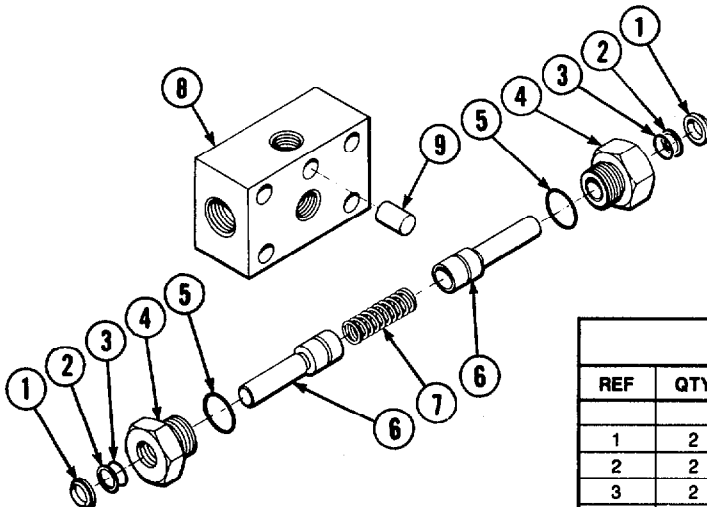
**Note:** Racine and Waterman Solenoid Valve assemblies are interchangeable as a unit. Coils must match valve.

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

# 180° Stop Group Option



77F			
REF	QTY	PART NO.	DESCRIPTION
		670703	Stop Group
1	4	670544	Capscrew, 3/8 NC x 1.75
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, 8-8
8	1	670702	Tube Assembly



## 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

# Recommended Spare Parts List

<b>77F PAPER ROLL CLAMPS</b>				
PART NO.	DESCRIPTION	ATTACHMENTS SERVICED		
		1-5	6-15	16-25
675007	<b>FRAME GROUP</b> Bushing	8	16	16
675008 675006	<b>SWING GROUP</b> Bushing Bushing	8 4	16 8	16 8
<b>COMMON COMPONENTS - FIXED FRAME</b>				
660200	Shim	8	16	16
675018	Pin	1	2	2
673385	Drive Pin	4	8	8
675022	Pin	1	2	2
675020	Pin	1	2	2
673379	Shim	16	32	32
<b>COMMON COMPONENTS - SWING FRAME</b>				
675024	Roller	2	4	4
675021	Pin	1	2	2
673385	Drive Pin	5	10	10
675018	Pin	1	2	2
675019	Pin	1	2	2
675022	Pin	1	2	2
673379	Shim	16	32	32
660200	Shim	10	20	20
675020	Pin	1	2	2
675023	Pin	1	2	2
<b>DRIVE GROUP</b>				
675608	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
675474	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
<b>REVOLVING CONNECTION - FIXED FRAME</b>				
674956	Shaft Service Kit	1	2	2
<b>REVOLVING CONNECTION - SWING FRAME</b>				
674955	Shaft Service Kit	1	2	2
667516	Check Valve Service Kit	2	4	4
<b>SHORT AND LONG ARM CYLINDER</b>				
555725	Cylinder Service Kit	2	4	4
667516	Check Valve Service Kit	2	4	4
<b>SWING CYLINDER</b>				
555725	Cylinder Service Kit	1	2	2
<b>SHORT AND LONG ARM</b>				
674993	Pin	2	4	4
674962	Contact Pad	0	1	2
<b>STOP KIT</b>				
670704	Stop Kit	1	2	2
<b>PAINT, CASCADE YELLOW</b>				
668209	12 oz. Aerosol Can	1	2	2
<b>PUBLICATIONS</b>				
674512	Service Manual			
674509	Operator's Guide - Fixed Frame			
676268	Operator's Guide - Swing Frame			



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