



Parts Manual

70D Revolving Clamps

Serial Numbers 676232 through 687738

Fork Clamps
Bale Clamps
Clamps without Arms

Manual Number 677705 R-1

cascade[®]

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How To Use This Manual

Introduction

This manual illustrates service replacement parts for standard production Cascade 70D Revolving Clamps.

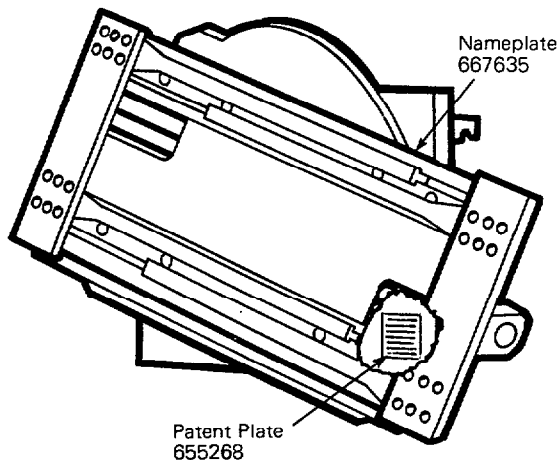
The parts manuals for attachments designed by the Application Engineering Department have an A.E.D. designation on the cover of the manual.

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 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 on the nameplate 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.

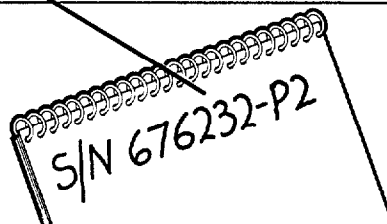
Lift Truck Dealers - To order Service Replacement Parts or Service Literature, contact:

Cascade Parts Depot
2501 Sheridan Avenue
P.O. Box 360
Springfield, Ohio 45505
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.

		ATTACHMENT CAPACITY	
LIFT TRUCK ATTACHMENT		POUNDS AT _____ INCH LOAD CENTER	
SERIAL NUMBER	676232-P2	CAPACITY OF TRUCK AND ATTACHMENT COMBINATION MAY BE LESS THAN ATTACHMENT CAPACITY SHOWN ABOVE. CONSULT TRUCK NAMEPLATE.	
CATALOG NUMBER	70D-CN-20G	RECOMMENDED SYSTEM PRESSURE - 2000 PSI	
ADDITIONAL EQUIPMENT		MAXIMUM SYSTEM PRESSURE - 2300 PSI	
ADDITIONAL EQUIPMENT		Cascade Corporation	
ADDITIONAL EQUIPMENT		FOR TECHNICAL ASSISTANCE, CONTACT	FOR PARTS AND SERVICE MANUALS CONTACT
		503-669-1511	513-322-1199
		PORTLAND, OREGON USA	SPRINGFIELD, OHIO USA



Serial Number Index

Serial Number	Model	Frame Group	Cylinder Group	Rotator Group	Drive Group	Revolving Conn.	Arm Group	Mount Group	Solenoid Adaption	180° Stop
676232	70D	1	3	4	6	9	11	13	18	22
676233	70D	1	3	4	6	9	11	14	18	22
676234	70D	1	3	4	6	9	11	15	18	22
676235	70D	1	3	4	6	9	11	16	18	22
676252	70D	1	3	4	6	9	12	13	18	22
676253	70D	1	3	4	6	9	12	14	18	22
676254	70D	1	3	4	6	9	12	17	18	22
676255	70D	1	3	4	6	9	12	17	18	22
676256	70D	1	3	4	6	9	12	13	18	22
676257	70D	1	3	4	6	9	12	14	18	22
676258	70D	1	3	4	6	9	12	17	18	22
676259	70D	1	3	4	6	9	12	17	18	22
676260	70D	1	3	4	6	9	12	13	18	22
676261	70D	1	3	4	6	9	12	14	18	22
676262	70D	1	3	4	6	9	12	17	18	22
676263	70D	1	3	4	6	9	12	17	18	22
676264	70D	1	3	4	6	9	12	13	18	22
676265	70D	1	3	4	6	9	12	14	18	22
676266	70D	1	3	4	6	9	12	17	18	22
676267	70D	1	3	4	6	9	12	17	18	22
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676970	70D	1	3	4	6	9	12	14	18	22
676971	70D	1	3	4	6	9	12	17	18	22
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676978	70D	1	3	4	6	9	12	14	18	22
676979	70D	1	3	4	6	9	12	17	18	22
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682354	70D	1	3	4	6	9	11	15	18	22
682355	70D	1	3	4	6	9	11	16	18	22

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Serial Number Index

Serial Number	Model	Frame Group	Cylinder Group	Rotator Group	Drive Group	Revolving Conn.	Arm Group	Mount Group	Solenoid Adaption	180° Stop
682608	70D	1	3	4	6	9	11	15	18	22
682609	70D	1	3	4	6	9	11	16	18	22
682612	70D	1	3	4	6	9	12	15	18	22
682613	70D	1	3	4	6	9	12	16	18	22
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682620	70D	1	3	4	6	9	12	15	18	22
682621	70D	1	3	4	6	9	12	16	18	22
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683063	70D	1	3	4	6	9	12	16	18	22
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683123	70D	1	3	4	6	9	12	16	18	22
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687680	70D	2	3	5	6	10	11	14	19	22
687681	70D	2	3	5	6	10	11	15	19	22
687682	70D	2	3	5	6	10	11	16	19	22
687683	70D	2	3	5	6	10	12	13	19	22
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687686	70D	2	3	5	6	10	12	16	19	22

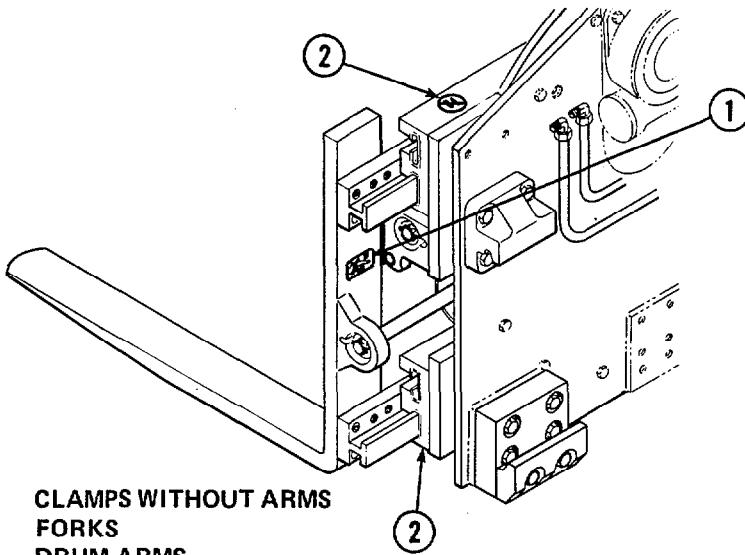
3222d-2

Serial Number Index

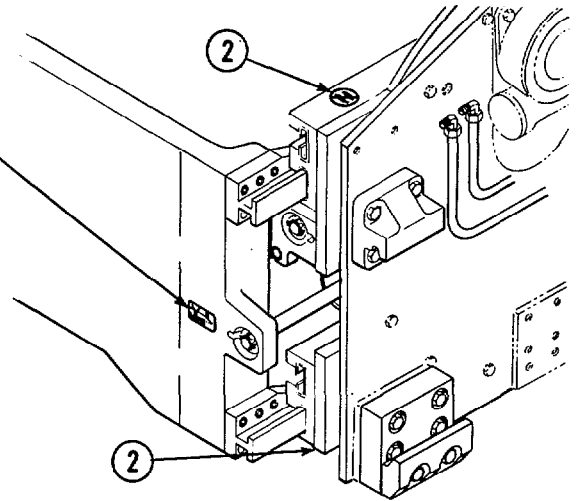
Serial Number	Model	Frame Group	Cylinder Group	Rotator Group	Drive Group	Revolving Conn.	Arm Group	Mount Group	Solenoid Adaption	180° Stop
687687	70D	2	3	5	6	10	12	13	19	22
687688	70D	2	3	5	6	10	12	14	19	22
687689	70D	2	3	5	6	10	12	15	19	22
687690	70D	2	3	5	6	10	12	16	19	22
687691	70D	2	3	5	6	10	12	13	19	22
687692	70D	2	3	5	6	10	12	14	19	22
687693	70D	2	3	5	6	10	12	15	19	22
687694	70D	2	3	5	6	10	12	16	19	22
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687697	70D	2	3	5	6	10	12	15	19	22
687698	70D	2	3	5	6	10	12	16	19	22
687699	70D	2	3	5	6	10	12	13	19	22
687700	70D	2	3	5	6	10	12	14	19	22
687701	70D	2	3	5	6	10	12	15	19	22
687702	70D	2	3	5	6	10	12	16	19	22
687703	70D	2	3	5	6	10	12	13	19	22
687704	70D	2	3	5	6	10	12	14	19	22
687705	70D	2	3	5	6	10	12	15	19	22
687706	70D	2	3	5	6	10	12	16	19	22
687707	70D	2	3	5	6	10	12	13	20	22
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687711	70D	2	3	5	6	10	12	13	20	22
687712	70D	2	3	5	6	10	12	14	20	22
687713	70D	2	3	5	6	10	12	15	20	22
687714	70D	2	3	5	6	10	12	16	20	22
687715	70D	2	3	5	6	10	12	13	20	22
687716	70D	2	3	5	6	10	12	14	20	22
687717	70D	2	3	5	6	10	12	15	20	22
687718	70D	2	3	5	6	10	12	16	20	22
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687724	70D	2	3	5	6	10	12	14	20	22
687725	70D	2	3	5	6	10	12	15	20	22
687726	70D	2	3	5	6	10	12	16	20	22
687727	70D	2	3	5	6	10	12	13	20	22
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687729	70D	2	3	5	6	10	12	15	20	22
687730	70D	2	3	5	6	10	12	16	20	22
687731	70D	2	3	5	6	10	12	13	20	22
687732	70D	2	3	5	6	10	12	14	20	22
687733	70D	2	3	5	6	10	12	15	20	22
687734	70D	2	3	5	6	10	12	16	20	22
687735	70D	2	3	5	6	10	12	13	20	22
687736	70D	2	3	5	6	10	12	14	20	22
687737	70D	2	3	5	6	10	12	15	20	22
687738	70D	2	3	5	6	10	12	16	20	22

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Safety Decals

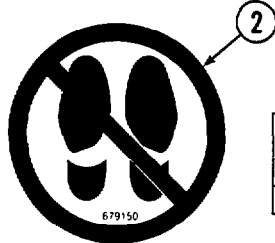
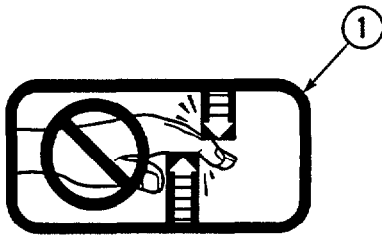


CLAMPS WITHOUT ARMS
FORKS
DRUM ARMS



BALE ARMS
MULT-PURPOSE/RIGID ARM

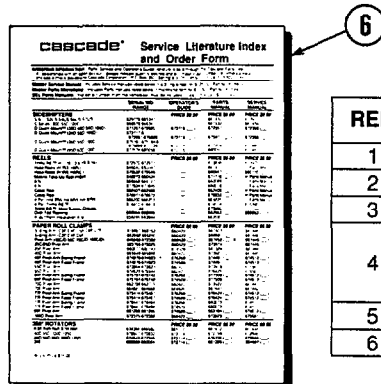
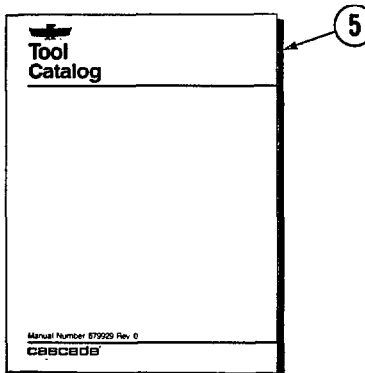
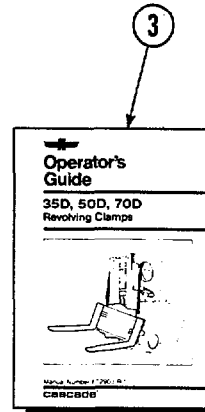
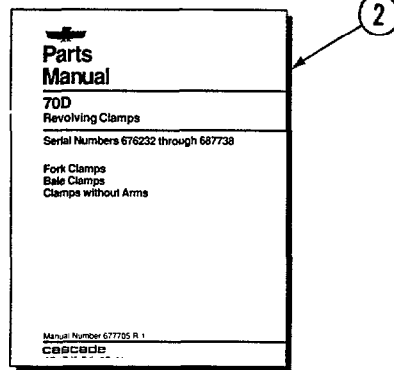
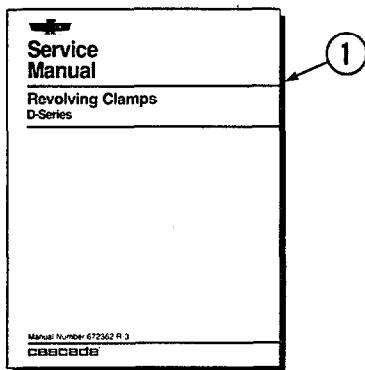
All decals shown are included
in Safety Awareness Kit 680069.



REF	QTY	PART NO.	DESCRIPTION
1	2	665595	No Hand Hold Decal
2	2	679150	No Step Decal

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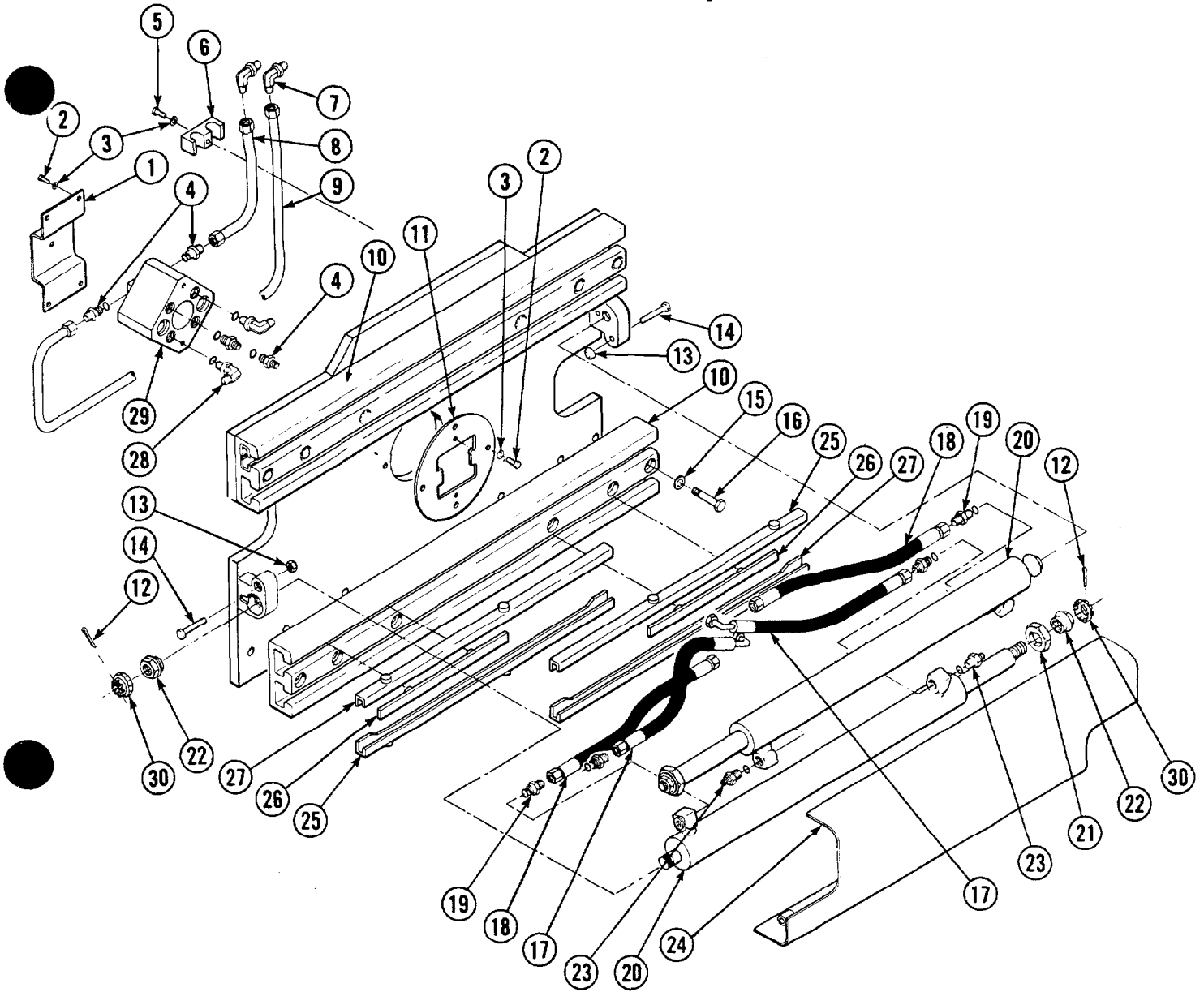
Publications



REF	PART NO.	DESCRIPTION
1	672362	Service Manual
2	677705	Parts Manual
3	672903	Operators Guide
4	680664	Servicing Cascade Cylinders - VHS
	680665	Servicing Cascade Cylinders - Beta
	680666	Servicing Cascade Cylinders - 3/4"
5	679929	Tool Catalog
6	673964	Literature Index Order Form

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Frame Group

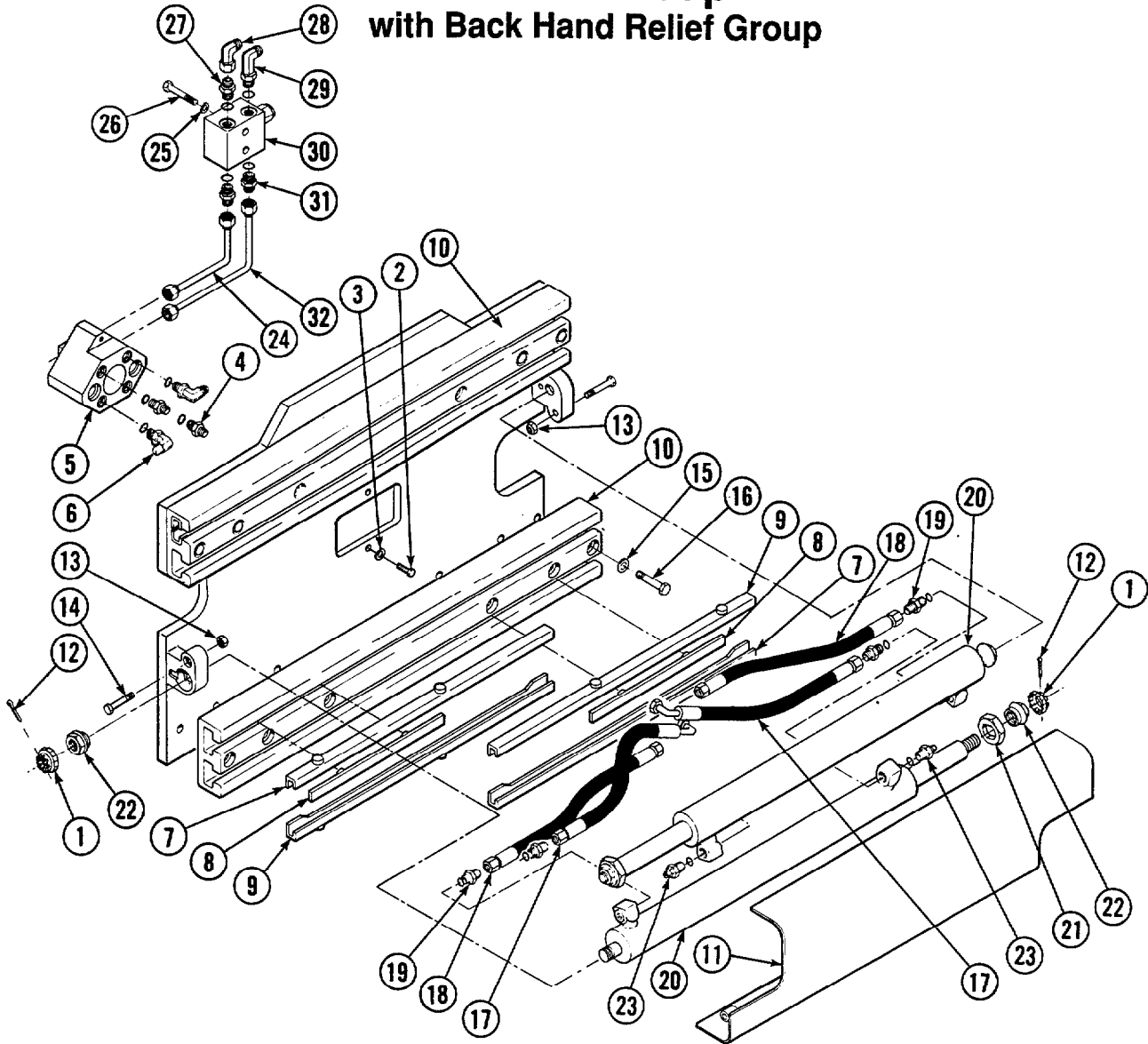


REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		676175	Frame Group	16	8	676793	Capscrew
1	1	670939	Bracket	17	2	678409	Hose, 2500 PSI♦
2	8	3574	Capscrew, 5/16 NC x .62	18	2	676114	Hose, 2500 PSI♦
3	9	6287	Lockwasher, 5/16" ID	19	4	601377	Fitting, 6-8
4	4	662187	Fitting, 8-6	20	2	676429	Cylinder
5	1	3578	Capscrew, 5/16 NC x 1.25	21	2	676108	Washer
6	1	629511	Bracket	22	4	676109	Nut
7	2	2440	Fitting, 8-8	23	2	667609	Restrictor Cartridge
8	1	670945	Tube	24	1	676106	Bumper
9	1	670944	Tube	25	4	676104	Bearing
10	2	676103	Frame	26	4	667663	Bearing
11	1	670938	Plate	27	4	676105	Bearing
12	4	6513	Cotter Pin	28	2	651303	Fitting, 6-6
13	2	773842	Nut	29	1	670940	Revolving Connection
14	2	768560	Capscrew, M12 x 1, 75 x 80-8.8	30	4	676110	Retainer
15	8	670692	Washer				

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- See page 3 for replacement parts breakdown.
- See page 8 for replacement parts breakdown.
- * See page 9 for replacement parts breakdown.
- ♦ Maximum working pressure.

Frame Group with Back Hand Relief Group

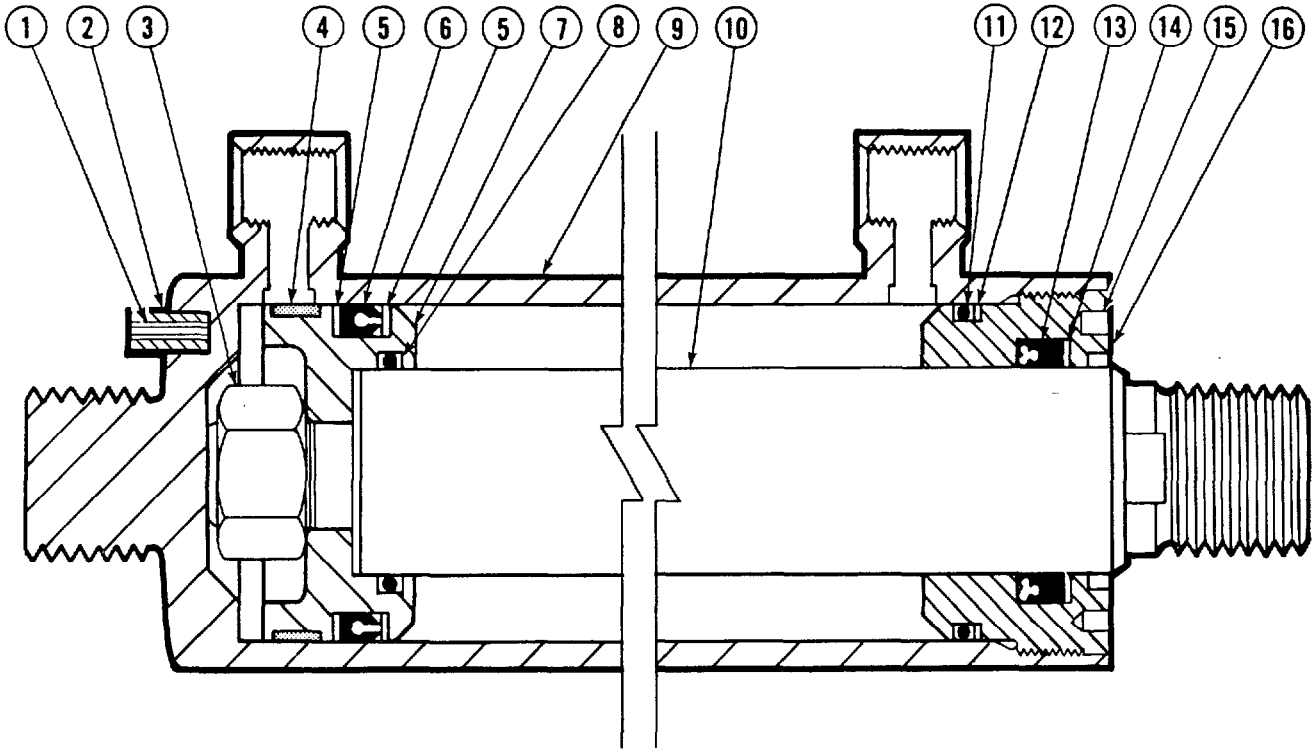


REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
		687283	Frame Group	16	8	676793	Capscrew
		♣ 689953	Back Hand Relief Group	17	2	678409	Hose, 2500 PSI♦
1	4	676110	Retainer	18	2	676114	Hose, 2500 PSI♦
2	2	765352	Capscrew, M8 x 1.25 x 30 x 8.8	19	4	601377	Fitting, 6-8
3	2	686119	Lockwasher	●20	2	676429	Cylinder
4	2	662187	Fitting, 8-6	21	2	676108	Washer
*5	1	686420	Revolving Connection	22	4	667109	Nut
6	2	651303	Fitting, 6-6	■23	2	667609	Restrictor Cartridge
7	4	676105	Bearing	24	1	689950	Tube
8	4	667663	Bearing	25	2	6287	Lockwasher
9	4	676104	Bearing	26	2	643519	Capscrew
10	2	676103	Frame	27	1	601377	Fitting, 8-8
11	1	676106	Bumper	28	1	605761	Fitting, 8-8
12	4	6513	Cotter Pin	29	1	601250	Fitting, 8-8
13	2	773842	Nut, M12 x 80	30	1	679888	Back Hand Relief Valve
14	2	768560	Capscrew, M12 x 80-8.8	31	2	611288	Fitting, 6-8
15	8	670692	Washer, 13/16" ID	32	1	689951	Tube

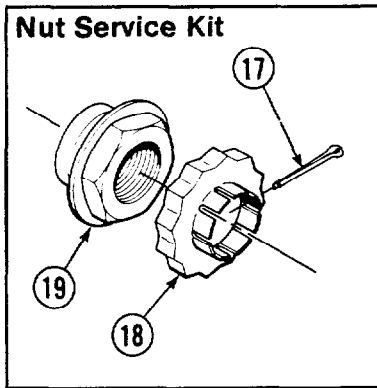
- ♣ Used on fork clamps only. Includes items 24-32.
- See page 3 for replacement parts breakdown.
- See page 8 for replacement parts breakdown.
- * See page 10 for replacement parts breakdown.
- ♦ Maximum working pressure.

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Cylinders



Nut Service Kit



REF	QTY	PART NO.	DESCRIPTION
	■	676429	Cylinder Assembly
1	1	7882	Roll Pin
2	1	7964	Roll Pin
3	1	667990	Nut
4	●1	660766	Bearing
5	●2	638292	Back-up Ring
6	●1	557574	Seal
7	1	556433	Piston
8	●1	2787	O-Ring
9	1	556463	Shell
10	1	556464	Rod
11	●1	2795	O-Ring
12	●1	615138	Back-up Ring
13	●1	553520	Seal
14	●1	636701	Back-up Ring
15	1	556432	Retainer
16	●1	624572	Wiper
17	*1	6513	Cotter Pin
18	*1	676110	Retainer
19	*1	676109	Nut
		556486	Service Kit
		678036	Nut Service Kit

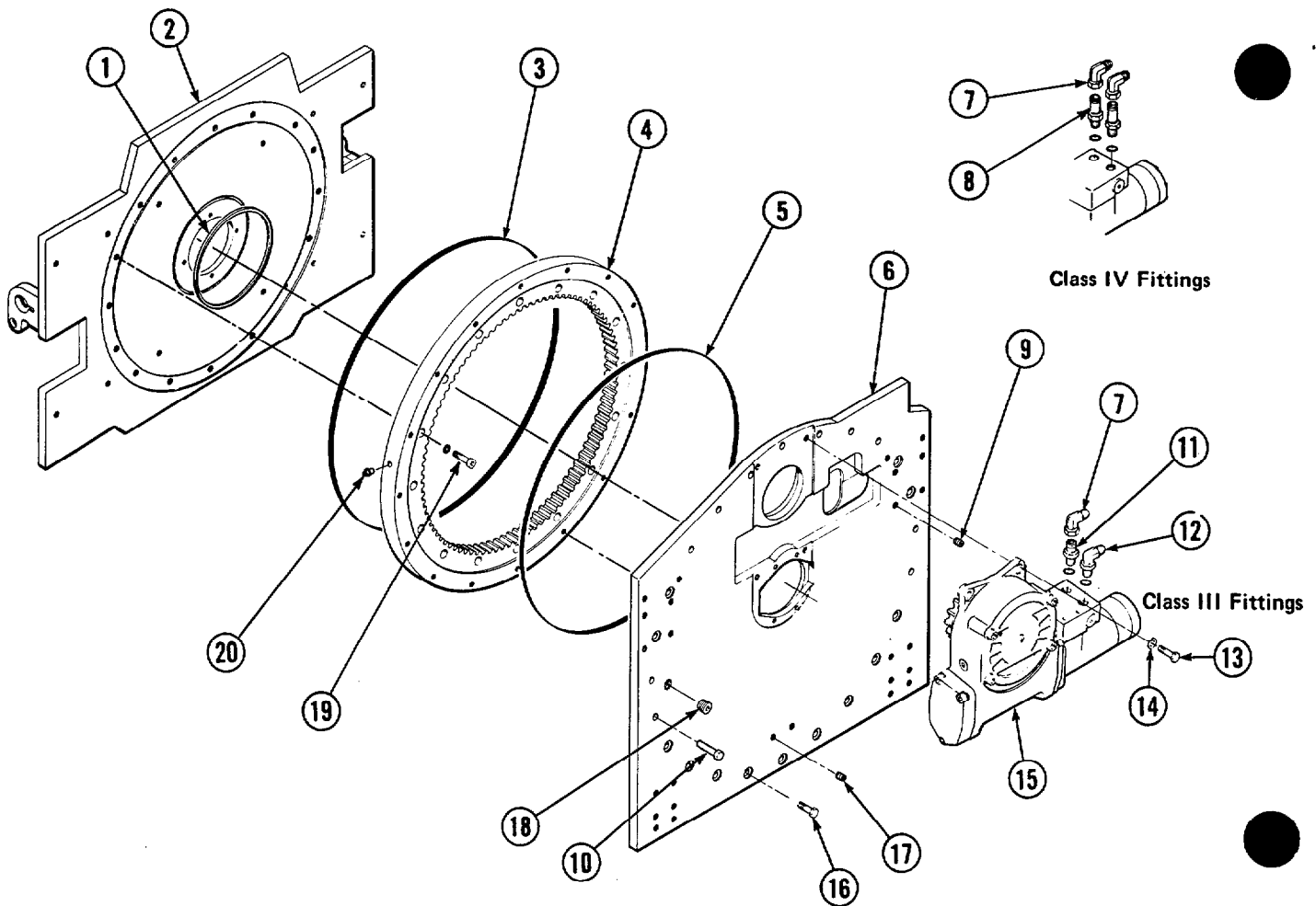
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● Included in Service Kit 556486.

■ Includes items 1 through 16.

* Included in Service Kit 678036.

Rotator Group

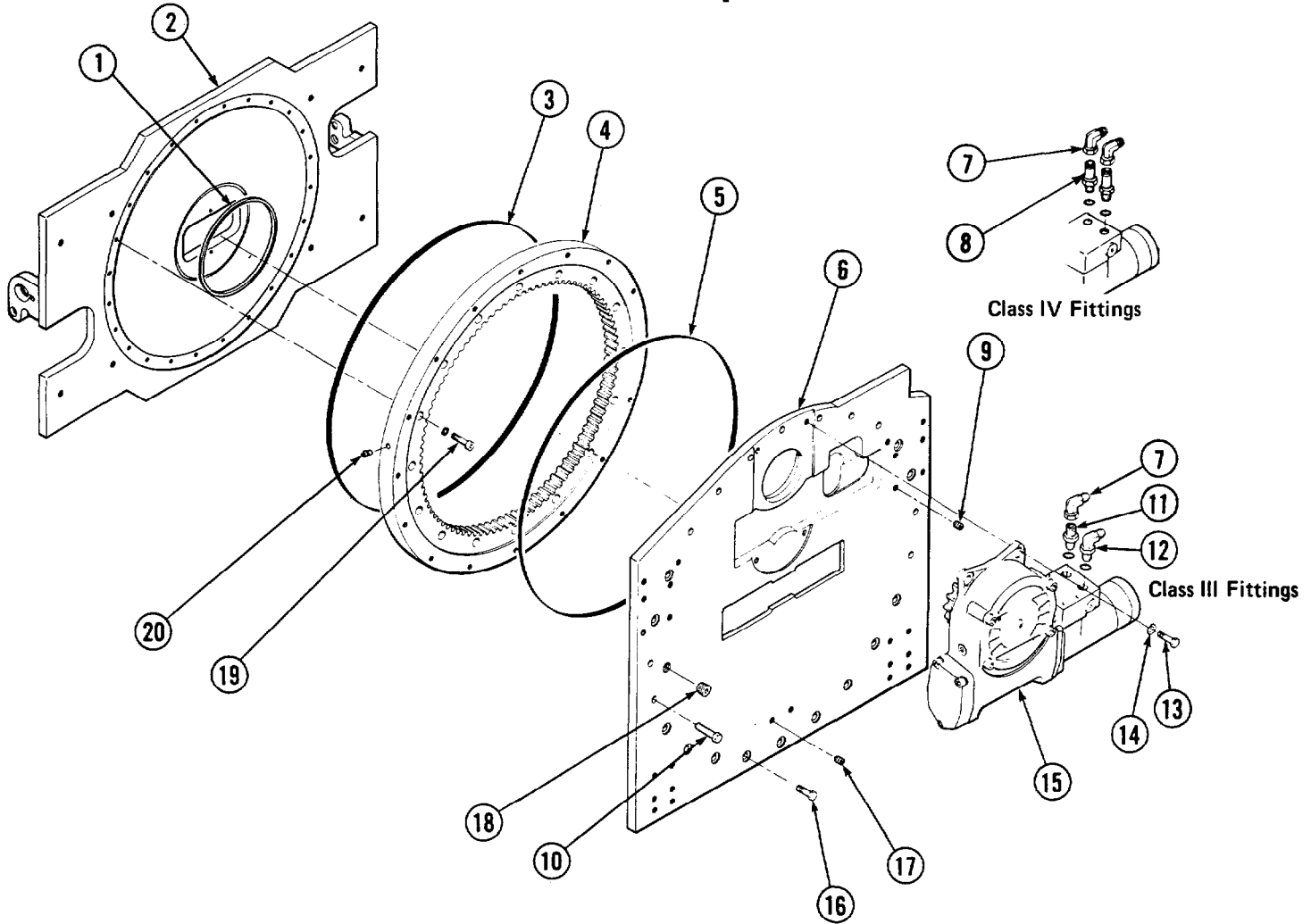


REF	QTY	PART NO.	DESCRIPTION
		676172	Rotator Group
1	1	670931	Seal
2	1	676173	Faceplate
3	1	670516	Seal
*■4	1	672830	Bearing Assembly
5	1	670515	Seal
6	1	676272	Baseplate
7	1	605761	Fitting, 8-8 Class III Only
	2	605761	Fitting, 8-8 Class IV Only
8	2	611295	Fitting, 8-8 Class IV Only
9	6	631385	Plug
10	11	678395	Capscrew
11	1	601377	Fitting, 6 Class III Only
12	1	601250	Fitting, 8-8 Class III Only
13	4	661742	Capscrew, 1/2 NC x 1.25 GR5
14	4	6290	Lockwasher, 1/2" ID
●15	1	675639	Drive Group
16	13	670682	Capscrew
17	1	631427	Plug
18	1	6605	Plug
*19	24	617254	Capscrew
20	1	7401	Grease Fitting
		672482	Bearing Service Kit

3222a-1

- Includes Items 3 and 5.
- See page 6 for replacement parts breakdown.
- * Included in Bearing Service Kit 672482.

Rotator Group

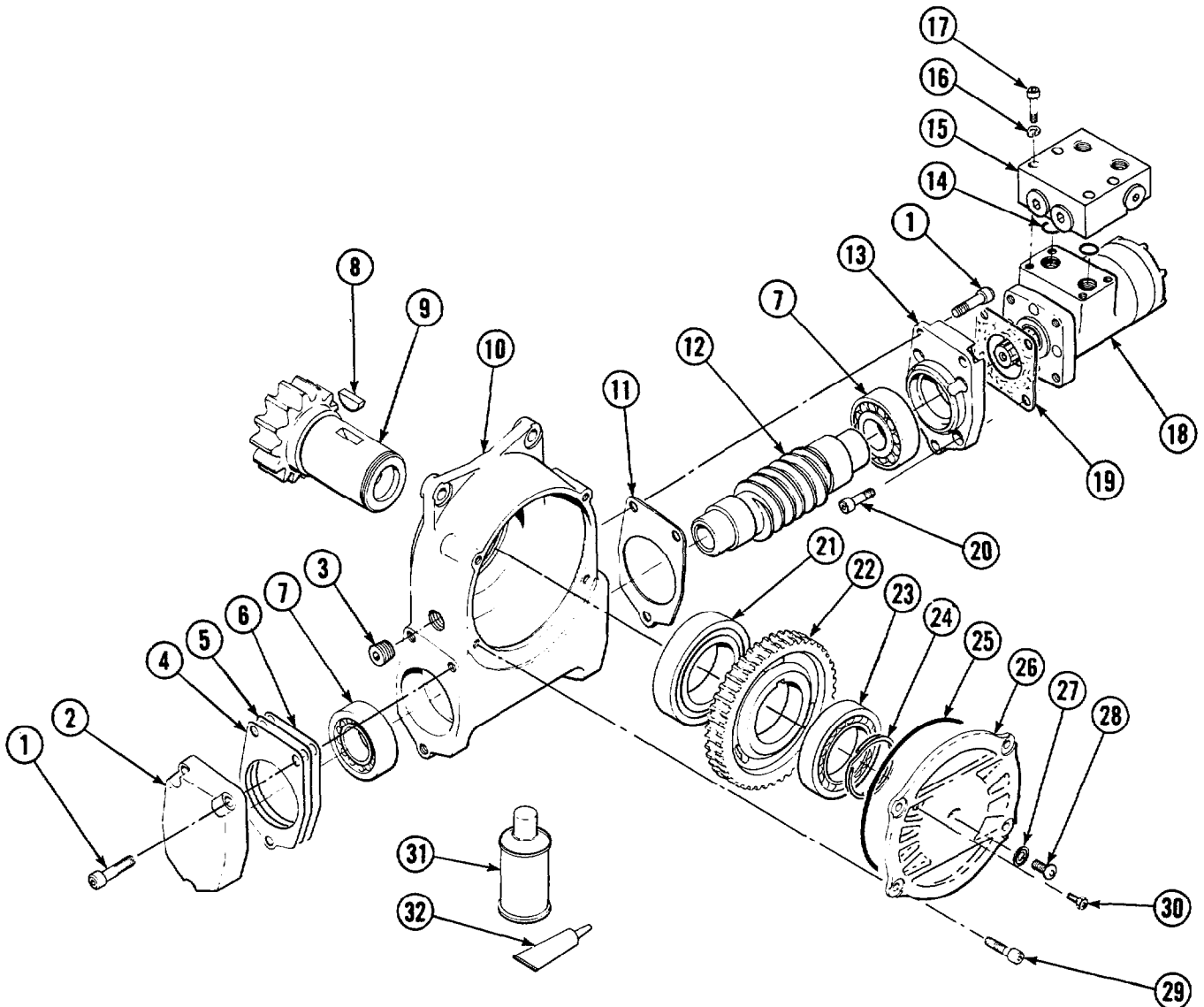


REF	QTY	PART NO.	DESCRIPTION
		687253	Rotator Group
1	1	670931	Seal
2	1	687232	Faceplate
3	1	670516	Seal
★4	1	672830	Bearing Assembly
5	1	670515	Seal
6	1	687234	Baseplate
7	1	605761	Fitting, 8-8 Class III Only
	2	605761	Fitting, 8-8 Class IV Only
8	2	611295	Fitting, 8-8 Class IV Only
9	6	631385	Plug
10	11	678395	Capscrew
11	1	601377	Fitting, 6 Class III Only
12	1	601250	Fitting, 8-8 Class III Only
13	4	661742	Capscrew
14	4	6290	Lockwasher, 1/2" ID
●15	1	675639	Drive Group
16	13	670682	Capscrew
17	1	631427	Plug
18	1	6605	Plug
★19	24	617254	Capscrew
20	1	7401	Grease Fitting
		672482	Bearing Service Kit

3222a-2

- Includes Items 3 and 5.
- See page 6 for replacement parts breakdown.
- ★ Included in Bearing Service Kit 672482.

Drive Group



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 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	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 (items 4-6, and 32)
*15	1	670549	Check Valve			675637	Service Kit (items 21 and 32)
16	4	6444	Lockwasher			675638	Service Kit (items 4-7 and 32)
17	4	607059	Capscrew, 5/16 NC x 1.75 GR8			675343	Drive Motor Serv Kit (4,14,18,19,32)

3222a-3

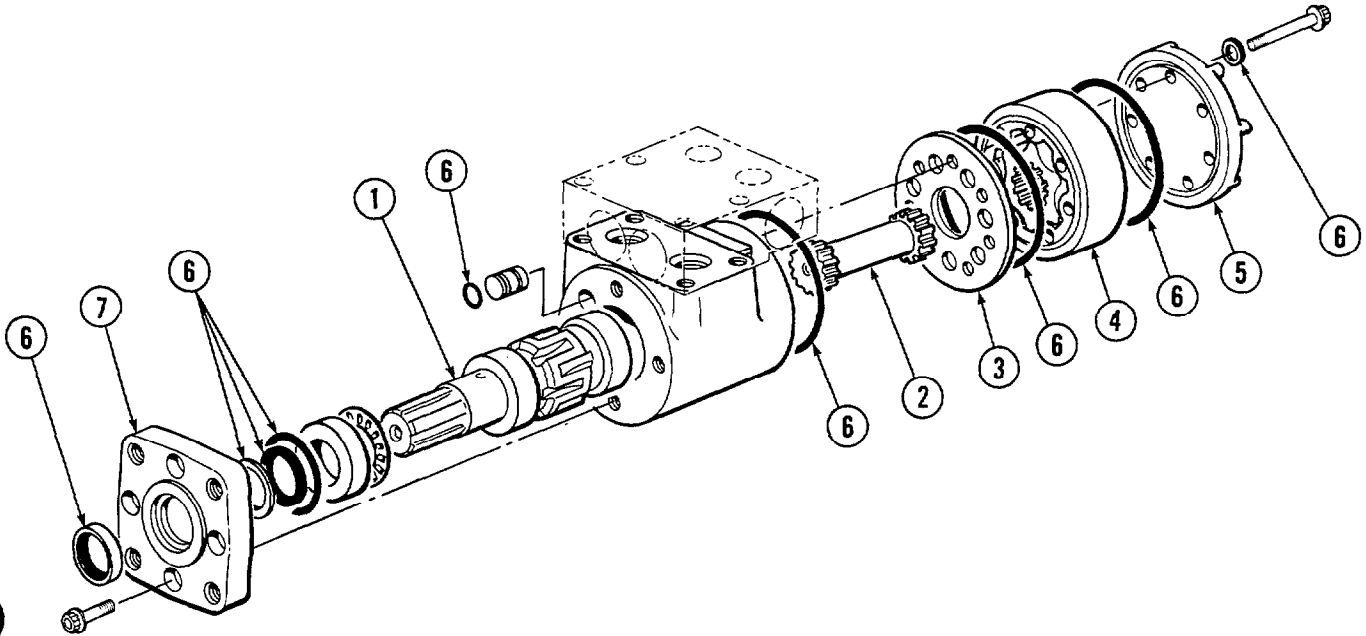
● Quantity as required.

■ Includes all items except 15, 17, and 18.

* See page 8 for replacement parts breakdown.

☆ See page 7 for replacement parts breakdown.

Drive Motor



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
	1	●686386	Service Kit
■7	1	685089	Flange (101-1768-007)
	1	685090	Flange (101-1768-009)

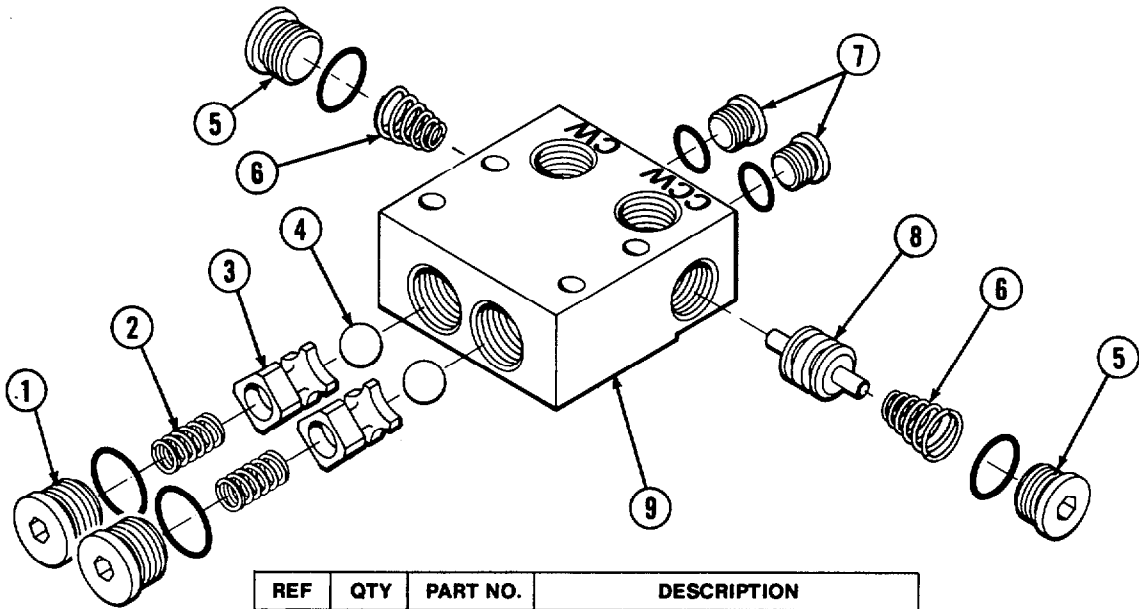
3222a.5

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.

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

● For use with water glycol based hydraulic fluids.

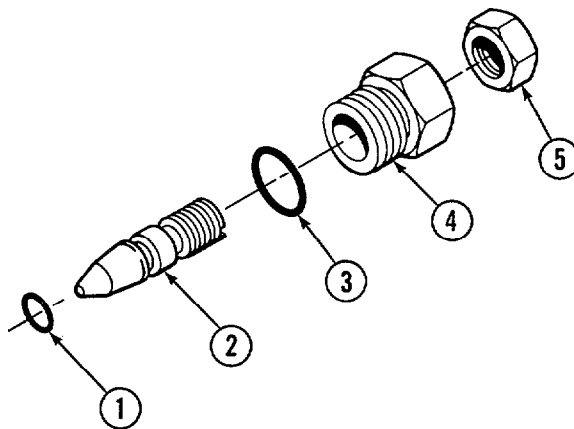
Check Valve



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

2258

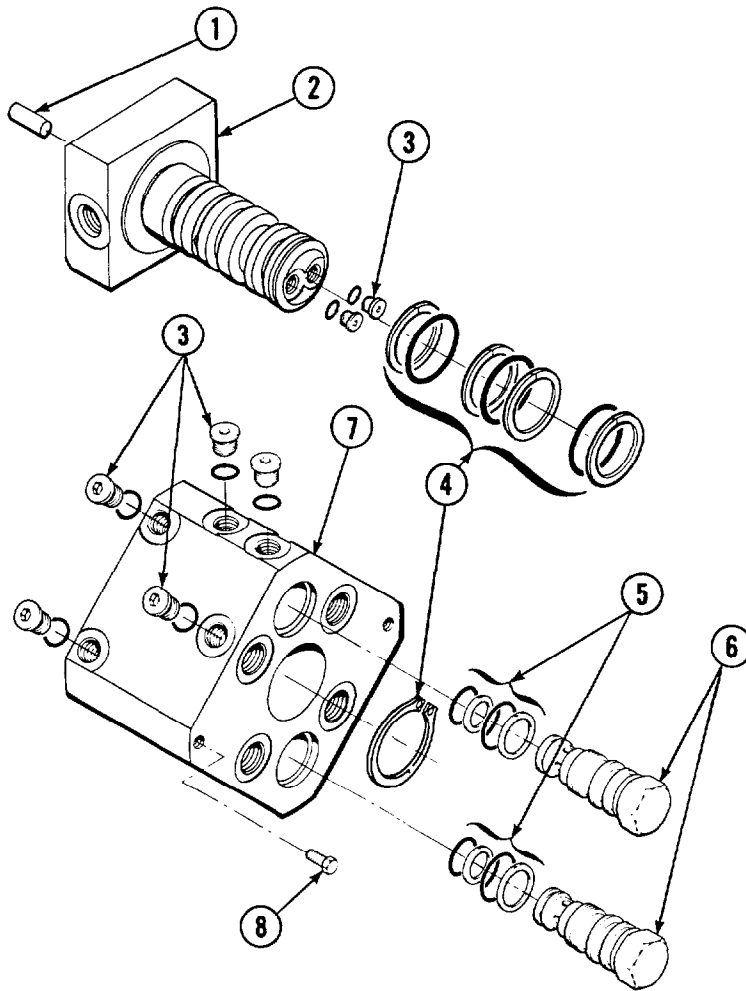
Restrictor Cartridge



REF	QTY	PART NO.	DESCRIPTION
	1	667609	Restrictor Cartridge
1	1	2701	O-Ring
2	1	667611	Plunger
3	1	2841	O-Ring
4	1	667610	Plug - Special
5	1	5716	Jam Nut

2258

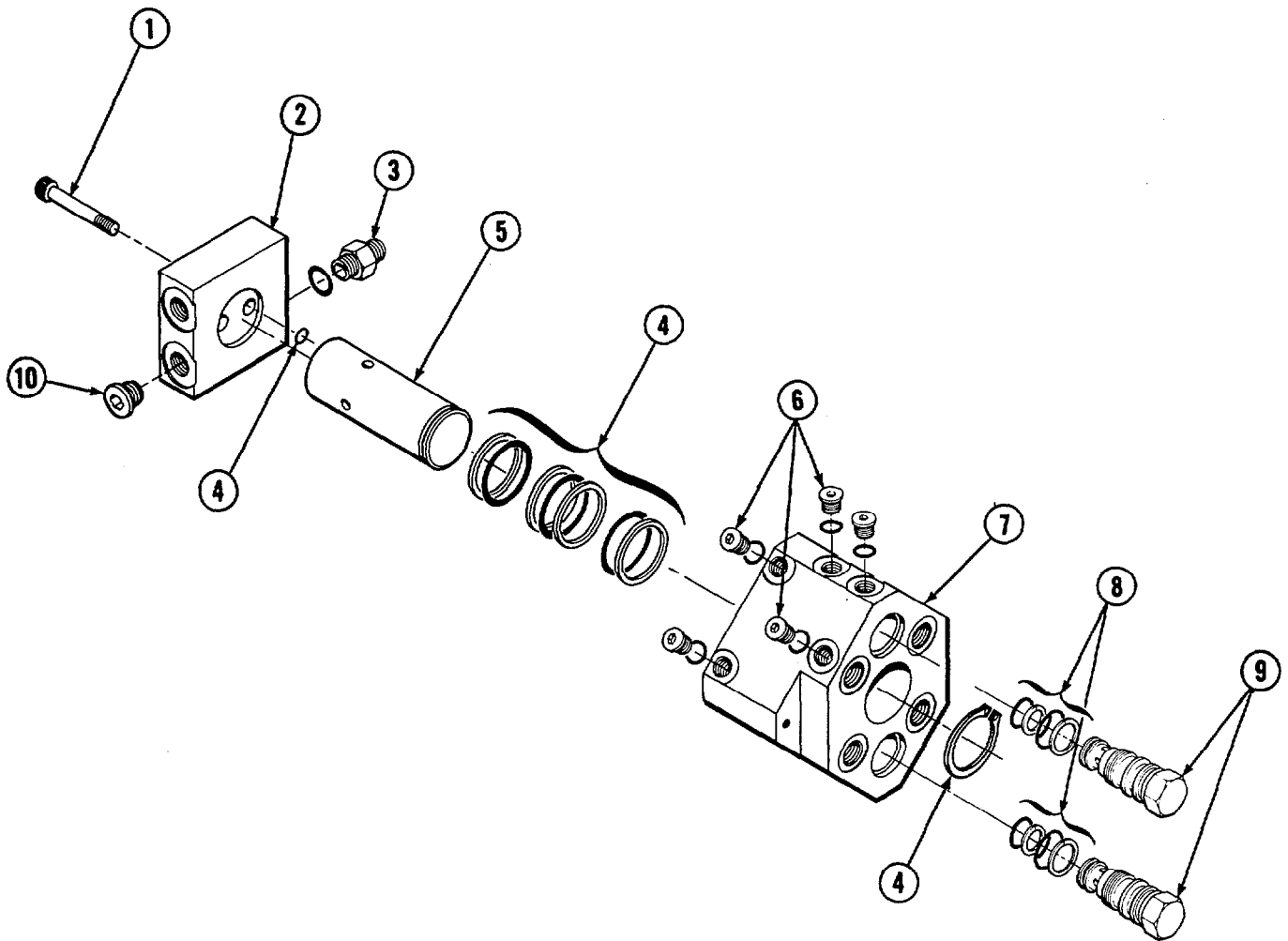
Revolving Connection



REF	QTY	PART NO.	DESCRIPTION
		670940	Revolving Connection
1	1	606805	Dowel Pin
2	1	670942	Shaft
3	7	663694	Plug
4	1	660476	Shaft Service Kit
5	2	667516	Check Valve Service Kit
6	2	678376	Check Valve
7	1	670941	Body
8	2	4466	Capscrew, 3/8 NC x .50 GR8

3222a-1

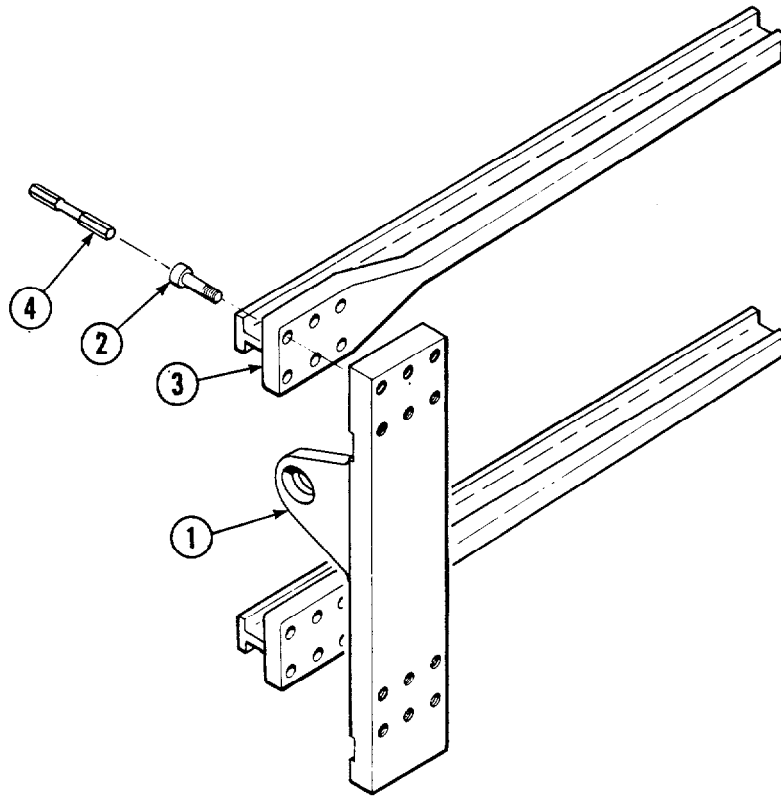
Revolving Connection



REF	QTY	PART NO.	DESCRIPTION
		686420	Revolving Connection
1	2	768796	Capscrew, M8 x 1, 25 x 35 x 8.8
2	1	686421	End Block
3	2	604511	Fitting, 6-6
4	1	687237	Service Kit
5	1	686422	Shaft
6	5	663694	Fitting, 3
7	1	686423	Body
8	2	667516	Check Valve Service Kit
9	2	678376	Check Valve
10	2	604510	Fitting, 6

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Arm Carriers

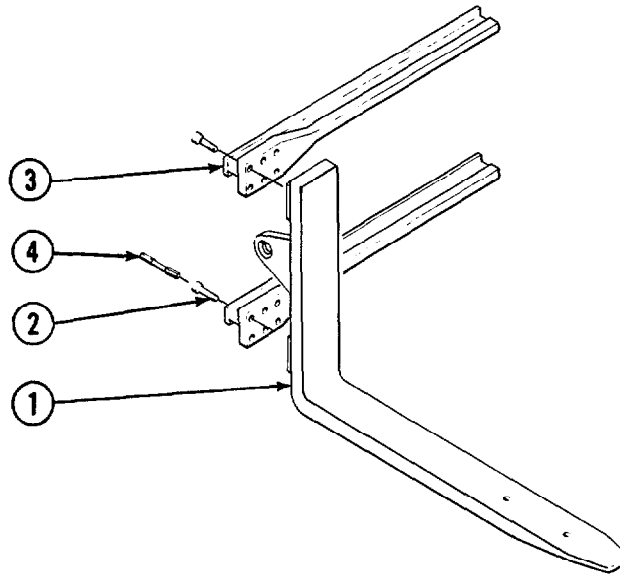


REF	QTY	PART NO.	DESCRIPTION
	●	676178	Arm Base Assembly (pair)
1	2	676179	Arm Base
2	24	676840	Capscrew M24 x 3.0 x 65-12.9
3	4	676132	Arm Bar
4	1	■676218	Tool

3222a-4

- Includes items 1 and 2 only.
- Required for proper capscrew torquing.

Bolt-On Pallet Forks

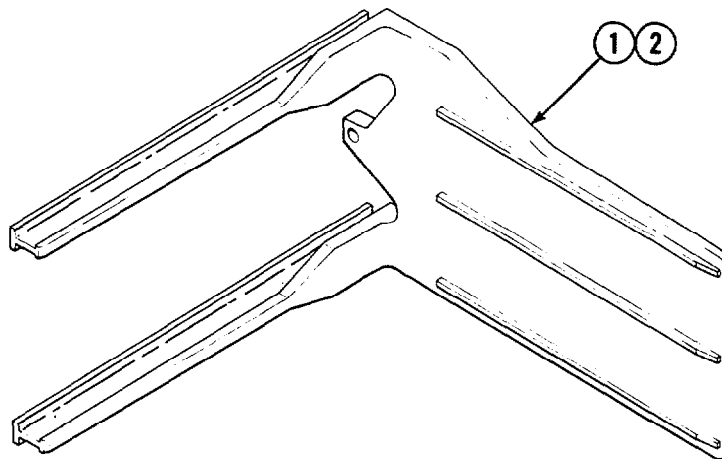


REF	QTY	42" PART NO.	48" PART NO.	54" PART NO.	60" PART NO.	
		●676201	●676202	●676203	●676204	Pallet Fork Assembly (Pair)
1	1	676211	676212	676213	676214	Pallet Fork R.H.
	1	676207	676208	676209	676210	Pallet Fork L.H.
2	24	676840	676840	676840	676840	Capscrew, M24 x 3.0 x 65-12.9
3	4	676132	676132	676132	676132	Arm Bar
4	1	676218	676218	676218	676218	Tool

3222a-3

● Includes items 1 and 2 only.

Bale Arm – Integral



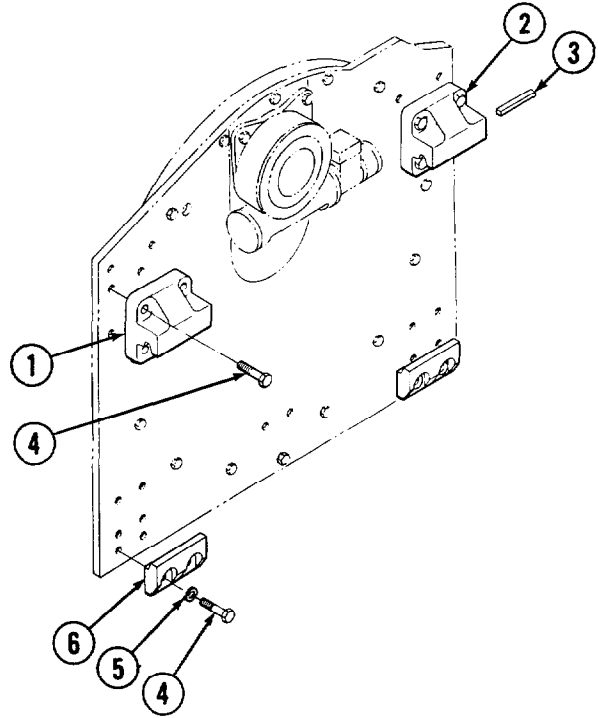
REF	QTY	18" x 48" PART NO.	18" x 54" PART NO.	18" x 60" PART NO.	DESCRIPTION
		676726	676727	676728	Bale Arm Assembly (pair)
1	1	676730	676731	676732	Bale Arm R.H.
2	1	676733	676734	676735	Bale Arm L.H.

3222a-3

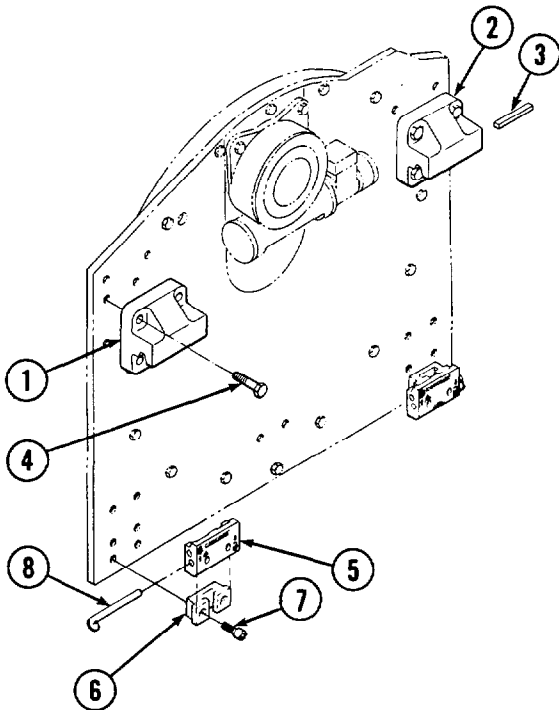
Bolt-On Mounting Group

Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		676273	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	12	667369	Capscrew
5	4	667225	Washer
6	2	675969	Lower Hook

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Quick Change Mounting Group



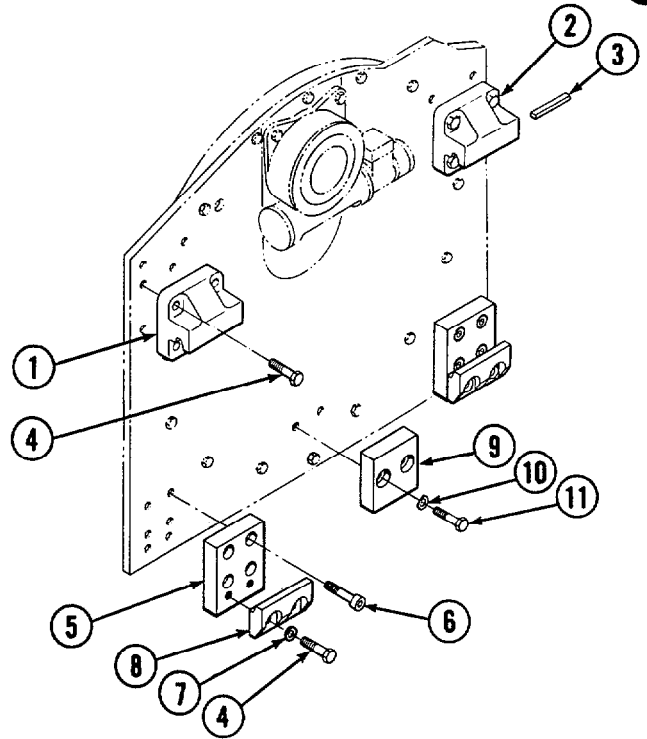
Class III, 4°			
REF	QTY	PART NO.	DESCRIPTION
		682163	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	667369	Capscrew
5	2	675957	Hook
6	2	675958	Guide
7	4	622467	Capscrew
8	2	678832	Pin

3049p-187/10

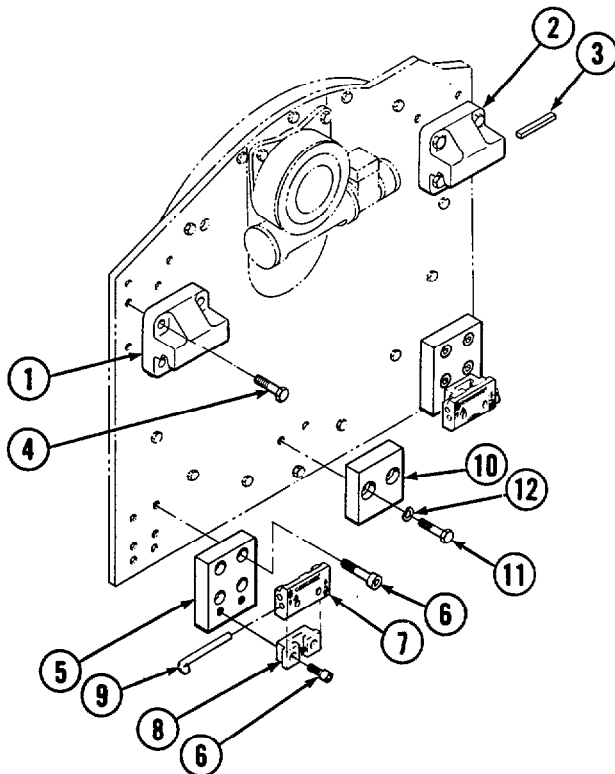
Bolt-On Mounting Group

Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		676274	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	12	667369	Capscrew
5	2	670668	Adapter Plate
6	8	622467	Capscrew
7	4	667225	Washer
8	2	675969	Lower Hook
9	1	670687	Bumper
10	2	6290	Lockwasher, 1/2 ID
11	2	3655	Capscrew, 1/2 NC x 1.5

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Quick Change Mounting Group



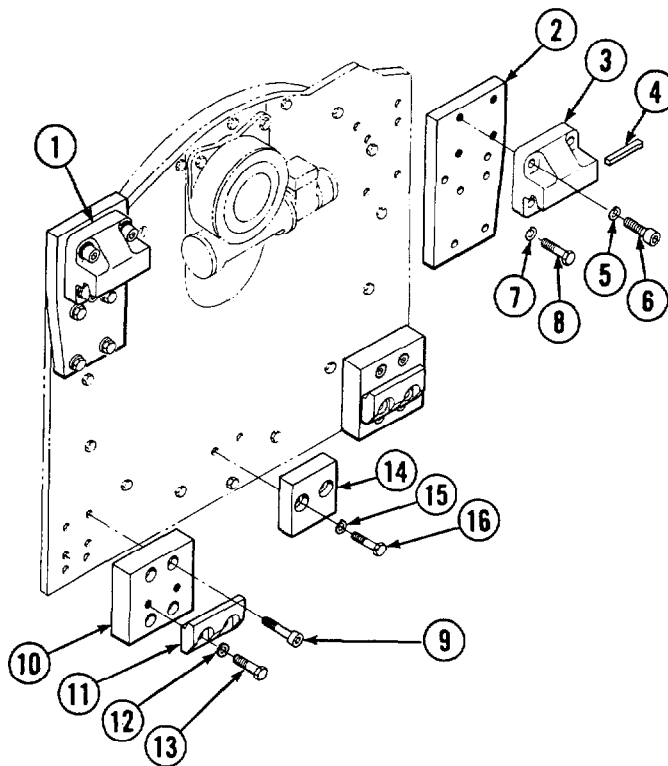
Class III, 0°			
REF	QTY	PART NO.	DESCRIPTION
		682164	Mounting Group
1	1	670684	Upper Hook-L.H.
2	1	670685	Upper Hook-R.H.
3	1	670704	Stop Kit
4	8	667369	Capscrew
5	2	670668	Spacer
6	12	622467	Capscrew
7	2	675957	Hook
8	2	675958	Guide
9	2	678832	Pin
10	1	670687	Bumper
11	2	3655	Capscrew, 1/2 NC x 1.5
12	2	6290	Lockwasher, 1/2 ID

3049q-188/10

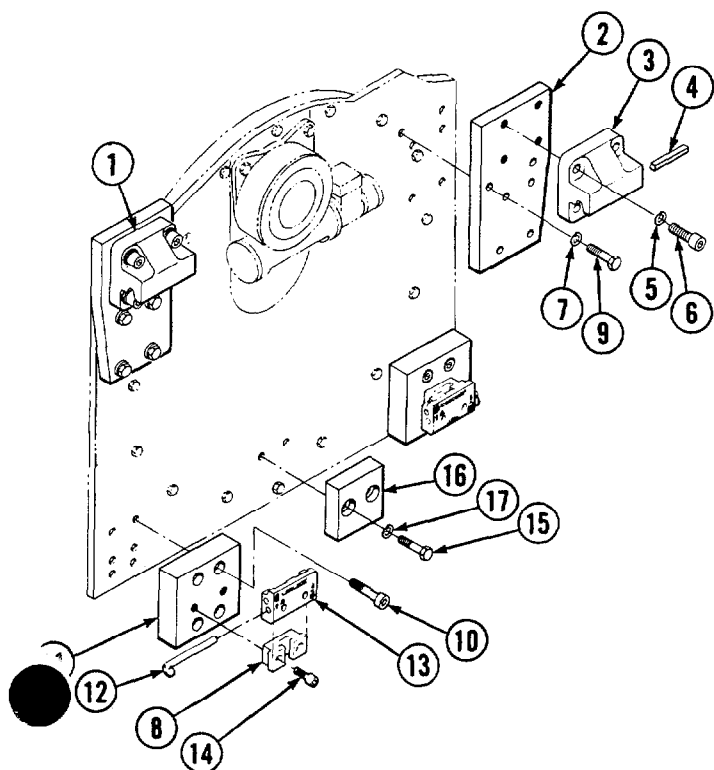
Bolt-On Mounting Group

Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		682141	Mounting Group
1	1	670690	Upper Hook-L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook-R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4 ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8 ID
8	12	638601	Capscrew, 5/8 NC x 2.0 GR5
9	8	622467	Capscrew
10	2	682195	Adapter Plate
11	2	679832	Lower Hook
12	4	670692	Washer
13	4	670693	Capscrew
14	1	670695	Bumper
15	2	6290	Lockwasher, 1/2 ID
16	2	3656	Capscrew, 1/2 NC x 1.75

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Quick Change Mounting Group



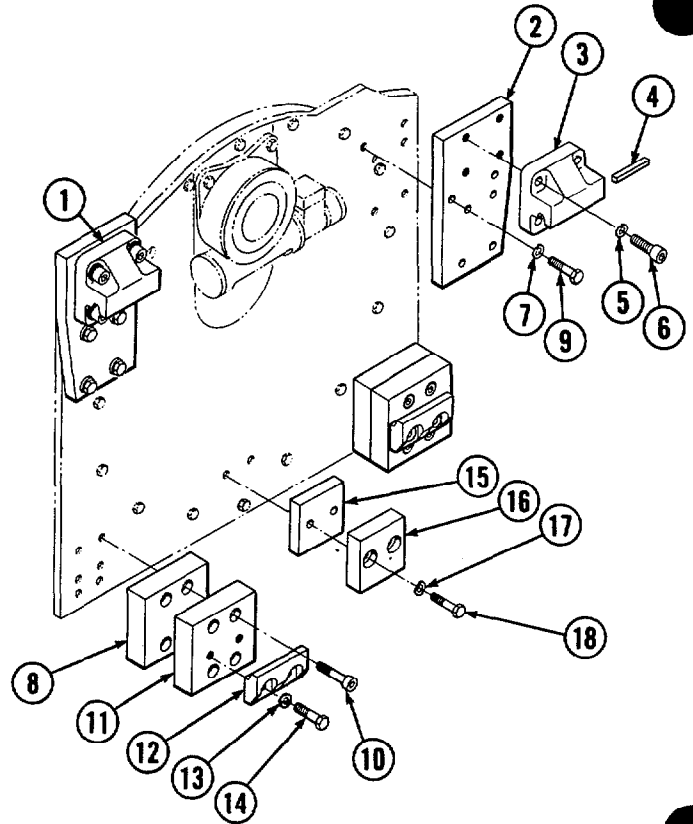
Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		682165	Mounting Group
1	1	670690	Upper Hook - L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook - R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4" ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8" ID
8	2	679829	Hook
9	12	638601	Capscrew, 5/8 NC x 2.0 GR5
10	8	622467	Capscrew
11	2	682195	Adapter Plate
12	2	679831	Pin
13	4	679830	Guide
14	4	672832	Capscrew
15	2	3656	Capscrew, 1/2 NC x 1.75
16	1	670695	Bumper
17	2	6290	Lockwasher, 1/2" ID

3222a-2

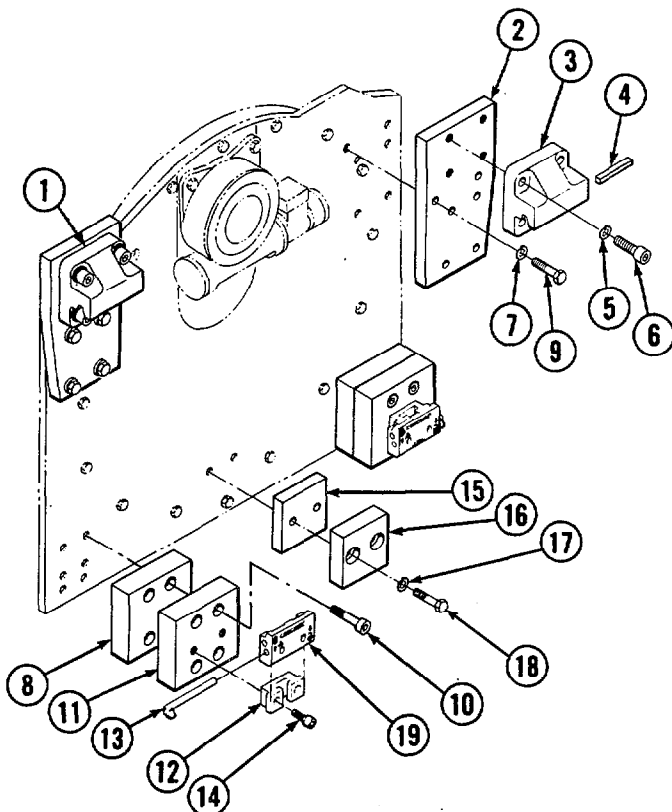
Bolt-On Mounting Group

Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		682142	Mounting Group
1	1	670690	Upper Hook-L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook-R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4 ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8 ID
8	2	670700	Spacer
9	12	638601	Capscrew, 5/8 NC x 2.0 GR5
10	8	670698	Capscrew
11	2	682195	Adapter Plate
12	2	679832	Lower Hook
13	4	670692	Washer
14	4	670693	Capscrew
15	1	670699	Spacer
16	1	670695	Bumper
17	2	6290	Lockwasher, 1/2 ID
18	2	3664	Capscrew, 1/2 NC x 3.75

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Quick Change Mounting Group



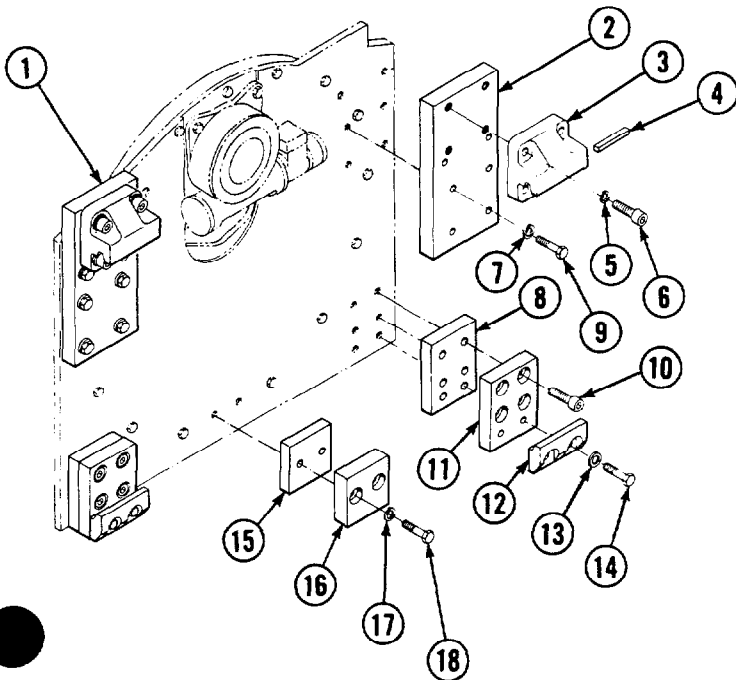
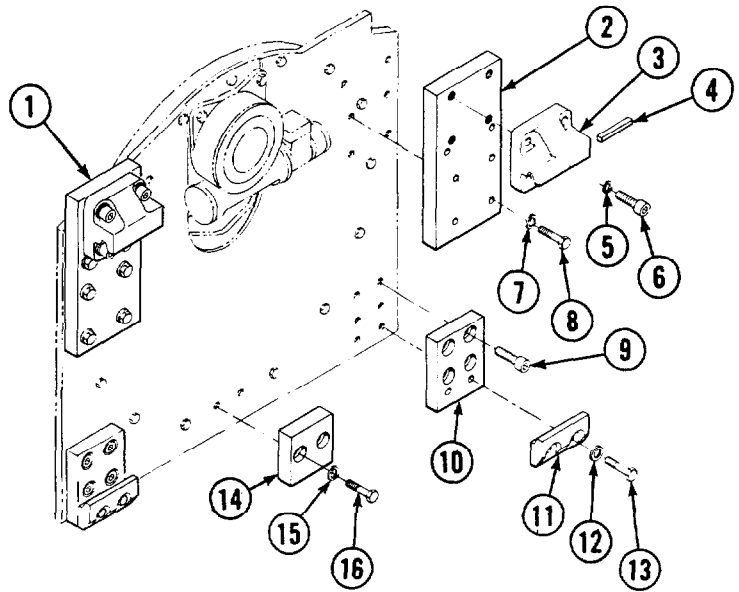
Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		682166	Mounting Group
1	1	670690	Upper Hook-L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook-R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4 ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8 ID
8	2	670700	Spacer
9	12	638601	Capscrew, 5/8 NC x 2.0 GR5
10	8	670698	Capscrew
11	2	682195	Adapter Plate
12	2	679829	Lower Hook
13	2	672831	Pin
14	4	672832	Capscrew
15	1	670699	Spacer
16	1	670695	Bumper
17	2	6290	Lockwasher, 1/2 ID
18	2	3664	Capscrew, 1/2 NC x 3.75
19	2	679830	Guide

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Mounting Groups

Class IV, 4°			
REF	QTY	PART NO.	DESCRIPTION
		670689	Mounting Group
1	1	670690	Upper Hook - L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook - R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4" ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8" ID
8	12	638601	Capscrew, 5/8 NC x 2.0 GR5
9	8	622467	Capscrew, 5/8 NC x 1.25
10	2	670696	Adapter Plate
11	2	670694	Lower Hook
12	4	670692	Washer, 3/4" ID
13	4	670693	Capscrew, 3/4 NC x 1.75 GR5
14	1	670695	Bumper
15	2	6290	Lockwasher, 1/2" ID
16	2	3656	Capscrew, 1/2 NC x 1.75

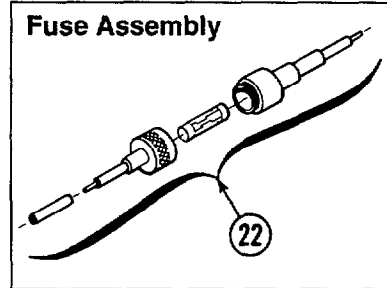
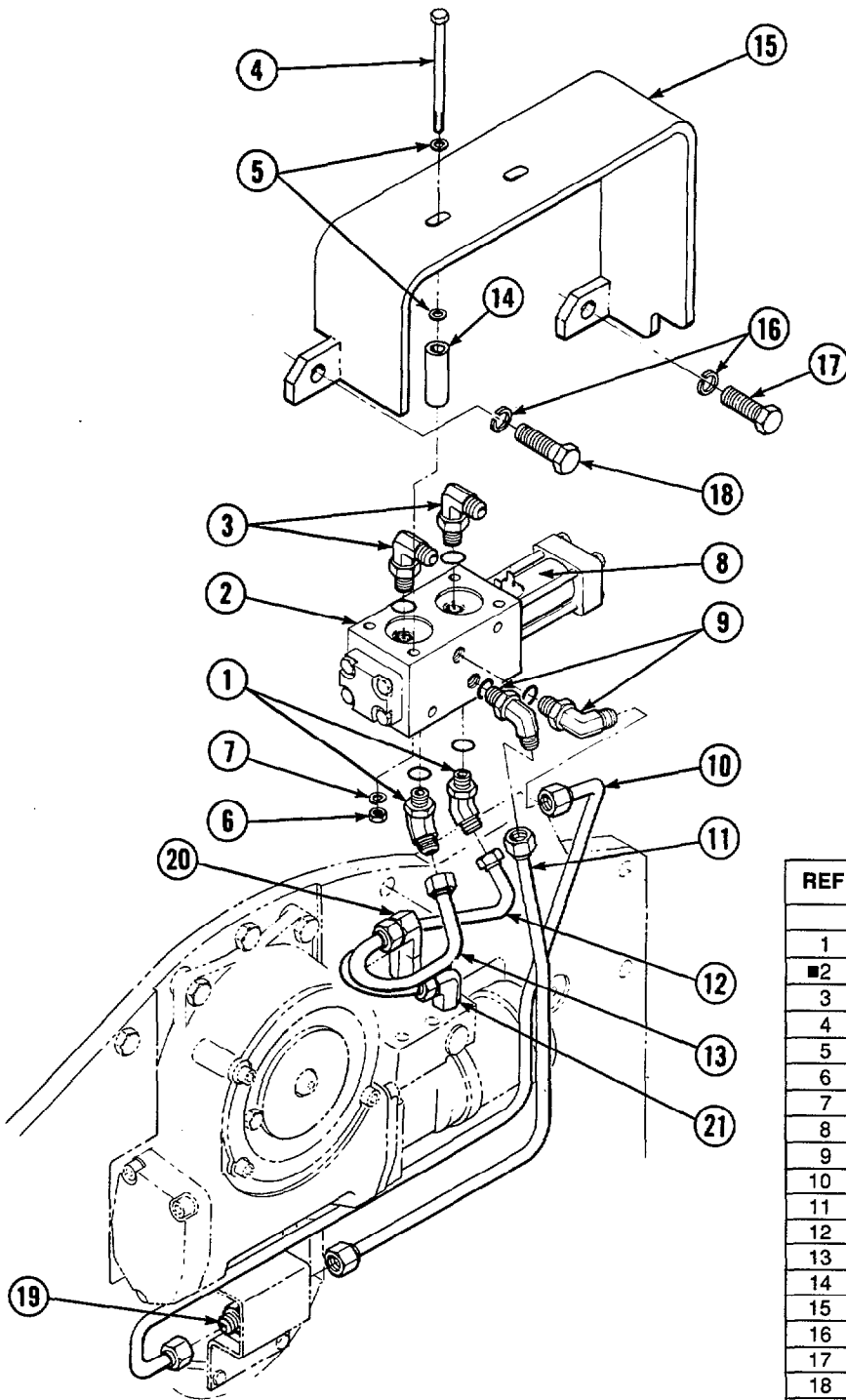
3222a-5



Class IV, 0°			
REF	QTY	PART NO.	DESCRIPTION
		670707	Mounting Group
1	1	670690	Upper Hook - L.H.
2	2	670697	Adapter Plate
3	1	670691	Upper Hook - R.H.
4	1	670704	Stop Kit
5	8	6448	Lockwasher, 3/4" ID
6	8	607104	Capscrew, 3/4 NC x 1.75 GR8
7	12	6292	Lockwasher, 5/8" ID
8	2	670700	Spacer
9	12	638601	Capscrew, 5/8 NC x 2.0 GR5
10	8	670698	Capscrew, 5/8 NCx 3.5
11	2	670696	Adapter Plate
12	2	670694	Lower Hook
13	4	670692	Washer, 3/4" ID
14	4	670693	Capscrew, 3/4 NC x 1.75 GR5
15	1	670699	Spacer
16	1	670695	Bumper
17	2	6290	Lockwasher, 1/2" ID
18	2	3664	Capscrew, 1/2 NC x 3.75

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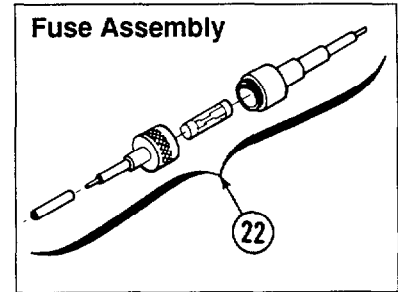
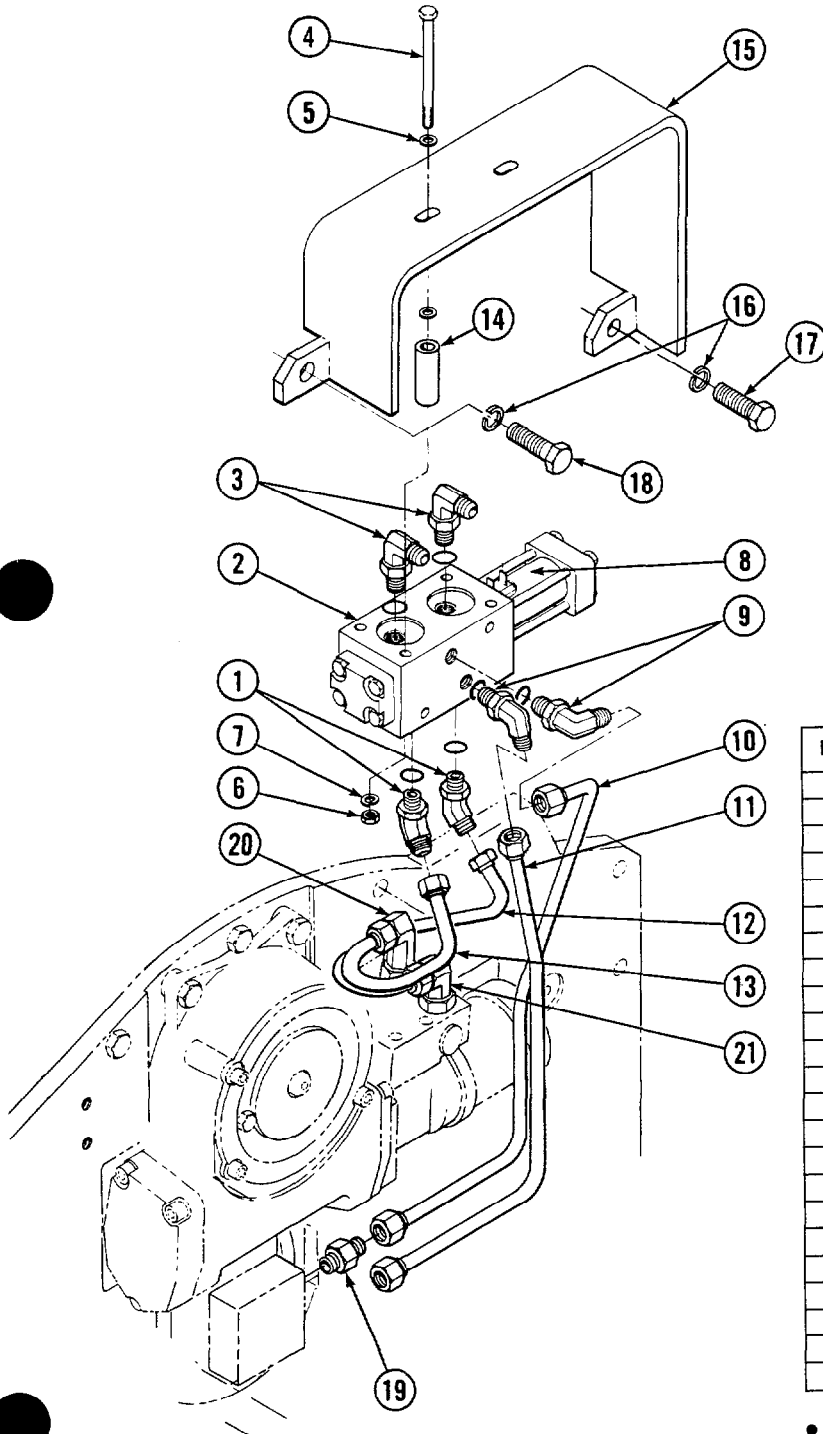
Solenoid Adaption



REF	QTY	PART NO.	DESCRIPTION
		676769	Solenoid Adaption Group
1	2	651302	Fitting, 6-6
■2	1	●	Solenoid Valve
3	2	651303	Fitting, 6-6
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16" ID
6	2	15251	Nut
7	2	6287	Lockwasher, 5/16" ID
8	1	●	Coil
9	2	601676	Fitting, 6-6
10	1	676770	Tube
11	1	676771	Tube
12	1	671516	Tube
13	1	671512	Tube
14	2	665115	Tube Spacer
15	1	676772	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	604511	Fitting, 6-6
20	1	660385	Fitting, 8-8
21	1	601250	Fitting, 8-8
22	1	677573	Fuse Assembly (7.5 AMP)

- See page 21.
- Includes item 8.

Solenoid Adaption

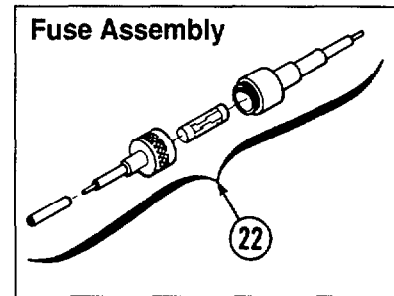
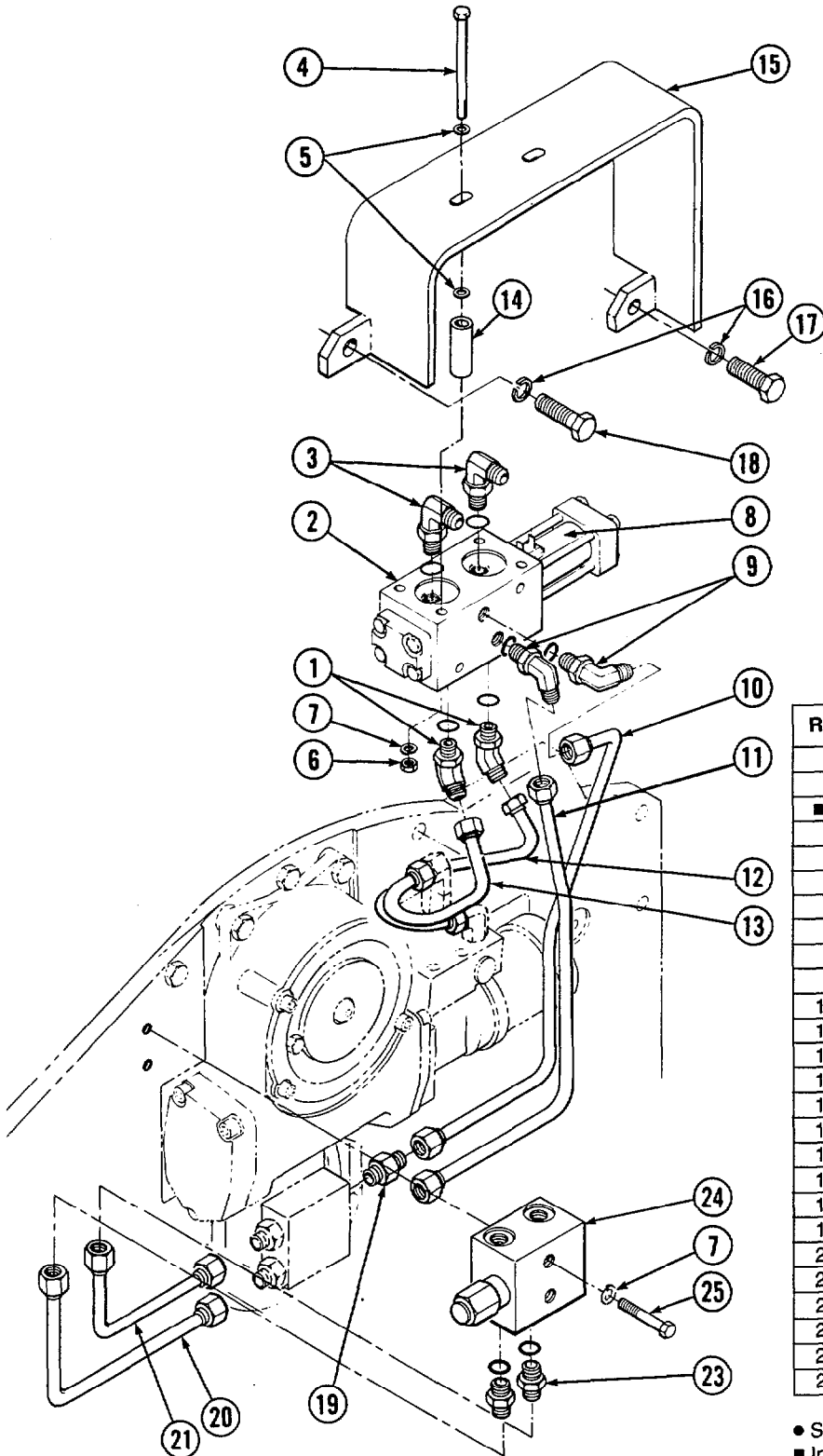


REF	QTY	PART NO.	DESCRIPTION
		687420	Solenoid Adaption Group
1	2	651302	Fitting, 6-6
■2	1	●	Solenoid Valve
3	2	651303	Fitting, 6-6
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16" ID
6	2	15251	Nut
7	2	6287	Lockwasher, 5/16" ID
8	1	●	Coil
9	2	601676	Fitting, 6-6
10	1	687417	Tube
11	1	687418	Tube
12	1	671516	Tube
13	1	671512	Tube
14	2	665115	Tube Spacer
15	1	676772	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	604511	Fitting, 6-6
20	1	660385	Fitting, 8-8
21	1	601250	Fitting, 8-8
22	1	677573	Fuse Assembly (7.5 AMP)

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- See page 21.
- Includes item 8.

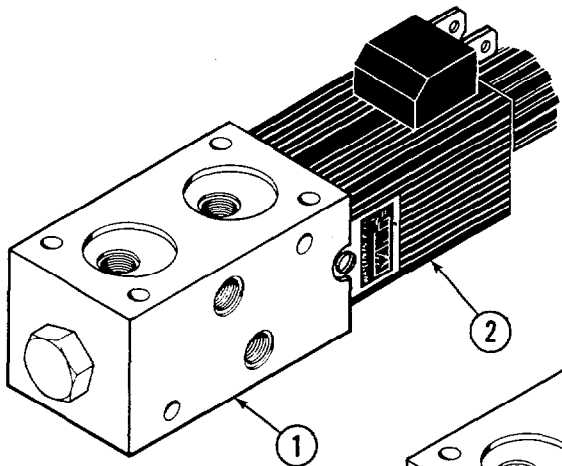
Solenoid Adaption with Pressure Relief



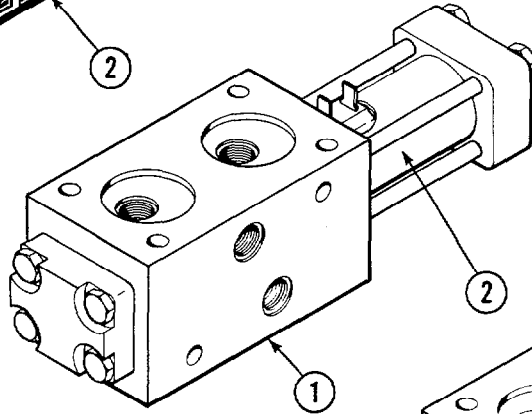
REF	QTY	PART NO.	DESCRIPTION
		689947	Solenoid Adaption Group
1	2	651302	Fitting, 6-6
■2	1	●	Solenoid Valve
3	2	651303	Fitting, 6-6
4	2	3592	Capscrew, 5/16 NC x 5.50
5	4	6229	Washer, 5/16" ID
6	2	15251	Nut
7	4	6287	Lockwasher, 5/16" ID
8	1	●	Coil
9	2	601676	Fitting, 6-6
10	1	687417	Tube
11	1	687418	Tube
12	1	671516	Tube
13	1	671512	Tube
14	2	665115	Tube Spacer
15	1	676772	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	604511	Fitting, 6-6
20	1	689951	Tube
21	1	689950	Tube
22	1	677573	Fuse Assembly (7.5 AMP)
23	2	611288	Fitting, 6-8
24	1	679888	Valve
25	2	643519	Capscrew, 5/16 NC x 2.85 GR8

- See page 21.
- Includes item 8.

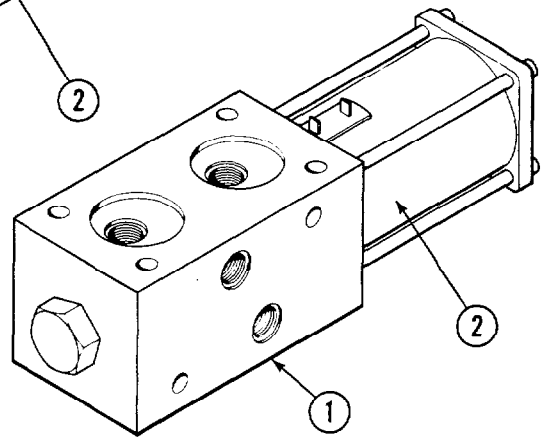
Solenoid Valves



**New Style
Waterman**



**Old Style
Waterman**



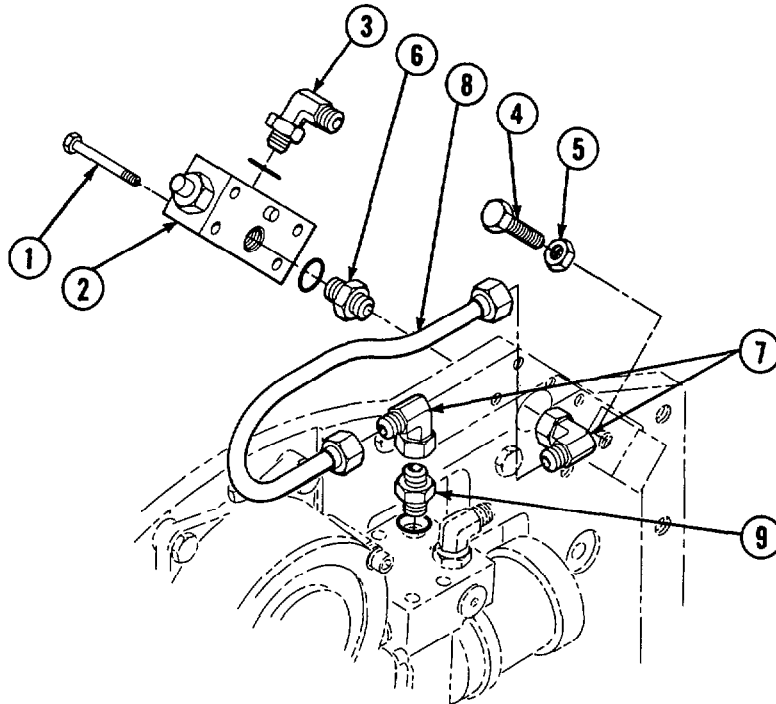
Racine

NOTE: Waterman new style with black coil, Waterman old style and Racine Solenoid Valve assemblies are interchangeable as a unit. However coils **must** match valves. If one brand is preferred over another you must specify both part number and brand name.

REF	QTY	New Style Waterman PART NO.	Old Style Waterman PART NO.	Racine PART NO.	DESCRIPTION
1	1	200251	614089	614089	Solenoid Valve - 12V
	1	200252	614091	614091	Solenoid Valve - 24V
	1	200253	614092	614092	Solenoid Valve - 36V
	1	200254	614093	614093	Solenoid Valve - 48V
	1	200540	614094	—	Solenoid Valve - 72V
2	1	200255	611458	665044	Coil - 12V
	1	200256	611460	665045	Coil - 24V
	1	200257	611461	665046	Coil - 36V
	1	200258	614097	665047	Coil - 48V
	1	200542	614098	—	Coil - 72V
		200259	685072	685012	Service Kit

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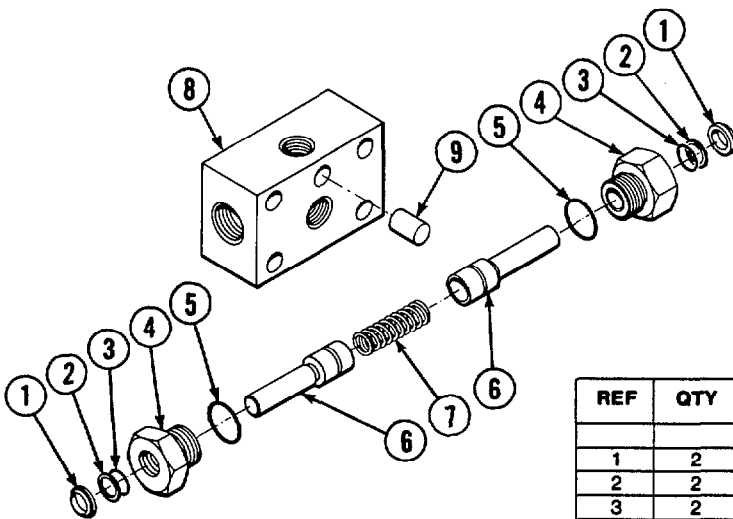
180° Stop Group



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

2485w

Stop Valve



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

2485w

Recommended Spare Parts List

70D Revolving Clamps				
PART NO.	DESCRIPTION	ATTACHMENTS SERVICED		
		1-5	6-19	20-50
DRIVE GROUP				
675608	Worm	0	1	2
670556	Pinion	0	1	2
670579	Bearing	0	1	1
7214	Snap Ring	2	2	4
643423	O-Ring	1	2	2
675329	Drive Motor	0	1	1
675343	Drive Motor Seal Kit	1	1	2
668184	Sealant	1	1	2
675638	Bearing Service Kit	1	1	2
675639	Bearing Service Kit	1	2	2
656300	Gear Box Lube	1	2	2
FRAME GROUP				
678409	Hose	0	1	2
676114	Hose	0	1	2
676103	Frame	0	1	2
676106	Bumper	0	0	1
676104	Bearing	4	8	12
676105	Bearing	4	8	12
667663	Bearing	4	8	12
CYLINDER				
676429	Cylinder Assembly	0	0	1
555463	Shell	0	1	1
555433	Piston	0	0	2
556432	Retainer	0	0	2
556464	Rod	0	1	2
678036	Nut Service Kit	0	2	4
556486	Service Kit	2	4	8
CHECK VALVE				
670549	Check Valve Assembly	0	1	1
REVOLVING CONNECTION				
•	Service Kit	1	1	1
667516	Check Valve Service Kit	2	4	4
ARMS				
676840	Cap screws	24	24	24
676218	Arm Cap screw Extension Tool	1	2	2
PAINT				
685660	12 oz. Aerosol Can - Heritage White	1	1	1
PUBLICATIONS				
672362	Service Manual	1	1	1
672903	Operators Guide	1	1	1
677705	Parts Manual	1	1	1
VIDEOS				
680666	Servicing Cascade Cylinders - 3/4	1	1	1
680664	Servicing Cascade - VHS			
680665	Servicing Cascade - BETA			

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• See specific parts page.

Notes

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

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