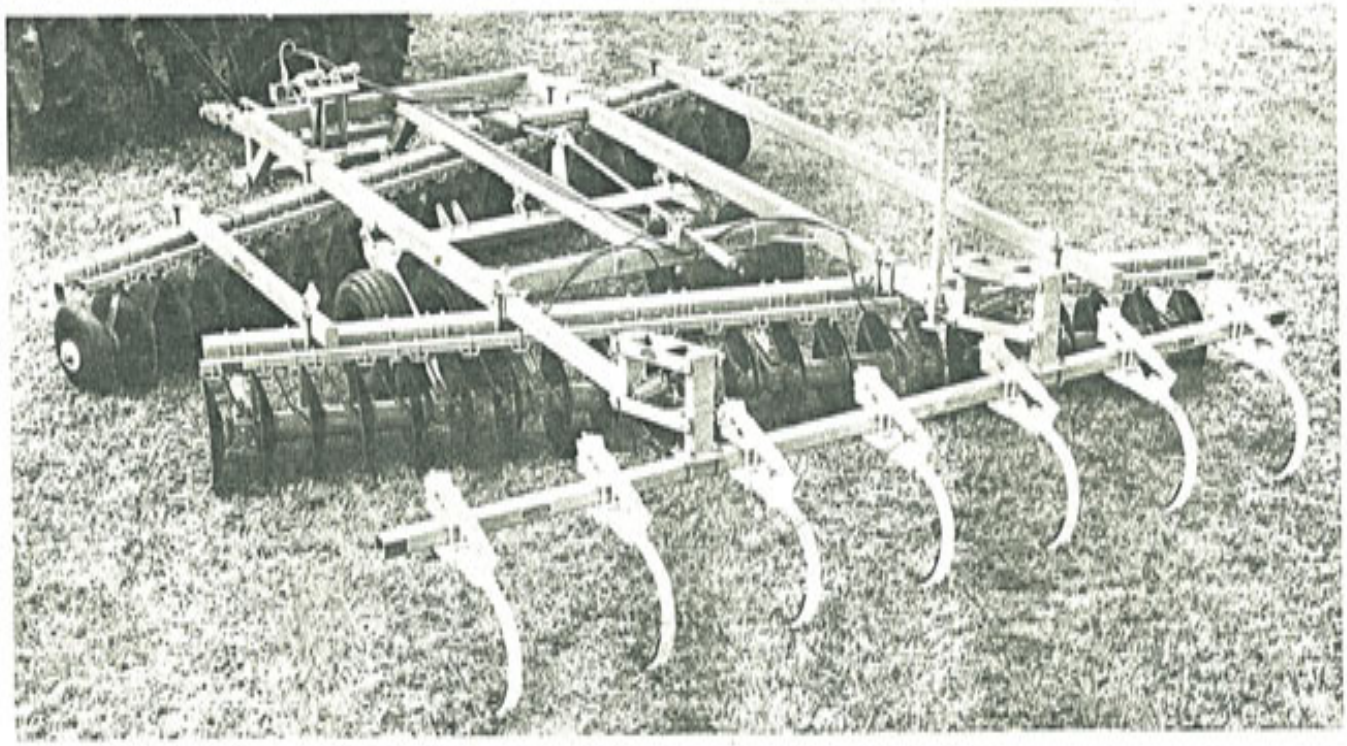
AMCO

CHISEL ATTACHMENTS
FOR AMCO OFFSETS



PARTS CATALOG
OPERATION - MAINTENANCE - SET-UP INSTRUCTIONS

AMCO PRODUCTS

No. 1 AMCO Drive, Yazoo City, Mississippi 39194 / 601 / 746-4464
Portable Elevator Division, Dynamics Corporation of America

DCA

TO THE PURCHASER

The care you give your new AMCO Chisel Attachment will greatly determine the satisfaction and service you will obtain from it. By observing the instructions and suggestions in this manual, your Chisel Attachment will serve you well for many years.

As an Authorized AMCO Dealer, we stock Genuine AMCO Parts, which are manufactured with the same precision and skill as the original equipment. For best performance and longer life use only Genuine AMCO replacement parts. Our factory trained staff is kept fully informed of the most efficient methods of servicing AMCO equipment and is ready and able to assist you.

When you sell your Chisel Attachment you should pass this manual to the new owner.

If you should require additional aid or information, contact us.

YOUR AUTHORIZED AMCO DEALER

OSHA requires that as a farm employer you meet certain safety requirements. Become familiar with and comply with those requirements. Be sure anyone who operates this equipment understands all safety related items. If this attachment is repainted, be certain new decals are ordered. Decals pertaining to personal safety must be replaced.

Look for this symbol to point out important safety precautions. It means —ATTENTION! Become alert! Your safety is involved.

To insure efficient and prompt service, please provide the model number and serial number of the AMCO Chisel Attachment in all correspondence or contacts. Remember, the right and left hand sides of the attachment are determined by standing at the rear of the attachment and facing the direction of travel.

MODEL NUMBER _____ SERIAL NUMBER _____

TABLE OF CONTENTS

CHISEL ATTACHMENTS FOR J42 - J43 - J44 OFFSETS

Standard Specifications
(Metrics in Parenthesis)

MOUNT BAR: 3 x 5 x 3/8 WT for CA50 and CA86 with parking stand

TOOL BAR: 4 x 4 x 3/8 WT

PARALLEL LINKAGE: Hydraulically controlled & provides constant pitch for chisels

SHANKS: 31 ½" clearance - 750# per inch Adjust-O-Pitch

HYDRAULIC CYLINDER: One - 3 ¼ x 8
One - 3 ½ x 8 with depth control

DRAWBAR HORSEPOWER: Allow 5 - 8 D.B.H.P. per shank

HYDRAULIC HOSES: Complete to front of disk

NOTE: Shanks may be added or deleted for variable shank spacing.

FOR THIS MODEL ⟶ ORDER ⟶ THIS MODEL					
MODEL	CUTTING WIDTH	CA MODEL	NUMBER OF SHANKS	SHANK SPACING	APPROX. WEIGHT
J42 - 2024 J43 - 2024 J44 - 2024	8'8" (2.64m) 8'8" (2.64m) 8'8" (2.64m)	CA50-382	3	32" to 36" (0.8m) (0.9m)	1292 lbs. (586.05kg.)
J42 - 2424 J43 - 2424 J44 - 2424	10'4" (3.15m) 10'4" (3.15m) 10'4" (3.15m)	CA50-4106	4	21½" to 32" (0.5m) (0.8m)	1422 lbs. (645.02kg.)
J42 - 2824 J43 - 2824	12'0" (3.66m) 12'0" (3.66m)	CA50-5154	5	32" to 36" (0.8m) (0.9m)	1586 lbs. (719.41kg.)
J42B- 2824 J43B- 2824 J44 - 2824 J42 - 3224 J43 - 3224 J44 - 3224	12'0" (3.66m) 12'0" (3.66m) 12'0" (3.66m) 13'8" (4.17m) 13'8" (4.17m) 13'8" (4.17m)	CA86-5146	5	25" to 34" (0.6m) (0.8m)	1802 lbs. (817.39kg.)
J42 - 3624 J43 - 3624 J44 - 3624 J42 - 4024 J43 - 4024 J44 - 4024 J42 - 4424 J43 - 4424 J44 - 4424	15'4" (4.67m) 15'4" (4.67m) 15'4" (4.67m) 17'0" (5.18m) 17'0" (5.18m) 17'0" (5.18m) 18'8" (5.69m) 18'8" (5.69m) 18'8" (5.69m)	CA86-7214	7	25" to 34" (0.6m) (0.8m)	2090 lbs. (948.02kg.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

CHISEL ATTACHMENTS FOR 148 & 185 SERIES OFFSETS
CHISEL ATTACHMENTS FOR J16 SERIES OFFSETS

Standard Specifications
(Metrics in Parenthesis)

MOUNT BAR: 4 x 4 x 3/8 WT for CA48 and CA85 w/Parking Stand

TOOL BAR: 4 x 4 x 3/8 WT

PARALLEL LINKAGE: Hydraulically controlled to provide constant pitch for chisels

SHANKS: 31 1/2" clearance - 750#/per inch Adjusto-Pitch

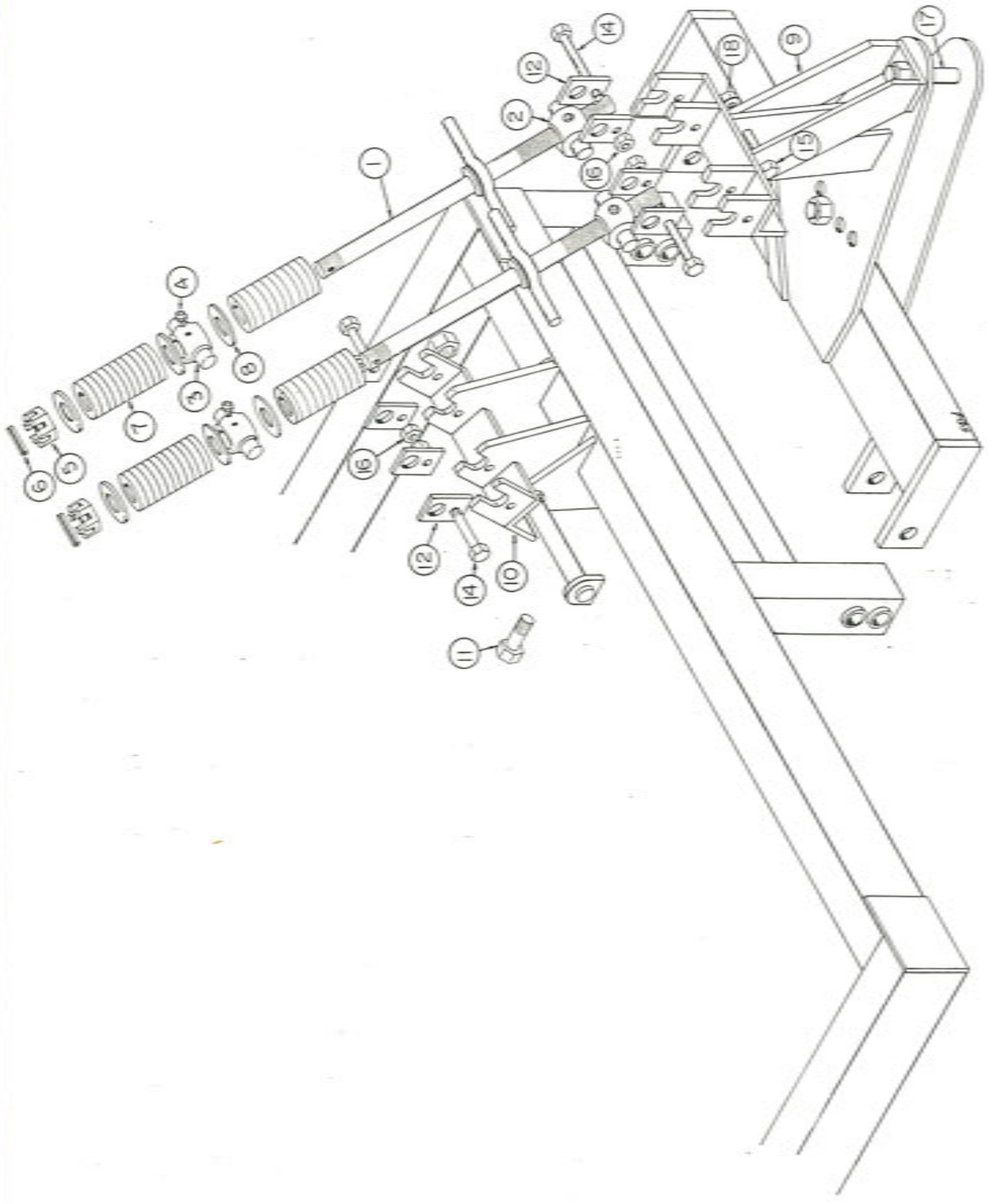
HYDRAULIC CYLINDER: One - 3 1/4 x 8
One - 3 1/2 x 8 with depth control

DRAWBAR HORSEPOWER: Allow 5 - 8 D.B.H.P. per shank

HYDRAULIC HOSES: Complete to front of disk

NOTE: Shanks may be added or deleted for variable shank spacing.

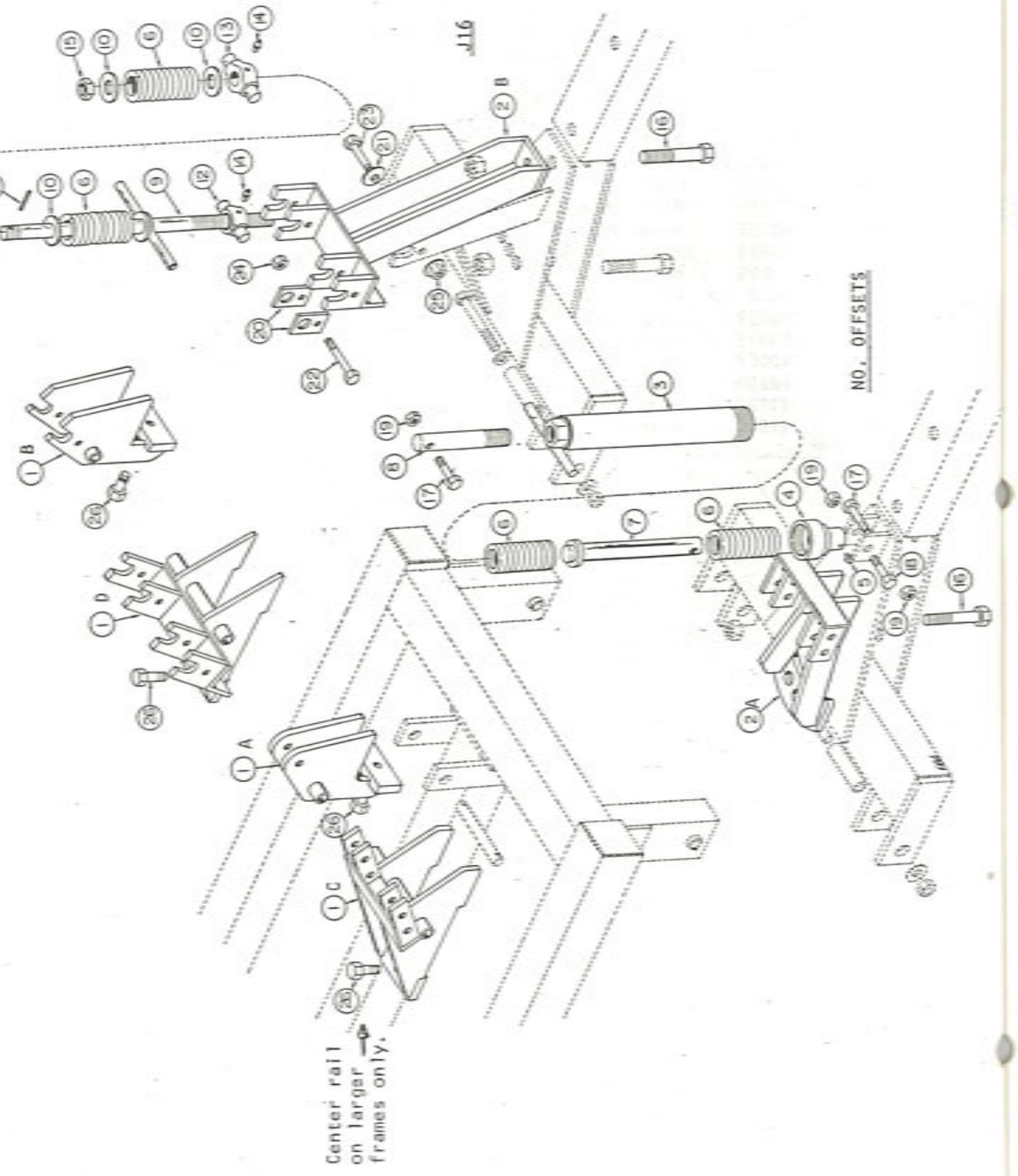
FOR THIS MODEL ⟶ ORDER ⟶ THIS MODEL					
MODEL	CUTTING WIDTH	CA MODEL	NUMBER OF SHANKS	SHANK SPACING	APPROX. WEIGHT
148-001 148-006	8'8" (2.64m) 8'7" (2.62m)	CA48-382	3	31" to 37" (.79m) (.94m)	1298 lbs. (588.77kg.)
148-009 148-010 148-014 148-018	10'4"(3.15m) 9'4" (2.84m) 10'0"(3.05m) 10'6"(3.20m)	CA48-4106	4	21" to 30" (.53m) (.76m)	1427 lbs. (647.29kg.)
148-017 148-026	12'0"(3.66m) 12'2"(3.71m)	CA48-5146	5	31" to 35" (.79m) (.89m)	1579 lbs. (716.23kg.)
185-009 185-013 185-017 185-018 185-022 185-026	12'10"(3.91m) 13'8"(3.86m) 14'6"(4.42m) 12'10"(3.91m) 13'7"(4.14m) 14'2"(4.32m)	CA85-5146	5	25" to 33½" (.64m) (.85m)	1746 lbs. (791.99kg.)
185-025 185-034 185-038	16'2"(4.93m) 15'9"(4.80m) 16'6"(5.03m)	CA85-6190	6	33" to 36½" (.84m) (.93m)	1903 lbs. (863.20kg.)
185-046 185-033	17'10"(5.44m) 17'10"(5.44m)	CA85-7214	7	25" to 33½" (.64m) (.85m)	2032 lbs. (921.72kg.)
J16-1824 J16-2024	7'10"(2.39m) 8'8" (2.64m)	CA48-3828	3	31" to 37" (.79m) (.94m)	1298 lbs. (588.77kg.)
J16-2224 J16-2424	9'6" (2.90m) 10'4"(3.15m)	CA48-41068	4	21" to 30" (.53m) (.76m)	1426 lbs. (646.83kg.)
J16-2624	11'2"(3.40m)	CA48-51468	5	31" to 35" (.79m) (.89m)	1578 lbs. (715.78kg.)
J16-2824 J16-3224	12' (3.66m) 13'8"(3.86m)	CA85-51468	5	25" to 33½" (.64m) (.85m)	1778 lbs. (806.50kg.)
J16-3624	15'4"(4.67m)	CA85-61908	6	33" to 36½" (.84m) (.93m)	1935 lbs. (877.72kg.)
J16-4024	17' (5.18m)	CA85-72148	7	25" to 33½" (.64m) (.85m)	2064 lbs. (936.23kg.)



AMCO Stabilizer Adapter for

F42, J42, J43, J44 SERIES

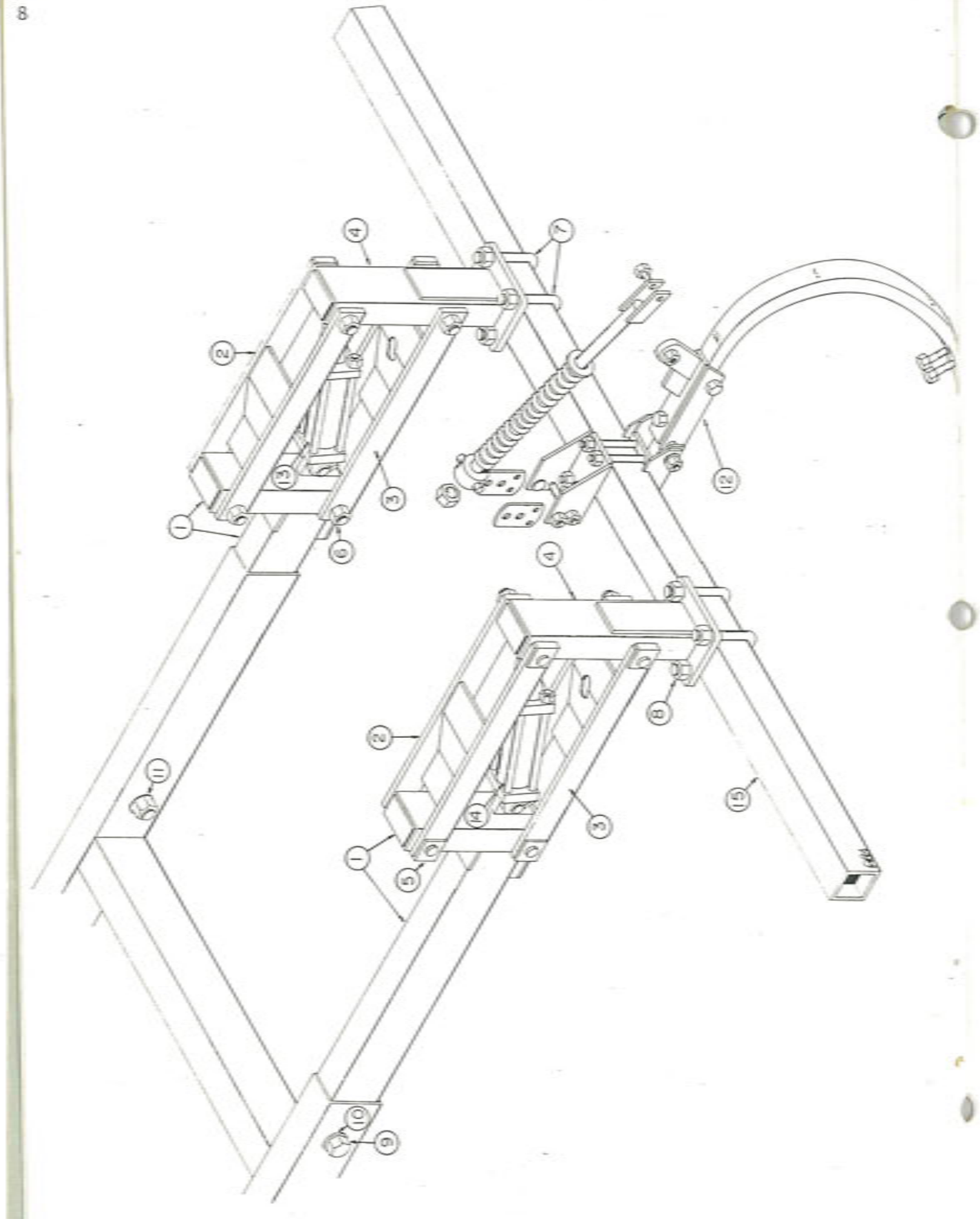
Ref. No.	Part No.	Description	No. Req'd
1	20108	Assy. Tongue Adjusting Rod	1
2	9919A	Stabilizer Swivel	1
3	9892	Swivel	1
4	10606	Grease Fitting 1/8 NPT Threaded	2
5	11279	Hex Nut 1 3/8 NC, PLT, Slotted	1
6	10910	Roll Pin 5/16 x 2 1/4	1
7	10460	Spring	2
8	10872	Cut Washer 1 3/8 PL	3
9	20251	Assy. Adjusting Rod Mount (50" Frame)	1
9	20252	Assy. Adjusting Rod Mount (86" Frame) Shown	1
10	20253	Assy. Rod Anchor (86" Frame)	1
11	11025	Hex Screw 1 x 3 NC, PLT, GR5	1
12	9628	Clamp Trunion	4
13	10059	Flat Washer 5/8 NC, PLT	1
14	10043	Hex Screw 5/8 x 6 1/2 NC, PLT, GR5	2
15	10067	Hex Screw 5/8 x 5 1/2 NC, PLT	1
16	10299	Lock Nut 5/8 NC, PLT	2
17	11021	Hex Screw 1 1/4 x 7 NC, PLT	1
18	11647	Flange Lock Nut 5/8 NC, PLT	1



AMCO STABILIZER ADAPTER

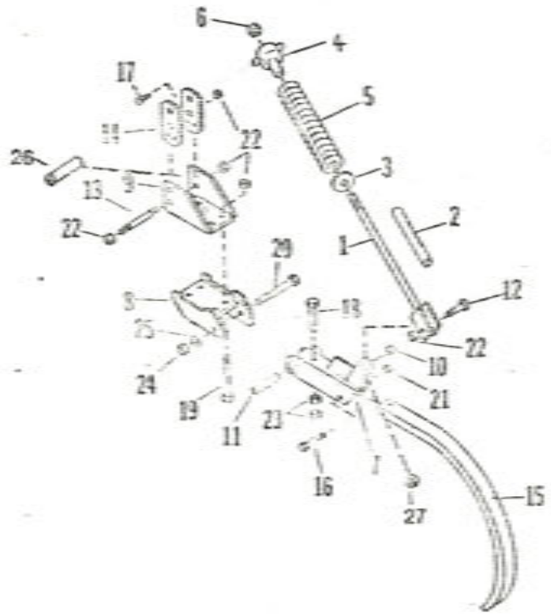
NO. OFFSETS & J16 SERIES

Ref. No.	Part No.	Description	No. Req'd. 148 248	185 285	J16 48"	J16 85"
1A	20257	ASSY. ADJUSTING ROD MOUNT	1	-	-	-
1B	20258	ASSY. ADJUSTING ROD MOUNT	-	1	-	-
1C	20254	ASSY. ADJUSTING ROD MOUNT	-	-	1	-
1D	20255	ASSY. ADJUSTING ROD MOUNT	-	-	-	1
2A	20260	ASSY. ROD ANCHOR	-	1	-	-
2B	20256	ASSY. ROD ANCHOR	-	-	-	1
3	081	ASSY. SPRING HOUSING	-	1	-	-
4	1166	ASSY. CAP	-	1	-	-
5	11081	GREASE FITTING 5/16" Drive In	-	1	-	-
6	10460	SPRING 3" OD. - 5/8" Wire 6 7/8 LONG	-	2	-	2
7	1167	ASSY. PISTON ROD	-	1	-	-
8	5403	THREADED ROD 1 1/2" Dia. 14" LONG	-	1	-	-
9	0635A	ASSY. STABILIZER ROD	-	-	-	1
10	10872	CUT WASHER 1 3/8" PL	-	-	-	3
11	10910	ROLL PIN 5/16 x 2 1/4	-	-	-	1
12	9919A	STABILIZER SWIVEL	-	-	-	1
13	9892	SWIVEL - 60-45-12	-	-	-	1
14	10606	GREASE FITTING 1/8 MPT THREADED	-	-	-	2
15	11279	HEX NUT 1 3/8 - NC, SLOTTED	-	-	-	1
16	11021	HEX SCREW 1 1/4 x 7 NC,PL	-	1	-	1
17	10113	HEX SCREW 3/4 x 4 NC,PL,GR5	-	2	-	-
18	10671	HEX SCREW 3/4 x 5 NC,PL,GR5	-	1	-	-
19	10300	LOCK NUT 3/4 NC,PL	-	3	-	-
20	9628	CLAMP TRUNION	-	-	-	4
21	10059	FLAT WASHER 5/8 NC,PL	-	-	-	1
22	10043	HEX SCREW 5/8 x 6 1/2 NC,PL,GR5	-	-	-	2
23	10067	HEX SCREW 5/8 x 5 1/2 NC,PL	-	-	-	1
24	10299	LOCK NUT 5/8 NC,PL	-	-	-	2
25	11647	FLANGE LOCK NUT 5/8 NC,PL,GR8	-	-	-	1
26	11025	HEX SCREW 1 x 3 NC,PL,GR5	1	1	1	1



CHISEL ATTACHMENT SERIES

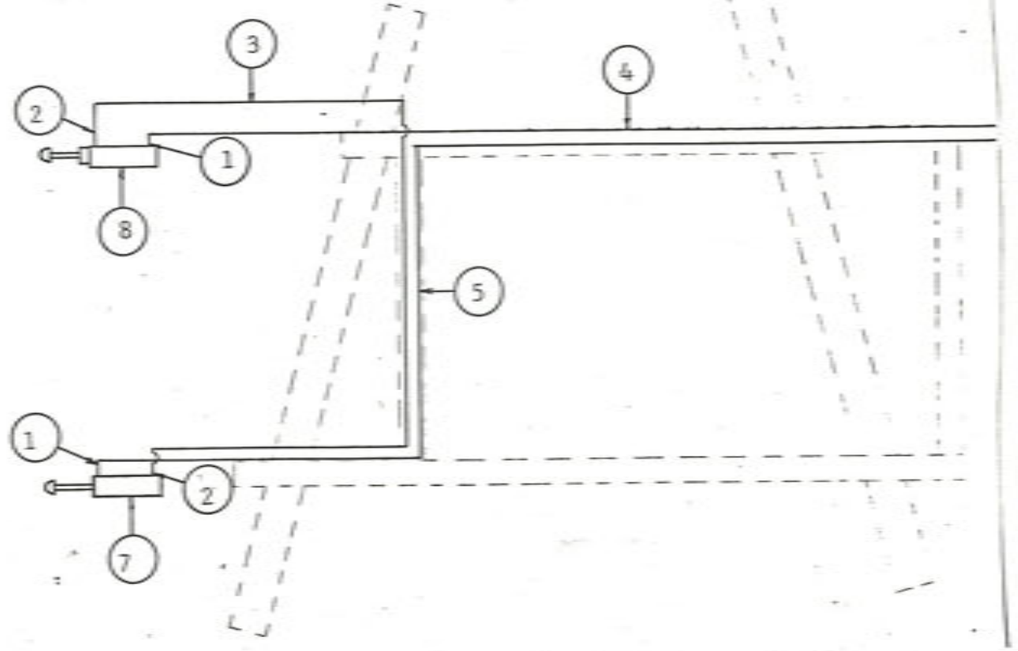
REF. NO.	PART NO.	DESCRIPTION	NO. REQUIRED CA48	CA50	CA85	CA86
1	20290	Assy. Mount Bar - LH	1	-	-	-
1	20291	Assy. Mount Bar - RH	1	-	-	-
1	20292	Assy. Mount Bar - LH	-	1	-	-
1	20293	Assy. Mount Bar - RH	-	1	-	-
1	20294	Assy. Mount Bar - LH	-	-	1	-
1	20295	Assy. Mount Bar - RH	-	-	1	-
1	20296	Assy. Mount Bar - LH	-	-	-	1
1	20297	Assy. Mount Bar - RH	-	-	-	1
2	20244	Assy. Linkage - Top	2	2	2	2
3	20261	Assy. Linkage - Bottom	2	2	2	2
4	20259	Assy. Tool Bar Mount	2	2	2	2
5	20243	Assy. Pin 1 1/4 Dia. 8 7/8" Long	8	8	8	8
6	10397	Lock Nut 1 1/4 NC,PL,GRB	8	8	8	8
7	11756	"U" Bolt 7/8 Dia. 16 1/4 Long	4	4	4	4
8	10396	Lock Nut 7/8 NC, PL, GRB	8	8	8	8
9	10591	Hex Screw 7/8 x 6 NC,PL,GR5	1	-	1	-
9	10760	Hex Screw 7/8 x 5 1/2 NC,PL,GR5	-	1	-	1
10	10063	Flat Washer USS 7/8"	2	2	2	2
11	11691	Flange Lock Nut 7/8 NC,PL	2	2	2	2
12	DC-01-0036	Adjusto-Pitch Shank (as req'd per model - See page 2 & 3)				
13	11661	Hydraulic Cylinder 3 1/4 x 8 (Lantex #4400-PP)	1	1	1	1
14	11702	Hydraulic Cylinder w/Collar (Lantex #5163-AP)	1	1	1	1
15		Tool Bar (as req'd per model - See page 2 & 3).				



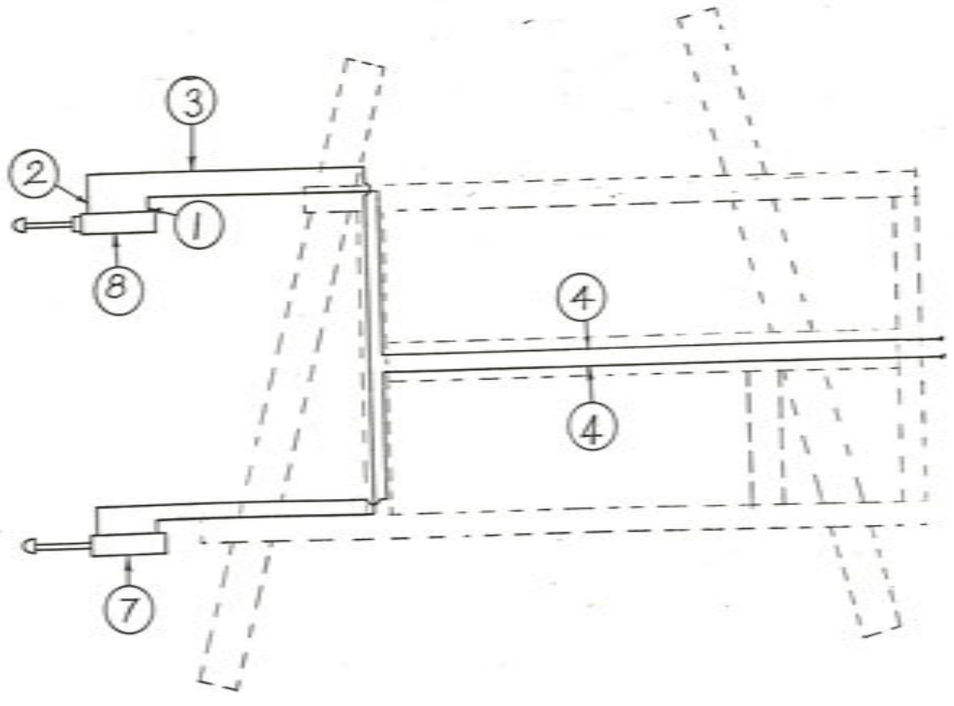
AMCO Adjusto-Pitch Shank

Ref. No.	Part No.	Description	No. Req'd
1	20271	Assy. Pressure Rod	1
2	11809	Sleeve 1 3/4 O.D. x 9" Long	1
3	11810	Washer	1
4	11813	Swivel	1
5	11814	Spring	1
6	11794	Nut Hx. Top Lock 3/4 - 10ZP	1
7	20269	Assy. Shank Holder	1
8	20270	Assy. Shank Mount	1
9	20272	Assy. Cylinder Lug	1
10	11815	Bushing 1" O.D. x 27/32" Long	1
11	11816	Bushing 1" O.D. x 4" Long	1
12	11819	Hex Head Screw 5/8" x 2 1/2" Gr5	1
13	11820	Stud Bolt 5/8" x 6 1/8"	1
14	11821	Adjusting Bracket	2
15	11822	Shank	1
16	11823	Hex Head Screw 1/2" x 3 1/2"	1
17	11824	Carriage Bolt 5/8" x 1 1/2" Gr5	2
18	11829	Hex Head Screw 5/8" x 3 1/2" Gr8	1
19	11789	Hex Head Screw 5/8" x 6"	4
20	11826	Hex Head Screw 3/4" x 6" Gr5	1
21	11827	Nut, Hex 1/2	1
22	11793	Nut, Hex Lock 5/8"	9
23	11828	Nut, Hex Heavy 5/8" Gr5	2
24	11794	Nut, Hex 3/4"	1
25	11797	Washer	1
26	11817	Spacer	1
27	11818	Tension Bushing	1

CA50-382, CA50-4106, CA50-5154, CA48-382, CA48-4106, CA48-5154



CA86-5146, CA86-7214, CA85-5146, CA85-7214



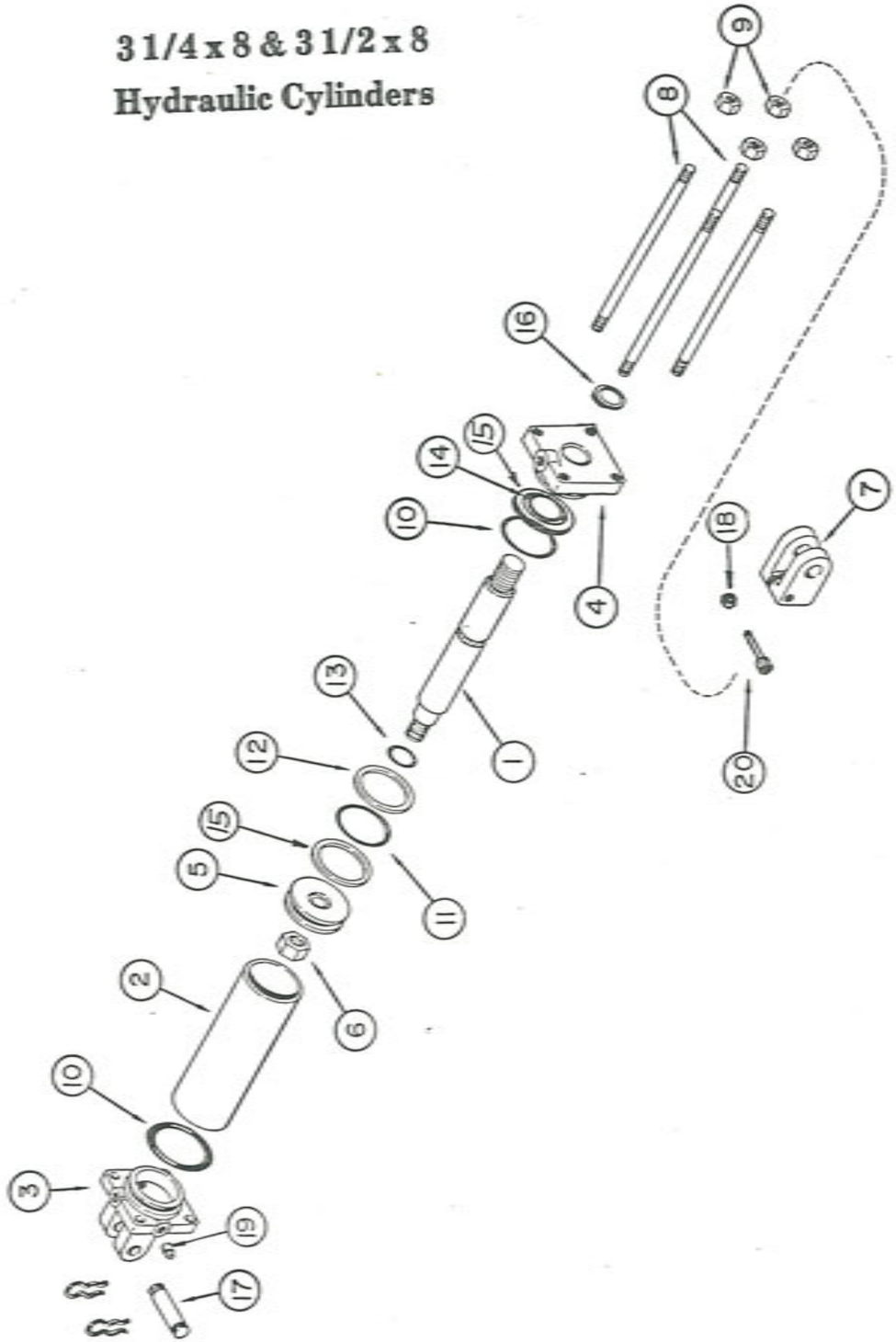
Hydraulic Circuit
(CA50-382, CA50-4106, CA50-5154)

Ref. No.	Part No.	Description	No. Req'd
1	11284	Bushing 1/2 NPT Male to 1/4 NPT Female.....	4
2	11758	Elbow-45° Swivel 1/4 NPTF Male to 1/4 NPSM Female	4
3	11801	Hose 1/4 x 192" with 1/4 NPT Fittings.....	1
4	11803	Hose 1/4 x 336" with 1/4 NPT Fittings.....	1
5	11804	Hose 1/4 x 360" with 1/4 NPT Fittings.....	1
6	11462	Pipe Sealant - 6cc Tube (with Teflon - not shown)	1
7	11661	Hydraulic Cylinder 3 1/4 x 8.....	1
8	11702	Hydraulic Cylinder 3 1/2 x 8.....	1

Hydraulic Circuit
(CA86-5146, CA86-7214)

Ref. No.	Part No.	Description	No. Req'd
1	11284	Bushing 1/2 NPT Male to 1/4 NPT Female.....	4
2	11758	Elbow-45° Swivel 1/4 NPTF Male to 1/4 NPSM Female	4
3	11802	Hose 1/4 x 258" with 1/4 NPT Fittings.....	1
4	11805	Hose 1/4 x 384" with 1/4 NPT Fittings.....	2
5	11462	Pipe Sealant - 6cc Tube (with Teflon - not shown)	1
7	11661	Hydraulic Cylinder 3 1/4 x 8.....	1
8	11702	Hydraulic Cylinder 3 1/2 x 8.....	1

3 1/4 x 8 & 3 1/2 x 8 Hydraulic Cylinders



3 1/4 x 8 Hydraulic Cylinder

Ref. No.	Part No.	Description	No. Req'd
1	11680	Rod	1
2	11677	Barrell	1
3	11678	Base—Clevis	1
4	11679	Head	1
5	11687	Piston	1
6	10980	Lock Nut, self-locking	1
7	11663	Rod Clevis	1
8	11681	Tie Rod	4
9	11682	Hex Nut, Tie Rod	8
	11689	Kit—Seal Repair (4041-34 Lantex)	
10	11685*	Gland Static Seal	2
11	11683*	O-Ring	1
12	11684*	Piston Seal	1
13	11252*	Rod Static Seal	1
14	11673*	Rod Seal	1
15	11674*	Back-up Ring	1
16	11675*	Rod Wiper	1
17	11686	Pin Assy	2
18	11672	Bolt, Allen Head	1
19	11676	Plug	1
20	11670	Hex Nut, Rod Clevis	1

*Parts purchased in Seal Kit #11689 only.
These parts are not purchased separately.

3 1/2 x 8 Hydraulic Cylinder

Ref. No.	Part No.	Description	No. Req'd
1	11723	Rod	1
2	11724	Barrell	1
3	11721	Base—Clevis	1
4	11720	Head	1
5	11719	Piston	1
6	10980	Lock Nut, self-locking	1
7	11722	Rod Clevis	1
8	11681	Tie Rod	4
9	11682	Hex Nut, Tie Rod	8
	11718	Kit—Seal Repair (#4057-34 Lantex)	1
10	11249*	Gland Static Seal	1
11	11254*	O-Ring	1
12	11255*	Piston Seal	1
13	11252*	Rod Static Seal	1
14	11727*	Rod Seal	1
15	11726*	Back-up Ring	2
16	11725*	Rod Wiper	1
17	11686	Pin Assy	2
18	11672	Bolt, Allen Head	1
19	11676	Plug	1
20	11671	Hex Nut, Rod Clevis	1
21	11728	Stroke Control Assy (Not shown)	1

*Parts purchased in Seal Kit #11718 only.
These parts are not purchased separately.

AMCO CHISEL ATTACHMENT

Tool Bars

Part No.	Description
101620	Tool Bar 4 x 4 x 3/8 WT - 82" Long
101621	Tool Bar 4 x 4 x 3/8 WT - 106" Long
101622	Tool Bar 4 x 4 x 3/8 WT - 146" Long
101623	Tool Bar 4 x 4 x 3/8 WT - 190" Long
101624	Tool Bar 4 x 4 x 3/8 WT - 214" Long
101625	Tool Bar 4 x 4 x 3/8 WT - 154" Long

AMCO Decals

Ref. No.	Part No.	Description	No. Required
	11466	Decal "AMCO" Small.....	3
	11548	Decal "FEMA".....	1
	11708	Tape/Amber Reflective.....	2
	11707	Tape/Red Reflective.....	2

assembly instructions

The AMCO Chisel Attachment is shipped from the factory with maximum pre-assembly. The following bundles are required for a complete attachment.

A. Two bundle mount bars (with parallel linkage)
B. Bundle tool bar
C. Bundle chisels
D. 3 1/2 x 8 hydraulic cylinder
E. 3 1/4 x 8 hydraulic cylinder
F. Bundle hydraulic hose and fittings
G. Bundle stabilizer mounts

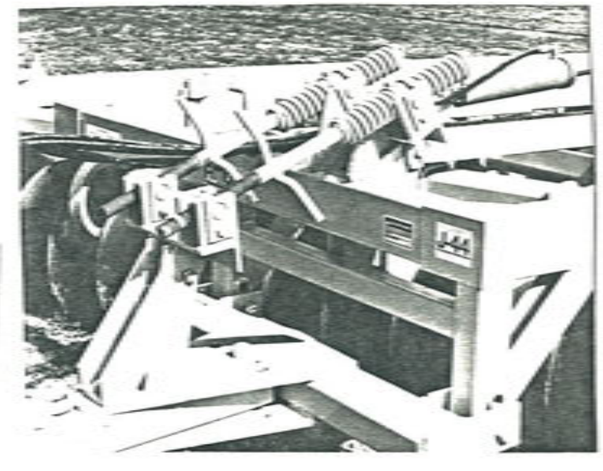
Right Hand and Left Hand sides of the harrow are determined by standing at the rear of the harrow and facing the direction of travel.

STEP 1.
Select a clear level area to assemble the attachment. Place all parts and bundles where they will be readily accessible during assembly. Lower disk harrow completely to the ground.

CAUTION: *When working on disk harrows care should be exercised in handling or tightening bolts near disk blades to avoid injury. All hydraulically or mechanically elevated components must be blocked or lowered to prevent accidents when servicing the harrow.*

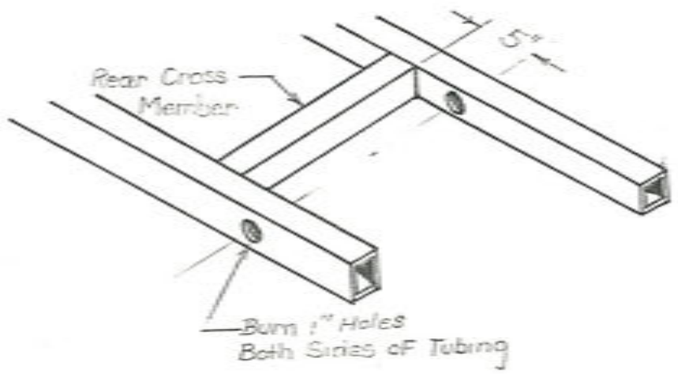
STEP 2.
The chisel attachment is designed to attach to AMCO F42, J42, J43, J44, J16, 148, 185,248 and 285 model offset disk harrows.

To provide better stability in transport, special stabilizer mounts are provided. These mounts should be attached while assembling the disk harrow and before assembling the chisel attachment. The assy. connector bar is not used when the chisel attachment is added to the F42, J42, J43, and J44 models.



STEP 3.
Remove end caps from the outside rails of the main frame of disk harrow and hand grind to clean.

STEP 4
Burn 1" hole, for a 7/8" bolt, 5" from backside of rear cross member. See drawing below.

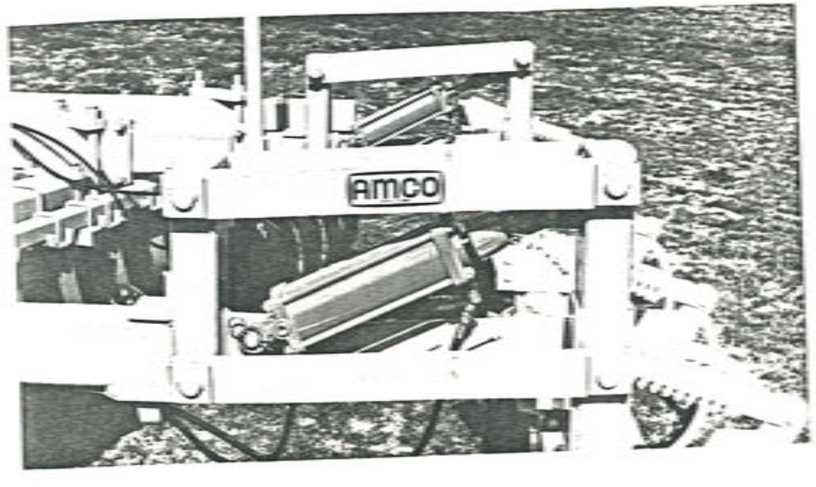


STEP 5.
Install the two mount bars in the main frame and secure with 7/8" dia. bolts. Mount bar with parking stand must be placed on left side of Main Frame. Raise disk harrow off blades. Pin off for transport. Install parking stand.

WARNING!! Back-heavy implements can fall backward and flip the tongue upward suddenly. Before unhitching, lower implement to the ground or use an approved rear parking stand.

WARNING!! While in transport, back-heavy implements exert a lifting force on the towing vehicle. Tow only with a tractor or other vehicle with adequate rear weight.

STEP 6.
Complete assembly of the parallel linkage and install the 3 1/2 x 8 hydraulic cylinder with stroke collar on the left hand parallel linkage and the 3 1/4 x 8 hydraulic cylinder on the right hand parallel linkage. Locate cylinder so that ports are downward.



STEP 7.
Install hydraulic fittings as follows for 48" and 50" main frames (CA50-382, CA50-4106, CA50-5154, CA48-382, CA48-4106, CA48-5154.)
Note: The right and left hand sides of the harrow are determined by standing at the rear of the harrow and facing the direction of travel.
Use small amount of pipe sealant on each hydraulic fluid fitting to eliminate fluid seeps. Avoid putting sealant over the end of the fittings, contaminating the hydraulic system.

(A) Place #11284 Bushing 1/2 NPT Male to 1/4 NPT Female (ref. no. 1) in all cylinder ports. All ports should be turned downward as shown in picture.

(B) Attach #11758 Elbow-45° Swivel 1/4 NPTF Male to 1/4 NPSM Female (ref. no. 2) to Bushings in ports of cylinders.

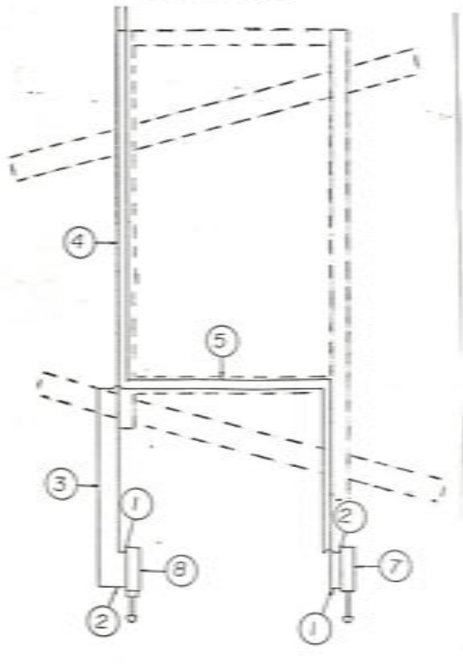
(C) Connect #11801 Hose 1/4 x 192" (ref. no. 3) from rod end of 3 1/2 x 8 hydraulic cylinder (ref. no. 8) to butt end of 3 1/4 x 8 hydraulic cylinder (ref. no. 7)

(D) Connect #11803 hose, 1/4 x 336" (ref. no.4) from butt end of 3 1/2 x 8 hydraulic cylinder (ref. no. 8) to the tractor.

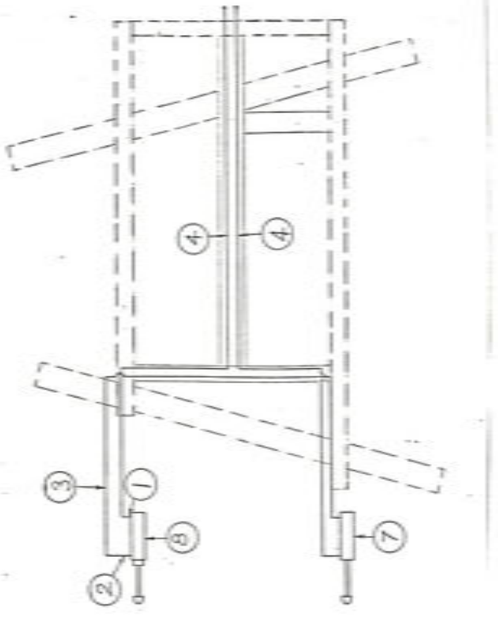
(E) Connect #11804 hose 1/4 x 360" (ref. no. 5) from rod end of 3 1/4 x 8 hydraulic cylinder (ref. no. 7) to the tractor.

Tighten fittings. All hoses must be properly routed through all hose mounts. Be sure hoses are not hanging over the frame to hamper operation. Fully extend hydraulic cylinders on chisel attachment with tractor hydraulics, hold valve open for one full minute, to phase cylinders. Retract and extend cylinder several times to completely charge cylinders with oil.

48" & 50"
Main Frames



85" & 86"
Main Frames



Install hydraulic fittings as follows for 85" and 86" main frames (CA86-5146, CA86-7214,CA85-5146, CA85-7214).
Note: The right and left hand sides of the harrow are determined by standing at the rear of the harrow and facing the direction of travel.
Use small amount of pipe sealant on each hydraulic fluid fitting to eliminate fluid seeps. Avoid putting sealant over the end of fittings, contaminating hydraulic system.

(A) Place #11284 Bushing 1/2 NPT Male to 1/4 NPT Female (ref. no. 1) in all cylinder ports. All ports should be turned downward as shown in picture.

(B) Attach #11758 Elbow-45° Swivel 1/4 NPTF Male to 1/4 NPSM Female (ref. no. 2) to Bushings in ports of cylinder.

(C) Connect #11802 Hose 1/4 x 258" (ref. no. 3) from rod end of 3 1/2 x 8 hydraulic cylinder (ref. no. 8) to butt end of 3 1/4 x 8 hydraulic cylinder (ref. no. 7).

(D) Connect one #11805 Hose 1/4 x 384" (ref. no. 4) from butt end of 3 1/2 x 8 hydraulic cylinder (ref. no. 8) to the tractor. Connect another #11805 Hose from rod end of 3 1/4 x 8 hydraulic cylinder (ref. no. 7) to the tractor.

Tighten fittings. All hoses must be properly routed through all hose mounts. Be sure hoses are not hanging over the frame to hamper operation. The hydraulic installation is now complete.

CAUTION: Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks - never use the hands or other parts of the body.

Relieve hydraulic pressure before disconnecting circuits. When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not given at once.

STEP 8.
Attach the tool bar to the two parallel linkages. Center tool bar on the parallel linkages and secure with four 7/8 'U' Bolts (NOTE: 7 shank models containing 21¼" tool bar with 3x3 brace tubing should be assembled with brace toward front of harro

STEP 9.
Attach the chisel shanks to the tool bar at the desired spacing.

STEP 10.
Attach provided decal on disk harrow pull tongue, left side, next to pull clevis. Decal warns of hazards of back heavy implements.

STEP 11.
Review all steps of the assembly process to be certain the attachment is properly assembled. Check all bolts to be sure they are properly torqued.

Remember a little extra attention to details at this time can prevent problems after the attachment is placed in service.

operating instructions

Your new AMCO Chisel Attachment has been set-up, and adjusted by your dealer before delivery. However, before using your new harrow, or one that has been stored, check to make certain that all nuts and bolts are tight, all cotter pins spread and that the harrow has been lubricated.

This instruction manual should be carefully and thoroughly read to enable the operator to care for and operate the harrow. Also carefully study assembly, lubrication, operating and maintenance instructions in your offset disk manual. Make sure that all operators are aware of safe operating procedure.

The right and left hand sides of the harrow are determined by standing at the rear of the harrow and facing the direction of travel.

Refer to your tractor operator's manual for complete tractor operating instructions.

TRANSPORT: Study tranport procedure for your offset disk before transporting with the chisel attachment. For transport, the chisel attachment should be raised to prevent the possibility of engaging chisels on uneven ground. Lock the disk harrow in transport position using the transport pin provided.

Before transporting the disk check your tires for proper inflation. Be sure that hub bolts and nuts are tight. Wheel bearings should be checked for proper adjustment and lubrication prior to roading the disk over long distances.

CAUTION: When transporting machinery over public roads, comply with your local and state laws regarding length, width and lighting.

CAUTION: When trailing the harrow over public roads, the SMV Emblem must be used, for protection of tractor and motor vehicle operators.

CAUTION: When transporting farm implements on public roads after dusk, it is the responsibility of the operator to provide lighting and reflectors on the rear of the implement in accordance with your state law.

CAUTION: Be sure the area is clear of any personnel before safely driving tractor with disk attached.

The chisel attachment adds additional rear weight to your offset disk which requires extra precaution when transporting. The chisel attachment could lift the rear end of some towing vehicles causing loss of control. Make sure the towing vehicle has adequate rear end weight.

WARNING: While in transport, back-heavy implements exert a lifting force on the towing vehicle. Tow only with a tractor or other vehicle with adequate rear weight.

HITCHING: To hitch or unhitch always lower the disk completely to the ground or use the parking stand provided with the chisel attachment.

WARNING: Back-heavy implements can fall backward and flip the tongue upward suddenly. Before unhitching, lower implement to the ground or use an approved rear parking stand.

If the implement is not lowered to the ground when disconnected from the tractor drawbar, the following procedure must be followed to eliminate possible operator injury from the tongue rising upward suddenly.

1. Remove the tongue jack from the tongue of the disk harrow.
2. Attach the tongue jack to the lower end of the parking stand on the chisel attachment.
3. Lower the parking stand and replace the pin.
4. Adjust the tongue jack so that it rests firmly on the ground.
5. When hooking-up to the disk harrow, adjust the jack to position the clevis at the tractor drawbar height.
6. Raise the parking stand, and swing the tongue jack to the horizontal position before moving the disk harrow.

OFFSET DISK ADJUSTMENTS: Study the offset disk operating instructions before proceeding. When operating the chisels in normal conditions, the pull tongue should be positioned in the center hole and gang angle should be set at minimun. Minimum gang angle reduces horsepower requirement and reduces horsepower requirement and reduces plugging in damp soil. Gang angle may be increased if greater penetration or soil mixing is required.

The rear chisels have a stabilizing effect of the operation of the disk, eliminating the need for many adjustments usually associated with offset disk harrows. However, if leveling or side draft problems occur with the chisels operating, refer to operating instructions for the offset disk for correction procedure.

Set the tractor drawbar so that it is free to swing during field operation. Center and secure the drawbar for road transport.

When plowing, the offset chisel may be operated with successive side by side passes by raising the disk at the end of each pass and turning. As an option, the offset chisel may be operated in "lands", raising only the chisels and making only left hand turns. Avoid turning with the chisels in the ground.

When chiseling is not required, it may be desirable to raise the chisels and use the offset disk alone. If so desired, set the disk by following the field adjustment procedure described in the offset disk operating instructions.

After setting the offset disk, the chisels may be lowered and used when desired. Often no further adjustment will be required to operate with the chisels lowered. Sometimes even in normal conditions a stabilizer adjustment will be needed. However, in heavy clay or hard soil conditions it may be necessary to make other adjustments for proper performance.

CHISEL DEPTH SETTING: Chisel depth may be set hydraulically from approximately 0 to 6 inches below the bottom of the disk blades. In order to maintain the same depth setting, set the stroke control collar on the 3 1/2 x 8" cylinder. The parallel linkage assures constant pitch regardless of the depth. Chisels should not be set any deeper than necessary to fracture a hardpan.

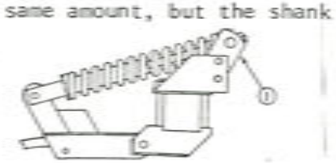
CHISEL POINTS: Double pointed spikes or shovels are recommended for use on the chisel shanks. Two inch wide spikes are recommended for deep chiseling when large beds are not required. Four inch wide double pointed shovels are recommended for building large beds, controlling erosion, trapping moisture and covering residue.

SHANK SPACING: Check the model description chart at the front of the manual for allowable shank spacing for your model. Shank spacing of 30 to 32" is recommended for general purpose chiseling and bed forming. Spacings less than 30" may cause plugging in extremely high residue. Spacing may be adjusted to match chisel plowing width to disk cutting width for better uniformity of outside beds.

BED FORMATION: Shovel size, speed of operation and chiseling depth will determine bed height. Wide shovels are best for building tall beds. Speeds of more than 4 1/2 mph are required for proper bed formation. Bed height will be affected when changes in chisel depth are made.

SHANK ADJUSTMENT: "Soil-Saver" shanks have two position "Adjusto-Pitch" which permits shank pitch adjustment to match field conditions. The adjusting brackets (Ref. No. 1) are set in the forward position at the factory. It has been found that this position causes the least amount of draft and blade wear and best bed formation in most conditions.

When operating the machine watch the shank pressure rods. If they protrude through the swivel more than 2" consistently, set the adjusting brackets back. This allows the soil pressure to preload the springs. The pressure rods will still protrude through the swivel about the same amount, but the shank will be held more nearly at the optimum pitch.



HYDRUALIC TROUBLE SHOOTING: If a new chisel attachment fails to raise level across the entire width, several hydraulic funtions should be checked. Check the assembly instructions for proper hose routing. The hoses from the rod end of the 3 1/2 x 8 cylinder with stroke control must go to the butt end of the 3 1/4 x 8 cylinder. Hold the hydraulic control lever fully open in the raising position for one full minute to rephase cylinders with hydraulic fluid. Raise

and lower the chisels several times to remove all air from the system. It may be necessary to rephase the cylinders occasionally during the season. The cylinders can get out of phase if oil leaks out of the system or back through the valves on the tractor. The chisels should be raised to maximum height occasionally to keep the cylinders properly phased. Remember to check the tractor hydraulic system oil level after all cylinders have been filled with hydraulic fluid. The cylinders hold one gallon of hydraulic fluid. Check tractor hydraulic valve for leaks by switching outlets. If problems persist, raise the chisels and disconnect hoses from the tractor. If chisels do not leak down, cylinders are okay.

If the attachment is not leveling properly, after making these adjustments, you should go back to the assembly section and carefully check for proper assembly.

CAUTION: Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks—never use the hands or other parts of the body.

Relieve hydraulic pressure before disconnecting circuits. When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not given at once.

Be careful when raising or lowering the unit or first charging the hydraulic system. Make sure there is no one near the unit. If there is air in the system, the unit could drop suddenly, injuring anyone near the unit.

Caution: All hydraulically or mechanically elevated components must be blocked to prevent accidental lowering or must be lowered to the ground when adjustments or repairs are being made or when not in use.

Caution: Never allow anyone to ride on the Chisel Attachment.

maintenance

Routine maintenance is important to ensure long service for the chisel attachment. Periodically check for damaged parts and loose bolts. Replace parts that are damaged and retighten bolts according to the General Torque specification table.

Shear bolts are provided as standard equipment on "Soil Saver" chisel shanks. A 7/16 Grade 5 bolt through the front of each shank will snap before damage to the 1 1/4 x 2 shank occurs when striking an obstruction. Replace when required.

AMCO harrows are equipped with reflective tape on the front and rear. Regularly wipe these reflectors clean. Replacement reflectors can be purchased from your authorized AMCO dealer.

CHECKING FOR HYDRAULIC CYLINDER LEAKS: To check for piston seal leaks on the 3 1/4" x 8" rephasing cylinders, attach a "doughnut" or similar collar at least 1 1/2" long to the piston rod and apply pressure to the rod end of the cylinder with the hose disconnected on butt end of cylinder. Before checking for leaks cylinder should be completely full of oil and fully retracted. Oil will flow from port on butt end of cylinder if piston seals are not sealing properly. Look for gland or rod seal leaks around the rod.

To check for piston seal leaks on the 3 1/2" x 8" rephasing cylinder, adjust the standard stroke control collar out at least 1 1/2" and follow the same procedure as above.

To check each 3 1/4" x 8" and 3 1/2" x 8" rephasing hydraulic cylinder for proper phasing attach hydraulic hose to butt end and disconnect hose from rod end. Before disconnecting hose, cylinder rod should be fully extended. Apply hydraulic pressure to the butt end of the cylinder. Oil will flow from the rod end port if cylinder is phasing properly.

HYDRAULIC CYLINDER REPAIR: Tie Rod Type Cylinders.

1. Remove hoses and fittings from cylinder.
2. Remove cylinder from attachment and clean outside of cylinder.
3. Dis-assemble cylinder by removing the rods and nut from end of cylinder rod. Slip piston and gland off cylinder rod.
4. Carefully clean and inspect all parts for wear or damage. Bent parts, nicks, scratches or blemishes on rod and inside barrel will cause internal leaks and should be smoothed with fine steel wool or emory cloth. Replace parts that cannot be repaired. Wear marks on one side of the rod or barrel is a sign of side load on the cylinder. Check cylinder mounts and make necessary repairs to prevent misalignment or binding.
5. Remove all "O" Rings from piston and gland. Replace all seals with new parts.
6. Assemble cylinder using care to prevent damage to "O" Rings and Seals.
7. Replace cylinder on attachment and attach hoses.

storage

Proper storage will add life to the life of your attachment, and assure its being in good condition for the next season. The following procedure is recommended:

Clean off all foreign matter.
Repaint where the original paint has worn off.
Tighten all loose bolts and replace any damaged or missing parts.
Hydraulic cylinder rods should be fully retracted or coated with rust preventive to prevent rusting in storage.

GENERAL TORQUE SPECIFICATION TABLE

ALL BOLTS SHOULD BE TIGHTENED TO THE RECOMMENDED TORQUES SHOWN IN THE *"GENERAL TORQUE SPECIFICATION TABLE"*

GENERAL TORQUE SPECIFICATION TABLE

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

Note: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly-disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SAE Grade No.		2		5		8 *	
Bolt head identification marks as per grade NOTE: Manufacturing Marks Will Vary							
Bolt Size		Torque Foot Pounds		Torque Foot Pounds		Torque Foot Pounds	
Inches	Millimeters	Min.	Max.	Min	Max	Min.	Max.
1/4	6.35	5	6	9	11	12	15
5/16	7.94	10	12	17	20.5	24	29
3/8	9.53	20	23	35	42	45	54
7/16	11.11	30	35	54	64	70	84
1/2	12.70	45	52	80	96	110	132
9/16	14.29	65	75	110	132	160	192
5/8	15.88	95	105	150	180	220	264
3/4	19.05	150	185	270	324	380	456
7/8	22.23	160	200	400	480	600	720
1	25.40	250	300	580	696	900	1080
1-1/8	25.58			800	880	1280	1440
1-1/4	31.75			1120	1240	1820	2000
1-3/8	34.93			1460	1680	2380	2720
1-1/2	38.10			1940	2200	3160	3560

* Thick nuts must be used with Grade 8 bolts