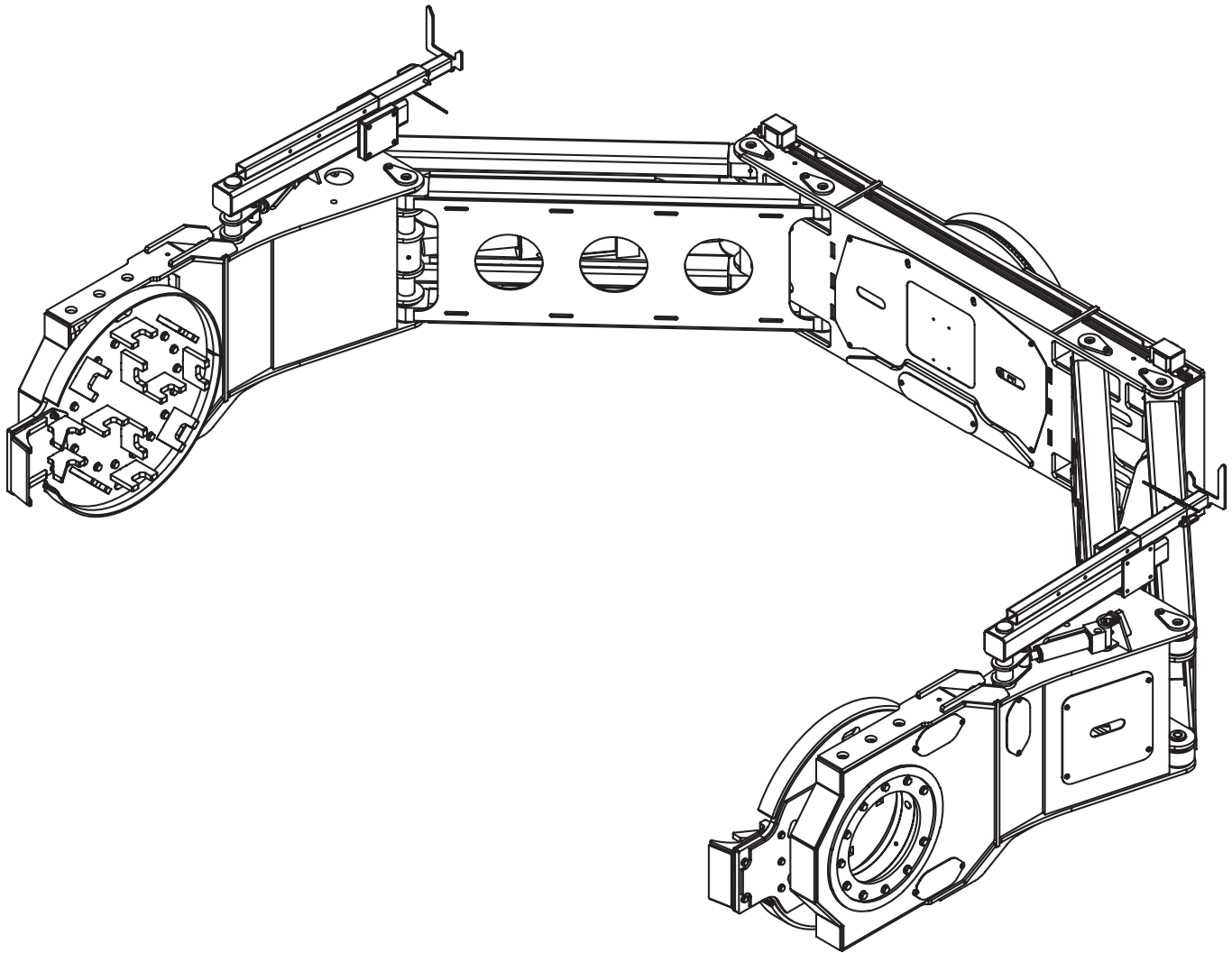




TireMan 28 Owner's Manual

Installation • Assembly Drawings • Parts



Notice: A copy of this manual must remain with the equipment at all times.
For a printable download copy, please visit: www.stellarindustries.com

Stellar Industries, Inc.

190 State Street

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Garner, IA 50438

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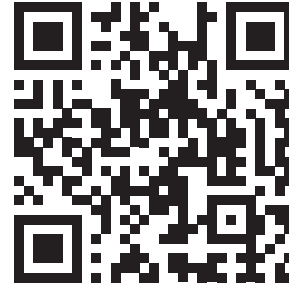
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Rev 3.4
PN 89781

Model TM28 Manual Revisions

WARNING

Operating, maintaining, and servicing a Stellar product may expose you to chemicals including, but not limited to, engine exhaust, carbon monoxide, phthalates, and lead. These chemicals are known to the State of California to cause cancer and birth defects (or other reproductive harm). To keep your exposure to a minimum, be sure to avoid breathing exhaust and service your Stellar product in a well-ventilated area while wearing gloves or washing your hands frequently. For more information, go to www.P65Warnings.ca.gov/passenger-vehicle.



www.p65/warning.ca.gov

NOTICE

Cold Weather Performance

Although clear data on cold weather performance from every steel manufacturer is not available for all types and thicknesses of steel, Stellar Industries is confident that the weldments on our products will operate to 100% of their intended purpose to temperatures down to -40° F / C.

It is recommended if Stellar manufactured equipment needs to be used in temperatures below -40° F / C, the operator should pull the unit into a climate-controlled area and allow the weldments to warm up to and then maintain a temperature above this level.

Table of Contents

Introduction.....	iv
Model TM28 Long Arm Dimensions/Specifications	1
Model TM28 Short Arm Dimensions/Specifications.....	2
General Installation.....	3
Installer Notice.....	3
Torque Data Chart	4
Fittings	5
Flat Face O-Ring Seal - FFORX	5
SAE 37° JIC	5
Fittings - Continued	6
O-Ring Boss	6
Face Seal Female Swivel Fittings	6
Hydraulic Installation	7
Hydraulic Pressure Settings	8
Face Seal/O-Ring Size Chart	8
Hydraulic Kit Long Arm - PN 87824.....	9
Hydraulic Kit Short Arm - PN 100038	10
Valve Bank Assembly - PN 117184	11
Hydraulic Bulkhead - PN 117185.....	12
Control Kit (434 MHZ) - PN 125258	13
Control Kit (900 MHZ) - PN 87826	14
Decal Placement - PN 89783	15
TM28 Long Arm Breakdown - PN 87064.....	16
TM28 Long Arm Breakdown - PN 87064.....	17
TM28 Long Arm Breakdown - PN 87064.....	18
TM28 Long Arm Breakdown - PN 87064.....	19
TM28 Long Arm Breakdown - PN 87064 Parts List.....	20
TM28 Long Arm Breakdown - PN 87064 Parts List.....	21
TM28 Long Arm Breakdown - PN 87064 Parts List.....	22
TM28 Short Arm - PN 99604	23
TM28 Short Arm - PN 99604 Continued.....	24
TM28 Short Arm - PN 99604 Continued.....	25
TM28 Short Arm - PN 99604 Continued.....	26
TM28 Short Arm Breakdown - PN 99604 Parts List	27
TM28 Short Arm Breakdown - PN 99604 Parts List	28
TM28 Short Arm Breakdown - PN 99604 Parts List	29
TM28 Side Shift Assembly - PN 85398	30
TM28 Side Shift Cylinder Assembly - PN 89388	31
Bearing - PN 63518	32
Pad Rotation Bearing Assembly - PN 72187	33
Valve Bank - PN 87380	34
Radio Transmitter - PN 89149/93084	35

Introduction

A copy of this manual is provided with every tire manipulator and can be found in the hard plastic manual case. A copy of this manual shall remain with the tire manipulator at all times.

Throughout the manual, three signal words will be used to bring attention to important items:

A NOTICE signal word indicates a practice not related to physical injury.

NOTICE

A WARNING signal word indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ WARNING

A DANGER signal word indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ DANGER

Information contained within this manual does not cover operation, maintenance, or troubleshooting. Please refer to the details on these items.

This manual is not binding. Stellar Industries, Inc. reserves the right to change, at any time, any or all of the items, components, and parts deemed necessary for product improvement or commercial/production purposes. This right is kept with no requirement or obligation for immediate mandatory updating of this manual.

In closing:

If more information is required or technical assistance is needed, or if you feel that any part of this manual is unclear or incorrect, please contact the Stellar Customer Service Department by phone at 800-321-3741 or email at service@stellarindustries.com.

**For Technical Questions, Information, Parts, or Warranty, Call Toll-Free at
800-321-3741**

Hours: Monday - Friday, 8:00 a.m. - 5:00 p.m. CST

Or email at the following addresses:

Technical Questions, and Information

service@stellarindustries.com

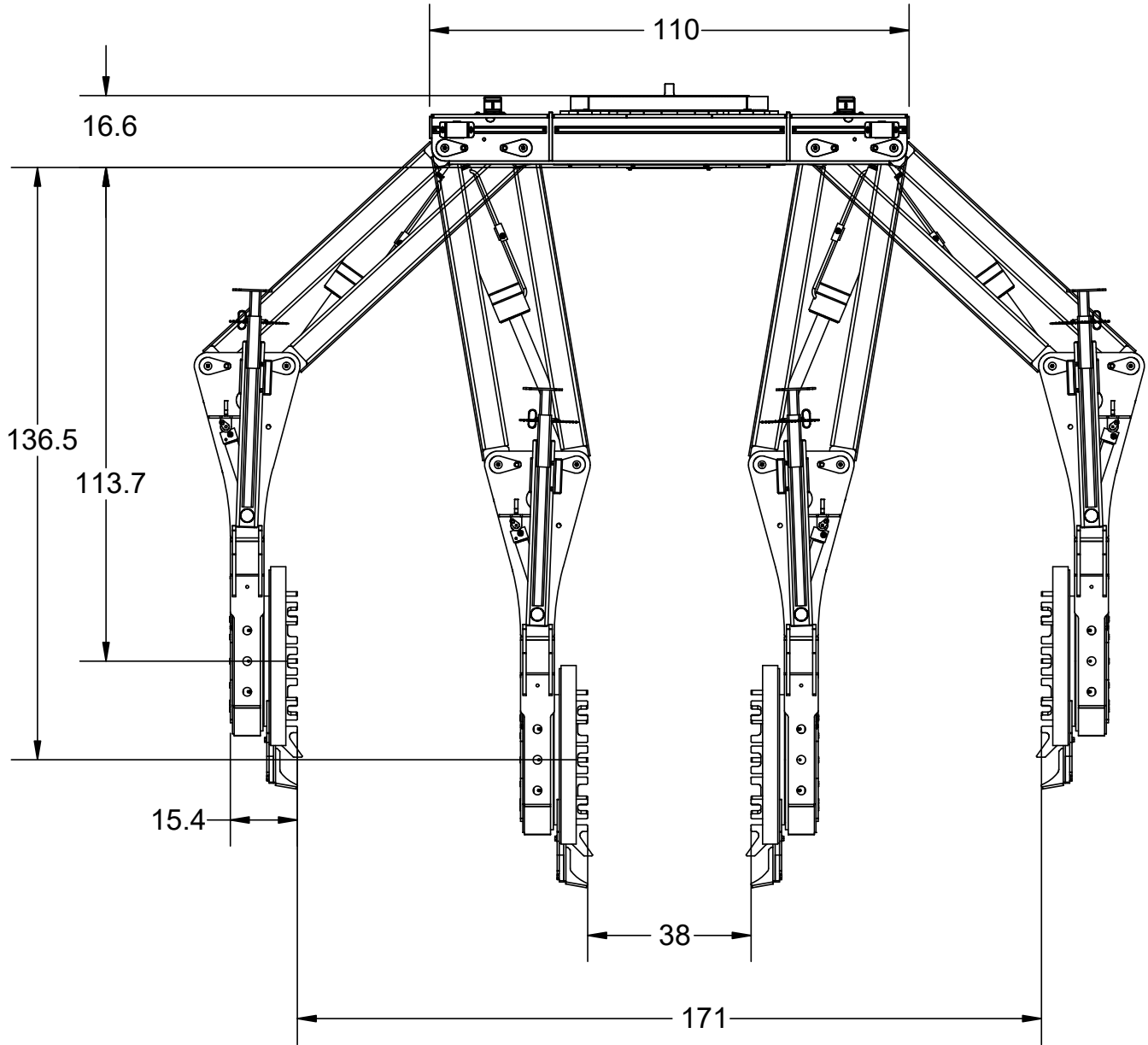
Order Parts

parts@stellarindustries.com

Warranty Information

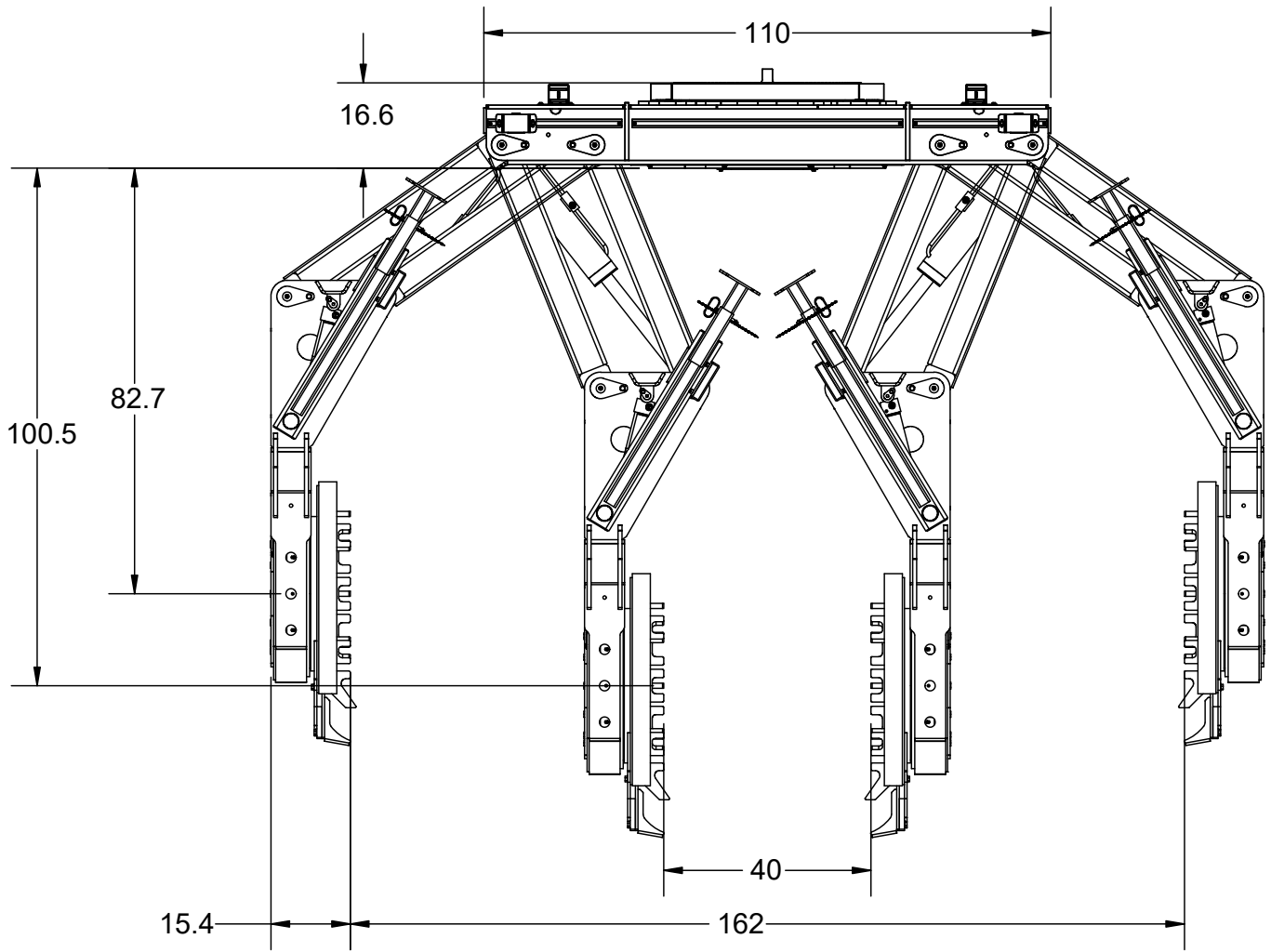
warranty@stellarindustries.com

Model TM28 Long Arm Dimensions/Specifications



Capacity	28000 lb (12700 kg)
Clamping Span	38" to 171" (95 cm to 434 cm)
Body Rotation	Dual pinion drive, 110 Deg rotation range
Pad Rotation	Dual worm gear continuous 360 deg rotation
Power supply required	16 gpm @ 3000 psi (60 lpm @ 207 bar)
Optional Controls	Radio Remote, Fully Proportional Paddle Controls for all functions
Approx. shipping weight	W/loader mount: 16,100 lb (7303 kg)
	W/forklift mount: 15,100 lb (6849 kg)

Model TM28 Short Arm Dimensions/Specifications



Capacity	28000 lb (12700 kg)
Clamping Span	40" to 162" (102 cm to 411 cm)
Body Rotation	Dual pinion drive, 110 Deg rotation range
Pad Rotation	Dual worm gear continuous 360 deg rotation
Power supply required	16 gpm @ 3000 psi (60 lpm @ 207 bar)
Optional Controls	Radio Remote, Fully Proportional Paddle Controls for all functions
Approx. shipping weight	W/loader mount: 14,800 lb (6713 kg)
	W/forklift mount: 13,800 lb (6260 kg)

General Installation

This chapter is designed to serve as a general guide for the installation of a Stellar TM28. Each installation is considered unique so certain portions of this chapter may or may not apply to your direct application. If a question should arise during the installation process, please contact Stellar Customer Service at (800) 321 3741.

⚠ WARNING Do not install this crane/manipulator on a body not capable of handling the loads imposed on it. Failure to do so may result in serious injury or death.

Installer Notice

According to Federal Law (49 cfr part 571), each final-stage manufacturer shall complete the vehicle in such a manner that it conforms to the standards in effect on the date of manufacture of the incomplete vehicle, the date of final completion, or a date between those two dates. This requirement shall, however, be superseded by any conflicting provisions of a standard that applies by its terms to vehicles manufactured in two or more stages.

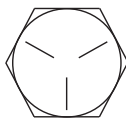
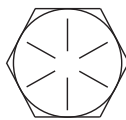
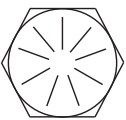
Therefore, the installer of Stellar® Cranes and Bodies is considered one of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations. They are required to certify that the vehicle is in compliance with the Federal Motor Vehicle Safety Standards and other regulations issued under the National Traffic and Motor Vehicle Safety Act.

Please reference the Code of Federal Regulations, title 49 - Transportation, Volume 5 (400-999), for further information, or visit <http://www.gpoaccess.gov/nara/index.html> for the full text of Code of Federal Regulations.

Torque Data Chart

When using the torque data in the chart, the following rules should be observed:

- Bolt manufacturer's particular specifications should be consulted when provided.
- Flat washers of equal strength must be used.
- All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.
- Torque values specified are for bolts with residual oils or no special lubricants applied.
- Torque values for socket-head capscrews are the same as for Grade 8 capscrews.

		GRADE 5		GRADE 8		GRADE 9
						
Size (DIA-TPI)	Bolt DIA (Inches)	Plain (Ft-Lb)	Plated (Ft-Lb)	Plain (Ft-Lb)	Plated (Ft-Lb)	Plated (Ft-Lb)
5/16-18	0.3125	17	13	25	18	22
3/8-16	0.3750	31	23	44	33	39
7/16-14	0.4375	49	37	70	52	63
1/2-13	0.5000	75	57	105	80	96
9/16-12	0.5625	110	82	155	115	139
5/8-11	0.6250	150	115	220	160	192
3/4-10	0.7500	265	200	375	280	340
7/8-9	0.8750	395	295	605	455	549
1-8	1.000	590	445	910	680	823
1 1/8-7	1.1250	795	595	1290	965	1167
1 1/4-7	1.2500	1120	840	1815	1360	1646
1 3/8-6	1.3750	1470	1100	2380	1780	2158
1 1/2-6	1.500	1950	1460	3160	2370	2865

- **NOTICE** Do not use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.
- Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.
- Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.
- Tighten plastic insert or crimped steel-type lock nuts to approximately 110 percent of the dry torque values shown in the chart below, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value. *Note: "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without lubrication. Tighten lubricated bolts to approximately 80% of dry bolts.*

Fittings

Flat Face O-Ring Seal - FFORX

HOSE FITTING ONLY



SIZE	THREAD SIZE	LB-FT TORQUE
-4	9/16-18 UNF	21
-5	5/8-18 UNF	25
-6	11/16-16 UN	40
-8	13/16-16 UN	46
-10	1-14 UNS	50
-12	1-3/16-12 UN	75
-16	1-7/16-12 UN	104
-20	1-11/16-12 UN	141
-24	2-12 UN	166
-32	2-1/2-12 UN	423

SAE 37° JIC

HOSE FITTING & FEMALE SWIVEL FITTINGS



SIZE	THREAD SIZE	LB-FT TORQUE
-2	5/16-24 UNF	7
-3	3/8-24UNF	9
-4	9/16-18 UNF	13
-5	5/8-18 UNF	16
-6	11/16-16 UN	20
-8	13/16-16 UN	41
-10	1-14 UNS	64
-12	1-3/16-12 UN	89
-16	1-7/16-12 UN	122
-20	1-11/16-12 UN	143
-24	2-12 UN	178
-32	2-1/2-12 UN	275

Fittings - Continued

O-Ring Boss

HYDRAULIC FITTING ONLY



-SIZE	THREAD SIZE	ORB	AORB
-4	7/16-20 UNF	15	23
-6	9/16-18 UNF	24	32
-8	3/4-16 UNF	40	55
-10	7/8-14 UNF	61	76
-12	1-1/16-12 UN	101	116
-16	1-5/16-12 UN	120	119
-20	1/5/8-12 UN	125	125
-24	1-7/8-12 UN	140	140
-32	2-1/2-12 UN	157	157

Face Seal Female Swivel Fittings

HYDRAULIC FITTING ONLY



-SIZE	THREAD SIZE	LB-FT TORQUE
-4	9/16-18 UNF	13
-6	11/16-16 UN	23
-8	13/16-16 UN	40
-10	1-14 UNS	61
-12	1-3/16-12 UN	86
-16	1-7/16-12 UN	119
-20	1-11/16-12 UN	125
-24	2-12 UN	140

Hydraulic Installation

Never modify or alter any of the equipment, whether mechanical, electrical, or hydraulic, without Stellar Industries' approval.

⚠ WARNING Do not touch or grab any hoses that could be under pressure. Release system pressure before attempting to make adjustments or repairs.

Do not attempt service or repair when PTO is engaged.

Disassemble and assemble hydraulic components on a clean surface.

Clean all metal parts in a nonflammable cleaning fluid. Then lubricate all components to aid in assembly.

⚠ WARNING Hydraulic fluid expands when heated. This raises the pressure in an unventilated tank. Release the tank pressure before removing the cap completely. Failure to do so may cause the oil to shoot out of the tank very rapidly and cause severe burns.

⚠ WARNING Do not rely on the hydraulic fluid to support the boom or crane. If hydraulic fluid escapes, the boom or crane can fall immediately. Make sure the ground or blocking is supporting the boom before performing any maintenance or repair.

NOTICE Contaminants in a hydraulic system affect operation and will result in serious damage to the system components. Dirty hydraulic systems are a major cause of component failures.

If evidence of foreign particles is found in the hydraulic system, flush the system.

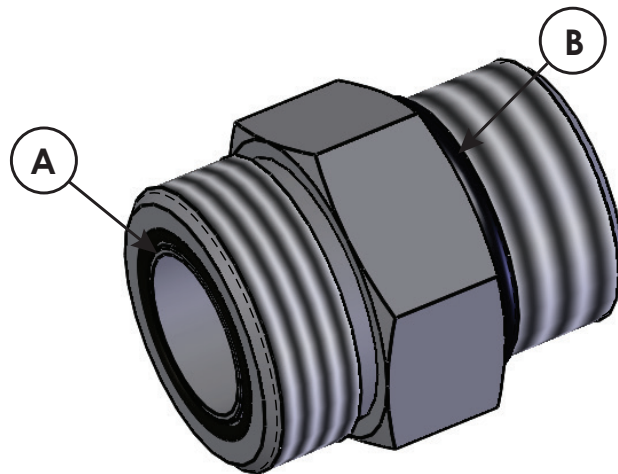
When installing metal hydraulic tubes, tighten all fittings finger tight. Then, in order, tighten the fittings at the rigid end, the adjustable end, and the mounting brackets. After tubes are mounted, install the hoses. Connect both ends of the hose with all fittings finger tight. Position the hose so it does not rub the machine or another hose and has a minimum of bending and twisting. Tighten fittings in both couplings.

Due to manufacturing methods, there is a natural curvature to a hydraulic hose. The hose should be installed so any bend is with this curvature.

Hydraulic Pressure Settings

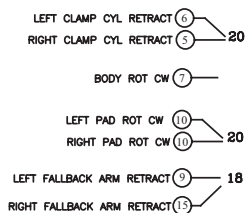
Main Relief 3000 psi			
		Pressure (psi)	
Function	Flow (gpm)	Extend	Retract
Fallback	6.6	3000	3000
Pad Rotate	15.6	3000	3000
Side Shift	6.6	3000	3000
Body Rotate	15.6	3000	3000
Clamp	15.6	3000	3000

Face Seal/O-Ring Size Chart

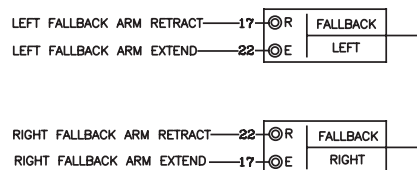
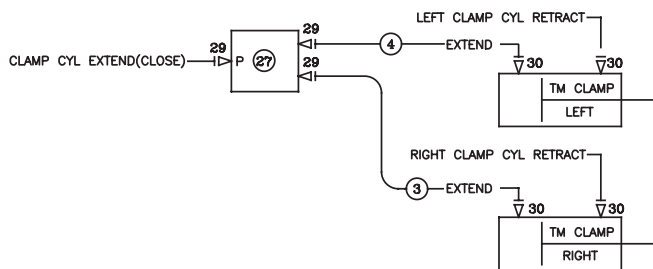
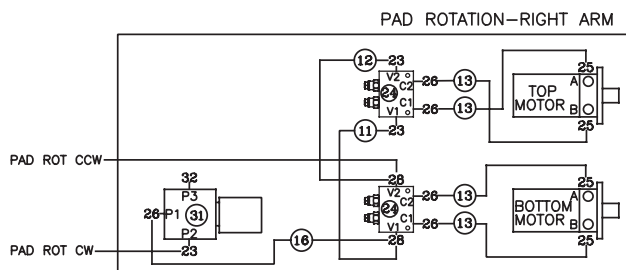
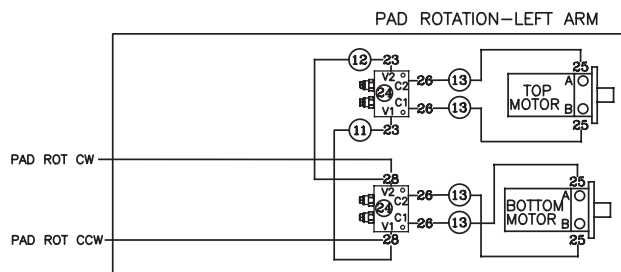
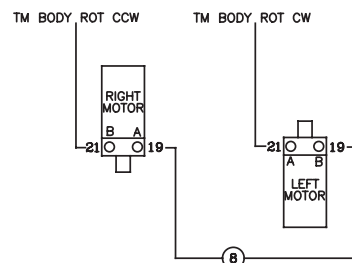
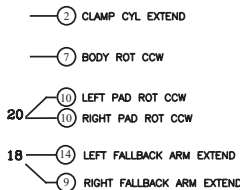


Hose Size	Fitting Size	Face Seal (A) Stellar® PN	O-ring Boss (B) Stellar® PN
1/4"	#4	C2027	D1245
3/8"	#6	C2028	D1246
1/2"	#8	C2029	D1247
5/8"	#10	32223	D1248
3/4"	#12	D1244	D1249
1"	#16		D1250

Hydraulic Kit Long Arm - PN 87824



HOSES CONNECT TO ONE OF TWO OPTIONS:
 1. VALVE BANK ASSEMBLY
 2. BULKHEAD PLATE ASSEMBLY

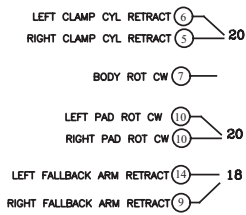


PN 87824

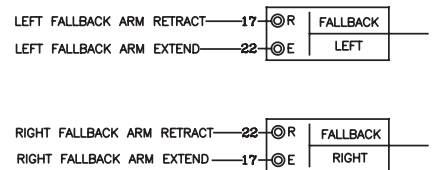
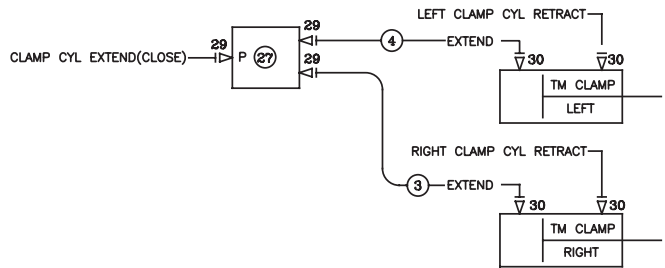
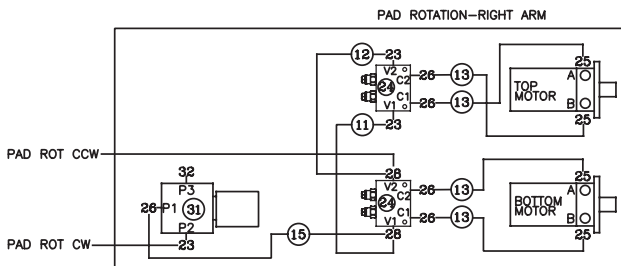
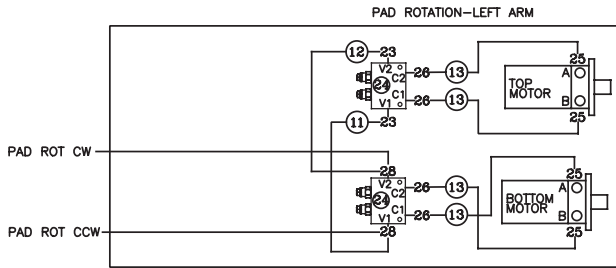
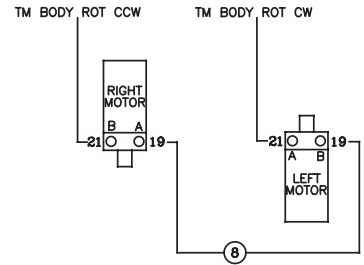
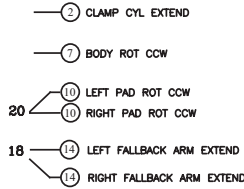
ITEM	PART No.	DESCRIPTION	QTY.
1	87825	HOSE KIT TM28 LONG ARM(INCL: 2-16)	1
2	96576	HOSE-HYD 0.50 X 16.00	1REF
3	94601	HOSE-HYD 0.38 X 62.00	1REF
4	94599	HOSE-HYD 0.38 X 91.00	1REF
5	94600	HOSE-HYD 0.38 X 66.00	1REF
6	94598	HOSE-HYD 0.38 X 66.00	1REF
7	94594	HOSE-HYD 0.50 X 26.00	2REF
8	94595	HOSE-HYD 0.50 X 34.00	1REF
9	94597	HOSE-HYD 0.25 X 161.00	2REF
10	94602	HOSE-HYD 0.38 X 153.00	4REF
11	94603	HOSE-HYD 0.38 X 21.00	2REF
12	81633	HOSE-HYD 0.38X 17.00	2REF
13	75107	HOSE-HYD 0.38 X 48.00	8REF
14	94706	HOSE-HYD 0.25 X 161.00	1REF
15	94596	HOSE-HYD 0.25 X 161.00	1REF
16	79939	HOSE-HYD 0.38 X 13.00	1REF

ITEM	PART No.	DESCRIPTION	QTY.
17	C4922	FTG 4-6 MFS-MORB STRAIGHT	2
18	23421	FTG 4-4-4 MFS-FFSS-MFS RUN TEE	2
19	C3643	FTG 8-10 MFS-MAORB 90	2
20	C2554	FTG 6-6-6 MFS-FFSS-MFS RUN TEE	3
21	C2252	FTG 8-10 MFS-MORB STRAIGHT	2
22	D1190	FTG 4-6 MFS-MAORB 45	2
23	C0338	FTG 6-6 MFS-MAORB 90	5
24	89378	MANIFOLD ASM CBAL DOUBLE CBBDLJNZ4U	4
25	D1302	FTG 6-10 MFS-MAORB 90	8
26	0279	FTG 6-6 MFS-MORB STRAIGHT	9
27	89377	VALVE COMB DIV MTDA08HG-050R	1
28	C2343	FTG 6-6-6 MFS-MAORB-MFS TEE	4
29	65587	FTG 6-6 MFS-MBSPP W/BS STRAIGHT	3
30	C1854	FTG 6-8 MFS-MORB STRAIGHT	4
31	119852	VALVE SOLND 2 POS 3 WAY 24V	1
32	C4961	FTG 6 MORB PLUG HOLLOW HEX	1

Hydraulic Kit Short Arm - PN 100038



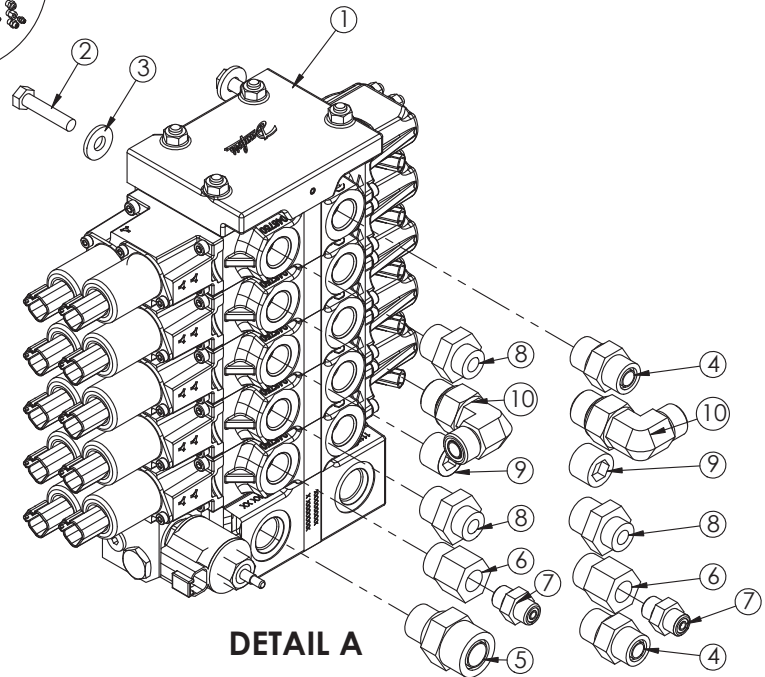
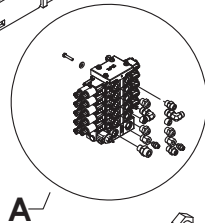
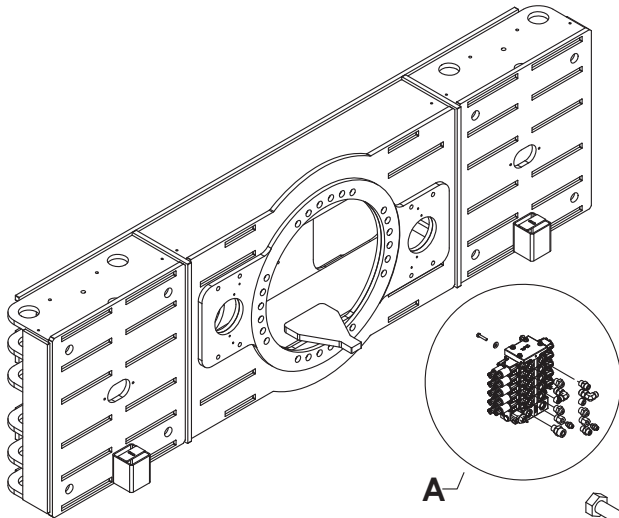
HOSES CONNECT TO ONE OF TWO OPTIONS:
 1. VALVE BANK ASSEMBLY
 2. BULKHEAD PLATE ASSEMBLY



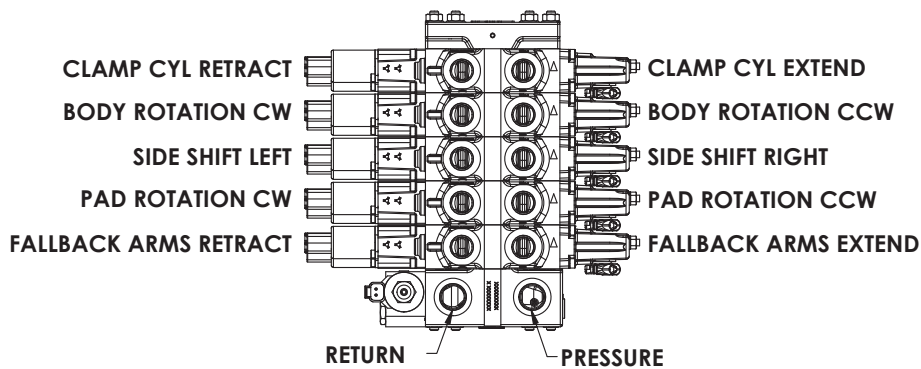
PN 100038

ITEM	PART No.	DESCRIPTION	QTY.	ITEM	PART No.	DESCRIPTION	QTY.
1	100039	HOSE KIT TM28 SHORT ARM (INCL: 2-15)	1	17	C4922	FTG 4-6 MFS-MORB STRAIGHT	2
2	96576	HOSE-HYD 0.50 X 16.00	1REF	18	23421	FTG 4-4-4 MFS-FFSS-MFS RUN TEE	2
3	94598	HOSE-HYD 0.38 X 57.00	1REF	19	C3643	FTG 8-10 MFS-MAORB 90	2
4	94599	HOSE-HYD 0.38 X 91.00	1REF	20	C2554	FTG 6-6-6 MFS-FFSS-MFS RUN TEE	3
5	94600	HOSE-HYD 0.38 X 66.00	1REF	21	C2252	FTG 8-10 MFS-MORB STRAIGHT	2
6	94601	HOSE-HYD 0.38 X 62.00	1REF	22	3338	FTG 4-6 MFS-MAORB 90	2
7	94594	HOSE-HYD 0.50 X 26.00	2REF	23	C0338	FTG 6-6 MFS-MAORB 90	5
8	94595	HOSE-HYD 0.50 X 34.00	1REF	24	89378	MANIFOLD ASM CBAL DOUBLE CBBDLJNZ4U	4
9	100042	HOSE-HYD 0.25 X 144.00	1REF	25	D1302	FTG 6-10 MFS-MAORB 90	8
10	100040	HOSE-HYD 0.38 X 129.00	4REF	26	0279	FTG 6-6 MFS-MORB STRAIGHT	9
11	94603	HOSE-HYD 0.38 X 21.00	2REF	27	89377	VALVE COMB DIV MTDA08HG-050R	1
12	81633	HOSE-HYD 0.38X 17.00	2REF	28	C2343	FTG 6-6-6 MFS-MAORB-MFS TEE	4
13	97057	HOSE-HYD 0.38 X 42.00	8REF	29	65587	FTG 6-6 MFS-MBSPP W/BS STRAIGHT	3
14	100041	HOSE-HYD 0.25 X 144.00	3REF	30	C1854	FTG 6-8 MFS-MORB STRAIGHT	4
15	79939	HOSE-HYD 0.38 X 13.00	1REF	31	119852	VALVE SOLND 2 POS 3 WAY 24V	1
N/A				32	C4961	FTG 6 MORB PLUG HOLLOW HEX	1

Valve Bank Assembly - PN 117184



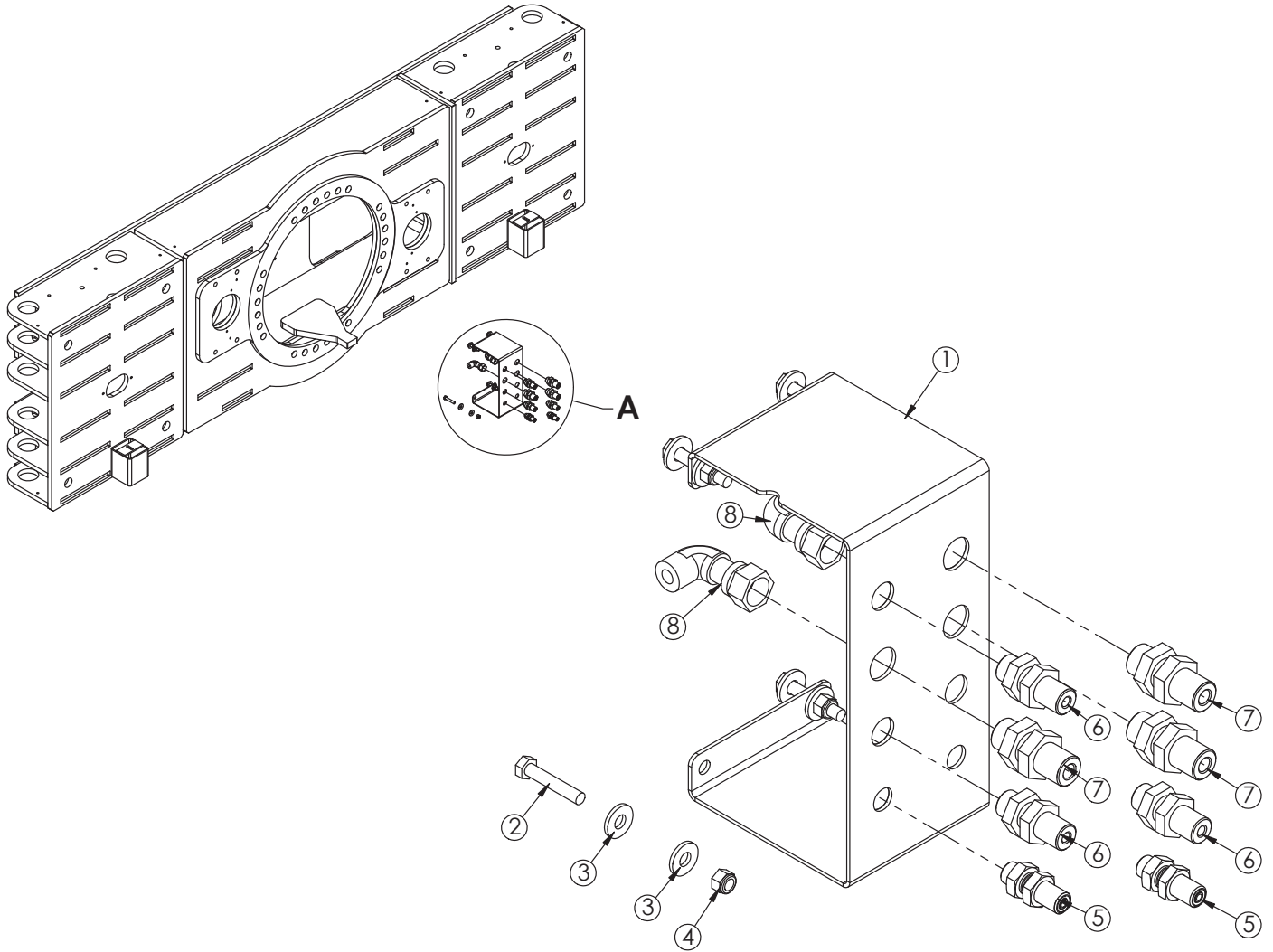
DETAIL A



PN 117184

ITEM	PART No.	DESCRIPTION	QTY.
1	87380	VB 5 SECT DANFOSS EC080 TM28	1
2	0486	CAP SCR 0.31-18X1.50 HHGR5	4
3	0343	WASHER 0.31 USS FLAT	4
4	C2252	FTG 8-10 MFS-MORB STRAIGHT	2
5	D1435	FTG 12-10 MFS-MORB STRAIGHT	1
6	C1111	FTG 10-6 MORB-FORB STRAIGHT REDUCER	2
7	C4922	FTG 4-6 MFS-MORB STRAIGHT	2
8	C1855	FTG 6-10 MFS-MORB STRAIGHT	3
9	12153	FTG 10 MORB PLUG HOLLOW HEX	2
10	C3643	FTG 8-10 MFS-MAORB 90	2

Hydraulic Bulkhead - PN 117185



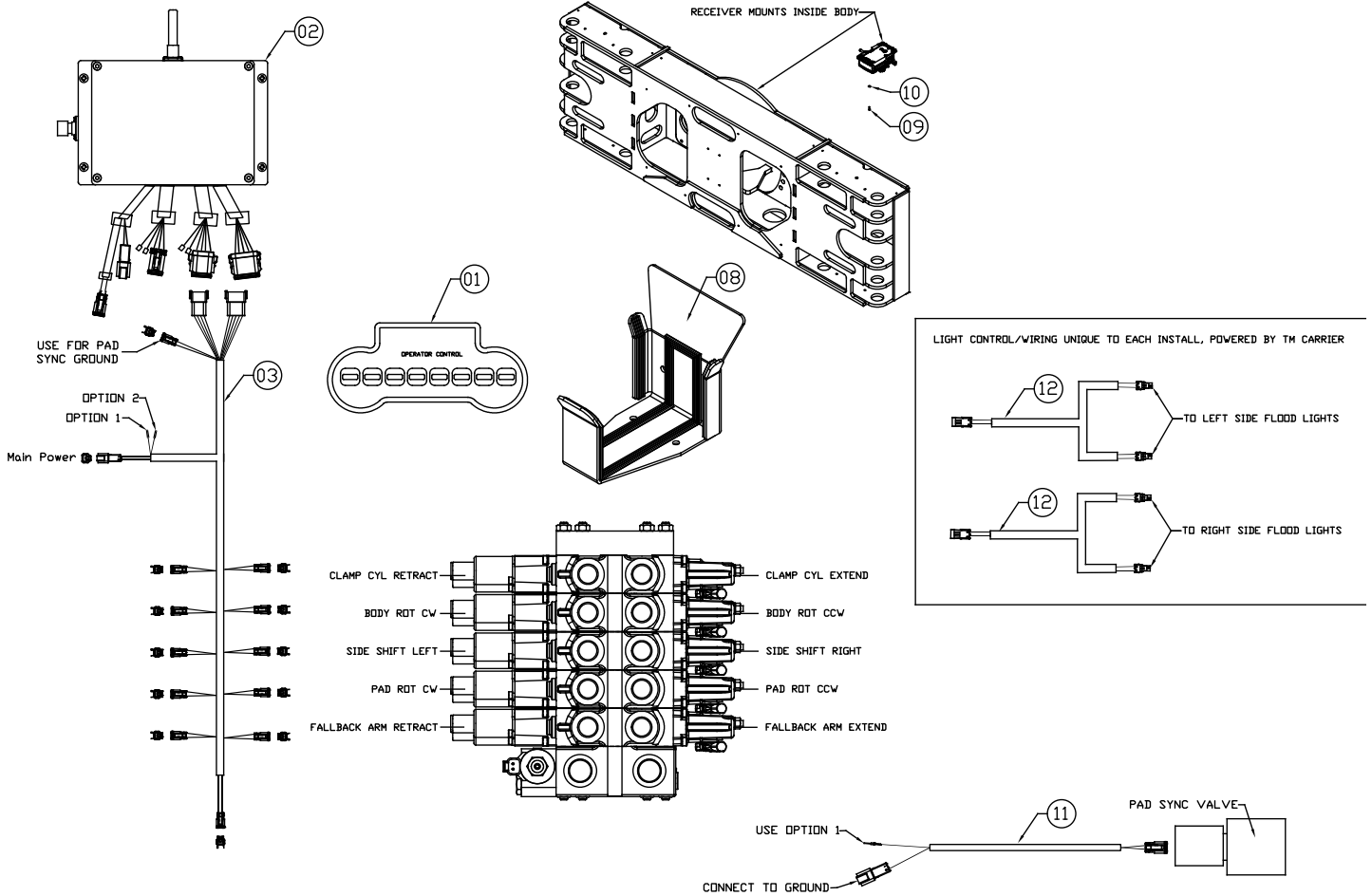
DETAIL A

CLAMP CYL RETRACT			CLAMP CYL EXTEND
BODY ROTATION CW			BODY ROTATION CCW
PAD ROTATION CW			PAD ROTATION CCW
FALLBACK ARMS RETRACT			FALLBACK ARMS EXTEND

PN 117185

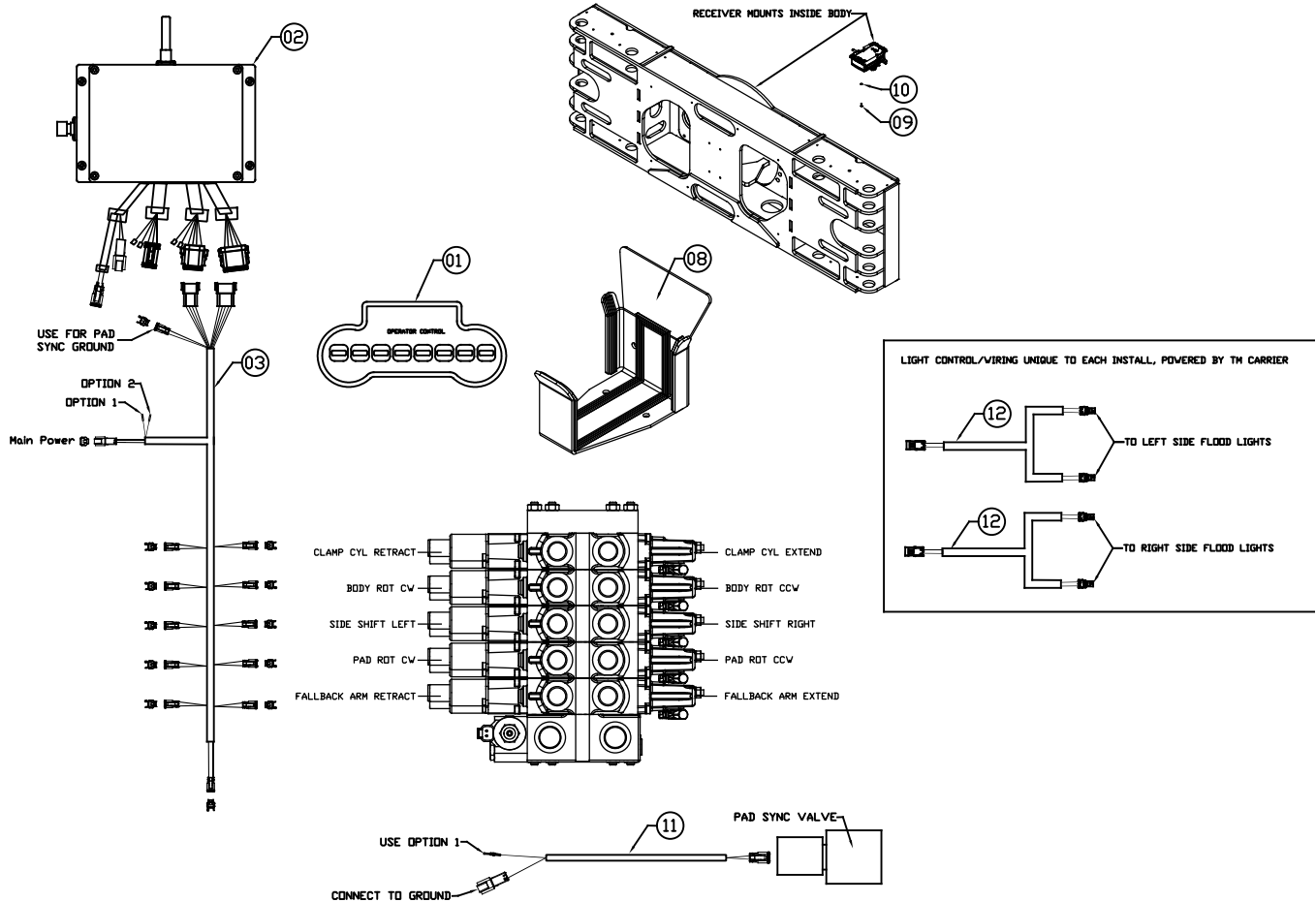
ITEM	PART No.	DESCRIPTION	QTY.
1	117187	PLATE HYD BULKHEAD TM28	1
2	0487	CAP SCR 0.31-18X1.75 HHGR5	4
3	0343	WASHER 0.31 USS FLAT	8
4	0342	NUT 0.31-18 HHGR5 NYLOC	4
5	12170	FTG 4-4 MFS-MFS BULKHEAD UNION	2
6	D1299	FTG 6-6 MFS-MFS BULKHEAD UNION	3
7	D1318	FTG 8-8 MFS-MFS BULKHEAD UNION	3
8	C2376	FTG 8-8 MFS-FFSS 90	2

Control Kit (434 MHZ) - PN 125258



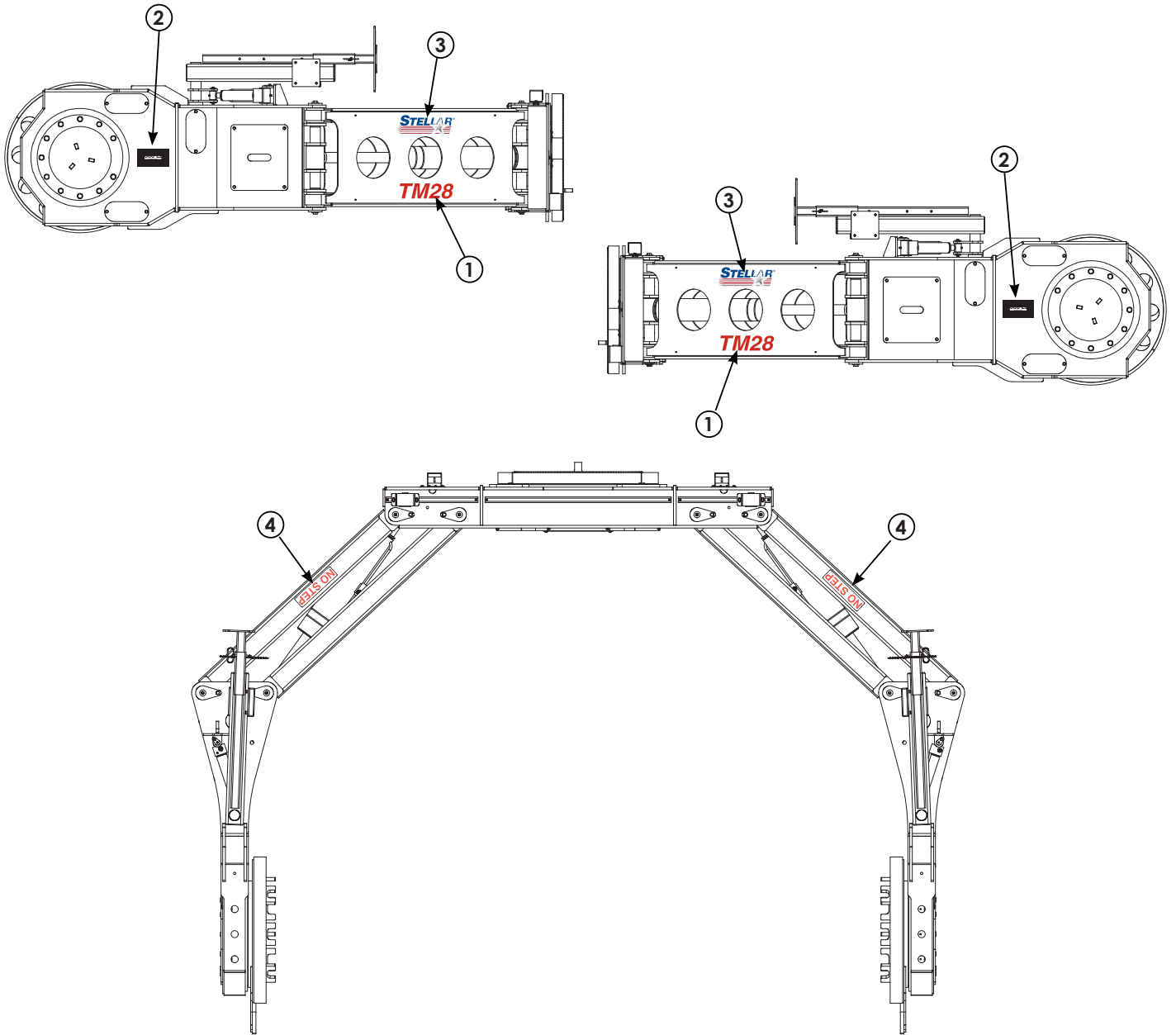
ITEM	PART No.	DESCRIPTION	QTY
01	93085	TRANSMITTER SCANRECO PADDLE TM28 434	1
02	125259	RECEIVER ASM SCANRECO TM28M 434	1
03	89640	WIRE HARNESS TM28	1
04	89152	CABLE BACKUP 10M SCANRECO	1
05	89154	BATTERY SCANRECO	2
06	89155	CHARGER BATTERY SCANRECO	1
07	89639	STRAP CARRYING SCANRECO	1
08	99148	DOCKING STATION SCANRECO TM28	1
09	D0894	SCREW #10-24X0.75 BTNHD	4
10	D0178	WASHER #10 SAE FLAT	4
11	121273	WIRE HRNS EXT TM28 PAD SYNC	1REF
12	21409	WIRE HARNESS FLOOD LIGHT	2REF

Control Kit (900 MHZ) - PN 87826



ITEM	PART No.	DESCRIPTION	QTY
01	89150	TRANSMITTER SCNARECO PADDLE TM28	1
02	89641	RECEIVER ASM SCANRECO PWN	1
03	89640	WIRE HARNESS TM28	1
04	89152	CABLE BACKUP 10M SCANRECO	1
05	89154	BATTERY SCANRECO	2
06	89155	CHARGER BATTERY SCANRECO	1
07	89639	STRAP CARRYING SCANRECO	1
08	99148	DOCKING STATION SCANRECO TM28	1
09	D0894	SCREW #10-24X0.75 BTNHD	4
10	D0178	WASHER #10 SAE FLAT	4
11	121273	WIRE HRNS EXT TM28 PAD SYNC	1REF
12	21409	WIRE HARNESS FLOOD LIGHT	2REF

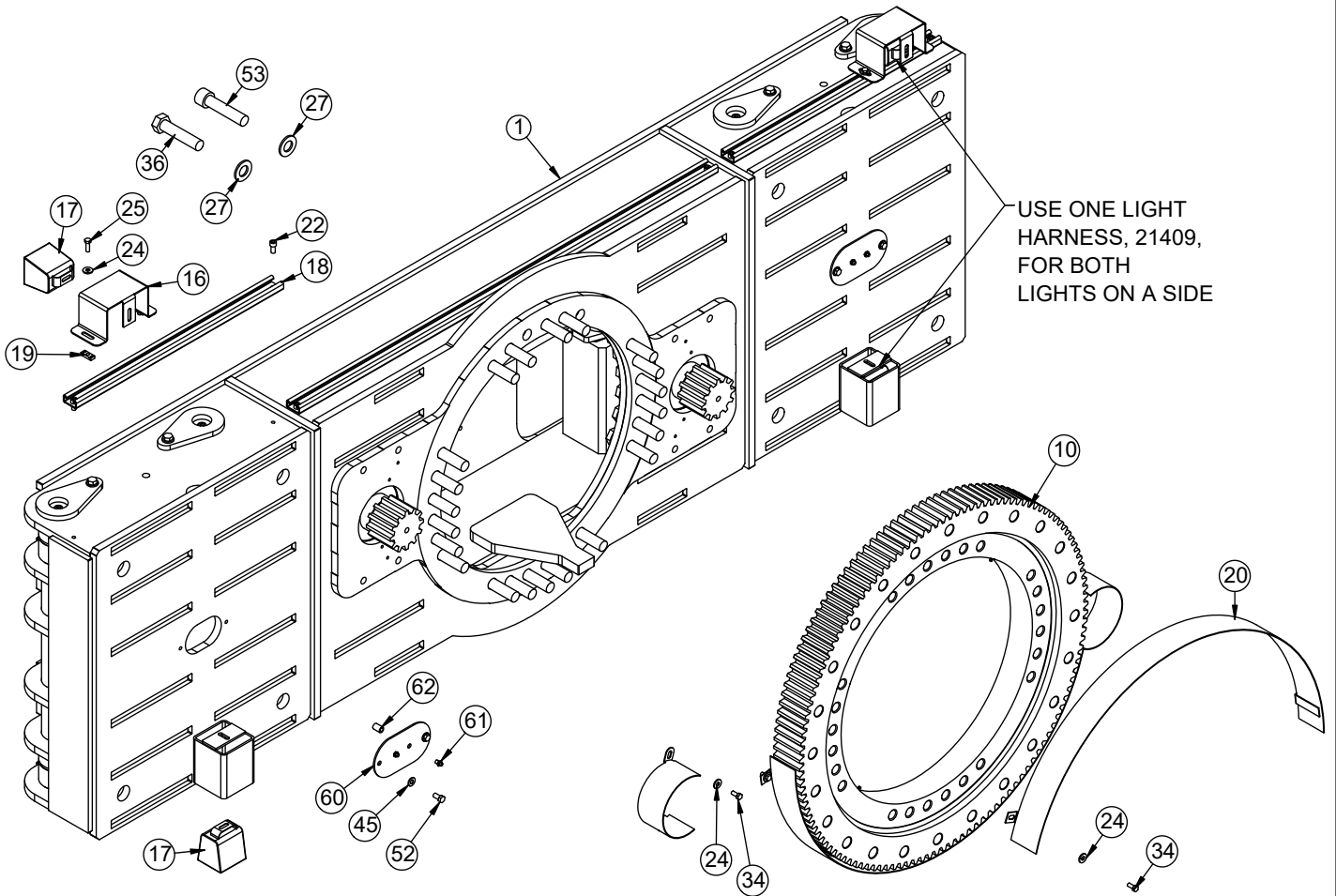
Decal Placement - PN 89783



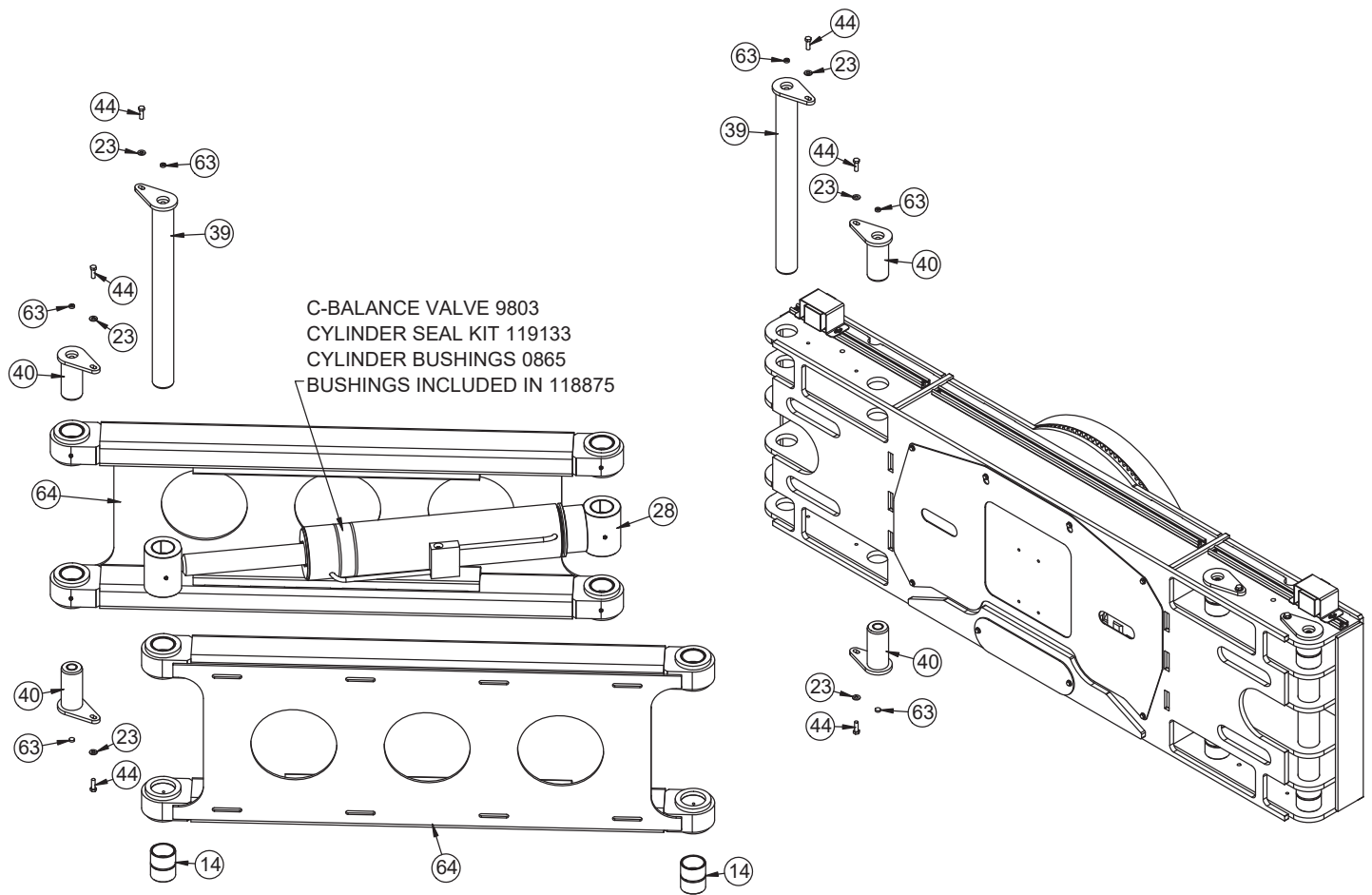
PN 89783
 (Rev A - 06/15/21)
 Added NO STEP decal

ITEM	PN	DESCRIPTION	LOCATION	QTY
1	89786	DECAL TM28 ID PRE-MASKED	TireMan Arms - Both Sides	2
2	89785	DECAL RATED LOAD TM28	Rotation Bearing Base - Both Sides	2
3	52681	DECAL STELLAR LOGO 6.00X16.50 PRE-MASKED	TireMan Arms - Both Sides	2
4	249825	DECAL NO STEP	TireMan Arms - Both Sides (Outer Tube/Upper Surface)	2

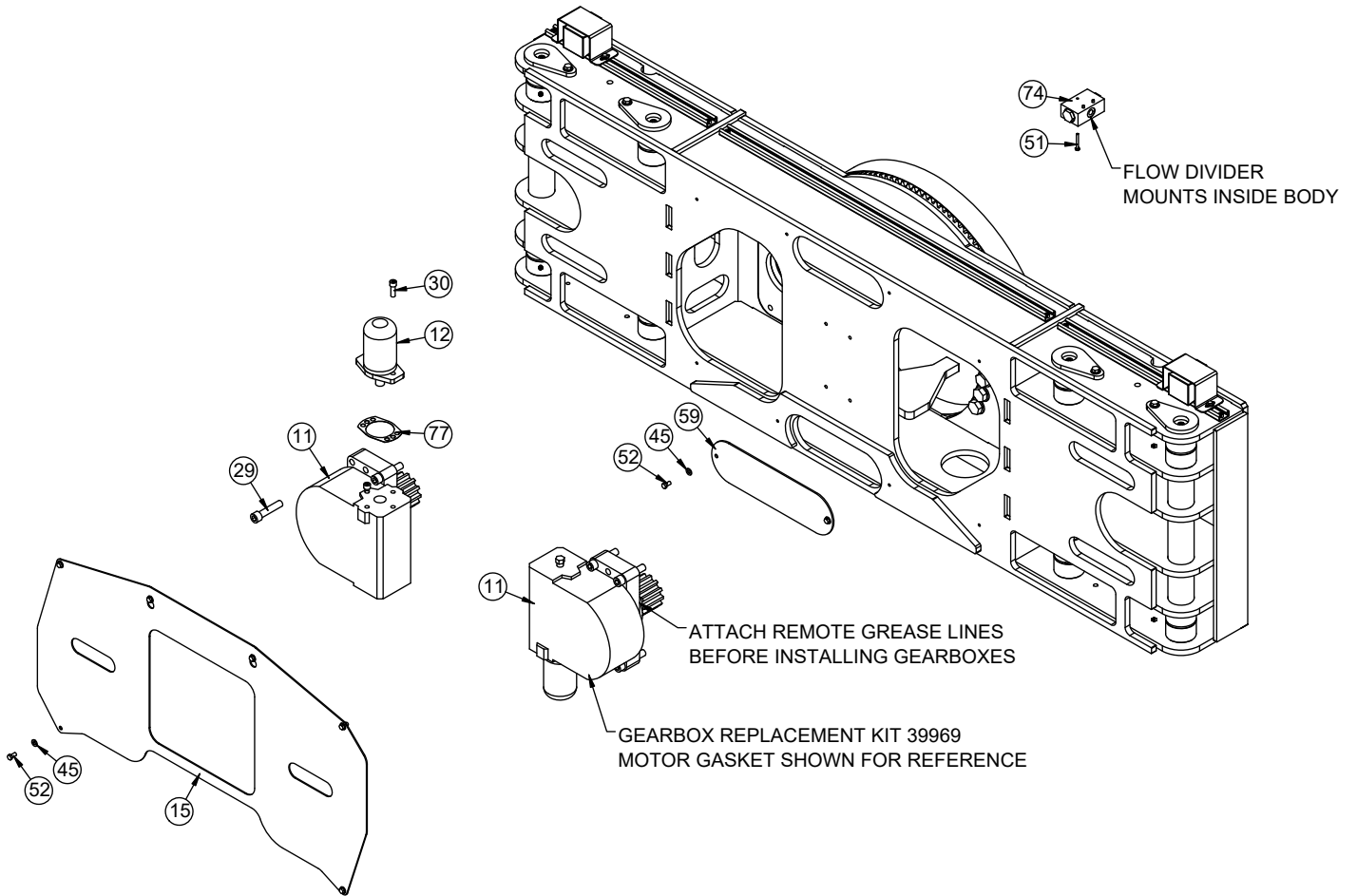
TM28 Long Arm Breakdown - PN 87064



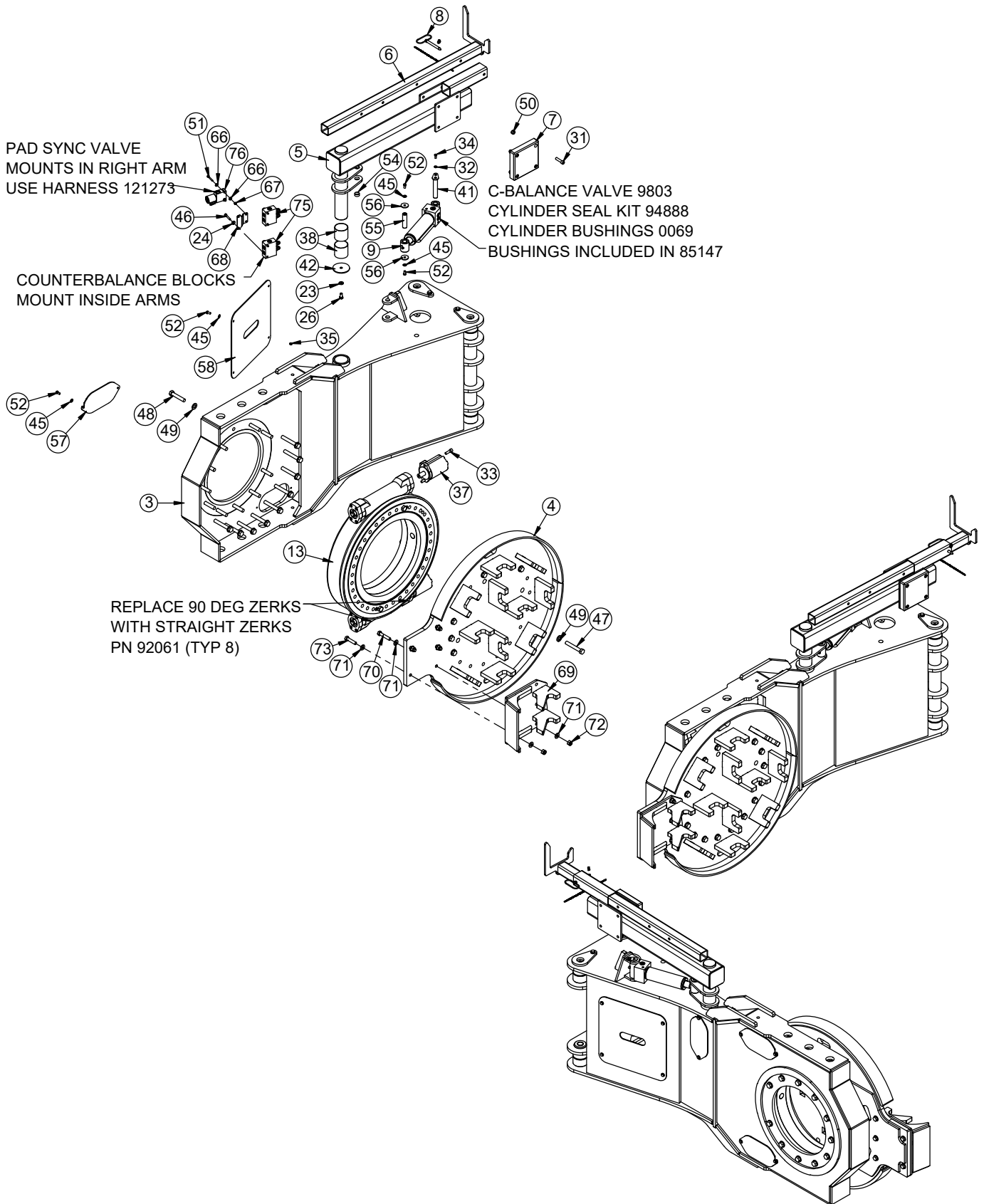
TM28 Long Arm Breakdown - PN 87064



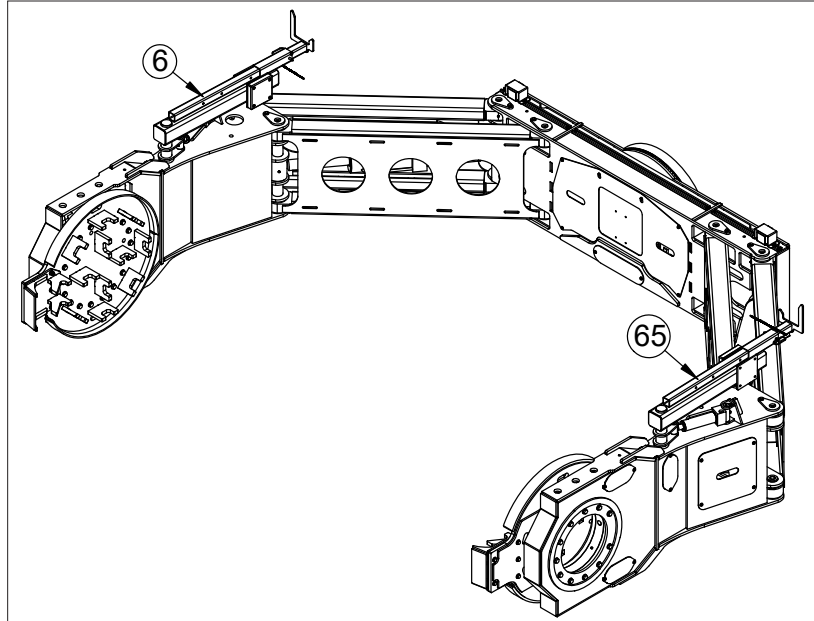
TM28 Long Arm Breakdown - PN 87064



TM28 Long Arm Breakdown - PN 87064



TM28 Long Arm Breakdown - PN 87064 Parts List



PN 87064

ITEM	PART	DESCRIPTION	QTY
1	85247	BODY TM28	1
2	85155	ARM LEFT TM28	1
3	87066	ARM RIGHT TM28	1
4	105546	PAD TM28 TEARDROP	2
5	85271	ARM FALLBACK WLDMT TM28	2
6	86458	ARM LOCK RING TM28 RIGHT	1
7	86454	PAD ARM FALL BACK TM28	2
8	C2036	PIN .50X4.00 W/LYNCH PIN (HITCH)	2
9	85147	CYLINDER 2.50X6.63	2
10	63518	BEARING TURNTABLE TM20165	1
11	6537	GEAR BOX 015-00120-1	2
12	5311	MOTOR HYD ROSS MG140611AAAB	2
13	72187	BEARING SWING DRIVE 25 IN DOUBLE WORM ENCLOSED	2
14	85246	BUSHING 3.00X4.25 BRONZE	16
15	100105	PLATE COVER FRONT BODY TM28	1
16	86459	GUARD LIGHT TM28	2
17	78431	LIGHT FLOOD LED 3.2X2.9 850LM 16W 10-30V	4
18	85258	CHANNEL STRUT AL 14GAX0.81X1.63X26.00 W/HOLES	2
19	76253	NUT STRUT CHANNEL .31X1.63	4
20	64845	GEAR GUARD TM20165 PC WHITE	2
21	94139	GUARD PINION TM28 PC WHITE	2
22	11881	CAP SCR 0.38-16X0.75 SH	6
23	D0790	WASHER 0.50 SAE FLAT YELLOW GR8	14
24	0343	WASHER 0.31 USS FLAT	20
25	C0922	CAP SCR 0.31-18X1.00 HHGR5	4

TM28 Long Arm Breakdown - PN 87064 Parts List

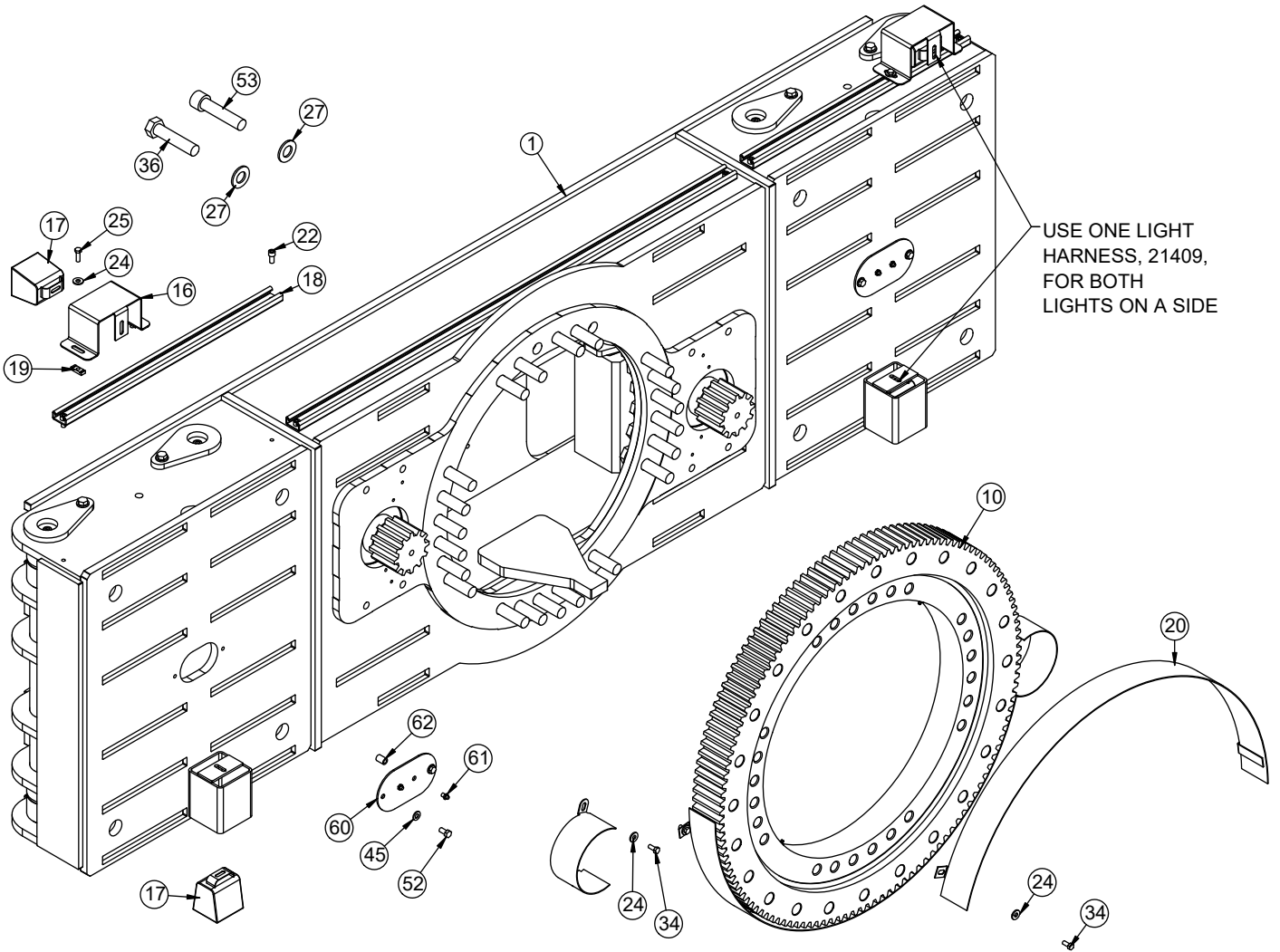
PN 87064			
ITEM	PART	DESCRIPTION	QTY
26	10172	CAP SCR 0.50-13X1.00 HHGR8	2
27	6538	WASHER 1.00 SAE FLAT YELLOW GR8	24
28	118875	CYLINDER 6.50X17.00	2
29	11298	CAP SCR 0.75-10X3.50 SH	8
30	D1295	CAP SCR 0.50-13X1.50 SH	4
31	53495	CAP SCR 0.50-13X2.00 SH	8
32	5591	WASHER 0.31 SAE FLAT YELLOW GR8	2
33	62484	CAP SCR 12MMX40MM SH	8
34	0420	CAP SCR 0.31-18X0.75 HHGR5	10
35	c1592	ZERK 1/8 NPT STRAIGHT	17
36	127548	CAP SCR 1.00-8X4.50 HHGR9	20
37	C6069	MOTOR HYD ROSS MK080613AAAB	4
38	2227	BUSHING BPC48DXR48 3.00X3.00	4
39	85391CR	PIN TEAR DROP 3.00X30.75 ZC	4
40	85393CR	PIN TEAR DROP 3.00X6.38 ZC	8
41	87057CR	PIN TEAR DROP 1.00X5.50 CR ZC	2
42	13315	PIN CAP 0.56X4.00X0.19 YZ	2
43	87068	CHANNEL STRUT AL 14GAX0.81X1.63X52.50 W/HOLES	1
44	10548	CAP SCR 0.50-13X1.50 HHGR8	12
45	C6353	WASHER 0.38 SAE FLAT YELLOW GR8	36
46	0488	CAP SCR 0.31-18X2.00 HHGR5	8
47	C1030	CAP SCR 0.75-10X5.00 HHGR8	36
48	C6218	CAP SCR 0.75-10X4.00 HHGR8	22
49	C6219	WASHER 0.75 SAE FLAT YELLOW GR8	58
50	5468	NUT 0.50-13 HHGR8 NYLOC	8
51	0481	CAP SCR 0.25-20X2.00 HHGR5	5
52	9843	CAP SCR 0.38-16X0.75 HHGR8	36
53	89787	CAP SCR 1.00-8X4.50 SH	4
54	20362	BUSHING BPC16DXR08 1.00X.50	4
55	86499CR	PIN 1.00X3.88 D&T ZC	2
56	9320	PIN CAP 0.44X1.75X0.19 YZ	4
57	89387	PLATE COVER ARM TM28	6
58	99834	PLATE COVER ARM TM28	2
59	90035	PLATE COVER SLOT BODY TM28	1
60	90036	PLATE COVER BODY REAR TM28	2
61	56589	ZERK 1/8 NPT STRAIGHT LONG THREAD	4
62	C2256	FTG CPLR PIPE 0.13	4
63	98237	SET SCREW 0.75-10X0.25 PLASTIC	12
64	94135	LINK TM28	4
65	100108	ARM LOCK RING TM28 LEFT	1
66	0340	WASHER 0.25 USS FLAT	4
67	0333	NUT 0.25-20 HHGR5 NYLOC	2

TM28 Long Arm Breakdown - PN 87064 Parts List

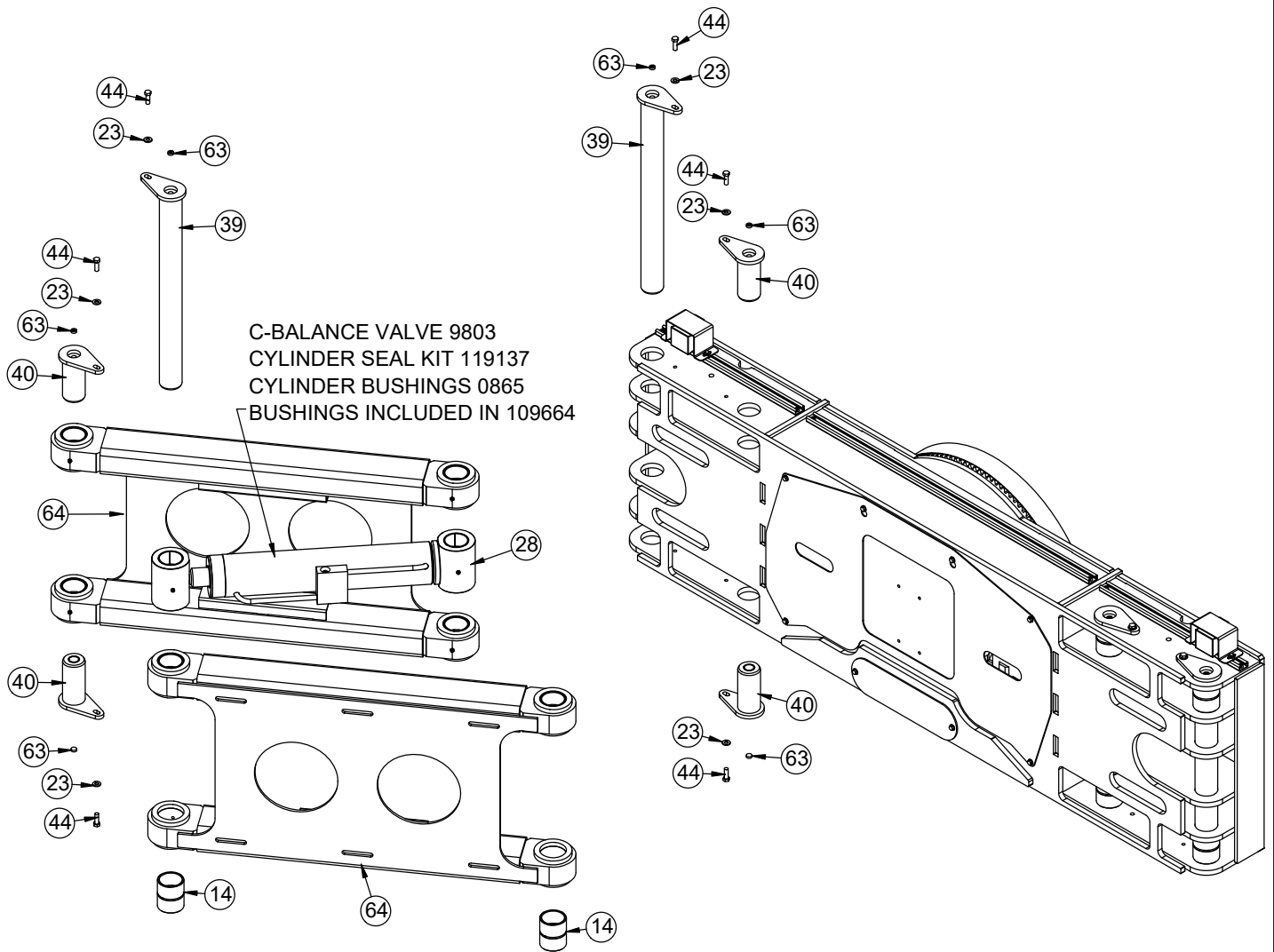
PN 87064			
ITEM	PART	DESCRIPTION	QTY
68	109663	PLATE BRACKET VALVE MOUNT TM28 PAD SYNC	1
69	117943	PAD EXT TEARDROP TM28	2
70	10751	CAP SCR 0.63-11X3.25 HHGR8	6
71	C5902	WASHER 0.63 SAE FLAT YELLOW GR8	20
72	24868	NUT 0.63-11 HHGR8 NYLOC	10
73	50375	CAP SCR 0.63-11X2.75 HHGR8	4
74	89377	VALVE COMB DIV MTD A08HG-050R	1
75	89378	MANIFOLD ASM CBAL DOUBLE CBBDLJNZ4U	4
76	119852	VALVE SOLND 2 POS 3 WAY SV10-34-6T-N-24DR	1
77	21151	GASKET MOTOR 008-10056-1	2

ITEMS NOT SHOWN		
PART	DESCRIPTION	QTY
89781	MANUAL TM28	1
102458	MANUAL TIRE MAN LOADER MNT	1
89782	MANUAL KIT TIRE MAN	1
59661	CRANE INSPECTION LOG	1
D0240	FTG 4-2 CPRSN-MP 90	4
D1810	TBE AIR SAEJ844 TYPE A .25 (RM)	13FT
D1345	FTG 4-2 CPRSN-MP STRAIGHT	4
89783	DECAL KIT TM28	1
92061	ZERK M8-1.25 STRAIGHT	8
C1592	ZERK 1/8 NPT STRAIGHT	2
87824	HYD KIT TM28 LONG ARM	1
121273	WIRE HRNS EXT TM28 PAD SYNC	1
21409	WIRE HARNESS FLOOD LIGHT TM14160	2

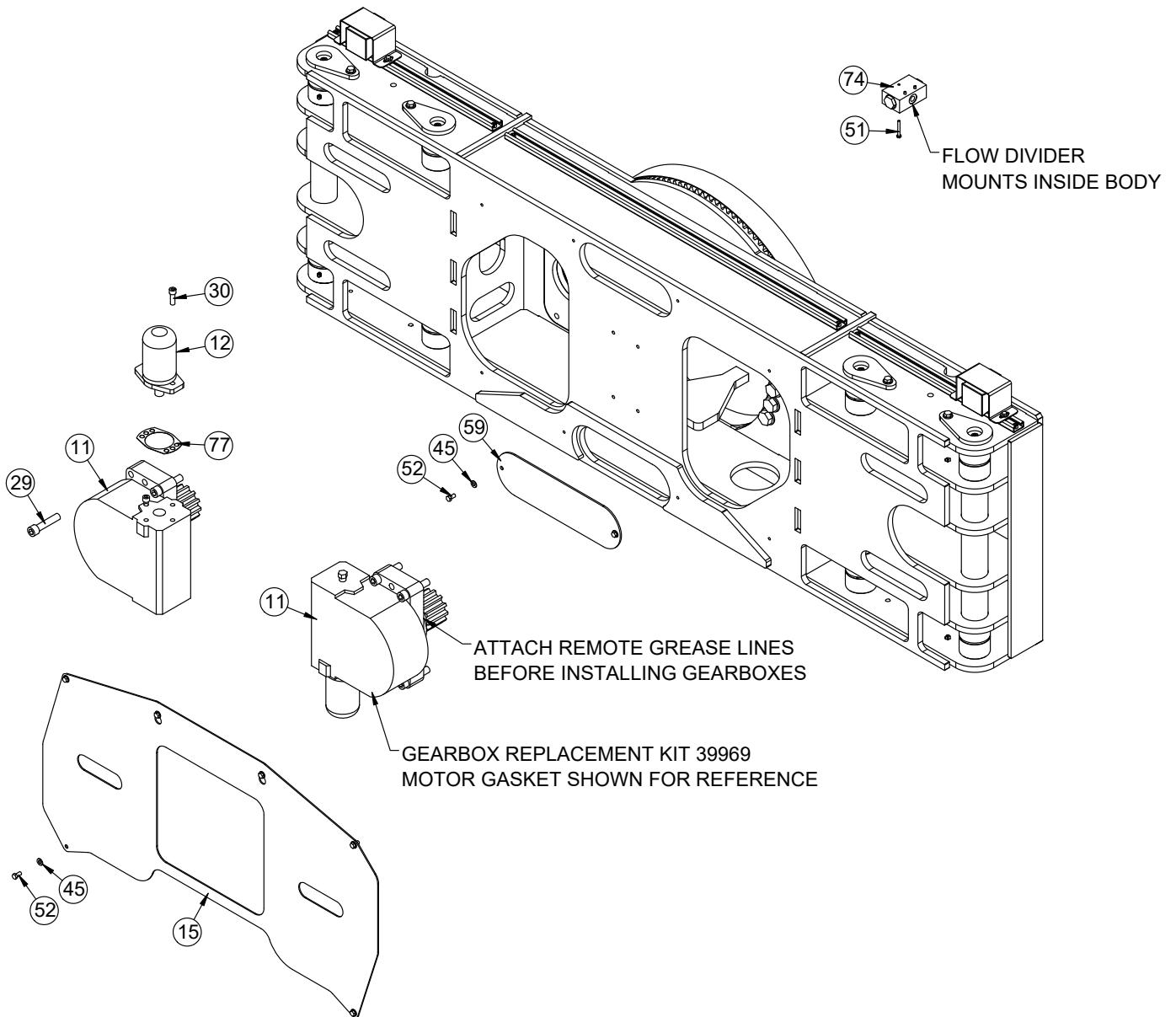
TM28 Short Arm - PN 99604



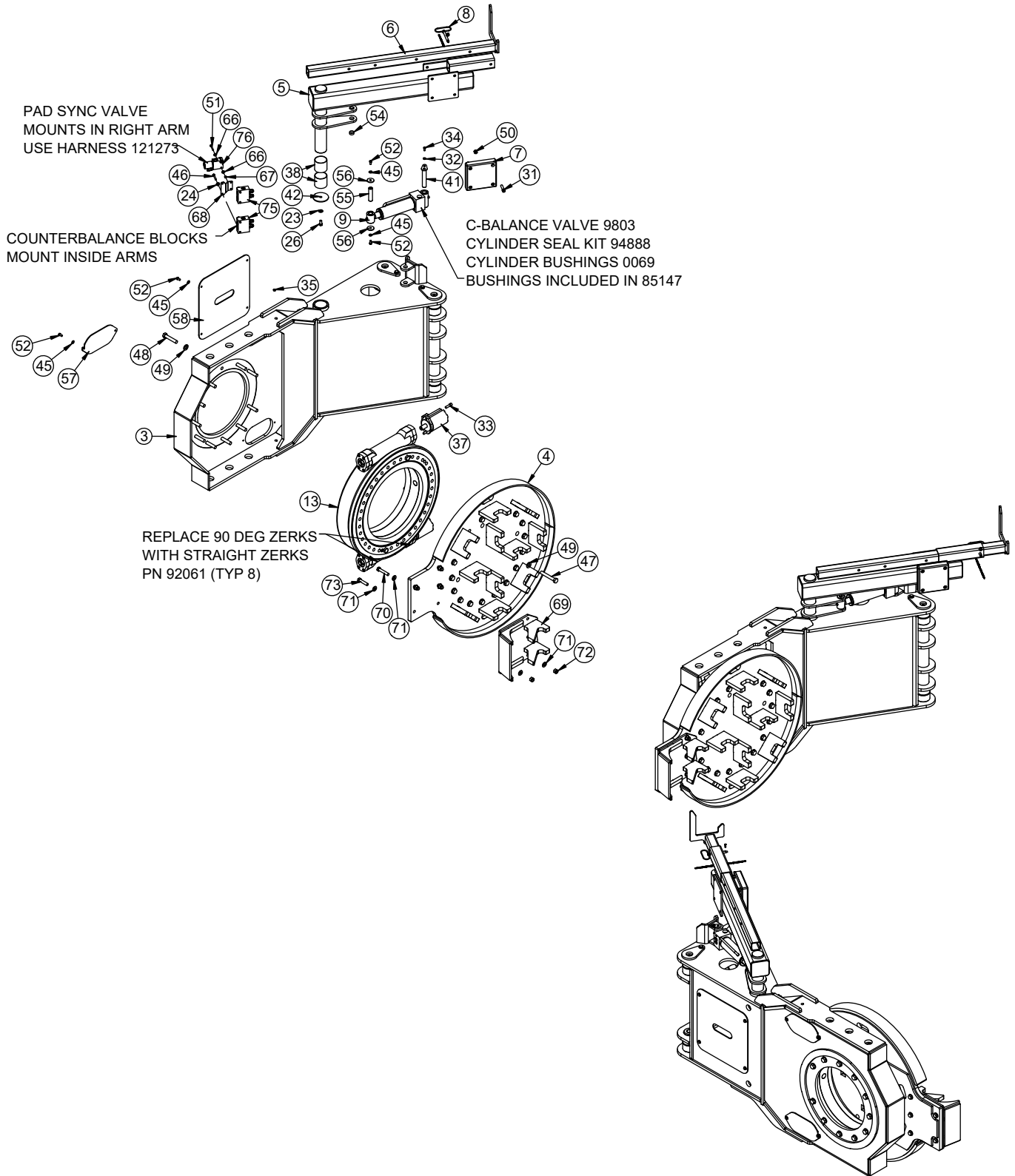
TM28 Short Arm - PN 99604 Continued



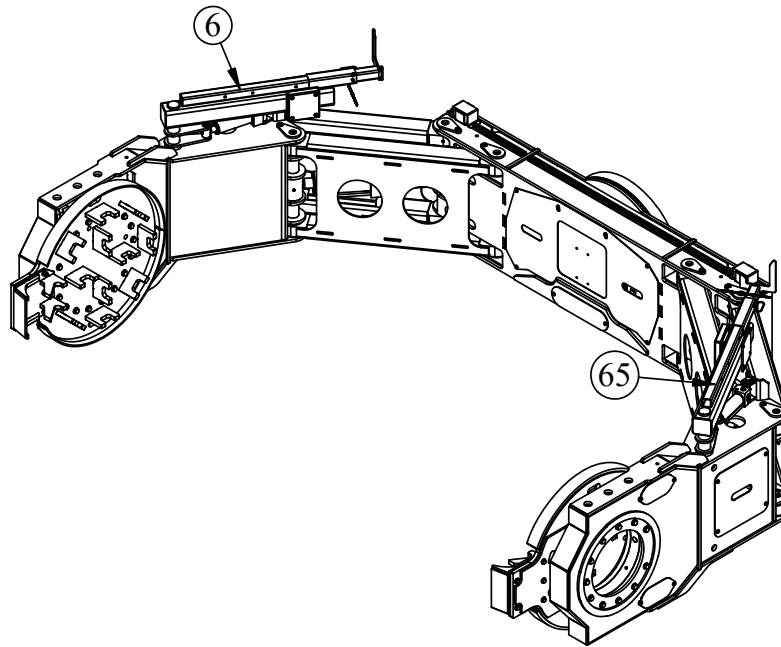
TM28 Short Arm - PN 99604 Continued



TM28 Short Arm - PN 99604 Continued



TM28 Short Arm Breakdown - PN 99604 Parts List



PN 99604

ITEM	PART	DESCRIPTION	QTY
1	85247	BODY TM28	1
2	99652	ARM LEFT TM28 SHORT ARM	1
3	99830	ARM RIGHT TM28 SHORT ARM	1
4	105546	PAD TM28 TEARDROP	2
5	99706	ARM FALLBACK WLDMT TM28 SHORT ARM	2
6	86458	ARM LOCK RING TM28 RIGHT	1
7	86454	PAD ARM FALL BACK TM28	2
8	C2036	PIN .50X4.00 W/LYNCH PIN (HITCH)	2
9	85147	CYLINDER 2.50X6.63	2
10	63518	BEARING TURNTABLE TM20165	1
11	6537	GEAR BOX 015-00120-1	2
12	5311	MOTOR HYD ROSS MG140611AAAB	2
13	72187	BEARING SWING DRIVE 25 IN DOUBLE WORM ENCLOSED	2
14	85246	BUSHING 3.00X4.25 BRONZE	16
15	100105	PLATE COVER FRONT BODY TM28	1
16	86459	GUARD LIGHT TM28	2
17	78431	LIGHT FLOOD LED 3.2X2.9 850LM 16W 10-30V	4
18	85258	CHANNEL STRUT AL 14GAX0.81X1.63X26.00 W/HOLES	2
19	76253	NUT STRUT CHANNEL .31X1.63	4
20	64845	GEAR GUARD TM20165 PC WHITE	2
21	94139	GUARD PINION TM28 PC WHITE	2
22	11881	CAP SCR 0.38-16X0.75 SH	6

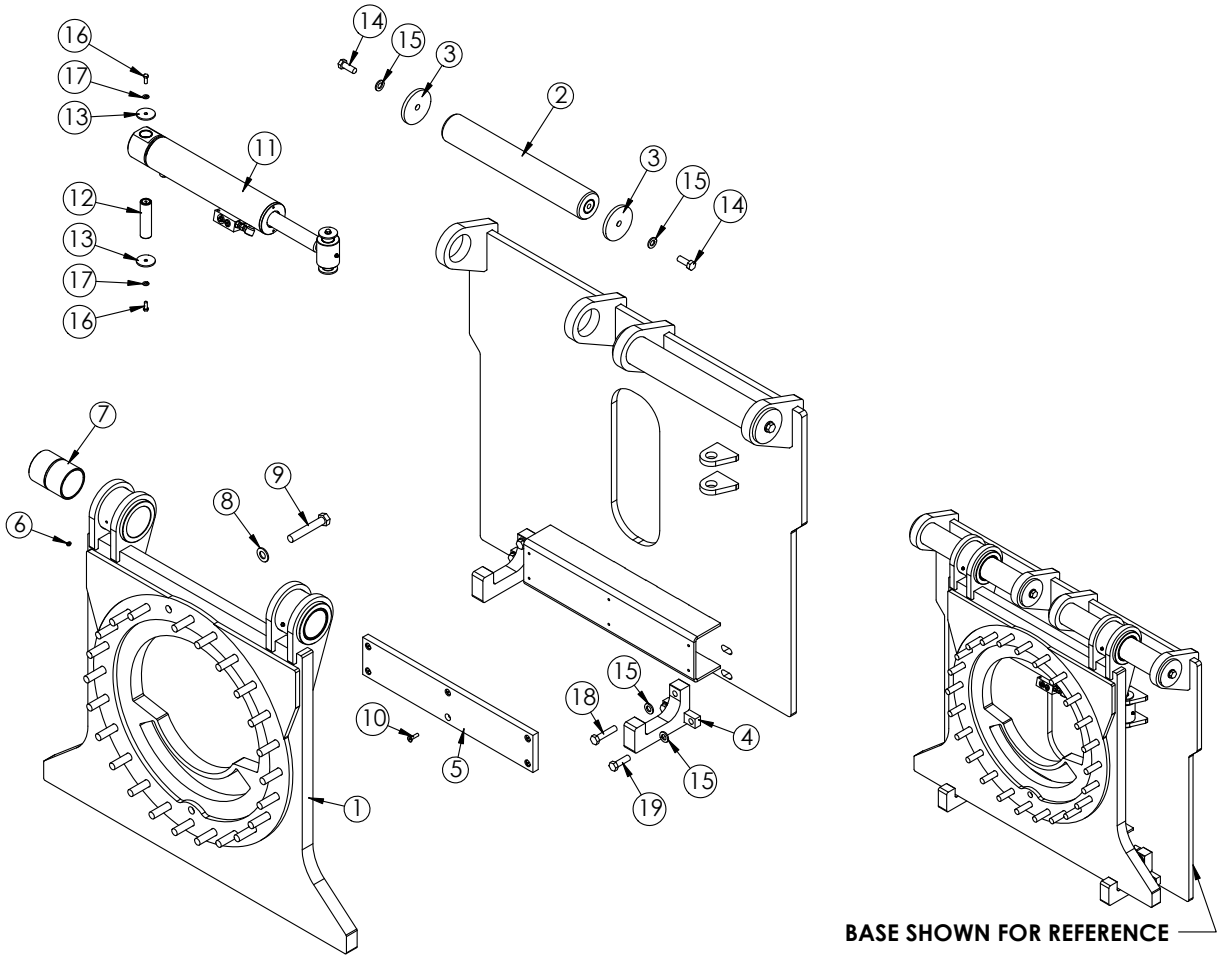
TM28 Short Arm Breakdown - PN 99604 Parts List

PN 99604			
ITEM	PART	DESCRIPTION	QTY
23	D0790	WASHER 0.50 SAE FLAT YELLOW GR8	14
24	0343	WASHER 0.31 USS FLAT	20
25	C0922	CAP SCR 0.31-18X1.00 HHGR5	4
26	10172	CAP SCR 0.50-13X1.00 HHGR8	2
27	6538	WASHER 1.00 SAE FLAT YELLOW R8	24
28	109664	CYLINDER 5.00X22.38	2
29	11298	CAP SCR 0.75-10X3.50 SH	8
30	D1295	CAP SCR 0.50-13X1.50 SH	4
31	53495	CAP SCR 0.50-13X2.00 SH	8
32	5591	WASHER 0.31 SAE FLAT YELLOW GR8	2
33	62484	CAP SCR 12MMX40MM SH	8
34	0420	CAP SCR 0.31-18X0.75 HHGR5	10
35	c1592	ZERK 1/8 NPT STRAIGHT	17
36	127548	CAP SCR 1.00-8X4.50 HHGR9	20
37	C6069	MOTOR HYD ROSS MK080613AAAB	4
38	2227	BUSHING BPC48DXR48 3.00X3.00	4
39	85391CR	PIN TEAR DROP 3.00X30.75 ZC	4
40	85393CR	PIN TEAR DROP 3.00X6.38 ZC	8
41	87057CR	PIN TEAR DROP 1.00X5.50 CR ZC	2
42	13315	PIN CAP 0.56X4.00X0.19 YZ	2
43	87068	CHANNEL STRUT AL 14GAX0.81X1.63X52.50 W/HOLES	1
44	10548	CAP SCR 0.50-13X1.50 HHGR8	12
45	C6353	WASHER 0.38 SAE FLAT YELLOW GR8	32
46	0488	CAP SCR 0.31-18X2.00 HHGR5	8
47	C1030	CAP SCR 0.75-10X5.00 HHGR8	36
48	C6218	CAP SCR 0.75-10X4.00 HHGR8	22
49	C6219	WASHER 0.75 SAE FLAT YELLOW GR8	58
50	5468	NUT 0.50-13 HHGR8 NYLOC	8
51	0481	CAP SCR 0.25-20X2.00 HHGR5	5
52	9843	CAP SCR 0.38-16X0.75 HHGR8	32
53	89787	CAP SCR 1.00-8X4.50 SH	4
54	20362	BUSHING BPC16DXR08 1.00X.50	4
55	86499CR	PIN 1.00X3.88 D&T ZC	2
56	9320	PIN CAP 0.44X1.75X0.19 YZ	4
57	89387	PLATE COVER ARM TM28	4
58	99834	PLATE COVER ARM TM28	2
59	90035	PLATE COVER SLOT BODY TM28	1
60	90036	PLATE COVER BODY REAR TM28	2
61	56589	ZERK 1/8 NPT STRAIGHT LONG THREAD	4
62	C2256	FTG CPLR PIPE 0.13	4
63	98237	SET SCREW 0.75-10X0.25 PLASTIC	12
64	99647	LINK TM28 SHORT ARM	4

TM28 Short Arm Breakdown - PN 99604 Parts List

PN 99604			
ITEM	PART	DESCRIPTION	QTY
65	100108	ARM LOCK RING TM28 LEFT	1
66	0340	WASHER 0.25 USS FLAT	4
67	0333	NUT 0.25-20 HHGR5 NYLOC	2
68	109663	PLATE BRACKET VALVE MOUNT TM28 PAD SYNC	1
69	117943	PAD EXT TEARDROP TM28	2
70	10751	CAP SCR 0.63-11X3.25 HHGR8	6
71	C5902	WASHER 0.63 SAE FLAT YELLOW GR8	20
72	24868	NUT 0.63-11 HHGR8 NYLOC	10
73	50375	CAP SCR 0.63-11X2.75 HHGR8	4
74	89377	VALVE COMB DIV MTD A08HG-050R	1
75	89378	MANIFOLD ASM CBAL DOUBLE CBBDLJNZ4U	4
76	119852	VALVE SOLND 2 POS 3 WAY SV10-34-6T-N-24DR	1
77	21151	GASKET MOTOR 008-10056-1	2

TM28 Side Shift Assembly - PN 85398



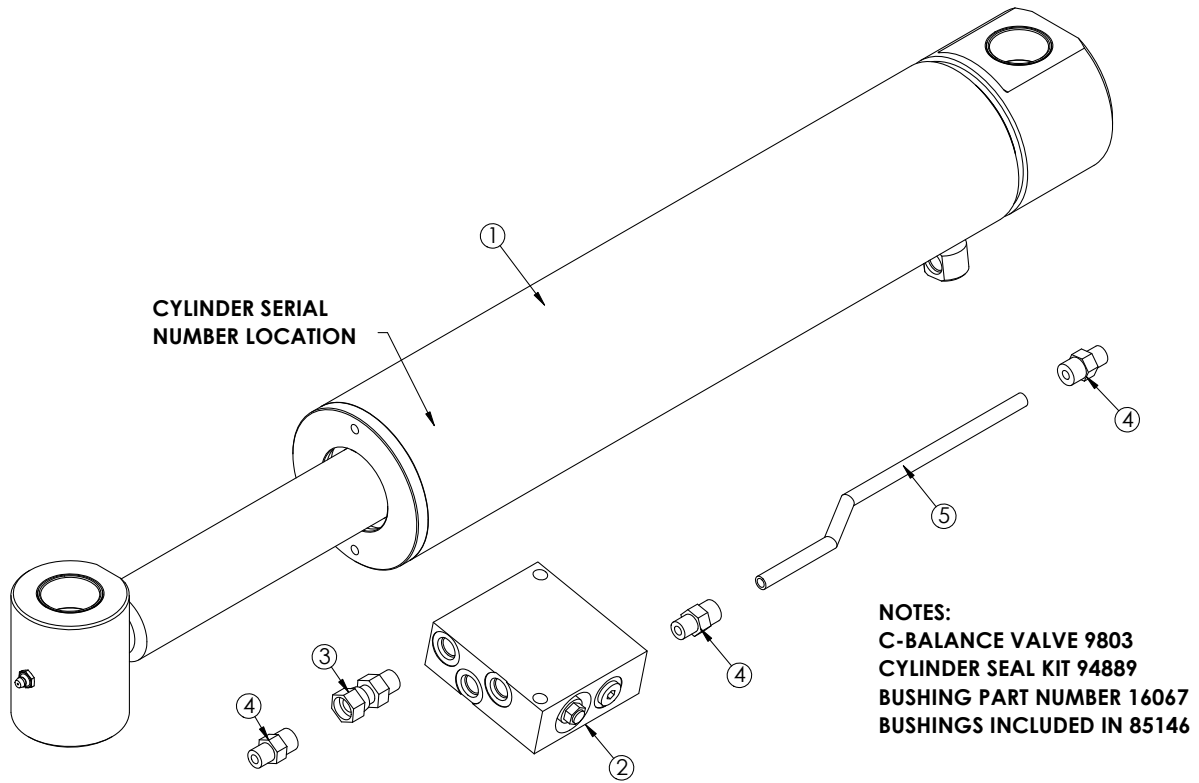
NOT SHOWN:

- 1 - 117186 HOSE KIT SIDE SHIFT ASM TM28
- 2 - C1855 FTG 6-10 MFS-MORB STRAIGHT
- 2 - 0279 FTG 6-6 MFS-MORB STRAIGHT

PN 85398

ITEM	PART No.	DESCRIPTION	QTY.
1	85259	SUB BASE WELDMENT TM28	1
2	87056CR	PIN 4.00X25.63 D&T ZC	2
3	85382	PIN CAP 1.06X5.00X0.50	4
4	100043	RETAINER WLDMT SUB BASE TM28	2
5	85388	WEAR PAD BASE SLIDE TM28	1
6	C1592	ZERK 1/8 NPT STRAIGHT	2
7	85265	BUSHING 4.00X6.00 BRONZE	2
8	6538	WASHER 1.00 SAE FLAT YELLOW GR8	24
9	89788	CAP SCR 1.00-8X6.00 HHGR8	24
10	79300	CAP SCR 0.38-16X1.50 FHSR RED PATCH	6
11	89388	CYL ASM SIDE SHIFT TM28	1
12	19514CR	PIN 1.50X5.50 D&T ZC	2
13	7403	PIN CAP 0.44X2.50X0.19 YZ	4
14	4543	CAP SCR 0.75-10X2.00 HHGR8	4
15	C6219	WASHER 0.75 SAE FLAT YELLOW GR8	10
16	13573	CAP SCR 0.38-16X1.00 HHGR8	4
17	C6353	WASHER 0.38 SAE FLAT YELLOW GR8	4
18	4975	CAP SCR 0.75-10X3.50 HHGR8	2
19	58681	CAP SCR 0.75-10X2.50 HHGR8	4

TM28 Side Shift Cylinder Assembly - PN 89388



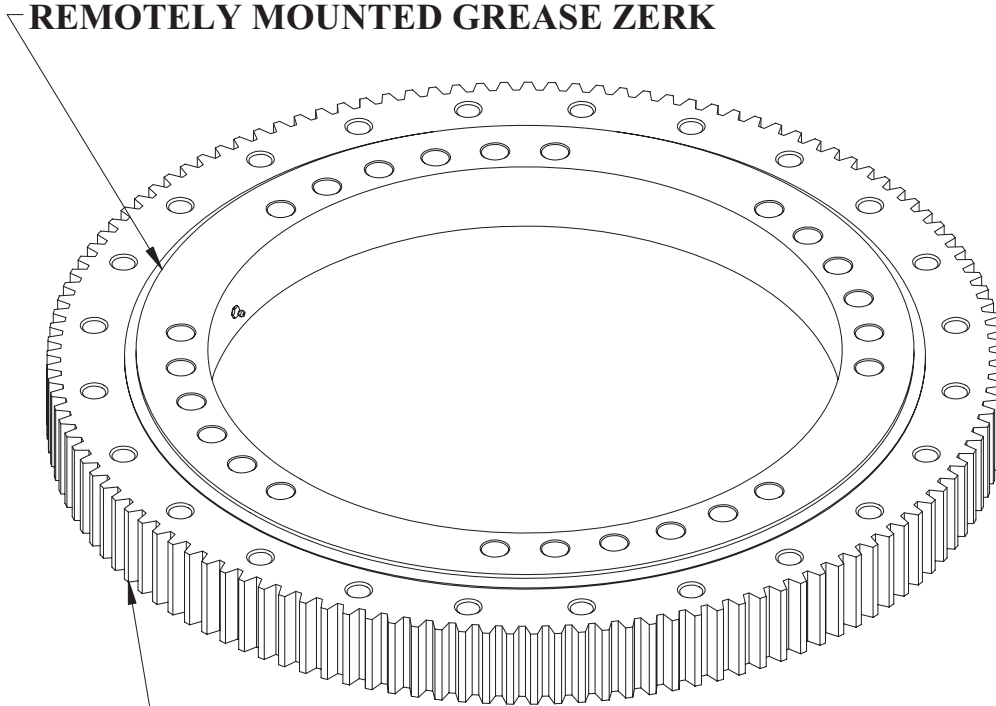
PN 89388

ITEM	PART No.	DESCRIPTION	QTY.
1	85146	CYLINDER 4.00X16.00	1
2	16154	MANIFOLD DOUBLE T11A 3500 PSI	1
3	33743	FTG 6-6 FFSS-MORB STRAIGHT	1
4	0279	FTG 6-6 MFS-MORB STRAIGHT	3
5	89780	TUBE ASM 0.38X10.06 SIDE SHIFT TM28 ZC	1

Bearing - PN 63518

**USE EP2 LITHIUM COMPLEX GREASE, STELLAR PN 78090
ON BEARING RACE**

**GREASE MAIN BEARING RACE THROUGH
REMOTELY MOUNTED GREASE ZERK**

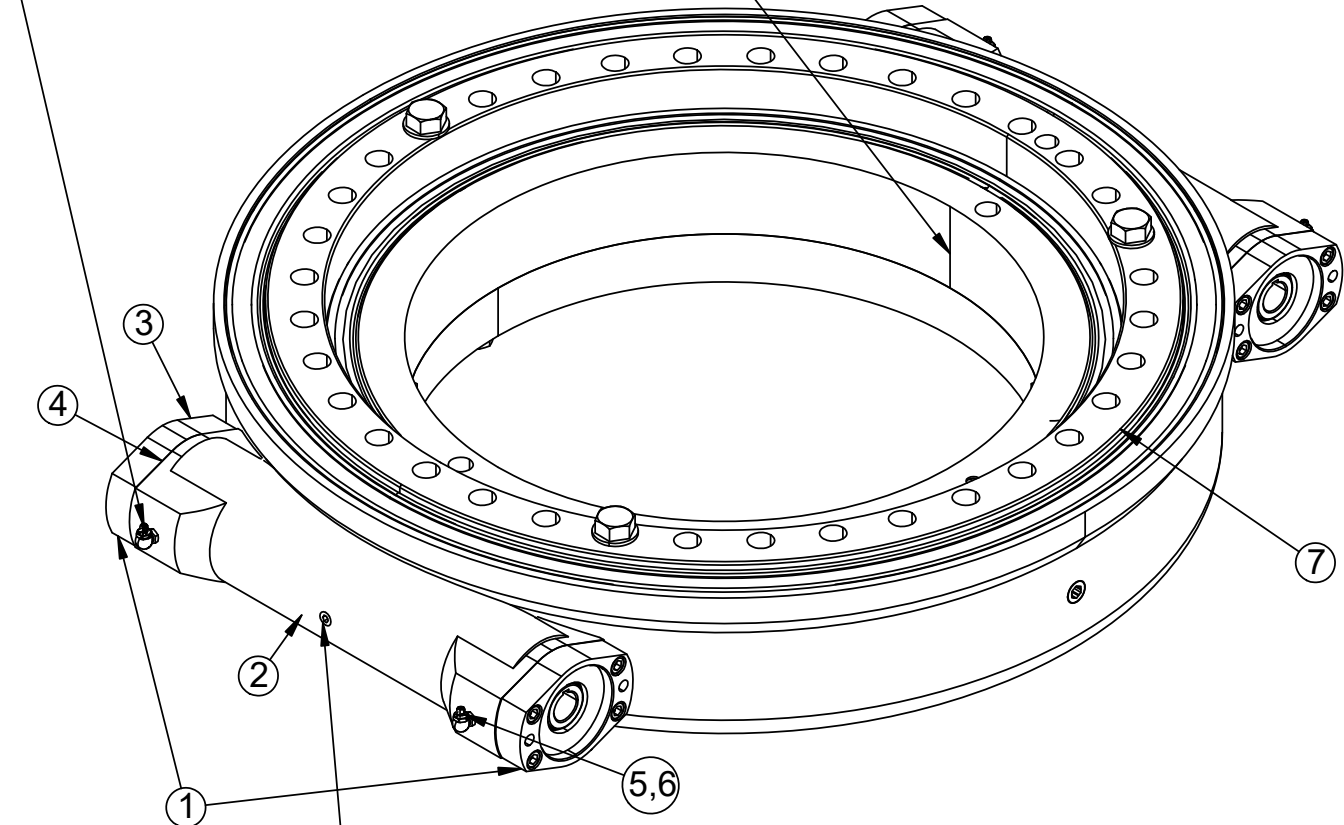


**USE MOLY GREASE 936SF HEAVY, STELLAR PN 4460
ON BEARING GEAR TEETH**

Pad Rotation Bearing Assembly - PN 72187

USE EP2 LITHIUM COMPLEX GREASE, STELLAR PN 78090
ON WORM BEARINGS AND BEARING RACE

GREASE MAIN BEARING RACE THROUGH
REMOTELY MOUNTED GREASE ZERK



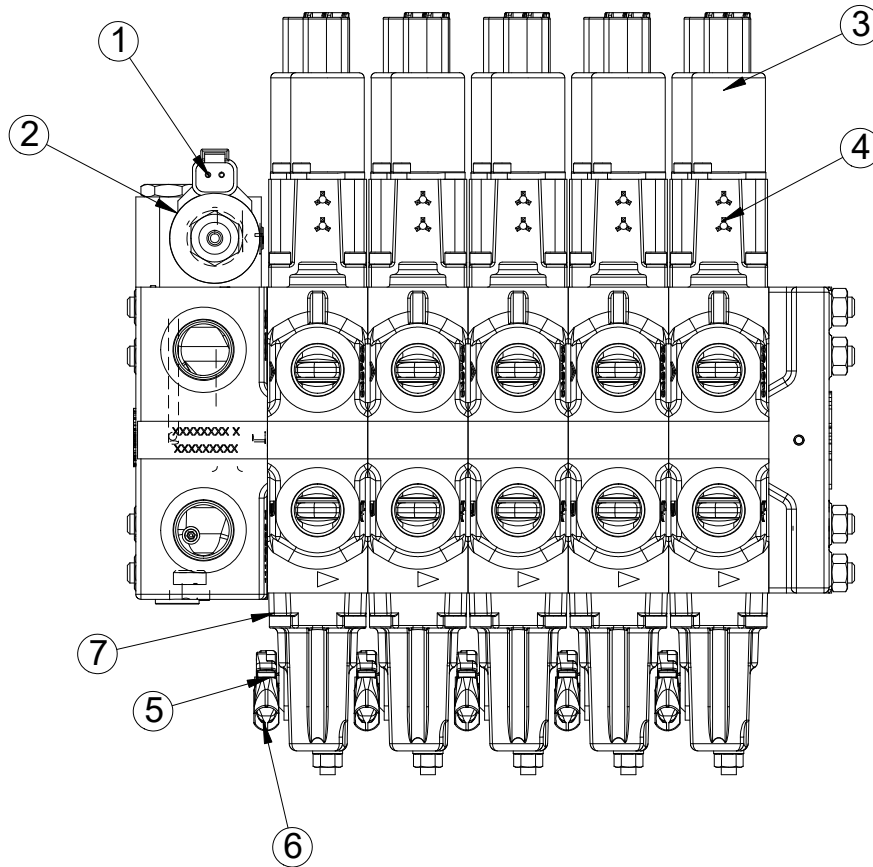
USE MOLY GREASE 936SF HEAVY, STELLAR PN 4460
ON WORM AND BEARING GEAR TEETH

PN 72187

ITEM	PART	DESCRIPTION	QTY
1	77741	BEARING AND SEAL KIT 14IN, 17IN, 25IN ENCLOSED KNMTS	2
2	77894	WORM 25IN ENCLOSED KNMTS	2
3	67864	END CAP 9IN/14IN/17IN/25IN KNMTS AFTER 2006	2
4	67863	SHIM KIT 6000 KINEMATICS W17B02	2
5	C1597	ZERK 1/8 NPT 90 DEG(13500)	4
6	C1592	ZERK 1/8 NPT STRAIGHT(TM28)	4
7	102100	SEAL TOP BEARING	1

REV. B REQ.710

Valve Bank - PN 87380



PN 87380

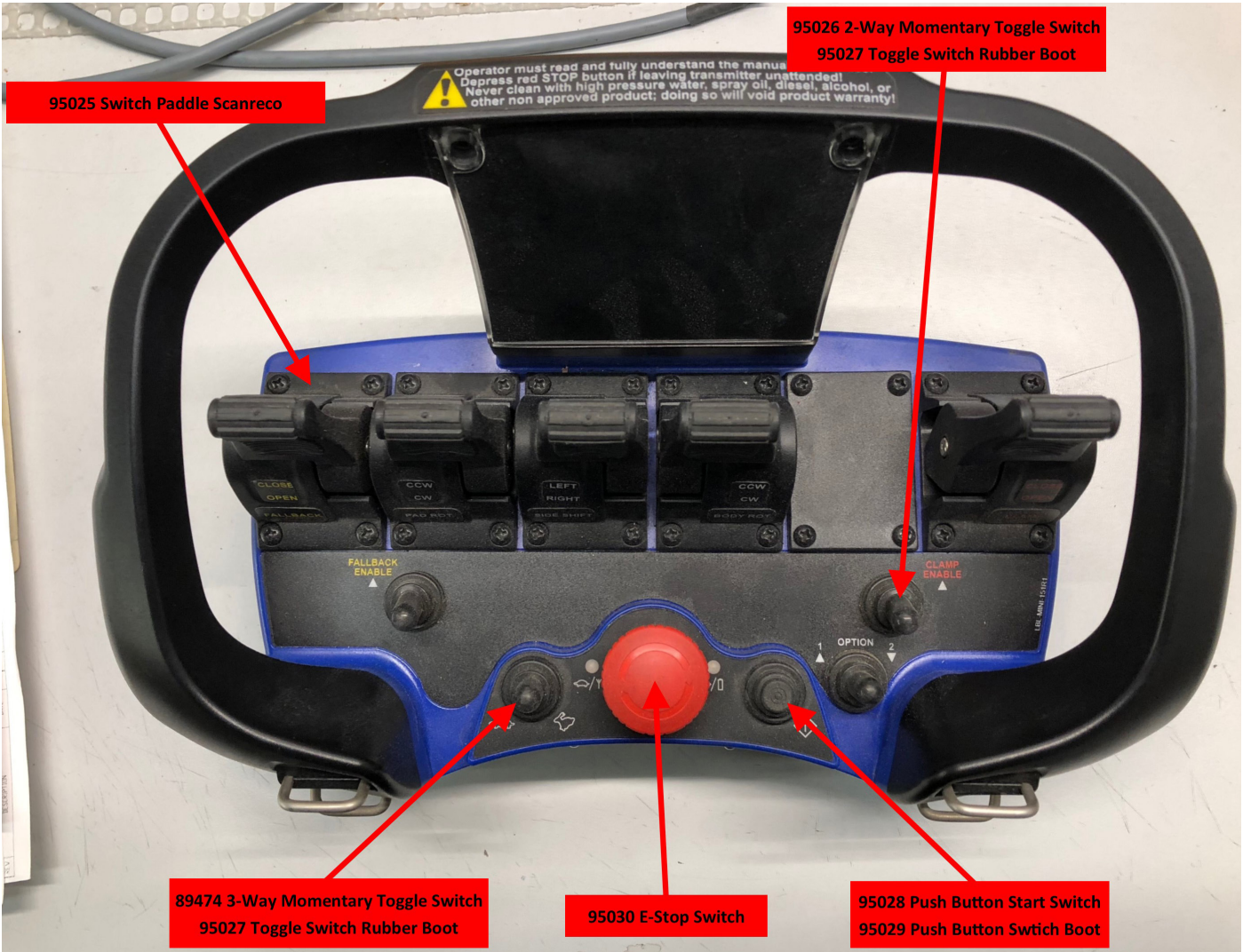
ITEM	PART	DESCRIPTION	QTY
1	50234	DUMP VALVE	1
2	58669	DUMP VALVE COIL 24V	1
3	147158	ACTUATOR COIL 24V	10
4	147157	ACTUATOR ASSEMBLY 24V	5
5	48696	BASE & LEVER	5
6	47866	LEVER	5
7	148894	MANUAL OPERATOR BASE/HANDLE/LEVER/SEALS ECO80	5
8	147159	SEAL KIT EVHC ACTUATOR ECO80	5
9	148895	SEAL KIT MANUAL OPERATOR ECO80	5
10	147160	SEAL KIT & TIE RODS DANFOSS ECO80	1

20260501

ITEMS NOT SHOWN

PART	DESCRIPTION
147157	INCLUDES MANIFOLD & TWO ACTUATOR COILS
147160	INCLUDES TIE RODS & SEALS FOR ALL SECTIONS
147159,	147160 & 148895 NOT SHOWN IN DRAWING

Radio Transmitter - PN 89149/93084





Subject to Change without Notification.
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