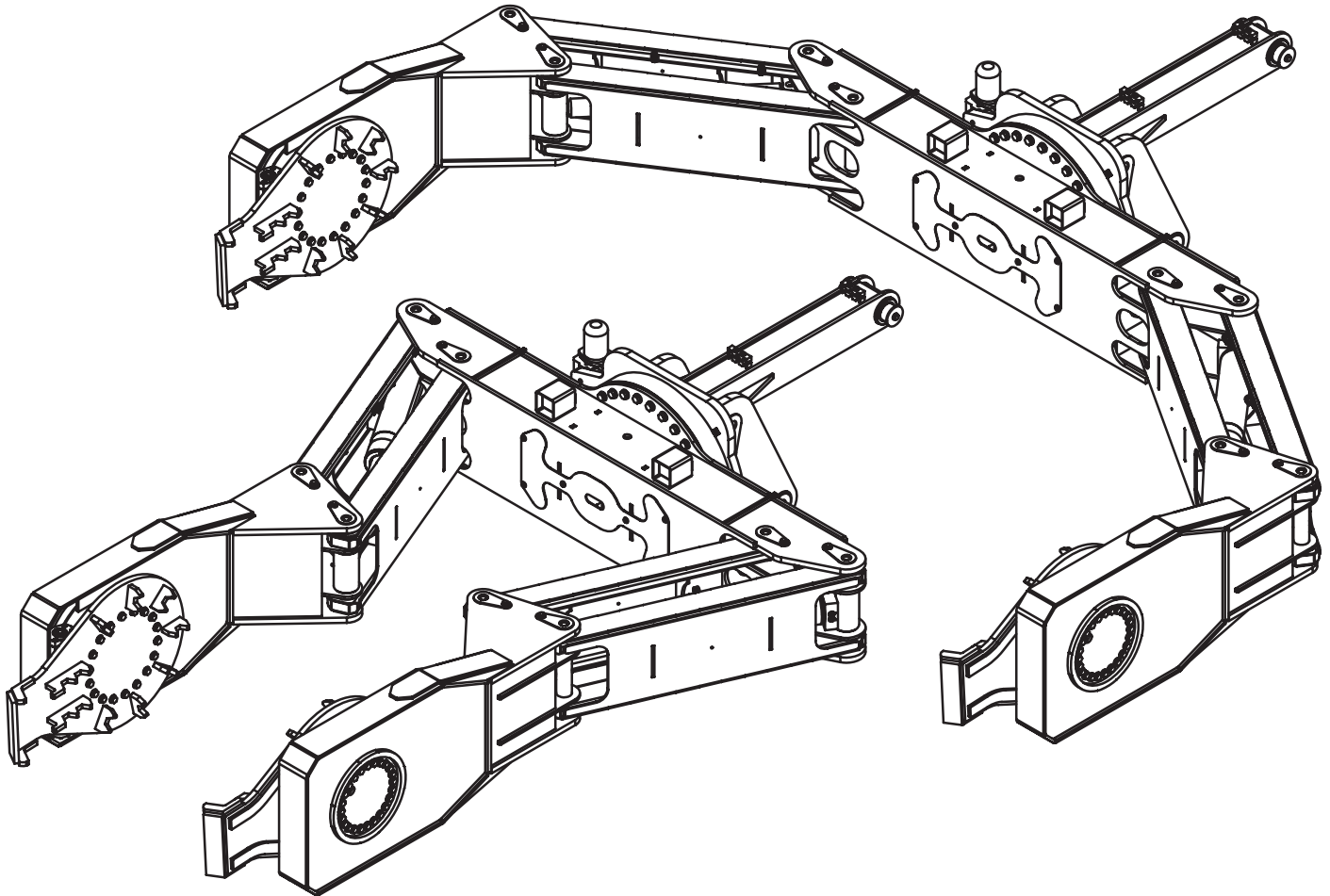




# TireMan 16160

## 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](http://www.stellarindustries.com)

**Stellar Industries, Inc.**

**190 State Street**

**PO Box 169**

**Garner, IA 50438**

**800-321-3741**

**Fax: 641-923-2811**

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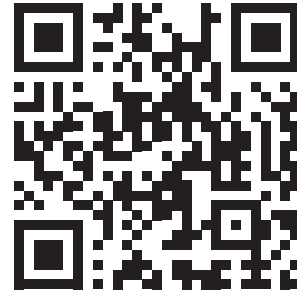
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Rev 2  
PN 90384

# P65 Warning / Cold Weather Notice

## 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](http://www.P65Warnings.ca.gov/passenger-vehicle).



[www.p65/warning.ca.gov](http://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

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# Introduction

A copy of this manual is provided with every tire manipulator and can be found in the hard plastic manual case that is installed on the chassis. 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:

## **NOTICE**

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

## **⚠ WARNING**

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

## **⚠ DANGER**

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

Information contained within this manual does not cover operation, maintenance, or troubleshooting. Please refer to the Large OTR Crane Manual for 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](mailto: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](mailto:service@stellarindustries.com)

**Order Parts**

[parts@stellarindustries.com](mailto:parts@stellarindustries.com)

**Warranty Information**

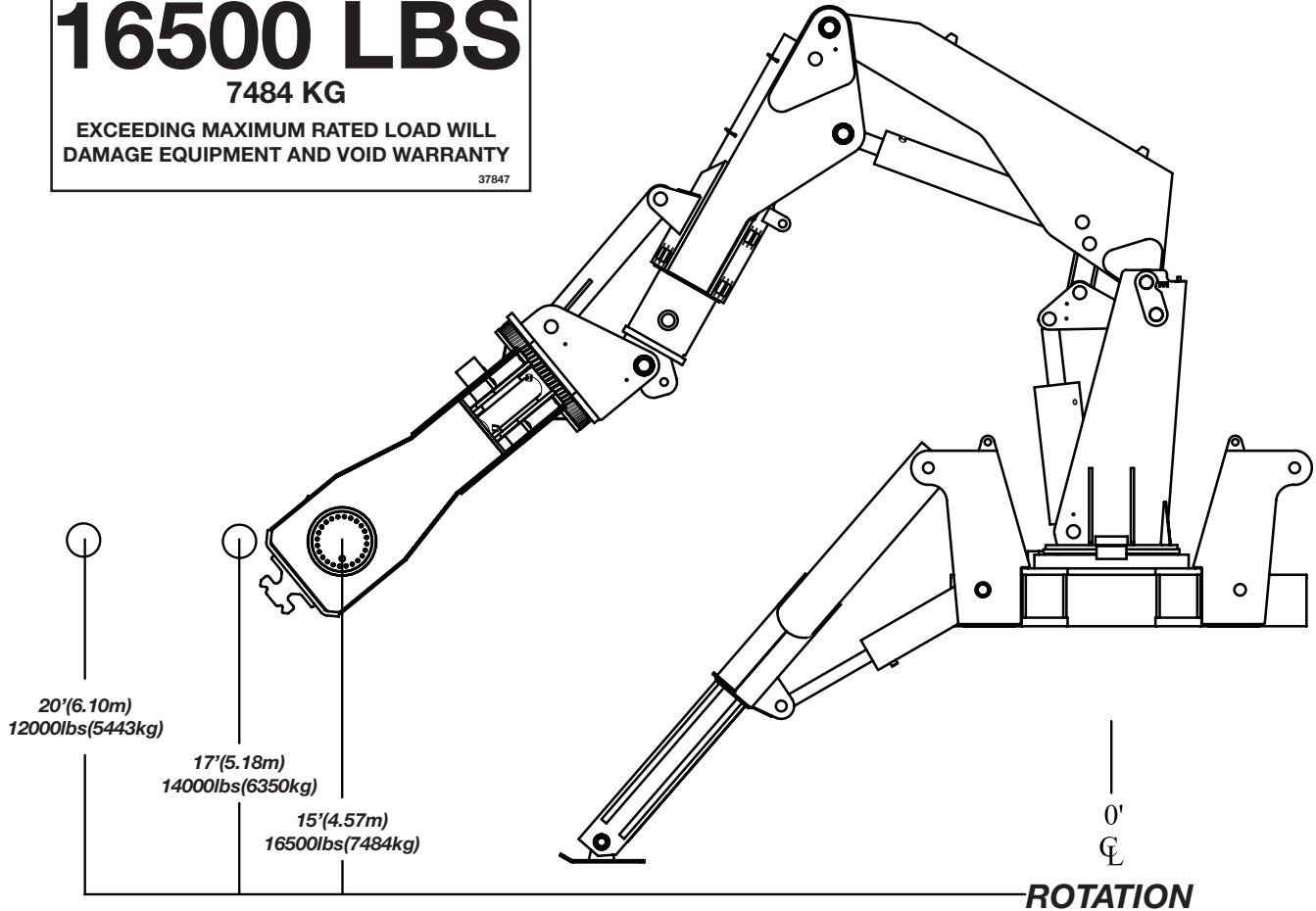
[warranty@stellarindustries.com](mailto:warranty@stellarindustries.com)

# Model TM16160 Specifications

**MAXIMUM RATED LOAD**  
**16500 LBS**  
 7484 KG

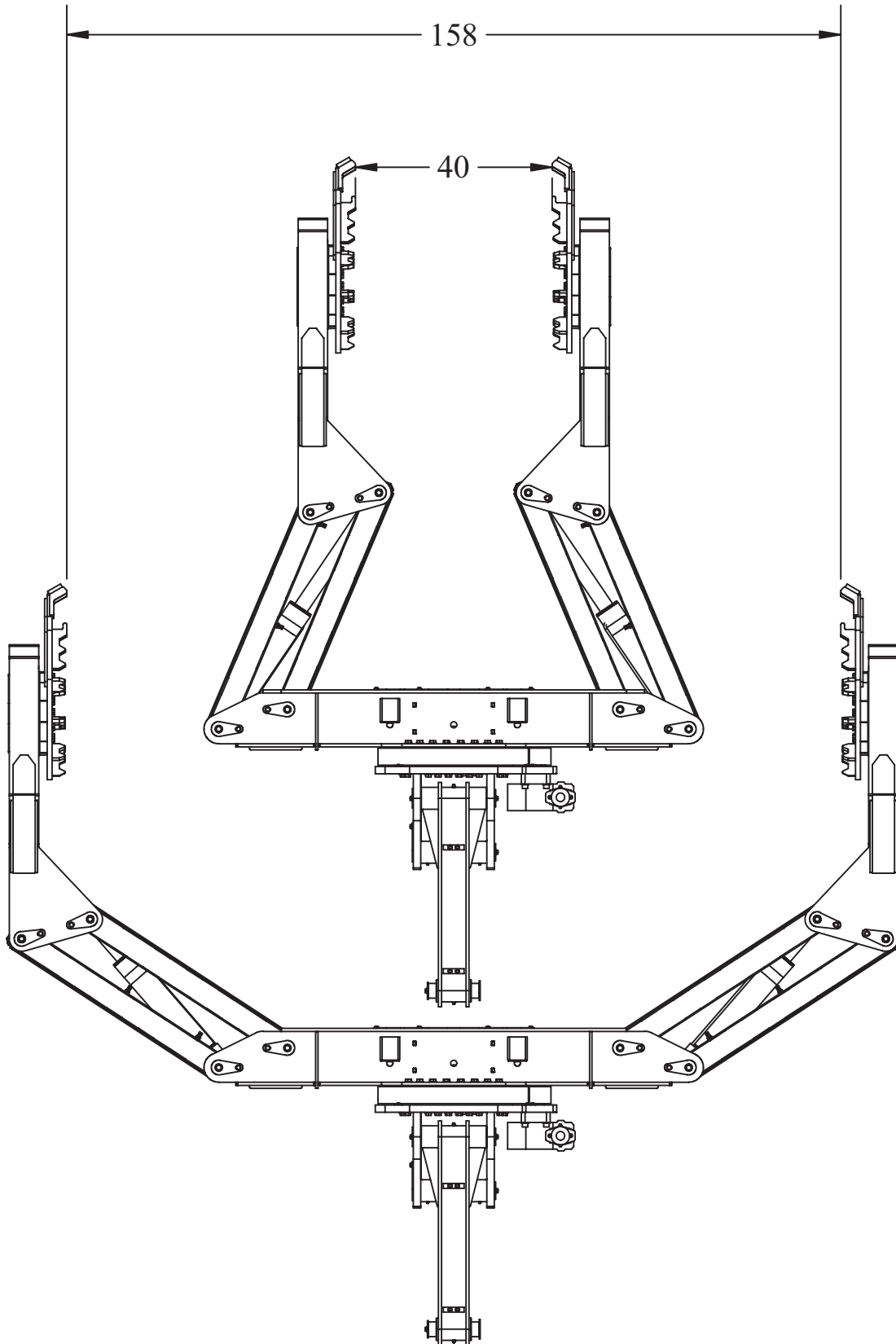
EXCEEDING MAXIMUM RATED LOAD WILL  
 DAMAGE EQUIPMENT AND VOID WARRANTY

37847



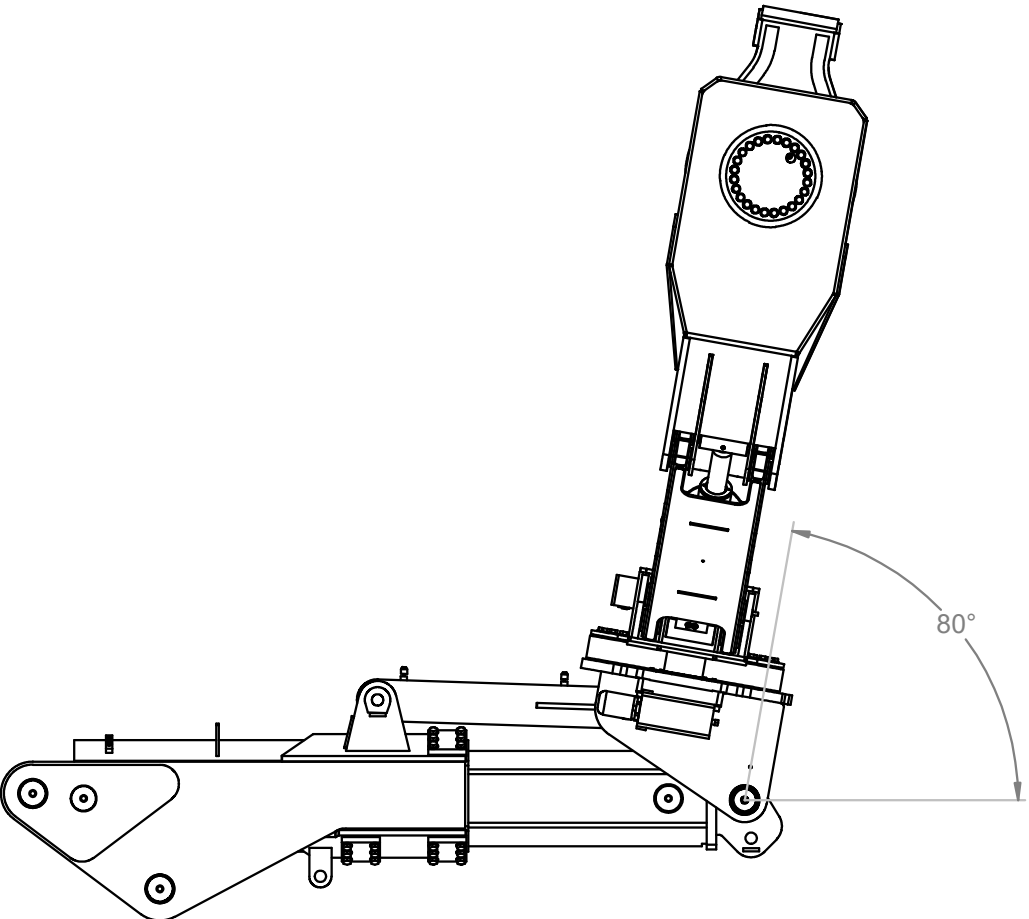
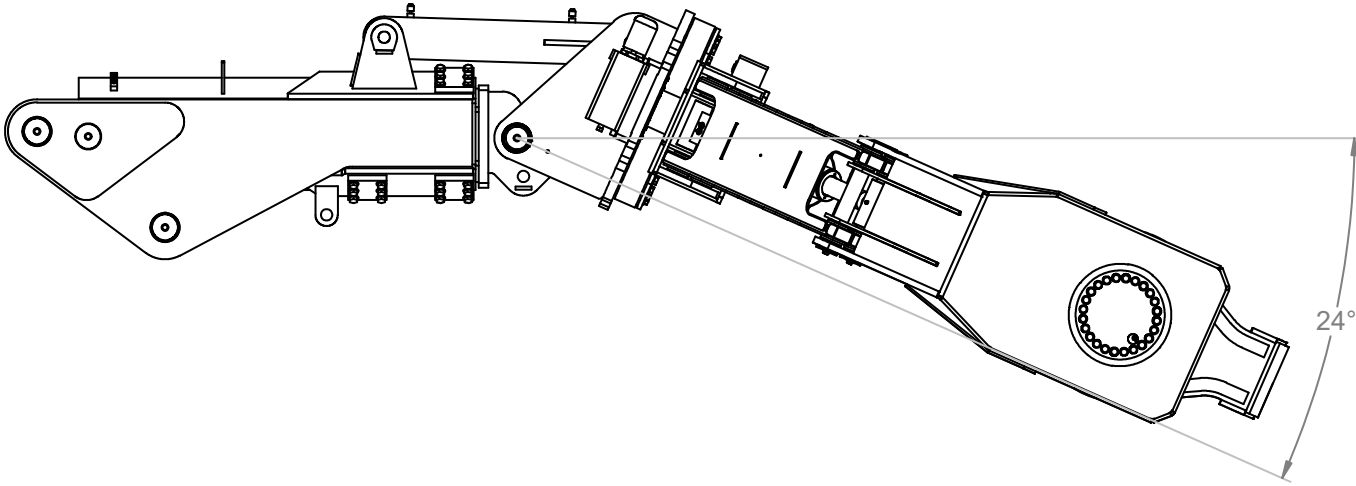
<b>Capacity:</b>	16,500 lbs @ 15 ft (7,484 kg @ 4.57m)
<b>Clamping Span:</b>	40" to 158" (102 cm to 401 cm)
<b>Tilt Cylinder:</b>	Provided by crane extension boom
<b>Body Rotation:</b>	315° power
<b>Rotation System:</b>	Worm gear
<b>Clamping Pad Rotation:</b>	Continuous 360° power
<b>TireMan Tilt:</b>	+80° to -24°
<b>Hydraulic Controls:</b>	Incorporated with the crane controls
<b>Approximate Shipping Weight:</b>	6,000 lbs (2,722 kg)

# TM16160 Dimensional Layout



# TM16160 Dimensional Layout (Continued)

## TIREMAN TILT



## General Installation

This chapter is designed to serve as a general guide for the installation of a Stellar TM16160 on a Stellar Service Crane. 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.

This crane is designed for use with a Stellar Service Crane installed on a vehicle that meets the minimum chassis requirements of the crane. It is the installer's responsibility to assure that the unit is mounted on a platform that will support the maximum crane rating of this crane.

**⚠ 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.

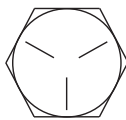
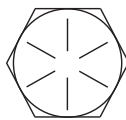
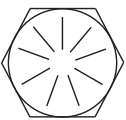
Please reference the Code of Federal Regulations, title 49 - Transportation, Volume 5 (400-999), for further information, or visit <http://www.gpoaccess.gov/nara/index.html> for the full text of Code of Federal Regulations.



## 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.*

# 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.

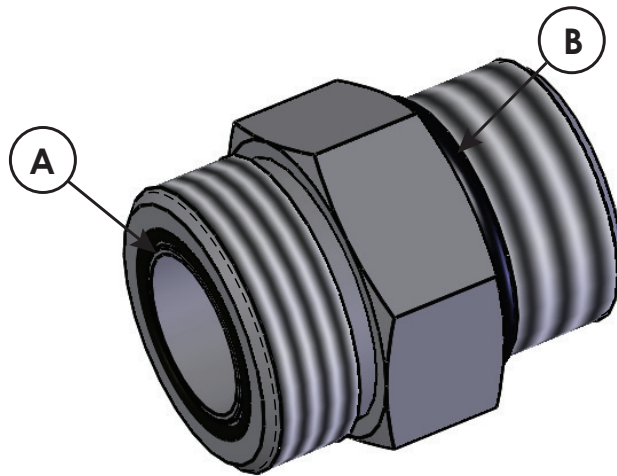
When installing metal hydraulic tubes, tighten all fittings finger tight. Then, in order, tighten the fittings at the rigid end, the adjustable end, and the mounting brackets. After tubes are mounted, install the hoses. Connect both ends of the hose with all fittings finger tight. Position the hose so 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

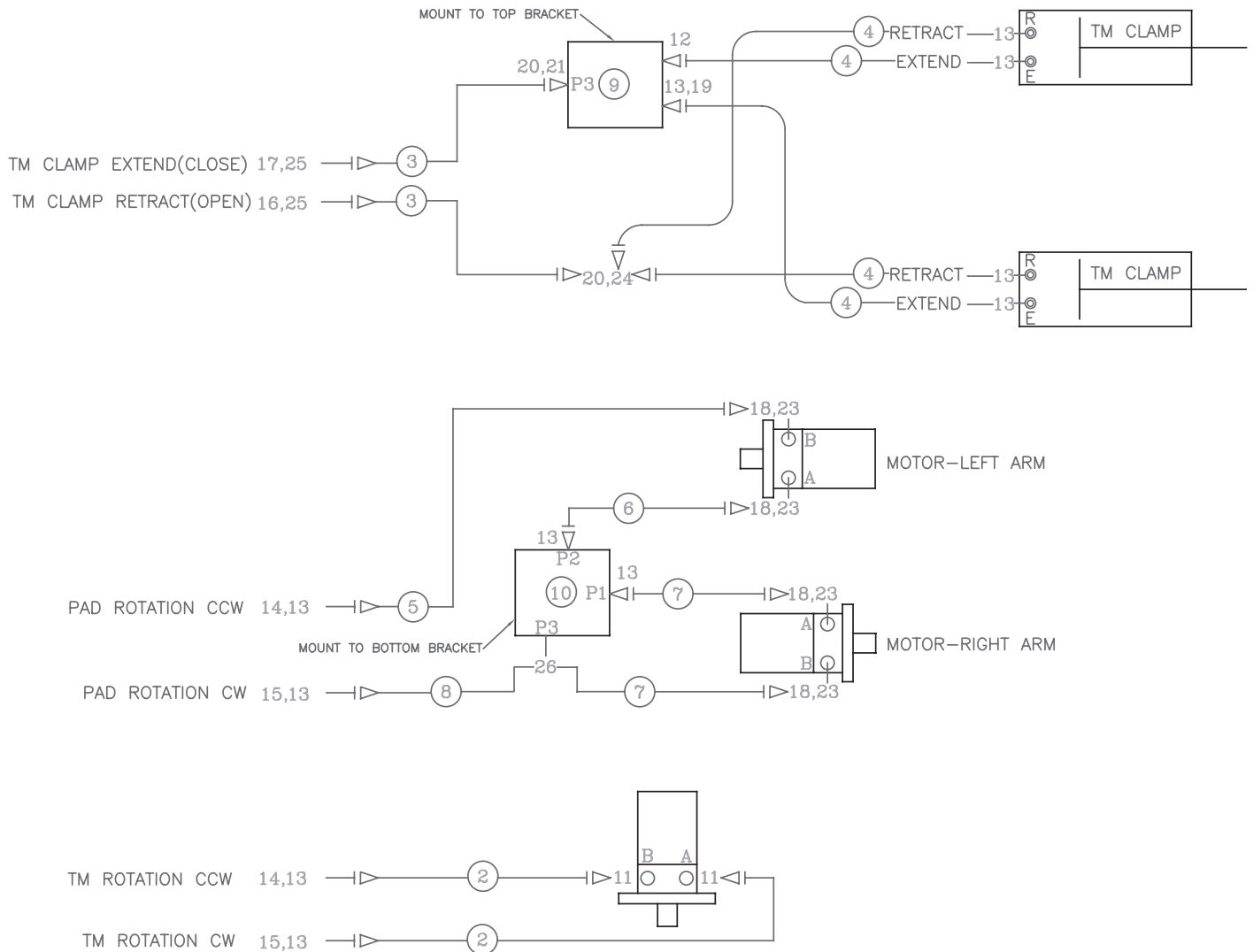
Main Relief 4600 psi			
		Pressure (psi)	
Function	Flow (gpm)	Extend	Retract
Inner	10.6	4400	2200
Outer	10.6	4400	2200
Extension	10.6	4400	4400
Rotation	10.6	2200	2200
TM Rot	6.6	2200	2200
TM Pad Rot	6.6	2500	2500
TM Clamp	6.6	4200	4200

## 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 w/Continuous Rotating Pads - PN 105060

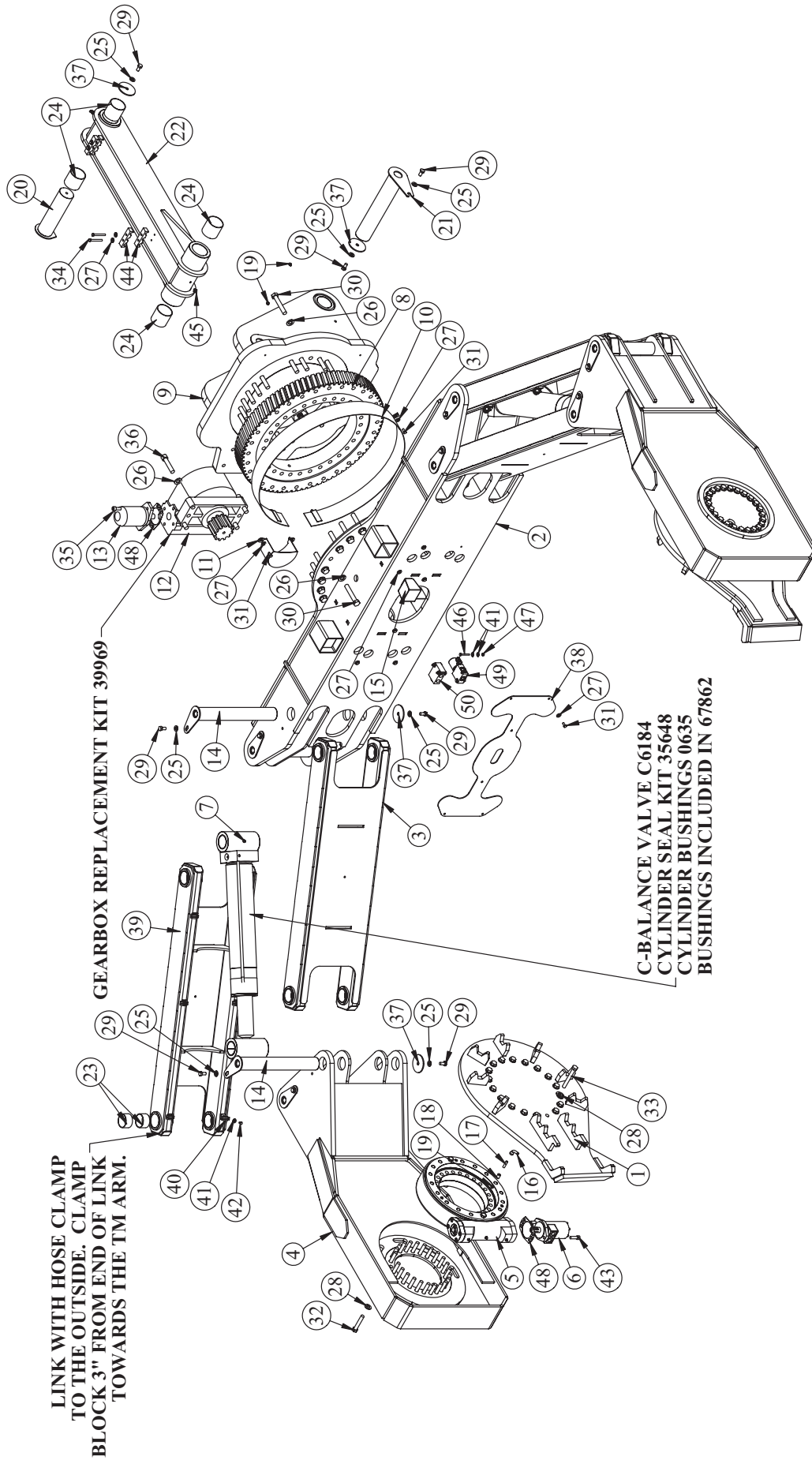


## PN 105060

13	0279	FTG 6-6 MFS-MORB STRAIGHT	11	26	C2345	FTG 6-6-6 MFS-MFS-MAORB TEE	1
12	C0338	FTG 6-6 MFS-MAORB 90	1	25	C1854	FTG 6-8 MFS-MORB STRAIGHT	2
11	D1302	FTG 6-10 MFS-MAORB 90	2	24	D0107	FTG 6-6-6 MFS-MFS-FFSS BRANCH TEE	1
10	105063	VALVE SOLND 2 POS 3 WAY SV10-34-8T-N-12DR	1	23	C1111	FTG 10-6 MORB-FORB STRAIGHT REDUCER	4
09	35111	VALVE COMB DIV FD50-44-6T-N-44	1	22	53479	LOOM 1.00 SPIRAL WRAP POLYETHYLENE	4
08	105347	HOSE-HYD 0.38 X 95	1ref	21	33743	FTG 6-6 FFSS-MORB STRAIGHT	1
07	105348	HOSE-HYD 0.38 X 153	2ref	20	12171	FTG 6-6 MFS-MFS SWIVEL STRAIGHT	2
06	105064	HOSE-HYD 0.38 X 153	1ref	19	C2248	FTG 6-6 MFS-FFSS 90	1
05	85509	HOSE-HYD 0.38 X 248	1ref	18	D1193	FTG 6-6 MFS-MAORB 45	4
04	71050	HOSE-HYD 0.38 X 60	4ref	17	13557	QUICK CPLR FFN06-12SAE-M	1
03	71052	HOSE-HYD 0.38 X 81	2ref	16	13556	QUICK CPLR FFN06-12SAE-F	1
02	71051	HOSE-HYD 0.38 X 76	2ref	15	13555	QUICK CPLR FFH04-38-SAE-M	2
01	105061	HOSE KIT, TM12154 V3 CONT RP (incl:2-8)	1	14	13554	QUICK CPLR FFH04-38-SAE-F	2
ITEM	PART No.	DESCRIPTION	QTY	ITEM	PART No.	DESCRIPTION	QTY

USE SPIRAL HOSE WRAP (53479) OVER HOSES THRU BODY ROTATION AREA

# TM16160 Breakdown - PN 109359



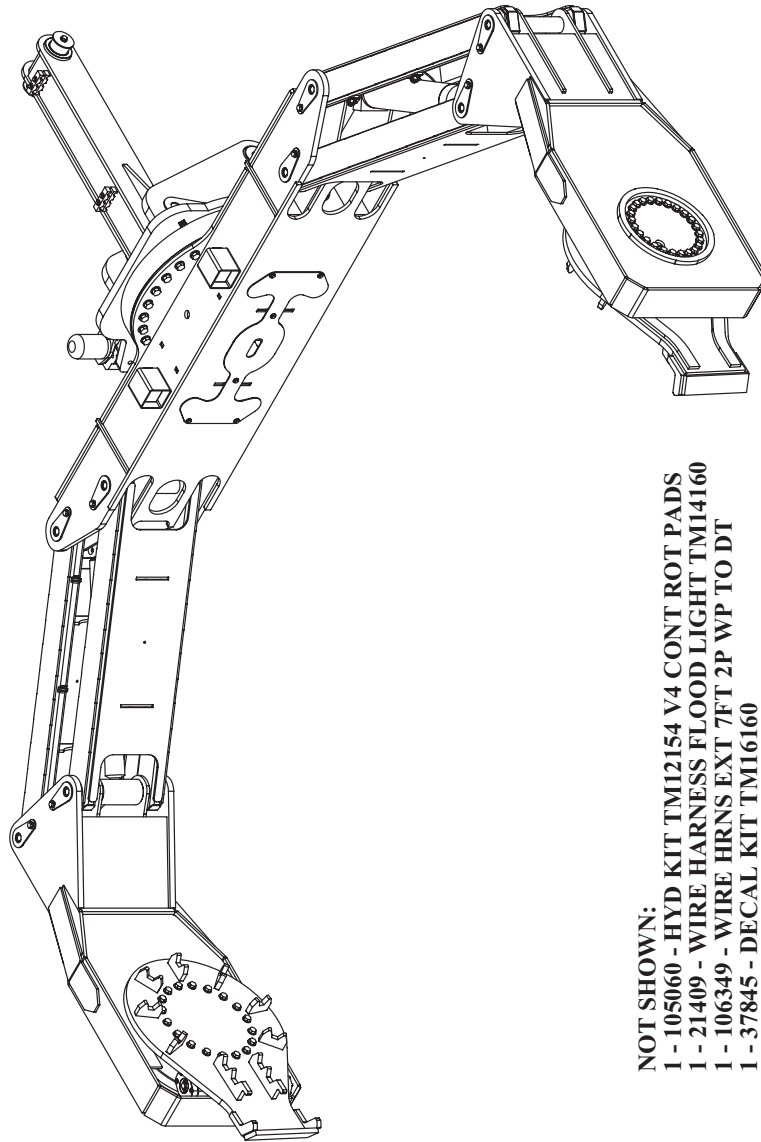
LINK WITH HOSE CLAMP TO THE OUTSIDE. CLAMP BLOCK 3" FROM END OF LINK TOWARDS THE TM ARM.

GEARBOX REPLACEMENT KIT 39969

C-BALANCE VALVE C6184  
CYLINDER SEAL KIT 35648  
CYLINDER BUSHINGS 0635  
BUSHINGS INCLUDED IN 67862

VALVES SHOWN FOR REFERENCE  
ROUTE HARNESS WITH HOSE THRU SPIRAL WRAP

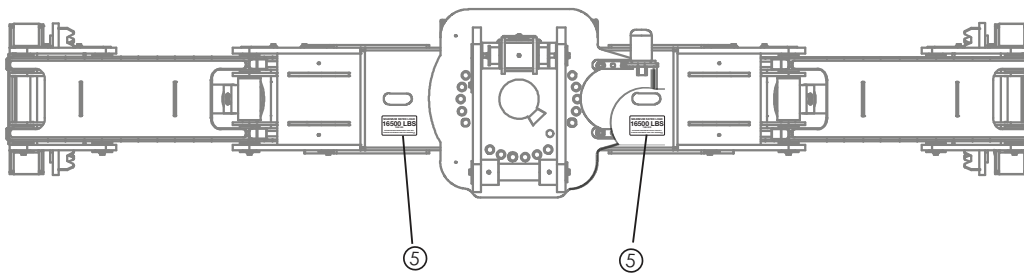
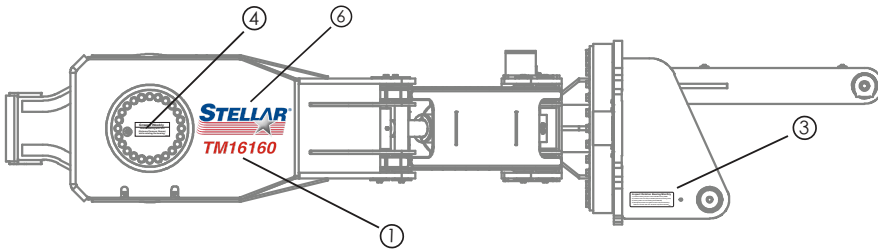
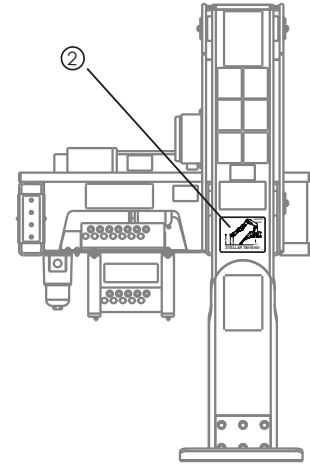
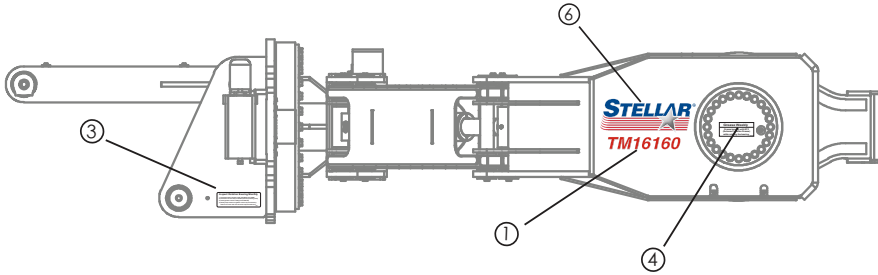
# TM16160 Bill - PN 109359



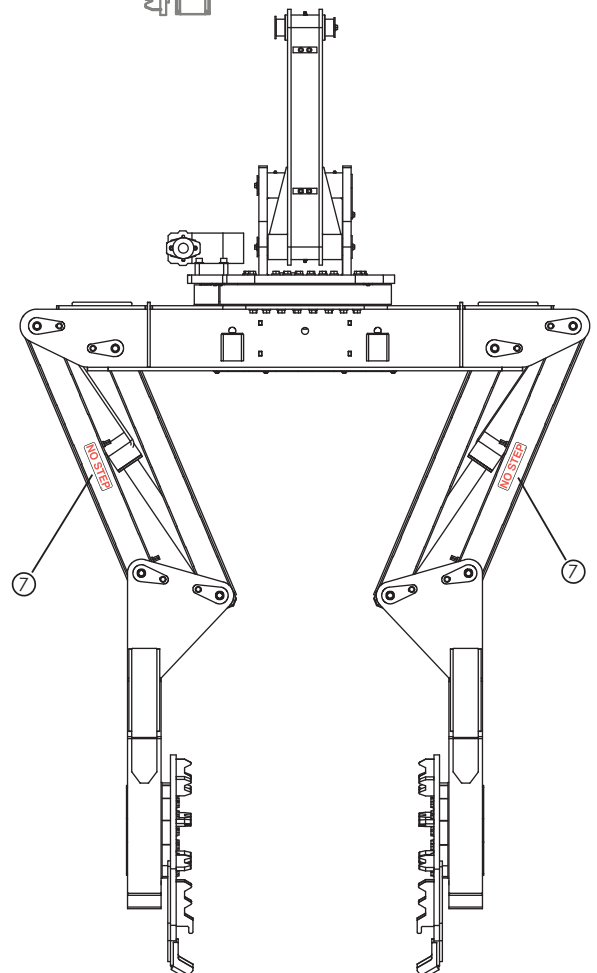
- NOT SHOWN:**
- 1 - 105060 - HYD KIT TM12154 V4 CONT ROT PADS
  - 1 - 21409 - WIRE HARNESS FLOOD LIGHT TM14160
  - 1 - 106349 - WIRE HRNS EXT 7FT 2P WP TO DT
  - 1 - 37845 - DECAL KIT TM16160
  - 1 - D0240 - FTG 4-2 CPRSN-MP 90
  - 0.67FT - D1810 - TBE AIR SAEJ844 TYPE A .25 (RM)
  - 1 - D1345 - FTG 4-2 CPRSN-MP STRAIGHT
  - 1 - 22161 - FTG 2-2 FP-FP COUPLER STRAIGHT BRASS
  - 1 - 56589 - ZERK 1/8 NPT STRAIGHT LONG THREAD
  - 2 - 9752 - CONNECT 2 PIN SHROUD PACKARD
  - 4 - 9756 - CONTACT M TERM SHROUD 18-20
  - 4 - 8384 - CABLE SEAL 18-20 PACKARD1 - 39000
  - 1 - 90384 - MANUAL TM16160

ITEM	PART	DESCRIPTION	QTY.
1	70210	PAD TM16160 V2	2
2	109362	BODY TM16160 V3	1
3	67109	LINK TM16160 V2 INSIDE	2
4	67846	ARM TM16160 V2	2
5	69742	BEARING SWING DRIVE 14 IN ENCLOSED KINEMATICS	2
6	22275	MOTOR HYD EATON 101-3454	2
7	67862	CYLINDER 4.50X18.25	2
8	22258	TURNTABLE BEARING 450-05110-1	1
9	68440	BASE TM16160 V2	1
10	22268	GEAR GUARD TM14160B PC BLACK	1
11	22272	GUARD TTB TM14160B PC BLACK	1
12	6537	GEAR BOX 015-00120-1	1
13	5311	MOTOR HYD ROSS MG14061 1AAAB	1
14	15625CR	PIN TEAR DROP 2.50X18.38 ZC	8
15	78431	LIGHT FLOOD LED 3.2X2.9 850LM 16W 10-30V	2
16	C2239	FTG 2-2 MP-FP STREET ELBOW 90	2
17	C2250	FTG 2-2X1.50 MP-MP NIPPLE STRAIGHT BLK	2
18	C2256	FTG CPLR PIPE 0.13	2
19	c1592	ZERK 1/8 NPT STRAIGHT	4
20	15770	PIN TEAR DROP 3.00X10.38 SS	1
21	22273	TEAR DROP PIN 3.00X16.63 SS	2
22	72439	LINK TM16160 V2	1
23	54319	BUSHING COMPOSITE 2.50X1.50	32
24	2227	BUSHING BPC48DXR48 3.00X3.00	4
25	D0790	WASHER 0.50 SAE FLAT YELLOW GR8	21
26	17150	WASHER 0.75 SAE FLAT YELLOW GR9	50
27	0343	WASHER 0.31 USS FLAT	18
28	C5902	WASHER 0.63 SAE FLAT YELLOW GR8	84
29	10172	CAP SCR 0.50-13X1.00 HHGR8	21
30	17149	CAP SCR 0.75-10X4.50 HHGR9	46
31	0420	CAP SCR 0.31-18X0.75 HHGR5	12
32	D1312	CAP SCR 0.63-11X3.50 HHGR8	48
33	72435	CAP SCR 0.63-11X5.00 HHGR8 RED PATCH	36
34	G0929	CAP SCR 0.31-18X2.75 HHGR5	4
35	D1307	CAP SCR 0.50-13X1.25 SH	2
36	11298	CAP SCR 0.75-10X3.50 SH	4
37	8377	PIN CAP 0.56X3.50X.25	11
38	101592	PLATE COVER BODY TM12154 V4	1
39	72436	LINK TM16160 V2 OUTSIDE	2
40	7623	CLAMP 1.00 RUBBER	12
41	0340	WASHER 0.25 USS FLAT	20
42	0478	CAP SCR 0.25-20X0.50 HHGR5	12
43	62484	CAP SCR 12MMX40MM SH	4
44	70964	CLAMP 3 HOSE 0.38 HYD 28000	4
45	C1597	ZERK 1/8 NPT 90 DEG	2
46	0481	CAP SCR 0.25-20X2.00 HHGR5	4
47	0333	NUT 0.25-20 HHGR5 NYLOC	4
48	21151	GASKET MOTOR 008-10056-1	3
49	105063	VALVE SOLID 2 POS 3 WAY SV10-34-61-N-12DR	1
50	35111	VALVE COMB DIV FD50-44-61-N-44	1

# Decal Placement - PN 37845



**Last Revision**  
 Rev Level: E  
 Date: 01/14/22  
 By: MEL  
 Change: Added 24982 (2)



## PN 37845

ITEM	P/N	DESCRIPTION	QTY.
01	54854	DECAL- TM 16160 IDENTIFICATION	2
02	38976	DECAL- RATED LOAD	2
03	22617	DECAL- ROATATION BEARING	1
04	22618	DECAL- GREASE WEEKLY	2
05	37847	DECAL- RATED LOAD	2
06	52681	DECAL - STELLAR LOGO 6.00X16.50	2
07	24982	DECAL NO STEP 5.00X1.25	2







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