



**W. W. Patterson Company**  
**3 Riversea Road**  
**Pittsburgh, PA 15233**  
**Phone: 800-322-2018**  
**FAX: 412-322-2785**

# **OPERATIONS/PARTS MANUAL FOR PATTERSON'S HAND OPERATED WINCH**

Please fill in the following blanks and then keep this manual in a safe and convenient location. When calling with either questions or replacement part needs, always refer to the Model and Serial Number of the winch.

**MODEL NUMBER: 5185-C**      **SERIAL NUMBER:** \_\_\_\_\_

**DATE PURCHASED:** \_\_\_\_\_

## **DISTRIBUTOR INFORMATION**

**NAME:**

\_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CITY:** \_\_\_\_\_ **STATE:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**PHONE:** \_\_\_\_\_ **FAX:** \_\_\_\_\_



## **IMPORTANT!**

**Prior to installing and operating the winch, please read this manual thoroughly and carefully. Keep this manual and all other instructions accessible at all times.**

**Although this manual will help you become familiarized with the operating procedures for the winch, it is by no means a substitute for proper training and the safe use of winches, barge rigging and other marine equipment. Because owners and operators are solely responsible for determining whether a particular usage is acceptable, only individuals trained in the proper use of winches, barge rigging and other marine equipment should operate winches.**

**The typical operational environment of winches includes very high forces, and the potential hazards associated with these forces should not be underestimated. Improper installation or misuse of the winch may result in injury to persons or cause equipment failure or damage.**

## **ALWAYS OBSERVE THESE BASIC SAFETY PRECAUTIONS:**

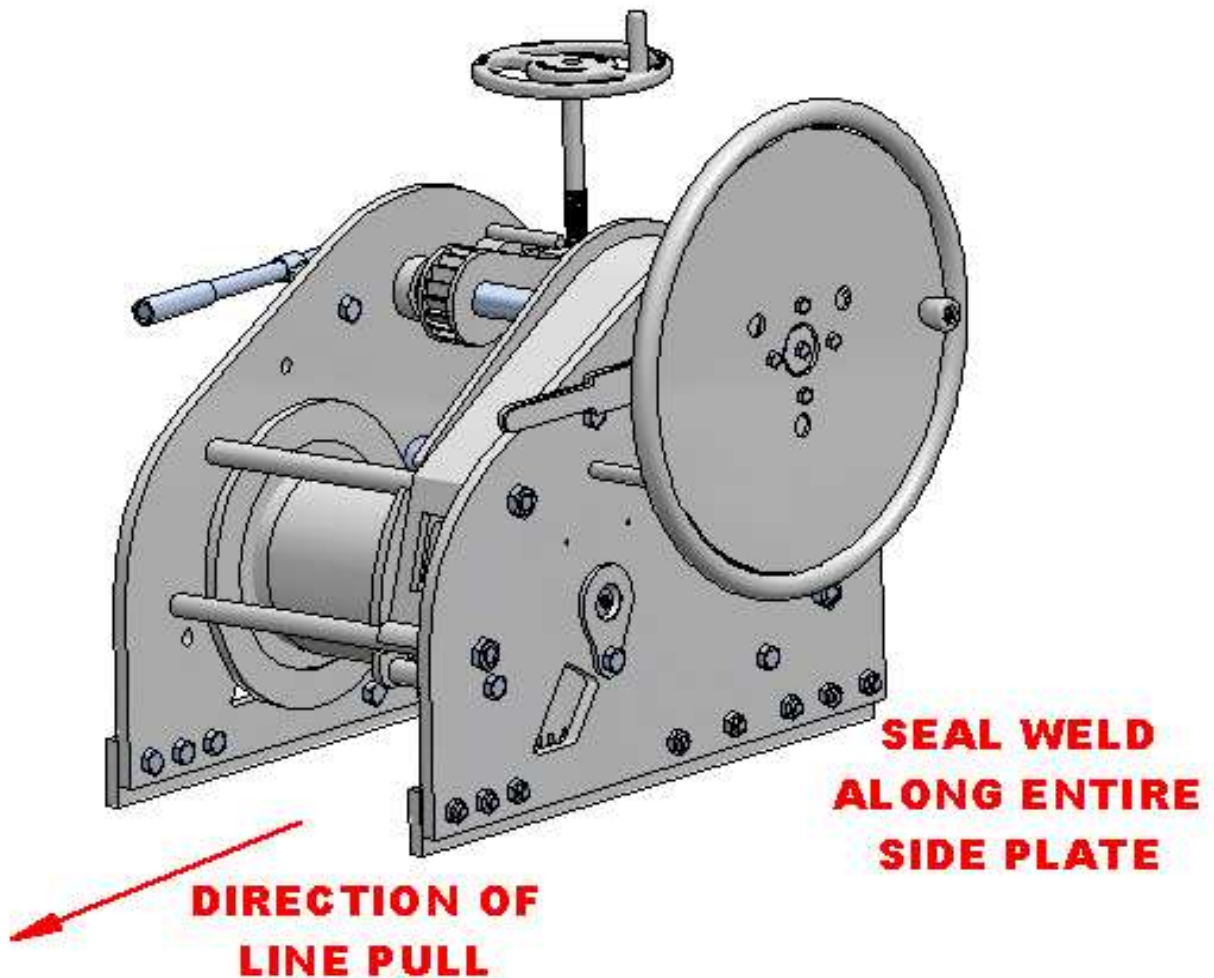
- **Keep all fingers, loose clothing and any foreign objects away from winch while in operation.**
- **During operation of the winch, always remain to the side of the winch, slightly behind the handwheel.**
- **Never operate the winch from the front or when bystanders are in front of it.**
- **Operators and bystanders should stay clear of any load and the wire rope while the winch is operating.**
- **Under no circumstances, should any winch be used to move, raise or lower a person(s) or equipment.**
- **Do not operate the winch unless you have a firm stance on a non-slippery surface.**
- **Tension on the wire rope should be adjusted only by the proper use of the handwheel ratchet or the extension pipe. Do not stand or jump on the extension pipe. Severe injury could result from such actions.**
- **Do not apply tension to the winch unless there are at least four complete wraps of rope on the drum.**
- **Never let go of the ratchet handle under tension. It will snap forward and can cause serious injury. Also, the ratchet extension can fly off the ratchet handle and cause injury, even at a distance.**
- **If tension on the wire rope is too much to be controlled with reasonable force by the operator, then maneuver the barges to relieve tension.**
- **Always place the ratchet handle in the forward resting position immediately after winch operation. Any other handle position is unsafe.**
- **Inspect the winch fully at least once a month for worn gears and pawls, cracked welds, and other damaged or worn parts. If any worn, cracked or damaged parts are found, stop use immediately and remove the winch from service until all appropriate repairs are completely made.**

# 1. INSTALLATION

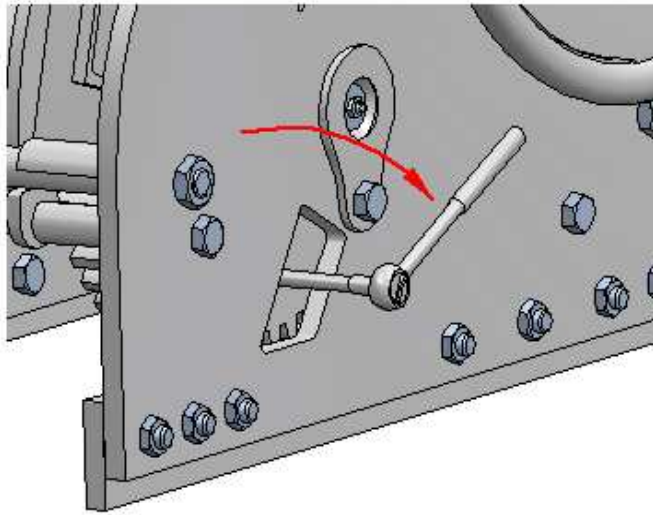
1.1. All winches must be installed on flat, rigid and non-slippery surfaces. Deck and structure must be strong enough to withstand the weight and holding capacity of the winch, and the forces likely to occur during operation.

1.2. Place the winch in the mounting area, in line with the direction of cable pull and with enough Fleet Angle Distance. (Refer to Diagram on Page 8.) Check to make sure there is enough clearance for proper operation by inserting the ratchet extension and swinging it through the complete arc.

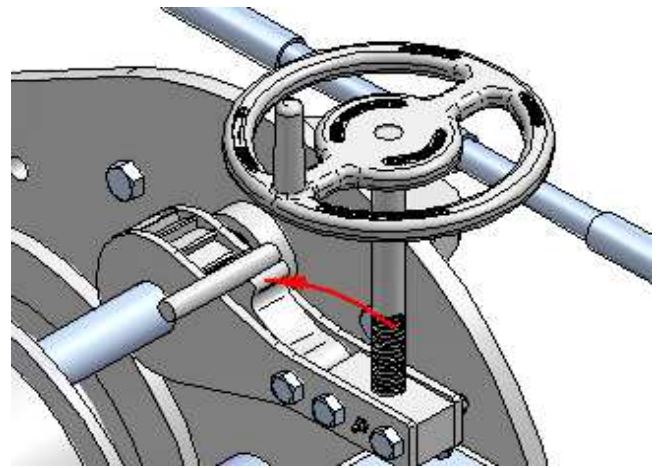
1.3. Weld to deck along the complete length of both side plates. Use seal welding to protect the weld against corrosion. Remember, the weld has to be strong enough to withstand loads equal to, at least, the Ultimate Shock Load Capacity of the winch.



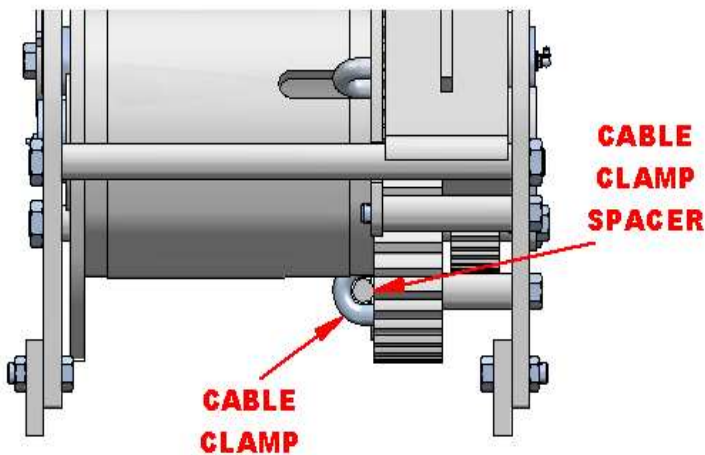
## 2. ATTACHING THE WIRE ROPE



2.1. Rotate the drum until the cable clamp nuts appear in the slot on the side plate. Using a standard socket wrench with extension, loosen the nuts.



2.3. Place the load-holding dog into the teeth of the load-holding ratchet wheel. This helps to prevent the wire rope from paying out.

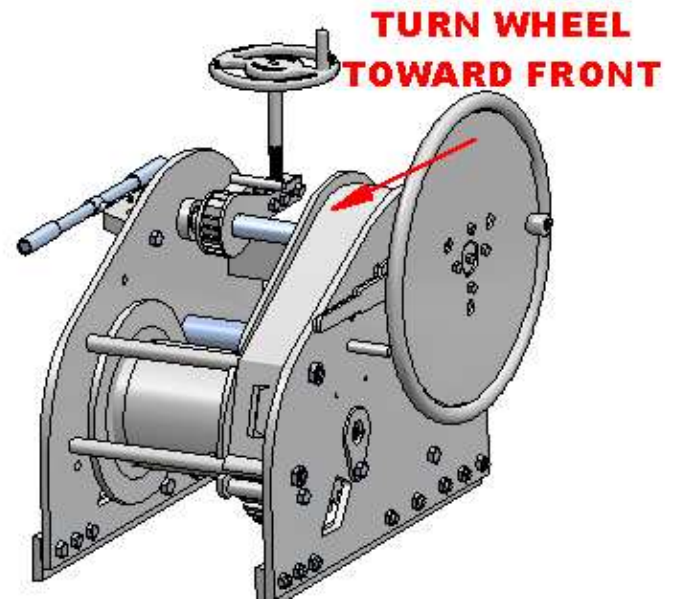


2.2. If installing a new winch, remove and discard the cable clamp spacer. If replacing worn out wire rope, remove the rope from the cable clamp and dispose of the wire rope properly. Insert the new wire rope from the front of the winch into the cable clamp until 3 to 4 inches of rope extends through the clamp. Tighten the nuts evenly.

**WARNING! PERIODICALLY RETIGHTEN THE NUTS ON THE CABLE CLAMP TO INSURE CABLE IS SNUG AGAINST DRUM FLANGE.**

ROPE CLIP TORQUE SPECIFICATIONS		
ROPE SIZE (in.)	CLIP SIZE (in.)	TORQUE (ft.lbs.)
3/4	5/8	95
7/8	3/4	130
1	7/8	225
1 1/8	1 1/8	225
1 1/4	1 1/4	360

**THE TIGHTENING TORQUE VALUES SHOWN ARE BASED UPON THE THREADS BEING CLEAN, DRY, AND FREE OF LUBRICATION.**

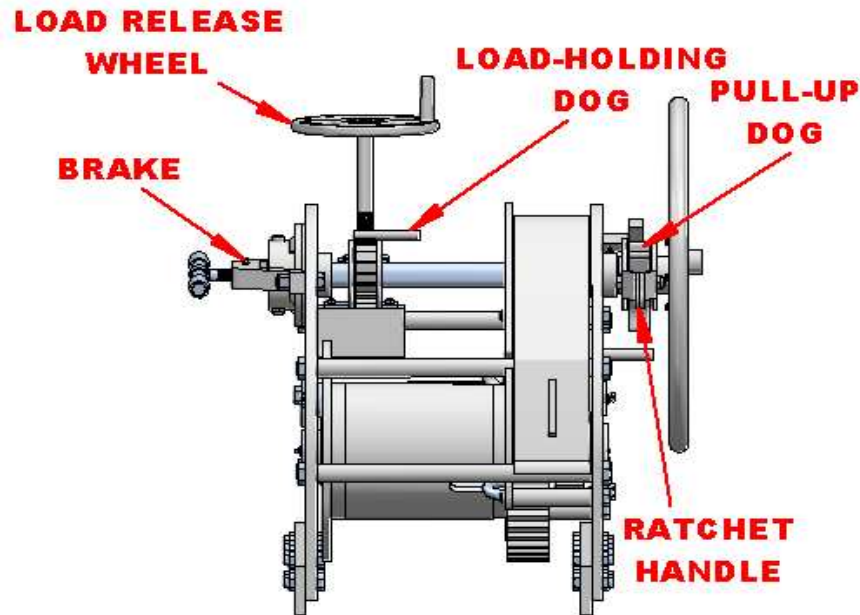


2.4. Turn the handwheel toward the front of the winch to spool the wire rope onto the drum. Maintain enough tension on the rope to be sure the first coil begins snugly against the side of the drum and each successive coil is snug against the previous coil. Check to make sure the rope is reeled in from the bottom of the drum. (If the winch is equipped with a spinner, the spinner may be used to spool the rope more quickly.)

2.5. Continue to spool the rope until at least four (4) complete coils of wire rope are snug on the drum.

**WARNING! FOUR (4) COMPLETE COILS OF THE WIRE ROPE MUST BE ON THE DRUM AT ALL TIMES IN ORDER FOR THE WINCH TO ATTAIN ITS FULL HOLDING CAPACITY AND PRIOR TO TENSION BEING APPLIED.**

# 3. REELING INTO TENSION

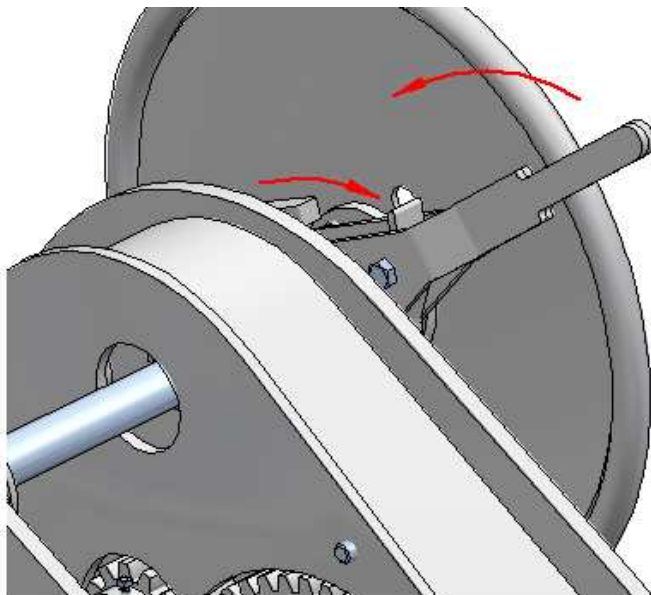


3.1. Make sure that the load-holding dog is engaged in the load-holding-ratchet wheel and that the brake is completely disengaged.

3.2. Turn the handwheel toward the front of the winch to tighten the load.

3.3. When the handwheel can no longer be turned, additional tension can be added to the wire rope by the use of an extension pipe on the ratchet handle.

**WARNING! SHOULD THE WINCH BE EQUIPPED WITH A SPOKED HANDWHEEL, DO NOT JUMP OR STAND ON THE HANDWHEEL SPOKES TO TIGHTEN THE WIRE ROPE OR ADJUST TENSION. SEVERE INJURY COULD RESULT!**



3.4. Slip an extension pipe over the end of the ratchet handle.

3.5. Raise the extension pipe.

3.6. Manually check to make sure the pull-up dog is completely engaged in the ratchet wheel.

3.7. Apply downward force to the extension pipe. Repeat steps 3.5 through 3.7 until desired tension is achieved.

**WARNING! DO NOT JUMP ON THE EXTENSION PIPE! SEVERE INJURY COULD RESULT! ADDITIONALLY, DO NOT PUT EXCESSIVE WEIGHT OR FORCE ON THE EXTENSION PIPE.**

3.8. When desired tension is achieved, disengage the pull-up dog and make sure the ratchet handle is in the forward resting position. The load-holding dog will continue to hold tension on the wire rope.

**WARNING! DO NOT OPERATE THE WINCH UNDER EXTREME TENSION. IF TENSION IS TOO MUCH TO BE CONTROLLED WITH REASONABLE FORCE BY THE OPERATOR, THEN MANEUVER THE BARGES TO RELIEVE TENSION.**

3.9. Remove the extension pipe and store it in its proper place.

**WARNING! NEVER LEAVE THE EXTENSION PIPE ON THE RATCHET HANDLE. NEVER LEAVE THE PULL-UP DOG ENGAGED IN THE RATCHET WHEEL. SEVERE INJURY COULD RESULT!**

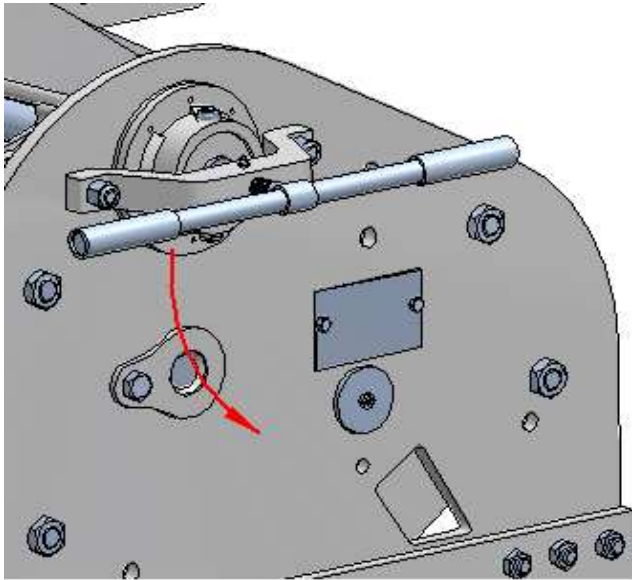


# 4. RELEASING THE LOAD

4.1. Make sure the areas around the winch and load are clear.

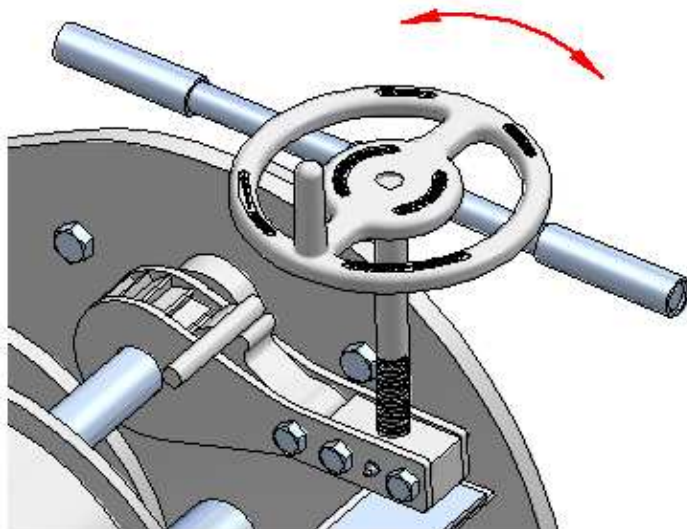
4.2. Make sure the ratchet handle and pull-up dog have been completely disengaged from the ratchet wheel. Also make sure the ratchet handle is in the forward resting position.

**WARNING! ALWAYS PLACE THE RATCHET HANDLE IN THE FORWARD RESTING POSITION IMMEDIATELY AFTER WINCH OPERATION. ANY OTHER POSITION IS UNSAFE.**



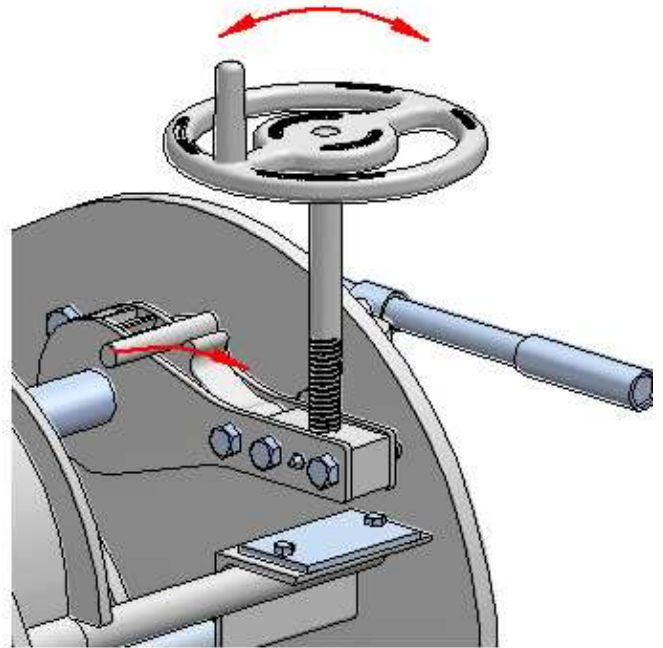
4.3. Move to the brake side of the winch.

4.4. Turn the brake handle toward the back of the winch to tighten the brake disk against the winch side plate.



4.5. Turn the load release wheel counterclockwise to lower the load holding assembly. The load-holding dog will partially disengage.

4.6. If the brake has not been engaged, the load-holding dog will not disengage when the load release wheel is turned. If this should happen, see Section 5: INCORRECT RELEASE OF THE LOAD.



4.7. Rotate the load-holding dog out of the ratchet wheel so that it is completely free of and away from the ratchet-wheel teeth.

4.8. Return to the brake side of the winch and slowly turn the brake handle toward the front of the winch. The slow release of the brake allows a controlled pay-out of the wire rope. Use the brake handle to tighten or to loosen the brake in order to maintain desired pay-out control.

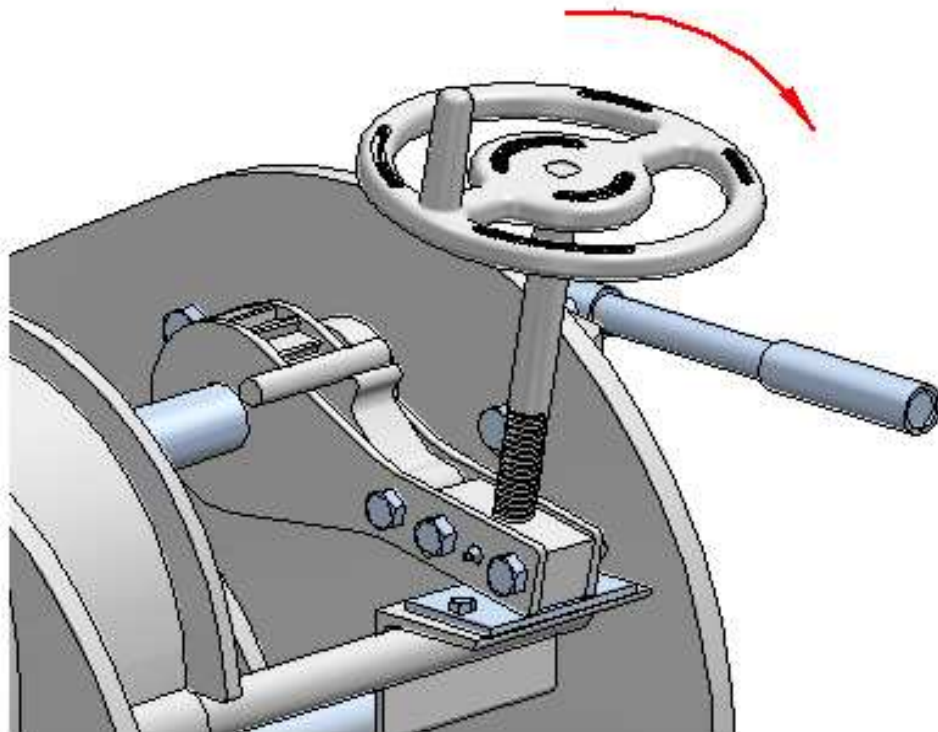
4.9. Finally, when the load has been completely released, turn the load release wheel clockwise to raise the load holding assembly.

# 5. INCORRECT RELEASE OF THE LOAD

In the event the load holding assembly has been lowered to the point of bottoming out before the brake disk has been tightened against the winch side plate, the operator will be unable to disengage the load-holding dog and therefore release the load.

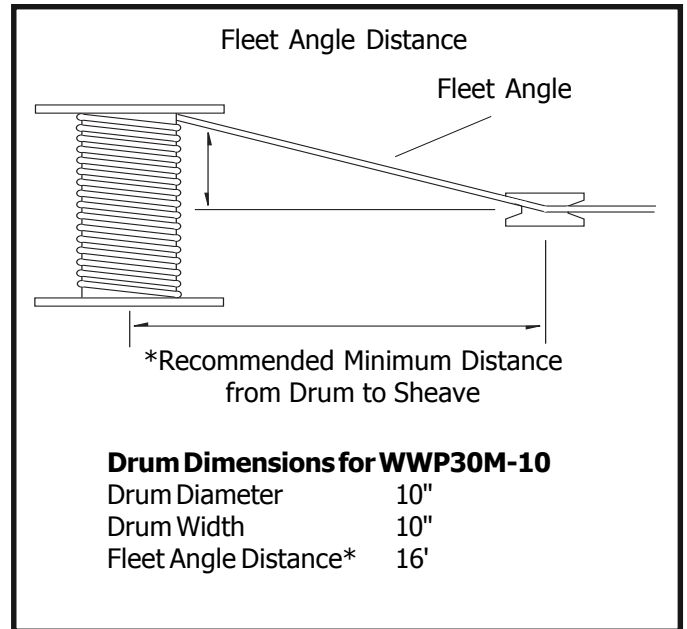
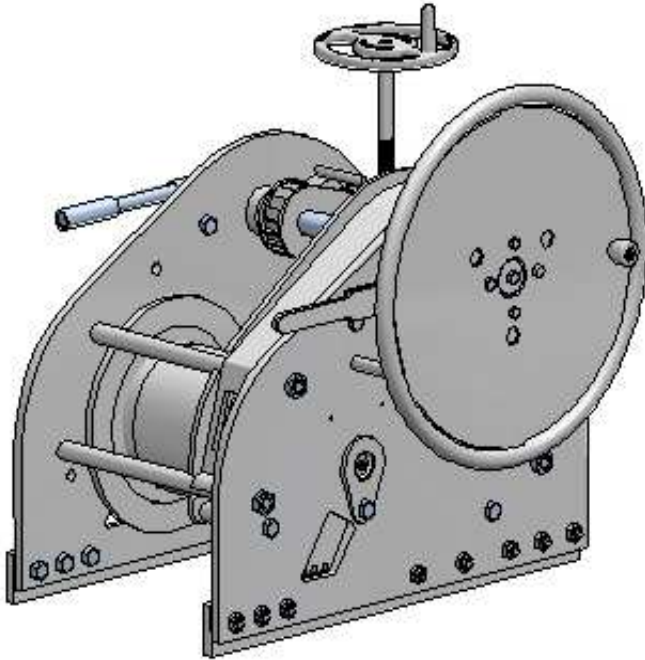
5.1. Turn the load release wheel clockwise to raise the load holding assembly.

5.2. Once the load holding assembly has been raised, follow the proper load-releasing sequence (see Section4: RELEASING THE LOAD).



# 6. LUBRICATION AND INSPECTION

- 6.1. All grease fittings should be lubricated **once a week** using a heavy-duty grease such as Keystone Moly 29.
- 6.2. All gear teeth should be coated **once a week** with heavy-duty gear grease.
- 6.3. Inspect the winch carefully and completely at least **once a month** for worn gears and pawls, cracked welds, and other damaged or worn parts. If any worn, cracked or damaged parts are found, stop use immediately and remove the winch from service until all appropriate repairs are completely performed.



**W. W. PATTERSON COMPANY**

3 Riversea Road, Pittsburgh, PA 15233 • Phone (800) 322-2018 • Fax (412) 322-2785

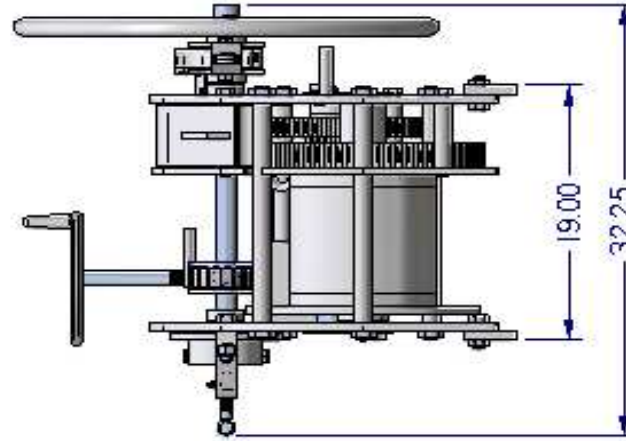
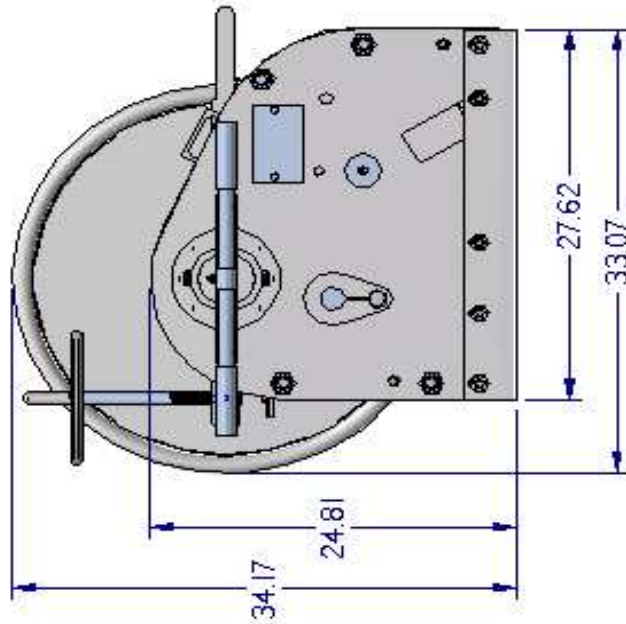


**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS V&V PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE USED, DUPLICATED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF V&V PATTERSON, INC.

**REVISIONS**

REV.	DESCRIPTION	DATE	CHG.	APPD



© 2001 V&V PATTERSON, INC.

**PATTERSON**  
Sheet 1 of 7

Scale:	1:8	Part No.	5185-C	Chkd By:	
Date:	04/14/04	Drawn By:	EK	App'd By:	
Drawn By:	EK	Orig. Dwg. No.	-	Dwg. File:	5185-Cdfl
Description:	WMP30M-10 IH W L R SOLID HOOD - GENERAL ARRANGEMENT		Revision:	-	
Material: SEE BILL OF MATERIALS			Dwg No.	5185-C	
			Sheet:	1 of 7	

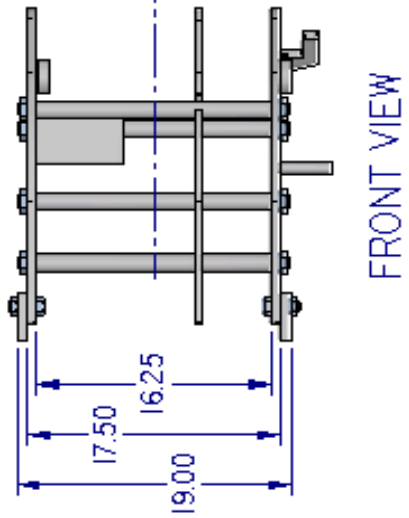
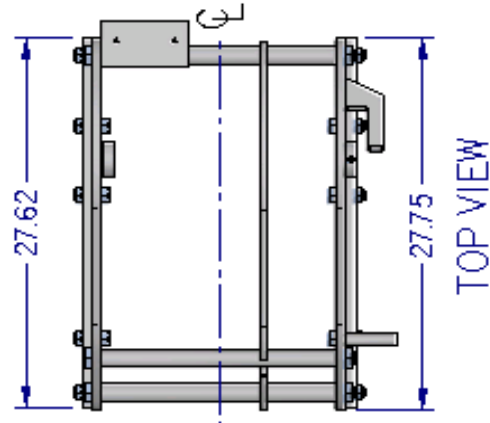
UNLESS OTHERWISE SPECIFIED  
ALL DIMENSIONS ARE IN INCHES  
AND ALL TOLERANCES ARE AS  
FOLLOWS:  
XX.XX ± .01  
XX.X ± .005  
XX ± .005  
ANGLES ± .5°

NOTES:

**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS VNA PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE USED, DUPLICATED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF VNA PATTERSON, INC.

REVISIONS			
REV.	DESCRIPTION	DATE	CHG. APPD



© 2001 VNA PATTERSON, INC.

Scale: 1:8 Date: 04/14/04		Chkd By:	
		App'd By:	
Drawn By: EK		Dwg. File: 5185-C.dft	
Description: WMP300M-10 IH W L R SOLID HOOP - INSTALLATION FOOTPRINT		Revision: -	
Material: SEE BILL OF MATERIALS		Dwg No. 5185-C	
Material: SEE BILL OF MATERIALS		Sheet: 2 of 7	

PATTERSON  
SHEET 2/27

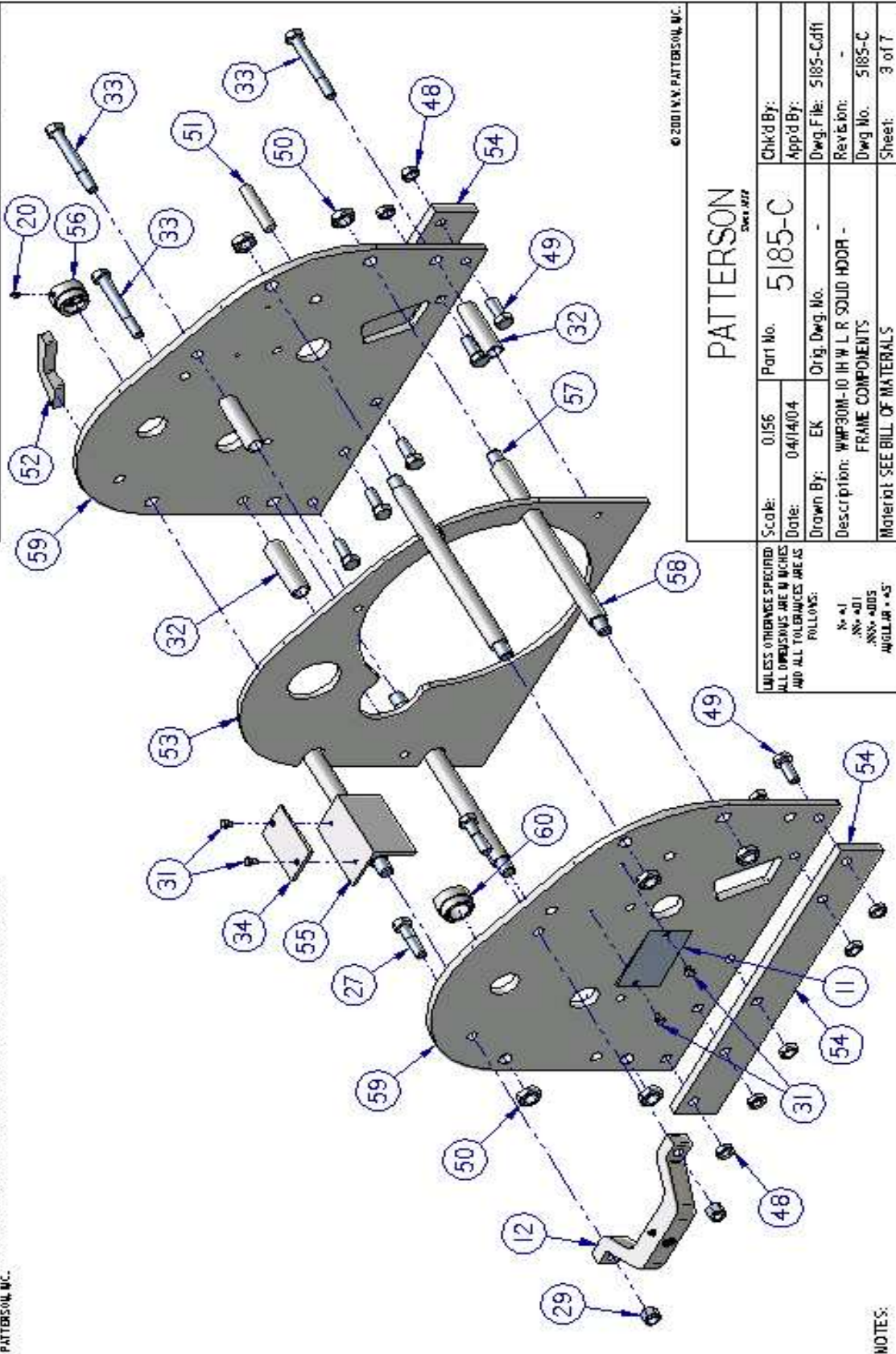
UNLESS OTHERWISE SPECIFIED  
 ALL DIMENSIONS ARE IN INCHES  
 AND ALL TOLERANCES ARE AS  
 FOLLOWS:  
 .0001  
 .0001-401  
 .0001-4005  
 ANGULAR ± .45

NOTES:

**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS NY PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE LOANED, DUPLICATED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF NY PATTERSON, INC.

REVISIONS			
REV.	DESCRIPTION	DATE	CHK. APPD.



© 2001 NY PATTERSON, INC.

**PATTERSON**  
Sheet 3 of 7

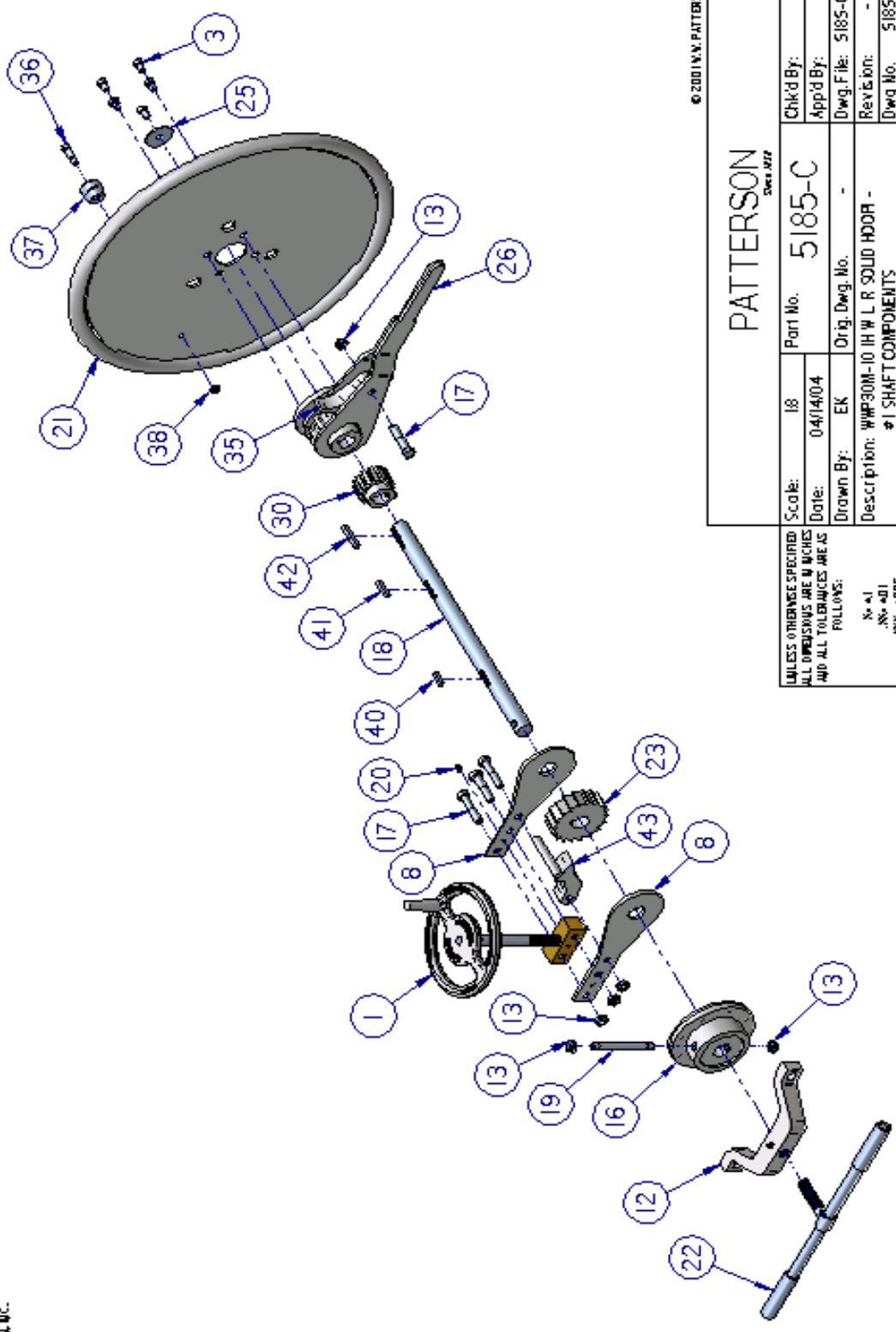
Scale:	0.156	Part No.	5185-C	Chkd By:	
Date:	04/14/04	Drawn By:	EK	App'd By:	
Description:		Orig. Dwg. No.	-	Dwg. File:	5185-C.dft
Revision:		Dwg. No.	5185-C	Revision:	-
Material:		SEE BILL OF MATERIALS	Sheet:	3 of 7	

UNLESS OTHERWISE SPECIFIED  
ALL DIMENSIONS ARE IN INCHES  
AND ALL TOLERANCES ARE AS  
FOLLOWS:  
X .01  
XX .015  
XXX .030  
HOLE .015

NOTES:

**PROPRIETARY AND CONFIDENTIAL**  
 THIS DOCUMENT CONTAINS NXP PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE REPRODUCED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF NXP PATTERSON, INC.

REVISIONS			
REV.	DESCRIPTION	DATE	CHG. APPD.



© 2001 NXP PATTERSON, INC.

<b>PATTERSON</b> <small>Since 1977</small>		Scale:	1:8	Part No.	5185-C	Chkd By:	
		Date:	04/14/04	Drawn By:	EK	App'd By:	
Description: WWP90M-10 IH W L R SOLID HOOR - #1 SHAFT COMPONENTS		Orig. Dwg. No.	-	Dwg. File:	5185-C.dft	Revision:	-
Material: SEE BILL OF MATERIALS		Dwg. No.	5185-C	Sheet:	4 of 7		

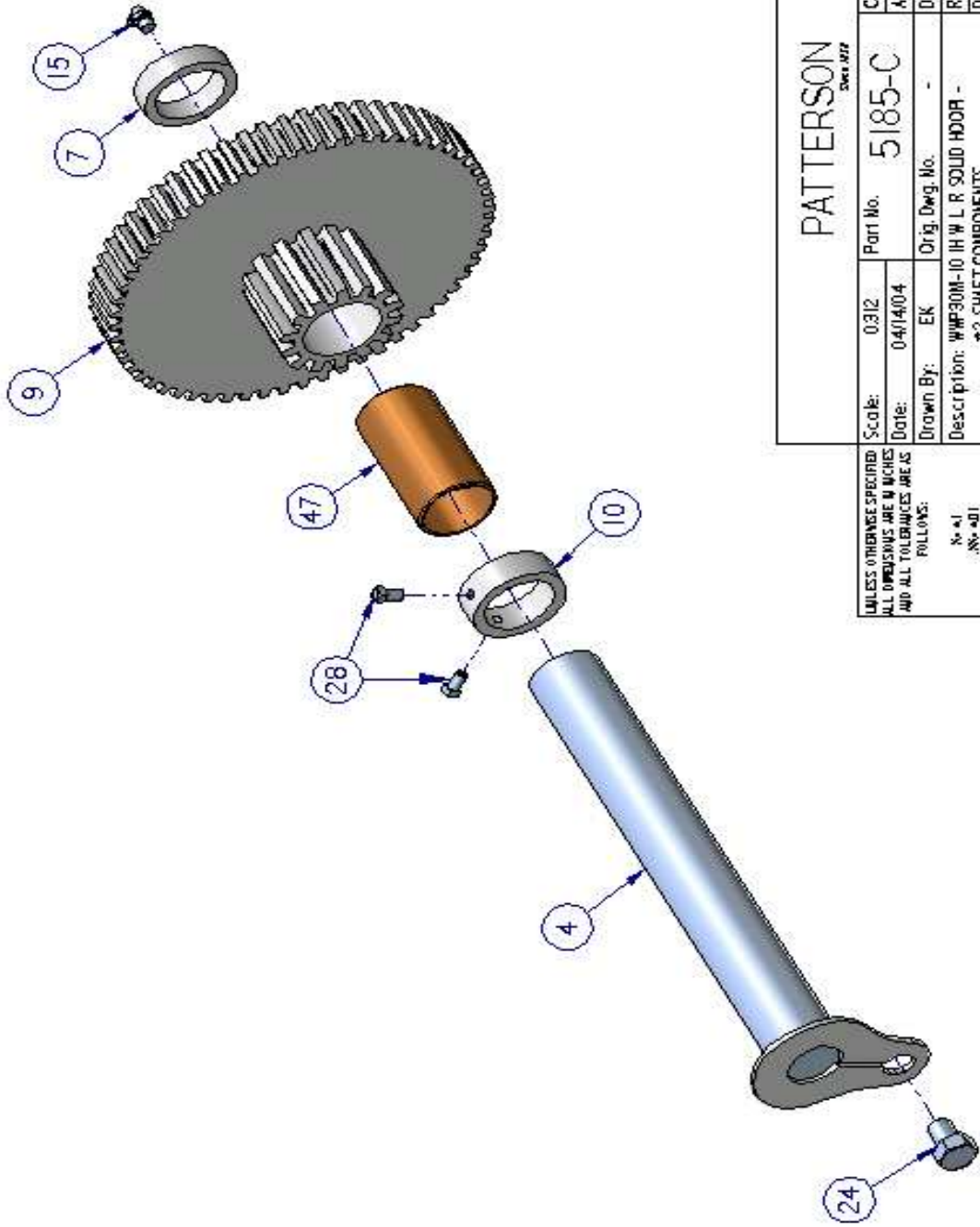
UNLESS OTHERWISE SPECIFIED:  
 ALL DIMENSIONS ARE IN INCHES  
 AND ALL TOLERANCES ARE AS  
 FOLLOWS:  
 .XX - .41  
 .XX5 - .005  
 .XXLL - .45

NOTES:

**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS NX, PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE USED, DUPLICATED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF NX, PATTERSON, INC.

REV.	DESCRIPTION	DATE	CHG.	APPD



© 2001 NX, PATTERSON, INC.

**PATTERSON**  
SHEET 5

Scale:	0.312	Part No.	5185-C	Chk'd By:	
Date:	04/14/04	Drawn By:	EK	App'd By:	
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES AND ALL TOLERANCES ARE AS FOLLOWS:		Orig. Dwg. No.	-	Dwg. File:	5185-C.dft
		Description:	WMP30M-10 IH W L R SOLID HOOR - #2 SHAFT COMPONENTS	Revision:	-
				Dwg No.	5185-C
				Sheet:	5 of 7

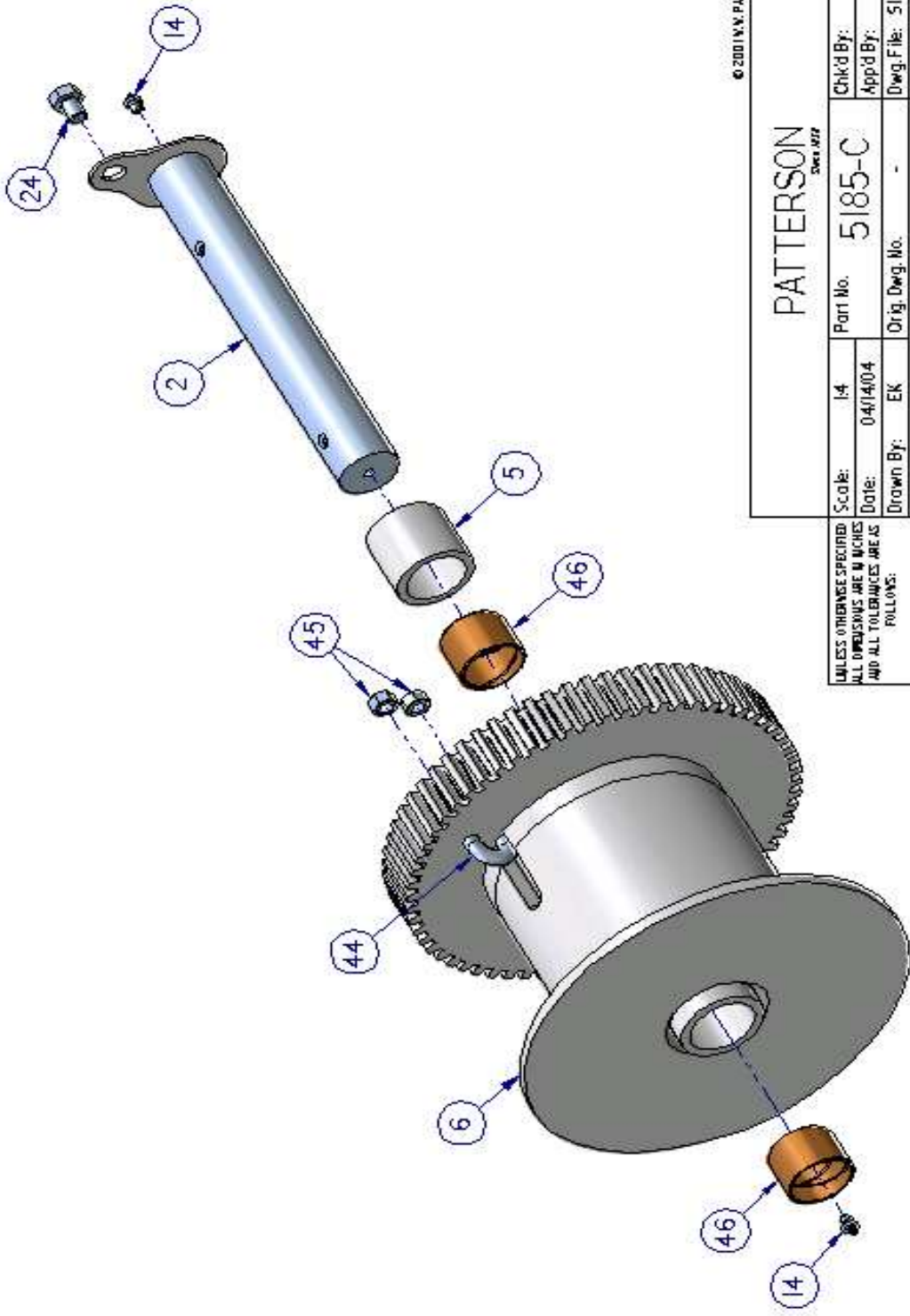
NOTES:



**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS W.V. PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE LOANED, DUPLICATED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF W.V. PATTERSON, INC.

REVISIONS			
REV.	DESCRIPTION	DATE	CHG.



© 2001 W.V. PATTERSON, INC.

**PATTERSON**  
Since 1877

Scale:	1:4	Part No.	5185-C	Chkd By:	
Date:	04/14/04	App'd By:		App'd By:	
Drawn By:	EK	Orig. Dwg. No.	-	Dwg. File:	5185-C.dft
Description:	WVP30M-10 IH W L R SOLID HOOR - #3 SHAFT COMPONENTS				
Material:	SEE BILL OF MATERIALS				
				Revision:	-
				Dwg. No.	5185-C
				Sheet:	6 of 7

UNLESS OTHERWISE SPECIFIED:  
ALL DIMENSIONS ARE IN INCHES  
AND ALL TOLERANCES ARE AS  
FOLLOWS:  
FRACTIONS  
XXX.XXX  
DECIMALS  
XXX.XXXX  
ANGLES  
XXX.X

NOTES:

**PROPRIETARY AND CONFIDENTIAL**

THIS DOCUMENT CONTAINS V&P PATTERSON, INC. PROPRIETARY AND CONFIDENTIAL INFORMATION AND SUCH INFORMATION MAY NOT BE REPRODUCED, COPIED, REPRODUCED, OR DISCLOSED TO OTHERS IN WHOLE OR PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF V&P PATTERSON, INC.

**REVISIONS**

REV.	DESCRIPTION	DATE	CHG.	APPD.

ITEM	QTY.	FILE NAME	DESCRIPTION	ITEM	QTY.	FILE NAME	DESCRIPTION	ITEM	QTY.	FILE NAME	DESCRIPTION
1	1	527-Base	LOAD RELEASE SCREW/BLOCK ASSEMBLY	22	1	5138-ss.asm	BRAKE YEBE SCREW COMPLETE STAINLESS STEEL	43	1	527-4-llhasm	LOAD RELEASE PAWL 40 TON MANUAL & OTHERS - LEFT HAND
2	1	6222-base	NO 3 SHAFT COMP 2530 TONE	23	1	5197-par	LOAD RELEASE WHEEL 1 1/2" BORE	44	1	1082-par	3/4 U-BOLT
3	5	1950-par	1/2 X 3/4 HEX HEAD GRNDE 5	24	2	1032-par	3/4 X 1 HEX HEAD OD 5	45	2	1635-par	508 FULL MUT
4	1	6219-4.asm	NO 2 SHAFT COMP 2530 TONE	25	1	1197-par	2 1/2" X 17/32" X 1/8" TR. WASHER	46	2	1695-par	2 1/2 X 2 3/4 X 2 LO BUSHING
5	1	6213-b-par	DRUM SPACER 2530 TONE RM	26	1	5031-g.asm	PULL-UP HUB ASSEMBLY	47	1	1694-g-par	2 1/4 X 2 1/2 X 4 5/16 LO BUSHING
6	1	6198-base	ROPE DRUM COMP 2530 TONE RM	27	2	1768-par	3/4 X 3 HEX HEAD OD 5 BOLT	48	10	1030-par	3/4 JHM MUT
7	1	6223-b-par	SPACER NO 2 SHAF T 2530 TONE	28	2	1006-par	3/8 X 5/8 SQ HEAD CUP POINT	49	10	1035-par	3/4 X 2 HEX HEAD OD 5
8	2	5271-par	LOAD RELEASE SIDE PEECS 1-3/4" BORE	29	2	1567-par	3/4 LOCKING FULL MUT	50	8	1041-par	1 JHM MUT
9	1	6197-base	COMBO GEAR BUSHED 2530 TONE RM	30	1	6219.asm	PINION GEAR NO 1 2530 TONE RM JBBIEBX	51	1	5146-par	HANDLE REST W 508 JBS38 JBB18 JBS68
10	1	5227-b-par	RETURNER 2530 TONE #2 SHAFT	31	4	1678-par	3/8 X 1/2 ST. ST. HEX HEAD BOLT	52	1	5147-par	JBB18 KNOCK OUT COMP
11	1	1376-c-par	MANUAL WINCH PATENT PENDING TAG	32	3	6212-par	GEAR/GUARD SEPARATOR 2530 TONE & W	53	1	5204-par	GEAR/GUARD 20 & 30 TON MANUAL JBS38 JBB18
12	1	5135.asm	BRNKE BRACKET BURH-DRILL-TAP	33	3	1009-par	3/4 X 8 HEX HEAD OD 5	54	2	5215-par	FOOT MOUNT-BAR 20/25/30 TON W JBS38 JBB18
13	6	1020-par	58 LOCKING JHM MUT	34	1	5279-par	LOAD RELEASE WEAR PAD SS	55	1	5279-par	LOAD RELEASE ANGLE SUPPORT PLATE
14	2	1132-Par	1/4" STRAIGHT GREASE FITTING	35	1	5042-par	PYWL PULL UP RATCHET PAWL W 1/2" W/INCHES	56	1	6122-p-wd	BOSS COMP 30 TON MANUAL NO 1
15	1	1563-par	1/4" ANGLE GREASE FITTING	36	1	110029-par	5/8" DN. SHOULDER BOLT 1" SH. GRNDE B	57	4	6226-par	TE ROD 18 3/4" LO 2530 TONE RM JBBIEBX
16	1	5162.asm	BRNKE COMP 1 1/2" D	37	1	110030-par	HANDLE FOR WPP 408 C SHORTER VERSION	58	4	6227-par	SEPARATOR 18 1/4" 2530 TON JBBIEBX
17	4	1026-par	58 X 3 HEX HEAD OD 5	38	1	1013-par	1/2 LOCKING JHM MUT BIN # 14	59	2	5186-b-par	SIDEPLATE 30 TON MANUAL
18	1	5190-b-par	NO 1 SHAFT COMP 30 TON MANUAL	39	1	5188.asm	GEAR SHROUD COMP 2530 TON W JBB18	60	1	6122-g-base	BOSS COMP 30 TON MANUAL NO 1 GRAPHITE BUSHING
19	1	5142-SS-par	BRNKE PIN MANUAL WINCH CUT-THREAD	40	1	key-10-par	KEY-10 - 3/8 X 3/8 X 1 3/8				
20	2	1133-Par	1/8" STRAIGHT GREASE FITTING	41	1	key-15-par	KEY-15 - 3/8 X 3/8 X 1 1/16				
21	1	5168-base	SAFETY WHEEL WELDMENT	42	1	key-9-par	KEY-9 - 3/8 X 3/8 X 2 7/16				

© 2001 V&P PATTERSON, INC.

**PATTERSON**  
DESIGN

Scale:	M/A	Part No.	5185-C	Chkd By:	
Date:	04/14/04			App'd By:	
Drawn By:	EK	Orig. Dwg. No.	-	Dwg. File:	5185-C.dft
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AND ALL TOLERANCES ARE AS FOLLOWS:		Description:	WPP30M-10 H W L R SOLID HOOP - BILL OF MATERIALS	Revision:	-
				Dwg No.	5185-C
				Sheet:	7 of 7

NOTES: