



MARSHALLTOWN
The Premier Line



OPERATIONS MANUAL AND PARTS BOOK

36E55 - 36" 5.5HP
36PE9 - 36" 9HP EDGER
46E9NH - 46" 9HP
46E11 - 46" 11HP

Marshalltown, IA
Phone 800-888-0127 / 641-753-0127
Fax 800-477-6341 / 641-753-6341
www.MARSHALLTOWN.com

LIMITED WARRANTY

Marshalltown Company warrants its products to be free of defects in material or workmanship for the following periods:

- | | |
|-------------------------------|-----------------|
| A. All New Machines and Parts | 6 Months |
| B. All New Gear Boxes | 2 Years |

Warranty period begins on first day of use by End User. This first day of use is established by a completed warranty card or a Bill of Sale to the end user. All warranty is based on the following limited warranty terms and conditions.

1. Marshalltown Company's obligation and liability under this warranty is limited to repairing or replacing parts if, after Marshalltown's inspection, it is determined to be a defect in material or workmanship. Marshalltown Company reserves the choice to repair or replace.
2. If Marshalltown Company chooses to replace the part, it will be at no cost to the customer and will be made available to the Distributor/Dealer from whom the customer purchased the product.
3. Replacement or repair parts, installed in the product, are warranted only for the remainder of warranty period of the product as though they were the original parts.
4. Marshalltown Company's warranty applies only to the products that are manufactured by Marshalltown Company and does not cover component parts such as engines and clutches. Marshalltown Company DOES NOT warranty clutches. Engine warranty claims should be made directly to an authorized factory service center for the particular engine make.
5. Marshalltown Company's warranty does not cover the normal maintenance of products or its components (such as engine tune-ups and oil changes). The warranty also does not cover normal wear and tear items (such as belts and consumables).
6. Marshalltown Company's warranty will be void if it is determined that the defect resulted from operator abuse, failure to perform normal maintenance on the product, modification to product, alterations or repairs made to the product without the written approval of Marshalltown Company. Marshalltown Company specifically excludes from warranty any damage to any trowels resulting from an impact to the rotors. Marshalltown Company also excludes from warranty any failure of clutches on any engine driven piece of equipment.
7. If a new gearbox has a factory defect within the first year of use, Marshalltown Company will either repair the gearbox or replace it with a new gearbox. If a new gearbox has a factory defect in the second year of use, Marshalltown Company will either repair it or replace it with a factory reconditioned gearbox. Impact damage is NOT covered under the gear box warranty.
8. Marshalltown Company will pay shop labor repair on warranty at the Marshalltown Company Shop Labor Rate in existence on the date of the warranty claim. A Marshalltown Company Labor Chart will determine the time allowed to complete a repair and will govern the shop labor hours that will be allowed.
9. Marshalltown Company will pay freight on warranty replacement parts at Worldwide standard ground rates. No warranty replacement parts will be shipped air freight at the expense of Marshalltown Company. Marshalltown Company only pays outbound freight charges when sending warranty replacement parts to the customer VIA ground service. Marshalltown Company does not pay any inbound freight, however, if Marshalltown Company determines this to be warranty defect only then will Marshalltown Company reimburse the customer for inbound freight at standard ground rates.
10. Marshalltown Company's warranty policy WILL NOT COVER the following; taxes, shop supplies, environmental surcharges, air freight, travel time, loss of rental revenue, or any other charges whatsoever or any liabilities for direct, incidental, or consequential damage or delay.
11. **Marshalltown Company makes no other warranty, expressed or implied. This limited warranty is in lieu of the warranty of merchantability and fitness. There are no other warranties that extend beyond the description on this document.**
12. No Marshalltown Company employee or representative is authorized to change this warranty in anyway or grant any other warranty unless such change is made in writing and signed by an officer of Marshalltown Company.

THE INFORMATION CONTAINED IN THIS MANUAL WAS BASED ON MACHINES IN PRODUCTION AT THE TIME OF PUBLICATION. MARSHALLTOWN COMPANY RESERVES THE RIGHT TO CHANGE ANY PORTION OF THIS MANUAL WITHOUT NOTICE.

Information Contained in this Manual:

This manual provides information and procedures to safely operate and maintain the Marshalltown Company's **CYCLONE™ Power Trowels**.

For your own safety and protection from personal injury, carefully read, understand and observe the safety instructions described in this manual.

Always operate and maintain this machine in accordance with the instructions described in this manual. A well maintained piece of equipment will provide many years of trouble free operation.

This manual is divided into the sections listed below:

1A
OPERATIONS

2A
ASSEMBLY

3A
PARTS

Ordering Parts

This manual contains an illustrated parts list for help in ordering replacement parts for your machine . Follow the instructions listed below when ordering parts to ensure prompt and accurate delivery.

1. On all orders for service parts include the SERIAL NUMBER and MODEL NUMBER of machine. Shipment will be delayed if this information is not included.
2. Include correct description and part number from parts section.
3. State exact shipping instructions including preferred routing and complete destination address.
4. **DO NOT** return parts to Marshalltown Company without first receiving written authorization from Marshalltown Company. All authorized returns must be shipped prepaid.

Keep this manual or a copy of it with the machine. If you lose this manual or need an additional copy, please contact your Marshalltown distributor or Marshalltown Company at 800-888-0127 or 641-753-0127.

**Marshalltown Company
104 S 8th Ave
Marshalltown, IA 50158 U.S.A**

IMPORTANT REMINDER

Fill out your Marshalltown Company warranty card and place it in the mail within 24 hours of delivery.

Complete other warranty requirements as specified by the engine manufacturer in their instructions attached to the engine.

Your engine is not manufactured by Marshalltown Company, and therefore is not covered under our warranty.

Your engine manufacturer should be contacted if you wish to purchase a parts manual or a repair manual for your engine.

Refer to the enclosed owners manual on the engine for complete Operation & Maintenance instructions.

Your Distributor

Your distributor has trained mechanics and access to original replacement parts. Always contact the distributor who sold you this machine for repairs and replacement parts.

Place distributor information here for future reference.

DISTRIBUTOR NAME: _____ PHONE NUMBER: _____

ADDRESS:

CITY: _____ **STATE:** _____ **ZIP:** _____

SALESMAN: _____

ADDITIONAL INFORMATION:

[illegible][illegible]

[illegible]

Operating Information

Marshalltown Cyclone™ Power Trowels

1A OPERATIONS

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This machine was built with user safety in mind, however, it can present hazards if improperly operated and serviced. Follow operating instructions carefully!

If you have questions about operating or servicing this equipment, please contact your Marshalltown distributor or Marshalltown Company at 800-888-0127 or 641-753-0127.



1.1 Safety Notes

This manual contains NOTES, CAUTIONS, and WARNINGS which must be followed to reduce the possibility of improper service, damage to the equipment, or personal injury. Read and follow all NOTES, CAUTIONS and WARNINGS included in instructions.

- NOTE:** Contains additional information important to a procedure
- CAUTION:** Provides information important to prevent errors which could damage machine or components
- WARNING:** Warns of conditions or practices which could lead to personal injury or death

1.2 Laws Pertaining to Spark Arresters

Notice: Some states require that in certain locations spark arresters be used on internal combustion engines. A spark arrester is a device designed to prevent the discharge of sparks or flames from the engine exhaust. It is often required when operating equipment on forested land to reduce the risk of forest fires. Consult the engine distributor or local authorities and make sure that you comply with regulations regarding spark arresters.

1.3 Operating Safety

SAFETY PRECAUTION

Familiarity and proper training are required for the safe operation of this equipment! Equipment operated improperly or by untrained personnel can be dangerous! Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all the controls.

1. Read operating and safety instructions before using the **Cyclone™ Power Trowel** and operate the machine in accordance with the manufacturer's instructions.
2. Inspect your **Cyclone™ Power Trowel** for damage or tampering that can sometimes occur during shipping. If damage is found, file a claim with your carrier immediately. Mark freight bill of lading as damaged shipment.
3. **Do not** operate your **Cyclone™ Power Trowel** if any guards have been removed or if the "Safety Switch" is not operational.
5. Only trained personnel should be allowed to operate your **Cyclone™ Power Trowel**.
6. No foreign objects such as buckets, tools, or materials should ever be attached or allowed to ride on the trowel during operations.
7. **Do not** attempt to fill fuel tank or oil sump while engine is running. Allow engine to cool 5 minutes before refueling.
8. Never attempt to operate the trowel on steeply inclined surfaces.
9. Do not use over-the-counter hardware to replace manufacturer's hardware.
10. **HEALTH HAZARD:** When operating machines with gas engines in confined areas, the fumes **MUST** be ventilated!
11. Always wear safety goggles and gloves when operating the **Cyclone™ Power Trowel**.

Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over a long period of time, periodic maintenance and occasional repairs are necessary.

Warning

- DO NOT** attempt to clean or service machine while it is running. Rotating parts can cause severe injury.
- DO NOT** crank a flooded engine with the spark plug removed on gasoline-powered engines. Fuel trapped in the cylinder will squirt out of the spark plug hole.
- DO NOT** test for spark on gasoline-powered engines if engine is flooded or the smell of gasoline is present. A stray spark could ignite fumes.
- DO NOT** use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.
- ALWAYS** operate machine with all safety devices and guards in place and in working order.
- ALWAYS** keep area around muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite them, starting a fire.
- ALWAYS** replace worn or damaged components with spare parts designed and recommended by Marshalltown Company.
- ALWAYS** disconnect spark plug on machines equipped with gasoline engines before servicing to avoid accidental start up.



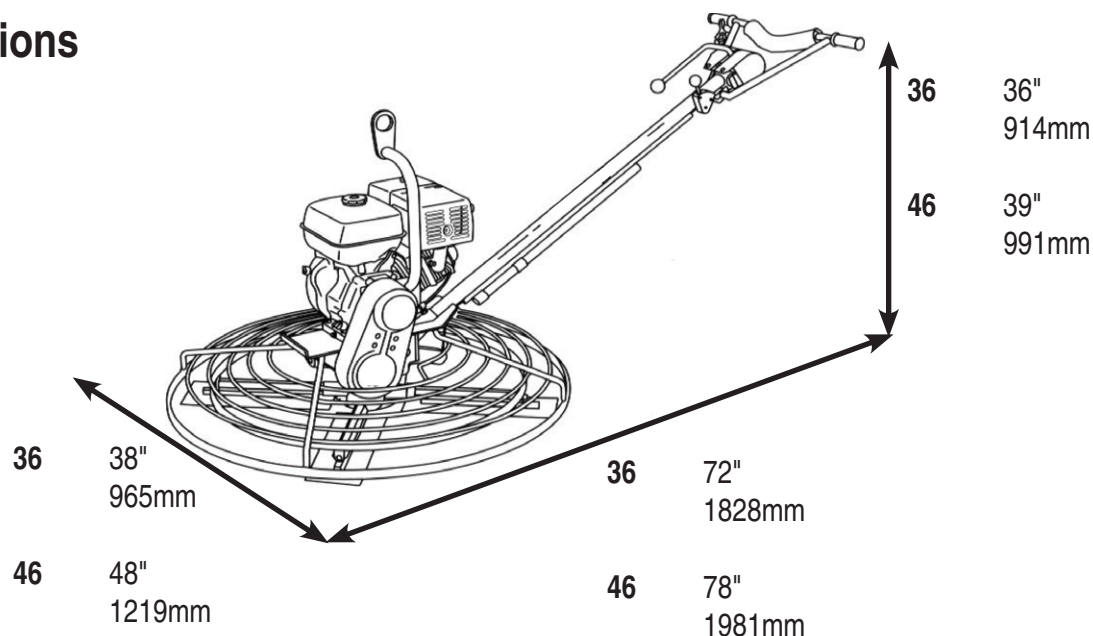
1.5 Technical Data Honda Engines

Engine Make and Model	Honda 5.5 GX160	Honda 9.0 GX270	Honda 11.0 GX340
Rated Power - hp (kw)	5.5 (2.9)	9.0 (6.0)	11.0 (8.2)
Piston Displacement - cu. in (cc)	9.9 (162)	16.5 (270)	21 (344)
Spark Plug	BPR6ES (NGK)	BPR6ES (NGK)	BPR6ES (NGK)
Electrode Gap - in. (mm)	.029 (.75)	.029 (.75)	.029 (.75)
Operating Speed - RPM	3800	3800	3800
Fuel Capacity - gal. (L)	.95 (2.5)	1.4 (5.3)	1.6 (6.0)
Fuel Consumption - lb/hph (g/kwh)	.50 (310)	.51 (313)	.51 (313)
Running Time - Hours	1.9	3.13	3.33
Centrifugal Clutch	Mech Ramp	Mech Ramp	Mech Ramp
Low Oil Shutdown Alert	Yes	Yes	Yes
Engine Oil Capacity - US qt. (L)	.63 (.6)	1.16 (1.1)	1.16 (1.1)
Engine Lubrication - Oil Grade	SAE 10W30	SAE 10W30	SAE 10W30
Operating Weight - lbs. (kg)	31 (12)	55 (25)	68 (31)



TROWEL	36"	36" EDGER	46" 9HP	46" 11HP
Length - in. (mm)	72 (1828)	80 (2032)	78 (1981)	78 (1981)
Width - in. (mm)	38 (965)	36.5 (927)	48 (1219)	48 (1219)
Operating Weight - lbs (kg)	230 (104)	226 (102)	238 (108)	238 (108)
Troweling Width - in. (mm)	36 (914)	36.5 (927)	46 (1168)	46 (1168)
Rotor Speed - RPM	118	118	118	118
Pitch Range - Degrees	0 - 20	0 - 20	0 - 20	0 - 20
Gear Box	Standard	Standard	Standard	Standard
Safety Switch - handle mount	Yes	Yes	Yes	Yes
Gear Box Lub. - 25 oz.	Special Formula Part# M048299	Special Formula Part# M048299	Special Formula Part# M048299	Special Formula Part# M048299

1.6 Dimensions



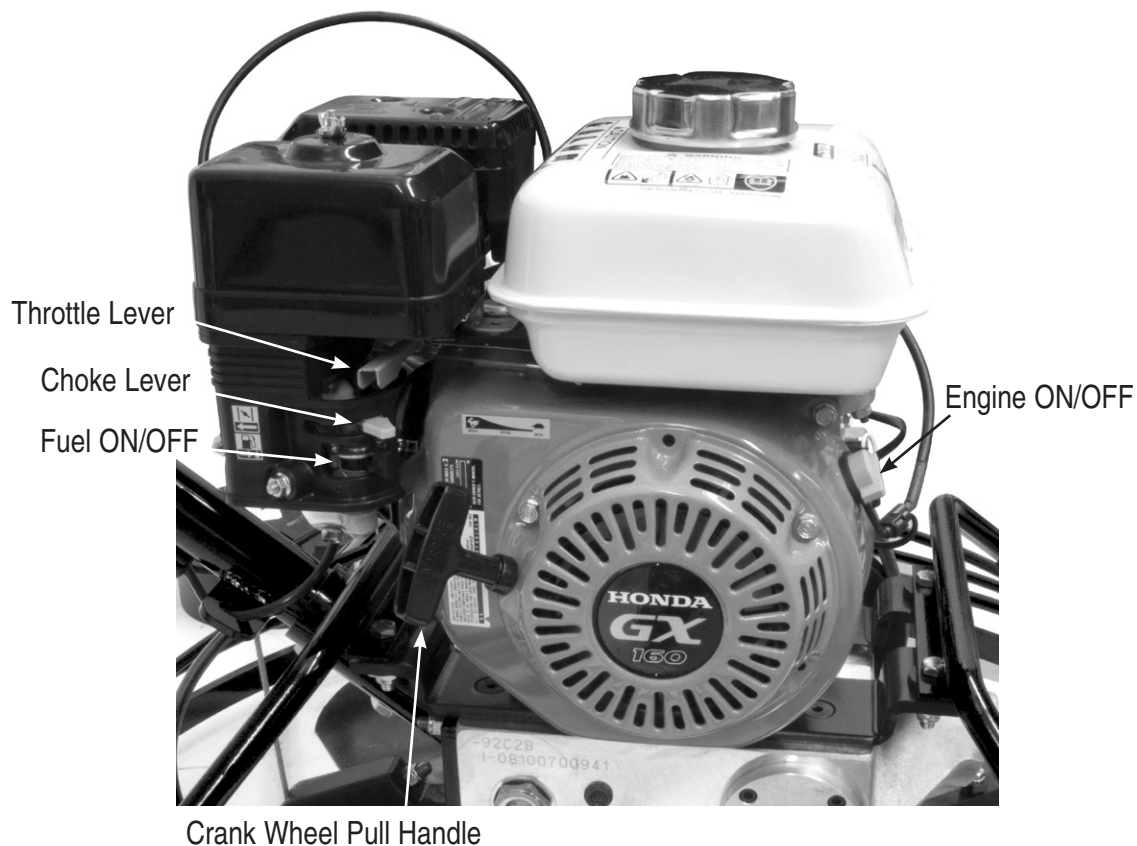
! CAUTION

DO NOT mix different types of gear oil.
DO NOT overfill the gearbox with gear oil.
 Damage to the gearbox may occur if gear oils
 are mixed, or if the gearbox is overfilled.



1.7 Description

The **Cyclone™ Power Trowel** is a modern high production machine. Finishing rate will vary depending on operator skill and job conditions. The trowel has four finishing blades. The standard duty gearbox is designed to provide exceptional performance low maintenance and trouble free use under the worst conditions. All **Cyclone™ Power Trowels** are equipped with a safety shutdown switch and a low oil shutdown alert for added job safety and engine protection. Operating time between fuel refills is approximately 2-1/2 to 3 hours with rotor speeds between 80 and 120 rpm. **Cyclone™ Power Trowels** are the most technically advanced trowels on the market today. With proper maintenance and use your trowel will provide you with exceptional service.



1.8 Before Starting

Before starting trowel check the following:

- *Oil level in engine
- *Oil level in trowel gear box
- *Fuel level
- *Condition of air filter
- *Condition of trowel arms and blades

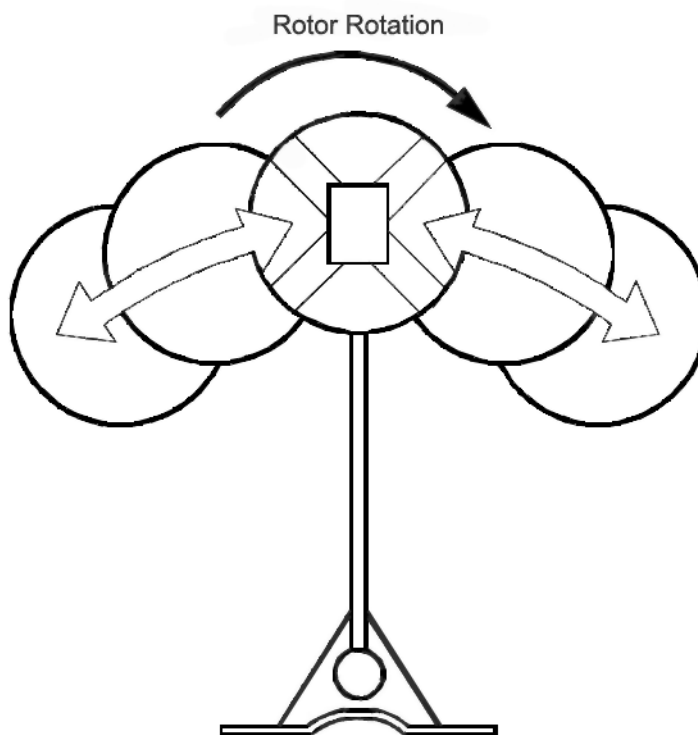
1.9 Starting

Before starting the operator must know the location of all the controls.

Move the **choke lever** to the closed position to start a cold engine. The choke may not be needed if the engine is warm or the air temperature is hot. In this case keep the choke lever open. Pull **crank wheel pull handle** until engine starts.

Push down on the handle to move the rotor assembly to the right.

Pull up on the handle assembly to move the rotor assembly to the left.



1.11 Pitch Adjustment

When changing or setting the pitch of the machine be sure that the machine is at a complete stop. On machines equipped with standard pitch, turn the pitch control knob clockwise to increase the pitch and turn it counter-clockwise to decrease the pitch.



1.12 Periodic Maintenance Schedule

The chart below lists basic engine maintenance. Refer to engine manufacturer's Operation Manual for additional information on engine maintenance. A copy of the engine Operator's Manual was supplied with the machine when it was shipped.

	DAILY	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 300 HOURS
GREASE TROWEL ARMS	X			
CHECK OIL LEVEL IN GEARBOX	X			
CHECK FUEL FILTER	X			
INSPECT AIR FILTERS - REPLACE AS NEEDED	X			
CHECK AND TIGHTEN EXTERNAL HARDWARE	X			
CHECK AND ADJUST DRIVE BELTS		X		
CHANGE ENGINE OIL			X	
REPLACE FUEL FILTER				X
REPLACE SPARK PLUG				X

1.13 Trowel Gearbox

Check gearbox sight glass for correct oil level daily(every 8 hours). Add oil if oil level is below the bottom third of sight glass. The gearbox oil level should only be checked when the gearbox is in the level position. To add oil, tilt trowel back and remove sight glass. Add oil through sight glass opening. Replace sight glass and check oil level. Do **NOT** fill past the 3/4 full point. Use only special blend Marshalltown gear oil part# M048299.



1.14 Drive Belts

1A OPERATIONS

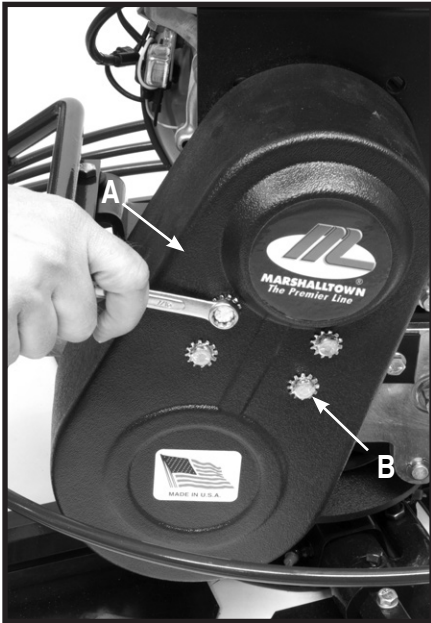


Figure 1

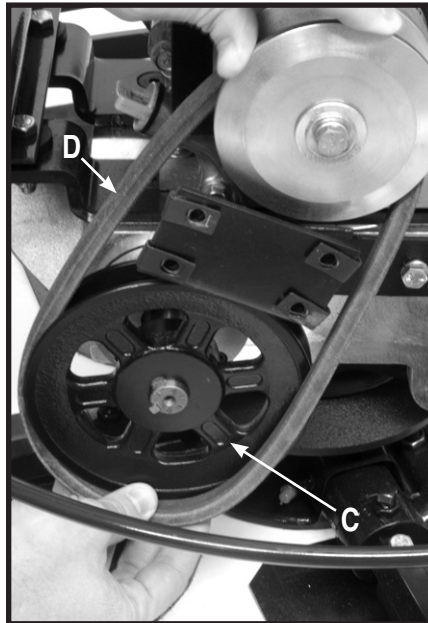


Figure 2

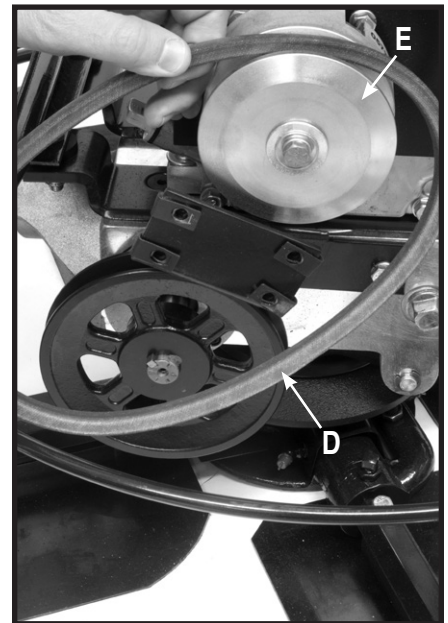


Figure 3

To Replace Belts:

1. Remove belt guard (A) by removing the four belt guard mounting bolts (B). See figure 1.
2. Rotate the pulley (C) while pulling the bottom of the belt (D) out. See figure 2.
3. After the belt (D) has cleared the pulley, remove it from the clutch (E). See figure 3.
4. Repeat steps 1 through 3 in reverse order to install the new belt.

NOTE: When replacing the belt be sure that the pulley and the clutch are in perfect alignment. If the belt is allowed to lean to the left or the right it will cause the clutch to engage prematurely on start-up.

1.15 Compensating for Bent Trowel Arms

1. Loosen nut (B) slightly.
 2. Adjust bolt (A) until trowel blade is level.
 3. Tighten nut.
- (See figure 4)

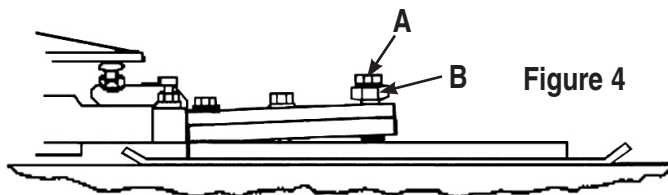
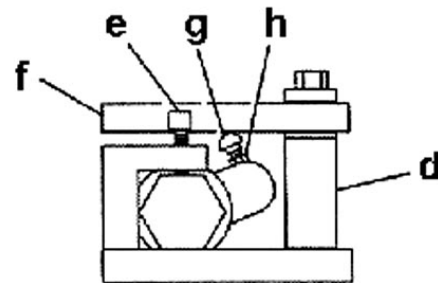
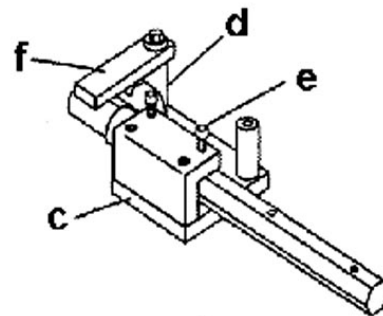
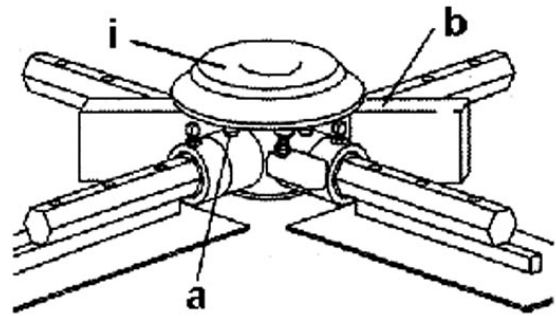


Figure 4

1.16 Lift Lever Adjustment

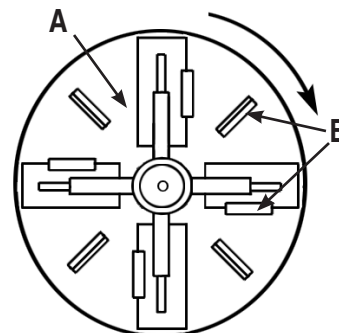
Damage to, or replacement of, a trowel arm can change the adjustment of the lift lever. This can unbalance the trowel arms and cause the trowel to wobble during operation. To operate smoothly, the lift lever on all arms must be adjusted equally. All arms should be adjusted at the same time to ensure that the trowel is balanced correctly. Adjust trowel arms using optional adjusting tool as described below.

1. Block up pressure plate using wooden blocks (b) and have blades without contact.
2. Loosen hex head screws (a) on spider which secures trowel arm in place (do not remove screws).
3. Remove trowel arms from spider with lift levers in place.
4. Remove blade from trowel arms.
5. Clean all flats on trowel arm before placing it in the adjusting tool (c) to make sure it lies flat. Clean thoroughly using a wire brush and scraper.
6. The adjusting tool comes with three different size spacers. Use the shortest spacer (d) when adjusting a **Cyclone™ Power Trowels**.
7. Insert trowel arm into adjusting tool as shown.
8. Tighten socket head bolts (e) down on the trowel arm to hold it in place.
9. Move adjusting tool arm (f) over carriage bolts (g) on lift levers shown.
10. Loosen the jam nut (h) and adjust the carriage bolt so that the top of the bolt is just touching and making contact with the bottom of the adjusting tool.
11. Tighten jam nut to secure adjustment in place.
12. Attach blades to arms and trowel arms to spider plate. Tighten hex head screws to secure arm in spider.



1.17 Mounting Floating Disc

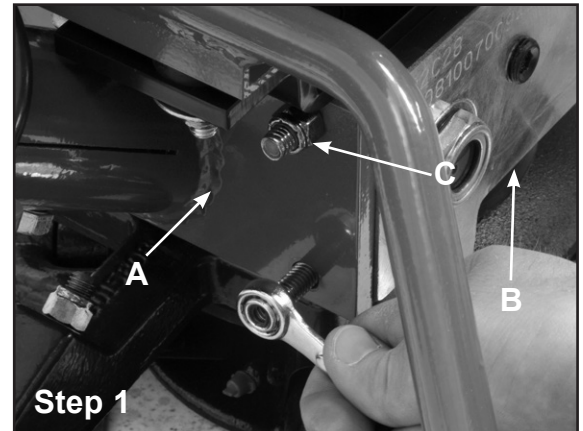
Certain applications may require the use of a floating disc. To mount disc (a), lift trowel off the ground (engine off) and position disc against blades. Turn disc either to the right or the left to engage clip angles (b) as shown. Remember the right hand trowel blades turn counterclockwise the left-hand blades turn clockwise.



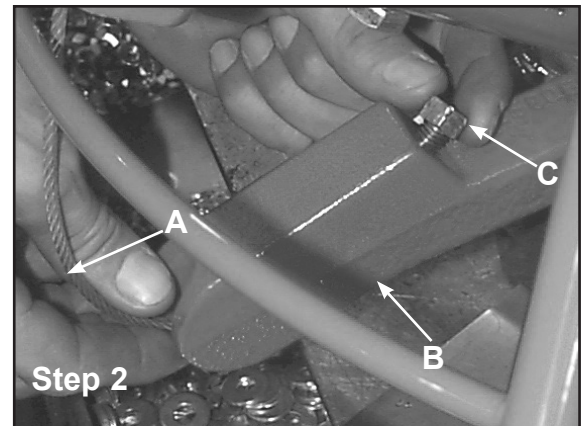
2A ASSEMBLY

ASSEMBLY INSTRUCTIONS

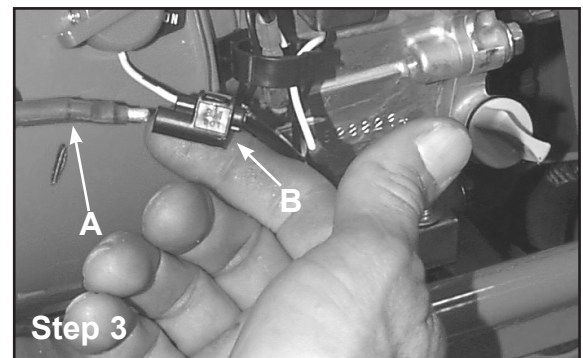
STEP 1: Un-pack the handle assembly(A) and the lower unit from their boxes. Check to make sure no damage was done during shipment. Mount the handle assembly(A) to the gearbox(B) on the lower unit using 4 3/8" nylock nuts(C) that are supplied in a package on the lower unit.



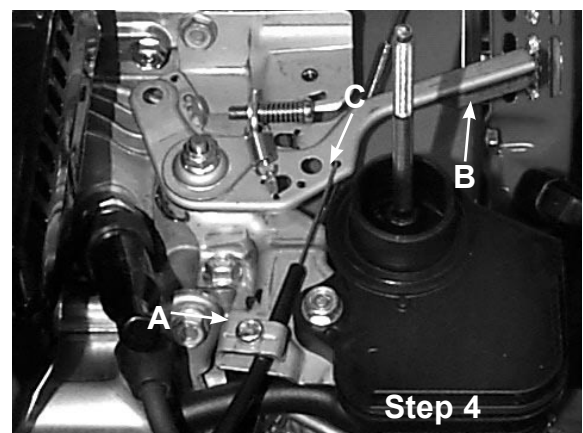
STEP 2: With the handle mounted to the lower unit, attach the pitch control cable(A) through the yoke arm(B) using the remaining 3/8" nylock nut(C). Tighten the nylock nut to where there is approximately a 1/4" of the threads are showing.



STEP 3: Attach the kill wire(A) that is coming from the handle assembly to the engine using the wire splicer(B) that is supplied on the lower unit.

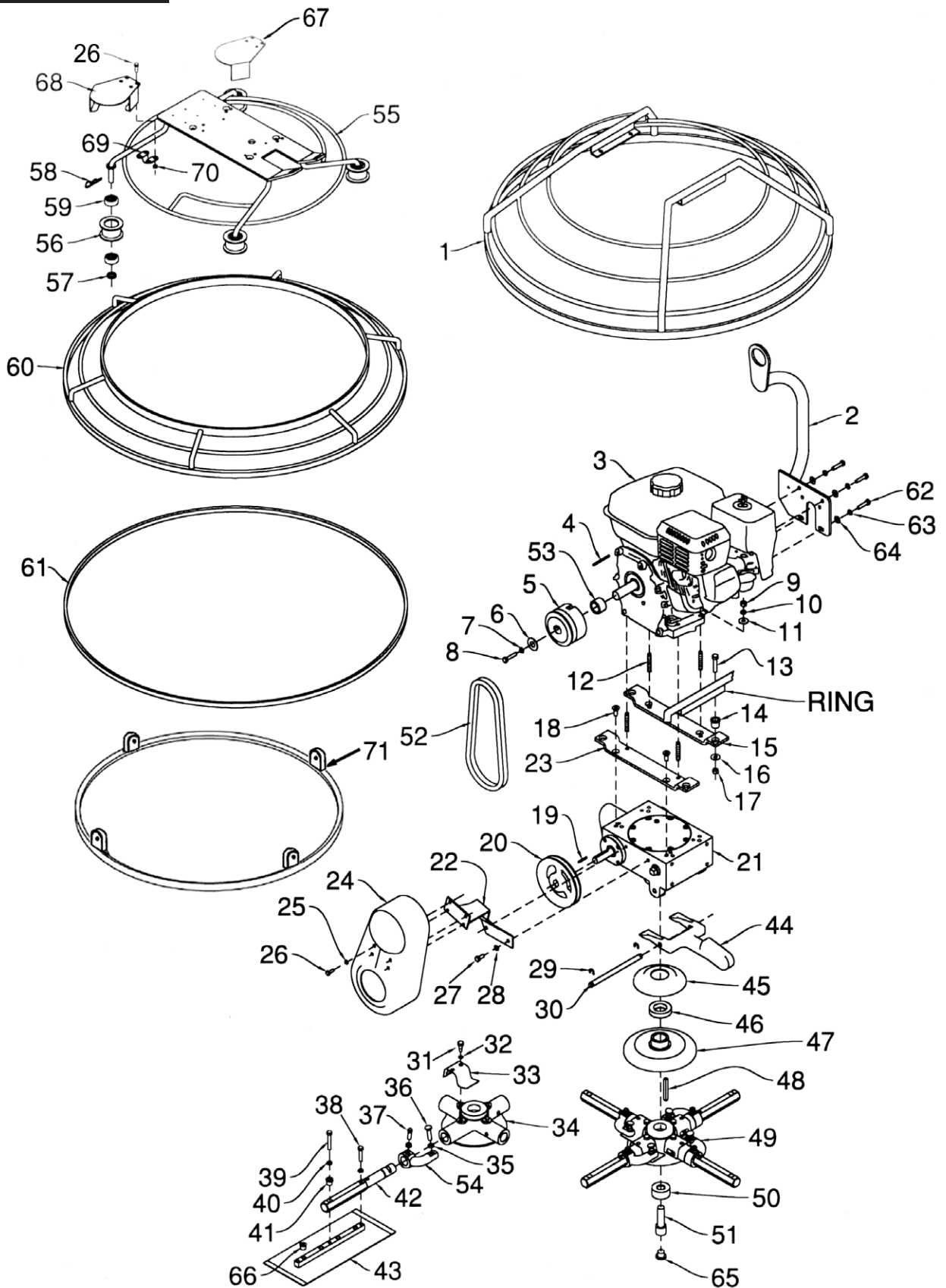


STEP 4: Make sure that the throttle lever on the handle assembly is pushed all the way forward. Remove the breather cap and the breather from the engine. Unscrew the cable adjustment clasp(A). Next, make sure that the throttle lever(B) on the engine is pushed all the way forward. Insert the wire coming out of the cable into the hole(C) shown on the diagram. With everything in place, put the cable adjustment clasp(A) back on and tighten down snug.



3A PARTS

LOWER END ASSEMBLY



LOWER END ASSEMBLY (cont'd)

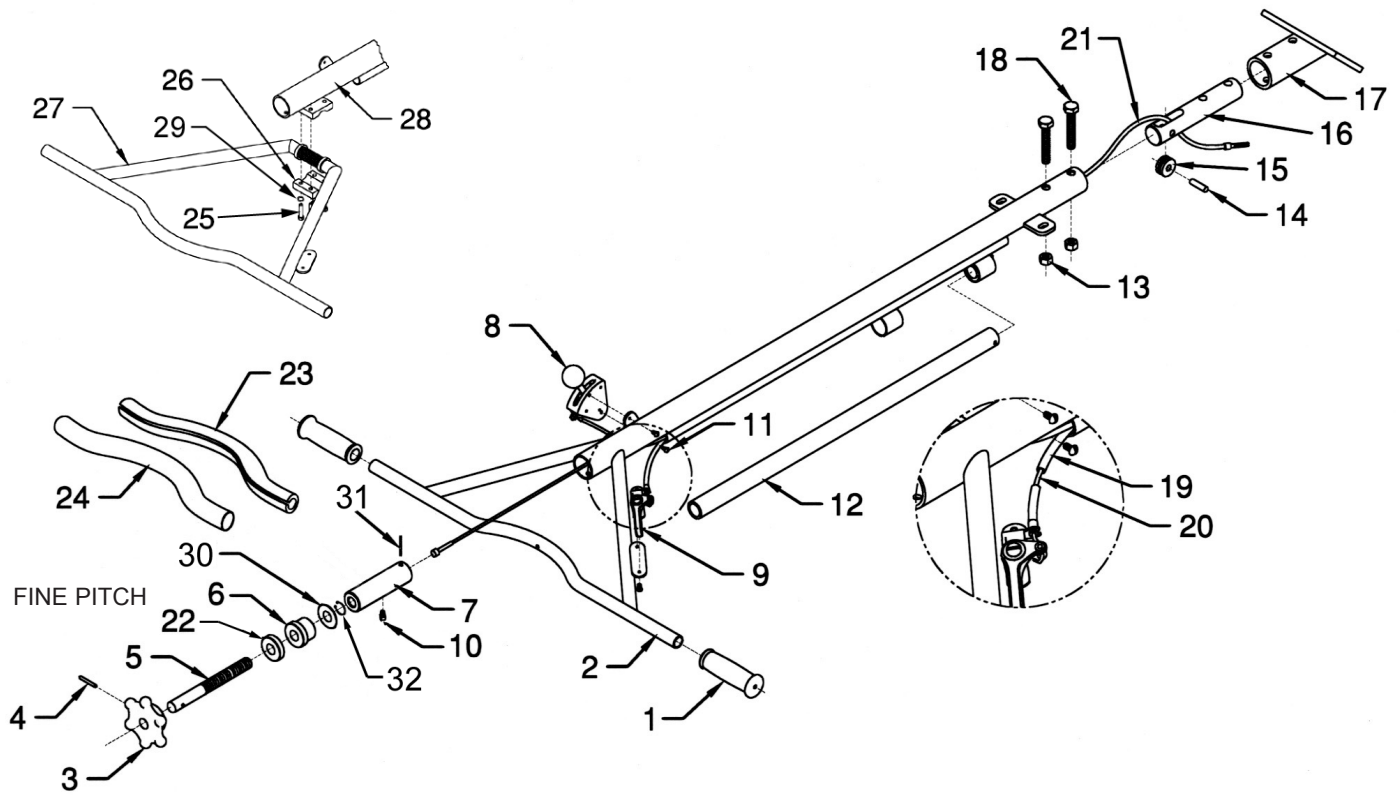
3A PARTS

ILL.	PART #	DESCRIPTION	QTY.
1	M037619	RING, 36"	1
	M037626	RING, 46"	1
2	M221480	LIFTING HOOK	1
3	M018961	ENGINE, 5.5 HO	1
	M018735	ENGINE, 9 HO	1
	M018967	ENGINE, 11 HO	1
4		KEY SUPPLIED WITH ENGINE	1
5	M016604	CLUTCH, 3/4"	1
	M015701	CLUTCH, 1"	1
6	M010083	FLAT WASHER	1
7	M010090	LOCK WASHER	1
8	M022553	BOLT	1
9	M010100	NUT	4
10	M010090	LOCK WASHER	4
11	M010082	FLAT WASHER	4
12	M018012	STUD	4
13	M010039	BOLT	4
14	M037648	RUBBER BUSHING	4
15	M037660	MTR MNT RH 9 HP	1
	M037665	MTR MNT RH 11 HP	1
	M037656	MTR MNT RH 5.5 HP	1
16	M037675	FLAT WASHER	4
17	M010464	NUT	4
18	M015711	SCREW	4
19	M010273	KEY, 3/16 X 2	1
20	M015707	PULLEY	1
20a	M012784	PULLEY (used on 040973 & 040974)	1
21	M015202	GEARBOX	1
	M040969	SFC GEARBOX	1
22	M020977	GUARD BRACKET	1
23	M037661	MTR MNT LH 9&11 HP	1
	M037659	MTR MNT LH 5.5 HP	1
24	M015987	SMALL GUARD	1
	M015703	LARGE GUARD	1
25	M012753	STAR WASHER	4
26	M010002	BOLT	20
27	M010019	BOLT	2
28	M010090	LOCK WASHER	2
29	M015677	E-CLIP	2
30	M015678	YOKE ARM PIN	1
31	M015683	BOLT	4
32	M015682	STAR WASHER	4
33	M016920	TROWEL ARM CLIP	4
34	M015816	4-BOSS	1
35	M015684	NUT	8
36	M012990	BOLT	4
37	M015686	BOLT	4

ILL.	PART #	DESCRIPTION	QTY.
38	M010022	BOLT	4
39	M010024	BOLT	4
40	M010090	LOCK WASHER	8
41	M015688	INSERT	4
42	M015818	36" TROWEL ARM	4
	M024794	46" TROWEL ARM	4
43	M6092	BLADE, 36"	4
	M6094	BLADE, 46"	4
43a	M7345	EDGER BLADE, 36"	4
44	M017264	YOKE ARM	1
45	M015821	PRESSURE CAP	1
46	M015822	THRUST BEARING	1
47	M015824	PRESSURE PLATE	1
48	M015696	KEY, 1/4 X 1-1/4	1
49	M015893	36" SPIDER ASSEMBLY	1
	M024812	46" SPIDER ASSEMBLY	1
50	M015690	WASHER	1
51	M015691	BOLT	1
52	M041325	BELT, 36"	1
	M041324	BELT, 46"	1
	M032701	BELT, (LOW SPEED) 5HP	1
52a	M041353	11/13 LO SPEED	1
53	M036665	SPACER	1
	M039407	SPACER	1
54	M033032	LIFT LEVER	4
	M033034	LIFT LEVER	4
55	M039203	UPPER RING (36")	1
56	M037265	WHEEL HOUSING	4
57	M037422	RETAINING SPACER	4
58	M037269	PIN	4
59	M037267	BEARING	8
60	M039204	LOWER RING (36")	1
61	M039211	URETHANE BELT(36")	111
62	M012974	5/16-24 X 3/4 BOLT	4
63	M010090	LOCK WASHER	2
64	M010082	FLAT WASHER	2
65	M015693	PLUG	1
66	M015694	PLUG	4
	M015694	PLUG -- (46)	12
67	M041681	COVER, LH (436)	2
	M042072	COVER, BC (430)	1
	M042073L	COVER, LH (430)	1
68	M042073R	COVER, RH (430)	2
	M041683	COVER, RH (436)	2
69	M040860	BRACKET	4
70	M020542	NUT, 1/4" STOVER	16
71	M015805	STAB. RING (46")	1

3A PARTS

HANDLE ASSEMBLY

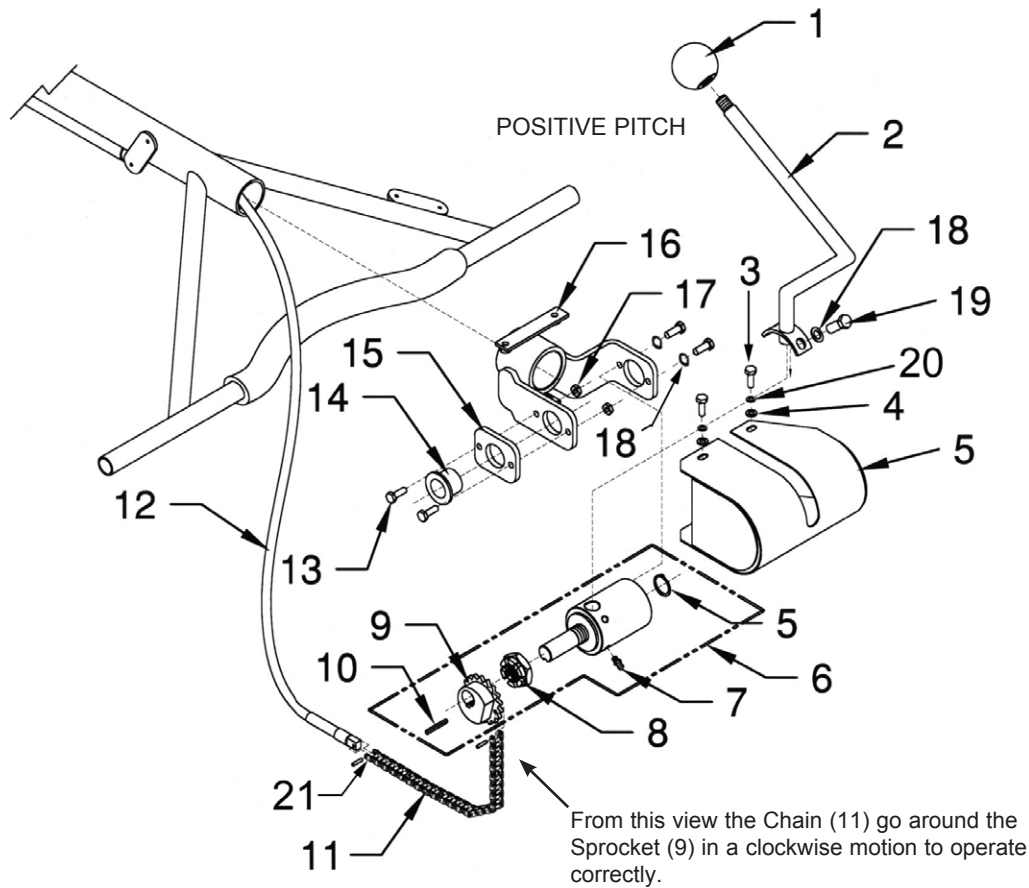


ILL.	PART #	DESCRIPTION	QTY.
1.	M037668.	GRIP.	2
2.	M015724.	HNDL ASSY FINE PITCH LG	1
	M015725.	HNDL ASSY FINE PITCH ST	1
	M028012.	HNDL ASSY POS PITCH LG.	1
	M034449.	HNDL ASSY POS PITCH ST.	1
	M020498.	HNDL ST WELD'T F/PT.	1
	M020499.	HNDL LG WELD'T F/PT.	1
3.	M015739.	KNOB. ADJ. HANDLE	1
4.	M015740.	PIN, SPIRAL 3/16 X 1-3/4	1
5.	M015741.	SCREW, SHAFT	1
6.	M015743.	BUSHING	1
7.	M015746.	BUSHING, SLIDE.	1
8.	M018409.	SWITCH, SAFETY ASSY.	1
9.	M015736.	LEVER, THROTTLE.	1
10.	M015410.	SET SCREW 1/4-20 X 3/8	1
11.	M013370.	SCREW, 10-32 X 3/8	2
12.	M015769.	BAR, CARRY	1
13.	M011238.	NUT, NYLOCK 1/2-13	2
14.	M015754.	PIN, 3/8 X 1-3/8	1
15.	M015753.	PULLEY CABLE.	1
16.	M015752.	BLOCK, CABLE SUPPORT.	1
17.	M034714.	BRKT, MTG. F/ SHT HNDL.	1
	M034201.	BRKT, MTG. F/ LNG HNDL.	1
18.	M010075.	FSTN, 1/2-13 X 3 GR. 5.	2
19.	M015735.	THROTTLE CABLE ASSY.	1

ILL.	PART #	DESCRIPTION	QTY.
21.	M016691.	CABLE, FINE SHORT	1
	M015748.	CABLE, FINE LONG	1
21A.	M027952.	CABLE LEVER PITCH ASSY	1
21B.	M028013.	CABLE 44.25 POSTIVE PITCH SHORT HANDLE.	1
22.	M015742.	BEARING	1
23.	M034441.	INSULATION F/ HANDLE	1
24.	M034440.	COVER, F/ HANDLE BAR	1
25.	M010004.	FSTN, 1/4-20 X 1-1/4	4
26.	M034279.	BLOCK, ADJ HANDLE.	1
27.	M034282.	HANDLE, ADJUSTABLE	1
28.	M034283.	HNDL FINE PITCH ADJ (LG)	1
	M034284.	HNDL FINE PITCH ADJ (SH)	1
	M034450.	HNDL POS PITCH ADJ (LG).	1
	M034451.	HNDL POS PITCH ADJ (SH).	1
29.	M010089.	FSTN, 1/4 LW.	4
30.	M015744.	WASHER	1
31.	M015747.	ROLL PIN	1
32.	M015745.	RING, RETAINING.	1
33.	M034285.	EXT. F/ LONG HANDLE	1
	M034286.	EXT. F/ SHORT HANDLE	1

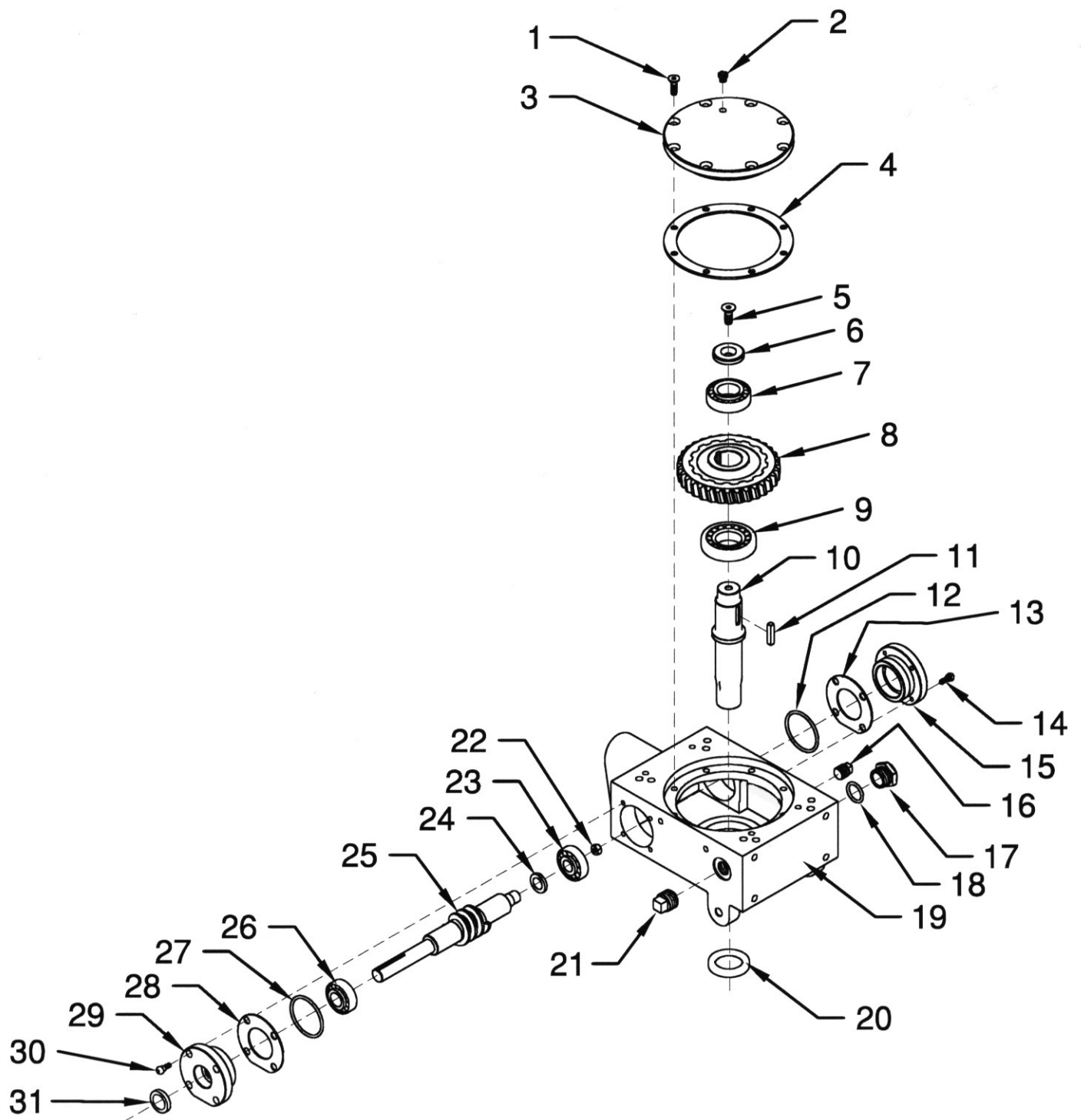
PITCH CONTROL ASSEMBLY

3A PARTS



ILL.	PART #	DESCRIPTION	QTY.
1.....	M019427.....	KNOB, BURLOP PLASTIC 1-7/8.....	1
2.....	M036448.....	HANDLE, POSITIVE PITCH.....	1
3.....	M010002.....	BOLT, 1/4-20 x 3/4.....	3
4.....	M010081.....	FLAT WASHER, 1/4.....	3
5.....	M027963.....	COVER, WELDIT LEVER PITCH.....	1
6.....	M027958.....	CLUTCH, POS PITCH ASSY.....	1
7.....	M018510.....	GREASE FITTING, 1/4-28 x 45°.....	1
8.....	M032346.....	NUT, 3/8 FLEX LOCK PLAIN.....	1
9.....	M027946.....	SPROCKET, LEVER PITCH.....	1
10.....	M015813.....	KEY, 3/16 x 1.....	1
11.....	M028033.....	CHAIN, #35 R/V.....	13.25 in
12.....	M028013.....	CABLE, POS PITCH CONTROL (SHORT).....	1
.....	M027952.....	CABLE, POS PITCH CONTROL (LONG).....	1
13.....	M010019.....	BOLT, 5/16-18 x 3/4 GR. 5.....	2
14.....	M024630.....	BUSHING, FLANGE.....	1
15.....	M027948.....	BUSHING, SUPPORT BRACKET.....	1
16.....	M027961.....	BRKT, LEVER PITCH CLUTCH.....	1
17.....	M010100.....	NUT, HEX 5/16-18.....	2
18.....	M010090.....	LOCKWASHER, 5/16.....	4
19.....	M010018.....	BOLT, 5/16-18 x 1/2 GR. 5.....	2
20.....	M010081.....	FSTN, 1/4 LW.....	3
21.....	M028035.....	LINK, MASTER (BOTH ENDS).....	2

GEARBOX ASSEMBLY



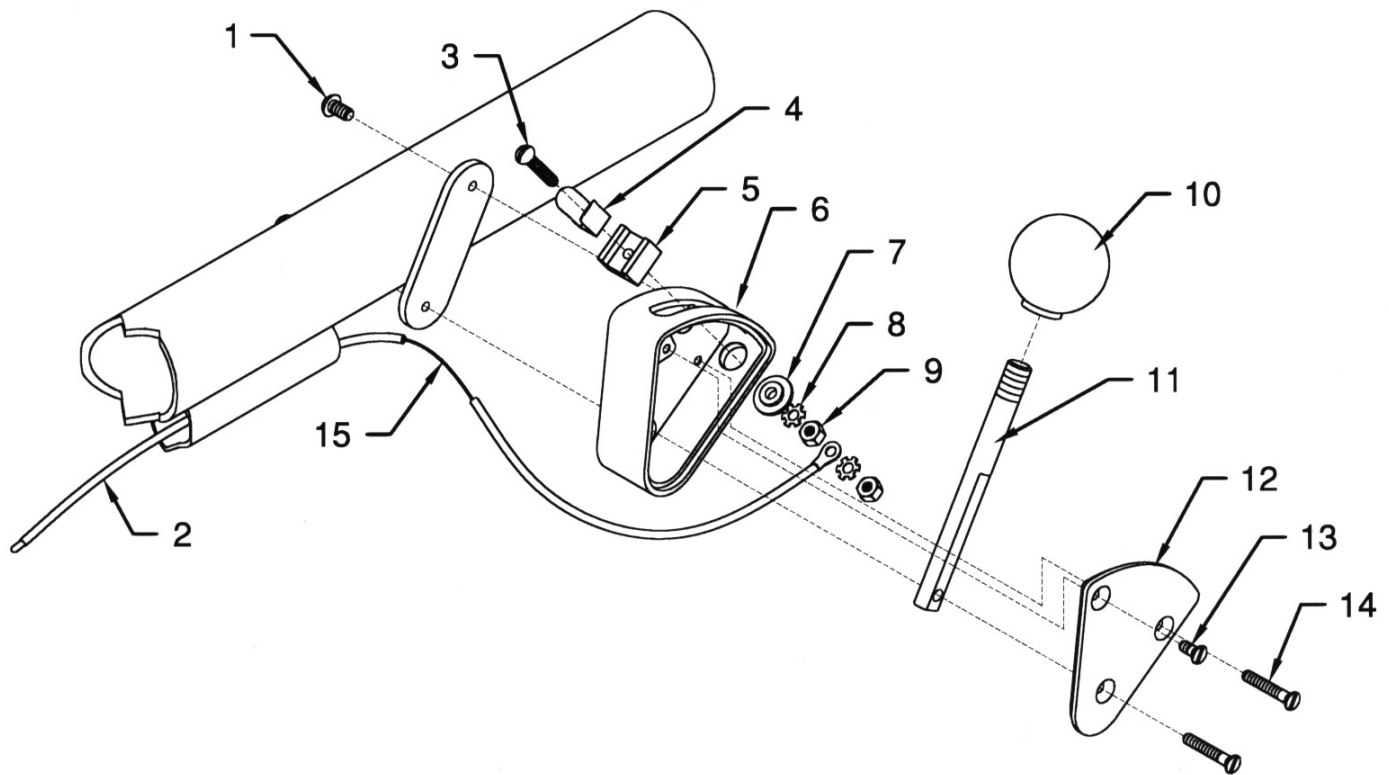
GEARBOX ASSEMBLY (cont'd)

3A PARTS

ILL.	PART #	DESCRIPTION	QTY.
1..	M015205	SCREW, 5/16-18 x 1	8
2..	M015209	VALVE, 1/8 NPT-27 RELIEF	1
3..	M015208	COVER, GEARBOX MACHINED	1
4..	M032772	SHIM, (.002)	AS REQ.
	M020018	SHIM, (.003)	AS REQ.
	M015210	SHIM, (.005)	AS REQ.
5..	M015212	SCREW, 3/8-16 x 1 (LH)	1
6..	M015213	WASHER, PRESSURE	1
7..	M022073	BEARING, TAPERED ROLLER	1
	M022074	BEARING RACE	1
8..	M015216	GEAR, BRONZE (RH)	1
9..	M015217	BEARING, RADIAL BALL	1
10..	M015219	SHAFT, MAIN MACH. FINISHED	1
11..	M015696	KEY, 1/4 x 1-1/4 HARDENED	1
12..	M015660	O-RING, GEARBOX END CAPS	1
13..	M015222	SHIM, (.005)	AS REQ.
	M015186	SHIM, (.003)	AS REQ.
14..	M017314	BOLT, 1/4-20 x 5/8	4
15..	M015221	CAP, GEARBOX END (4-HOLE)	1
16..	M010498	PLUG, 3/8 NPT BI SQUARE HD PIPE	1
17..	M015672	SIGHTGLASS, 3/4-14 NPT	1
18..	M015673	O-RING	1
19..	M015204	GEARBOX, MACHINE FINISHED	1
20..	M015671	SEAL, OIL CR# 13650	1
21..	M012953	PLUG, 3/4 NPT BI SQUARE HD PIPE	1
22..	M015662	NUT, JAM LH 5/8-18	1
23..	M015663	BEARING, ANGULAR CONTACT	1
24..	M022025	SPACER, FIBER GEARBOX COUNTERS	1
25..	M026740	SHAFT, INPUT RH GEARBOX	1
26..	M015668	BEARING, TAPERED ROLLER	1
	M015669	BEARING RACE	1
27..	M015660	O-RING, GEARBOX ENDCAPS	1
28..	M015222	SHIM, (.005)	AS REQ.
	M015186	SHIM, (.003)	AS REQ.
29..	M015223	FLANGE, GEARBOX (4-HOLE)	1
30..	M017314	BOLT, 1/4-20 x 5/8	4
31..	M015670	SEAL, OIL SEAL CR# 7443	1

Note: Items 4, 13, and 28 from above are sold only in a kit. SHIM SET - M029457 This kit consist of (2) M015210, (2) M015222, (2) M020018, and (2) M022186.

KILL SWITCH ASSEMBLY

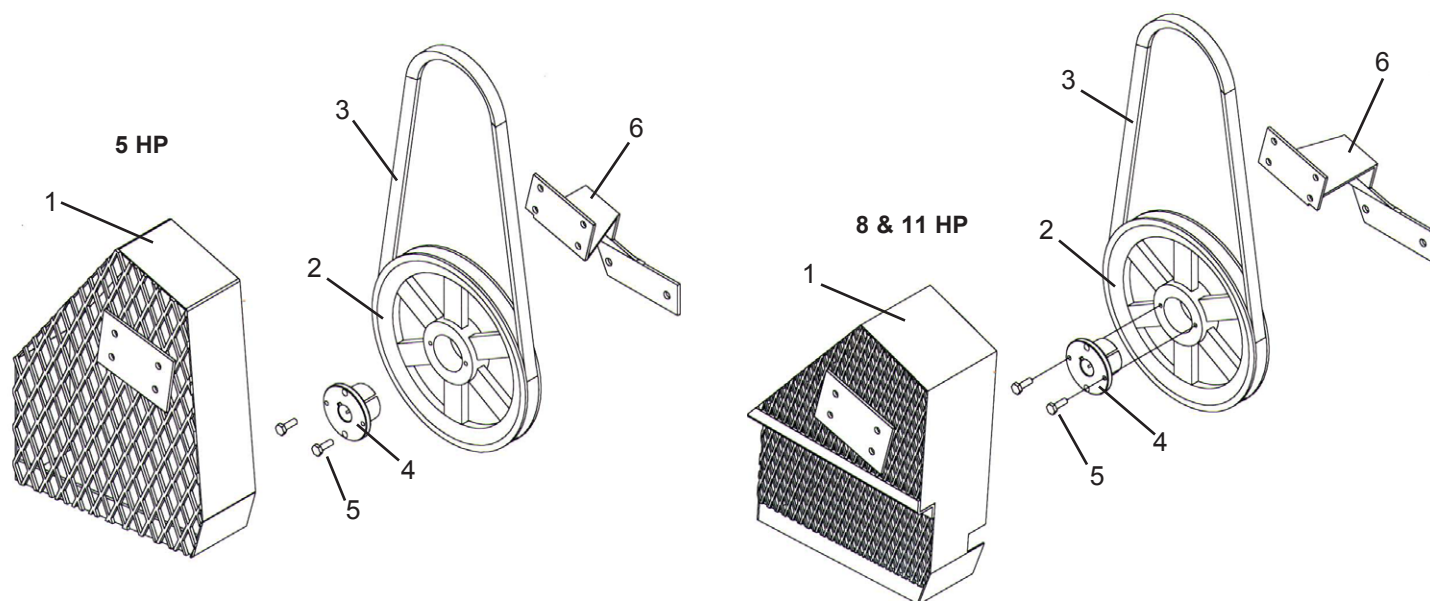


ILL.	PART #	DESCRIPTION	QTY.
1.....	M013370	SCREW, 10-32 x 3/8 SLOTTED	2
2.....	M018512	CONDUIT, RD PVC 1/4" SMOOTH	6.6 ft.
3.....	M018624	SCREW, SLT 8-32 x 1	1
4.....	M018267	CLIP, CONTACT PT SAFETY SWITCH	1
5.....	M018407	BLOCK, CONTACT F/ PT SAFETY SWITCH	1
6.....	M018324	HOUSING, SAFETY SWITCH MF	1
7.....	M018264	INSULATOR, RUBBER SAFETY SWITCH	1
8.....	M013704	LOCK WASHER, EXT STAR 8-32	2
9.....	M018406	NUT BRASS, HEX 8-32	2
10.....	M034072	KNOB, SAFETY SWITCH F/ WALKER	1
11.....	M034316	LEVER, SAFETY SWITCH F/ PT	1
12.....	M018326	COVER, SAFETY SWITCH	1
13.....	M018623	SCREW, BRASS 8-32 x 3/8	1
14.....	M018404	SCREW, SLT BRASS 8-32 x 1	1
15.....	M013270	WIRE, RED 14 GA. ELECT.	7.1 ft.

SPEED KITS

3A
PARTS

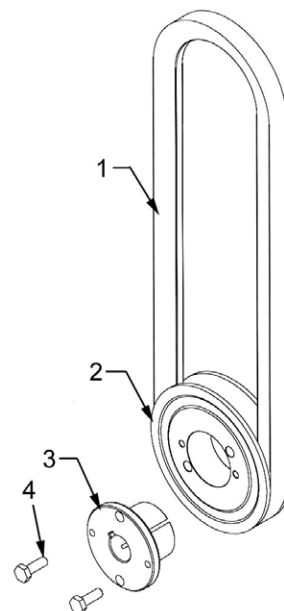
LOW SPEED KITS



ILL.	PART #	DESCRIPTION	QTY.
1..	M027242	BELT GUARD (9 & 11 HP)	1
	M032696	BELT GUARD (5.5 HP)	1
2..	M029102	PULLEY, BK90	1
3..	M041353	V-BELT, #6937 (9 & 11 HP)	1
	M032701	V-BELT, B32 (5.5 HP)	1
4..	M012387	H-BUSHING, 3/4" BORE	1
5..		BOLT (COMES W/ H-BUSHING)	2
6..	M032697	BRKT, BELT GUARD (5.5HP)	1
	M032693	BRKT, BELT GUARD (9 & 11HP)	1
KIT	M027239	EPOXY KIT FOR 9 & 11 HP STD.	1
KIT	M032702	EPOXY KIT FOR 5.5 HP	1
	M042676	EPOXY KIT FOR 11/13 SD	1

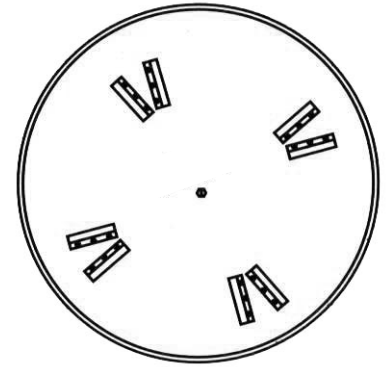
HIGH SPEED KIT

ILL.	PART #	DESCRIPTION	QTY.
1.....	M041325	V-BELT #6929	1
2.....	M012784	PULLEY, BK45H	1
3.....	M012387	H-BUSHING 3/4"	1
4.....		BOLT (COMES WITH H BUSHING)	2
KIT	M022942	HIGH SPEED	1

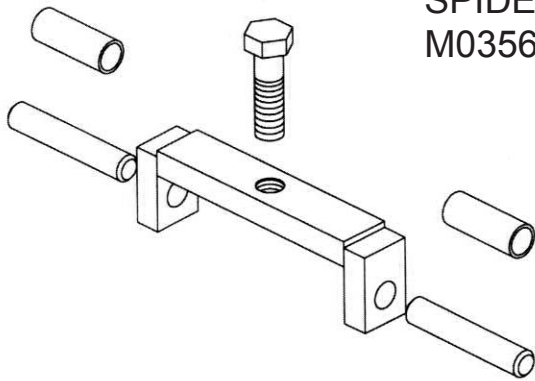


OPTIONAL ACCESSORIES

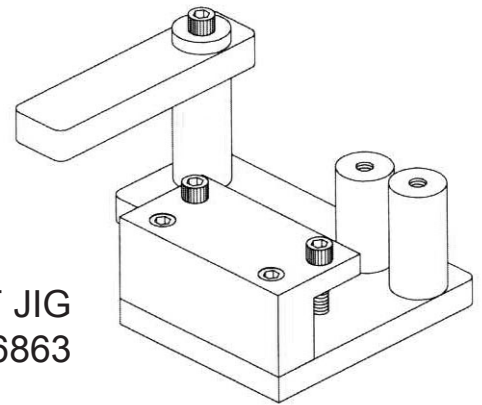
PAN36-4C
PAN36-4CE
PAN46-4C



SPIDER PULLER
M035688



ALIGNMENT JIG
M016863



10 POUND WEIGHT
M010640

