

MODEL 140EW

PRAIRIE DOG BORING MACHINE



OWNERS MANUAL & PARTS LIST

PRAIRIE DOG BORING EQUIPMENT, INC.

10006 AIRLINE DRIVE

HOUSTON, TEXAS 77037

281-448-8442 FAX: 281-448-5553

Prairie Dog Boring Equipment, Inc.
Limited Warranty

To the original purchaser for 1 year from purchase date we will repair or replace at our option and free of charge any parts found to be defective under normal use and service resulting from defects in material and/or workmanship after an examination at our factory in Houston, Texas.

All transportation charges, damages, and loss incurred in connection with the transportation of all parts for inspection, replacement, or repair under this warranty shall be borne by the purchaser.

The express warranty contained herein shall not be applied to any boring machine attachment or part which has been altered in any way, nor shall such express warranty apply to any damages resulting from accident, misuse, or abuse, nor shall such express warranty apply to any damages resulting from failure to follow the Prairie Dog Boring Equipment, Inc. instruction for operation and maintenance of boring machine attachments and parts. Also, the express warranty contained herein shall not apply to engines, clutches, gearboxes, etc., which are not of our manufacture as they are covered by the design and specification changes on future machines without notice and without obligation on our part to present owners.

The foregoing express warranty is in lieu of all other express warranties. Prairie Dog Boring Equipment, Inc. neither assumes nor authorizes any other person, natural or corporate, to assume for it any other obligation or liability in connection with or with respect to any boring machine attachments or parts.

Prairie Dog Boring Equipment, Inc. hereby disclaims any and all implied warranties, including, but not limited to warranties of merchantability and fitness for any particular purpose, if and to the extent, but only if and to the extent, that such disclaimer is not forbidden by any applicable law and any implied warranties, including, but not limited to which Prairie Dog Boring Equipment, Inc. is so forbidden to disclaim by any applicable law, are limited to the periods of the express warranty as defined in the first paragraph of this warranty. Prairie Dog Boring Equipment, Inc. shall in no event be liable for any consequential, incidental or special damages, and/or expenses.

Prairie Dog Boring Machine

NO REGISTRATION (WARRANTY) CARD IS NECESSARY TO OBTAIN WARRANTY ON PRAIRIE DOG BORING MACHINE. FILL IN THE REQUIRED INFORMATION AND RETAIN FOR YOUR RECORDS.

Prairie Dog Boring Machine: Serial No: _____ Model No: _____
Dealer Purchased from: **PRAIRIE DOG BORING EQUIPMENT, INC.**

If warranty service is needed, contact your nearest authorized dealer or Prairie Dog Boring Equipment, Inc. For prompt attention our service department will need to know the trouble experienced and the total number of hours the boring machine has been operated. If you differ with the decision of our service department on warranty claim, ask your service department to submit all supporting facts for our review. If Prairie Dog Boring Equipment, Inc. decides that your claim is justified, you will be fully reimbursed for those items accepted as defective.

To avoid misunderstandings which might occur between boring machine owners and Prairie Dog Boring Equipment, Inc., we are listing causes of boring machine failures, where repair or replacement is NOT covered by Prairie Dog Boring Equipment, Inc. warranty.

ABUSE OR NEGLECT

1. Parts which are scored or broken because the machine was operated without sufficient lubricating oil or the power grade of oil are not covered by warranty. Check oil level at least every five hours, and refill when necessary. Change oil as recommended.
2. Damage or wear caused by dirt which enters the machine because of improper maintenance is not covered by warranty. Clean and re-oil regularly.
3. Warranty does not cover the adjustment of the machine unless the need for such repair is the result of defects in material or workmanship or both. Minor adjustment are NOT covered by warranty.
4. Broken parts which result from improper operation, overspending, or abuse in operation are covered by warranty.
5. Repair or adjustment of associated parts which are not of Prairie Dog Boring Equipment, Inc. manufacture will be covered by Prairie Dog Boring Equipment, Inc. warranty.
6. Only ORIGINAL PRAIRIE DOG BORING EQUIPMENT, INC. PART OR PARTS APPROVED PRAIRIE DOG BORING EQUIPMENT INC. may be covered by warranty.
7. About improvements: Prairie Dog Boring Equipment, Inc. is continually striving to improvements or changes when its becomes practical to do so, without incurring and obligations to make changes or additions to the equipment sold previously.

WARRANTY IS AVAILABLE ONLY THROUGH SERVICE CENTERS OR SERVICE DEPARTMENT WHICH HAVE BEEN APPROVED AND AUTHORIZED BY PRAIRIE DOG BORING EQUIPMENT, INC.

STANDARD OPERATING PROCEDURES FOR THE “PRAIRIE DOG “

WE CONGRATULATE YOU ON THE INFORMED CHOICE OF BUYING THE “PRAIRIE DOG” PUP, WITH MODERATE CARE THE MODEL 140EW WILL PROVIDE YEARS OF PROFITABLE SERVICE.

FIRST MIX THE GASOLINE-OIL MIXTURE PROPERLY. IT TAKES JACHO CERTIFIED TWO-CYCLE OIL AT A RATIO OF 50:1. PRAIRIE DOG BORING EQUIPMENT, INC HIGHLY RECOMMENDS THE USE OF AN OFF THE SHELF CANNED PREMIX. THESE PREMIXED FUELS USE HIGH QUALITY SYNTHETIC OILS AND NON ETHANOL GAS.

MAKE SURE TO GREASE THE FRONT BEARING AT LEAST ONCE A DAY WHEN IN USE. ONE SHOT IS ENOUGH.

DO NOT SET ENGINE DOWN IN WATER AT ANYTIME.

NOW LET’S BEGIN TO BORE. ASCERTAIN WHAT DEPTH IS NECESSARY TO BORE UNDER THE SET OF OBSTRUCTIONS (SIDEWALK, DRIVEWAY, ROAD, APRON OR POSSIBLY A BUILDING) TO REACH THE COME-OUT HOLE. THEN DIG A SMALL TRENCH TO THE DESIRED DEPTH. THE LENGTH OF THE TRENCH DEPENDS A GREAT DEAL ON THE LENGTH OF PIPE BEING USED TO BORE THE HOLE. IF BORING WHILE HOLDING THE “140EW” IT SHOULD BE HELD APPROXIMATELY WAIST HIGH SO THE NATURAL BEND OF THE PIPE WILL ALLOW THE LAST 3 TO 4 FEET TO LIE HORIZONTAL WITH THE GROUND. ALIGN THE BORE WITH A STAKE FROM ONE SIDE TO THE OTHER. THIS WILL HELP INCREASE YOUR ACCURACY. NOW, START THE ENGINE AND TURN THE WATER ON AT THE BALL VALVE JUST BEFORE STARTING TO BORE, MAKING SURE WATER IS COMING OUT OF THE BIT. START THE BIT AT THE DESIRED DEPTH AND SLOWLY WALK IT FORWARD 2” TO 3”. THIS WILL HELP KEEP THE BIT CLEAR. WE RECOMMEND PUTTING A LEVEL ON THE PIPE OUTSIDE YOUR HOLE AT THIS TIME. IF IT IS LEVEL, THEN YOU MAY PROCEED AT THE DESIRED DEPTH TO THE COME-OUT HOLE. MAKE SURE TO PROCEED SLOWLY ENOUGH, AND NOT ALLOW THE CLUTCH TO SLIP OR THE ENGINE TO BOG DOWN. YOU SHOULD ALWAYS HAVE A SMALL AMOUNT OF WATER COMING OUT OF THE ENTRY POINT. IF YOU NOTICE NO WATER OR SLURRY IS COMING OUT OF THE ENTRY HOLE, STOP AND CHECK FOR OBSTRUCTION IN THE PIPE OR BIT. ONCE THE OBSTRUCTION IS CLEARED, PROCEED AGAIN.

IF NO WATER OR SLURRY IS COMING FROM THE ENTRY HOLE, IT’S POSSIBLE THE COME-OUT HOLE HAS BEEN REACHED. IF SO, STOP THE WATER AT THE “140EW” AND PROCEED WITH COMPLETING THE JOB.

A GOOD RULE OF THUMB IN MAINTAINING ACCURACY IS; FOR EVERY ONE FOOT OF DEPTH, MAINTAIN 20 FEET BEHIND THE ENTRANCE HOLE. (SEE FIG. 1) DO NOT FORCE THE PIPE TO BEND BY TRYING TO STAND UP RIGHT ALL

THE WAY TO THE ENTRY HOLE. PUTTING TOO MUCH STRESS ON THE NATURAL SWAY OF THE PIPE AND NOT MAINTAINING PROPER DISTANCE BEHIND YOUR ENTRANCE HOLE WILL RESULT IN BENT PIPE, BROKEN ENDS OR AN INCREASE IN THE DEPTH OF THE BORE.

IN TOUGH SOIL CONDITIONS WITH MULTIPLE OBSTRUCTIONS, IT MAY BE HELPFUL TO DIG A SMALL TRENCH LARGE ENOUGH FOR ONE PERSON TO GET INTO AND LONG ENOUGH TO ALLOW SHORTER LENGTHS OF PIPE TO BE USED (PIT BORING). WHEN PIT BORING, IT IS MORE OPERATOR FRIENDLY TO DIG A SMALL PIT LOWER THAN THE LAUNCHING PIT TO ALLOW THE SLURRY OR WATER TO RUN INTO THE SECONDARY PIT. THIS HELPS TO KEEP THE WORK AREA RELATIVELY DRY.

WHEN PIT BORING, SOME OF THE SAME PRINCIPLES AS BORING IN THE STANDING POSITION

ARE STILL APPLIED. (SEE FIG-2) LINE YOUR MACHINE UP WITH A STAKE AT THE STARTING POINT ON TOP OF YOUR PIT AND ANOTHER AT THE DESIRED POINT AT THE COME-OUT SIDE. PUT A LEVEL ON THE PIPE, IF IT IS LEVEL, THEN PROCEED WITH ASSURANCE THAT THE DESIRED COME-OUT DEPTH WILL BE REACHED. IT IS ALSO A GOOD RULE TO LAY OUT ENOUGH SECTIONS OF PIPE BY YOUR TRENCH TO EQUAL THE DISTANCE OF YOUR BORE. THIS WILL HELP TO DETERMINE WHEN THE BIT SHOULD COME THROUGH TO THE COME-OUT HOLE. NOW START THE ENGINE, AFTER PUTTING THE DRILL PIPE ON THE MACHINE THEN ADD YOUR 2" PILOT BIT TO THE END OF THE PIPE, TURN ON THE WATER AT

THE BALL VALVE. ADVANCE THE MACHINE WHEN THE FIRST SECTION OF PIPE HAS ABOUT 6" TO 12" REMAINING OUT OF THE HOLE, TURN THE WATER SUPPLY OFF AT THE BALL VALVE. ATTACH YOUR NEXT SECTION OF PIPE AND MAKE SURE TO TURN THE WATER ON AT THE BALL VALVE, PROCEED WITH YOUR BORE UNTIL THE PIPE DISAPPEARS. ONCE YOUR BIT HAS TRAVELED TO THE COME-OUT HOLE, SHUT THE WATER SUPPLY OFF. REMOVE THE BIT AND INSTALL THE BACK REAMER IF REQUIRED. ONLY ONE STEP IS NECESSARY, INSTALL A 4"

BACK REAMER. BE SURE TO ADD A CABLE SWIVEL TO THE END OF THE BACKREAMER SO THE WATER WILL PORT OUT OF THE HOLES AT THE CUTTING BLADES. WHEN ATTACHING A CABLE TO THE CABLE SWIVEL YOU CAN ESTABLISH A CABLE THROUGH THE HOLE. A CABLE CAN ALSO COME IN HANDY WHEN RUNNING INTO AN OBSTRUCTION THAT IS IMPOSSIBLE; SIMPLY PULL THE CABLE TO RETRIEVE THE TOOLING.

WARNING*WARNING*WARNING*WARNING*WARNING*WARNING*WARNING

THE "140EW" BORING MACHINE IS A WATER LUBRICATED BORING MACHINE. IT MUST NOT BE RUN DRY OR WITHOUT WATER. THIS BORING MACHINE WILL NOT BORE PROPERLY

WITHOUT WATER. THE UNIT IS DESIGNED TO USE WATER TO KEEP THE BORE HOLE CLEAN AND MAKE A SLURRY OF THE CUTTINGS TO FACILITATE A GOOD CLEAN HOLE. NO EXCEPTION. THANK YOU

OPERATING INSTRUCTIONS

ABOVE GROUND OPERATION

FIRST MEASURE THE DISTANCE TO BE BORED, BEING SURE THIS SECTION IS ALLOWED TO SAG TO A POINT EQUAL TO A DISTANCE FROM A TO B SO THAT THIS SECTION IS LEVEL. HOLDING THE "140EW" FIRMLY WITH BOTH HANDS ENGAGE THE THROTTLE, THE DRILL STEM WILL TURN AUTOMATICALLY. THE "140EW" HAS A CENTRIFUGAL CLUTCH, ALLOWING THE DRILL STEM TO ROTATE ONLY IF THE THROTTLE IS PRESSED. DO NOT FORCE!!!! IF THE DRILL STEM IS FORCED TOO HARD YOU MAY BEND THE DRILL STEM. IF THE DRILL STEMS STOP TURNING AND YOU CONTINUE TO PRESS THE THROTTLE YOU COULD DAMAGE THE CLUTCH. FEED SLOWLY ALLOWING THE PILOT BIT TO MAKE ITS OWN WAY.

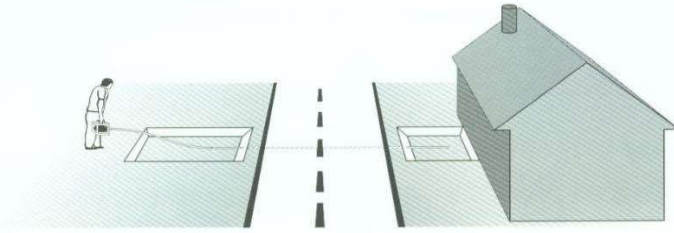
BELOW GROUND OPERATION

HOLD THE MACHINE FIRMLY AND GET IN THE DITCH, THE DRILL STEM IS ATTACHED IN THE LENGTH THAT HAD PREVIOUSLY BEEN SELECTED. AFTER THE DRILL STEM SECTION HAS BEEN ATTACHED THE PILOT BIT IS INSTALLED ON TO THE DRILL STEM. START THE "140EW" AND HOLDS IT AS LEVEL AS POSSIBLE. ENGAGE THE THROTTLE TO START THE DRILL BIT TURNING THEN SLOWLY PUSH THE DRILL ROD FORWARD UNTIL THE FIRST LENGTH OF ROD IS IN THE HOLE. WHEN THE DRILL ROD IS ALMOST ALL THE WAY IN THE HOLE UNSCREW THE ROD FROM THE "140EW" AND ADD ON ANOTHER LENGTH OF DRILL STEM. THIS PROCESS IS REPEATED UNTIL THE BIT COMES OUT ON THE OTHER SIDE AS DESIRED.

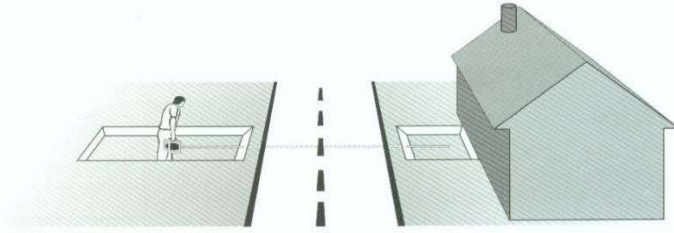
AFTER THE HOLE IS COMPLETE THE PIPE OR CABLE CAN BE PULLED BACK THROUGH THE HOLE.

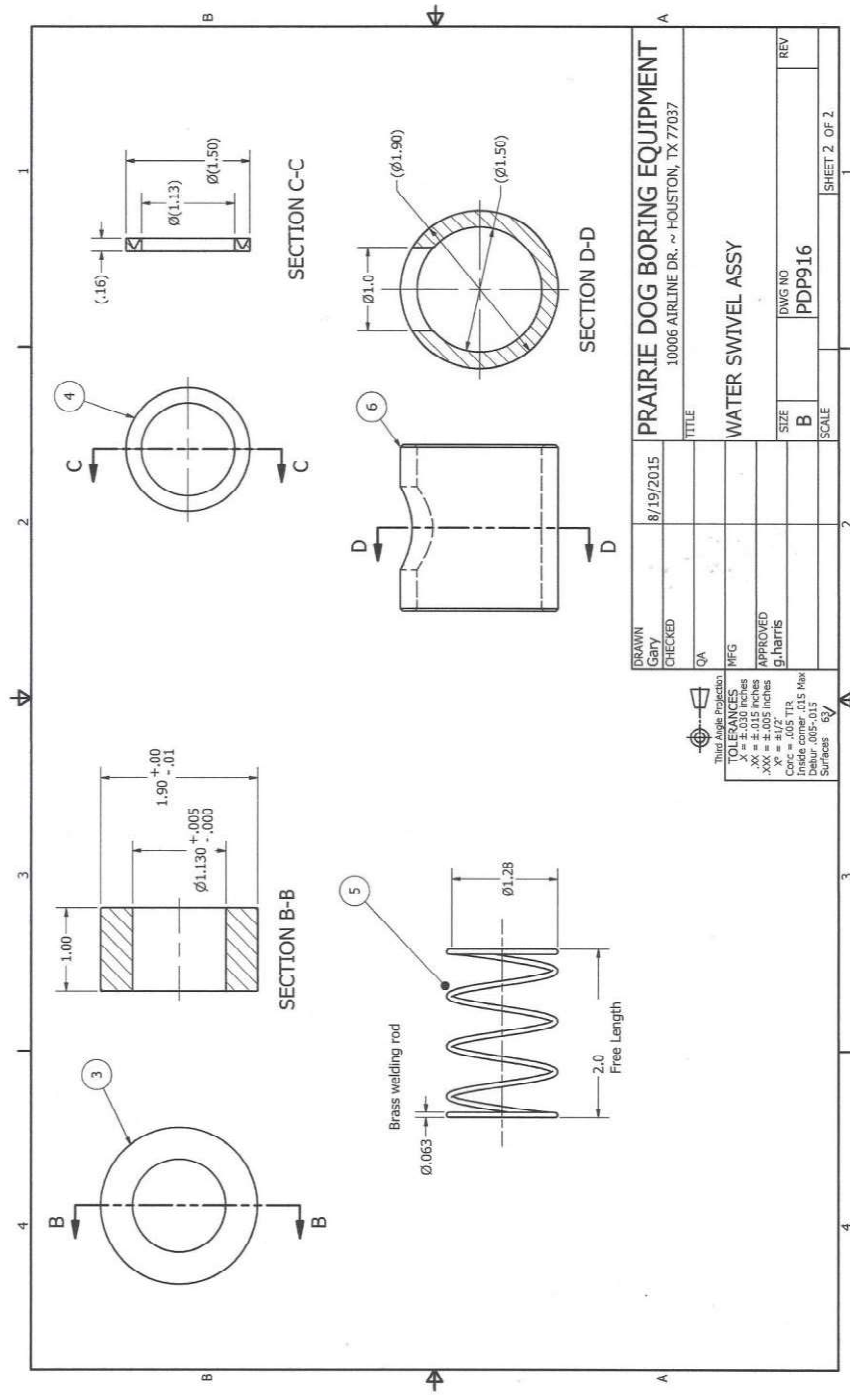
IT SHOULD BE NOTED THAT THE 140EW USES AN ENGINE AND TRANSMISSION THAT HAS A REVERSE LEVER. THE BORING MACHINE SHOULD NEVER BE USED WITH THE TRANSMISSION IN REVERSE.(CCW ROTATION) THIS WILL LIKELY CAUSE SOME PORTION OF THE DRILL ROD TO DISENGAGE AND POSSIBLY BE UNRECOVERABLE.

ABOVE GROUND OPERATION.



BELOW GROUND OPERATION.

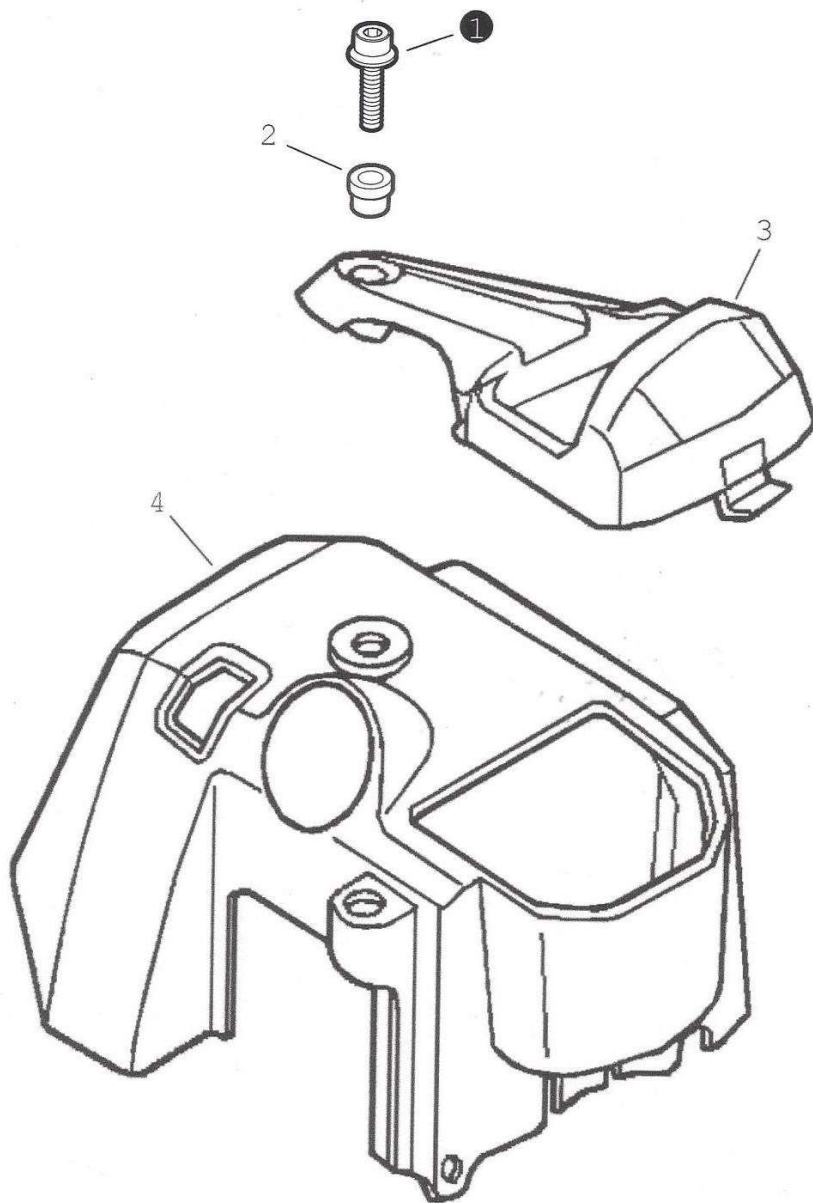




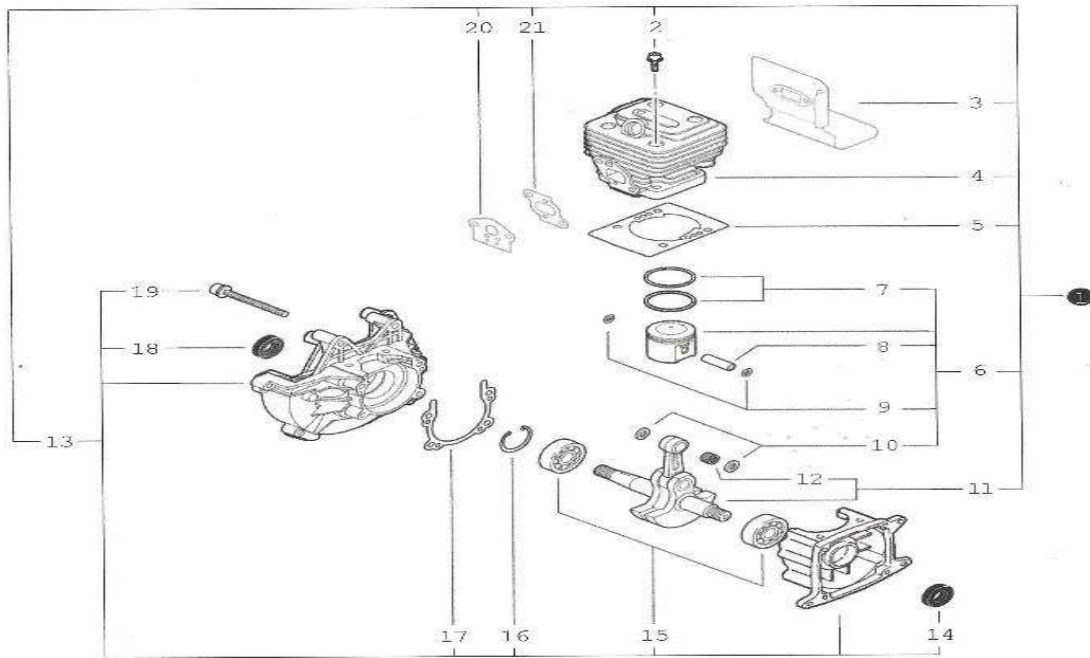
DRAWN Gary		8/19/2015		PRAIRIE DOG BORING EQUIPMENT	
CHECKED				10006 AIRLINE DR. ~ HOUSTON, TX 77037	
QA				TITLE	
MFG				WATER SWIVEL ASSY	
APPROVED					
g.harris					
				SIZE	
				B	
				SCALE	
				SHEET 2 OF 2	

TOLERANCES	
X = ±.030 inches	
XX = ±.015 inches	
XXX = ±.005 inches	
X* = ±.002 inches	
XX* = ±.001 inches	
XXX* = ±.0005 inches	
Finish = .005 Ra	
Material = 6061-T6	
Surfaces = 63	

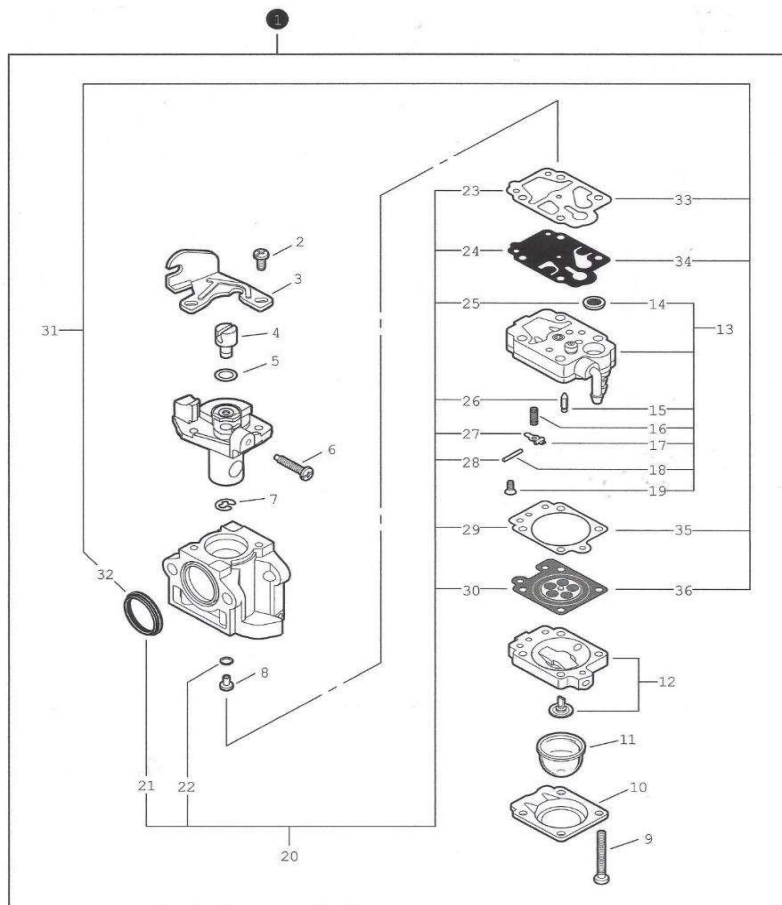
Third Angle Projection	
WATER SWIVEL ASSY	
DWG NO	
PDP916	
REV	



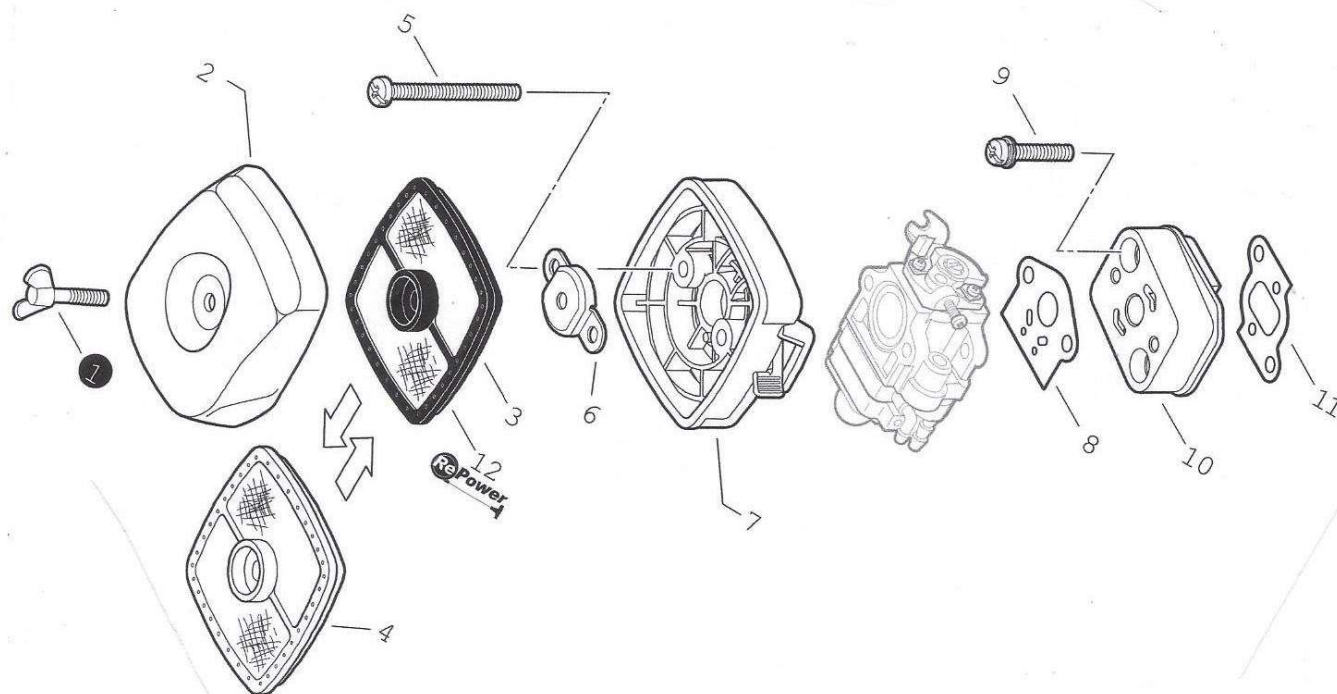
REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	90010605016	SCREW-5X16	1
2	V353000020	COLLAR	2
3	A161000090	DUCT,AIR	1
4	A160001130	COVER, ENGINE	1



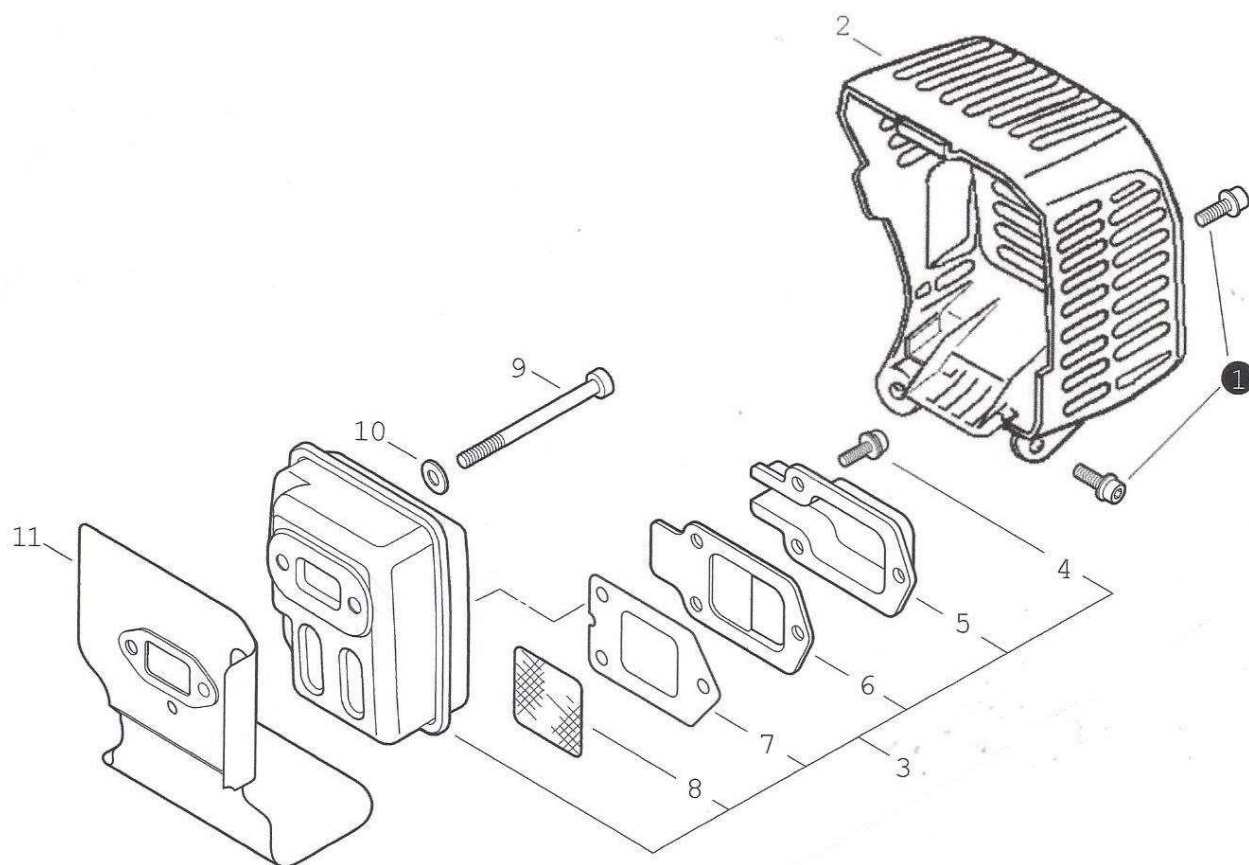
REF NO.	PART NUMBER	DESCRIPTION	QTY
1	SB1060	SHORT BLOCK	1
2	90016205022	SCREW-5X22	4
3	V104000061	SHEILD,EXHAUST	1
4	A130000371	CYLINDER	1
5	V100000070	GASKET, CYLINDER	1
6	P021004740	PISTON KIT	1
7	A101000010	RING, PISTON	2
8	V606000000	PIN, PISTON	1
9	10001504630	RING, RETAINING	2
10	10001455930	SPACER, PISTON	2
11	A011001110	CRANKSHAFT ASSY.	1
12	V5530000020	BEARING, NEEDLE	1
13	P021000941	CRANKCASE KIT	1
14	V505000020	SEAL, OIL	1
15	90080036001	BEARING, BALL	2
16	90070200028	RING, RETAINING	1
17	10024255930	GASKET, CRANKCASE	1
18	10021228230	SEAL, OIL	1
19	90016205025	SCREW,5X25	4
20	13001013410	GASKET, INTAKE	1
21	13001055930	GASKET, INTAKE	1



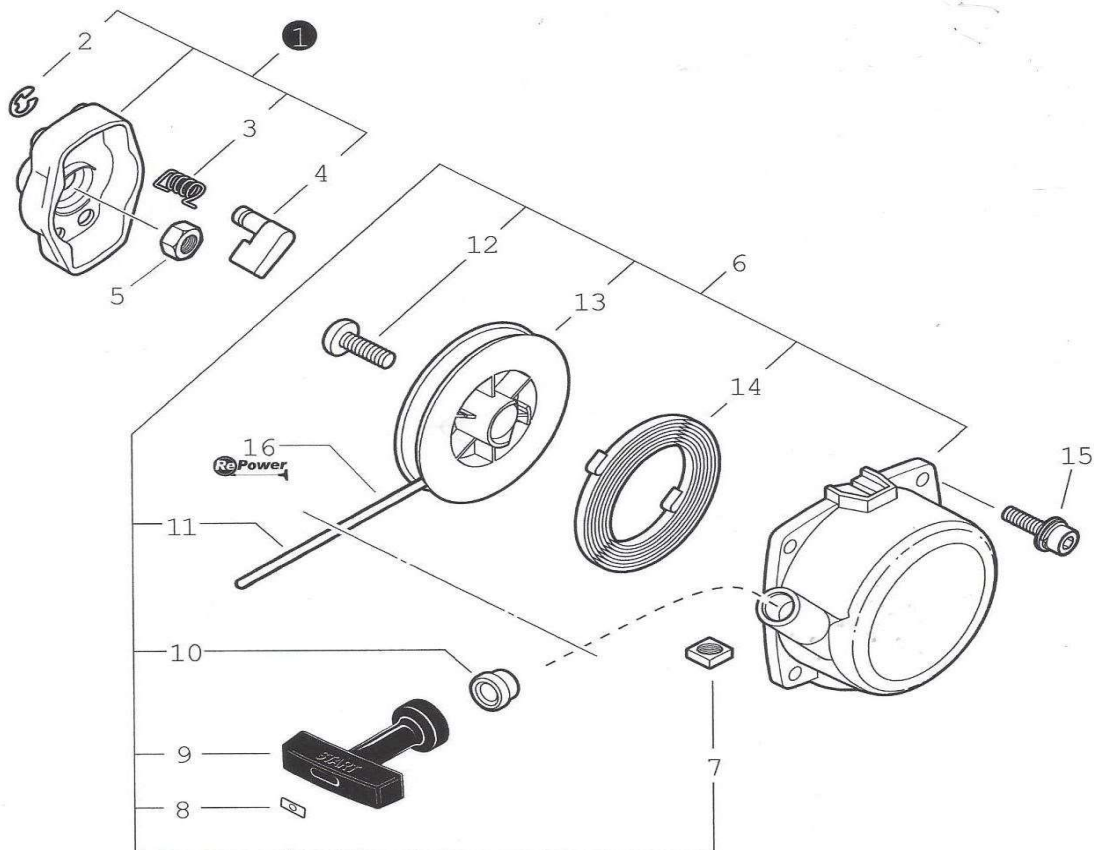
REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	A021000672	CABURETOR ASSY.	1
2	12311440630	SCREW	2
3	P003000180	BRACKET, CABLE	1
4	12317245130	SWIVEL	1
5	12314954230	WASHER	1
6	12313440030	SCREW, IDLE ADJUST	1
7	12317307930	RING, RETAINING	1
8	P003001050	JET, MAIN	1
9	12311005560	SCREW, PUMP COVER	4
10	12314205560	RETAINER, PURGE BULB	1
11	12318140630	BULB, PURGE	1
12	12318005560	PURGE BASE ASSY.	1
13	P003000870	PUMP BODY ASSY.(13-18)	1
19	12313905560	SCREW, METERING LEVER PIN	1
20	P003000190	REPAIR KIT (20-30)	1
31	P003000200	DIAPHRAGM/GASKET KIT (31-36)	1



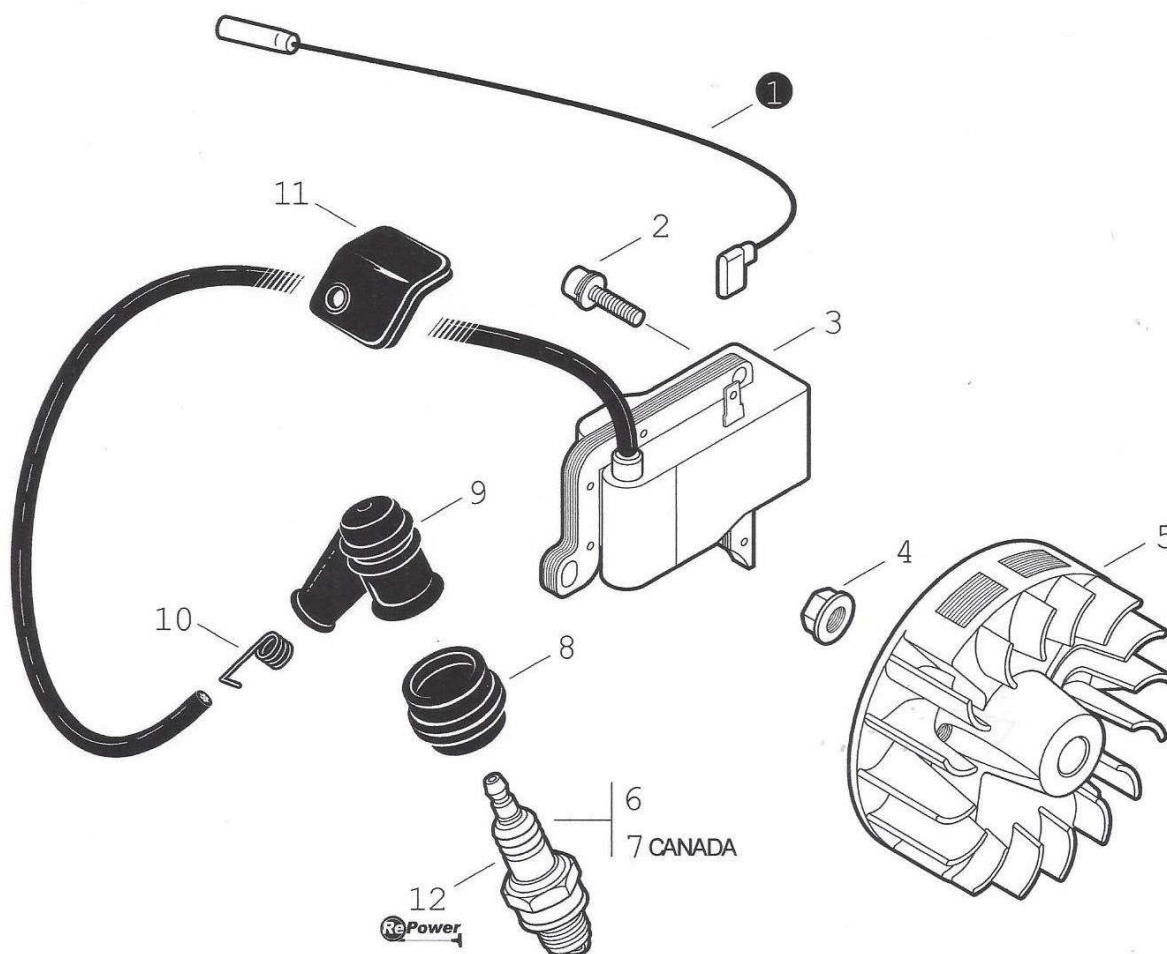
REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	21041752730	THUMB SCREW	1
2	13031305863	COVER, AIR CLEANER	1
3	A226001410	FILTER, AIR-DOUBLE LAYER	1
4	13031054130	FILTER, AIR-SINGLE LAYER	1
5	90024205060	SCREW-5X60	2
6	12901152730	PLATE, PREVENT	1
7	P021004480	CASE, AIR CLEANER	1
8	13001013410	GASKET-INTAKE	1
9	90016205025	SCREW-5X25	2
10	13001756431	INSULATOR, INTAKE	1
11	13001055930	GASKET, INTAKE	1
	90152	TUNE-UP KIT	1
12	90008	FILTER KIT	1



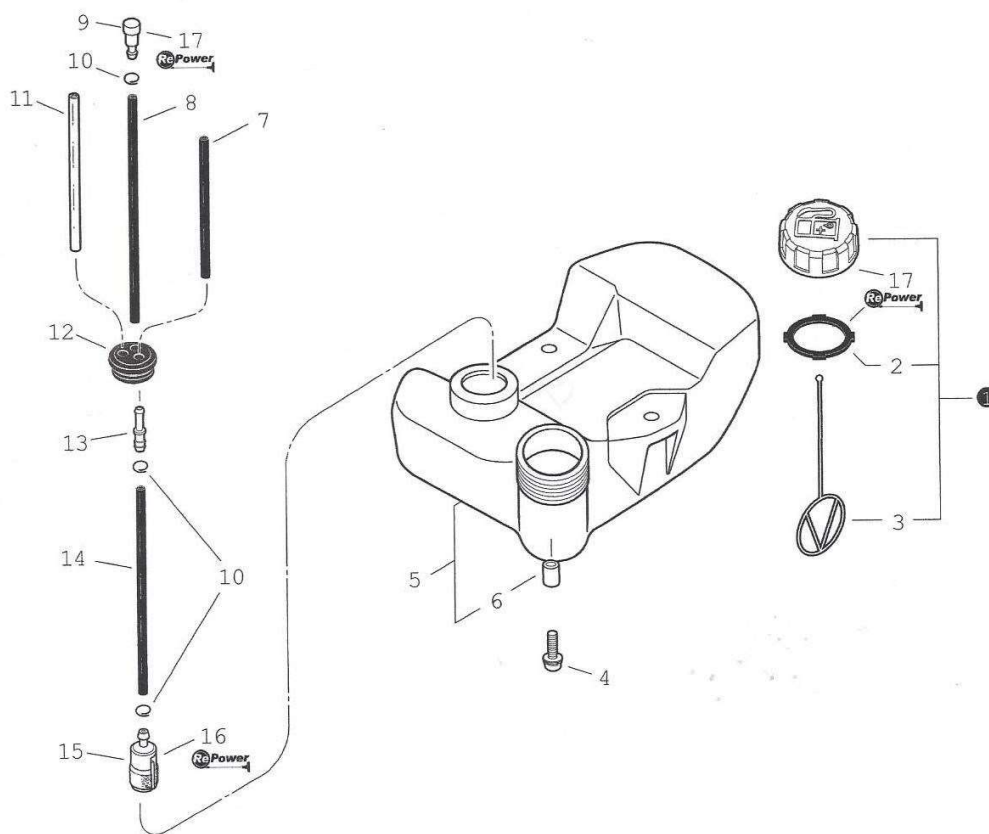
REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	A320000220	COVER,EXHAUST	1
2	90010605012	SCREW, 5X12	2
3	P021005770	MUFFLER ASSY.	1
4	90024204010	SCREW, 4X10	3
5	A313000041	GUIDE, EXHAUST-OUTER	1
6	14587642030	GUIDE, EXHAUST-INNER	1
7	V104000003	GASKET, EXHAUST	1
8	14586240630	SCREEN, SPARK ARRESTER	1
9	90010505055	SCREW,5X55	2
10	90060200005	WASHER-5	2
11	V104000061	SHIELD, EXHAUST	1



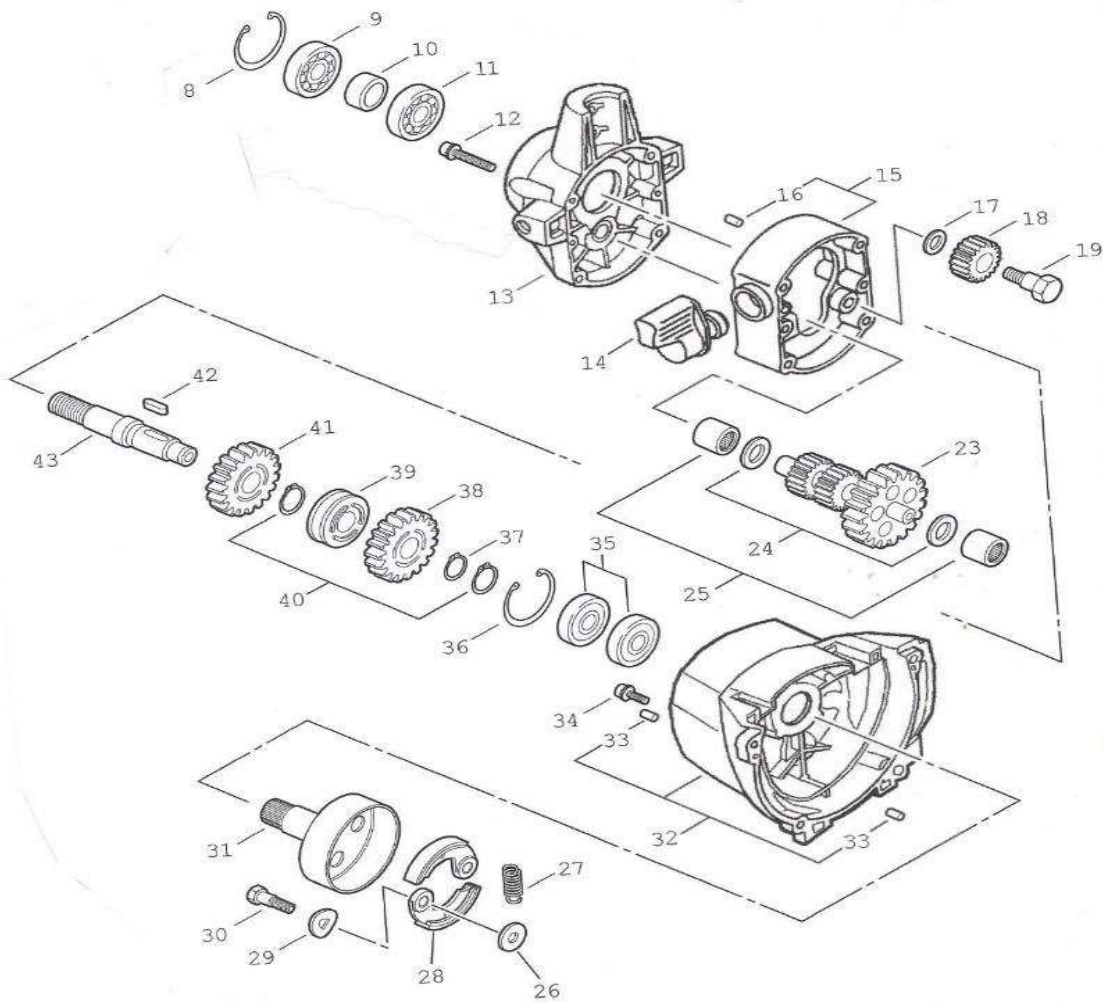
REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	A052000030	STARTER PAWL ASSY.	1
2	90070000004	RING, RETAINING-4	2
3	17723440630	SPRING, RETURN	2
4	17721840630	PAWL, STARTER	2
5	90050200008	NUT-8	1
6	17720055931	STARTER ASSY.	1
7	90056500005	NUT-5	1
8	17724611120	RETAINER, ROPE	1
9	17722827030	GRIP, STARTER	1
10	17722742030	GUIDE, ROPE	1
11	17722603930	ROPE, STARTER	1
12	17723644330	SCREW	1
13	17721540630	REEL, ROPE	1
14	17722040630	SPRING, REWIND	1
15	90016204014	SCREW-4X14	4
16	99944445000	ROPE, STARTER	1



REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	16201056430	LEAD, IGNITION	1
2	90016205016	SCREW-5X16	2
3	A411000110	COIL, IGNITION	1
4	90051500008	NUT	1
5	A409001191	FLYWHEEL	1
6	15901019830	SPARK PLUG	1
7	A425000000	SPARK PLUG	1
8	A429000000	COVER, SPARK PLUG CAP	1
9	A427000013	CAP, SPARK PLUG	1
10	A426000010	TERMINAL, SPARK PLUG CAP	1
11	15011242030	COVER, IGNITION	1
12	90152	TUNE-UP KIT	1



REF NO.	PART NUMBER	DESCRIPTION	QTY.
1	P021040030	CAP ASSY.	1
2	V107000150	GASKET	1
3	13105156030	CONNECTOR CAP	1
4	90023905016	SCREW-5X16	3
5	A350000660	FUEL TANK ASSY.	1
6	13104528230	SLEEVE	1
7	V471003710	PIPE 3X5	1
8	V471000110	PIPE 3X6	1
9	A356000031	VENT-FUEL TANK	1
10	V490001230	CLIP 6.5	3
11	13201256030	PIPE 3X6	1
12	13211555930	GROMMET	1
13	V186000520	CONNECTOR, FUEL PIPE	1
14	13201056030	PIPE 3X6	1
15	13120519832	FILTER,FUEL	1
16	90152	TUNE UP KIT	1
16B	90008	FILTER KIT	1
17	90248	CAP AND VENT KIT	1



<u>REF NO.</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
8	90070200032	RING, RETAINING	1
9	90080206002	BEARING, BALL	1
10	60404405560	COLLAR	1
11	90080036002	BEARING, BALL	1
12	90016205050	SCREW-5X55	4
13	C531000182	CASE, GEAR	1
14	70300520960	LEVER, CLUTCH	1
15	P021005801	GEAR CASE ASSY.	1
16	90033040080	PIN, LOCATING	2
17	V3050000020	WASHER	1
18	V650000150	GEAR, SPUR	1
19	V2040000070	BOLT, SHAFT	1
20	90010010015	BOLT-10X15	1
23	P021005820	GEAR ASSY.	1
24	60422305560	WASHER	2

25	60422105560	BEARING, NEEDLE	2
26	17504805530	WASHER	2
27	V451000090	SPRING, CLUTCH	1
28	A553000010	SHOE, CLUTCH	2
29	17504956030	WASHER, SPRING	2
30	17504656030	BOLT, SHAFT	2
31	A556000250	DRUM, CLUTCH	1
32	P021005831	FAN CASE ASSY.	1
33	90033040080	PIN, LOCATING	4
34	90016205018	SCREW-5X18	4
35	90080106002	BEARING, BALL	2
36	90070200032	RING, RETAINING	1
37	90070100012	RING, RETAINING	1
38	V650000140	GEAR, SPUR	1
39	P021005840	CAM, CLUTCH ADJUSTER	1
40	90070100015	RING, RETAINING	2
41	V650000130	GEAR, SPUR	1
42	90032504016	KEY-4X16	1
43	60602120960	SHAFT, GEAR	1

