



SAND MAN

INSTRUCTION & PARTS MANUAL



MODEL 850

MACHINE SERIAL NUMBER

CATALOG 85-04039

IMPORTANT SAFETY INFORMATION FOR SAND MAN OWNERS, OPERATOR EMPLOYERS AND OPERATORS

1. Do not allow individuals to operate the Sand Man without first receiving personalized training and ensuring that they have read this manual.
2. Before each operation of the Sand Man, make a careful visual inspection of the machine. Do not operate if you observe damaged or missing parts, missing guards, excessive wear or unusual noise or vibration during startup.
3. Never allow a bystander to approach the operating Sand Man.
4. Do not attempt to clear large obstacles from the path of the Sand Man. Stop the Sand Man, turn it off and manually remove obstacles.
5. Never attempt to clear a jam by placing hands or any part of the body into or near the machinery which has not been completely shut down. A jammed shaker component can immediately jump into motion and cause serious injury to hands or other body parts in immediate contact with the components if the engine is running.
6. Follow OSHA regulations regarding fire safety, guarding and if applicable, lock-out/tag/out procedures.
7. Before conducting any repair or maintenance on the Sand Man, insure that the engine is OFF, not just in neutral, and examine the machine carefully to assure that:
 - (a) All sources of power have been locked in the Δ OFF@ position and tagged.
 - (b) No flames are present.
 - (c) Engine has been cooled.
8. Never allow one person to operate the controls of the Sand Man while another has any part of their body in or near a pinch point or machinery element from which a guard has been removed.
9. Do not operate the Sand Man on a steep incline, extremely irregular surface or unstable surface. The Sand Man can capsize and cause serious injury or death to the operator or nearby persons.
10. Never modify any part of the Sand Man without prior approval, in writing, from the manufacturer.
11. Never replace any components of the Sand Man with one which is not manufactured by H. Barber & Sons, Inc., or listed in this manual as a proper replacement part.

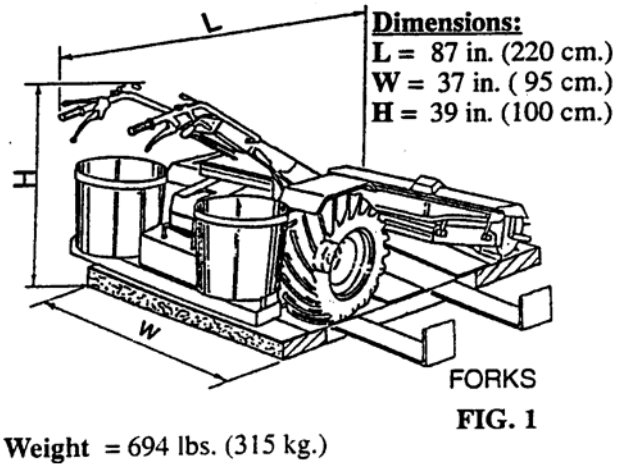
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Description

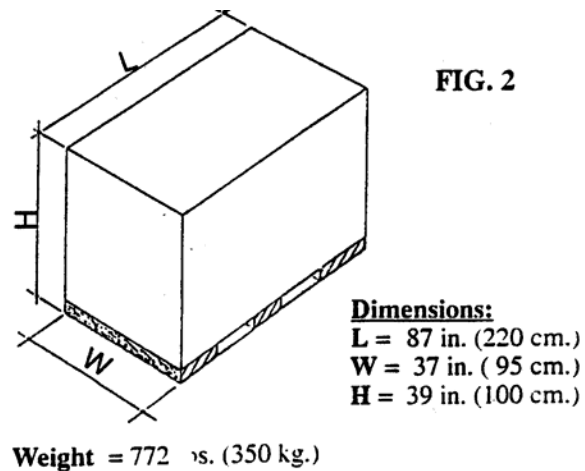
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1.0 PACKING – HANDLING – TRANSPORT

The machine is packed on a wooden pallet, fastened and protected with plastic (Fig. 1)



OR in a wood crate set on a pallet (Fig. 2).



The machine can be lifted either by means of a forklift or, by two (2) rings on top center of frame (Fig. 3)

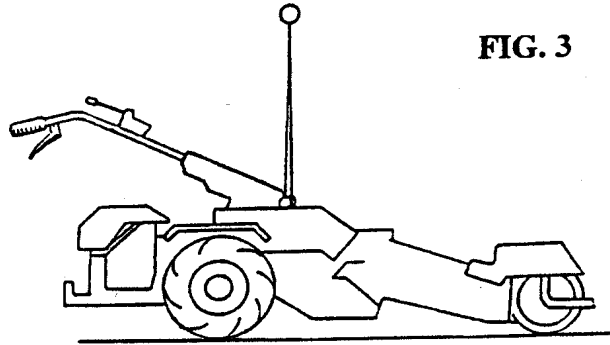


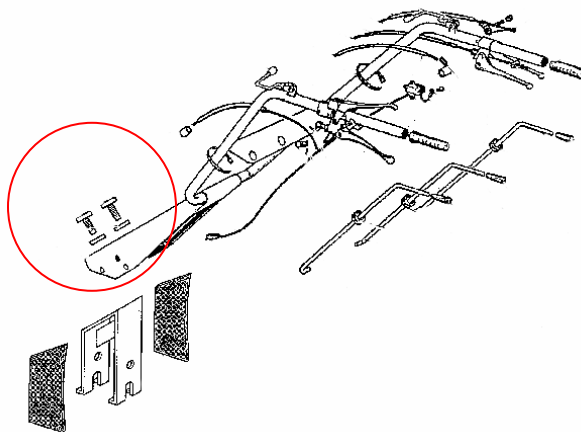
FIG. 3

Upon demand or in case of export, a special packing has been designed (fig. 2), consisting of one wooden crate, set on a pallet.

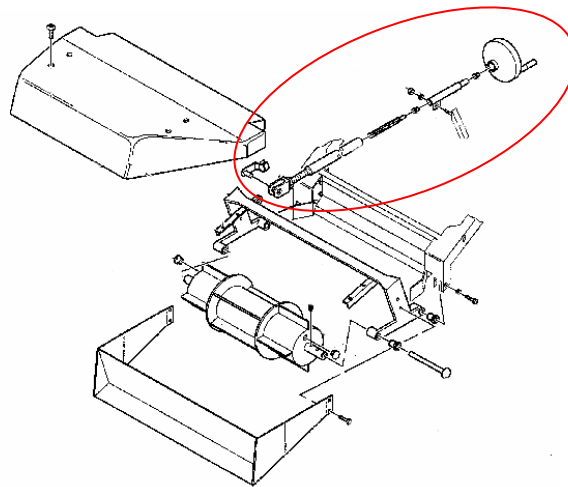
ATTENTION!

Use suitable lifting means with higher capacity than the machine weight.

In the case of packing in a wooden crate, the handlebars of the machine will need to be fitted onto the machine. To install the handlebars, remove the two screws located at the top center of the machine.



Pull the handlebars back (toward you) into position. Replace screws and tighten. *You will also need to connect the hand wheel and arm. Remove the nut and washer from the machine. Connect the end of the arm to the bar by the front roller with snap pin. Attach the upper part of the arm to the stud on the machine with the washer and locking nut.*



2.0 DESCRIPTION OF THE MACHINE

The machine has four major sections

- a) engine
- b) gearbox unit
- c) control unit
- d) vibrating unit

It is delivered complete and ready to operate. Fuel must be added. The principle is the vibrating screen. The SAND MAN uses a vibrating screen to separate out unwanted debris.

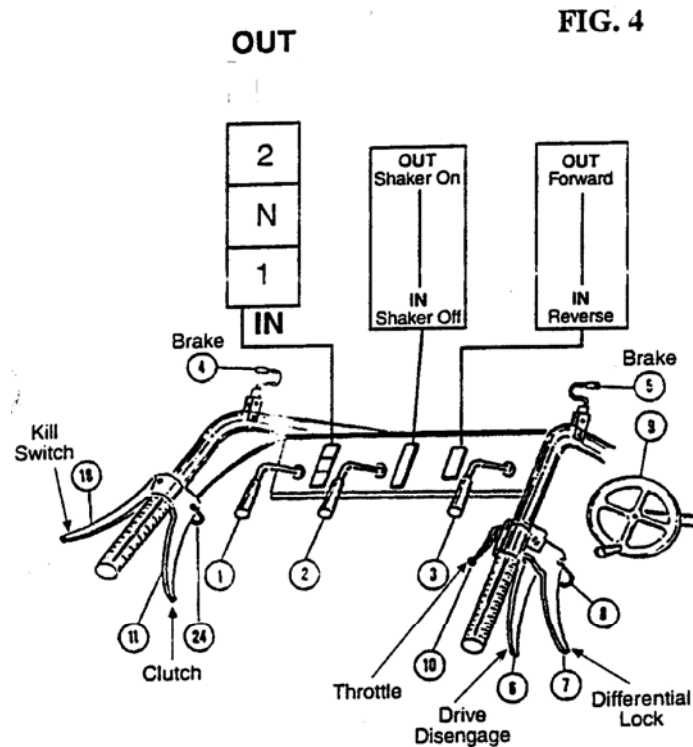
3.0 CORRECT USE OF THE MACHINE

The machine has been designed for the cleaning of sandy areas.

IMPORTANT!!

The machine shall be driven exclusively by a skilled operator, who shall be at least 18 years old, shall carry out the cleaning operations in areas where no one is present, and shall be sure that no people are close to the machine before carrying out the operation. Those present shall be at least ten feet (three meters) from the machine itself.

The machine operator should **never leave the machine unattended** and during his absence, even though for a short while, he should **always stop the machine** according to the following instructions (see Fig. 4)



- a) lower the plow-share blade onto the ground by means of the depth control wheel (9)
- b) reduce the throttle lever (10)
- c) release the safety lever (18)
- d) close the engine fuel cock

ATTENTION!

The operator shall wear working shoes and gloves.

4.0 SAFETY DEVICES (Fig. 4)

While operating, the operator shall keep the kill switch (18) steadily engaged.
All safety shielding must be in place when operating the machine.

5.0 BEFORE OPERATING

Before carrying out any operation or starting the engine, it is necessary to carry out the checks below:

- a) correct oil levels in all the parts of the machine and of the engine
- b) gearshift lever (1) in neutral position
- c) reversing gear lever (3) in neutral position
- d) powergear lever (2) in neutral position
- e) clutch lever (11) pulled and locked by means of the hook (24)
- f) safety lever (18) lowered and locked by the clutch lever

then:

- a) start the engine, as per manufacturer's instruction contained in the enclosed "owners manual"
- b) set the engine at slow running (level 10)
- c) pull the clutch lever (11) with your left hand
- d) select direction (FORWARD/REVERSE) by means of the reversing gear lever (3)
- e) engage the desired gear by means of the gearshift lever (1)
- f) slowly release the clutch lever (11) and at the same time engage the accelerator lever (10), as to achieve the desired running speed of the machine.

IMPORTANT!!

The differential lock of the machine is engaged by lever (7).

It should be used only when it is necessary to lock the differential, if wheel slippage occurs.

6.0 STOP MACHINE

- a) set the engine to slow running (lever 10)
- b) release the safety lever (18)
- c) close the fuel cock of the engine

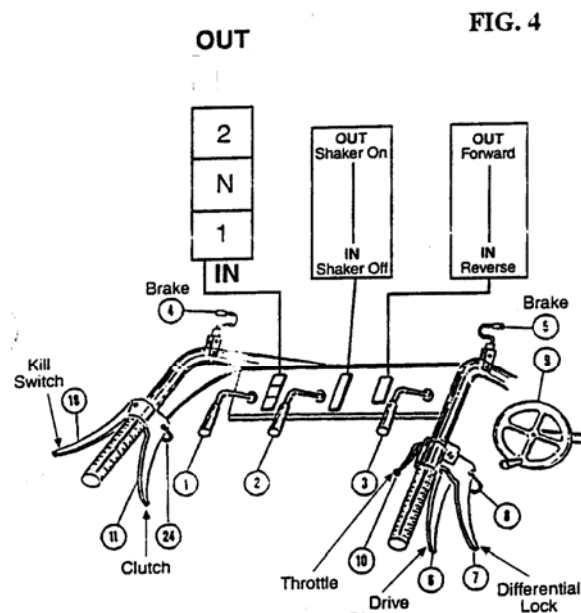
IMPORTANT!!

To move the machine without starting the engine, pull the drive disengage lever (6).

7.0 DEPTH ADJUSTMENT

To lower the cutting edge, turn the depth-control wheel (9) clock-wise. To lift the cutting edge, turn the wheel (9) **counter clockwise**.

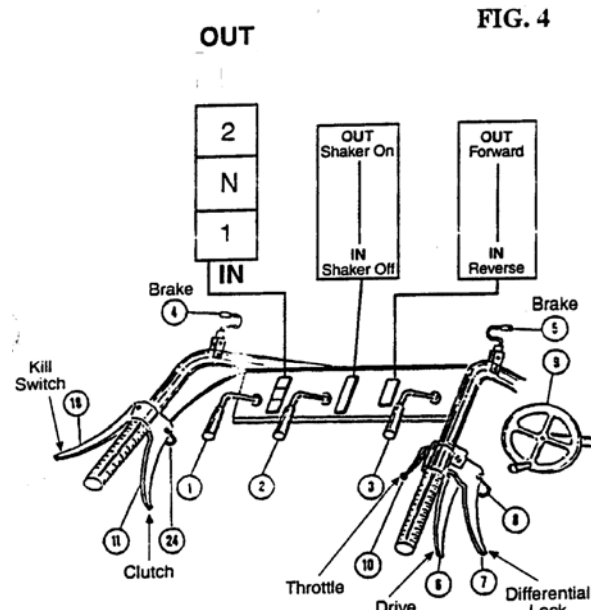
8.0 SIEVE OPERATION



Start the machine as per procedure (see point 5.0), then:

- pull the clutch lever (11)
- engage the power lever (2)
- release clutch and gradually lower the cutting edge by means of the depth-control wheel (9) in such a way to keep constant the sand loading on the screen.

For this purpose it is necessary to adjust the swinging frequency of the screen by means of the throttle lever (10) **making sure that the waste material only falls into the waste collecting box.**



If all the sand is not being sifted through the screen and is reaching the hopper:

- a) pull the clutch lever (11) which will stop the forward motion on the machine and allow the screen to process through the excess sand.
- b) reduce cleaning depth by turning the depth control wheel (9) counterclockwise.

9.0 CHANGE OF DIRECTION

Pull the brake lever (4) to direct the machine to your **left-hand**
 Pull the brake lever (5) to direct the machine to your **right-hand**

To make a "U" turn, lift up the cutting edge by means of the depth control wheel (9) or by leaning on the machine to lift the front end before pulling brake levers (4) or (5).

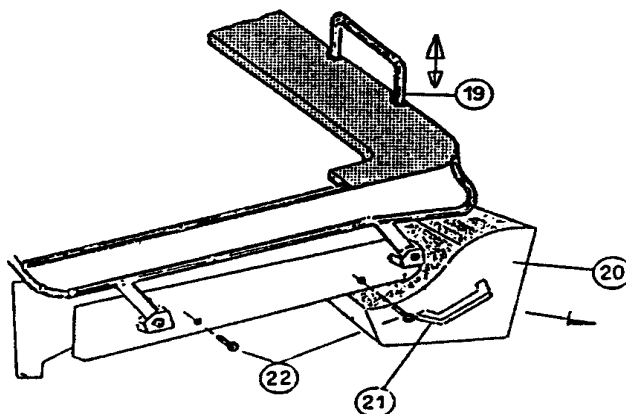
10.0 EMPTYING OF THE COLLECTING-BOX

When the collecting box is full, the machine shall be stopped before emptying it:

- a) set the engine at slow running (lever 10)
- b) pull the clutch lever (11) and block it by means of the hook (24)
- c) block the safety lever (18) by means of the clutch lever (11)
- d) disengage the gearshift lever (1) as well as the power lever (2)
- e) lift-up the plow share

then:

FIG. 6



- 1) disengage lever (19) by lifting it up
- 2) remove the container (20) laterally by means of the handle (21)
- 3) empty it
- 4) reposition the container by laying the gear guide onto the raceway (in order to simplify the introduction, the box shall be a bit tilted)
- 5) engage the lever (19) in order to lock the whole unit

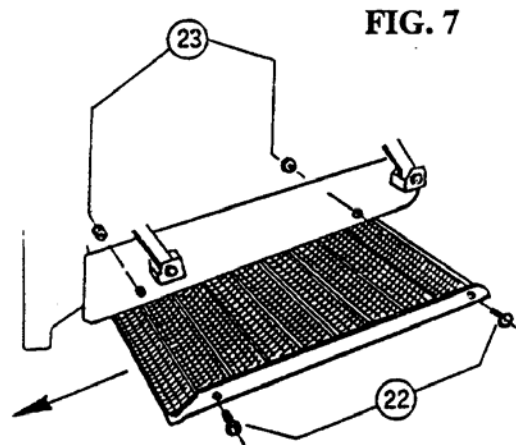
11.0 CHANGING SIEVE

The operation should be carried out with the machine stopped, the cutting edge lifted and the engine off.

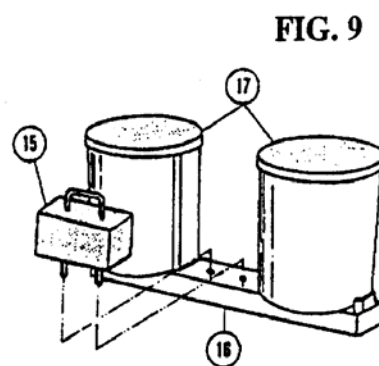
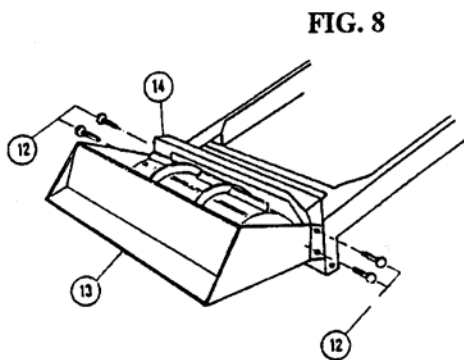
- a) unscrew the four bolts (22)
- b) remove screen
- c) install new screen
- d) replace bolts and tighten securely

IMPORTANT!!

When changing the screen, make sure that the coupling is done correctly: the short net shoulder should be on the blade side (fig. 7)



12.0 ACCESSORIES (Fig. 8) & (Fig. 9)



The machine can be supplied with a front SCRAPER and its counterweight.

To couple the scraper to the machine:

- a) unscrew the four bolts (12) from the front-roller support (14)
- b) line up holes in scraper (13) with frame
- c) insert bolts and tighten securely
- d) put the counterweight (15) on the rear bar (16)

The working depth adjustment is made by means of the wheel (9 – fig. 5)

ATTENTION!!

The operation shall be carried out with the machine stopped, the plow-share lifted-up and the engine stopped.

13.0 MAINTENANCE

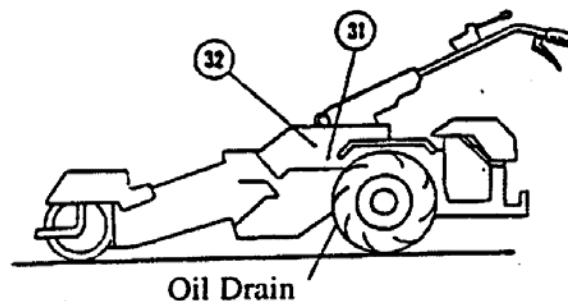
13.1 CLUTCH

It is **CRUCIAL** that the clutch cable be adjusted correctly. If it is too loose the clutch will not disengage properly. If it is too tight the clutch will slip unnecessarily causing premature wear.

13.2 GEAR BOX SERVICE

Change the oil in the gearbox after the first 100 hours of service and every 300 hours thereafter, use SAE 40 transmission fluid. Volume = 70oz. (fig. 10)

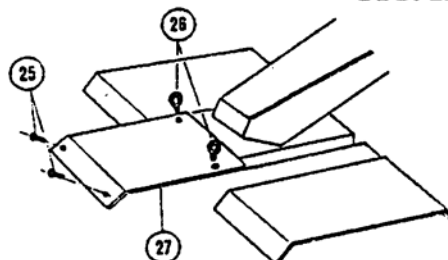
FIG. 10



13.3 BELT AND PULLEYS UNIT

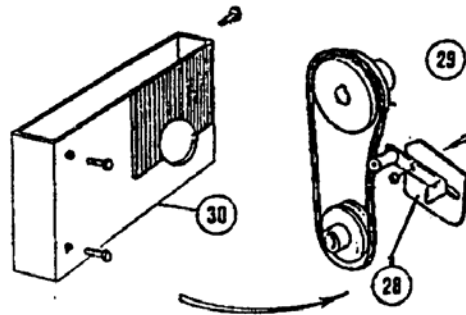
- a) To inspect, replace or tighten the drive belt, remove upper cover (27). (fig. 11)

FIG. 11



- b) Remove protective shield (30). Loosen bolt (29) and adjust pulley arm (28) by HAND, tight. Do not over tighten, this belt must slip if drive is overloaded (fig. 12)

FIG. 12



OR

- c) If unit is supplied with an automatic belt tensioner, replace belt if inspection reveals belt loose beyond ability of automatic tensioner.

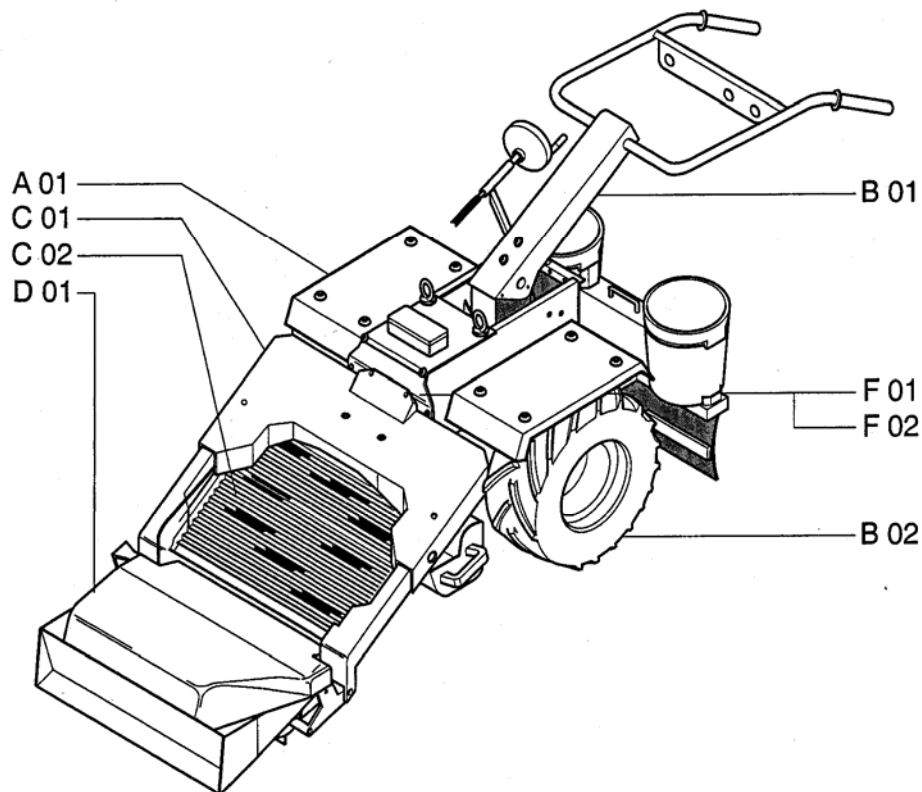
13.4 ENGINE AND AIR-FILTER

Carefully follow the instructions contained in the owner's manual issued by the engine manufacturer.

ATTENTION!!

All the operations above must be carried out with the machine stopped, the cutting edge elevated and the engine off.

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TELAIO
FRAME
CHASSIS
ARMADURA

B 01

GRUPPO COMANDI
CONTROLS UNIT
GROUPE COMMANDES
GRUPO MANDOS

B 02

COMANDO FRENO
CONTROL BRAKE
COMMANDE FREIN
MANDO FRENO

C 01

GRUPPO SETACCIO
SIEVE UNIT
GROUPE PASSOIRE
GRUPO TAMIZ

C 02

GRUPPO SETACCIO
SIEVE UNIT
GROUPE PASSOIRE
GRUPO TAMIZ

D 01

GRUPPO FRONTALE
FRONT UNIT
GROUPE ANTERIEUR
GRUPO ANTERIORE

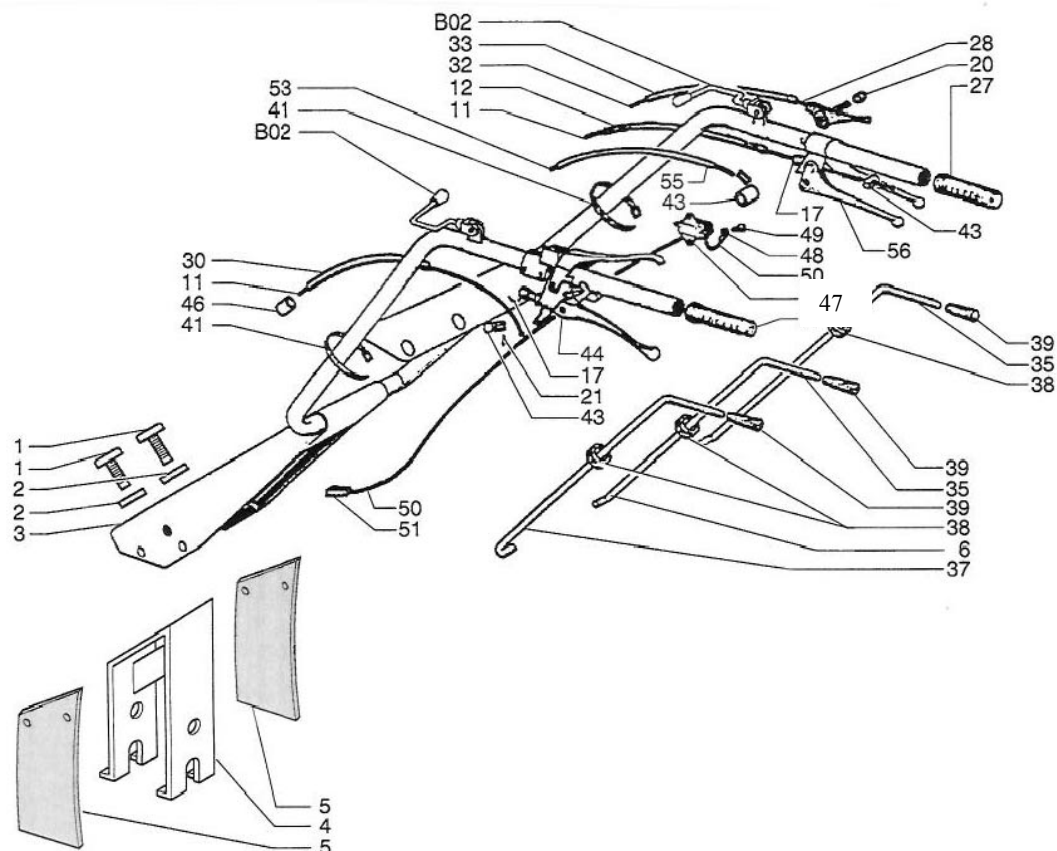
F 01

GRUPPO TRASMISSIONE
TRANSMISSION UNIT
GROUPE TRANSMISSION
GRUPO TRANSMISION

F 02

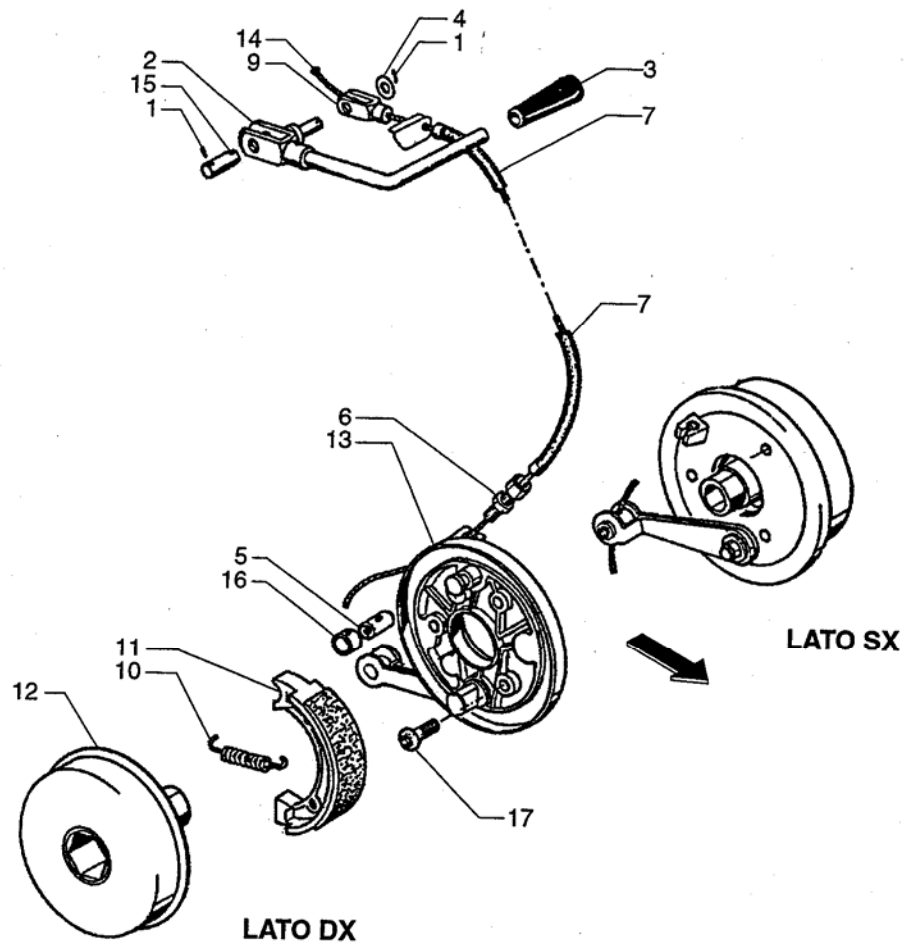
GRUPPO TRASMISSIONE
TRANSMISSION UNIT
GROUPE TRANSMISSION
GRUPO TRANSMISION

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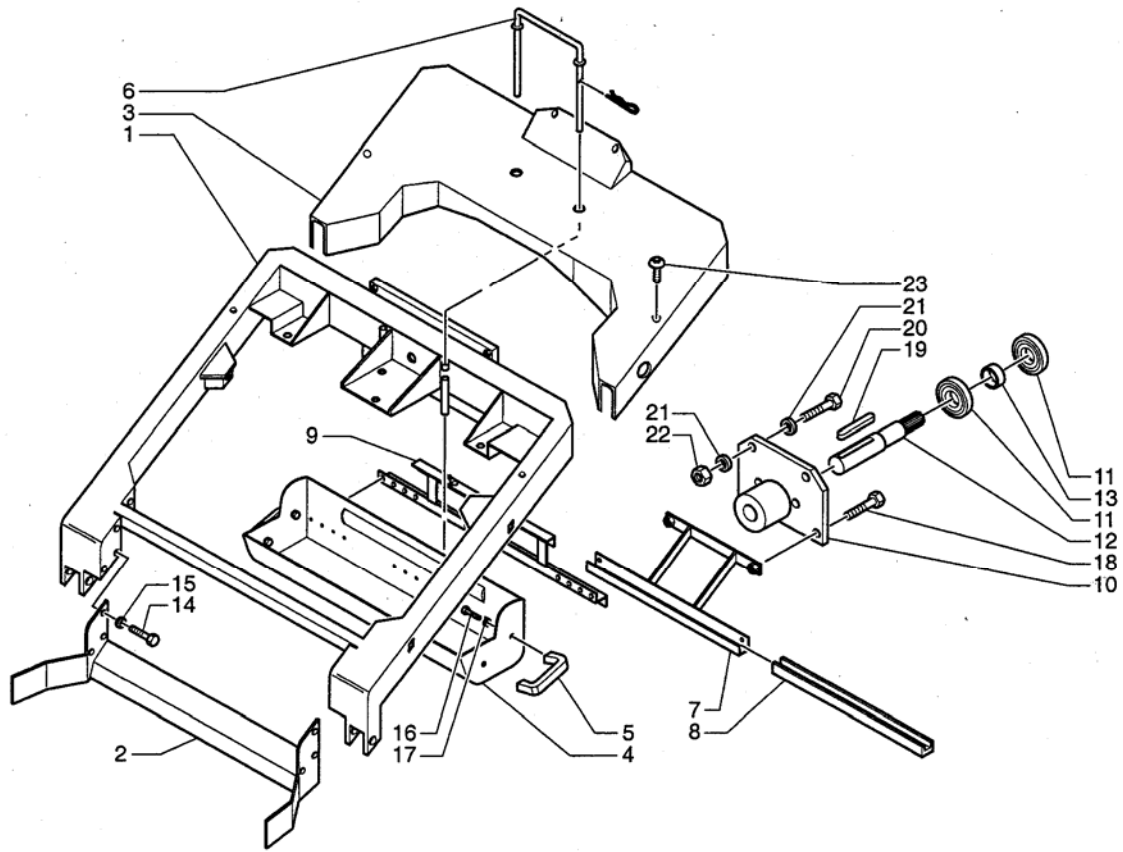


POSITION	PART NUMBER	DESCRIPTION
1	85-911283	Screw
2	85-911282	Washer
3	85-911273	Handlebar
4	85-10030	Support
5	85-10031	Shield
6	85-911281C	Rod
11	85-915086	Cable
12	85-908096A	Sheath
17	85-907025	Regulator
20	85-903162	Nut
21	85-903118	Split Pin
27	85-903108	Knob
28	85-903065	Throttle Control
30	85-911323	Sheath
32	85-903066	Cable
33	85-906036	Sheath

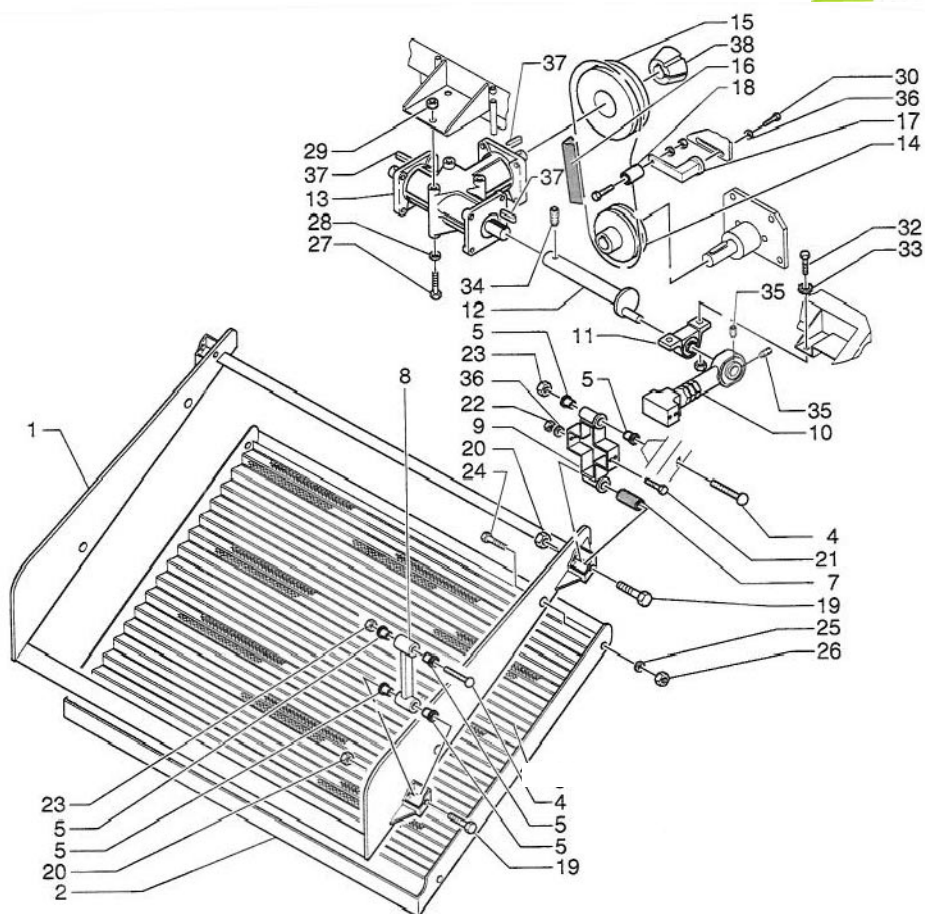
POSITION	PART NUMBER	DESCRIPTION
35	85-911279	Tie-Rod
37	85-911280	Tie-Rod
38	85-911087	Rubber Ring
39	85-908101	Knob
41	85-902831	Collar
43	85-913044	Ratchet
44	85-909343	Lever
46	85-904072	Clamp
47	85-909349-XX	Switch Assembly
48	85-902625	Cable lug
49	85-907187	Screw
50	85-903168	Cable
51	85-909141	Terminal Connector
53	85-902705	Cable
55	85-908096	Sheath
56	85-911215	Level Control



POSITION	PART NUMBER	DESCRIPTION
1	85-903118	Split Pin
2	85-911243	Lever
3	85-903045	Knob
4	85-907146	Washer
5	85-905133A	Clamp
6	85-907025	Regulator
7	85-908223	Sheath
9	85-911245A	Fork-Lever
10	85-904117A	Spring
11	85-905341A	Brake Jaw
12	85-911246B	Drum
13	85-911246A	Disc
14	85-905265	Cable
15	85-904558	Pin
16	85-905133B	Bushing
17	85-911214A	Bolt

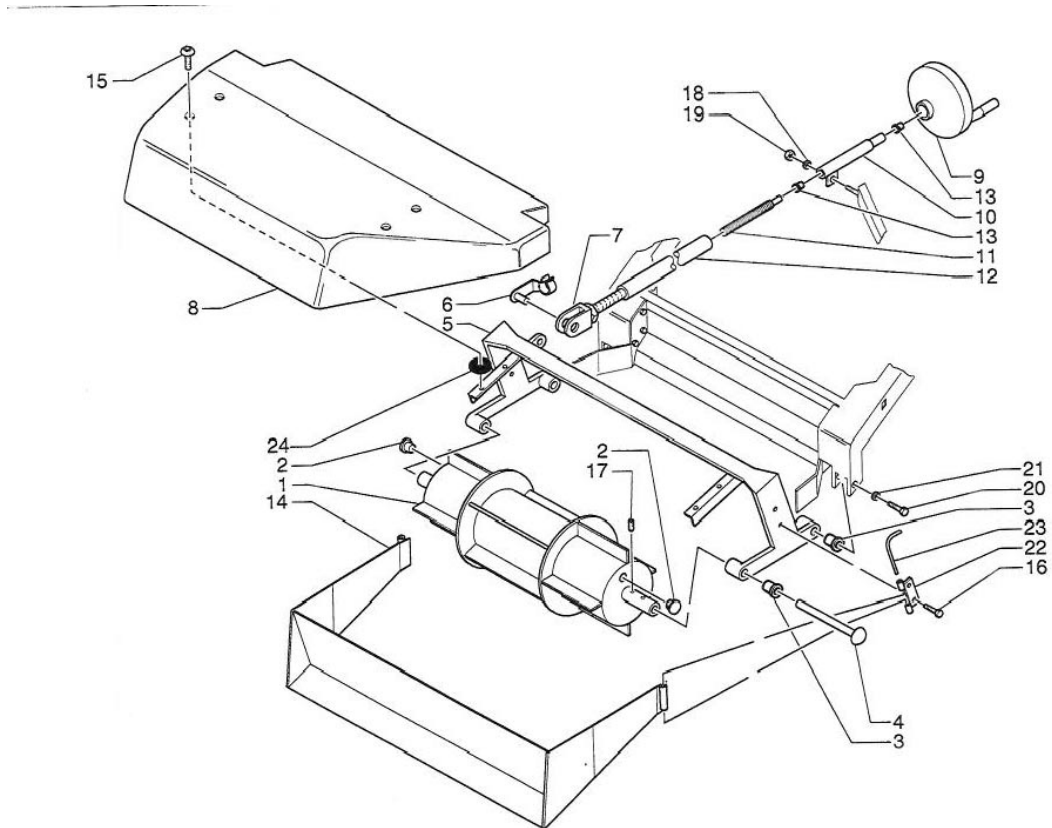


POSITION	PART NUMBER	DESCRIPTION
1	85-10060	Frame
2	85-10061	Cutter Blade
3	85-10062	Engine Hood
4	85-10063	Basket
5	85-10064	Basket Handle
6	85-10065	Engine Hood Handle
7	85-10066	Basket Support
8	85-10067	Guide
9	85-10068	Basket Frame
10	85-10069	Support
11	85-10070	Bearing
12	85-10071	Shaft
13	85-10072	Spacer
14	85-50011	Bolt
15	85-50012	Washer
16	85-50011	Bolt
17	85-50013	Washer
18	85-50007	Bolt
19	85-50014	Spline
20	85-50015	Bolt
21	85-50016	Washer
22	85-50009	Nut
23	85-50005	Screw
24	85-50114	Cotter Pin
25	85-50076	Washer

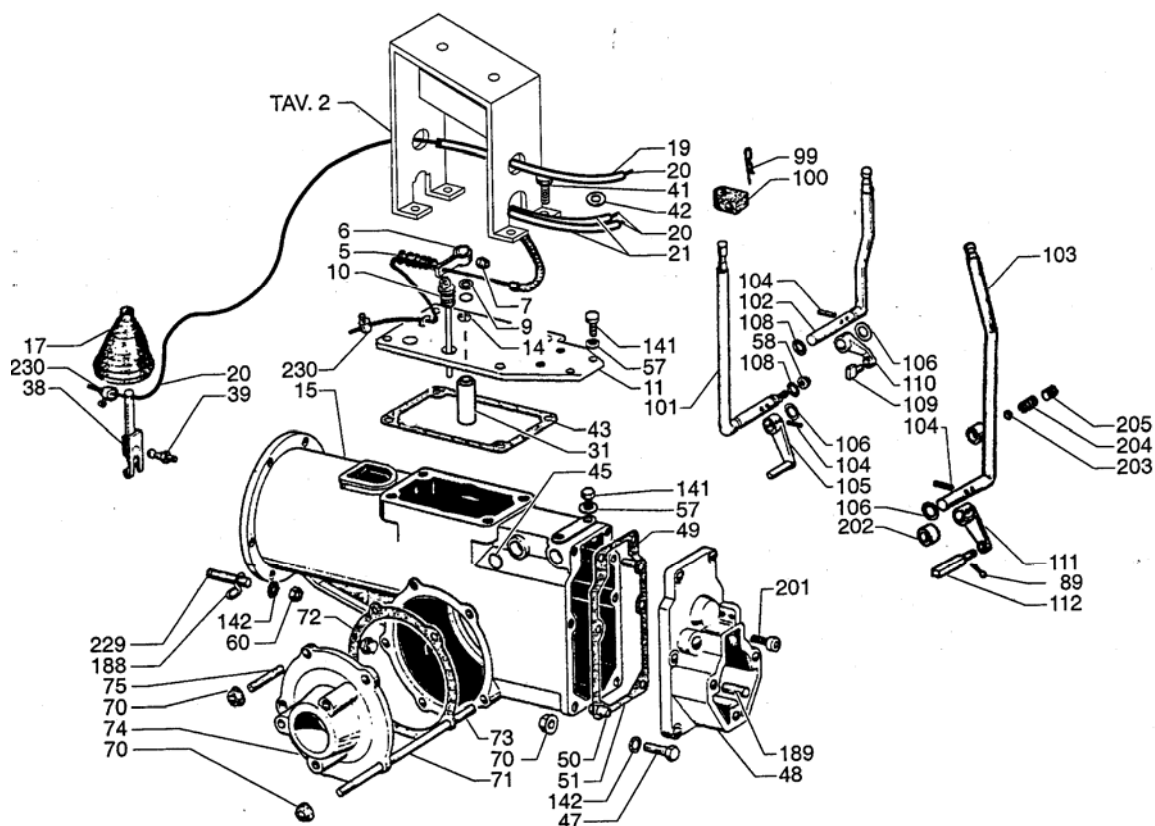


POSITION	PART NUMBER	DESCRIPTION
1	85-10100	Frame
2	85-10120-3	XXS Small Sieve Assy.
	85-10120-5	XS Small Sieve Assy.
	85-10120-8	S Small Sieve Assy.
	85-10120-12	M Medium Sieve Assy.
	85-10120-20	Large Sieve. Assy.
3	Intentionally	Left Blank
4	85-10103	Pin
5	85-10082	Bushing
6	Intentionally	Left Blank
7	85-10105	Silent-Block
8	85-10106	Arm
9	85-10125	Arm
10	85-10126	Arm
11	85-10109	Support
12	85-10110	Shaft
13	85-10111	Idle
14	85-10112	Pulley
15	85-10128	Pulley
16	85-10114	Belt
17	85-10127	Support

POSITION	PART NUMBER	DESCRIPTION
18	85-10116	Roller
19	85-50020	Bolt
20	85-50021	Nut
21	85-50132	Bolt
22	85-50131	Nut
23	85-50021	Nut
24	85-50024	Bolt
25	85-50016	Washer
26	85-50009	Nut
27	85-50025	Bolt
28	85-50016	Washer
29	85-50009	Nut
30	85-50134	Bolt
31	Intentionally	Left Blank
32	85-50027	Bolt
33	85-50028	Washer
34	85-50029	Screw
35	85-50018	Screw
36	85-50133	Washer
37	85-50135	Spline
38	85-10129	Busting

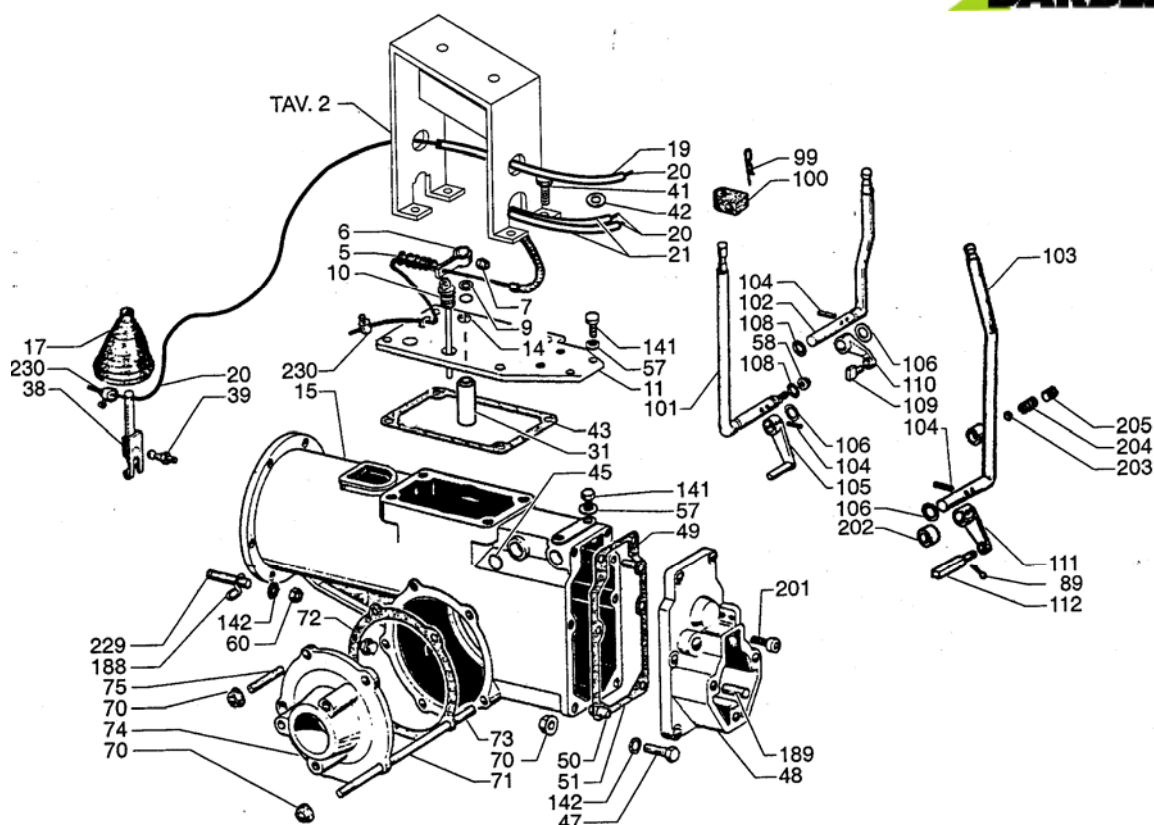


POSITION	PART NUMBER	DESCRIPTION
1	85-10080	Roller
2	85-10081	Plug
3	85-10082	Bushing
4	85-10083	Pin
5	85-10084	Rocker Arm
6	85-10085	Pin
7	85-10086	Fork-lever
8	85-10087	Engine Hood
9	85-10088	Handwheel
10	85-10089	Guide
11	85-10090	Worm screw
12	85-10091	Rod
13	85-10092	Bushing
14	85-10093	Cutter Blade
15	85-50005	Screw
16	85-50017	Bolt
17	85-50018	Screw
18	85-50002	Washer
19	85-50019	Nut
20	85-50020	Bolt
21	85-50021	Nut
22	85-10121	Connection
23	85-10122	Pin
24	85-10124	Washer

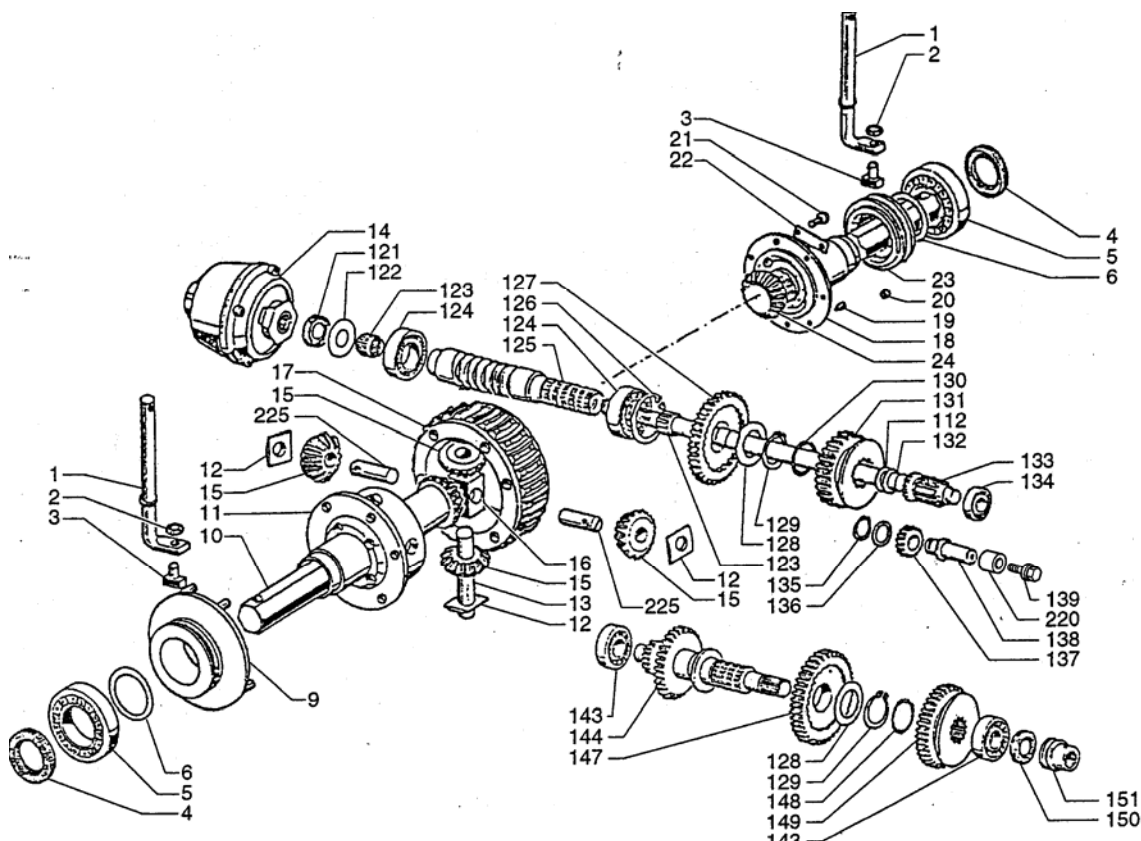


POSITION	PART NUMBER	DESCRIPTION
5	85-902593	Spring
6	85-911257	Lever
7	85-903116	Nut
9	85-911285	Pad
10	85-911089	Plug
11	85-911275	Covering
14	85-908058	Ring
15	85-911003	Crankease
17	85-911037	Boot
19	85-911323	Sheath
20	85-915086	Cable
21	85-904081	Sheath
31	85-911144	Support
38	85-911159	Lever
39	85-905060	Screw
41	85-911136	Screw
42	85-906168	Washer
43	85-911040	Gasket

POSITION	PART NUMBER	DESCRIPTION
45	85-911095	Plug
47	85-907133	Screw
48	85-911005	Covering
49	85-911262	Threaded Rod
50	85-902668	Guide Pin
51	85-911042	Gasket
57	85-907146	Washer
58	85-903061	Nut
60	85-907053	Nut
70	85-909080	Nut
71	85-911076	Stud
72	85-908088	Split Pin
73	85-911041	Articulation
74	85-911242	Lever
75	85-908086	Lever
89	85-93118	Guide Pin
99	85-911062	Guide Pin

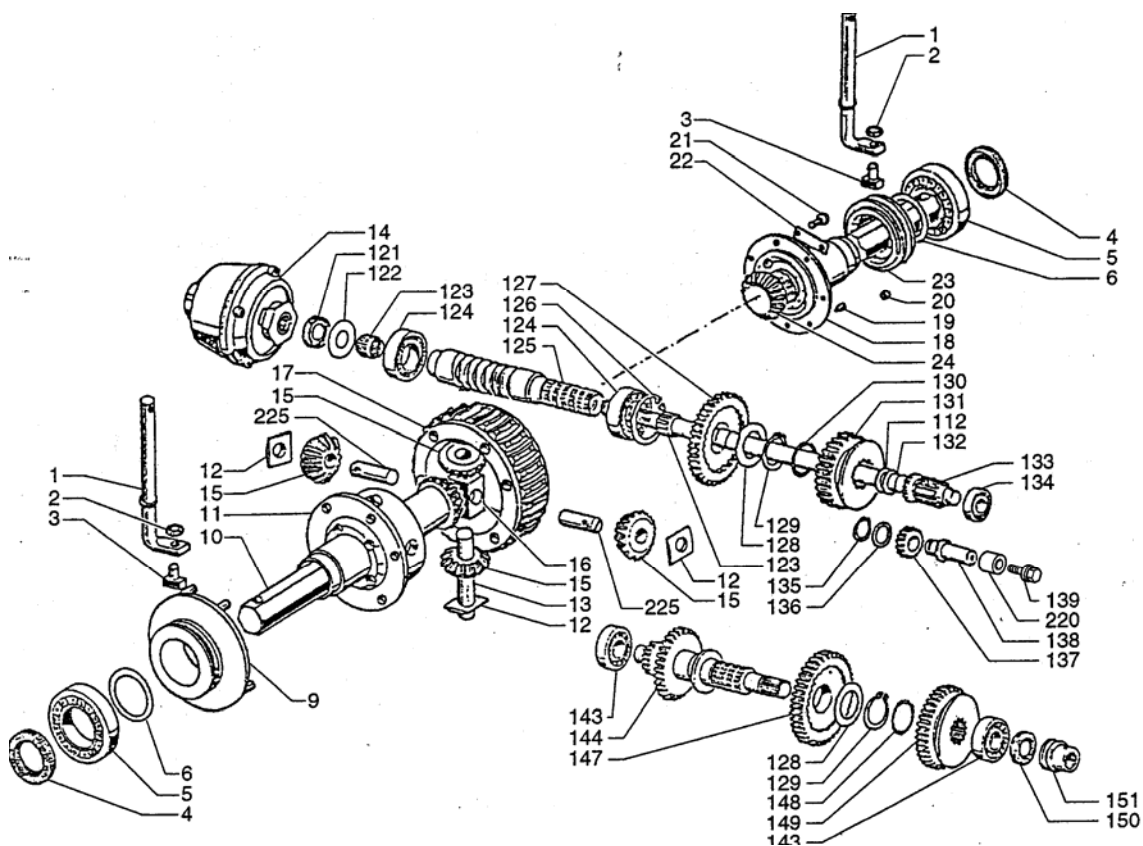


POSITION	PART NUMBER	DESCRIPTION
100	85-911045	Articulation
101	85-911134	Lever
102	85-911135	Lever
103	85-911052	Lever
104	85-911083	Guide pin
105	85-911025	Lever
106	85-902666	Pad
108	85-903010	Ring
109	85-904024	Sliding Pad
110	85-911024	Lever
111	85-911023	Lever
112	85-911026	Sliding Pad
141	85-907191	Screw
142	85-909371	Washer
188	85-908626	Eyelet
189	85-911248	Stud
201	85-911128	Screw
203	85-97044	Ball
204	85-94116	Spring
205	85-97007	Dowell
207	85-97104	Screw
229	85-908086	Stud
230	85-907094	Clamp



POSITION	PART NUMBER	DESCRIPTION
1	85-911259	Lever
2	85-911263	Washer
3	85-906113	Sliding Pad
4	85-903024	Rubber Ring
5	85-911267	Bearing
6	85-903030	Pad
9	85-911258	Slider
10	85-911255	Crown Wheel
11	85-911251	Diff. Gears and case
12	85-908575	Washer
13	85-908028	Pin
14	85-911035	Clutch
15	85-908652	Idle pinion
16	85-908650	Sector
17	85-911250	Diff. Wheel
18	85-911252	Covering
19	85-908120	Dowel
20	85-911270	Ball

POSITION	PART NUMBER	DESCRIPTION
21	85-903037	Screw
22	85-908100	Plate
23	85-908026	Hose
24	85-911254	Crown
109	85-909189	Spring
110	85-906146	Ball
112	85-911072	Shim
121	85-911067	Rubber Ring
122	85-911063	Shim
123	85-911073	Bearing
124	85-904033	Bearing
125	85-911007	Screw
126	85-904413	Stop Ring
127	85-911008	Gear
128	85-908124	Shim
129	85-904217	Stop Ring
130	85-911071	Ring
131	85-911009	Gear



POSITION	PART NUMBER	DESCRIPTION
132	85-911032	Pad
133	85-911006	Shaft
134	85-907092	Bearing
135	85-902653	Stop Ring
136	85-906062	Pad
137	85-911015	Gear
138	85-911014	Pin
139	85-902686	Screw
143	85-907114	Bearing
144	85-911010	Shaft
147	85-911011	Gear
148	85-911094	Ring
149	85-911012	Gear
150	85-911068	Rubber Ring
151	85-911013	Hose
220	85-911112	Washer
225	85-908651	Pin

Barber SAND MAN Engine Maintenance Schedule

Regular Service Period		Each Use.	First Month or 20 Hrs.	Every 3 Month or 50 Hrs.	Every 6 Month or 100Hrs.	Every Year or 300 Hrs.
Performed at every indicated month or Operating hour interval, whichever comes first.						
Item						
Engine Oil	Check Level	X				
	Change		X		X	
Air cleaner	Check	X				
	Clean			X (1)		
Sediment cup	Clean				X	
Spark plug	Check-Clean				X	
Valve Clearance	Check-Adjust					X (2)
Fuel Tank and Strainer	Clean					X (2)
Fuel Line	Check (Replace if Necessary)	Every 2 Years (2)				

NOTE: (1) Service more frequently when used in dusty areas.

(2) These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient.

SAND MAN Maintenance Schedule

Regular Service Period		After First 100 Hrs.	First Month or 20 Hrs.	Every 3 Month or 100 Hrs.	Every Year or 300 Hrs.
Performed at every indicated month or Operating hour interval, whichever comes first.					
Item	Page # Part				
Transmission fluid	Check Level			X	
Pg. 11 SAE 40 - 70 oz.	Change	X			X
Belt tension	Check-Adjust		X		
Pg. 12 (Replace if Necessary)					
Belt Tension idler bearing	Check			X	
Pg. C-02 - #18 (Replace if Necessary)					
Tire pressure (7 PSI)	Check				
Brake cable tension	Check Tension -Adjust			X	X
Throttle Cable					
Differential Lock					
Clutch Cable	Lubricate				
Brake Shoes	Check			X	
Pg.B-02 - #11 (Replace if Necessary)					
Front roller bushings	Check			X	
Pg. D-01 - # 3 (Replace if Necessary)					
Sieve bushings	Check		X		
Pg. C-02 - # 5, #6, #7 (Replace if Necessary)					
Sieve bushings	Oil		X		
Pg. C-02 - # 6					
Shaker bearings	Grease		X		
Pg. C-02 - #10					