Howard 350 Rotavator Attachments
Instructions & Parts List

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350 Attachments

Instructions and Parts List

When ordering parts always quote the number of the attachment, the type of attachment and the part number (not the illustration number). The rights to alter and/or amend all designs, specifications and/or prices without prior notice is strictly reserved.

WARNING—ALWAYS STOP ENGINE BEFORE ATTEMPTING TO FIT ANY ATTACHMENT

TRAILER AND PLOUGH HITCH BRACKET

(Parl No. 65517)

To fit this bracket to the '350' be sure that the engine is stopped and proceed as follows.—
(a) Remove the rotor and shield and fit the dust covers over the rotor drive shaft stubs (see Ill. 'A').
(b) Bolt the hitch into position as shown in diagram 'B'. Use the longer bolts provided and one of the bolts removed from the chimney. Once fitted this hitch may be left in position as it does not interfere with other attachments.

(b) Loosen the cotter pin in the right-hand wheel hub and remove the wheel.
(c) Fit the wheel extension (Ill. '43') to the axle exposed, push right home and tighten the cotter pin (Ill. '44').
(d) Fit the wheel to the extension, push right home and tighten the cotter pin.
(e) Bolt the plough hitch (Ill. '1') into position. Use the longer bolts provided and one of the bolts from the chimney as shown in inset 'B'. Once fitted this hitch plate may be left in position as it will not interfere with other attachments.
(f) Remove the retaining pin (Part No. 64469) (Parts List Ill. No. 150) Insert the front weight bearing (Ill. No. 48) between the engine brackets ensuring that the spacer (64391) (Parts List Ill. No. 156) fitted in the machine is in the lower of the two holes provided. Push the beam over the spacer and insert the retaining pin (Part No. 64469). Ensure that the beam is fitted crank upwards.
(g) Fit the ballast weight (Ill. No. '48') to the beam with the '350' mark upright and push it to the rear of the beam and clamp with the set-screw.

Adjustments:
(a) To retain an upright position at work, the plough is adjusted by means of the slotted holes in the plough pivot bracket
(c) The Coulier is adjusted by slackening the two nuts holding the 'U' bolt (Dl) '11'.
(b) Adjustment for furrow depth provided at (E) (Ill. '15').
(c) Adjustment for draught line is provided at (F) (Ill. '29').

TRAILER AND PLOUGH HITCH BRACKET

1 65517 Hitch Bracket
2 S.1110200 Bolt f° UNF, x 4" long
3 S.7110020 Nut f° UNF
4 S.1404070 Setscrew ¼° UNC, x 1½" long, Hex. Head
5 S.8048300 Spring Washer 1½" dia.
6 S.7204030 Nut ¼° UNC, x 1½" long

Note: use 1 off—¼° UNC, x 1½" long setscrew, nut and spring washer, from those removed from chain-case.

PLough

Plough Kit comprising:
Plough hitch assembly (Part No. 65517) complete with five bolts.
Plough assembly
Pivot bracket (Part No. 66332)
Front beam with weight (Part No. 66485'6)
Wheel extension.
To fit the plough to the machine proceed as follows:—
(a) Be sure engine is not running. Remove the rotor and shield and fit the dust covers over the rotor drive shaft stubs.
**PLOUGH**

7  66322 Plough Pivot Bracket ........................................... 1
8  S.1406120 Setscrew \( \frac{1}{4} \) UNC. x 1\( \frac{3}{4} \)" long.  Hex. Head ........................................... 1
9  S.7205010 Nut \( \frac{1}{4} \) UNC ............................................................ 5
10 S.8061140 Spring Washer \( \frac{1}{2} \)" dia ..................................................... 4
11 66342 "U" Bolt ................................................................. 1
12 66342 Clamp Plate ......................................................... 1
13 66341 Couler ................................................................. 1
14 66327 Plough Beam ......................................................... 1
15 66327 Straining Screw—DAVY REF. No. 1379—\( \frac{1}{8} \)" Screw ... ................................................................. 1
16 S.1209130 Bolt \( \frac{3}{4} \) UNC. x 1\( \frac{3}{4} \)" long .................................. 1
17 S.8081160 Flat Washer \( \frac{1}{2} \)" dia ..................................................... 3
18 S.7208020 Nut \( \frac{3}{4} \) UNC. Philadas NUCI .................................. 2
19 10317 Boss ................................................................. 1
20 S.1408220 Setscrew \( \frac{3}{4} \) UNC. x 2\( \frac{1}{2} \)" long. Hex. Head .... 2
21 S.7208020 Locknut \( \frac{3}{4} \) UNC ..................................................... 1
22 66339 Plough ................................................................. 1
23-25 not allocated

**SKID TINE**

A new Skid Tine, \( \frac{1}{2} \)" above the bottom hole in the Depth Control Skid, for a new Skid Tine to increase ground coverage when the machine is used for shallow cultivation. When fitting the time, pointed and facing direction of travel, ensure that it can pivot on the retaining bolt; tighten the Philadas nuts so that the bolts do not drop out, but not so tight that the time is pinched to the skid.

**FURROWER**

To fit the furrowing attachment be certain the engine is stopped and proceed as follows:—
(a) Remove depth control skid.
(b) Remove shield (Parts List III. No. 314 in Machine Instruction Book) by sliding out shield securing pins (64439).
(c) Fit Furrower into depth skid slot and retighten with clip pin provided.
(d) Replace shield.

It is necessary to remove the shield to allow the furrower to be hooked over and into the skid slot.

**SIDE SHIELDS**

When fitting side shields to the rotor shield proceed as follows:—
(a) Identify L. and R. shields, (Ills.38 and 39, L. and R. respectively).
(b) Bolt the shield together with the flanges of the side shields on top of the main shield. It is not necessary to remove the main shield.

**SKID TINE ASSEMBLY**

26  60488 Skid Tine .......................................................... 1
27 S.1206120 Bolt \( \frac{3}{4} \) UNC. x \( \frac{3}{16} \)" long .................................. 2
28 S.7205130 Nut \( \frac{1}{4} \) UNC. Philadas Self-locking GUCP/1 .... 2
29-30 not allocated

**SIDE SHIELDS**

38  65170 Side Shield L.H .................................................. 1
39  65171 Side Shield R.H .................................................. 1
40 S.1206500 Bolt \( \frac{1}{4} \) UNC. x \( \frac{1}{2} \)" long .................................. 4
41 S.8035940 Spring Washer \( \frac{1}{4} \)" dia ..................................... 4
42 S.7205010 Nut \( \frac{1}{4} \) UNC ....................................................... 4
EXTENSION AXLE ASSEMBLY

43 64481 Extension Axle ... ... ... ... ... 2
44 64486 Cotter Pin ... ... ... ... ... 2
45 S.8061210 Flat Washer 1/4" dia. ... ... ... ... 2
46 S.8061440 Spring Washer 1/4" dia. ... ... ... ... 2
47 S.7106010 Nut 1/4" UNF ... ... ... ... ... 2

FRONT WEIGHT ASSEMBLY

48 66185 Weight ... ... ... ... ... 1
49 66186 Weight Beam ... ... ... ... ... 1
50 S.1406120 Setscrew 1/4" UNC x 1 1/2" long, Hex, Head ... ... 1

TOOLBAR FRONT OR REAR FITTING

For front fitting be sure engine is stopped then:
(a) Remove rotor and shields.
(b) Fit dust caps (Parts List Ill, No. 184) to rotor drive shafts.
(c) Remove depth control skid and insert rear tool bar adaptor into skid socket, locate with clip pin provided.
(d) Insert bolt and screw on wing nut at front end of adaptor.
(e) Couple 'A' frame of tool bar to adaptor bracket at pivot plates.
(f) Assemble transverse beams of tool bar under the 'A' frame.
(g) Adjust clamps and stands, etc., to suit row widths.

For front fitting:

(a) Assemble front toolbar adaptor as 90° plough section.
(b) Fit toolbar frame to adaptor as rear fitting instructions.

*The front toolbar adaptor is required to operate Tarpen hedge trimmers and allied cable-driven equipment.
350 Attachments

69200  Pistol Hoe and Stalk Assembly R.H. ... 2
  comprising —

69  69209  Stalk ... 2
70  S.5605110  Coach Bolt \( \frac{3}{8} \)" BSW \( \times \) \( \frac{3}{4} \)" long Cup Square ... 2
71  S.7605160  Square Nut \( \frac{3}{8} \)" BSW ... 2
72  S.8050940  Spring Washer \( \frac{3}{8} \)" dia ... 4
73  S.1605110  Bolt \( \frac{3}{8} \)" BSW \( \times \) \( \frac{3}{4} \)" long ... 4
74  S.7605010  Nut \( \frac{3}{8} \)" BSW ... 2
75  69187  Pistol Hoe R.H.—Close Youle—SH/2702/4l/D1 ... 2
76  69201  Pistol Hoe and Stalk Assembly L.H. ... 2
  comprising —

69  69209  Stalk ... 2
70  S.5605110  Coach Bolt \( \frac{3}{8} \)" BSW \( \times \) \( \frac{3}{4} \)" long Cup Square ... 2
71  S.7605160  Square Nut \( \frac{3}{8} \)" BSW ... 2
72  S.8050940  Spring Washer \( \frac{3}{8} \)" dia ... 4
73  S.1605110  Bolt \( \frac{3}{8} \)" BSW \( \times \) \( \frac{3}{4} \)" long ... 4
74  S.7605010  Nut \( \frac{3}{8} \)" BSW ... 2
77  69188  Pistol Hoe L.H.—Close Youle—SH/2702/4l/D1 ... 2
78  69202  Ducksfoot Hoe and Stalk Assembly ... 2
79  69188  Ducksfoot Hoe and Stalk Assembly ... 2
80  S.5605110  Coach Bolt \( \frac{3}{8} \)" BSW \( \times \) \( \frac{3}{4} \)" long Cup Square ... 2
81  S.7605160  Square Nut \( \frac{3}{8} \)" BSW ... 2
82  S.8050940  Spring Washer \( \frac{3}{8} \)" dia ... 4
83  S.68765  Ducksfoot Hoe—Close Youle CV/135/6 ... 2

WATER PUMP

To fit proceed as follows:

(a) Remove belt guard (Parts List III, No. 84).
(b) Ensure spacer (Parts List II, No. 120) is in the top hole, remove bolt to position as necessary.
(c) Remove retaining pin (Parts List III, No. 114): Slide mounting bracket (III, No. 84) between engine support beams and locate the slot in the end of the beam over the spacer.
(d) Refit retaining pin and locate into beam in hole provided.
(e) Remove quick release screw from clutch bracket and swing the operating arm clear to allow belt to be fitted.
(f) Fit belt from pumps to pulley using the larger pulley on the clutch assembly. If machine drive belt is being used on this pulley either move it to the other pulley or remove it completely.
(g) Adjust the belt by moving the pump forward on the plate—using the four securing bolts and the drilled base plate.
(h) Refit the clutch arm and replace the quick release screw.
(i) The pump will require priming. Uncrew the knurled cap on top of the body—fill with water—replace cap and start up. Be sure there is an airjoint joint on pipe at suction side.

PUMP

81  Pump—Alcon 1½" Mk. III complete with 20 ft. Suction and 20 ft. Delivery Hose and Fittings

82  B.2034160  Elbow—1½" BSP—Crane No. 152 (M/F) ... 1
83  B.4006230  " V" Belt—Fenner Alpha 335 ... 1
84  64946  Pump Adaptor ... 1
85  S.1106130  Bolt 1 ½" UNF \( \times \) \( \frac{3}{4} \)" long ... 4
86  S.8051210  Flat Washer \( \frac{3}{8} \)" dia ... 4
87  S.8061140  Spring Washer \( \frac{3}{8} \)" dia ... 4
88  S.7106010  Nut 1 ½" UNF ... 4
89  67635  Pump Belt Guard for home market only ... 1
90  not allocated

WHEEL WEIGHT ASSEMBLY

91  64958  Wheel Weight ... 2
92  S.1106240  Bolt 1" UNF \( \times \) \( \frac{3}{4} \)" long ... 4
93  S.8061140  Spring Washer \( \frac{3}{8} \)" dia ... 4
94  S.7106010  Nut 1" UNF ... 4

23" ROTOR KIT

L. and R. rotor extensions, Part No. 64451 (Parts List III, No. 187).
Long draw bolt, Part No. 64450 (Parts List III, No. 173).
23" shield assembly, Part No. 64455 (Parts List III, No. 314).

Assemble the kit as follows:

(a) Remove depth skid.
(b) Remove shield by sliding out securing pins (64439).
(c) Remove draw bolt (Parts List III, No. 173) from existing 16" rotor.
(d) Fit rotor extensions. Ensure that the L. and R. hand extensions have been properly identified with cutting edge of blades leading. The pins on the rotor extensions locate in holes on the end flanges of the standard rotor and cannot be incorrectly fitted. (See Fig. A Machine Instruction Book).
(e) Fit the long drawbolt from the right-hand side of the machine ensuring that a drawbolt washer (64430) (Parts List III, No. 174) is fitted at each end and tighten securely.
(f) Fit 23" rotor shield using the original LONG securing pin. Replace the short pin at the forward end with the long securing pin provided in the kit. Transfer the depth control handle assembly (Parts List III, No. 318) from the 16" shield by uncrewing the wing nut and bolt.
(g) Refit the depth skid. Start engine and test.

Do not work on rotor section with engine running.

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