

# **Balcrank®**

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## **PGM-40 MECHANICAL CONTROL HANDLE**

**Model #3330-037**

**3330-038**

**3330-039**

**3330-040**

**3330-041**

**3330-042**

**3330-060**

**3330-061**



Thoroughly read and understand this manual before installing, operating or servicing this equipment.


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**OPERATION, INSTALLATION,  
MAINTENANCE AND REPAIR GUIDE**


## GENERAL SAFETY REQUIREMENTS


**NOTE: THOROUGHLY READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT.**


- Please retain this instruction manual for future reference.
- Your safety is important to us. Please read, and follow all safety instructions listed below.
- Some of these instructions alert you to the potential for personal injury. “Warnings” listed throughout this manual advise of potential practices or procedures which may cause damage to your equipment.
- This control handle is not designed for in-line installation. Do not install with a shut-off valve on the outlet side of the meter. Such an installation could result in damage to the meter housing.
- Ensure all operators have access to adequate instructions about safe operating and maintenance procedures.
- Do not exceed the maximum working pressure of 1,500 psi.
- Do not strike the oil control gun if it fails to operate. Refer to the “trouble shooting guide” or return unit to your nearest Balcrank authorized service center.
- Never allow any part of the human body to come in contact with the control handle outlet.
- Never point the outlet nozzle at yourself or anyone else.
- Never exceed the pressure rating of any component installed in the System.
- Before each use check all hoses for signs of wear, leaks or loose fittings. Tighten all fluid connections regularly and replace weak or damaged hoses. Your personal safety and well-being are at stake.
- Before attempting any repairs or maintenance of this product disconnect the air supply on the pump, and release the line pressure by pressing the lever on your control handle.

	<b>⚠ IMPORTANT</b>
Read these safety warnings and instructions in this manual completely, before installation and start-up of the control handle. It is the responsibility of the purchaser to retain this manual for reference. Failure to comply with the recommendations stated in this manual will damage the control handle and void factory warranty.	

	<b>⚠ WARNING</b>
Before doing any maintenance on the control handle, be certain all pressure is completely vented from the pump, suction, discharge, piping, and all other openings and connections. Be certain the air supply is locked out or made non-operational, so that it cannot be started while work is being done on the control handle. Be certain that approved eye protection and protective clothing are worn at all times in the vicinity of the control handle. Failure to follow these recommendations may result in serious injury or death.	

	<b>⚠ WARNING</b>
Airborne particles and loud noise hazards.	
Wear ear and eye protection.	

	<b>⚠ WARNING</b>
DANGER: Not for use with fluids that have a flash point below 100°F (38°C). Examples: gasoline, alcohol. Sparking could result in an explosion which could result in death.	

	<b>⚠ WARNING</b>
Manual tip cannot be used on PGM-40 control handle. An auto tip or semi-auto tip must be used.	
Use of manual tip can result in overpressurization, which can cause control handle to crack.	

## GENERAL DESCRIPTION

This manual assists you in operating and maintaining your new PGM-40 Mechanical Control Handle. The information contained will help you ensure many years of dependable performance and trouble free operation.

Please take a few moments to read through this manual before installing and operating your new control handle. If you experience problems please contact your local Balcrank® distributor or Balcrank authorized service center.

## SPECIFICATIONS


Accuracy	..... +/- 1% (of Reading)
Flow Range	..... 0.26-8 gpm
Max Operating Pressure	..... 1,500 psi
Weight	..... 2.55 lbs
Outlet:	..... 3/8" NPT (prior to 5/03) ..... 3/8" NPS (after 5/03)
Swivel Inlet	..... 1/2" NPT
Operating Temperature	..... 23°-122° F
Wetted parts	..... Aluminum, Acetal, Steel, Nitril Rubber
Fluid Compatibility	..... Engine Oil, Diesel Oil, ATF, Antifreeze, Gear Oil
Dimensions	..... 10" L x 3.7" W x 4.33" H

## OPERATION

Use Teflon® tape (or suitable thread sealant) when connecting the control handle to the hose connection.

Press the lever on the control handle and fluid will start flowing. The meter will now record oil use.

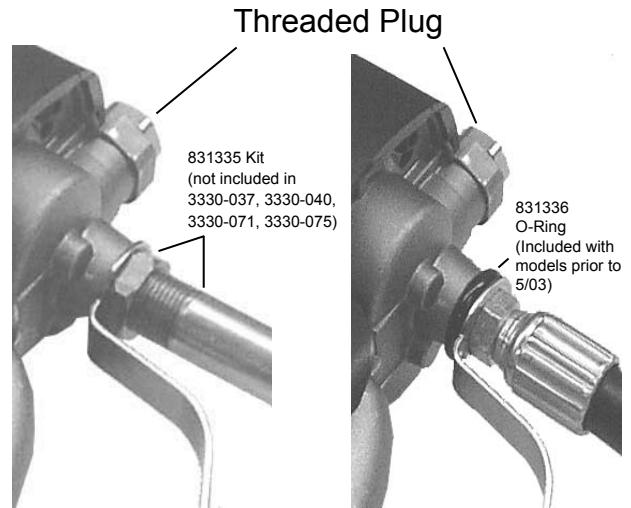
The top accumulative register will record the total volume of fluid passed through the meter. The bottom register is a reset batch total, which can be reset by pressing the reset button

	<b>WARNING</b> Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. The discharge line may be pressurized and must be bled of its pressure.
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## OUTLET EXTENSION

The outlet extension can be fitted either inline (forward) or on the outlet port "pistol style" located under the meter.

**Note:** The threaded plug removed from the outlet port on the underside of the meter, is used to seal the outlet port not in use.



## MAINTENANCE

Inspect your control handle daily for any signs of damage. Replace any damaged parts or components as required.

## HANDLE DISASSEMBLY

Use a clean work area to carry out maintenance.

- Remove the fluid hose from the control handle inlet swivel (46).
- Unscrew and remove swivel (46), washer (44), and o-ring (45) from the control handle inlet. Clean or replace the strainer and o-ring.

**CAUTION: The swivel is under spring tension.**

- Slide off the handle sleeve (43).
- Remove valve spring (42), seal/valve body assembly (40, 41) and plunger (39).

## LEVER AND VALVE REMOVAL

- Using a 2.5mm allen wrench, remove the two handle screws (38).
- Remove lever (34).
- Remove the washer (32) and o-ring (31), then push the valve cam (30) from the handle body (4), and remove o-ring (33).

## HANDLE REASSEMBLY

- A) Clean and inspect all parts. Replace any suspect, worn, or damaged components.

**NOTE:** Lightly lubricate the valve cam (30) before assembly.

- B) Place o-ring (31) onto valve cam (30).

**NOTE:** The cutout section in the middle of the valve cam (30) must face the inlet swivel (46).

- C) Replace the valve cam (30) into the body (4). Note the orientation shown on the assembly drawing. Fit the second o-ring (33) and washer (32).
- D) Slide lever assembly (34) into position and replace the two allen screws (38). Use Loctite or similar sealant.
- E) Replace plunger (39).

**NOTE:** The end hole in the plunger must face the meter.

- F) Assemble the seal/valve body (40, 41) and spring (42) and replace into the handle body.

**NOTE:** Install the spring, small end first.

- G) Replace handle sleeve (43).
- H) Replace washer (44), o-ring (45), and swivel assembly (46) and screw firmly into place. Use Loctite or similar sealant.

## METER DISASSEMBLY

- A) Unscrew the swivel assembly (46) two complete turns to allow easy disassembly and reassembly of the meter and remove boot (28).
- B) Unscrew the 4 philips head screws (21), from the underside of the handle body (4).
- C) Using 4mm allen wrench remove 4 screws (29) from the underside of the handle body (4).
- D) Remove register housing (23) assembly.

**NOTE:** Take care when removing register housing as the outlet shaft (16) and seal assembly are also removed.

- E) Remove gearbox housing (10) assembly.

## GEAR AND O-RING REPLACEMENT

- A) Pull bevel gear off the shaft (24) from inside register housing (23).

- B) Remove gear (17), E-clip (18), washer (19), o-ring (20), and shaft (16) from the underside of register housing.

**NOTE:** Use all new parts when reassembling the gear and shaft assembly.

- C) Assembly is a reversal of disassembly.

## MODULE REPLACEMENT

**Note:** Refer to Meter Disassembly Parts A and B.

- A) Remove module assembly (25) and remove the register bracket clip (27).
- B) Remove facia (26).
- C) Assembly is a reversal of disassembly.

## METER REASSEMBLY

- A) Clean and inspect all parts. Replace any suspect, worn, or damaged components.
- B) Replace rotors (8,9).

**NOTE:** Ensure the rotor with the magnets is assembled with the magnets facing up and positioned on the correct side of the meter. Both rotors must also be positioned at 90 degrees to each other.

- C) Replace the handle body o-ring (5).
- D) Fit gears (13,14,15) into gear box (10).

**NOTE:** Gears are marked in order of assembly 1, 2, and 3.

- E) Replace o-ring (11) on gearbox housing (10) and position gearbox assembly on top of handle body (4).
- F) Replace register-housing assembly (23) on top of gearbox housing assembly (10).

**NOTE:** The gear shaft (16) on the register housing assembly (23), must be located through gear 2 (14) inside the gearbox and fitted into the location hole in the gearbox housing (10).

- G) Replace 4 allen head screws (29) and screw the meter assembly together.
- H) Fit bevel gear (24) inside the register housing (23).
- I) Fit Module assembly (25) into register housing (23) and replace 4 Phillips head screws (21).
- J) Firmly tighten the swivel assembly (46).
- K) Replace the boot (28).
- L) Test the control handle for correct operation.

# PGM-40 Mechanical Control Handle Parts List

ITEM	PART NO.	QTY.	IN KIT	DESCRIPTION
1	-	1	-	Compression Fitting
2	-	1	-	Olive
3	-	1	-	Adapter
4	-	1	-	Control Handle Body
5	-	1	-	O-Ring
6	-	2	-	Roto Shafts
7	-	1	-	3/8" Plug
8	-	1	-	Oval Gear
9	-	1	-	Oval Gear and Piston
10	-	1	-	Gearbox Housing
11	-	1	-	O-Ring
12	-	1	-	Middle Shaft
13	-	1	-	Q1 Quart Gear
14	-	1	-	Q2 Quart Gear
15	-	1	-	Q3 Quart Gear
16	-	1	-	Outlet Shaft
17	-	1	-	Q4 Quart Gear
18	-	1	-	E-Clip
19	-	1	-	Washer
20	-	1	-	O-Ring
21	-	4	-	Hi-Lo Screws
22	-	1	-	Brass Boss
23	-	1	-	Register Housing
24	-	1	-	Bevel Gear (Quart)
25	830724	1	-	Module, PGM
26	-	1	-	Facia (Quart)
27	-	1	-	Register Bracket Clip
28	830725	1	-	Boot, PGM
29	-	4	-	Screws
30	-	1	-	Valve Cam
31	-	1	■	O-Ring
32	-	1	■	Washer**
33	-	1	■	O-Ring
34	-	1	-	Lever, Non Latching
35	-	1	-	Button Spring
36	-	1	-	Lever Plug
37	-	1	-	Push Button
38	-	2	■	Countersink Screws
39	-	1	-	Plunger
40	-	1	■	Seal
41	-	1	-	Valve Body
42	-	1	■	Valve Spring
43	-	1	-	Handle Sleeve
44	-	1	■	Washer
45	-	1	■	O-Ring
46	830728	1	-	Swivel, Control Handle
47	-	1	■	Strainer
48	-	1	■	O-Ring
49	-	1	-	Adapter (Pistol Style)
	831336	1	-	O-Ring*

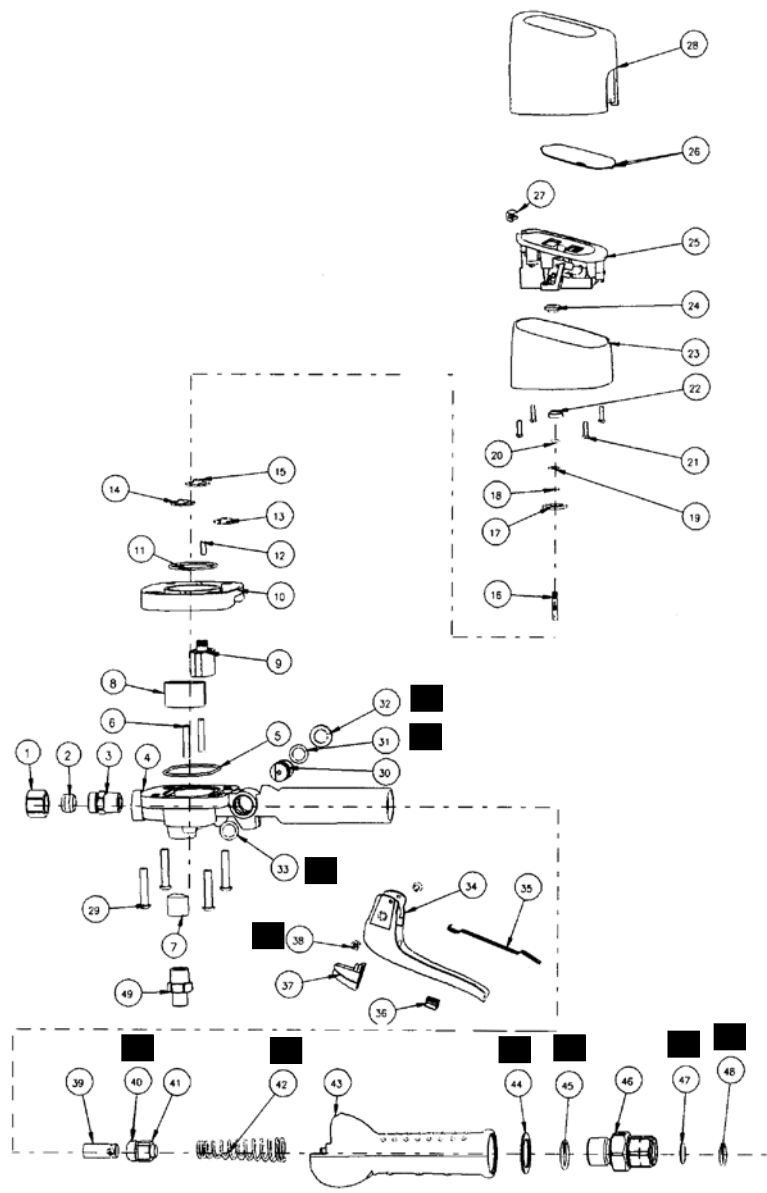
■ Control Valve Service Kit  
(Order 900013)


\* To be used with flexible hose outlet  
when used as pistol style.(see page 2)  
(for control handles prior to 5/03 only)

\*\* Prior to 7/03 (stamped on handle 0283)  
use metal washer.  
After 7/03 (stamped on handle 0293)  
use plastic washer.

# PGM-40 Mechanical Control Handle

## Parts Diagram





**⚠ WARNING**

Manual tip cannot be used on PGM-40 control handle. An auto tip or semi-auto tip must be used. Use of manual tip can result in overpressurization, which can cause control handle to crack.

Outlet Extensions	Model Number	Nozzle / Tip	Extensions	
			Before 5/03 3/8" NPT	After 5/03 3/8" NPS
Rigid	3330-037 Qt. 3330-040 Lt.	3332-086	829648	831471 plus seal- ing nut 831470
Flex	3330-038 Qt. 3330-041 Lt.	3332-086	829973	831469*
Flex 90°	3330-039 Qt. 3330-042 Lt.	3332-086	830276	831429*
Straight	3330-060 Qt. 3330-061 Lt.	3332-086	81334 plus jam nut 831333	831472 plus seal- ing nut 831470
9" Flex	3330-053 Lt.	3332-086	830107	831473

\* 806895 (-112) o-ring included with extension.

TROUBLE	CAUSE	REMEDY
No fluid passing through the meter	A. Blocked strainer B. Dirt particles jamming the rotors C. Damaged plunger seal	A. Clean or replace strainer (47) B. Dismantle meter assembly and clean C. Replace damaged plunger seal (40)
The meter is not registering fluid output	Damaged Mechanical Module	Replace Module (item 25)
Constant oil leak from the tip	Damaged plunger seal	Replace plunger seal (check for damage)
Intermittent drip from the tip	Dirt in the tip  Tip not closed (semi-auto tip)	Remove the tip and blow out any dirt particles, replace if necessary Tip must be manually closed
Oil leak from the lever assembly area	Damaged o-rings	Replace damaged o-rings (item 33 & 31)
Low flow rate	Blocked strainer	Replace strainer (item 47)
Oil leaking from the swivel inlet	Damaged o-ring or swivel	Replace o-ring (item 48) or swivel (item 46)

#### Revision Log:

Rev. E - Added o-ring and 831335 kit

Rev. F - Changed from 3/8" NPT to 3/8" NPS on outlet port.

Rev. G - Note about washer (item 32).

Rev. H - Removed semi-automatic tip models and changed part number for automatic tip to 3332-086.

**For Warranty Information Visit:  
[www.balcrank.com](http://www.balcrank.com)**

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Rev. H 11/09