PANDROL

Twin Power Unit

MODEL 05500

MODEL 05550

OPERATION AND MAINTENANCE MANUAL

ENG_OMM_TWIN_POWER_UNIT_P01
29th November 2021

Partners in excellence

Thank you for choosing Twin Power Unit!

You are now the owner of a quality product from Pandrol.

1. Preface

This manual aims to help you get to know your new Twin Power Unit, to use it in the best way and to maintain it properly for a long lifetime. It also presents important safety regulations and warnings.

The manual is intended for people who handle and operate the machine. It is originally written in English and translated into the local language by Pandrol.

Pandrol reserves the right to change specifications, equipment, instructions and maintenance guidelines without prior notice.

The manual contains instructions about the following topics:

1. Installation
2. Operation
3. Safety features and warnings
4. Maintenance and troubleshooting

(1) refers to a component in a figure/illustration.

IMPORTANT

This manual contains ordered actions, e.g.

1. Do this
2. ...and then this...
3. ...and finally this

These actions **must** be done in the numerical order presented.

2. Revision

Revision	Date	Comments
P01	2021-11-29	New Manual

Table of Contents

3. Safety Information

3.1. General

- Tool operators and maintenance personnel must always comply with the safety precautions given in this manual, and with all stickers and tags attached to the tool and hoses.
- All safety precautions are given for your safety. Read to understand and follow all safety, maintenance and operation instructions before you use or maintain the tool.
- Review the manual daily before using the tool.
- Follow all safety guidelines given you by your supervisor. Do not use the tool if you have any questions about the operation, safety or maintenance of this tool . Failure to follow these instructions can result in personal injury or equipment damage.
- Pandrol has no control over the tool use or operation once it leaves the plant. Pandrol has no control over operator or maintainer selection. The customer must assume responsibility for the tool suitability for a particular function.
- During use of the tool, good judgement must be used to work safely and efficiently without endangering themselves or bystanders.
- Understanding of the operation and maintenance manual is essential for anyone using or maintaining the tool.
- Warnings and safety precautions described in this document shall only be considered as a minimum. National conditions, standards and regulations override conditions, standards and regulations described in this document.
- Work with the machine is only to be carried out by qualified personnel, well-informed and educated in general railway workmanship and specifically in the conditions, standards and regulations on specific rail track.
- The machine may only be used for its specified purpose.
- Any adjustments or service on the machine is only allowed to be done by qualified personnel that have read and understood this manual and have had training and information from Pandrol.

3.2. Safety actions

- Read and understand all safety regulations and warnings before installation, operating or performing maintenance on this machine.
- Do not operate the tool until you have been thoroughly and properly trained or under the supervision of an instructor.
- Check power source daily to determine if correct flow and pressure are available. Never exceed flows or pressures for the tool being used. Personal injury or damage to the tool can result.
- Operators must clear the work area of non-essential personnel. Flying debris can cause serious injury.
- The operator must be familiar with all prohibited work areas such as unsafe grades, poor footing areas and overhead hazards.
- Use standards and regulations, accident prevention regulations and regulations concerning special ambient conditions (e.g. areas potentially endangered by explosive materials, heavy pollution or corrosive influences).
- Maintain balance and proper footing at all times. Never overreach to the extent that a broken part or sudden movement of the tool can cause you to lose your balance and fall, or cause injury to your self or someone else.

- Do not operate the tool at excessive fluid temperatures operator discomfort and potential burns can result at high oil temperatures.
- Do not clean inspect or repair the tool while connected to the power source. Accidental engagement of the tool can cause serious personal injury.
- Oil injection hazard exists with this tool. Oil injection is a condition where hydraulic oil is injected under the skin from pressure in the line. Always wear gloves and repair any leaks immediately. Never carry a tool by the hoses.
- Do not use damaged equipment. Immediately replace any damaged hoses, fittings, or other components showing wire braid, nicks, cuts, damage or abrasions. Failure to do so may result in equipment damage and / or personal injury or death.
- Clean up any oil or fluid spills immediately.

3.3. Personal/Safety equipment

- Never wear loose clothing that can get entangled in the working parts of the tools or be careless with hands, feet or other body parts around the working parts of the tools. Hydraulic tools exert high torque and force and can cause serious injury or death if improperly used.
- When working near electrical conductors, always assume that the conductors are energized and that hoses and clothing can conduct harmful electricity. Use hoses labeled and certified as nonconductive.
- Always wear safety equipment such as oil injection resistant work gloves, safety glasses, safety boots, ear protection and other safety apparel dictated by your supervisor applicable for the job you are doing and the tool you are using.
- The use of an compressed air, which must be less than 8 BAR (116 PSI), to blow parts clean or to blow them dry after being cleaned with a solvent will cause particles of dirt and/or droplets of the cleaning solvent to be airborne. These conditions may cause skin and/or eye irritation. When using an air jet do not direct it toward another person. Improper use of air jet could result in bodily injury.

3.4. Safety precautions

- Always wear protective equipment such as gloves, safety glasses, ear protection, safety shoes and other required safety equipment.
- Do not wear clothing which may become entangled in the moving parts of the unit.
- Always keep work area free of tools or any other objects which may impair sound footing.
- Caution oil injection hazard exists with this tool. Oil injection is a condition where the hydraulic oil is forced under the skin through pressure in the line. Always wear gloves and repair leaks immediately.
- Do not operate the power unit until you have been properly trained or under the supervision of a qualified instructor.
- Never store engine oil or hydraulic oil near oxygen tanks or lines.
- Never add engine oil or hydraulic oil when a spill might come in contact with your oxygen lines, torch or fittings.
- Clean up any spills immediately.
- Never perform grinding or sawing operations that direct sparks into the close proximity of the power unit or flammable materials.
- Never operate the power unit with any part of the exhaust system or the heat deflector removed.
- Periodically, inspect the fuel tank, fuel line and fittings for cracks or leaks and repair or replace as required.

- Avoid over filling the fuel tank; wipe up any spills immediately and properly dispose of the cleaning rags.
- Always turn power unit "OFF" and disconnect hoses before performing any maintenance.

3.5. Qualified personnel

The machine is only to be used by trained personnel, thoroughly familiar with and trained in general railway workmanship. The equipment should be operated according to the conditions and standard regulations applying to the track they are working on.

The equipment must be serviced, maintained, or in any way modified only by trained personnel, who are familiar with the Operation & Maintenance Manual and have received training and information from Pandrol.

In order to avoid personal injury and/or material damage, everyone involved with assembling, starting-up or overhaul must possess relevant knowledge of the equipment, its use, maintenance requirements and procedures.

4. Summary

The Pandrol Twin Power Unit is designed to deliver 2-5 GPM circuits or 1-10 GPM circuit at 2000 PSI for hydraulic tool operations. With the additional 5000 watt generator, AC powered equipment maybe operated simultaneously. Quiet and efficient, this unit gives maintenance-of-way crews the versatility to operate safely and cost effective in adverse conditions with a variety of equipment.

Fig 1.

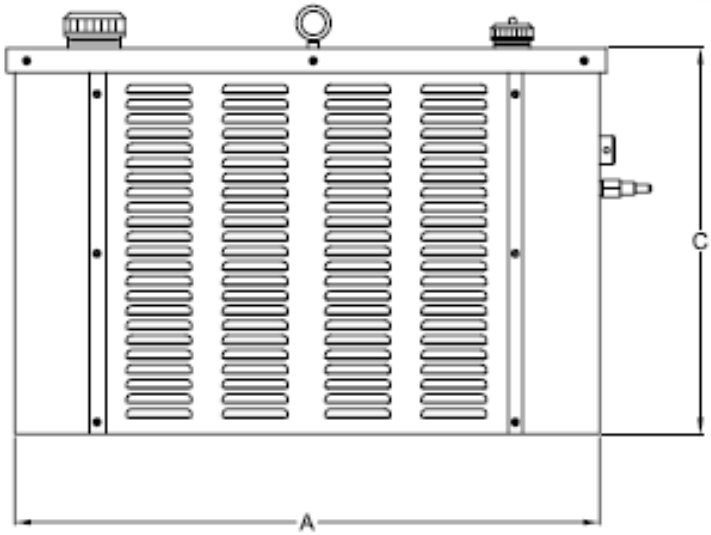


Fig 2.

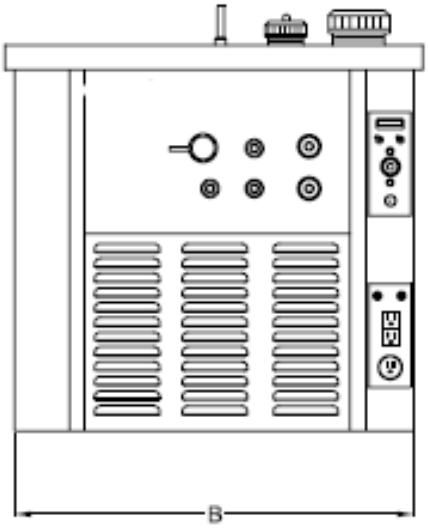


Fig 3.

Engine	Flow	Generator	Dimensions	Weight
22 hp Kohler Fuel: Gasoline Start: Electric 12 volt	5 GPM (19 LPM) or 10 GPM (38 LPM) Fluid: Hydraulic 5 us gal (18.9) liters	5000W 120/240 V Single phase @ 60hz 120 v - 41.6 Amp rating 240 v- 20.8 Amp rating	A - 36" (91.44 cm) B - 25" (63.5 cm) C - 32" (81.28 cm)	365 lbs (165.5 kg)

Accessories:

06300 - The Mobility Cart is equipped with insulated wheels for on track mobility or wheelBARrow type operation off track.

02326 - Hose reel equipped with 50’ transmission hose and mounting bracket.

5. Operation

Before starting the power unit, check all fluid levels, and add fuel, motor oil, and or hydraulic oil as required.

- To start the power unit, check to make sure that the control valve is in the "OFF" position.
- Set the system switch to the "ON" position.
- Pull the choke all the way “out”.
- Push the starter button.
- Allow the engine to warm up until it will run smoothly with the choke all the way “in”.
- Connect the power transmission hose to either the 5 or 10 GPM ports, depending on the flow required for the tool you will be using.
- Connect the tool(s) to the power transmission hose(s) before turning the valve on the power unit.
- In cold weather start the power unit and allow the oil to circulate before using the tools. In extremely cold weather refer to cold weather operation section of this manual.
- During the warm weather, the hydraulic oil cooler fan should be turned on for additional cooling capacity. The fan control switch is located on the engine control panel.
- To shut down the power unit or to change tools, turn the control valve to the "OFF" position and turn system switch "OFF".

5.1. Generator operation

- The power unit provides two different power sources; 120 volt single phase and 240 volt single phase.
- Plug accessory into the proper receptacle and operate as desired.
- Push breakers “IN” to reset in case of a tripped circuit.

CAUTION HIGH VOLTAGE!
- **When the engine is running the receptacles are hot at all times.**

NOTE!
- **When operating a 10 GPM tool you cannot have any other tool connected to the 5 GPM ports, even if the tool is not being used.**

5 GPM tools:

To operate a 5 GPM tool, connect both tools to the ports marked 5 GPM and turn "ON" the valve corresponding to each tool port.

10 GPM tools:

To operate a 10 GPM tool, connect it to the port marked 10 GPM and turn on both control valves.

5.2. Changing tools

- Always turn the control valve to the "OFF" position before disconnecting hoses.
- Once the tool has been changed, turn the valve to the desired position depending on flow and pressure requirements of the tool being used.

5.3. Cold weather operation

Hydraulic system performance is affected when the temperature drops below 50°F. Therefore, measures should be taken to pre-warm tools and fluids before operating.

NOTE!

- **Refer to operating procedures of this manual before starting**

6. Troubleshooting guide

- Before any troubleshooting, check all fluid levels, and add fuel, motor oil and/or hydraulic oil as required.
- Repair any leaks or obvious damage to power unit.
- Maintenance to be performed by qualified maintenance personnel only read operation manual to understand operational characteristics before making any adjustments.

Problem	Remedy
Power unit runs, but engine quits when under load.	• Check system relief pressure - system relief valve (part #05502-01) should be set at 2250 PSI • If flow and pressure are ok, but engine still quits under load: - Drain fuel and check for water or contamination. - Tune engine
Hydraulic oil overheats	• Check temperature with thermal measurement device. If over 140 Degrees F. (60 Degrees celsius), Check the following: - Hydraulic oil to full mark in tank - Adequate clearance for air circulation around power unit. Power unit should be moved so unrestricted air movement is available In front, rear and sides of unit. Remember, the cooler draws air from Around the power unit. If the cooler can only draw hot exhaust, captured Air next to bulkhead, or superheated air in truck body hot hydraulic Oil will be the result. • Check tool flow rate. Operate 5 GPM tools only on 5 GPM. Excess Flow at 10 GPM can cause overspeeding of the tool or heat buildup Depending on the tool design.

IMPORTANT!

- **Make certain that the control valve is positioned for the tool being used. Having both knobs turned on and only using one 5 GPM tool will allow fluid to be forced over the relief valve causing extreme heating.**

7. Review of hydraulic principles

Tool circuit

7.1. Hydraulic formulas

$$GPM = \frac{CID \times RPM}{231}$$

$$HP = \frac{GPM \times PSI}{1714\ (.85)} = \frac{}{1456.9}$$

Example: HP required to deliver 10 GPM at 1500 PSI.

$$\frac{10\ GPM \times 1500\ PSI}{1456.9} = \frac{15000}{1456.9} = 10.3\ HP$$

(subtract back pressure for tool HP)

Estimated HP delivered by pump or used by tool

	PSI					
GPM	**500**	**1000**	**1500**	**2000**	**2500**	**3000**
3	1.03	2.06	3.09	4.12	5.15	6.18
5	1.72	3.43	5.15	6.86	8.58	10.30
10	3.43	6.86	10.30	13.70	17.20	20.60
15	5.15	10.30	15.40	20.60	25.70	30.90

7.2. Back pressure

Back pressure measured at the tool return port must not exceed the manufacturers back pressure rating. Most manufacturers list the maximum back pressure for their hydraulic tools at 250 PSI. Back pressure measured on the return side of the tool is the force required to get the oil back to the tank. In almost all cases the lower the back pressure the better the tool performance. First, the back pressure is subtracted from the maximum tool pressure to arrive at a maximum tool operating pressure. For example, tools with 2000 PSI operating pressure are installed on a system with 250 PSI back pressure. This leaves 1750 PSI as a maximum tool pressure. Imagine a system with 500 PSI back pressure. 2000 Minus 500 PSI back pressure leaves only 1500 PSI for the tool. Second, tools are designed for pressure to build on the pressure side of the tool. If too much pressure builds on the return side, not only is performance effected, but seals may blow. This is why it is very important to direct the flow into the tool correctly. Reversing the hoses to test may result in blown seals, damage to the tool, and personal injury.

8. Maintenance

8.1. General

Maintenance and overhaul is to be carried out by qualified personnel only
Warranty is based on parts and spares delivered by Pandrol.

Check tools DAILY for proper operation, leaks, or damage.

Inspect hoses DAILY. Replace cut, burned, or otherwise damaged hoses.

Keep quick disconnect couplers clean and lubricated.

Use hydraulic fluids that comply with HTMA Specification 5.7, The hydraulic fluid should have a viscosity between 100 and 400 SSU (20-82 centistokes) at the maximum and minimum expected operating temperatures. Petroleum based hydraulic fluids with anti-wear properties and a viscosity index of over 140 work for a wide range of operating conditions.

The following oils meet HTMA Specification 5.7

AMOCO RYKON MV	CITGO A/W ALL TEMP
SUNVIS 706	MOBIL D.T.E. 13
CHEVRON EP-MV	TEXACO "RANDO" HDAZ

Other fluids that meet or exceed this specification can be used.

*** See cold weather operation hydraulic oil note.**

Have tool inspected, at least annually, by Pandrol or a Pandrol qualified service representative to determine if tool is in need of safety changes or worn part replacement.

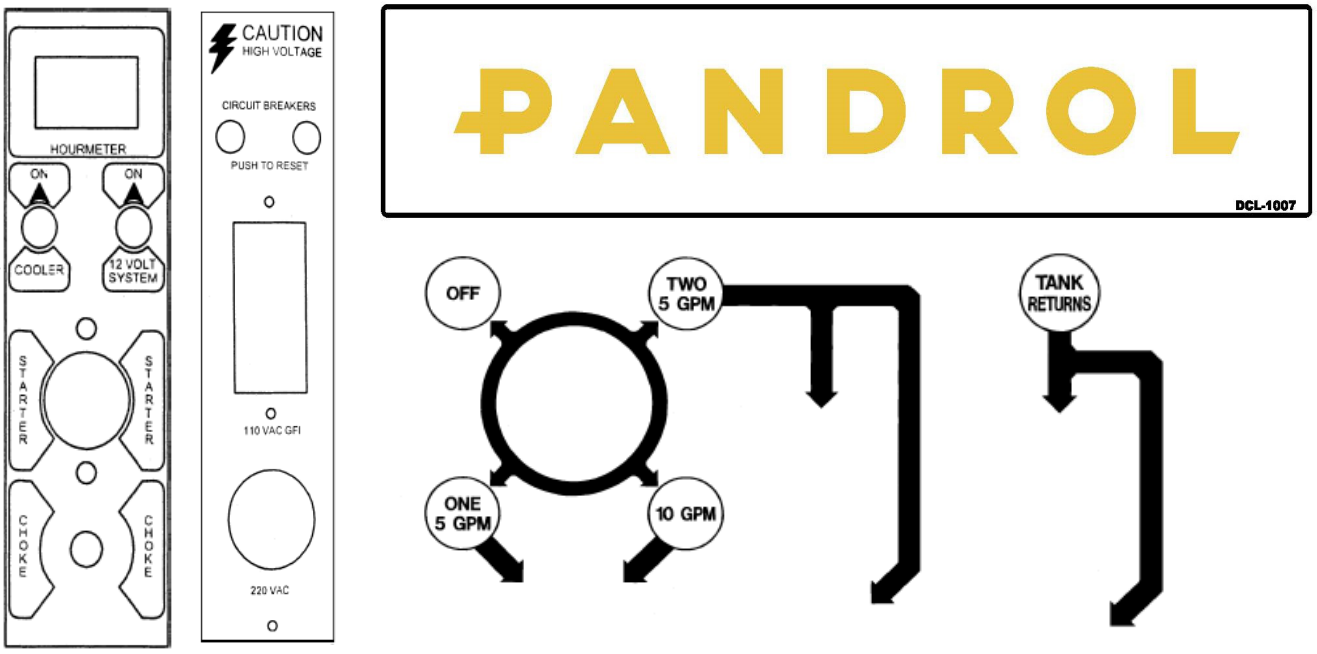
Contact Pandrol on a periodic basis, at least annually, for service Bulletins, safety notices, or other important information pertaining to this tool.

WARNING!

- **All adjustments work, overhaul and service must take place with the machine turned off. Failure to do so could lead to fatal injury.**
- **It is of great importance that qualified personnel accomplish all service and overhaul**

8.2. Warning labels and information symbols

Below are examples of warning labels and information symbols on the machine. If any of these labels become damaged or lost, they are to be replaced with new original warning labels that are available from Pandrol.

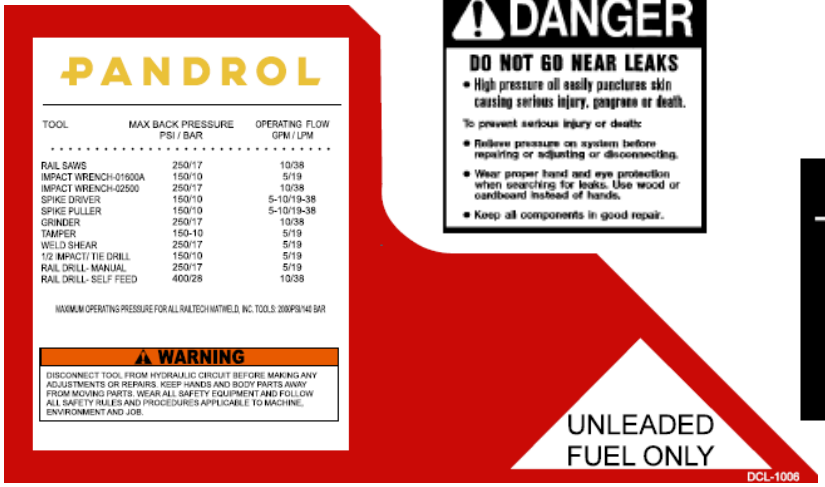


HYDRAULIC CONTROL OPERATION

- This power unit offers two individual 5 GPM supplies or one 10 GPM supply.
- Turn control knob to "off" position before attaching hoses, changing tools, or detaching hoses.
- 5 GPM tool - connect hose to 5 GPM supply and turn control valve to "ONE 5 GPM"
- 5 GPM tool - connect hose to 10 GPM supply and turn control valve to "10 GPM"
- Two 5 GPM tools - connect two hoses to the two 5 GPM supplies and turn control valve to "TWO 5 GPM"

STARTING INSTRUCTIONS

- Turn control valve to "OFF" position.
- Position ignition switch to "ON".
- Pull choke control out.
- Push starter button.
- With engine running, push choke control in.



9. Limited warranty

Pandrol, INC warrants to the original purchase of this product that the product will be free from defects in material and workmanship for the period of one (1) year after the delivery of such product to the customer. Other equipment and parts used, but not manufactured by Pandrol are covered directly by the warranty of the manufacturer of those products. Proof of purchase must be documented including reference to a serial number located on each tool. The purchaser's only remedies under this limited warranty shall be limited at Pandrol's sole option to the following: repair, replacement or refund of the purchase price of the defective products. Each of these remedies requires timely notification of the defect in the product and substantiation that the product has been properly stored, maintained and used. Pandrol's obligations hereunder extend only to the purchaser of the product and not to any third party.

As a condition precedent to Pandrol's obligation hereunder, the defective product must not have been altered or modified without the express written approval of Pandrol. The product must not have been subjected to deliberate damage, shipping damage, neglect, tampering by unauthorized personnel or damage by improper use, storage or maintenance. Serial numbers must not have been altered, defaced or removed. Such action voids limited warranty.

9.1. Exclusions to limited warranty

This limited warranty is exclusive and is in lieu of any other warranty, written or oral, expressed or implied, including, without limitation, any implied warranty or merchantability or fitness for a particular purpose.

Limited warranty does not cover normal wear and tear items such as filters, hoses, couplers, bits, sockets, augers, and batteries

9.2. Limitation of liability

Except as provided above, Pandrol shall in no event be liable or responsible for any injury, loss or damage, direct, incidental or consequential, arising out of the use or misuse or inability to use the product, however caused and on any theory of liability including, without limitations, breach of contract, tort, (including negligence or street liability) and not withstanding any failure of any remedy herein of its essential purpose, even if Pandrol was aware of this possibility of such damage. Pandrol's limited warranty as set forth above shall not be enlarged, diminished or affected by, and no obligation or liability shall arise or go out of the rendering of technical advice or service by Pandrol or its agents. The foregoing may not be changed except by written agreement signed by an authorized officer of Pandrol, the remedies set forth herein are exclusive.

10. Customer information

Name _____

Company _____

Serial # of your Pandrol tool _____

Upon receiving your Pandrol tool, make sure to list serial number above so that a good record is kept for order information.

Pandrol hydraulic tool list

All Pandrol Hydraulic Tools operate at 5 GPM (19 LPM) or 10 GPM (38 LPM) @ 2000 PSI (140 BAR)

Power units:

00100K – Gasoline powered (1) 10 GPM or (2) 5 GPM circuits
02900A – Diesel (1) 10 GPM or (2) 5 GPM circuits (optional catalytic exhaust)
05500 – Twin power dual circuit (1) 10 GPM or (2) 5 GPM circuits & 5000 watt generator
02050RM – Modular power unit (1) 9 GPM
03700A – Electric power (1) 10 GPM or (2) 5 GPM circuits

Grinders:

09200A – Precision frog grinder
06000 – Profile grinder
06950 & 06950A – Multi-purpose grinder
05900 – Frog/profile grinder (trigger version available)
00700 – Rail surfacing guide
04600 – Straight stone grinder cw rotation (trigger version available)
04700 – Straight stone grinder ccw rotation (trigger version available)
07500 – Chamfer tool
04800 – 6" Cup stone grinder (trigger version available)
00600 – 8" Cup stone grinder
05400 – Angle grinder
09300 - Head wash grinder

Track tools:

03900A – Reversing rail saw
05100A & 05100B – Power weld shear
03500 – Self feed rail drill
04500D – 1/2” Hydraulic drill impact wrench
08200 – Tamper
02800A – 60 Ton bridge spreader
01200 – Spring anchor applicator
01100A – Spike puller (Single, 2 stage & trigger versions available)
00800A – 16” Rail saw
05000 – Hand pump weld shear
02500 – 10 GPM 1” Impact wrench
08300 – Spike driver
01600A – 5 GPM 1” Impact wrench
01100RM – Light-weight spike puller

Other products:

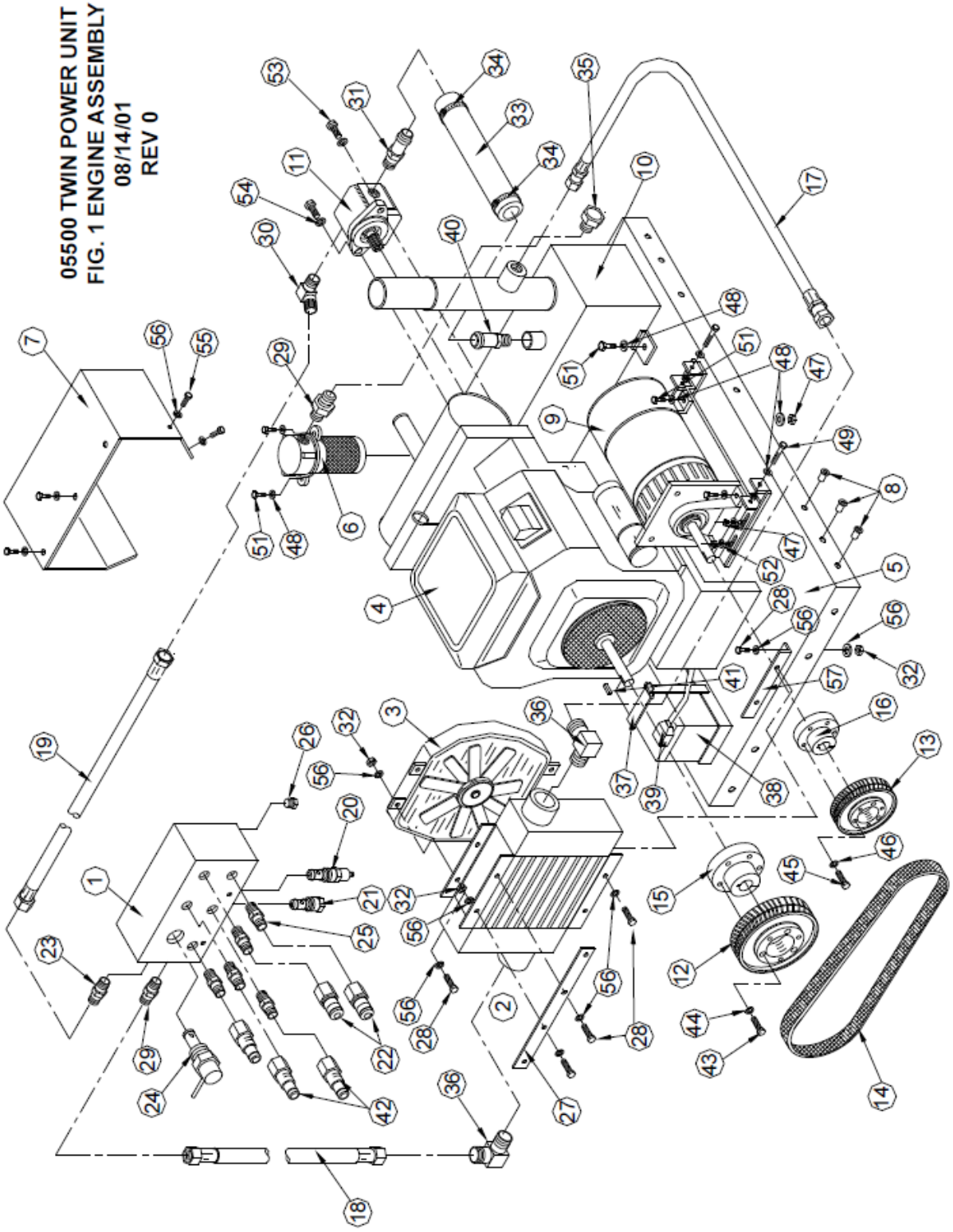
Hydraulic manifolds
Hydraulic test gauges
Hose reels
Hydraulic hoses

Accessories

Drill bits
Shear Blades
Saw Blades
Grinding Stones
Sockets

11. Assembly

11.1. Engine parts diagram



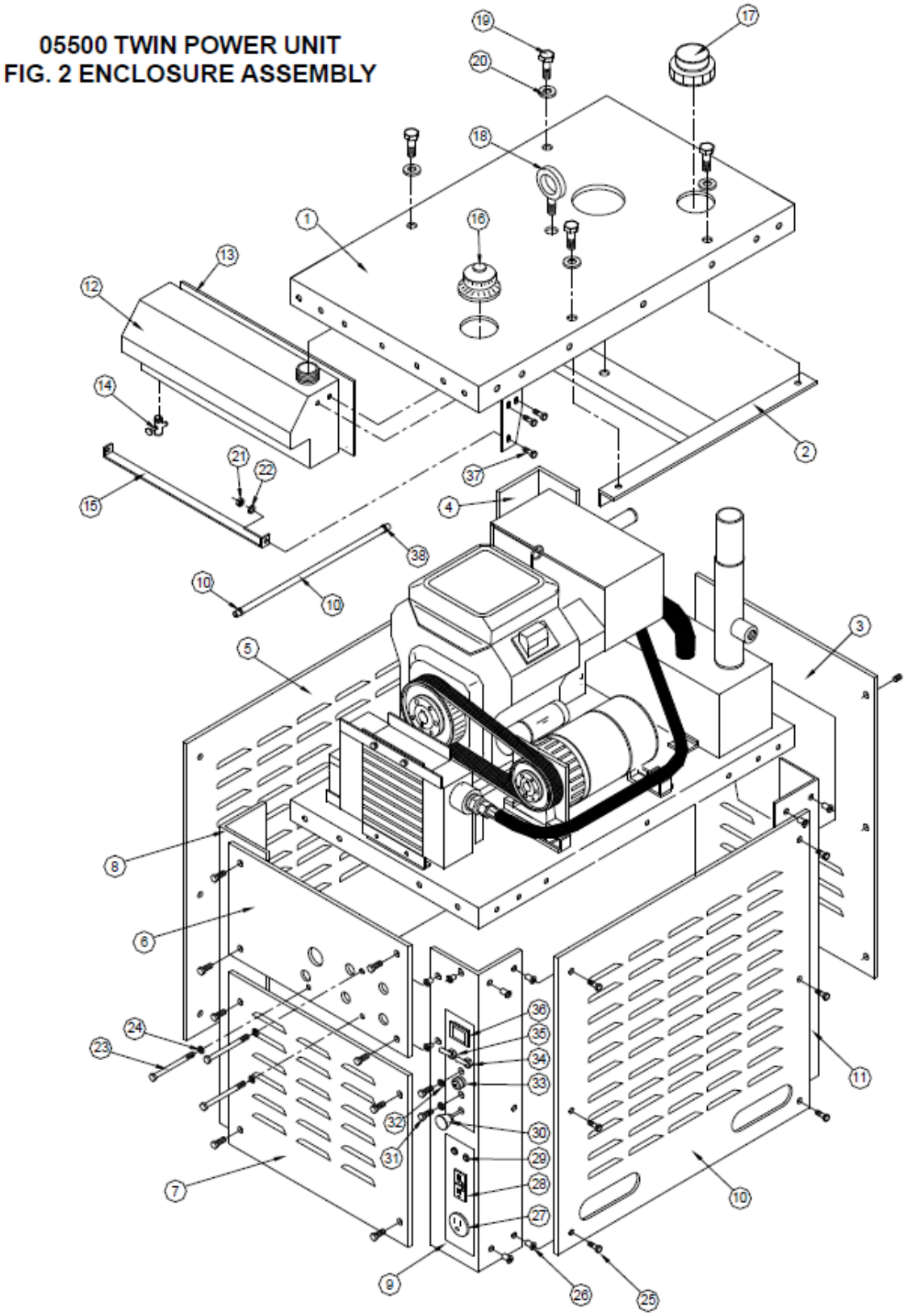
11.2. Enginge parts list

05500 TWIN POWER UNIT
PARTS LIST FIG. 1

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	05502	MANIFOLD	1
2	05503	COOLER	1
3	05503-01	FAN	1
4	05501	ENGINE	1
5	05512	BASE ASSEMBLY	1
6	05517	RETURN FILTER ASSEMBLY	1
7	05524	HEAT DEFECTOR SHIELD	1
8	A2062	1/4" NUT INSERT	26
9	05510	GENERATOR	1
10	05513	HYDRAULIC RESERVOIR	1
11	05504	PUMP	1
12	05505	DRIVE SPROCKET-ENGINE	1
13	05506	DRIVE SPROCKET-GENERATOR	1
14	05509	HELICAL TOOTH DRIVE BELT	1
15	05507	BUSHING-ENGINE SPROCKET	1
16	05508	BUSHING-GENERATOR SPROCKET	1
17	05527	HOSE-COOLER/FILTER	1
18	05526	HOSE- MANIFOLD/COOLER	1
19	05516	HOSE- PRESSURE	1
20	05502-01	VALVE-RELIEF	1
21	05502-02	VALVE-FLOW DIVIDER	1
22	00145	QUICK DISCONNECT COUPLER	2
23	6400-10-12	#10 MJIC X #12 MOR	1
24	05502-03	CONTROL VALVE	1
25	249-08-08	#8 X 1/2 MP NIPPLE	5
26	231P-04	#4 O-RING PLUG	1
27	05531	COOLER SUPPORT BRACE	1
28	A1002	1/4"-20 X 1 GR. 5 ZP	5
29	6400-12-12	# 12 MJIC X # 12 MOR	2
30	6802-10-10	#10 MOR X #10 MJIC 45	1
31	4604-16-12	#12 SAE X 1" HOSE BARB	1
32	A2046	1/4-20 NYLOCK NUT	5
33	05515	HOSE-SUCTION	1
34	00147	HOSE CLAMP	2
35	SVM-16	SIGHT GLASS	1
36	6801-12-16	#16 MORB X #12 MJIC 90	2
37	00123	BATTERY STRAP	1
38	00122	BATTERY	1
39	00121-02-01	BATTERY POST COVER	1
40	4404-16-16	1" MPT X 1" BEADED BARB	1
41	00165	ENGINE SHAFT KEY	1
42	00146	QUICK DISCONNECT NIPPLE	3
43	A1026	5/16-18 X 2" GR 5 ZP.	3
44	A3810	5/16" LOCK WASHER	3
45	A1003	1/4-20 X 1-1/4 GR. 5 ZP	3
46	A3809	1/4" LOCK WASHER	3
47	A2048	5/16-18 NYLOCK NUT	10
48	A2191	5/16 SAE FLAT WASHER	15
49	A1027	5/16-18 X 2-1/4 GR. 5 ZP	2
50	A1452	5/16-18 JAM NUT	2
51	A1022	5/16-18 X 1" GR 5 ZP	8
52	A2162	5/16 USS FLAT WASHER	4
53	A1042	3/8 X 1 GR. 5 ZP	2
54	A2192	3/8 SAE FLAT WASHER	10
55	A1500	6 X 12 HEX HEAD METRIC BOLT	7
56	A2190	1/4 SAE FLAT WASHER	19
57	05512-07	COOLER MOUNT-BOTTOM	1
58	A1045	3/8-16 X 1-3/4 GR. 5 ZP	4
59	A2050	3/8 NYLOCK NUT	7

NOTE: ITEMS 58 & 59 (ENGINE MOUNT HARDWARE) OMITTED FROM DRAWING FOR CLARITY

11.3. Enclosure parts diagram

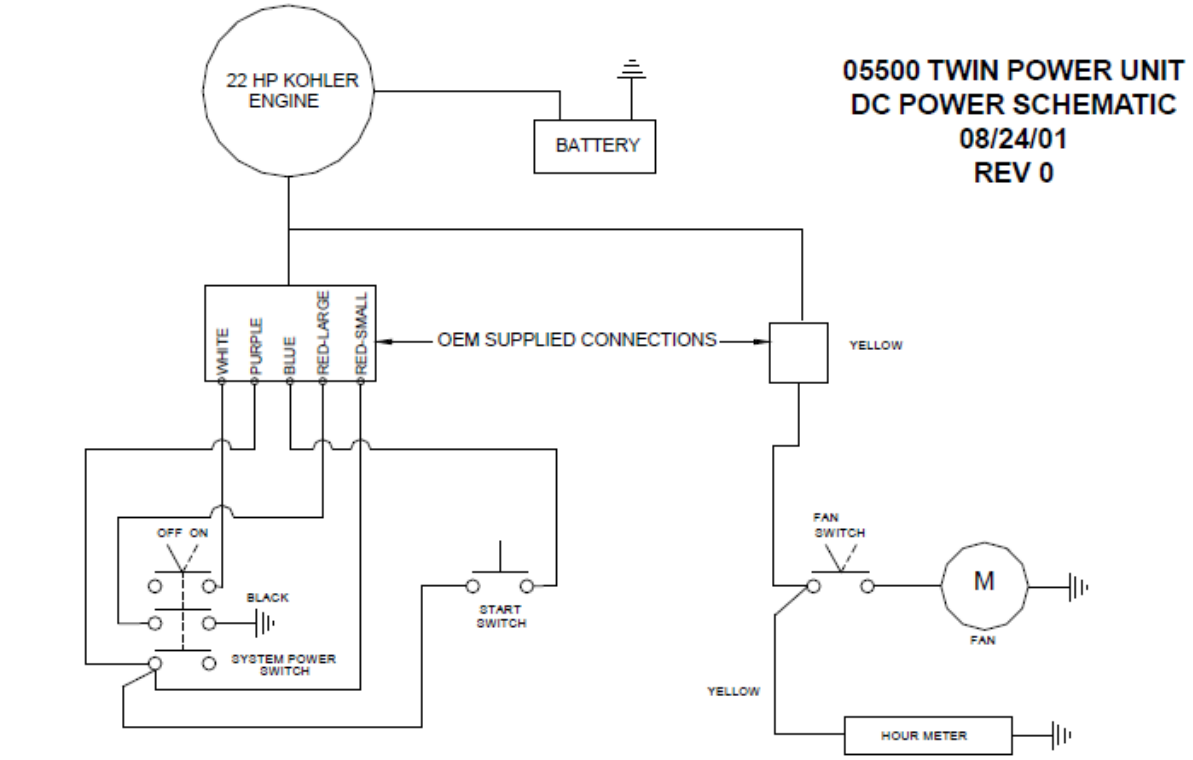


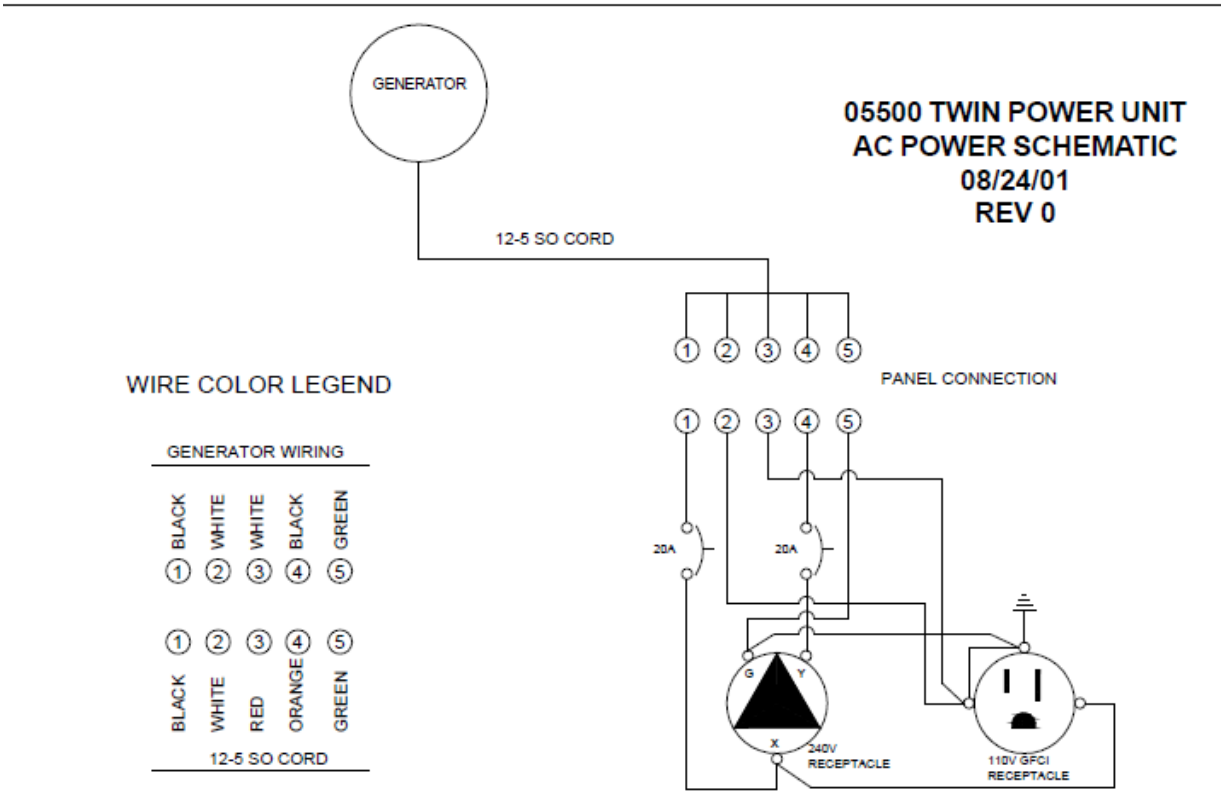
11.4. Enclosure parts list

05500 TWIN POWER UNIT
ENCLOSURE ASSEMBLY FIG. 2

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	05514-10	TOP PANEL	1
2	05518	LIFTING FRAME	1
3	05514-07	REAR PANEL	1
4	05514-08	LEFT REAR CORNER PANEL	1
5	05514-05	LEFT/RIGHT SIDE PANEL	2
6	05514-02	CONTROL PANEL	1
7	05514-03	COOLER PANEL	1
8	05514-04	LEFT FRONT CORNER PANEL	1
9	05514-04	RIGHT FRONT CORNER PANEL	1
10	01031	FUEL LINE CLAMP	2
11	05514-06	RIGHT REAR CORNER PANEL	1
12	00128A	FUEL TANK	1
13	00180	FUEL TANK INSULATION	1
14	00129	FUEL VALVE	1
15	00154	FUEL TANK STRAP	1
16	00127	FUEL CAP	1
17	00131-01	HYDRAULIC OIL CAP	1
18	03804	LIFTING EYE	1
19	A1022	5/16 X 1 GR 5 ZP	4
20	A2191	5/16 SAE FLAT WASHER	4
21	A2046	1/4-20 NYLOCK NUT	4
22	A2190	1/4" SAE FLAT WASHER	12
23	A1056	3/8 X 5 GR 5 ZP	3
24	A2192	3/8 SAE WASHER	6
25	A0999	1/4 X 5/8 FLANGE HEAD BOLT	70
26	A2062	1/4" NUT INSERT	51
27	705003	240 VOLT RECPTECALE	1
28	705005	110 VOLT GFCI RECEPTACLE	1
29	705009	20 AMP BREAKER	2
30	00157	CHOKE CABLE	1
31	A1001	1/4" X 3/4 GR. 5 ZP	4
32	A1000	1/4-20 X 1/2 GR. 5 ZP	4
33	692303	START SWITCH	1
34	01032	SYSTEM SWITCH	1
35	00193	FAN SWITCH	1
36	02903	HOUR METER	1
37	05525	FUEL LINE	1

11.5. Power schematic





12. Disclaimer

Pandrol exempts itself from liability in the event of usage that deviates from that recommended in this manual.

13. Contact

Address	Phone	Internet and E-mail
		www.Pandrol.com

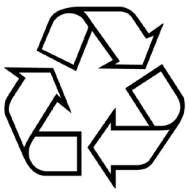
14. Recycling and Environment

Sustainable environment is a great part of Pandrol.

All components of the product can either be:

- Recycled
- Taken care of
- Be re-used

We recommend you to follow your local region regulations of environmental and recycling policies.



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Find out more at

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