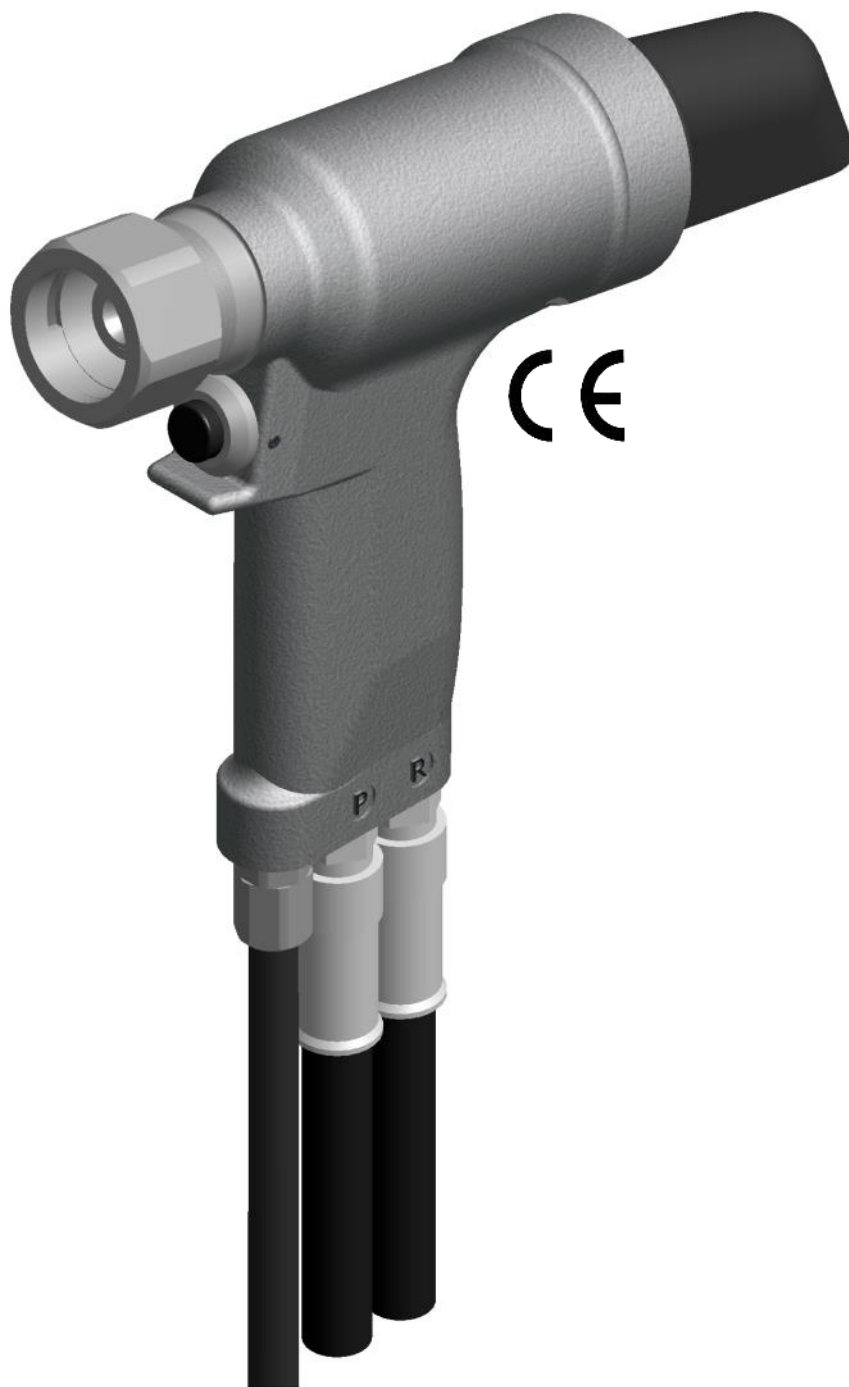


# GB2581

## INSTALLATION TOOL

S/N: 1068 AND ABOVE  
PLEASE CONTACT GAGE BILT FOR  
ALL OTHER SERIAL NUMBERS.



GAGE BILT TOOLS ARE AVAILABLE WORLDWIDE  
E-MAIL US FOR DISTRIBUTOR NEAR YOU.

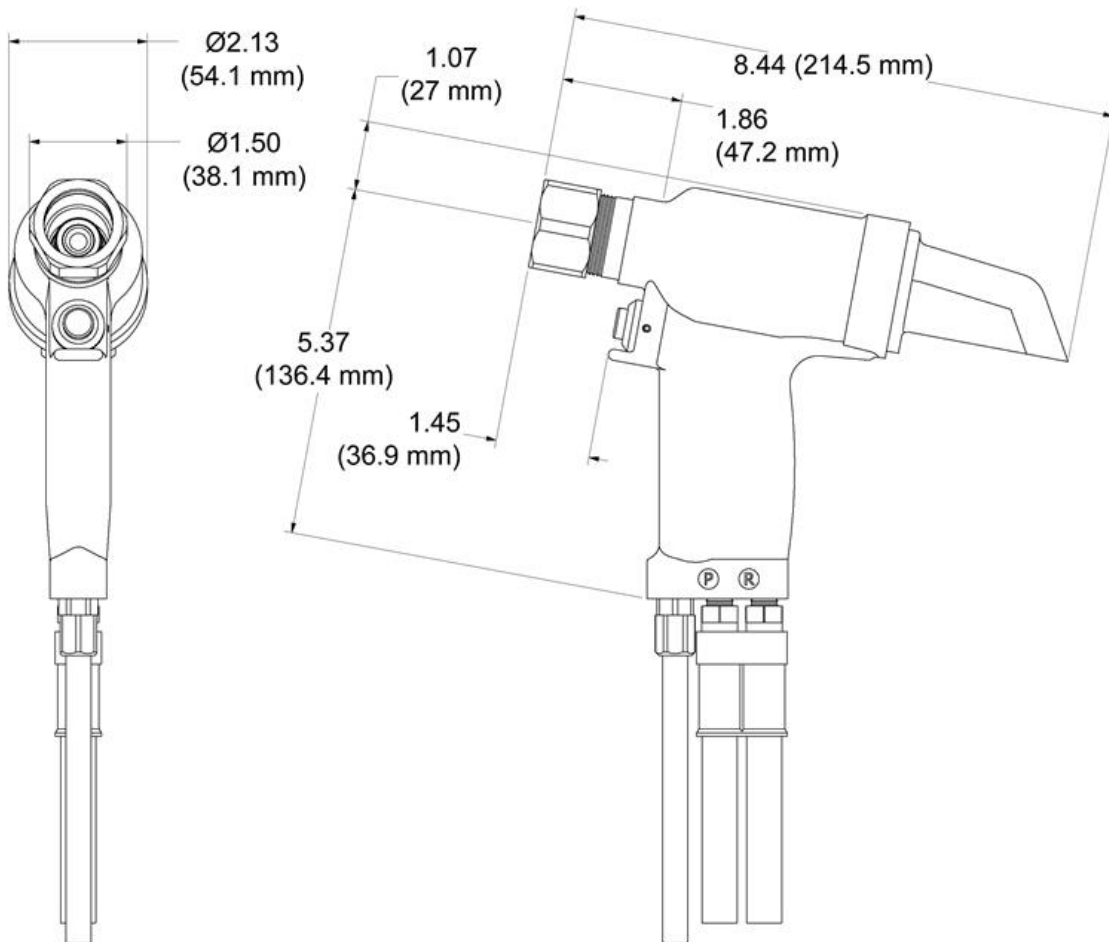
**GAGE BILT**  
MADE IN U.S.A.

**GAGE BILT Inc.**

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## SPECIFICATIONS

<b>Weight</b>	- 6 lbs. 10 oz. (3.0 kg)
<b>Hyd. pressure req'd</b>	- 7,400 psi (510.2 bar) PULL 3,200 psi (220.6 bar) MAX RETURN
<b>Hyd. Power Source</b>	- GB940 Powerunit or equivalent
<b>Hydraulic Oil</b>	- See power unit for hydraulic oil specifications
<b>Setting stroke</b>	- 1.000" (25.4 mm)
<b>Rated pull load</b>	- 10,700 lbs. (47.59 kN) @ 7,400 psi (510.2 bar)
<b>Noise level</b>	- 81.5 dB (A)
<b>Vibration</b>	- Tested- No hazards found.

# SAFETY WARNINGS



**PLEASE READ THIS MANUAL BEFORE  
SERVICING OR USING THIS TOOL.**



## **WARNINGS:**

**MUST BE UNDERSTOOD TO AVOID  
SEVERE PERSONAL INJURY**

## **CAUTIONS:**

**SHOW CONDITIONS THAT WILL  
DAMAGE EQUIPMENT OR STRUCTURE**

### **WARNING**

Do not pull fastener unless it is placed in an assembly with collar, pin will eject forcibly when pintail breaks off. Severe personal injury may result.

### **WARNING**

Always disconnect tool from power source before performing any maintenance to any tool or nose assembly.

### **WARNING**

When operating, repairing or overhauling tool, wear approved eye protection. Do not look in front of nose assembly or rear of tool when installing fastener.

### **WARNING**

Ensure that all connections are properly secured before connecting to power.

### **WARNING**

Do not operate if deflector, bottle, catcher bag or vacuum tube is removed or damaged, broken pintails may eject forcibly from rear of tool. Severe personal injury may result.

### **CAUTION**

Ensure that nose assembly and tip are properly matched for the fastener being installed.

### **CAUTION**

Keep Nose Assemblies clean and free of chips and debris.

### **WARNING**

Be sure there is adequate clearance for tool and operator's hands before proceeding. Keep fingers clear of any moving parts. Keep fingers clear from fasteners and installed materials. Severe personal injury may result.

### **WARNING**

Do not use beyond the design intent.

### **WARNING**

It is required to use hearing protection. A test was carried out in a simulated work environment where the background level was 73.2 dB (A). In this condition the max level was 81.5 dB (A). Therefore, it is required where prolonged use, hearing protection be used.

### **WARNING**

Tool must be maintained in a safe working condition at all times and examined on a daily basis for damage or wear. Any repair should be done by qualified personnel trained on Gage Bilt procedures.

### **WARNING**

Risk of crushing exists if nose assembly is not attached.

### **WARNING**

Where prolonged use is foreseen, it is recommended a tool balancer be used. Check suspension device to ensure that it is secure.

### **WARNING**

It is recommended tool be operated 50 out of every 60 minutes, where prolonged use is expected.

### **WARNING**

Do not use tool in explosive atmosphere.

### **WARNING**

Tool is not to be used as a hammer.

### **WARNING**

**Shock:**

It is recommended operator wear a suitable gloves during operation where prolonged use is expected.

### **CAUTION**

Hydraulic pressure not to exceed 7,400 PSI (510.2 bar) pull 3,200 PSI (220.6 bar) reload.

## PRINCIPLE OF OPERATION

When the tool is connected to a powerunit, operation is controlled by an electric actuator in the handle. When the electric actuator is depressed, a directional valve in the powerunit directs oil to the front side of the piston ass'y forcing it and the nose assembly collet rearward. This action causes the jaws to clamp onto the fastener pintail and pull the sheets together. The anvil is forced forward, swaging the collar into locking grooves of the fastener. Further force breaks the pintail off, approximately flush with the collar.

When the electric actuator is released the directional valve reverses oil flow to the back of the piston ass'y and pushes the nose assembly off of the swaged fastener. The pintail will eject from deflector once next rivet is installed.

## HOW TO USE THE GB2581

**WARNING:** Operator **MUST** read and understand all warnings and cautions.

**WARNING:** It is required that eye protection and hearing protection be worn during operation.

**WARNING:** Do not pull rivet in the air. Personal injury from fastener ejecting may occur.

**CAUTION:** Do not use beyond the design intent.

#1. Set power supply to the recommended pressure, 7,400 psi (510.2bar) for the pull and 3,200 psi (220.6 bar) MAX. for the return.

#2. Attach deflector (258032) to rear of barbed retainer (258015) located on rear of cylinder (258009).

**WARNING:** Rotate deflector (258032) away from operator and other persons working in the vicinity.

#3. Connect hydraulic hoses (206119) and electric cord (258020) to power supply.

**WARNING:** Ensure air hose is securely connected to avoid possible hose whipping.

#4. To ensure piston assy (258111) is in the full forward position, Cycle tool.

#5. Disconnect hydraulic hoses (206119) and electric cord (258020) from power supply .

#6. Select proper Nose Assembly.

#7. Hold piston assy (258111) in place using a 3/8" allen wrench in the back of the piston assy and screw collet securely on piston assy.

#8. Slide anvil over collet, slide retaining nut stop (408125) and retaining nut (480124) over anvil and tighten retaining nut (480124).

(See proper data sheet for further instructions.)

#9. Re-connect electric cord (258020) and hydraulic hoses (206119) to power supply.

**WARNING:** Be sure there is adequate clearance for tool and operator's hands before proceeding. Keep fingers clear of any moving parts. Keep fingers clear from fasteners and installed materials. Severe personal injury may result.

## DESCRIPTION

**WARNING:** The balance of the tool is designed for horizontal use and is not suited for any other application. Gage Bilt will be pleased to advise for your specific application.

The GB2581 is a hydraulic installation tool. It weighs 6 lbs. 10 oz. (3.0 kg). It has a 1.000" (25.4mm) rivet setting stroke and a rated pull load of 10,700 lbs (47.59kN) @ 7,400 psi. (510.2 bar).

Normal operating pressure is set at 7,400 psi. (510.2 bar) PULL pressure and 3,200 psi. (220.6 bar) MAX RETURN pressure, enabling the tool to pull all the fasteners listed on the selection chart without adjusting pressures. Powerunit may be set to the pressures only needed to pull your specific fastener using pressure setting gauge (942280). The tool comes equipped with 12' hoses and electric cord kit complete with quick disconnects.

NOSE ASSEMBLIES ARE NOT FURNISHED WITH THE TOOL AND MUST BE ORDERED SEPARATELY.

## MAINTENANCE

**WARNING:** Excessive contact with hydraulic oil and lubricants should be avoided.

**WARNING:** Maintenance personnel **MUST** read and understand all warnings and cautions.

**WARNING:** Disconnect tool from its power source before performing maintenance.

**WARNING:** Be sure powerunit is disconnected before cleaning or when replacing worn or damaged components. Severe personal injury may occur if power source is not disconnected.

**WARNING:** Read MSDS documents for all applicable materials.

The performance of any tool depends upon good maintenance practices. Following these minimal requirements for service and care will extend the life of your tool.

- \*Only use a hydraulic power source equipped with relief valves and pressures set within specified limits.
- \*Keep hydraulic system free of dirt. Avoid letting couplers contact a dirty floor.
- \*Do not use as a hammer to force fasteners into holes or otherwise abuse tool.
- \*Proper care by operators is necessary in maintaining full productivity and reducing downtime.
- \*Check tool, all hoses and all couplings daily for damage or air/hydraulic leaks. Tighten or replace (if necessary).  
(See *hydraulic thread preparation pg.5*)

## HYDRAULIC THREAD PREPARATION

**IMPORTANT:** Be sure to use thread sealant on all hydraulic fittings, Loctite® 30534 or similar Teflon® infused pipe dope is recommended. **CAUTION:** Teflon tape is an excellent thread sealer, however, if it is not properly applied, pieces of Teflon may enter the hydraulic system and cause malfunction or damage. Use 1 1/2 wraps of tape on each thread. Cut off all loose tape ends. Tighten until fitting feels snug and then go 1/2 to a full turn past that point. **CAUTION:** Over tightening can easily distort the threads.

## TORQUE SPECIFICATIONS

Socket Head Cap Screw (406030) = 20 inch lbs.  
Set Screw (401731) = 20 inch lbs.

## TROUBLESHOOTING

Providing all maintenance conditions have been met, follow this systematic approach to diagnosis.

1. **NO OPERATION WHEN ELECTRIC ACTUATOR (240122) IS DEPRESSED**
  - a.) Check Powerunit power source.
  - b.) Control cord may be loose or damaged.
  - c.) Faulty electric actuator. Replace.
  - d.) Check hydraulic couplings; repair or replace.
  - e.) Relief valve not installed in tool.
2. **SLOW OR PARTIAL OPERATION WHEN ELECTRIC ACTUATOR (240122) IS DEPRESSED**
  - a.) Low hydraulic pressure. Check powerunit, adjust.
  - b.) Cylinder Piston Glyd Ring Assy. (406180) could be worn or damaged. Replace.
  - c.) Excessive wear or scoring on moving parts. Check and replace faulty parts.
  - d.) Check hydraulic couplings; repair or replace.
3. **TOOL OPERATES IN REVERSE**
  - a.) Tool stops in back position. Hydraulic hoses are reversed. Correct.
4. **HYDRAULIC OIL OVERHEATS**
  - a.) Powerunit motor rotation reversed. Electrical connections reversed. See powerunit instruction manual.
  - b.) Restrictions in either hydraulic lines, hoses or couplings. Check and tighten, clean or replace. (See *hydraulic thread preparation pg.5*)
5. **OIL LEAKAGE**
  - a.) Hydraulic oil leaks from connections. Tighten threaded connections. Do not use Teflon® tape. (See *hydraulic thread preparation pg.5*)
  - b.) Oil leaks from tool. Determine source of leak and replace worn or defective o'rings and back-up rings.
  - c.) Relief valve installed incorrectly.
6. **PINTAIL GROOVES STRIPPED DURING PULL STROKE**
  - a.) Nose Assembly must be pushed onto fastener fully.
  - b.) Chips may have collected in chuck jaws. Disassemble nose assembly, clean jaws in mineral spirits using a sharp pointed object.
  - c.) Chuck jaws may be worn or damaged. Replace.
  - d.) Pintail too short for jaws to properly grip. Select proper grip length fastener.
  - e.) Excessive gap between sheets. Reduce gap before attempting to install fastener.
7. **NOSE ASSEMBLY WON'T ACCEPT FASTENER PINTAIL**
  - a.) Spent fastener stem may be jammed in pulling head. Disassemble and check for worn or broken parts in nose assembly. Replace defective parts and clean before reassembling.
8. **PINTAIL OF FASTENER FAILS TO BREAK.**
  - a.) Improper Tool operation.
  - b.) Pull grooves on fastener stripped.
  - c.) Pull pressure too low.
  - d.) Worn relief valve.

## OVERHAUL

**WARNING:** Disconnect tool from its power source before performing overhaul.

**WARNING:** Tool must be maintained in a safe working condition at all times and examined on a daily basis for damage or wear. Any repair should be done by qualified personnel trained on Gage Bilt procedures.

**WARNING:** When operating, repairing or overhauling tool, wear approved eye protection. Do not look in front of tool or rear of tool when installing fastener.

If a tool is performing poorly or leaking badly, a complete overhaul may be necessary. Service Kit (GB2581KS) contains a complete set of o'rings, back-up rings and screws.

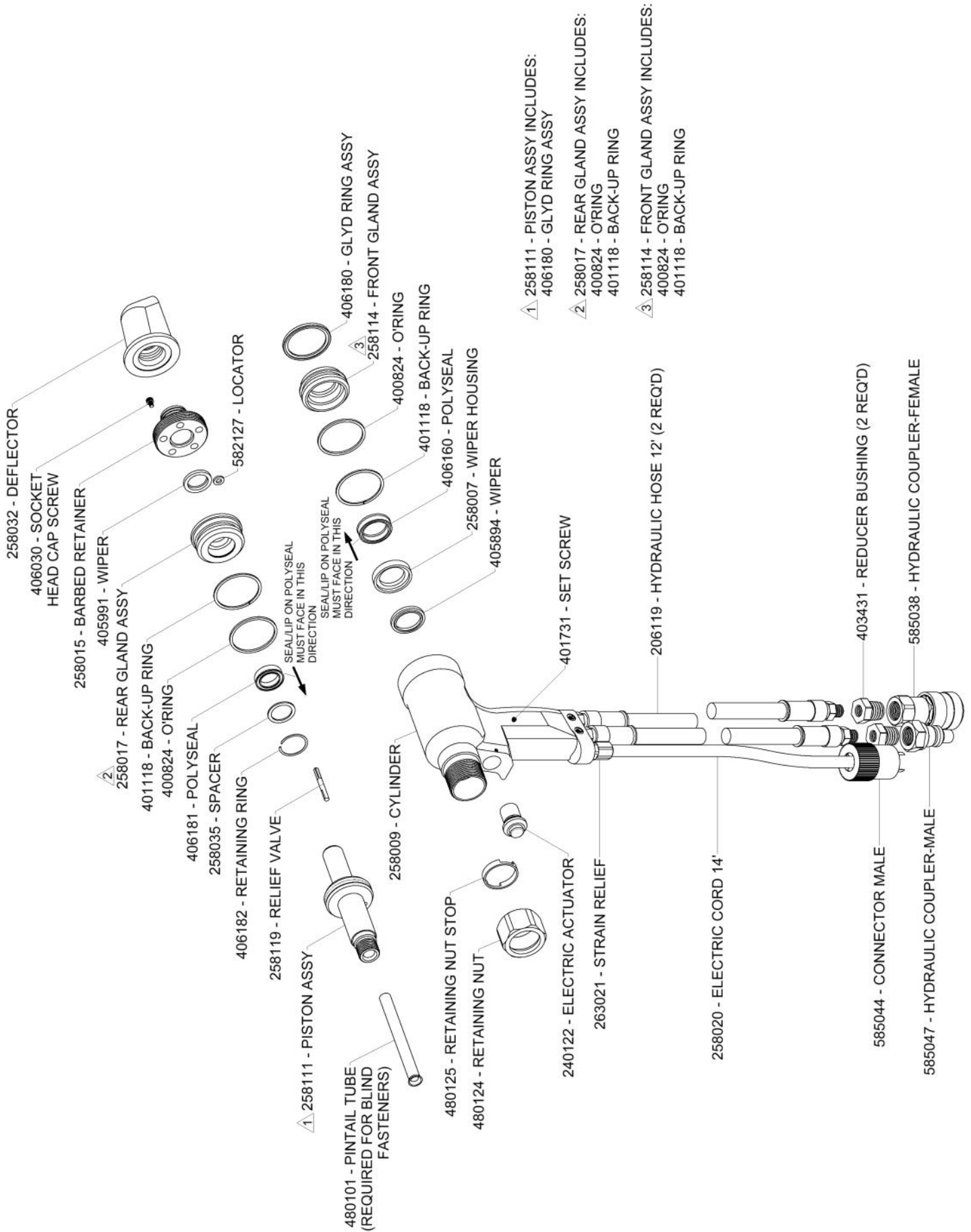
Perform overhaul in a clean, well lit area using care not to scratch or nick any smooth surface that comes in contact with an o'ring. Use of Lubriplate® (Gage Bilt part no. 402723) or other lubricant is recommended during reassembly to prevent tearing or distorting of o'rings.

Disconnect hydraulic hoses (206119) and electrical cord (258020) from powerunit. Remove hydraulic coupler-male (585047) & hydraulic coupler-female (585038) from hose assy (206119) and drain. Remove retaining nut (480124), retaining nut stop (480125), and nose assembly. Remove deflector (258032), socket head cap screw (406030), barbed retainer (258015), wiper (405991), locator (582127) and rear gland assy (258017). Push piston assembly (258111) rearward and remove. Then remove front gland ass'y(258014), polyseal (406160), wiper housing (258007) and wiper (405894).

Clean parts in mineral spirits or other o'ring compatible solvent being sure to clean o'ring grooves. Inspect components for scoring, excessive wear or damage.

Reassembly sequence is opposite of disassembly. Be sure relative positions of o'rings and back-up rings are as shown in exploded view and part list. Relief valve (258119) must be installed with four flats towards the rear of the cylinder. Coat hose fitting threads with a non-hardening Teflon thread compound such as Slic-tite® (Gage Bilt part no. 403237). Apply hot glue to wire connections to ensure wires DO NOT contact each other or handle assy. (See *hydraulic thread preparation pg.5*)

# GB2581- PARTS LIST





# GB2581- SELECTION CHART

FASTENER	DIA.	STRAIGHT		*OFFSET	
ASP® 2 ASP & ASP PF ASP PF & ASP F ASP-LC	13/64 17/64 21/64	ASP06-745B-23 ASP08-745B-23 ASP10-755-23	ASP06-745B-48 ASP08-745B-48 ASP10-755-48	ASP06-204D-27OS ASP08-204D-27OS ASP10-204D-27OS	ASP06-204D-37OS ASP08-204D-37OS ASP10-204D-37OS
BOM® BLIND OVERSIZE MANDREL	1/4 5/16 3/8	BOM08-755-23 BOM10-756-26 **BOM12-756A-26			
COMMERCIAL LOCKBOLTS C6L® AVDELOK®	3/16 1/4 5/16 3/8	NAS06-2581-12 NAS06-2581-23 NAS08-2581-12 NAS08-2581-23 LB10-745C-26 LB12-756-26	NAS06-2581-48 NAS08-2581-48 NAS10-2581-23 NAS12-756-48	NAS06-204C-25OS NAS06-204C-34OS NAS08-204C-25OS NAS08-205A-31 NAS10-205D-31 NAS12-205A-31	NAS06-204C-30OS NAS08-204D-30OS NAS08-204C-34OS
CONTAINER BOLT	3/8	HT12-745B-28			
FLOOR BOLT	5/16	FT10-353A-28			
LGP® LIGHTWEIGHT GROOVE PROPORTION LOCKBOLTS	5/32 3/16 7/32 1/4 5/16 3/8	LGP05-2581-12 LGP05-2581-48 LGP06-2581-12 LGP06-2581-48 LGP07-745B-12 LGP07-755-48 LGP08-2581-12 LGP08-2581-48 LGP10-2581-12 LGP10-2581-48 LGP12-745B-12 LGP12-756-48	LGP05-2581-23 LGP06-2581-23 LGP07-755-23 LGP08-2581-23 LGP10-2581-23 LGP12-756-26	LGP05-204C-25OS LGP05-204C-34OS LGP06-204C-25OS LGP06-204C-34OS LGP07-204C-25OS LGP07-204C-34OS LGP08-204C-25OS LGP08-204C-34OS LGP10-205D-31 LGP12-205A-31	LGP05-204C-30OS LGP06-204C-30OS LGP07-204C-30OS LGP08-204D-30OS LGP08-205A-31
LOCKBOLT NAS SHEAR PULL TYPE NAS TENSION PULL TYPE & GROOVE PORPORTION NASS = NAS SHEAR NAST = NAS TENSION	5/32 3/16 1/4 5/16 3/8	NASS05-2581-12 NASS05-2581-23 NASS05-2581-48 NAS06-2581-12 NAS06-2581-48 NAS08-2581-12 NAS08-2581-48 NAS10-2581-12 NAS10-2581-48 NAS12-745B-12 NAS12-756-48	NAST05-2581-12 NAST05-2581-23 NAST05-2581-48 NAS06-2581-23 NAS08-2581-23 NAS10-2581-23 NAS12-756-26	NASS05-204C-25OS NASS05-204C-30OS NASS05-204C-34OS NAS06-204C-25OS NAS06-204C-34OS NAS08-204C-25 NAS08-204C-34 NAS10-205D-31 NAS12-205A-31	NAST05-204C-20OS NAST05-204C-30OS NAST05-204C-34OS NAS06-204C-30OS NAS08-204D-30 NAS08-205A-31
MULTI-GRIP LOCKBOLT	3/16 1/4 5/16 3/8	MG06-745-48 MG08-745-48 MG10-756-28 MG12-756-28			
MULTI-GRIP STRUCTURAL BLIND RIVET	3/8	MGL12-353C-28			
OVERSIZE STRUCTURAL RIVET	1/4 5/16 3/8	OS08-745-48 OS10-756-26 OS12-756A-26	OS10-756-48 OS12-756A-48		
BLIND BOLT (SINGLE ACTION) WITH OR W/O DRIVE WASHER MS90353S & U & MS90354S & U MS21140S & U & MS21141S & U CR7000 SERIES BACB30YY, YU, & YT	5/32 3/16 1/4 5/16 3/8	SB05-745C-23 SB06-745B-23 SB08-755-23 SB10-756-28 SB12-756-28	SB05-745C-48 SB06-745B-48 SB08-755-48 SB10-756-48 SB12-756-48	SB05-204D-27OS SB06-204D-27OS SB08-204D-27OS SB08-205A-35 SB10-205A-35 SB12-205A-35	SB05-204D-37OS SB06-204D-37OS SB08-204D-37OS
BLIND BOLT (SINGLE ACTION) WITH DRIVE WASHER MS90353S & U & MS90354S & U MS21140S & U & MS21141S & U CR7000 SERIES BACB30YY, YU, & YT	5/32 3/16 1/4 5/16 3/8	UBB05-745C-23 UBB06-745B-23 UBB08-755-23 UBB10-756-28 UBB12-756-28	UBB05-745C-48 UBB06-745B-48 UBB08-755-48 UBB10-756-48 UBB12-756-48	UBB05-204D-27OS UBB06-204D-27OS UBB08-204D-27OS UBB08-205A-35 UBB10-205A-35 UBB12-205A-35	UBB05-204D-37OS UBB06-204D-37OS UBB08-204D-37OS

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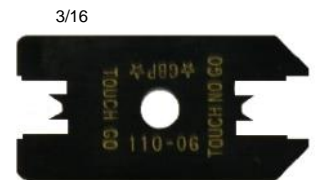
### GAGE BILT CERTIFIES THE GB2581 WILL INSTALL THE ABOVE FASTENERS

\*ALL OFFSET 204 SERIES NOSES REQUIRE 353204 A ADAPTER WITH 258152 STROKE LIMITER AND 258157 RELIEF VALVE.  
\*ALL OFFSET 205 SERIES NOSES REQUIRE 353205 A ADAPTER WITH 258153 STROKE LIMITER AND 258156 RELIEF VALVE.

\*\* Repair Only

NOTE: THE LAST 2 DIGITS OF THE NOSE ASSEMBLY REPRESENTS THE LENGTH THE NOSE  
EXTENDS FROM THE TOOL. I.E. -20 = 2.0 INCHES

**GAGE BILT ALSO SUPPLIES PIN & COLLAR SWAGE INSPECTION  
GAGES TO CERTIFY CORRECT SWAGE INSTALLATION.**





## DECLARATION OF CONFORMITY

**MANUFACTURER:** Gage Bilt Inc. 44766 Centre Ct. Clinton Twp. Michigan (586-226-1500)

**WE DECLARE THAT THE EQUIPMENT SPECIFIED HEREIN CONFORMS  
TO THE FOLLOWING DIRECTIVES AND STANDARDS**

Machinery Directive 2006/42/EC

EN ISO 12100:2010

EN ISO 13849-2:2012

**EU REPRESENTATIVE:** Edgar Hausmann GmbH Förster-Busch-Str. 10 D-34346 Hann. Münden Germany

**EQUIPMENT DESCRIPTION:** GB2581 FASTENER INSTALLATION TOOL

This product specified above conforms to the above directives and standards.

SIGNATURE:

NAME: BRIAN LEIGH  
PRODUCT MANAGER  
CLINTON TWP., MI U.S.A.  
SEPT 2012  
(586) 226-1500

### WARRANTY

Seller warrants that all goods covered by this catalog will conform to applicable specifications and will replace or repair, F.O.B. our plant, any goods providing defective from faulty workmanship, or material, for 6 months from date of shipment.

Said warranty to remain in effect if, and only if, such goods are used in accordance with all instructions as to maintenance, operation and use, set forth in manuals and instruction sheets furnished by seller.

Sellers obligation under this warranty shall be limited to the repair or rework of the goods supplied or replacement thereof, at Seller's option, and in no case is to exceed the invoice value of said goods. Under no circumstances will the seller be liable for incidental or consequential damages or for damages incurred by the buyer or subsequent user in repairing or replacing defective goods or if the goods covered by this warranty are reworked or subjected to any type of additional processing.

This warranty is void if Seller is not notified in writing of any rejections or defects within 6 months after the receipt of the material by the customer.

**THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES  
EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY.**