Yellow Jacket Motto:
If we can't make it better, we won't make it.

About Yellow Jacket
- Yellow Jacket Oil Tools manufactures high-quality, innovative wireline tools that are more productive, durable and safe
- Yellow Jacket specializes in new wireline hardware development and tailors conventional tool designs for improved wireline performance
- We understand the demands of wireline operations and are committed to providing tools to better meet those demands
- Yellow Jacket hardware is designed to be compatible with industry standard perforating equipment
- Time is critical in downhole operations: for rapid and reliable response, Yellow Jacket warehouses are strategically located in major oil producing regions, and our sales team is on call 24/7

Leading Perforating Tool Manufacturer
- Yellow Jacket Oil Tools is a division of G&H Diversified Manufacturing, LP, an ISO 9001:2008 certified, USA based advance contract manufacturer
- 30 years manufacturing oil well perforation equipment
- World leader in laser cut perforating gun charge tubes and one of the largest producers of perforating guns worldwide
- Manufacturing expertise and capabilities to produce custom tooling

Not Just Perforating Tools
- For over 50 years, G&H has manufactured for leading companies in all sectors of oil and gas and other industries

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DURABLE. COMPATIBLE. 
MORE PRODUCTIVE. 
WIREFLINE HARDWARE.
PERFORATING GUNS
By Yellow Jacket Oil Tools
The Cleanest, Safest and Most Productive Guns.

Corrosion resistant plating and knurled wrench surfaces, patented features of Yellow Jacket perforating guns, make them the cleanest, safest and most productive guns in the world. Yellow Jacket guns are also compatible with all industry standard shaped charges and tooling.

Yellow Jacket: Patented Features
- Knurled wrench surfaces improve grip for increased safety and productivity
- Zinc plating provides a clean, corrosion resistant finish for improved grounding
- Zinc plated charge loading tubes have dull edges and are less likely to cut detonating wires

Compatible
- Yellow Jacket perforating guns are compatible with all industry standard shaped charges and tooling

Experienced
- We have been producing shaped charge loading tubes since 1991, and our capabilities are second to none in the world
- We began manufacturing perforating guns in 2004 and have grown to become one of the largest producers worldwide

<table>
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<td>CHARGE TUBES</td>
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<td>KEYWAY/ KEY</td>
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* Custom configurations available upon request

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<tr>
<td>20000 [138]</td>
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<td>15000 [103]</td>
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<td>7500 [51]</td>
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* Based on scalloped perforating guns, 3¾" and smaller Other configuration specifications available upon request
SUB CONNECTORS
By Yellow Jacket Oil Tools

Yellow Jacket produces a full line of industry standard sub connectors, including Yellow Jacket Exclusive and custom subs. Yellow Jacket subs are more durable with premium, heat treated 4340 steel construction, corrosion resistant plating and fluted wrench surfaces.

**Built to Last**
- Premium, heat treated 4340 steel
- Corrosion resistant plating
- Fluted wrench surface lasts longer than traditional knurling

**Better Grip:**
**Fluted Wrench Surface**
- Improved gripping creates a safer, more productive tool
- More productive: facilitates tool configuration assembly and disassembly
- Increased safety: wrenches are less likely to slip and injure the user

**Industry Standard & Custom Designs**
- Yellow Jacket specializes in custom designed and industry standard sub connectors
- Selection of industry standard port configurations
- Threads compatible with industry standard completion equipment

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Maximum Temperature (°F) [°C]</th>
<th>350 - 450 [176-232]</th>
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<tr>
<td>Maximum Pressure (psi) [MPa]</td>
<td>20000 [138]</td>
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* Varies based on rating of o-ring used

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**FLUTED WRENCH SURFACE. CORROSION RESISTANT PLATING. BETTER VALUE.**
**YELLOW JACKET SUB CONNECTORS**
**DEIGNED MORE DURABLE AND SAFE**

- Yellow Jacket Oil Tools specializes in custom designed subs and industry standard sub designs
- Yellow jacket sub connectors offer full compatibility with industry standard perforating equipment and features that increase durability and user safety

**FEATURES & BENEFITS KEY**
- Increases Durability
- Increases Safety
- Compatible with Industry Standard Components

---

**PLUG SHOOT FIRING HEAD (PSFH)**
**ONE TOOL DOES THE JOB OF 3-5.**

PSFH REPLACES UP TO FIVE TOOLS
In plug and perf operations, the patent pending PSFH does the job of up to five tools, eliminating the need for a switch sub, blast sleeve, plug shoot adapter, quick change and traditional firing head to set a plug.

REDUCED RISK OF MISRUNS
- Fewer o-rings, electrical connections and components to potentially fail with PSFH, up to:
  - 4 fewer tools
  - 12 fewer o-rings
  - 12 fewer electrical connections

SAVES TIME AND COST
- Fewer components to assemble, redress and clean each run
- Fewer components to purchase

OPTIMIZED TOOL CONFIGURATION
- Shorter tool configuration optimal for tight radius well geometries
- Stronger tool configuration without small diameter quick change neck

---

**DIRECT CONNECT SUB**
**CCL TO GUN STRING. NO QUICK CHANGE.**

REPLACES QUICK CHANGE AND TOP SUB
The patent pending Direct Connect Sub connects the CCL directly to a perforating gun string without a quick change.

REDUCED RISK OF MISRUNS
- Fewer o-rings, electrical connections and components to potentially fail with Direct Connect:
  - 1 fewer tool
  - 5 fewer o-rings
  - 5 fewer electrical connections

OPTIMIZED TOOL CONFIGURATION
- Stronger tool configuration without small diameter quick change neck
- Shorter tool configuration optimal for tight radius well geometries

REDUCED REDRESS COST
- Reduced redress labor and consumable parts cost

INNOVATIVE ELECTRICAL CONTACT ASSEMBLY
- Reusable design with plunging contact pin and replaceable pigtail wire

---

**PORT CONFIGURATIONS**
**MORE RELIABLE SEAL WITH YELLOW JACKET DUAL PRESSURE SEAL**

**A**
YELLOW JACKET
Two Pressure Seals

**B**
DIRECT CONNECT

**C**
OWEN/ GRIZZ STYLE
One Pressure Seal
One Blast Seal

**D**
5" PORT
One Pressure Seal

**G**
LARGE, TITAN STYLE
One Pressure Seal

---

**PLUG & PERF SHORTENED WITH YELLOW JACKET EXCLUSIVE TOOLS.**

**SHORTER WITH YELLOW JACKET**
For plug and perf operations, reduce the tool string by up to 39.88" using these Yellow Jacket exclusive tools:
- Plug Shoot Firing Head
- Direct Connect Sub
- Yellow Jacket CCL

**WHY SHORTER IS BETTER**
- Fewer o-rings, electrical connections and components to potentially fail with Yellow Jacket, up to:
  - 5 fewer tools
  - 17 fewer o-rings
  - 20 fewer electrical connections

- A compact tool configuration is ideal for tight radius well geometries

---

**YELLOW JACKET EXCLUSIVE**

**YELLOW JACKET SUB CONNECTORS DESIGNED MORE DURABLE AND SAFE**

- Increased Durability
- Increased Safety
- Compatible with Industry Standard Components

---

** 컴패티블**
Compatible with industry standard perforating equipment

**포트 구성**
Available with all industry standard port configurations

**기술**
Patent pending technology

**플루트드 웰쳐스 보어스**
Fluted wrench surface improves grip and lasts longer than knurled gripping surface

**커로스 세션**
Port cross section

**플러그 사이드 뷰**
Plug side view

**플러그 톱 뷰**
Plug top view

---

*Angled port bore and custom port configurations available upon request*
PLUG SHOOT FIRING HEAD
Exclusively From Yellow Jacket Oil Tools
One Tool. Fewer Components. Best Solution.

In plug and perf operations, the patent pending Plug Shoot Firing Head (PSFH) does the job of up to five tools. Replacing three to five tools with one saves time and cost, reduces the risk of misruns, and optimizes the tool string configuration.

One Tool Replaces Five
- PSFH eliminates the need for a switch sub, blast sleeve, plug shoot adapter, quick change and traditional firing head to set a plug

 Saves Cost & Time
- Fewer components to assemble, redress and clean each run reduces labor and parts costs
- Fewer tools to purchase

Reduced Risk of Misruns
- Reduces the risk of misruns with fewer components, o-rings and electrical connections to potentially fail

Optimized Tool String
- Shorter tool configuration optimal for tight radius well geometries
- Stronger tool configuration without small diameter quick change neck

Compatible with Industry Standard Components
- Setting Tools: Baker #10, Baker #20 and 3 ¼” Compact
- Igniters: BP 3, 4, 5 and 074
- Accepts industry standard igniter holders
- Industry standard perforating gun thread

* Available Q4 2015

PART NUMBER & SIZE GUIDE

<table>
<thead>
<tr>
<th>PART</th>
<th>PSFH OD SIZE</th>
<th>SETTING TOOL</th>
<th>PORT TYPE</th>
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| PLUG SHOOT FIRING HEAD | BAKER #10 | BAKER #20 | COMPACT 3 ¼"
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<td>31 = 3 ¼&quot;</td>
<td>33 = 3 ¾&quot;</td>
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</tbody>
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A = YELLOW JACKET
C = GRIZZ STYLE
D = 5” PORT
G = TITAN STYLE

* Compact setting tool configuration available Q4 2015

PSFH PART NUMBERS

| SETTING TOOL | BAKER #20 | COMPACT 3 ¼"
<table>
<thead>
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<td>PSFH.27.20.X</td>
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<table>
<thead>
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<tr>
<td>A</td>
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<td>5” PORT</td>
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<tr>
<td>G</td>
<td>TITAN STYLE</td>
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</table>

SPECIFICATIONS

350-450 [176-232]° MAXIMUM TEMPERATURE (°F [°C])
20000 [138] MAXIMUM PRESSURE (psi) [MPa]

*Varies based on rating of Diode or Pass Thru used
**ONE TOOL REPLACES UP TO FIVE**

**PSFH VS. CONVENTIONAL TOOL CONFIGURATIONS FOR PLUG & PERF OPERATIONS**

*THREE TOOLS*

- PSFH CONNECTS THE SETTING TOOL DIRECTLY TO THE GUN STRING FOR A STRONGER & SHORTER TOOL CONFIGURATION

*FOUR TOOLS*

- TOOL KEY: 1. FIRING HEAD 2. PSA (PSPC) 3. SWITCH SUB 4. QUICK CHANGE 5. PSA (OWEN) 6. PSA (TITAN) 7. BLAST SLEEVE

*FIVE TOOLS*

- STRONGER TOOL CONFIGURATION WITHOUT QUICK CHANGE NECK SMALL DAMPER

**USER BENEFITS OF STREAMLINED TOOL CONFIGURATION**

**TECHNICAL BENEFITS ASIDE, ONE TOOL IS SIMPLY EASIER TO TOOL CONFIGURATION**

- Purchase, store, assemble, clean and redress one tool (PSFH) instead of three, four or five.
- Working with one tool instead of multiple saves time, saves cost and is more convenient.

**1000+ STAGES COMPLETED WITH PSFH AND COUNTING...**

**FIELD PROVEN UNDER A RANGE OF DOWNHOLE CONDITIONS**

- PSFH performs consistently well under a range of downhole conditions and meets or exceeds industry standard maximum pressure and tensile ratings.
- Already utilized in many plug and perf operations, PSFH use has been rapidly adopted due to the reliable function and time and cost saving features of this new, innovative tool.

**1000+ STAGES COMPLETED WITH PSFH AND COUNTING...**

**FIELD PROVEN UNDER A RANGE OF DOWNHOLE CONDITIONS**

- Introducing a patent pending igniter holder that allows Baker style electric firing heads with a removable igniter holder.

**INITIATE FOR LESS YELLOW JACKET IGNITER HOLDERS**

**INITIATE BAKER STYLE SETTING TOOLS WITH 074 IGNITERS**

- Yellow Jacket igniter holders use standard o-rings and are compatible with Baker style electric firing heads with a removable igniter holder.

**LES IS MORE WITH PSFH**

**REDUCED RISK OF MISRUNS, REDUCED LENGTH AND REDUCED COST**

**REDUCED RISK OF MISRUNS**

**WHEN AN O-RING OR ELECTRICAL CONNECTION FAILS, IT RESULTS IN A MISRUN COMPARED TO CONVENTIONAL TOOL CONFIGURATIONS, PSFH HAS UP TO:**

- 12 FEWER O-RINGS
- 15 FEWER ELECTRICAL CONNECTIONS

**THAT’S 27 FEWER OPPORTUNITIES FOR A MISRUN WITH PSFH**

**EVERY SHORTER COMBINE PSFH WITH THE DIRECT CONNECT SUB TO SHORTEN THE TOOL STRING AN ADDITIONAL 9.1”**

**WHY SHORTER IS BETTER**

**A MORE COMPACT TOOL STRING IS IDEAL IN TIGHT RADIUS WELL GEOMETRIES**

**PSFH REDUCES THE TOOL CONFIGURATION LENGTH BY UP TO 29.28”**

**REDRESS FOR LESS WITH PSFH**

**REDUCE REDRESS TIME AND PARTS COST EACH RUN, UP TO:**

- 38 MINUTES FASTER REDRESS
- $27 LOWER REDRESS PARTS COST

**ACTUAL SAVINGS AND REDRESS PRACTICES VARY BASED ON TOOL CONFIGURATION, PROCEDURE AND DOWNHOLE CONDITIONS**

**PSFH REDRESS EVERY RUN, CLEAN IGNITER HOLDER AND REPLACE: DIODE, O-RINGS, IGNITERS (PRIMARY & SECONDARY)**

**REDRESS FOR LESS WITH PSFH**

**REDUCE REDRESS TIME AND PARTS COST EACH RUN, UP TO:**

- UP TO 80% FASTER REDRESS
- UP TO 30% LOWER REDRESS PARTS COST

**AVERAGE REDRESS:**

- 10 MIN PARTS $90
- 33 MIN PARTS $75
- 45 MIN PARTS $90
- 48 MIN PARTS $90

**REDRESS TIME AND PARTS COST EACH RUN, UP TO:**

- UP TO 80% FASTER REDRESS
- UP TO 30% LOWER REDRESS PARTS COST

**PARTS COST EACH RUN, UP TO:**

- $27 LOWER REDRESS PARTS COST

**REDRESS PARTS COST EACH RUN, UP TO:**

- 30%
- 80%

**PSFH A CLOSER LOOK**

**MATERIAL**

- 4340 HT STEEL, ELECTROPLATED FOR CORROSION RESISTANCE

**FLUTED WRENCH SURFACE**

- IMPROVES WRENCH GRIP
- SAFER & MORE PRODUCTIVE

**PORT & PORT PLUG**

- 1. FIRING HEAD 2. PSA (PSPC) 3. SWITCH SUB 4. QUICK CHANGE 5. PSA (OWEN) 6. PSA (TITAN) 7. BLAST SLEEVE

**PORT & PORT PLUG**

- STYLES: YELLOW JACKET, GROOZ, TITAN, 3” STEEL, AND REPLACE: DIODE, O-RINGS, IGNITERS (PRIMARY & SECONDARY)

**COMPONENT SCHEDULE AND PART NUMBERS**

**PARTS $90**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $75**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $63**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $50**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $45**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $40**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $35**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $30**

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- 80% REDRESS TIME AND PARTS COST EACH RUN

**PARTS $25**

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**PARTS $20**

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**PARTS $15**

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**PARTS $10**

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**PARTS $5**

- 30% REDRESS TIME AND PARTS COST EACH RUN
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**PARTS $1**

- 30% REDRESS TIME AND PARTS COST EACH RUN
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**AVAILABLE Q4 2015**

**PARTS $25**

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- 80% REDRESS TIME AND PARTS COST EACH RUN

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**AVAILABLE Q4 2015**

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**PARTS $1**

- 30% REDRESS TIME AND PARTS COST EACH RUN
- 80% REDRESS TIME AND PARTS COST EACH RUN

**AVAILABLE Q4 2015**
The patent pending Direct Connect Sub connects the CCL directly to a perforating gun without a quick change. Eliminating the quick change strengthens and shortens the tool string while reducing the risk of misruns. The innovative electrical contact assembly also decreases redress time.

**Optimized Tool Configuration**
- Stronger tool configuration without quick change small diameter
- Shortened tool string is optimal for tight radius well geometries

**Reduced Risk of Misruns**
- Reduced risk of misruns with fewer o-rings, electrical connections and components to potentially fail

**Reduced Labor**
- Fewer components to assemble, redress and clean each run saves time and labor costs

**Innovative, Longer Lasting Electrical Contact Assembly**
- Reusable, disposable design
- Innovative, plunging contact pin
- Replaceable pigtail wire extends the life of the contact assembly
- Easier Redress: single, replaceable unit, no teardown or loose parts

**Compatible with Industry Standard Components**
- Features industry standard perforating gun and CCL threads

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**PART NUMBER & SIZE GUIDE**

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<thead>
<tr>
<th>PART</th>
<th>OD SIZE</th>
<th>PORT TYPE</th>
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<td>DC.31.X*</td>
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<tr>
<td>DIRECT CONNECT</td>
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</table>

A = YELLOW JACKET  
C = GRIZZ STYLE  
D = 5” PORT  
G = TITAN STYLE

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**DIRECT CONNECT PART NUMBERS**

2 ¾” DC.27.X*  
3 ⅜” DC.31.X*  
3 ⅛” DC.33.X*  

* Port Type| select one: A, C, D or G

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**SPECIFICATIONS**

| MAXIMUM TEMPERATURE (°F) [°C] | 350 [176] |
| MAXIMUM PRESSURE (psi) [MPa] | 20000 [138] |

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**STRONGER. MORE COMPACT. TOOL CONFIGURATION.**
STRONGER & MORE COMPACT TOOL CONFIGURATION
DIRECT CONNECT VS. QUICK CHANGE AND TOP SUB

DIRECT CONNECT
- Directly connects the CCL to a perforating gun

CONVENTIONAL TOOL CONFIGURATION TO CONNECT THE CCL TO A PERFORATING GUN
- Quick change

WEAK LINK QUICK CHANGE
The quick change to CCL connection is the narrowest diameter segment of the tool configuration for plug & perf operations. Quick changes are vulnerable to bend or break at their narrowest point. If a quick change breaks, it can result in substantial hardware damage and even injury to personnel.

STRONGER CONFIGURATION WITH DIRECT CONNECT
The larger diameter direct connect to CCL connection produces a stronger tool configuration eliminating the quick change and also eliminates the risk of a potential quick change failure.
* Diameter varies based on quick change model

LONGER LASTING CONTACT ASSEMBLY
Reusable electrical contact assembly comprised of:
- Plunging contact pin
- O-rings for sealing to the sub body
- Replaceable pigtail wire

SINGLE UNIT: No tear down/Loose parts
REDRESS EACH RUN: Clean & inspect, replace O-rings, trim pigtail wire as needed

DIRECT CONNECT
- Longer lasting with direct connect

PLUG & PERF SHORTENED
Pair direct connect with the Yellow Jacket exclusive plug shoot firing head for plug & perf operations. This combination reduces tool string length by up to 38” compared to conventional tool configurations.

REDRESS DIRECT CONNECT
- Every run: Clean and replace: O-rings, dart, and dart retainer

REPLACE AS NECESSARY:
- Contact assembly
- Contact assembly retainer
- Contact assembly pigtail wire

LESS IS MORE WITH DIRECT CONNECT
REDUCED: RISK OF MISRUNS, TOOL CONFIGURATION LENGTH & REDRESS TIME

REDUCED RISK OF MISRUN
When an o-ring or electrical connection fails, it results in a misrun. Compared to the quick change, top sub pairing, direct connect has:
- 5 fewer O-rings
- 5 fewer electrical connections
THAT'S 10 FEWER OPPORTUNITIES FOR A MISRUN WITH DIRECT CONNECT

WHY SHORTER IS BETTER
In tight radius well geometries, the shorter the tool string, the better. Direct connect reduces tool string length by 5’1”, that’s 63% shorter than the quick change, top sub combination.

AVERAGE REDRESS: 6 MIN PARTS $13

FASTER REDRESS
Reduce redress time by up to 70% each run, without increasing redress parts costs with direct connect. Simple redress, no redress kits required. Actual savings and redress frequencies vary based on procedure and downhole conditions.

DIRECT CONNECT A CLOSER LOOK

COMPONENT SCHEDULE AND PART NUMBERS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RETAINER</td>
<td>CONTACT ASSEMBLY RETAINER</td>
</tr>
<tr>
<td>2</td>
<td>CONTACT ASSEMBLY</td>
<td>D.C.C</td>
</tr>
<tr>
<td>3</td>
<td>PIGTAIL WIRE</td>
<td>E.P.T.A</td>
</tr>
<tr>
<td>4</td>
<td>DART</td>
<td>S.D.A</td>
</tr>
<tr>
<td>5</td>
<td>DART RETAINER</td>
<td>S.D.R.A</td>
</tr>
</tbody>
</table>

DIRECT CONNECT MATERIAL
- 4340 HT Steel, electroplated for corrosion resistance

FLUTED WRENCH SURFACE
- Improves wrench grip

PORT & PORT PLUG
- Styles: Yellow Jacket®, Grizz, Titan, 5”
- Seal: More reliable with two pressure seals

GROUND SCREW
- 5GROVE STANDARD THREADS (CCL/PERFORATING GUN)
CABLE HEADS
Exclusively From Yellow Jacket Oil Tools
Precision Weak Point. Clean Cut.

Instead of the conventional method of incrementally breaking the wireline, the patent pending Yellow Jacket cable head cuts the wireline with one, clean shear. Precision pin shearing elements provide accurate, repeatable pull-out tension, and a clean cut facilitates wireline removal.

**Precision Weak Point**
- Precision pin shearing elements provide accurate and repeatable pull-out tension
- Option to use up to ten pins allows for a wide range of shear strengths
- Tight tolerance pins provide dependable repeatability

**Clean Cut: Line Termination**
- Line terminator compression design provides dependable clamping strength
- No need to thread through secondary holes to terminate line armor
- Preload spring stores initial line cutting energy
- Hardened tool steel cutters shear wire cleanly
- Clean line shear facilitates exit through pressure control equipment, resulting in faster re-head and rig-up

**Shock Absorbing Spring**
- Dampens shock from gun string
- Reduces sharp impacts on the shear pins

**Compatibility**
- Compatible with industry standard over the line weight equipment and electric pin connection subs

---

**PART NUMBERS**

- CH.PS.281.A CABLE HEAD 9/32” LINE ASSEMBLY*
- CH.PS.281.14 REPLACEMENT LINE CLAMP WASHER*
- CH.PS.281.07 REPLACEMENT BRASS SHEAR PIN*
- CH.PS.281.12 REPLACEMENT LINE CLAMP BASE*
- CH.PS.281.04 REPLACEMENT UPPER CUTTING TOOTH*
- CH.PS.281.05 REPLACEMENT LOWER CUTTING TOOTH*

*Available Q1 2016

**SPECIFICATIONS**

<table>
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<tr>
<th>350-450 [176-232] MAXIMUM TEMPERATURE (°F) [°C]*</th>
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<tbody>
<tr>
<td>20000 [138] MAXIMUM PRESSURE (psi) [MPa]</td>
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</table>

* Varies based on rating of o-ring used

---

CLEAN WIRELINE CUT. FASTER REMOVAL. FASTER RE-HEAD. FASTER RIG-UP.
CASING COLLAR LOCATORS
Exclusively From Yellow Jacket Oil Tools

The patent pending Yellow Jacket Casing Collar Locator (CCL) is an upgraded version of industry standard CCL design. Design enhancements such as a double wound coil, pressure bulkheads and stronger, permanent magnets provide a better functioning, longer lasting tool.

Cleaner Signal
- Increased wound length and dual coil winding increase signal strength and clarity while providing system redundancy
- Stronger, permanent magnets enable higher feedback levels

Reduced Risk of Flooding
- Pressure bulkheads on both ends prevent CCL flooding due to seal failure above or below the CCL

Longer Lasting
- Tungsten carbide inserts protect the housing and subs by reducing contact with well casing
- Double wound coil provides a back-up system: if one strand breaks, you still get a signal
- Permanent magnets never require recharging

Compatible with Industry Standards
- Industry standard CCL threads
- High nickel alloy housing is non-magnetic and is suitable for harsh environments (CO2, H2S)
- Housing material meets API 5CT and NACE NR0175 standards

PART NUMBERS

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>CCL.31.A</td>
<td>3 1/8&quot; CCL*</td>
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<tr>
<td>CCL.QDA.A</td>
<td>REPLACEMENT DIODE</td>
</tr>
<tr>
<td>CCL.CFA.A</td>
<td>REPLACEMENT COIL ASSEMBLY</td>
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SPECIFICATIONS

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<tr>
<td>WEIGHT (LBS)</td>
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</table>

* Available Q4 2015

IMPROVED FUNCTION. LONGER LASTING. BETTER VALUE.
FEATURS & BENEFITS KEY

- Increases Durability
- Increases Safety
- Exclusive to Yellow Jacket CCL Design

COMPATIBLE CCL design and threads compatible with industry standard cable heads

DIODE ASSEMBLY Replacement part number: CCL.QDA.A

DOUBLE STRAND COIL
- Higher output, cleaner signal
- Permanent magnets, no recharge required
- Redundant wind for extra protection
- Replacement part number: CCL.CFA.A

COMPATIBLE CCL design and threads compatible with industry standard quick change or Yellow Jacket Direct Connect

PRESSURE BULKHEADS (TYPICAL BOTH ENDS)
Prevent CCL flooding due to seal failure above or below the CCL

TUNGSTEN CARBIDE INSERTS (TYPICAL BOTH ENDS)
Protect CCL housing and subs by reducing contact with casing

HOUSING MATERIAL
- High nickel alloy housing is non-magnetic and is suitable for harsh environments (CO2, H2S)

FLUTED WRENCH SURFACE (TYPICAL BOTH ENDS)
- Improves wrench grip
- Safer and more productive

SHOCK ABSORBER

1.5" SHORTER THAN CONVENTIONAL CCL DESIGNS

WHY SHORTER IS BETTER
A more compact tool configuration is ideal for tight radius well geometries

EVEN SHORTER WITH DIRECT CONNECT SUB
Combine the Yellow Jacket CCL with the Yellow Jacket Direct Connect Sub to reduce the tool configuration an additional 9.1"

PLUG & PERF SHORTENED WITH YELLOW JACKET
For plug and perf operations, reduce the tool string by up to 39.88" using these Yellow Jacket exclusive tools:
- Yellow Jacket CCL
- Plug Shoot Firing Head
- Direct Connect Sub

WHY SHORTER PLUG & PERF IS BETTER
- Fewer o-rings, electrical connections and components to potentially fail, up to:
  - 5 fewer tools
  - 17 fewer o-rings
  - 20 fewer electrical connections
- A compact tool configuration is ideal for tight radius well geometries

YELLOW JACKET CASING COLLAR LOCATOR (CCL)
AN UPGRADED VERSION OF THE CONVENTIONAL CCL

OVERALL LENGTH (1): 17.5"
MADE-UP LENGTH (2): 16"

YELLOW JACKET PATENT PENDING TECHNOLOGY
Yellow Jacket #10, #20 and compact setting tools offer industry proven design and full compatibility with standard completion equipment, plus design improvements that increase durability and user friendliness.

### #10 and #20 Setting Tools

**More Durable**
- Improved interface between piston and rod to eliminate mushrooming
- Piston rod slotted to eliminate loading of pin
- Fluted wrench surface improves grip and outlasts traditional micro-flutes
- Increased wall thickness (#10 only)

**User Friendly & Compatible**
- Serialized parts facilitate cleaning and inspecting multiple tools simultaneously
- Data books with MTR and critical dimensions included with tool
- Bleeder port compatible with shear-disc and stem style bleeder devices
- Components compatible with industry standard Baker style setting tools

### Compact Setting Tool

**More Durable**
- Thicker lower cylinder better resists deformation under high pressure
- Lengthened lower piston o-ring face profile for more stable stroke travel
- Fluted wrench surface improves grip and outlasts traditional micro-flutes
- Recessed bleeder port shields retainer nut from contact with casing inner wall

### Compatibility
- Bleeder port compatible with shear-disc and stem style bleeder devices
- Adapters available for Baker #20 profile

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#### SETTING TOOL PART NUMBERS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>T.ST.10.A</td>
<td>#10 SETTING TOOL, CONVENTIONAL</td>
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<tr>
<td>T.ST.10.B</td>
<td>#10 SETTING TOOL, BLEEDERLESS</td>
</tr>
<tr>
<td>T.ST.20.A</td>
<td>#20 SETTING TOOL, CONVENTIONAL</td>
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<tr>
<td>T.ST.20.B</td>
<td>#20 SETTING TOOL, BLEEDERLESS</td>
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<tr>
<td>T.ST.C.36.A</td>
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#### REDRESS KIT PART NUMBERS

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<td>T.ST.10.RDK.B</td>
<td>#10 SETTING TOOL, BLEEDERLESS</td>
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<tr>
<td>T.ST.20.RDK.A</td>
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<tr>
<td>T.ST.C.36.RDK</td>
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</table>

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Yellow Jacket Oil Tools

a division of G&H Diversified Manufacturing

Greater Oilfield

diervesified

MANUFACTURING
JUNK BASKETS/ GAGE RINGS
By Yellow Jacket Oil Tools

An upgraded version of the industry standard junk basket, corrosion resistant material and design features increase durability and function. Fluted wrench surfaces on the junk basket and gage ring improve wrench grip and torque to create a more productive and safe tool.

More Durable
- Corrosion resistant 304 stainless steel basket screen
- Shorter, thicker rod reduces the risk of bending
- Top sub permanently TIG welded to rod for a more dependable connection

Better Function
- Non-linear vents trap more debris while increasing fluid flow

Better Grip: Fluted Wrench Surface
- Fluted wrench surface on junk baskets and gage rings identifies the proper wrench placement to minimize tool damage
- Increases wrench grip and torque
- Pipe wrench is less likely to slip and injure the user

Compatible with Industry Standard Components
- Choice of top sub style
- Yellow Jacket junk baskets accept industry standard gage rings
- Yellow Jacket gage rings fit industry standard junk baskets

JUNK BASKET PART NUMBER & SIZE GUIDE

<table>
<thead>
<tr>
<th>PART</th>
<th>PART SIZE</th>
<th>SUB STYLE</th>
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<tbody>
<tr>
<td>JB</td>
<td># #</td>
<td>X</td>
</tr>
<tr>
<td>JUNK BASKET</td>
<td>05 = #5</td>
<td>A = 1 ¾&quot; - 6 ACME</td>
</tr>
<tr>
<td></td>
<td>10 = #10</td>
<td>B = 2 ¾&quot; - QUICK CHANGE</td>
</tr>
<tr>
<td></td>
<td>15 = #15</td>
<td>C = 3 ¾&quot; - QUICK CHANGE</td>
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<tr>
<td></td>
<td>20 = #20</td>
<td>D = JRC - QUICK CHANGE</td>
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<tr>
<td></td>
<td>25 = #25</td>
<td>E = ¾&quot; - SUCKER ROD</td>
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<tr>
<td></td>
<td></td>
<td>F = 1 ¾&quot; - 12 UN GO</td>
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GAGE RING PART NUMBER & SIZE GUIDE

<table>
<thead>
<tr>
<th>PART</th>
<th>PART SIZE</th>
<th>OUTER DIAMETER SIZE</th>
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</thead>
<tbody>
<tr>
<td>JB GR</td>
<td># #</td>
<td>X X X X X</td>
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<tr>
<td>JUNK BASKET</td>
<td>10 = #10</td>
<td>EXAMPLES:</td>
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<tr>
<td>GAGE RING</td>
<td>20 = #20</td>
<td>3000 = 3.0&quot;</td>
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<tr>
<td></td>
<td>25 = #25</td>
<td>8500 = 8.5&quot;</td>
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</table>

GAGE RING PART NUMBERS

- JB.GR.10.#### #10: OD SIZES FROM 3” - 7 ½”*
- JB.GR.20.#### #20: OD SIZES FROM 4” - 8 ½”*
- JB.GR.25.#### #25: OD SIZES FROM 6” - 8 ½”*

* Large diameter sizes available upon request
DUMP BAILERS
By Yellow Jacket Oil Tools

Yellow Jacket dump bailers are more durable with heavy-duty materials and a standalone window sub. Threaded holes in the window sub allow access for grounding and suspending conductor wiring. Fluted wrench surfaces improve grip and create a more productive, safe tool.

More Durable
- 304 stainless steel body resists corrosion, especially when used with acid
- Heavy-wall tube reduces bending damage
- 4140 steel, heavy-wall end fittings

Standalone Window Sub
- Window positioned in a standalone sub to reduce bending risk
- Threaded holes in the window sub facilitate grounding and suspending the conductor wire

Better Grip: Fluted Wrench Surface on End Fittings
- Increase wrench grip and torque for faster tool configuration assembly and disassembly
- Pipe wrenches are less likely to slip and injure the user

Compatible with Industry Standard Components
- Multiple sub configurations available: top/ window/ bottom
- Industry standard top threads

Optional Configuration: Bump & Dump Bottom Sub
- Spring loaded rod breaks glass when actuated

PART NUMBERS

3 ¼” DIAMETER DUMP BAILER
DB.TS.31.A TOP SUB
DB.WS.31.A WINDOW SUB
DB.BS.31.A BOTTOM SUB - PLAIN BOTTOM
DB.BS.31.B BOTTOM SUB - BUMP AND DUMP
DB.BJ.31.05A 5' BAILER JOINT, STAINLESS TUBE, WELDED
DB.BJ.31.10.A 10' BAILER JOINT, STAINLESS TUBE, WELDED

4 ¼” DIAMETER DUMP BAILER
DB.TS.42.A TOP SUB*
DB.WS.42.A WINDOW SUB*
DB.BS.42.A BOTTOM SUB - PLAIN BOTTOM*
DB.BS.42.B BOTTOM SUB - BUMP AND DUMP*
DB.BJ.42.05A 5’ BAILER JOINT, STAINLESS TUBE, WELDED*
DB.BJ.42.10.A 10’ BAILER JOINT, STAINLESS TUBE, WELDED*

* Available Q2 2016

MORE DURABLE MATERIAL AND DESIGN. BETTER DUMP BAILER.
Yellow Jacket over the line and over the cable head weight bars feature ports that allow well bore fluid to flow through the weight bar to help prevent sand build-up around the cable. Fluted wrench surfaces improve grip, creating a safer and more productive tool.

### Yellow Jacket Weight Bar Styles
- Over the line
- Over the cable head
- Fishing neck available for both styles

### Easier Cable Removal With Ported Design
- Ports on both ends increase the flow of well bore fluid inside the weight bar to reduce sand accumulation
- Reduced sand build-up facilitates cable removal

### Better Grip With Fluted Wrench Surfaces
- Increase wrench grip and torque for faster tool configuration assembly and disassembly
- Pipe wrenches are less likely to slip and injure the user

### Compatible with Industry Standard Components
- Industry standard weight bar threads
- Compatible with standard cable heads

### PART NUMBERS

<table>
<thead>
<tr>
<th>PART NUMBERS</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>OVER THE LINE</strong></td>
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</tr>
<tr>
<td>WB.OTL.31.3</td>
<td>3' LENGTH, 3 ⅛&quot; DIA.</td>
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<tr>
<td>WB.OTL.16.5</td>
<td>5' LENGTH, 1 ⅜&quot; DIA.*</td>
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<td>WB.OTL.20.5</td>
<td>5' LENGTH, 2&quot; DIA.*</td>
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<tr>
<td>WB.OTL.27.5</td>
<td>5' LENGTH, 2 ⅛&quot; DIA.*</td>
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<td>WB.OTL.31.5</td>
<td>5' LENGTH, 3 ⅛&quot; DIA.*</td>
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<td>WB.OTL.16.7</td>
<td>7' LENGTH, 1⅜&quot; DIA.*</td>
</tr>
<tr>
<td>WB.OTL.20.7</td>
<td>7' LENGTH, 2&quot; DIA.*</td>
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<tr>
<td>WB.OTL.27.7</td>
<td>7' LENGTH, 2 ⅛&quot; DIA.*</td>
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<tr>
<td>WB.OTL.31.7</td>
<td>7' LENGTH, 3 ⅛&quot; DIA.*</td>
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<tr>
<td><strong>OVER THE CABLE HEAD</strong></td>
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<td>WB.OTCH.31.7</td>
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<td><strong>OTHER COMPONENTS</strong></td>
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<td>WB.CHH.27.3</td>
<td>CABLE HEAD HOUSING, 2 ⅛&quot;*</td>
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<tr>
<td>WB.CHH.31.A</td>
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<tr>
<td>S.FNA.27.A</td>
<td>FISH NECK ASSEMBLY</td>
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<tr>
<td>S.FNI.A</td>
<td>FISH NECK INSERT</td>
</tr>
</tbody>
</table>

* Available Q2 2016
Yellow Jacket pressure switches, dual diode switches and pass thrus are modeled after the widely used and proven EB style design. Complementing trusted design, all Yellow Jacket switches are anodized for increased protection against arcing.

**Patterned After the Best**
- EB style design pressure switches, dual diode switches, and pass thrus
- Polarity discriminating pressure and dual diode switches for sequential firing control

**Reliable Performance with Quality Design & Production**
- EB style design provides reliable function and full compatibility with industry standard components
- Trusted design falls short without quality execution. Yellow Jacket switches are made to the same strict production standards as all Yellow Jacket perforating products.

**Reduced Risk of Arcing**
- Anodized switch housing provides additional protection against arcing compared to traditional EB style switches

**PART NUMBERS**

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<tr>
<th>Part Number</th>
<th>Description</th>
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<td>PRESSURE SWITCH - POSITIVE*</td>
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<td>SW.PR.N</td>
<td>PRESSURE SWITCH - NEGATIVE*</td>
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<td>SW.PR.M</td>
<td>PRESSURE SWITCH - MONO</td>
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<td>DUAL DIODE - POSITIVE</td>
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<td>SW.DD.N</td>
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<tr>
<td>SW.PT</td>
<td>PASS THRU</td>
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<tr>
<td>SW.PT.G</td>
<td>PASS THRU WITH GROUND</td>
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**PSFH COMPATIBLE**

DO NOT CONTAIN O-RINGS

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<tr>
<td>SW.PT.PSFH</td>
<td>PASS THRU*</td>
</tr>
<tr>
<td>SW.PT.G.PSFH</td>
<td>PASS THRU WITH GROUND*</td>
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**SPECIFICATIONS**

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<th>Value</th>
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<td>Voltage</td>
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<td>Current</td>
<td>2000</td>
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</tbody>
</table>

* Available Q4 2015
IGNITER HOLDERS
Exclusively From Yellow Jacket Oil Tools
Initiate for Less. 074 Without Blast Damage.

The Yellow Jacket, patent pending 074 igniter holder for Baker style #10 and #20 electrical firing heads protects connected tools from blast damage and pressure build up. Yellow Jacket also offers industry standard igniter holders for BP 3, BP 4 and BP 5 igniters.

074 Without the Blast Damage
- Insulated bulkhead seal maintains pressure isolation to protect connected tools from blast damage when used with a 074 igniter
- Protects up hole tools from blast and pressure after setting wellbore equipment

Initiate for Less
- Yellow Jacket 074 igniter holders allow users to fire 074 igniters in Baker style electric firing heads
- Reduce cost by initiating with less expensive 074 igniters instead of BP 3, BP 4, or BP 5 igniters
- No need to purchase 074 firing heads when switching from BP igniters to 074 igniters

Standard BP Igniter Holders
- Yellow Jacket also offers BP 3, BP 4 and BP 5 igniter holders

Compatibility
- Yellow Jacket 074 and BP 3, BP 4, and BP 5 igniter holders are compatible with industry standard Baker style #10 and #20 firing heads

PART NUMBERS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
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<td>#10 FIRING HEAD, BP 3, 4, 5 IGNITER*</td>
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<td>#20 FIRING HEAD, BP 3, 4, 5 IGNITER*</td>
</tr>
<tr>
<td>FH.IH.10.B</td>
<td>#10 FIRING HEAD, 074 IGNITER*</td>
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<tr>
<td>FH.IH.20.B</td>
<td>#20 FIRING HEAD, 074 IGNITER*</td>
</tr>
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* Available Q4 2015

SPECIFICATIONS

<table>
<thead>
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<th>Specification</th>
<th>Value</th>
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<td>350-425 [176-218]</td>
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<tr>
<td>Maximum Pressure (psi) [MPa]</td>
<td>20000 [138]</td>
</tr>
</tbody>
</table>

* Varies based on rating of igniter and o-rings used
FLOW TUBES
By Yellow Jacket Oil Tools

Yellow Jacket flow tubes last longer than conventional steel tubes. Advanced coating and material significantly increase durability. With precision ID sizing in .001” increments, select the exact size required for the job and achieve the most efficient seal.

More Durable
- Last up to 30% longer than other flow tubes
- More durable due to specialized coating, material and production method
- Replace less often, reduce replacement costs

Precision ID Sizing in .001” Increments
- More sizing options to select the best ID for the size of wireline cable used
- Precise fit requires less grease to seal
- Compatible with all standard model Grease Injection Control Heads (GICH)

PART NUMBER & SIZE GUIDE

<table>
<thead>
<tr>
<th>PART NUMBER &amp; SIZE GUIDE</th>
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</thead>
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<td>Flow Tube</td>
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* .280"-.299” through hole IDs available upon request

PREMIUM COATING. BETTER MATERIAL. LASTS LONGER. SAVES YOU MONEY.
CINCO-C
Exclusively From Yellow Jacket Oil Tools
One Tool. Two Functions. Faster Assembly.

This hand tool does the job of two. Designed specifically for wireline, Cinco-C cuts detonating cord and crimps on the detonator for faster perforating gun string assembly. No more shifting between tools.

Faster Gun String Assembly
- One tool replaces two
- Eliminates shifting between tools
- Lightweight, ergonomic design

Safer
- Blade less exposed than other det. cord cutters, reducing the risk of accidental cuts

Convenient
- Purchase one tool instead of two
- No special replacement blade required. Accepts standard, commonly available #9 single edge, stainless steel razor blades.
- Includes 6” and 12” rulers

Effective
- Secure crimp without over crimping
- Clean detonating cord cut
- Crimper opens wide for easy clearance
- Compatible with all standard 1/4” nominal OD detonators and boosters

PART NUMBERS

<p>| | |</p>
<table>
<thead>
<tr>
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<td>REPLACEMENT BLADES</td>
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<td>REPLACEMENT RULER- 6”</td>
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<td>REPLACEMENT RULER- 12”</td>
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A DETONATING CORD CUTTER & A DETONATION CAP CRIPMER COMBINED
HAMMER WRENCH
By Yellow Jacket Oil Tools
The Toughest, Backed by a Lifetime Guarantee

Constructed from high strength 4340 ALLOY steel, the same heavy-duty alloy used for aircraft landing gear! Each forging is heat treated to produce a wrench built for maximum toughness. We are so confident in their durability, Yellow Jacket hammer wrenches come with a LIFETIME GUARANTEE.

More Durable
- The only hot forged 4340 alloy steel hammer / striking wrench
- Tougher than 41XX alloy wrenches
- Xylan coated for corrosion resistance
- Engineered stronger with I-beam design
- 6 point, hex style reduces stripping of wrench and nut

Lifetime Guarantee
- If you break it, we replace it

Easy to Use
- Applicable stud and nut sizes are noted on the tool throat
- Easier handling with large head to handle clearance
- Straight handle reduces cocking when struck

Safety Features
- Bright, safety yellow coating for better visibility and eye awareness
- Large striking handle surface area reduces glancing blows and tension rope slipping or damage

 PART NUMBERS & SIZES*

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<tr>
<th>PART #</th>
<th>NUT</th>
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* Hex head box thickness for all sizes is 1-1/4"
Custom sizes available upon request

4340 ALLOY. LIFETIME GUARANTEE. LASTS LONGER. SAVES YOU MONEY.
Convenient Distribution
When you need a part, you need it fast

Yellow Jacket warehouses are located in major U.S. shale plays, and the Yellow Jacket sales team is available 24/7.

Northeast - USA
Jesse Holloran
jholloran@ghdiv.com
713-417-3838
Connellsville, PA Warehouse

Southeast - USA
Cody Wells
cwells@ghdiv.com
713-679-8064
Tyler, TX Warehouse

Texas - USA
Houston | South TX
Jerry Cobb
jcobra@ghdiv.com
817-559-2943
Houston, TX Warehouse

West TX
Chris Einspahr
cceinspahr@ghdiv.com
832-477-5491
Odessa, TX Warehouse

North TX | East TX
Cody Wells
cwells@ghdiv.com
713-679-8064
Tyler, TX Warehouse

Northwest - USA
Drew Schroeder
ds Schroeder@ghdiv.com
281-782-7232
Dickinson, ND Warehouse

Midcontinent/ Rockies - USA
TJ Langley
tjlangley@ghdiv.com
281-793-4979
Brighton, CO Warehouse