“Master of Super Breakers”
Founded in 1995, MSB is the premium Korean manufacturer that has complete ‘gas firing breaker lineup’ such as SAGA series.
Promise to deliver the best value and enjoy Korean premium!
Smart rock mining: Blast Free

Most common mining method without blasting:
Breaking with hydraulic breakers

- Why most common mining to use MSB hydraulic breakers?
  - Optimal operation for the planned mining yield
  - Cost Reduction of the security expenses
  - Eliminating unnecessary explosion output
  - Exact completion for the mining task
  - Selective mining of the deposits
  - Reducing Environmental Pollution
  - Minimizing emissions from the blast

Gas Firing System: SAGA Series

- SAGA Series: Legendary breaker series that inspires your choice for any breaking task.

  - Large Sized Breakers: SAGA 300/350/400/510
    The large sized breakers provide us the time saving alternative in tight timeframe. They are available for the toughest demolition tasks such as the biggest demolition jobs, primary excavation in quarrying tasks, tunneling jobs and the underwater jobs with the extra kit installation. It is one of most efficient mining solutions against the blast.

  - Mid-Sized Breakers: SAGA 120/180/220/250
    The robust structure and the optimized weight ratio of the mid-sized breakers by the dedicated product design are the smart choices for the jobs such as earthworks in non-residential area and secondary demolition in quarrying tasks, demolishing buildings and the underwater jobs with the extra kit installation. It is a perfect solution for digging narrow deep trenches.

  - Small Sized Breakers: SAGA 20/30/50/55/81/100
    The small breakers are highly productive choices for the jobs such as excavation work, highway and road maintenance, demolitions in urban area and building refurbishment.
**SAGA Series Section Feature (Small Size : SAGA 20/30/40/50/55/81/100)**

1. **Energy Regeneration Nitrogen Gas**
   Cushion Chamber (ERNGCC)
   Absorbs the piston’s upward recoil and conduct energy recycling for the constant blow.

2. **Easy-Pass Valve**
   Side mounted type of Easy-Pass Valve (EPV) as a spool to regulate smooth oil traffic and to control the oil direction for the stable operation and the vibration absorbing.

3. **Piston**
   Most efficient design for maximum energy transfer and recoil reduction as well as ideal match of tool and piston diameters. It transfers highest shock wave into the breaking objects.

4. **Efficient Power Transfer(Piston to tool)**
   Optimum transfer of blow energy into the material and the reduction of the recoil.

5. **Underwater Application(UA)**
   Air line for underwater use.

6. **Housing Bottom Plate**
   Abrasion-resistant plate delivers breaker protection.

7. **Single Tool Retainer Pin**
   Correct tool alignment and dispersion of tool wear.

8. **Auto Grease Refiller**
   Compact auto grease refiller is equipped as an optional feature. Easy daily refill is serviced and continuous greasing is available as long as the breaker is operated. (Not shown on the illustration)

9. **Top Buffer**
   Vibration absorber to prevent the impulses between the carrier and the breaker.

10. **Side(Tie) Rods**
    Fully closed side (tie) rods enlarges the durability and the optimal load carrying capacity is designed.

11. **Cylinder Design**
    Square type cylinder design brings optimum match between back head and front head as well as improves stable operation to increase the product durability and to reduce the unnecessary damages such as scratches.

12. **Wearing Plates**
    Employment of wear resistant plates between cylinder, front head and housing increases the overall product durability.

13. **Base Buffer**
    Vibration absorber and suspension device to protect the powercell.

14. **All-in-One Type of Upper Bushing and Thrust Ring Integration**
    Convenient one set and easier maintenance and serviceability without disassembly of powercell.

15. **Replaceable Tool Bushing**
    Convenience for replacement and protect the front head (Not shown on the illustration)

---

**SAGA Small Series**

- **Open / Box (Soundproof)** / Side housing are all available in SAGA Small Sized Series.
- **Technical Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>SAGA 20</th>
<th>SAGA 30</th>
<th>SAGA 40</th>
<th>SAGA 50</th>
<th>SAGA 55</th>
<th>SAGA 81</th>
<th>SAGA 100</th>
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<td>33</td>
<td>59.5</td>
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<td>74.5</td>
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<tr>
<td>Return Line Size [OUT] (Hose Connection)</td>
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<td>33</td>
<td>59.5</td>
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<td>68</td>
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<td>Carrier Weight Range 2)</td>
<td>lb</td>
<td>1600</td>
<td>1500</td>
<td>2600</td>
<td>2300</td>
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<td>2700</td>
<td>4400</td>
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</tbody>
</table>
| 1) The working weight includes a standard working tool and top bracket.  
2) Check the lifting capacity of the main carrier from the carrier manual and the carrier manufacturer. |

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**Competitive Feature List : SAGA Series**

- **Energy Regeneration Nitrogen Gas**
- **Cushion Chamber (ERNGCC)**
- **Correct tool alignment and dispersion of tool wear.**
- **Auto Grease Refiller**
- **Compact auto grease refiller is equipped as an optional feature. Easy daily refill is serviced and continuous greasing is available as long as the breaker is operated. (Not shown on the illustration)**

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**Note :**
- Note 1: Some competitive features may not be available, please consult this concern to MSB corporation for the availability.
- Note 2: Option.

---

**Technical Specification**

- **Specification**
- **Unit**
- **SAGA Small Sized Series**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA 20**
- **SAGA 30**
- **SAGA 40**
- **SAGA 50**
- **SAGA 55**
- **SAGA 81**
- **SAGA 100**
- **Technical Specification**
- **Unit**
- **SAGA Series Small**

---

**Note :**
- Note 1: Some competitive features may not be available, please consult this concern to MSB corporation for the availability.
- Note 2: Option.
**SAGA Series Section Feature (Mid & Large Size) : SAGA 120/180/220/250/300/350/400/510**

1. **Energy regeneration nitrogen gas cushion chamber (ERNGCC)**
   - Absorbs the piston's upward recoil and conduct energy recycling for the constant blow.
2. **Side Buffer**
   - Side vibration absorber and side suspension device to protect the powercell.
3. **Easy-Pass Valve**
   - Side mounted type of Easy-Pass Valve (EPV) as a spool to regulate smooth oil traffic and to control the oil direction for the stable operation and the vibration absorbing.
4. **N2 gas charged accumulator**
   - Rechargeable N2 gas accumulator to assist power stroke and to reduce the surge pressure and the spikes from the hydraulic circuit of the excavator.
5. **Piston**
   - Most efficient design for maximum energy transfer and recoil reduction as well as ideal match of tool and piston diameters. It transfers highest shock and leverage into the material.
6. **Efficient power transfer (Piston to tool)**
   - Optimum transfer of blow energy into the material and the reduction of the recoil.
7. **Dual tool retainer pins**
   - Correct tool alignment and dispersion of tool wear.
8. **Accumulator pressure**
   - 200-450 psi, 200-400 psi, 400-800 psi.
9. **Oil flow**
   - 150-170 l/min, 160-180 l/min, 200-210 l/min.
10. **Operating pressure**
    - 2320-2610 psi, 2320-2610 psi, 2900-3045 psi.
11. **All-in-One Type of Upper bushing and thrust ring integration**
    - Convenient one set and easier maintenance and serviceability without disassembly of powercell.
12. **Cylinder Design**
    - Square tapered cylinder design brings optimum match between back head and front head as well as improves stable operation to increase the product durability and to reduce the unnecessary damages such as scratches.
13. **Super anti blank firing (SABF) system**
    - SABF increases the lifespan of all components subject to wear and fatigue and reducing stress for the arm of the main carrier and the breaker. (Not shown on the illustration)
14. **Underwater Application (UA)**
    - Air line for underwater use. (Not shown on the illustration)
15. **Effective Swivel Bar**
    - High pressure (in) and low pressure (out) swivel bar increase hose lifespan. (Not shown on the illustration)
16. **Double speed system (DSS)**
    - As a standard feature (above SAGA 120) to change from long stroke to short stroke according to the operator's requirement for the optimal performance. (Not shown on the illustration)

---

**Technical Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Unit</th>
<th>SAGA 120</th>
<th>SAGA 180</th>
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<th>SAGA 250</th>
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**Competitive Feature List : SAGA Series**

- **SAGA Series**
  - SAGA 120
  - SAGA 180
  - SAGA 220
  - SAGA 250
  - SAGA 300
  - SAGA 350
  - SAGA 400
  - SAGA 510

- **Mid**
  - SAGA 120
  - SAGA 180
  - SAGA 220
  - SAGA 250
  - SAGA 300
  - SAGA 350
  - SAGA 400
  - SAGA 510

- **Large**
  - SAGA 180
  - SAGA 220
  - SAGA 250
  - SAGA 300
  - SAGA 350
  - SAGA 400
  - SAGA 510

**Note:** Some competitive features may be adjusted due to the drawing updates by the manufacturer.
### MSB Working Tool Selections

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Working Tool</th>
<th>Tool Configurations</th>
<th>Recommended Applications</th>
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<td>Rock breaking</td>
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### Operational Methods of 4 Stroke Modes

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<th>DSS</th>
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</tr>
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<td>2</td>
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</tr>
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<td>On</td>
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<tr>
<td>4</td>
<td>Off</td>
<td>On</td>
</tr>
</tbody>
</table>

- **SABF System**: Super Anti Blank Firing
- **DSS System**: Double Speed Stroke

- **Mode 1**: Hard Rock Breaking, Powerful Frequency Breaking, Anti Blank-Firing Condition
- **Mode 2**: Blank Firing Free Mode, Long Stroke Mode
- **Mode 3**: Anti Blank Firing Mode, Short Stroke Mode
- **Mode 4**: Blank Firing Free Mode, Short Stroke Mode

The four mode selections for efficient breaking are now available in SAGA 120 / 220 / 250 / 300 / 400 / 510.