SEOAM MACHINERY INDUSTRY

BULL GEAR & PINION GEAR

MARINE ENGINE GEAR
We will make a great effort to satisfy customers with self-confidence of the best.
By manufactured high quality Gears, Power Chuck & Hydraulic Cylinder, Curvic Couplings, and Gear Reducers, The SEOAM continually make effort for customers that they will look for SEOAM to be believed our reliable capability from customers again and sincerely promise with customers to support products or services.

SEOAM Machinery boasts the highest quality and precision product.

以最大的自信，尽最大的努力，
瑞岩机械生产超精密齿轮，动力卡盘，液压油缸，端面齿轮，减速器等，瑞岩机械通过不断的努力和卓越的技术制造一流品质的产品，出口国际市场，为成为世界水平的公司而不懈努力。
瑞岩机械引以为荣的是拥有“最高品质”和“最高精度”的产品。

最高という自信で最善を尽くします。
超精密ギア、パワー・チャック、油圧シリンダ、カービングカップリング、減速機等を生産しているSEOAMは絶え間ない努力と優秀な技術力を元にお客様が信頼して使える製品とサービスを提供することをお約束します。

SEOAMは“最高品質”と“最高精度”を誇っております。

최고라는 자부심으로 최선을 다합니다。
超精密가와 피워·차크, 유압시린더, 카비링커핑, 절차기 등의 생산하고 있는 사śmy가에 끊임없는 노력과 우수한 기술력을 바탕으로 고객이 믿고 둘 수 있는 제품과 서비스를 제공하여 드림을 약속하였습니다。

사망가에 최고의 품질과 고정밀도 제품을 자랑합니다.
HISTORY OF SEOAM

1976. 02.
Establishment of Hwacheon Gear Works Co., Ltd.

1980. 04.
Merged with Hwacheon Chuck Co., Ltd.

1986. 07.
Made a contract of technical cooperation with Hwacheon machine Ltd.

1986. 02.
Exported Power Chuck to Hwacheon machine Ltd.

1996. 01.
Moved factory in Hanam Industrial Complex.

1996. 12.
Achieved C.E. Mark.

1996. 12.
Appointed as an excellent company for the cooperation of labor & employer.

2001. 11.
Awarded a prize by president in commemoration of TRADE day.

2003. 05.
Exported Power Chuck & Cylinder to China.

2004. 01.
Exported Power Chuck & Cylinder to South Africa.

2004. 11.
Awarded for exports over US$5Mio and awarded a recognition from Korean presidnet.

2005. 11.

2006. 01.
Developed high speed Compensation Chuck & hydraulic cylinder (10,000rpm)

2006. 03.
Developed a model taxpayer by Ministry of Finance and Economy

2006. 12.
Sponsored a High speed Compensation Chuck & Korean Intellectual Property Office

2007. 04.
Appointed as a standard company certified by Ministry of Commerce, Industry and Energy.

2008. 11.
A reviewed Single PPM certificate for Power Chuck and Hydraulic Cylinder

2011. 12.
Stock listed at KOSDAQ

www.kenyerengineering.com
1. High Quality • Secure quality managing system are implemented from materials to heat treatments and grinding processes.
2. High Reliability • Gears manufactured by cutting-edge machines guarantee high quality and durability.
3. Low noise and vibration • Gears applied crowning and profile-modification can be used in high speed rotation.
4. Specialized in Gear Reducers • SM manufactures large-sized gear reducers for ships and industrial purposes.

1. 高品質：精密的质量监控系统贯穿材料的选取、热处理及磨削加工等的全过程。
2. 高可靠性：由切削加工的齿轮，具有高质量和长久的耐用性。
3. 噪音低，振动小：经过精密磨削加工的齿轮，安装在高速运转的设备上，且运行的噪声小，振动小。
4. 专业齿轮减速装置：生产齿轮用和工业用的大型齿轮减速装置。

1. 高品質 2. 高耐熱性 3. 低振動 4. 减速機生產專門

← TURBO COMPRESSOR BULL GEAR SET
涡轮空气压缩机用齿轮装置
ユーボ圧縮機用のブギアセット
타보 압축기용 불기어 세트
1 PLANETARY REDUCER
2 TURBO COMPRESSOR
3 REDUCER
4 REDUCER
5 REDUCER

Gear set for towing locomotives in the Panama Canal (Exported to Mitsubishi Heavy Industries, Ltd in Japan)

パナマ運河引船用軸箱ギア類 (日本三菱重工業輸入品)

파나마 운하 선박에인용 철도차량 GEAR류 (일본 미쓰비시 중공업 납품)
Classification by application / 按应用行业分类 / 適用業種別の分類 / 適用 산업별 분류

Gears for Wind power / 風力発電機齒輪 / 風力発電用ギア / 風力発電用ギア

- Gears for Pitch & Yaw drive of wind turbine
- 風力発電機ピッチ・ヨー駆動用齿轮
- 風力発電用ピッチ＆ヨードライブ用ギア
- 風力発電用ギア
- 風力発電用ギア

Gears for Marine engine / 船舶齿轮 / 船舶用エンジンギア / 선박엔진용 기어

- Gear for Marine engine
- Gear manufacturing as per classification Criterion
- 船舶发动机齿轮
- 船舶发动机齿轮
- 船舶用エンジンギア
- 船舶用エンジンギア
- 선박엔진용 기어
- 선박엔진용 기어

Gears for Railway vehicles / 铁路车辆上的齿轮 / 鉄道車両ギア / 철도 차량용 기어

- Driving gears for railway vehicles
- 用于铁路车辆上的齿轮
- 鉄道車両ギア製作
- 철도차량용 기어 제작
<p>Gears for Industrial machinery / 工业机械用齿轮 / 産業機械用ギア / 산업기계용기어</p>

- Gears for printing, chemical, paper and iron industry
- Bull gear & pinion for Turbo compressor
- 印刷、化学、造纸、钢铁工业用齿轮
- プリント、化学、紙製、鉄鋼など産業用ギア製作
- ターボ圧縮機用ギヤ・ピニオン
- 인쇄기, 화학, 제지, 재활용 산업용 기어 제작
- 탄소철강 용접기 기어 제작

<p>Gears for Locomotive / 船舶牵引电动车齿轮 / 船舶引電動車用ギア / 선박 예언 전동차용 기어</p>

- Supplied driving gear for railway vehicles
- Gear & Shaft set for towing locomotives in the Panama Canal
- 供船舶牵引电动车减速箱
- 附带牵引电动车减速箱 Gear & Shaft
- 선박 예언 전동차용 감속기 Gear & Shaft

<p>Gears for Machine tools & Robot / 机床齿轮 / 机工機械・ロボット用ギア / 공작기계용기어 & 로봇용기어</p>

- High precision gears for Machine tools (Milling, Lathe, Boring machine, Machining center, etc) and Industrial Robots
- 用于磨床、车床、铣床、多工位自动数控车床等设备上的高精度齿轮与机械齿轮
- フライス盤、旋盤、ボーリングマシン、マシニングセンター用高精度の工作機械用ギア及び産業ロボットギア製作
- 급료, 세공, 보링, 쿼리링, 제어, 산업용 로봇의 공작기계용 기어 및 산업 로봇 기어제작
Classification by kind / 种类的分类 / 種類別分類 / 종류별 분류

- **Spur gear** / 直齿轮
- **Helical gear** / 螺旋齿轮
- **Bevel gear** / 斜齿轮

- Module: 0.5–30 • Pressure angle: 20°, 25°, special pressure angle • Angle of torsion: 0°～45° (left, right) • Maximum working dia.: 03150 • Class: DIN4→DIN6(U50→U54) • Material: SCM435, SCM415, SCM440 • Hardening treatment: Carburizing, Induction Hardening, Nitriding

- Module: 0.5–30 • Pressure angle: 20°, 25°, special pressure angle • Angle of torsion: 0°～45° (left, right) • Maximum working dia.: 03150 • Class: DIN4→DIN6(U50→U54) • Material: SCM435, SCM415, SCM440 • Hardening treatment: Carburizing, Induction Hardening, Nitriding

### Internal gear

- **Internal gear** / 内齿轮

  - Max. module: 12.7 • Max. tooth width: 200mm
  - 最大モジュール: 12.7 • 最大歯幅: 200mm
  - Maximum module: 12.7 • Maximum tooth width: 200mm
  - 最大モジュール: 12.7 • 最大歯幅: 200mm

- **Worm & Worm wheel gear** / ウォーム&ウォームホイール

  - Consisted of a round and screw shaped worm gear and a spur gear shaped worm wheel. It is useful to get great reduce rate and the function of anti-reversion

  - 齒数が少ないネジ形のウォームギアとそれに合う直齿轮形のウォームホイールギアを組み合わせた構造で、大いに減速率を上げるための歯車を採用しています。

- **Rack gear** / ラックギア

  - Products for linear motion that require high-precision quality

### Spline shaft

- **Spline shaft** / スプラインシャフト

  - Involute spline, and square spline, spindle for industries and machine tools

### Timing pulley

- **Timing pulley** / タイミングプーリー

  - Max. working dia.: 380mm
  - 最大直径: 380mm
  - Maximum outside diameter: 380mm
  - 最大外径: 380mm
  - Maximum outside diameter: 380mm
SPEED REDUCER /减速设备 /減速機 / 감속기

Based on our long experience and excellent technology, we design gear boxes to be most suitable for every customer’s needs by examining teeth face intensity, considering the accuracy of gears and the characteristics of lubrication oil as well as revolution speed, transmission torque, we are eager to meet various demands from our customers with the high-speed, low noise and low vibration productions.

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Gear reducer for Paper industry /用于造纸业的齿轮减速设备 /製紙機械用減速機 / 제지기계용 감속기

- Customer: HANSOL PAPER, etc.
- Use: Reducer for driving kneader
- Remarks: motor capacity: 1000kw, output shaft: 2-shaft

- 用戶：HANSOL紙業等
- 用途：製紙機械用傳動用
- 註: 機動功率：1000kw, 輸出軸：2軸

Gear reducer for Iron manufacture/用于钢铁工业的齿轮减速设备 /製鉄機械用減速機 / 제철기계용 감속기

- Customer: JSW (Japan steel works), etc.
- Use: Driving gear for a screw of an extruder

- 用戶：日本鋼業等
- 用途：傳動螺杆用

Industrial gear reducer /工业用的齿轮减速设备 /産業用減速機 / 산업용 감속기

- Customer: POSCO, etc.
- Use: Driving gear for ceiling crane

- 用戶：POSCO等
- 用途：吊頂吊車用

Reducer for Textile machine /纺织机械用的齿轮减速设备 /織機機械用減速機 / 삽무기계용 감속기

- Customer: Hwia, etc.
- Use: S/F stretch line for drive

- 用戶：Hwia等
- 用途：S/F拉長機

Turbine & Pump reducer /涡轮和泵的齿轮减速设备/タービン・ポンプ用減速機 / 涡輪機用減速機 / 터빈과 펌프용 감속기

- Customer: Samsung, etc.
- Use: Driving gear for small industrial gas turbine

- 用戶：Samsung等
- 用途：小型工業用燃氣輪機用
GEAR GRINDING MACHINE /ギア研削盤

1. GEAR GRINDING MACHINE /ギア研削盤: Gleason-PFAUTER P2800G & 1200G

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 가공능력</th>
<th>Max. tip Dia. 최대대경 mm</th>
<th>Min. root Dia. 최소지름 mm</th>
<th>Max. slide Travel 최대지속 mm</th>
<th>Min. and max Module 모듈</th>
<th>Max. workplace Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2800G(1대)</td>
<td>2,800</td>
<td>360</td>
<td>1,000</td>
<td>1.5~35</td>
<td>30,000</td>
<td></td>
</tr>
<tr>
<td>P1200G(2대)</td>
<td>1,200</td>
<td>20</td>
<td>1,000</td>
<td>1.5~35</td>
<td>10,000</td>
<td></td>
</tr>
</tbody>
</table>

2. GEAR GRINDING MACHINE /ギア研削盤: Gleason 400GX & TAG400

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 가공능력</th>
<th>Max. tip Dia. 최대대경 mm</th>
<th>Min. root Dia. 최소지름 mm</th>
<th>Max. slide Travel 최대지속 mm</th>
<th>Min. and max Module 모듈</th>
<th>Max. workplace Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>400GX</td>
<td>400</td>
<td>10</td>
<td>200</td>
<td>0.5~8.0</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>TAG400</td>
<td>400</td>
<td>10</td>
<td>200</td>
<td>0.5~8.0</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>
### 3. GEAR GRINDING MACHINE / GEAR研削盤: REISHAER RZ1000 & RZ360

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 가공능력</th>
<th>Max. tip Dia. 최대외경 mm</th>
<th>Min. pitch Dia. 최소피차원경 mm</th>
<th>Max. tooth width 최대치면 mm</th>
<th>Min. and max Module 모듈</th>
<th>Max. workplace Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>RZ1000</td>
<td></td>
<td>1,000</td>
<td>85</td>
<td>200</td>
<td>1.0~8.0</td>
<td>600</td>
</tr>
<tr>
<td>RZ360</td>
<td></td>
<td>360</td>
<td>10</td>
<td>180</td>
<td>0.5~6.0</td>
<td>100</td>
</tr>
</tbody>
</table>

### 4. CNC VERTICAL GRINDING MACHINE / CNC立型研削盤

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 가공능력</th>
<th>Max. tip Dia. 최대외경 mm</th>
<th>Max. tip Int Dia. 최대내경 mm</th>
<th>Length 연식길이 mm</th>
<th>Max. workplace eWeight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NV/GH-12TC</td>
<td></td>
<td>1,200</td>
<td>1,200</td>
<td>600</td>
<td>2,500</td>
</tr>
<tr>
<td>NV/G-12</td>
<td></td>
<td>1,200</td>
<td>1,200</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td>NV/G-8TC</td>
<td></td>
<td>800</td>
<td>800</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>NV/G-8</td>
<td></td>
<td>800</td>
<td>800</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>Vertical Mate85</td>
<td></td>
<td>800</td>
<td>800</td>
<td>500</td>
<td>700</td>
</tr>
</tbody>
</table>
### 5. CNC GEAR MEASURING CENTER / CNCギア測定器：Klingelnberg & Tokyo Technical

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 기능력</th>
<th>Max. tip Dia. 최대와경 mm</th>
<th>Max. tooth widge 최대치 폭 mm</th>
<th>Min. and max Module 모듈</th>
<th>Center Distance 센터거리 mm</th>
<th>Max. workplace Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNC 60</td>
<td></td>
<td>600</td>
<td>400</td>
<td>0.5~20</td>
<td>0~800</td>
<td>450</td>
</tr>
<tr>
<td>PFSU1200</td>
<td></td>
<td>1,200</td>
<td>600</td>
<td>0.7~30</td>
<td>900</td>
<td>1,500</td>
</tr>
<tr>
<td>TTT-800E</td>
<td></td>
<td>850</td>
<td>600</td>
<td>0.5~20</td>
<td>30~1,000</td>
<td>1,500</td>
</tr>
</tbody>
</table>

### 6. COORDINATE MEASURING MACHINE / 3 次元測定器：Gidding & Lewis, Sheffield Div. RS-150DCC

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 기능력</th>
<th>X mm</th>
<th>Y mm</th>
<th>Z mm</th>
<th>Table size 태이블 규격 mm</th>
<th>Max. workplace Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-150DCC</td>
<td></td>
<td>1,200</td>
<td>2,000</td>
<td>1,000</td>
<td>1,270~2080</td>
<td>1,800</td>
</tr>
</tbody>
</table>
7. METALLURGICAL MICROSCOPE & AUTOCOLLIMATOR / 金属顯微鏡 & オートコリメーター

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 기능력</th>
<th>Model 모델</th>
<th>Magnification 배율</th>
<th>Specification 사양</th>
<th>Maker 메이커</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autocollimator</td>
<td></td>
<td>6D</td>
<td>×38</td>
<td>30°</td>
<td>Nikon</td>
</tr>
<tr>
<td>Metallurgical Microscope</td>
<td></td>
<td>GX51</td>
<td>×1,000</td>
<td>1.3 M-fixel</td>
<td>Olympus</td>
</tr>
</tbody>
</table>

8. CURVIC COUPLING GRINDER / カービックカップリング研削盤: Gleason No19・No120

<table>
<thead>
<tr>
<th>MODEL 기종</th>
<th>CAPACITY 기능력</th>
<th>Max. Out dia. 최대외경 mm</th>
<th>Max. Depth 최대깊이 mm</th>
<th>Max. Divide 최대분할</th>
<th>Max. Workpiece Weight 최대중량 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO 12D(5대)</td>
<td></td>
<td>610</td>
<td>9.5</td>
<td>360</td>
<td>680</td>
</tr>
<tr>
<td>NO 19(2대)</td>
<td></td>
<td>610</td>
<td>12</td>
<td>72</td>
<td>680</td>
</tr>
</tbody>
</table>
Curvic coupling is a key part of indexing devices. It secures operation accuracy in turret devices of CNC lathes, machining centers and other indexing devices.

Curvic coupling is a key part of indexing devices. It secures operation accuracy in turret devices of CNC lathes, machining centers and other indexing devices.

1. **Standardized Model** • Selection range has been expanded by producing various standardized products based on the size and the number of teeth.
2. **Rigidity and abrasion resistance** • Extended product life cycle is achieved by increasing abrasion resistance and rigidity through heat treated chrome molybdenum steel.
3. **Improved Restoration and Division Accuracy** • It guarantees ±1 sec restoration and 5 sec remained division of the same teeth position.
4. **Precise Self-Centering & Compatibility** • By teeth mating of convex and concave teeth, precise automatic centering is realized. As master curvic coupling is used in the process of machining, high compatibility is achieved.
5. **Long term quality assurance** • Long term quality assurance is provided by secure quality control of the entire products.
6. **Customized production** • More satisfaction provided by customized manufacturing in response to customers’ special needs.

1. 标准化モデル • 削蜜と耐摩耗性の確保
2. 円周精度および歯形精度の向上
3. 超精密のセルフセンタリング及び互換性
4. 長期保証を提供
5. 注文生産可能

1. 표준화된 모델 • 2. 가공성과 내마모성 확보
3. 복합정도 및 분할정도의 향상
4. 초정밀의 자동조심성 및 호환성
5. 장기간 품질보증
6. 주문 생산 가능
### Shape of Tooth / 齿形 / 齿の形状 / 齒의 형상

<table>
<thead>
<tr>
<th>Shape</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convex Teeth</td>
<td><img src="image" alt="Convex Teeth Diagram" /></td>
</tr>
<tr>
<td>Concave Teeth</td>
<td><img src="image" alt="Concave Teeth Diagram" /></td>
</tr>
</tbody>
</table>

### View at outside / 齿轮外周展开图 / 齿の外周展開図 / 齿의 외주 전개도

![View at outside Diagram](image)

### QUALITY CONTROL PROCEDURES / 精度基准

<table>
<thead>
<tr>
<th>Item / 項目 / 項目 / 항목</th>
<th>Tolerance / 允许公差</th>
<th>Note / 说明 / 内容 / 内容</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tooth Contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>入歯数 (B.N)</td>
<td>More than 80%</td>
<td></td>
</tr>
<tr>
<td>接触齿数 (B.N)</td>
<td>(大于80%)</td>
<td></td>
</tr>
<tr>
<td>啮合齿数 (B.N)</td>
<td>(80% 以上)</td>
<td></td>
</tr>
<tr>
<td>啮合齿顶 (B.W)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>齿顶接触 (B.W)</td>
<td>More than 50%</td>
<td></td>
</tr>
<tr>
<td>齿顶接触度 (B.W)</td>
<td>(大于50%)</td>
<td></td>
</tr>
<tr>
<td>齿顶接触度 (B.W)</td>
<td>(50% 以上)</td>
<td></td>
</tr>
<tr>
<td>Runout on top face</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>轴向跳动 / 上面振れ / 上面回轉誤差</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Runout at outside diameter</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>径向跳动 / 外周振れ / 外周回轉誤差</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stacking Distance</td>
<td>±0.10</td>
<td></td>
</tr>
<tr>
<td>啮合高度 / 調合厚さ / 조합 두께</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- Tooth mating degree is confirmed by mating with the standard master curvic coupling. The standard teeth contacting length should be above 50% of tooth length. Throughout the whole teeth, two adjacent teeth should not be in contact. More than 50% of teeth surface should be contacted every time.
- The run out is checked by light mating with master curvic coupling.

**Curvic Coupling:**
- The combined thickness of mated convex and concave teeth is marked as S in the standard dimension table. The standard couplings are marked as S in the standard dimension table.

**Curvic Coupling Diagram:**
- ![Curvic Coupling Diagram](image)
### Model Description

<table>
<thead>
<tr>
<th>No. of Teeth</th>
<th>Outside Dia.</th>
<th>Inside Dia.</th>
<th>3PCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>335</td>
<td>220</td>
<td>3P</td>
</tr>
</tbody>
</table>

### Dimension

<table>
<thead>
<tr>
<th>NO.</th>
<th>Model NO.</th>
<th>Number of Teeth</th>
<th>D1</th>
<th>D2</th>
<th>H1</th>
<th>H2</th>
<th>S</th>
<th>Dowel Holes</th>
<th>Bolt Holes</th>
<th>Draw Bolt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24-110-060-P</td>
<td>110 - 40 10</td>
<td>16.75</td>
<td>11.5</td>
<td>30</td>
<td>60</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>2</td>
<td>135-060-P</td>
<td>135 - 60 14</td>
<td>18.75</td>
<td>13.5</td>
<td>34</td>
<td>80</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>3</td>
<td>165-060-P</td>
<td>165 - 80 20</td>
<td>20.75</td>
<td>15.5</td>
<td>38</td>
<td>100</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>4</td>
<td>200-120-P</td>
<td>200 - 120 20</td>
<td>21.75</td>
<td>16.5</td>
<td>40</td>
<td>140</td>
<td>30°</td>
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<td>2-M6</td>
</tr>
<tr>
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<td>230-135-P</td>
<td>230 - 135 22</td>
<td>21.75</td>
<td>16.5</td>
<td>40</td>
<td>165</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>6</td>
<td>270-160-P</td>
<td>270 - 160 24</td>
<td>21.75</td>
<td>16.5</td>
<td>40</td>
<td>250</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>7</td>
<td>30-110-060-P</td>
<td>110 - 170 20</td>
<td>16.75</td>
<td>11.5</td>
<td>30</td>
<td>60</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>8</td>
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<td>135 - 60 14</td>
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<td>13.5</td>
<td>34</td>
<td>80</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
<td>9</td>
<td>165-060-P</td>
<td>165 - 80 20</td>
<td>20.75</td>
<td>15.5</td>
<td>38</td>
<td>100</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
<tr>
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<td>200 - 120 20</td>
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<td>16.5</td>
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<td>30°</td>
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<td>6.6</td>
<td>2-M6</td>
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<tr>
<td>11</td>
<td>230-135-P</td>
<td>230 - 135 22</td>
<td>21.75</td>
<td>16.5</td>
<td>40</td>
<td>165</td>
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</tr>
<tr>
<td>12</td>
<td>270-160-P</td>
<td>270 - 160 24</td>
<td>21.75</td>
<td>16.5</td>
<td>40</td>
<td>250</td>
<td>30°</td>
<td>1</td>
<td>6.6</td>
<td>2-M6</td>
</tr>
</tbody>
</table>

### Example

- No Lift Type
- Rolling with Fixed in Table: V=固定テーブルに固定
- Fixed in Housing: VO=ボディに固定

**Positioning VO by vertical movement**

- X=VOの位置変更
- Y=VOの位置固定

---

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**Dimension**

<table>
<thead>
<tr>
<th>NO.</th>
<th>Model NO.</th>
<th>형식번호</th>
<th>D1</th>
<th>d1</th>
<th>D2</th>
<th>d2</th>
<th>F</th>
<th>H1</th>
<th>S</th>
<th>Dowel Holes</th>
<th>Bolt Holes</th>
<th>Draw Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>48-335-220-3P</td>
<td>VX VO</td>
<td>48</td>
<td>335</td>
<td>-</td>
<td>220</td>
<td>24</td>
<td>2575</td>
<td>20.5</td>
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<td>258</td>
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<tr>
<td>14</td>
<td>425-300-3P</td>
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<td>48</td>
<td>425</td>
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<td>480</td>
<td>-</td>
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<td>48</td>
<td>540</td>
<td>-</td>
<td>415</td>
<td>-</td>
<td>30</td>
<td>2925</td>
<td>24</td>
<td>55</td>
<td>450</td>
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<td>VX VO</td>
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<td>335</td>
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<td>220</td>
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<td>2575</td>
<td>20.5</td>
<td>48</td>
<td>258</td>
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<tr>
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<td>425-300-3P</td>
<td>VX VO</td>
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<td>425</td>
<td>-</td>
<td>300</td>
<td>26</td>
<td>2675</td>
<td>21.5</td>
<td>50</td>
<td>335</td>
<td>15'</td>
</tr>
<tr>
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<td>540</td>
<td>-</td>
<td>415</td>
<td>30</td>
<td>2925</td>
<td>24</td>
<td>55</td>
<td>450</td>
<td>15'</td>
</tr>
<tr>
<td>19</td>
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<td>VX VO</td>
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<td>335</td>
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<td>220</td>
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<td>2575</td>
<td>20.5</td>
<td>48</td>
<td>258</td>
<td>15'</td>
</tr>
<tr>
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<td>VX VO</td>
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<td>425</td>
<td>-</td>
<td>300</td>
<td>26</td>
<td>2675</td>
<td>21.5</td>
<td>50</td>
<td>335</td>
<td>15'</td>
</tr>
<tr>
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<td>VX VO</td>
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<td>415</td>
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<td>450</td>
<td>15'</td>
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<tr>
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<td>28.5</td>
<td>75</td>
<td>710</td>
<td>10'</td>
</tr>
</tbody>
</table>

**Notes:**
- **No. of Bolt-holes = N1 (볼트 구멍의 개수)**
- **Bolt Holes Dia = d (볼트 구멍의 크기)**
- **Count Bore = d1 (카운트 보어 크기)**
- **Depth = d2 ( 깊이 )**

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