



ISO9001
CERTIFIED

ISO14001
CERTIFIED



FINE Hydraulic Breaker

Manual de Operacion y Mantenimiento

FINE 1, FINE 2, FINE 3 Series

FINE 4 Series

FINE 5, FINE 5BL, FINE 6, FINE 6BL Series

FINE 7BLX, FINE 7, FINE 8BL Series

FINE 10 Series

FINE 12 Series

FINE 16 Series

FINE 20, FINE 21, FINE 22, FINE 23 Series

FINE 36, FINE 36, FINE 37 Series

FINE 45, FINE 46 Series

FINE 50, FINE 65 Series

FINE 80 Series



**FEEL INDUSTRIAL
ENGINEERING CO., LTD.**



Introduccion

Le agradezco su compra del Martillo Hidráulico FINE.

Este manual indica la manera de los manejos correctos, tales como inspección, reparación, operación, ensamble y desarmado del Martillo Hidráulico, para poder utilizarlo seguro y eficientemente.

También, este manual muestra toda la información que Ud. necesita para lograr el mejor funcionamiento del martillo hidráulico, minimizando el tiempo requerido.

Antes de utilizar el martillo hidráulico, se necesita leer y entender eficazmente este manual.

Si no sigue este manual, podría encontrarse con algún accidente serio.

ADVERTENCIA

- El operador debe leer y entender este manual completamente, antes de instalar, reparar u operar el martillo hidráulico.
- Este manual debe estar cerca del martillo hidráulico y la gente que lo usa o maneja debe leerlo periódicamente.
- Cuando se mueve el martillo hidráulico, este manual también debe acompañarlo.
- Si este martillo hidráulico se utiliza sin cuidado, un accidente severo puede ocurrir, perjudicando a la persona.
- Si este manual esta perdido o dañado, por favor contacte con nuestro distribuidor en su área o con **Feel Industrial Engineering Co., Ltd in Korea.**



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1. Información de Seguridad

Antes de Operación

Muchos accidentes se ocurren por descuidar la Regla básica de Instalación, Operación y Reparación o por desatender la Inspección antes de la operación..

Antes de operar o reparar el martillo hidráulico, debe asegurarse de leer y entender los métodos preventivos y la advertencia escrita en este manual o en el martillo hidráulico.

El usuario del Martillo hidráulico debe leer y entender los contenidos de la etiqueta de seguridad y mensajes que están mencionados en el martillo hidráulico o en este manual.

PELIGRO

- Indica que la situación es muy peligrosa, si no se evita, puede resultar la muerte o perjudicar seriamente.
- Esta señal está muy limitada a situación extrema.

ADVERTENCIA

- Indica la situación peligrosa potencialmente que si no se evita, puede causar la muerte o perjudicar seriamente.

Precaución

- Indica la situación peligrosa que si no se evita, puede perjudicar ligeramente.

Atención

- indica el comentario de la política de la compañía directamente o indirectamente relacionada con la persona de seguridad o protección apropiada.

La Obra Específica

Este martillo hidráulico se utiliza para romper, demoler y taladrar en la minas, en las obras de romper las rocas o en las obras de ingeniería de construcción

ADVERTENCIA

- No usar el martillo hidráulico para otras áreas excepto las obras especificadas

ADVERTENCIA

- **Observar las precauciones y tomar la medida preventiva para la seguridad.**

Observación de las reglas de seguridad en el area de obra.

- Observar todas las reglas, precauciones y procedimiento para la Seguridad cuando se opera o repara el martillo hidráulico.
- Cumplir el trabajo según las indicaciones una vez decidida cuando se realiza el trabajo cooperativo o trabajo por guía

Vestirse o usar los artículos para la Seguridad

- Debe vestirse muy ajustado al cuerpo para no jalarsé por alguna protección o palanca de la máquina.
- Se debe usar el casco, zapatos de seguridad, protector de oído etc. Si es necesario, debe ponerse la cubreboca de protección contra polvo, gafas protectivas y guantes.
- Siempre debe mantener la máquina limpia y debe mantener el ambiente de trabajo limpio. .

Inspección de Aparatos de Seguridad

- Cuando el trabajo se para o termina, debe asegurarse fijar la cerradura de seguridad del interruptor de la operación del martillo hidráulico.
- Cuando el operador sale de la máquina, debe asegurarse que el martillo hidráulico esta en el piso y esta apagado el motor de la máquina.

Cuidado de la presión del aceite hidráulico.

- Antes de desconectar o conectar las mangueras hidráulicas, debe parar el motor de la máquina, cerrar las válvulas de parada y conexión de " IN" y "OUT", y después operar el nivel de control para liberar la presión dentro las manqueras y esperar 10 minutos.

Seguridad de los pedazos de roca que pueden volar durante la operación del martillo hidráulico.

- Debe proteger a Ud. mismo y su vecino contra los pedazos que desprenden de la roca.
- No debe operar el martillo hidráulico o la máquina si alguien esta muy cerca.
- Mantener la puerta y ventana de la cabina de la máquina cerrada durante la operación.
- Es recomendable instalar las barras de protección de la ventana para proteger las ventanas de los pedazos que pueden volar de la roca.

2. Specification

■ Specification Hydraulic Breaker (Silenced) X- Series, Close Type

| Description | | FINE 1X | FINE 2X | FINE 3X | FINE 4X | FINE 5X | FINE 6X | FINE 7BLX | FINE 7X | FINE 10X | FINE 12X |
|--------------------|-------|-------------|-------------|-------------|-------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Operating Weight | kg | 120 | 138 | 145 | 200 | 350 | 400 | 375 | 585 | 870 | 920 |
| | lb | 265 | 305 | 320 | 441 | 772 | 882 | 827 | 1,290 | 1,918 | 2,029 |
| Overall Height | mm | 1,105 | 1,105 | 1,271 | 1,420 | 1,586 | 2,338 | 1,535 | 1,946 | 2,338 | 2,400 |
| | inch | 43.5 | 43.5 | 49.6 | 55.4 | 61.9 | 91.2 | 60.4 | 75.9 | 91.2 | 93.6 |
| Operating Pressure | bar | 90-110 | 90-110 | 90-110 | 90-120 | 100-130 | 110-140 | 110-140 | 130-150 | 150-170 | 150-180 |
| | psi | 1,305-1,595 | 1,305-1,595 | 1,305-1,595 | 1,305-1,740 | 1,450-1,885 | 1,595-2,031 | 1,595-2,031 | 1,885-2,175 | 2,175-2,465 | 2,175-2,610 |
| Required Oil Flow | lpm | 15-30 | 15-30 | 20-40 | 20-50 | 30-50 | 45-90 | 30-50 | 45-90 | 80-110 | 90-120 |
| | gpm | 3-8 | 3-8 | 5-11 | 5-13 | 8-13 | 12-24 | 8-13 | 12-24 | 21-29 | 24-32 |
| Impact Rate | bpm | 700-1,300 | 700-1,300 | 600-1000 | 550-1,200 | 450-900 | 400-800 | 450-900 | 450-800 | 450-800 | 400-900 |
| | joule | 210 | 210 | 248 | 480 | 849 | 1,250 | 849 | 1,764 | 2,443 | 3,000 |
| Impact Power | ft-lb | 155 | 155 | 183 | 354 | 627 | 922 | 627 | 1,302 | 1,803 | 2,214 |
| | mm | Ø 36 | Ø 40 | Ø 45 | Ø 53 | Ø 68 | Ø 72 | Ø 72 | Ø 85 | Ø 100 | Ø 110 |
| Tool Diameter | inch | 1.4 | 1.6 | 1.8 | 2.1 | 2.7 | 2.8 | 2.8 | 3.4 | 3.9 | 4.3 |
| | mm | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 19 | 19 | 19 |
| Hose Diameter | inch | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 |
| | ton | 0.8-2.5 | 0.8-2.5 | 1-3.0 | 1-3.5 | 3-6 | 5-7 | 5-8 | 7-9 | 9-12 | 12-14 |
| Suitable Excavator | lb | 1,764-5,511 | 1,764-5,511 | 2,205-6,613 | 2,205-7,716 | 6,613-13,227 | 11,023-15,432 | 11,023-17,637 | 15,432-19,842 | 19,842-26,455 | 26,455-30,865 |

* Above specifications are subject to change without notice.

■ Specification Hydraulic Breaker (Top Bracket) - Open Type

| Description | | FINE 4 | FINE 5 | FINE 6 | FINE 6BL | FINE 7 | FINE 10 | FINE 12 | FINE 16 |
|--------------------|-------|-------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Operating Weight | kg | 150 | 310 | 400 | 320 | 560 | 870 | 920 | 1,250 |
| | lb | 331 | 684 | 882 | 705 | 1,235 | 1,918 | 2,029 | 2,756 |
| Overall Height | mm | 1,420 | 1,586 | 2,338 | 1,535 | 1,946 | 2,338 | 2,400 | 2,440 |
| | inch | 55.4 | 61.9 | 91.2 | 60.4 | 75.9 | 71.1 | 93.6 | 95.2 |
| Operating Pressure | bar | 90-120 | 90-120 | 90-130 | 90-120 | 130-150 | 150-170 | 150-180 | 150-180 |
| | psi | 1,305-1,740 | 1,305-1,740 | 1,305-1,885 | 1,305-1,740 | 1,885-2,175 | 2,175-2,465 | 2,175-2,610 | 2,175-2,610 |
| Required Oil Flow | lpm | 20-50 | 30-50 | 45-90 | 30-50 | 45-90 | 80-110 | 90-120 | 90-120 |
| | gpm | 5-13 | 8-13 | 12-24 | 8-13 | 12-24 | 21-29 | 24-32 | 24-32 |
| Impact Rate | bpm | 550-1,200 | 450-900 | 400-800 | 450-900 | 450-800 | 450-800 | 400-900 | 400-900 |
| | joule | 480 | 849 | 1,250 | 849 | 1,764 | 2,443 | 3,000 | 4,234 |
| Impact Power | ft-lb | 354 | 627 | 922 | 627 | 1,302 | 1,803 | 2,214 | 3,125 |
| | mm | Ø 53 | Ø 68 | Ø 72 | Ø 72 | Ø 85 | Ø 100 | Ø 110 | Ø 120 |
| Tool Diameter | inch | 2.1 | 2.7 | 2.8 | 2.8 | 3.4 | 3.9 | 4.3 | 4.7 |
| | mm | 13 | 13 | 13 | 13 | 19 | 19 | 19 | 19 |
| Hose Diameter | inch | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | 3/4 |
| | ton | 1-3.5 | 3-6 | 5-7 | 5-8 | 7-9 | 9-12 | 12-14 | 13-18 |
| Suitable Excavator | lb | 2,205-7,716 | 6,613-13,227 | 11,023-15,432 | 11,023-17,637 | 15,432-19,842 | 19,842-26,455 | 26,455-30,865 | 28,660-39,683 |

* Above specifications are subject to change without notice.

■ Specification Hydraulic Breaker (Side Bracket) - Side Type

| Description | | FINE 4 | FINE 5 | FINE 5BL | FINE 6 | FINE 7 | FINE 10 | FINE 12 |
|--------------------|-------|-------------|--------------|--------------|---------------|---------------|---------------|---------------|
| Operating Weight | kg | 140 | 237 | 300 | 430 | 735 | 760 | 920 |
| | lb | 309 | 523 | 661 | 948 | 1,621 | 1,676 | 2,029 |
| Overall Height | mm | 1,420 | 1,586 | 1,510 | 2,338 | 1,946 | 2,338 | 2,400 |
| | inch | 55.4 | 61.9 | 58.9 | 91.2 | 75.9 | 71.1 | 93.6 |
| Operating Pressure | bar | 90-120 | 90-120 | 90-120 | 90-130 | 130-150 | 150-170 | 150-180 |
| | psi | 1,305-1,740 | 1,305-1,740 | 1,305-1,740 | 1,305-1,885 | 1,885-2,175 | 2,175-2,465 | 2,175-2,610 |
| Required Oil Flow | lpm | 20-50 | 30-50 | 30-50 | 45-90 | 45-90 | 80-110 | 90-120 |
| | gpm | 5-13 | 8-13 | 8-13 | 12-24 | 12-24 | 21-29 | 24-32 |
| Impact Rate | bpm | 550-1,200 | 450-900 | 450-900 | 400-800 | 450-800 | 450-800 | 400-900 |
| | joule | 480 | 849 | 849 | 1,250 | 1,764 | 2,443 | 3,000 |
| Impact Power | ft-lb | 354 | 627 | 627 | 922 | 1,302 | 1,803 | 2,214 |
| | mm | Ø 53 | Ø 68 | Ø 68 | Ø 72 | Ø 85 | Ø 100 | Ø 110 |
| Tool Diameter | inch | 2.1 | 2.7 | 2.7 | 2.8 | 3.4 | 3.9 | 4.3 |
| | mm | 13 | 13 | 13 | 13 | 19 | 19 | 19 |
| Hose Diameter | inch | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 |
| | ton | 1-3.5 | 3-6 | 3-6 | 5-7 | 7-9 | 9-12 | 12-14 |
| Suitable Excavator | lb | 2,205-7,716 | 6,613-13,227 | 6,613-13,227 | 11,023-15,432 | 15,432-19,842 | 19,842-26,455 | 26,455-30,865 |

* Above specifications are subject to change without notice.

■ Specification Hydraulic Breaker (Silenced) X- Series, Close Type

| Description | | FINE 16X | FINE 21X | FINE 22X Plus | FINE 23X Plus | FINE 36X | FINE 37X | FINE 45X | FINE 46X | FINE 50X | FINE 65X | FINE 80X |
|--------------------|-------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|-----------------|-----------------|-----------------|
| Operating Weight | kg | 1,220 | 1,660 | 1,640 | 1,760 | 2,220 | 2,350 | 2,690 | 3,000 | 3,500 | 3,790 | 5,500 |
| | lb | 2,690 | 3,659 | 3,616 | 3,881 | 4,850 | 5,182 | 5,931 | 6,615 | 7,718 | 8,366 | 12,125 |
| Overall Height | mm | 2,440 | 2,500 | 2,640 | 2,707 | 2,958 | 3,100 | 3,258 | 3,532 | 3,726 | 3,775 | 4,252 |
| | inch | 95.2 | 97.5 | 103.0 | 105.6 | 115.4 | 120.9 | 127.1 | 137.7 | 145.3 | 148.6 | 167.4 |
| Operating Pressure | bar | 150-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-200 | 160-180 | 150-180 | 180-210 |
| | psi | 2,175-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,900 | 2,320-2,755 | 2,176-2,610 | 2,610-3,046 |
| Required Oil Flow | lpm | 90-120 | 100-160 | 140-160 | 120-180 | 160-190 | 180-220 | 190-250 | 190-250 | 250-310 | 250-350 | 300-400 |
| | gpm | 24-32 | 26-42 | 37-42 | 32-48 | 42-50 | 48-58 | 50-66 | 50-66 | 66-82 | 66-92.5 | 79-105 |
| Impact Rate | bpm | 400-900 | 350-600 | 400-800 | 350-550 | 350-700 | 300-500 | 300-600 | 300-700 | 250-450 | 200-400 | 180-350 |
| | joule | 4,234 | 5,300 | 5,600 | 6,200 | 7,433 | 8,550 | 9,970 | 11,040 | 13,125 | 13,630 | 16,598 |
| Impact Power | ft-lb | 3,125 | 4,005 | 4,133 | 4,576 | 4,990 | 6,273 | 7,330 | 8,147 | 9,686 | 10,059 | 12,242 |
| | mm | Ø120 | Ø135 | Ø135 | Ø140 | Ø140 | Ø155 | Ø160 | Ø165 | Ø175 | Ø180 | Ø200 |
| Tool Diameter | inch | 4.7 | 5.3 | 5.3 | 5.5 | 5.5 | 6.1 | 6.3 | 6.5 | 6.9 | 7.1 | 7.9 |
| | mm | 19 | 25 | 25 | 25 | 25 | 32 | 32 | 32 | 32 | 32 | 38 |
| Hose Diameter | inch | 3/4 | 1 | 1 | 1 | 1 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/2 |
| | ton | 13-18 | 18-24 | 20-26 | 22-26 | 28-35 | 36-40 | 40-49 | 40-49 | 50-65 | 50-65 | 65-85 |
| Suitable Excavator | lb | 28,660-39,683 | 39,683-52,911 | 44,092-57,320 | 48,502-57,320 | 61,729-77,162 | 79,366-88,185 | 88,185-108,027 | 88,185-108,027 | 110,231-143,301 | 110,231-143,301 | 143,300-187,393 |

* Above specifications are subject to change without notice.

■ Specification Hydraulic Breaker (Top Bracket) - Open Type

| Description | | FINE 20 | FINE 22 | FINE 23 Plus | FINE 35 | FINE 37 | FINE 45 | FINE 46 | FINE 50 |
|--------------------|-------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|-----------------|
| Operating Weight | kg | 1,850 | 1,850 | 1,865 | 2,270 | 2,650 | 2,860 | 3,100 | 3,700 |
| | lb | 3,638 | 4,079 | 4,112 | 5,004 | 5,843 | 6,306 | 6,836 | 8,159 |
| Overall Height | mm | 2,773 | 2,640 | 2,707 | 3,046 | 3,100 | 3,258 | 3,532 | 3,726 |
| | inch | 109.1 | 103.0 | 105.6 | 118.8 | 120.9 | 127.1 | 137.7 | 145.3 |
| Operating Pressure | bar | 160-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-200 | 160-180 |
| | psi | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,900 | 2,320-2,610 |
| Required Oil Flow | lpm | 130-150 | 140-160 | 120-180 | 180-200 | 180-220 | 190-250 | 190-250 | 250-310 |
| | gpm | 34-40 | 37-42 | 32-48 | 48-53 | 48-58 | 50-66 | 50-66 | 66-82 |
| Impact Rate | bpm | 400-800 | 400-800 | 350-550 | 350-700 | 300-500 | 300-600 | 300-700 | 250-450 |
| | joule | 5,290 | 5,600 | 6,200 | 7,433 | 8,550 | 9,970 | 11,040 | 13,125 |
| Impact Power | ft-lb | 3,904 | 4,133 | 4,576 | 4,990 | 6,273 | 7,330 | 8,147 | 9,686 |
| Tool Diameter | mm | Ø135 | Ø135 | Ø135 | Ø150 | Ø155 | Ø160 | Ø165 | Ø175 |
| | inch | 5.3 | 5.3 | 5.3 | 5.9 | 6.1 | 6.3 | 6.5 | 6.9 |
| Hose Diameter | mm | 25 | 25 | 25 | 25 | 32 | 32 | 32 | 32 |
| | inch | 1 | 1 | 1 | 1 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 |
| Suitable Excavator | ton | 18-24 | 20-26 | 22-26 | 28-35 | 36-40 | 40-49 | 40-49 | 50-65 |
| | lb | 39,683-52,911 | 44,092-57,320 | 48,502-57,320 | 61,729-77,162 | 79,366-88,185 | 88,185-108,027 | 88,185-108,027 | 110,231-143,301 |

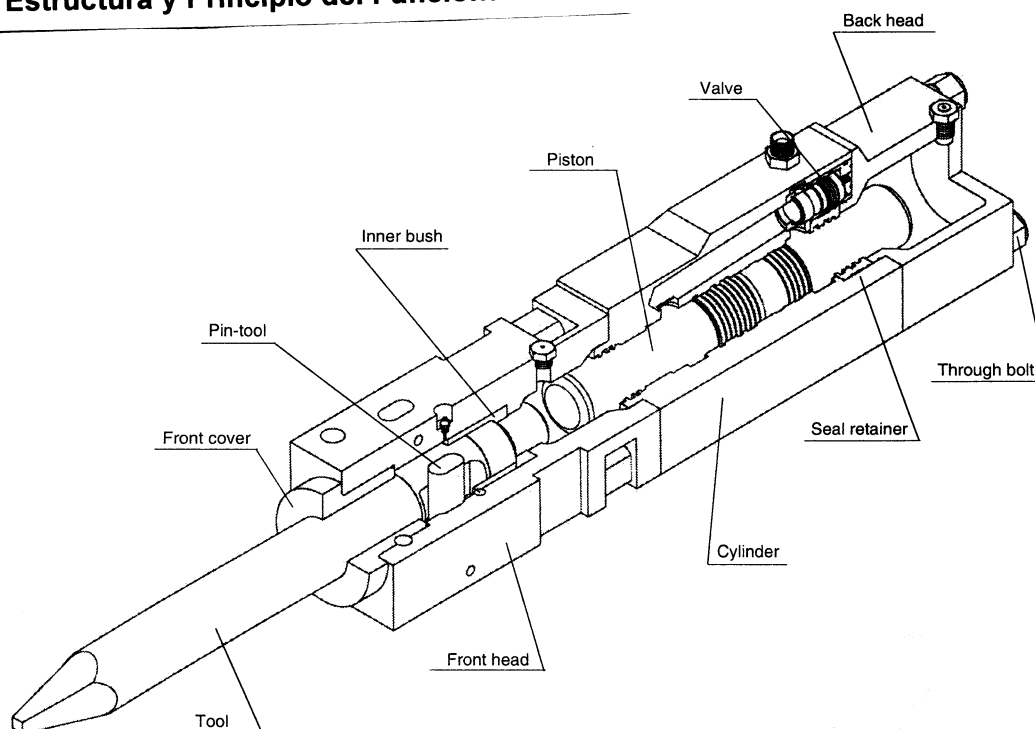
* Above specifications are subject to change without notice.

■ Specification Hydraulic Breaker (Side Bracket) - Side Type

| Description | | FINE 16 | FINE 23 Plus | FINE 35 | FINE 37 | FINE 45 | FINE 46 | FINE 50 | FINE 65 |
|--------------------|-------|---------------|---------------|---------------|---------------|----------------|----------------|-----------------|-----------------|
| Operating Weight | kg | 1,250 | 1,665 | 2,100 | 2,350 | 2,500 | 3,000 | 3,500 | 3,590 |
| | lb | 2,756 | 3,671 | 4,631 | 5,182 | 5,513 | 6,615 | 7,718 | 7,915 |
| Overall Height | mm | 2,440 | 2,707 | 3,046 | 3,100 | 3,258 | 3,532 | 3,726 | 3,725 |
| | inch | 95.2 | 105.6 | 118.8 | 120.9 | 127.1 | 137.7 | 145.3 | 146.7 |
| Operating Pressure | bar | 150-180 | 160-180 | 160-180 | 160-180 | 160-180 | 160-200 | 160-180 | 150-180 |
| | psi | 2,175-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,610 | 2,320-2,900 | 2,320-2,610 | 2,176-2,610 |
| Required Oil Flow | lpm | 90-120 | 120-180 | 180-200 | 180-220 | 190-250 | 190-250 | 250-310 | 250-350 |
| | gpm | 24-32 | 32-48 | 48-53 | 48-58 | 50-66 | 50-66 | 66-82 | 66-92.5 |
| Impact Rate | bpm | 400-900 | 350-550 | 350-700 | 300-500 | 300-600 | 300-700 | 250-450 | 200-400 |
| | joule | 4,234 | 6,200 | 7,433 | 8,550 | 9,970 | 11,040 | 13,125 | 14,300 |
| Impact Power | ft-lb | 3,125 | 4,576 | 4,990 | 6,273 | 7,330 | 8,147 | 9,686 | 10,547 |
| | mm | Ø120 | Ø135 | Ø150 | Ø155 | Ø160 | Ø160 | Ø175 | Ø180 |
| Tool Diameter | inch | 4.7 | 5.3 | 5.9 | 6.1 | 6.3 | 6.3 | 6.9 | 7.1 |
| | mm | 19 | 25 | 25 | 32 | 32 | 32 | 32 | 32 |
| Hose Diameter | inch | 3/4 | 1 | 1 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 |
| | ton | 13-18 | 22-26 | 26-35 | 36-40 | 40-49 | 40-49 | 50-65 | 50-65 |
| Suitable Excavator | lb | 28,660-39,683 | 48,502-57,320 | 61,729-77,162 | 79,366-88,185 | 88,185-108,027 | 88,185-108,027 | 110,231-143,301 | 110,231-143,301 |

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3. Estructura y Principio del Funcionamiento



1) Cilindro

Esto contiene el pistón móvil que impacta la pica. Los sellos para ambas terminales de este pistón están ubicadas en el cilindro. Los sellos para la terminal superior del pistón están ubicados en el retenedor del sello separable y los de la terminal inferior del pistón están ubicados en la ranura abajo del cilindro.

2) Piston

El Pistón transfiere la fuerza del impacto a la pica, generado por la fuerza hidráulica

3) Retenedor de Sello

El retenedor del sello, tiene sellos de aceite para sellar Gas Nitrógeno en cabezal trasero y previene la fuga de aceite hidráulico

4) Válvula

La válvula controla la acción inversa del pistón con la distribución del flujo hidráulico.

5) Cabezal frontal

Este retiene la pica, usando los pernos de la misma. La pica se puede cambiar, eliminando estos pernos.

6) Buje Interior

Esto quita la pica, y limita la posición superior de la pica. Estas son partes consumibles que deben ser chequeadas por su límite de desgaste. Si es necesario, deben reemplazarlos

7) La Pica

Esto transfiere la fuerza de impacto de pistón a los objetos. Se recomienda aplicar el tipo apropiado de la pica según la circunstancia de trabajo

8) Perno de la Pica

Esto está ubicado en el cabezal frontal y prohíbe a la pica salirse

9) Cabezal trasero

Esto contiene la cámara de cojín cargado con el gas nitrógeno que comprime durante las carreras del pistón y sirve a suministrar la absorción máxima de retroceso del pistón y la eficiencia, guardando la energía del impacto próximo

10) Tornillos de Tensores

Estos son utilizados para ensamblar el cabezal frontal, el cilindro y el cabezal trasero. Estos deben estar siempre fijos al torque especificado. Debe verificar que no estén sueltos y debe fijarlos semanalmente.

1) Set Up

En la relación entre el área (A1) que afecta la presión de la cámara superior del pistón y el área (A2) que afecta la presión de la cámara inferior del pistón, A1 es más grande que A2 y la Presión alta siempre aplica a A2. Cuando A1 cambia de la presión alta a la baja o viceversa, el pistón corresponde. Dentro de cabezal trasero, se cambia con gas de alta presión y la energía de gas almacenando en la carrera hacia arriba de C1 actúa el pistón C1 durante el impacto.

2) Conversión Del Pistón

Cuando el pistón (C1) llega a la posición A1, el aceite de Alta presión del puerto B3 entra a la cámara superior del pistón A1 y el pistón mueve al área de impacto de la posición superior.

A este momento, la válvula (C2) mueve al área superior ya que la cámara de A4 es más grande que A3.

La alta presión siempre aplica a A4 y válvula C2 se queda en la posición arriba.

3) Conversión de la Válvula

Cuando el Puerto B1 con la presión baja del cilindro está conectado con el Puerto B2 de cambio del cilindro, la presión en el Puerto B2 de cambio de válvula se baja. Ya que la fuerza que actúa el puerto C2 es la única presión en la cámara A3 de alta presión de la válvula, la válvula C2 empieza a bajar. Durante la carrera que baja la válvula, el Puerto B3 de alta presión de válvula se cierra y el puerto B5 de alta presión de pistón se abre para bajar la presión en la cámara superior del pistón A1.

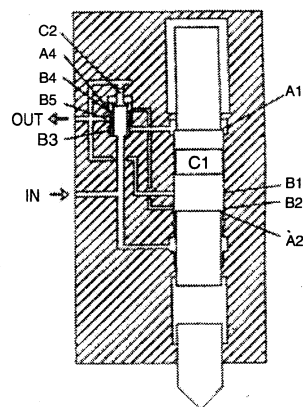
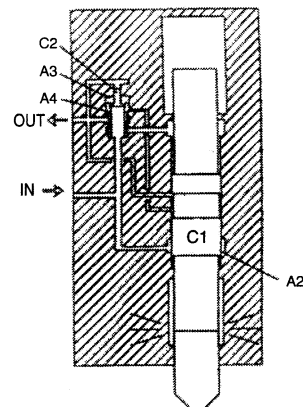
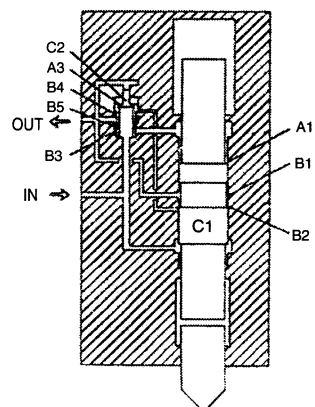
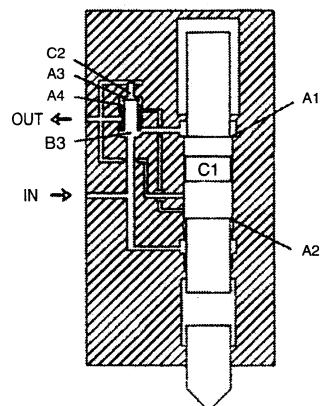
4) Impacto

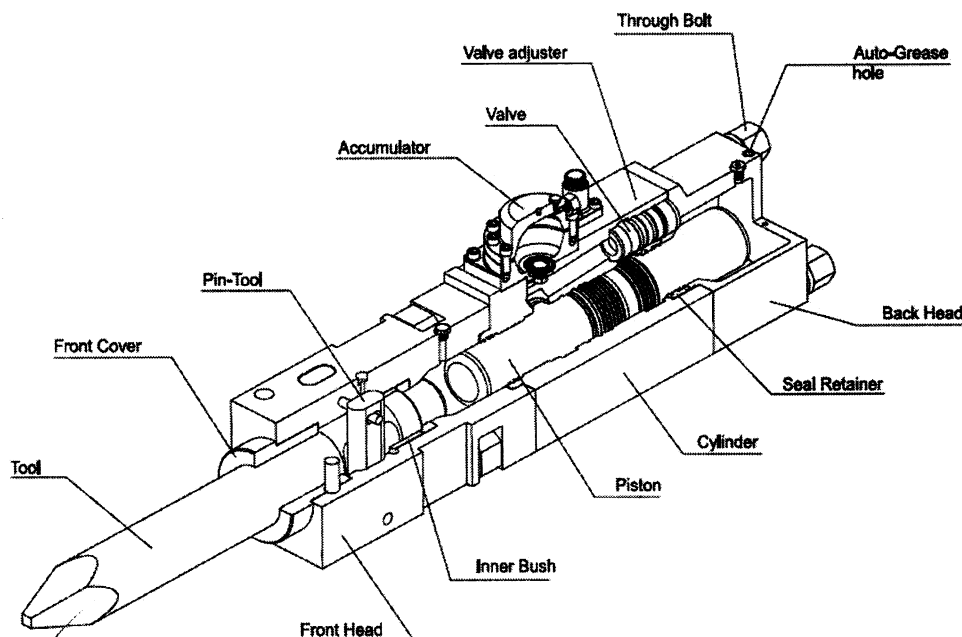
Cuando el pistón C1 llega al punto de impacto, la energía cinética obtenida por el pistón C1 durante la carrera de impacto, se transmite a la pica por la energía de impacto que se requiere el martillo hidráulico. En este momento, ya que la presión alta aplica solamente a la cámara inferior del pistón A2, el pistón C1 empieza a retroceder. Es decir, ya que la Alta presión aplica solamente a la cámara A3 de alta presión de la válvula, la válvula C2 se queda en la posición baja.

5) Ascenso del Pistón

Cuando el puerto de conversión de cilindro B2 está conectado al puerto de baja presión del cilindro B1, el aceite de alta presión se aplica a la válvula del puerto de salida de baja presión C2. Cuando la válvula está conectada al puerto de baja presión por A1, el puerto de baja presión B5 está cerrado. Cuando se abre la válvula de alta presión de B3, la cámara superior del pistón A1 va a subir la presión en la cámara inferior del pistón A1.

A1: Cámara superior del Pistón B1: Puerto de baja presión de cilindro C1: pistón
A2: Cámara inferior del pistón B2: Puerto de conversión del cilindro C2: válvula
A3: Cámara de alta presión de válvula B3: Puerto de alta presión de válvula
A4: Cámara de conversión de válvula B4: Puerto de conversión de válvula
B5: Puerto de baja presión de válvula





1) Cilindro

Esto contiene el pistón móvil que impacta la pica. Los sellos para ambas terminales del pistón están ubicados en el cilindro. Los sellos para la terminal superior del pistón están ubicados en el retenedor del sello separable y los sellos para la terminal inferior del pistón están ubicados en la ranura abajo del cilindro

2) Pistón

El Pistón transfiere la fuerza de impacto a la pica, generado por la fuerza hidráulica

3) Retenedor de Sello

El retenedor del sello tiene los sellos de aceite para sellar Gas Nitrógeno en el cabezal trasero y para prevenir la fuga de aceite hidráulico

4) Válvula

La válvula controla la acción inversa de pistón con la distribución de flujo hidráulico.

5) Ajustador de válvula

Cuando la maquina de base no suministra el aceite hidráulico al martillo hidráulico, este ajustador de válvula puede obtener la presión del trabajo adecuado por reducir el número de golpes y a la reversa, cuando suministra el flujo excesivo de aceite de la máquina de base, este ajustador de válvula puede mantener la presión adecuada del trabajo con el incremento del golpes.

6) Ensemble del Acumulador

El acumulador es un aparato de almacenamiento con carga de gas para mantener la cantidad reservada del flujo hidráulico de baja presión. En el circuito hidráulico, variaciones menores o grandes pueden causar la operación inestable o la operación irregular, que se ha hecho por el suministro del aceite de presión en el acumulador. El acumulador está construido firme para resistir la presión alta de operación.

7) Cabezal Frontal

Esto retiene la pica, usando los pernos de la misma, esta a su vez se puede cambiar, eliminando estos pernos

8) Buje Interior

Esto guía la pica, y limita la posición superior de la pica. Estos son las partes consumibles que deben ser chequeadas por su límite de desgaste. Si es necesario, deben reemplazarlos

9) Pica

Esto transfiere la fuerza de impacto de pistón a los objetos. Se recomienda aplicar el tipo apropiado de circunstancia del trabajo.

10) Perno de la Pica

Esto está ubicado en el cabezal frontal y prohíbe la pica a salirse.

11) Cabezal trasero

Esto contiene la cámara de cojin cargado con el gas nitrógeno que comprime durante las carreras del pistón y sirve a suministrar la absorción máxima de retroceso del pistón y la eficiencia, guardando la energía del impacto próximo.

12) Tornillos tensores

Estos son utilizados para ensamblar el cabezal frontal, el cilindro y cabezal trasero. Estos deben estar siempre fijos al torque especificado. Debe inspeccionar por no estar sueltos y debe fijarlos semanalmente

13) Ranura de Auto Lubricación (Para FINE 23X, 37X)

Es útil para el funcionamiento de Auto Lubricación.

14) Auto-Paro : Esto protege el Impacto vacío

1) Set Up

En la relación entre el área (A1) que afecta la presión de la cámara superior del pistón y el área (A2) que afecta la presión de la cámara inferior del pistón, A1 es más grande que A2 y la Presión alta siempre aplica a A2. Cuando A1 cambia de la presión alta a la baja o viceversa, el pistón C1 corresponde. Dentro de cabezal trasero, se cambia con gas de alta presión y la energía de gas almacenando en la carrera arriba de C1 actúa el pistón C1 durante el impacto.

2) Conversión Del Pistón

Cuando el pistón (C1) llega a la posición A1, el aceite de Alta presión del puerto B3 entra a la cámara superior del pistón A1 y el pistón mueve al área de impacto de la posición superior.

A este momento, la válvula (C2) mueve al área superior ya que la cámara de A4 es más grande que A3.

La alta presión siempre aplica a A4 y válvula C2 se queda en la posición arriba.

3) Conversión de la Válvula

Cuando el Puerto B1 con la presión baja del cilindro está conectado con el Puerto B2 de cambio del cilindro, la presión en el Puerto B2 de cambio de válvula se baja. Ya que la fuerza que actúa el puerto C2 es la única presión en la cámara A3 de alta presión de la válvula, la válvula C2 empieza a bajar. Durante la carrera que baja la válvula, el Puerto B3 de alta presión de válvula se cierra y el puerto B5 de alta presión de válvula se abre para bajar la presión en la cámara superior del pistón A1.

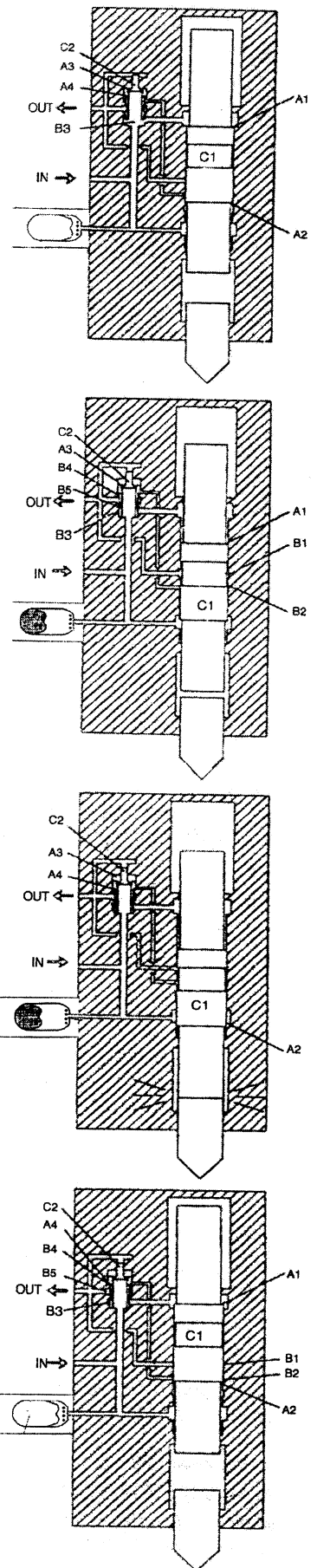
4) Impacto

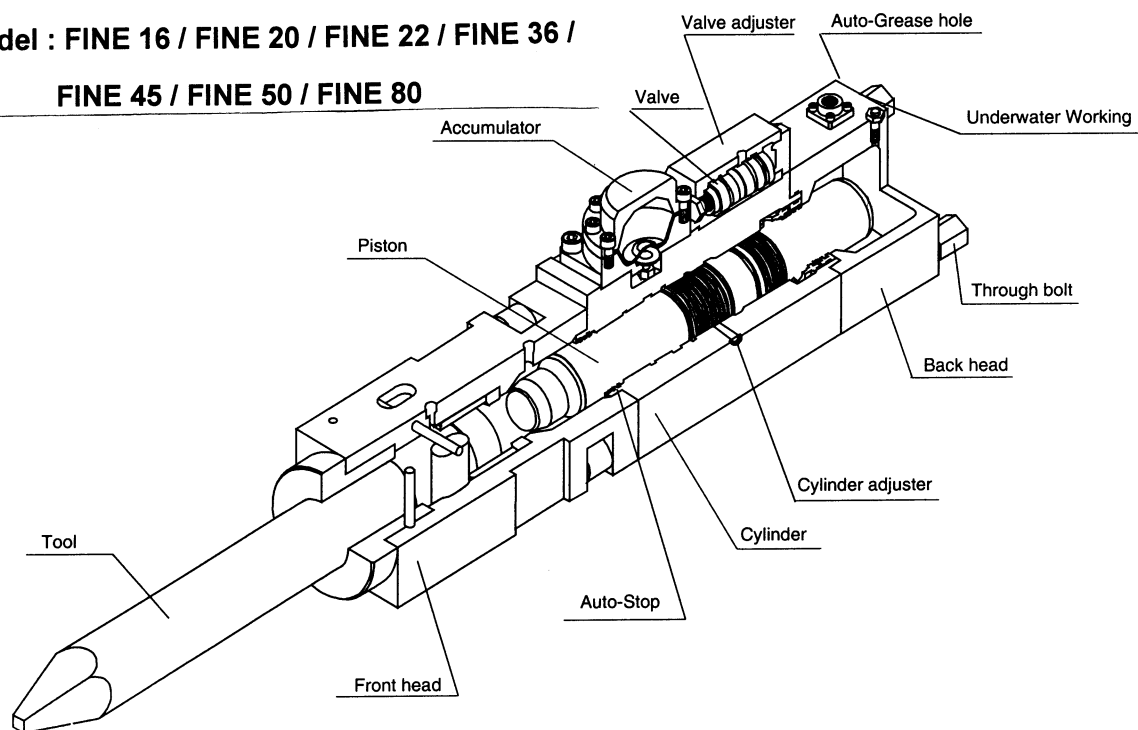
Cuando el pistón C1 llega al punto de impacto, la energía cinética obtenida por el pistón C1 durante la carrera de impacto, se transmite a la pica por la energía de impacto que se requiere el martillo hidráulico. En este momento, ya que la presión alta aplica solamente a la cámara inferior del pistón A2, el pistón C1 empieza a retroceder. Es decir, ya que la Alta presión aplica solamente a la cámara A3 de alta presión de la válvula, la válvula C2 se queda en la posición baja.

5) Ascenso del Pistón

Cuando el puerto de conversión de cilindro B2 está conectado al puerto de baja presión del cilindro B1, el aceite de alta presión se aplica a la válvula del puerto de salida de baja presión C2. Cuando la válvula está conectada al puerto de baja presión por A1, el puerto de baja presión B5 está cerrado. Cuando se abre la válvula de alta presión de B3, la cámara superior del pistón A1 va a subir la presión en la cámara inferior del pistón A1.

- | | | |
|---------------------------------------|--|-------------|
| A1: Cámara superior del Pistón | B1: Puerto de baja presión de cilindro | C1: pistón |
| A2: Cámara inferior del pistón | B2: Puerto de conversión del cilindro | C2: válvula |
| A3: Cámara de alta presión de válvula | B3: Puerto de alta presión de válvula | |
| A4: Cámara de conversión de válvula | B4: Puerto de conversión de válvula | |
| | B5: Puerto de baja presión de válvula | |





1) Cilindro

Esto contiene el pistón móvil que impacta la pica. Los sellos para ambas terminales del pistón están ubicados en el cilindro. Los sellos para la terminal superior del pistón están ubicados en el retenedor del sello separable y los sellos para la terminal inferior del pistón están ubicados en la ranura abajo

2) Pistón

El Pistón transfiere la fuerza de impacto a la pica, generado por la fuerza hidráulica

3) Retenedor de Sello

El retenedor del sello tiene los sellos de aceite para sellar Gas Nitrógeno en el cabezal trasero y para prevenir la fuga de aceite hidráulico

4) Caja de Válvula

Esto guía el movimiento de la válvula principal

5) Válvula : La Válvula controla la acción inversa de pistón con la distribución de flujo hidráulico.

6) Ajustador de válvula

Cuando la máquina de base no suministra el aceite hidráulico al martillo hidráulico, este ajustador de válvula puede obtener la presión del trabajo adecuado por reducir el número de golpes y a la reversa, cuando suministra el flujo excesivo de aceite de la máquina de base, este ajustador de válvula puede mantener la presión adecuada del trabajo con el incremento del golpes.

7) Ajustador de Cilindro : Girar a la derecha para reducir los golpes del martillo hidráulico y girar a la izquierda para incrementar los golpes del martillo hidráulico

8) Acumulador

El acumulador es un aparato de almacenamiento con carga de gas para mantener la cantidad reservada del flujo hidráulico de baja presión. En el circuito hidráulico, variaciones menores o grandes pueden causar la operación inestable o la operación irregular, que se ha hecho por el suministro del aceite de presión en el acumulador. Los acumuladores están contruidos firme para resistir la presión alta de operación.

9) Cabezal Frontal

Esto retiene la pica, usando los pernos de la misma, esta a su vez se puede cambiar por separar estos pernos

10) Buje Interior

Esto guía la pica, y limita la posición superior de la pica. Estos son las partes consumibles que deben ser checadas por su límite de desgaste. Si es necesario, deben reemplazarlos

11) Pica

Esto trasfiere la fuerza de impacto de pistón a los objetos. Se recomienda aplicar el tipo apropiado de circunstancia del

12) Perno de la Pica

Esto esta ubicado en el cabezal frontal y prohíbe la pica a salirse.

14) Cabezal trasero

Esto contiene la cámara de cojin cargado con el gas nitrógeno que comprime durante las carreras del pistón y sirve a suministrar la absorción máxima de retroceso del pistón y la eficiencia, guardando la energía del impacto próximo.

15) Tornillos tensores

Estos son ultizados para ensamblar el cabezal frontal, el cilindro y cabezal trasero. Estos deben estar siempre fijos al torque especificado. Debe inspeccionar por no estar sueltos y debe fijarlos semanalmente

16) Ranura de Auto Lubricación (Para FINE 23X, 37X) : Es útil para el funcionamiento de Auto Lubricación.

17) Auto-Paro : Esto protégé el impacto vacío.

1) Set Up

Las cámaras C3 y C2 siempre mantienen la presión baja ya que ellas están conectadas con la línea de salida. Las cámaras V3, V1, C1 y el acumulador siempre mantienen la presión alta ya que ellas están conectadas con la línea de entrada. La presión de la cámara V2 se cambia a la presión baja o a la presión alta, dependiendo de la posición del pistón.

2) Ascenso del Pistón

El aceite entra al Puerto "IN" y empieza a acumular la fuerza para subir el pistón: La fuerza hidráulica se aplica a A1 de la flanja inferior del pistón y el pistón empieza a subir.

Cuando el pistón empieza a subir, el aceite de la cámara C4 vuelve a la línea de salida a través de la válvula de control.

3) Ascenso de la Válvula

Cuando el pistón sube al límite superior, A1 de la flanja inferior del pistón llega a Cámara C2 y el gas nitrógeno (N2) del cabezal trasero se comprime. Esta vez, el aceite de la cámara C2 va a la cámara V2.

El área de A3 es más grande que el área de A4, sin embargo la presión aplicada del área A3 es igual a la presión de A4. Por eso, la válvula empieza a subir por la diferencia del área entre A4 y A3.

4) Bajada de Pistón

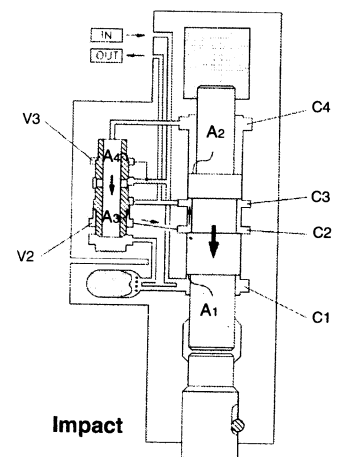
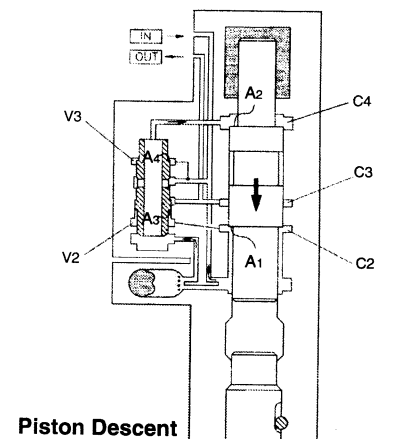
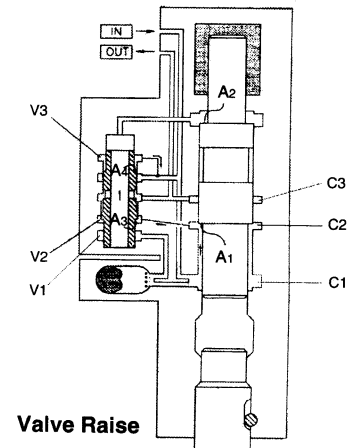
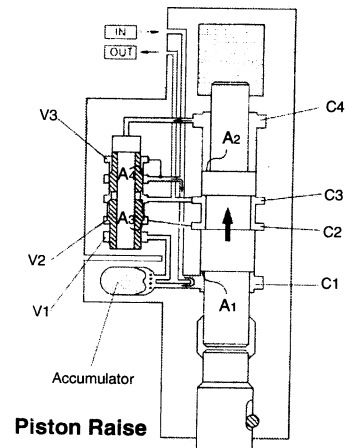
Cuando la válvula llega al límite superior, la cámara C4 va a ser el área de alta presión porque el aceite de la bomba del trabajo va a la cámara C2 a través de la válvula de control. El área A2 es más grande que el área A1, sin embargo la presión aplicada al área A1 es igual a la presión aplicada a A1. Por eso, el pistón va a bajar por la diferencia del área entre A2 y A1. Esta vez, la velocidad de bajada del pistón se acelera por la presión de gas nitrógeno (N2) comprimido y por el peso de pistón.

5) Impacto

La cámara V2 se cambia a la presión baja cuando la cámara C2 está conectada con C3 durante la bajada del pistón. Sin embargo, V3 es siempre de alta presión. Por eso, la válvula empieza a bajar.

6) Golpe Continuo

Después de que el pistón golpe la pica, el estado de todos los circuitos se cambia a la subida del pistón. El pistón empieza a subir vía estado de flujo en el Puerto "IN" y el ciclo repite nuevamente.

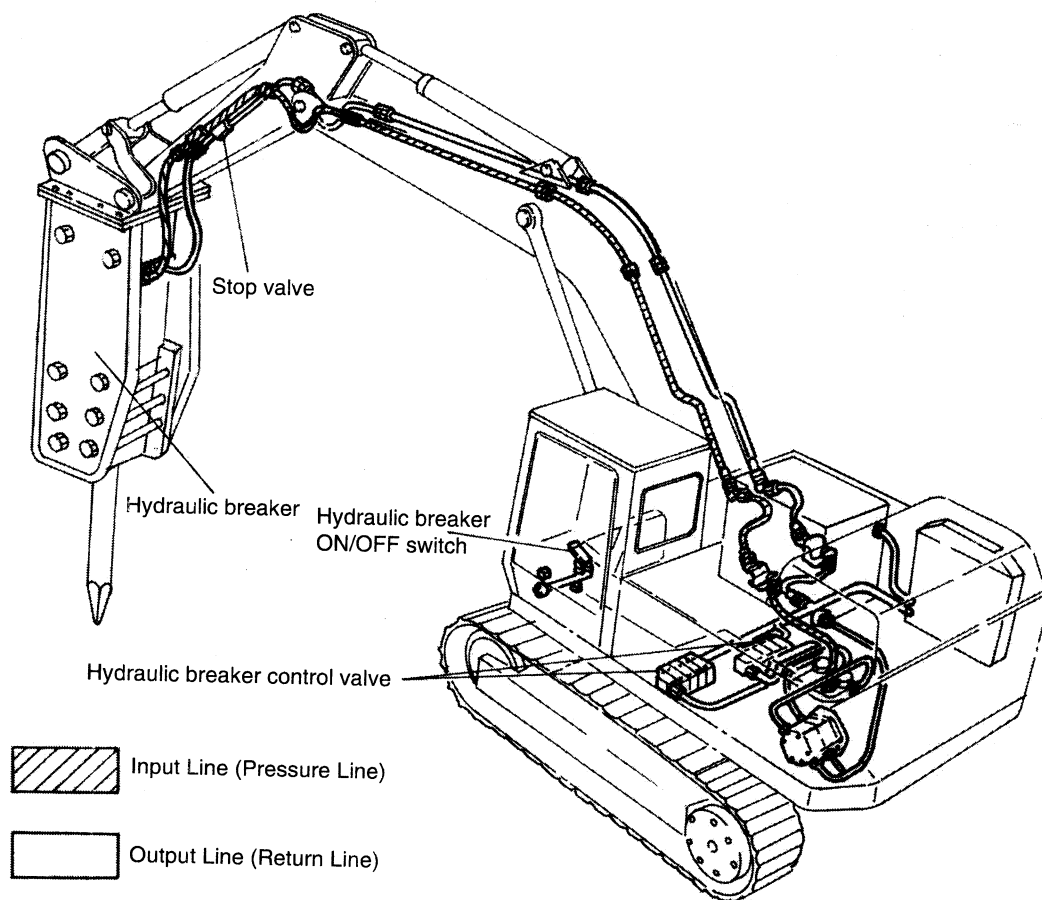


4-2. Vista General

ATENCION

- Cuando la máquina de la base tiene instalada las líneas de tubería del martillo hidráulico, por favor chequear las líneas de tubería, si esta correcta la presión, el flujo o si no hay pérdida de la presión.
- La válvula de control de presión debe instalarse, si no tiene la válvula de control de presión en la válvula de control principal de la máquina de la base.

La vista estandar de la instalacion se muestra en Fig. 4-2



(Fig. 4-2)

4.3. Instalacion

PRECAUCION

- No meter su mano o dedos en el hueco del perno o no mirarlo.

ADVERTENCIA

- Cuando alinea el hueco del brazo o mueve el cucharon, asegurarse de que no esta nadie alrededor del brazo o cucharon de la máquina de la base.
- Es peligroso mover la máquina de la base de repente, durante la instalación.
- Ponerse los zapatos de seguridad para proteger los pies.

ATENCION

- Tener cuidado por no entrar el polvo en el martillo hidráulico y la máquina de la base.
- Instalar o desmontar el martillo hidráulico en el piso plano sin manchar el barro o polvo.

1) Poner el martillo hidráulico en el piso plano.

2) Desmontar el cucharon de la máquina de la base despues de quitar los dos pernos.

ATENCION

- Si el cilindro del cucharon es retraido, el trabajo de instalación seria mas fácil.

3) Mover la máquina de la base alrededor del martillo hidráulico y alinea el hueco del perno del brazo con el hueco de perno del martillo hidráulico y despues, insertar los pernos.

4) Despues de insertar el perno de brazo, levanta la pluma y insertar el martillo hidráulico en bloque de Madera como se muestra 4-3-3. Extender el cilindro del cucharon, ajustarlo al hueco de cucharon e insertar los pernos.

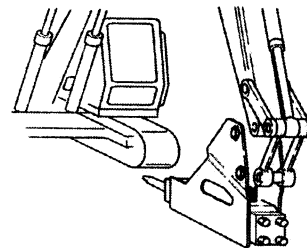
5) Instalar el anillo de paro, alinea los huecos de tornillo e insertar los tornillos. Mutuamente cierre con la tuerca doble.

ATENCION

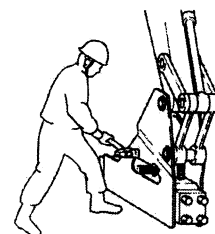
- Si los anillos de paro estan puestos con una tuerca solamente, la vida del servicio del tornillo podría ser corta o el tornillo podría aflojarse muy pronto.

6) Apaga el motor de la máquina de la base y descarga la presión del aire en el tanque del aceite hidráulico.

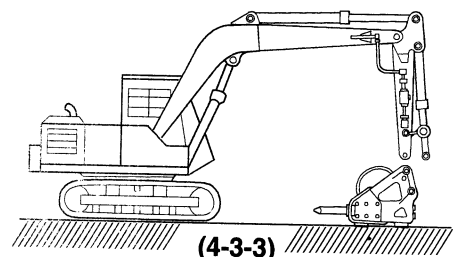
7) Quitar las tapas de union del tubo de martillo hidráulico de la terminal del brazo y conectar las mangueras despues de quitar el tapón de la manguera



(4-3-1)



(4-3-2)



(4-3-3)

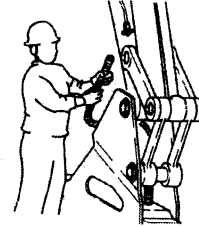
ATENCION

- No permitir el aceite caer al piso.
- Guardar la tapa de union y el tapón de manguera en la caja de herramienta.
- Cuando instala o desmonta la manguera del aceite y la tapa de union, limpiarlos bien para prevenir el polvo o el barro a entrar al martillo hidráulico o la máquina del base.

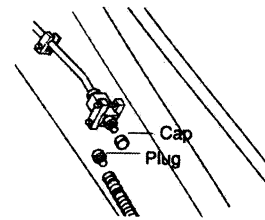
8) Conectar las mangueras a las válvulas de paro en ambos lados del brazo.

9) Prender el motor de la máquina de la base, dejar la pluma, operar el cilindro del cucharón y checar si la manguera del martillo hidráulico está conectada correctamente.

10) Empezar a calentar la máquina de la base.



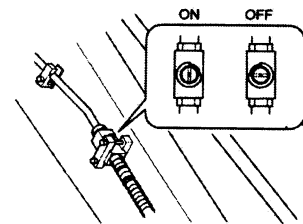
(4-3-4)



(4-3-5)

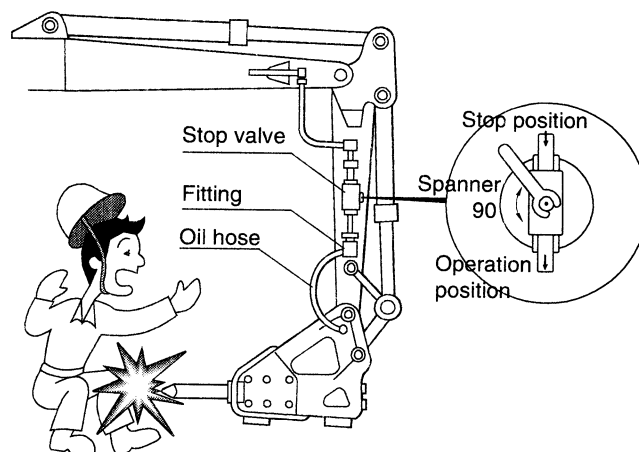
ATENCION

- Calentar la máquina de la base sin marcha en vacio por 5 minutos despues de prender el motor.
- Mover la pluma y brazo durante aprox. 5 minutos despues de la operación de calentamiento para subir la temperatura del aceite hidráulico de la máquina de la base.



(4-3-6)

11) Prender las válvulas de paro a la posición "ON".



PRECAUCION

- La pica puede salir por la presión del aceite en la línea de tubería. No estar cerca del martillo hidráulico.

4-4. Desmontaje

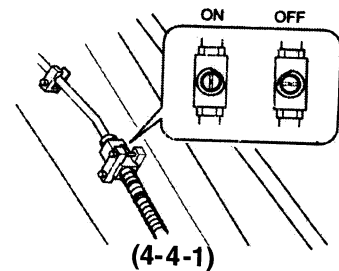
PRECAUCION

- Puede suceder el Perjuicio personal al caerse los pernos durante el desmontaje.

ADVERTENCIA

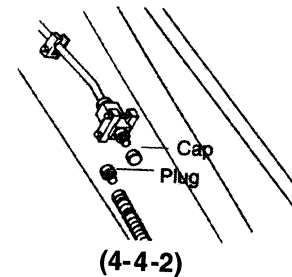
- Ponerse los zapatos de seguridad para proteger los pies.

- 1) Poner el martillo hidráulico en el piso limpio y plano.
Cerrar el freno de la máquina de Base



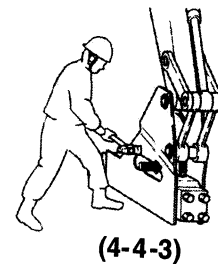
- 2) Parar el Motor.

- 3) Girar la válvula de paro a la posición " OFF".



- 4) Desconectar las mangueras de las válvulas de paro.
Asegurarse de que no sucede la fuga de aceite de las mangueras y valvulas de paro.

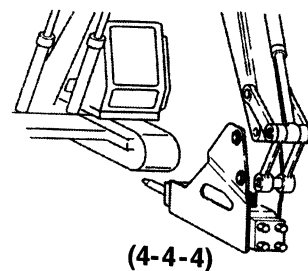
- 5) Aplicar la tapa de union y tapón a las terminales de la manguera.



- 6) Quitar los apretadores del perno.

- 7) Quitar los pernos.

- 8) Cuando los pernos estan eliminado, mover el Joystick (palanca universal) suave, para quitar el peso de los pernos de conexión.



- 9) Levantar el brazo el martillo hidráulico para mover el martillo hidráulico o montar el otro aditamento a la máquina de base.

ATENCION

- Tapar el martillo hidráulico con el forro y guardarlo adentro.

5. Mantenimiento

5-1. Sistema de Número de Serie

El número de serie de la unidad esta estampado en el lado izquierdo del soporte por la placa de acero con nombre (P/no. FB-80003. Es muy importante el número de serie para manejar la reparación o colocar el orden de las partes.

Estructura del número de serie es como sigue:

F XX A 000

F XX : Número de Modelo de Martillo Hidráulico FINE

(1, 2, 3, 4, 5BL, 6BL, 7, 8BL, 10, 12, 16, 20, 22, 23, 36, 45, 46, 50, 65)

A : Número de Versión

(Actualización de Versión: A, B, C, D...)

000 : Número de identificación de martillo hidráulico FINE

(Número de Cilindro y número de modificación de martillo hidráulico)

Tiene su propio código del cuerpo principal.

B : Bracket type (Tipo de Soporte/Bracket)

S : Bracket lateral

T: top bracket sin placa de montaje

T+B : top bracket con placa de montaje

TB : Box bracket sin placa de montaje



TBOC : Box bracket con placa de montaje

BL: Backhoe loader Retroexcavador)

M : main body only (cuerpo principal solamente)



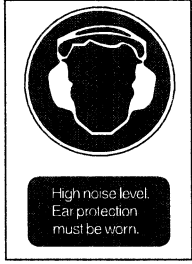
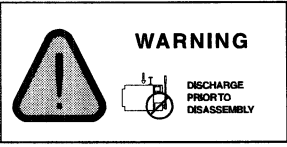
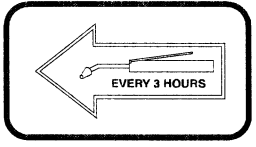


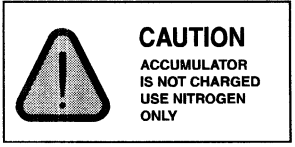
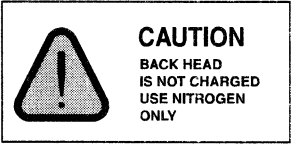
Ejemplo : F23A 123

Modelo de Martillo es FINE 23, Versión de Martillo es A. El código de su propio cuerpo es 123.

| | |
|---|-------|
|  FINE Hydraulic Breaker | |
| Model | FINE |
| Serial Number | |
| Manufacturing Date | |
| Working Weight | kg |
| Operating Pressure | bar |
| Required Oil Flow | L/min |
| Manufactured by  FEELENG® FEEL INDUSTRIAL ENGINEERING CO., LTD. #13-3, Ssangsong-Ri, Mado-Myeon, Hwasung-City, Kyunggi, Korea | |

P/no. P98000000

5-2 Etiqueta de Seguridad

| | |
|---|--|
|  |  |
| <p>1) (P/no. FB-80001)</p> | <p>2) Advertencia de escombros volantes (P/no. FB-80002)</p> |
|  |  |
| <p>3) Advertencia de ruido de alto nivel (P/no. FB-80004)</p> | <p>4) Advertencia de descarga por la cabeza trasera (P/no. FB-80005)</p> |
|  |  |
| <p>5) Etiqueta de Lubricacion (P/no. FB-80006)</p> | <p>6) Accumulator serial no. label (P/no. FB-80008)</p> |
|  |  |
| <p>7) Advertencia de Acumulador de alta presion (P/no. FB-80008)</p> | <p>8) Advertencia de acumulador no cargado (P/no. FB-80009)</p> |
|  | |
| <p>9) Advertencia de Cabezal trasera no cargada (P/no. FB-80010)</p> | |

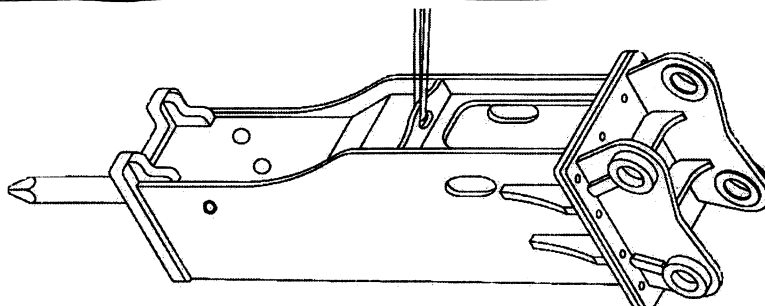
5-3. Movimiento y Levantamiento

ADVERTENCIA

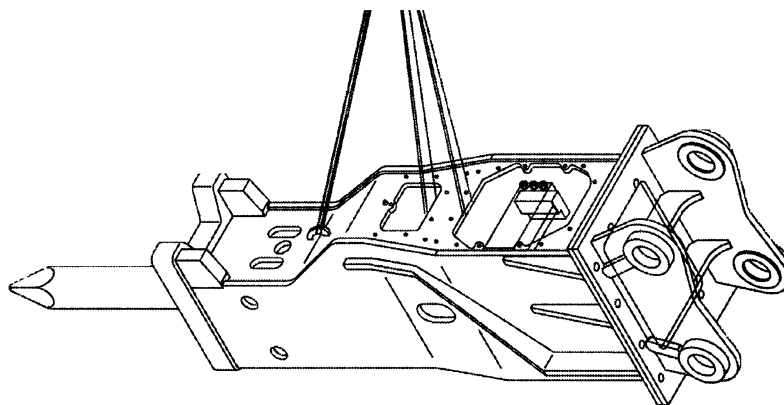
Siempre utilizar Eye-Bolts cuando mueve y levanta el martillo hidráulico, y después fijar el soporte (Bracket).

Amarrar las sogas de alambre a los ganchos (cuatro piezas) y levantar el martillo.

Quitar Eye-Bolts antes de operación del martillo hidráulico.



| Model | Wire Rope |
|---------|-----------|
| FINE 1 | 16mm |
| FINE 2 | 16mm |
| FINE 3 | 16mm |
| FINE 4 | 16mm |
| FINE 5 | 16mm |
| FINE 6 | 16mm |
| FINE 7 | 16mm |
| FINE 10 | 16mm |



| Model | Wire Rope |
|-------------------|-----------|
| FINE 12 | 19mm |
| FINE 16 & FINE 21 | 19mm |
| FINE 20 & FINE 22 | 19mm |
| FINE 36 & FINE 37 | 19mm |
| FINE 45 & FINE 46 | 19mm |
| FINE 50 & FINE 65 | 19mm |
| FINE 80 | 22mm |

5-4. Intervalo de Mantenimiento

ATENCION

- Antes de operar el martillo hidráulico, asegurarse de checar los siguientes.

Cada 3 horas

- Echar la grasa en el cabezal frontal.
- Checar la temperatura del aceite hidráulico, tubería, conexiones de manguera y la condición de trabajo.
- Checar la tensión de los tornillos.

Cada 10 horas o diariamente

- Si se ve las cáscaras ásperas en la pica y pernos, debe quitarlos. Checar la presión de gas nitrógeno en el cabezal trasero.
- Reapretar los tornillos del soporte (bracket)

Cada 50 horas o semanalmente

- Checar la limpieza entre la pica y la tapa frontal.
- Checar las mangueras hidráulicas.
- Reapretar los tornillos de tensores.

Cada 1,000 horas, o 6 meses

- Inspección por la persona de servicio autorizado esta recomendada.
- Inspección de todos los tubos hidráulicos y las conexiones de las mangueras.
- Checar la interferencia de la manguera en el movimiento de la máquina de la base.
- Checar las condiciones de filtro del aceite, diafragma de acumulador, tornillos de tensores y los pernos de la pica.

Cada 2,000 horas, o anualmente

- Todos los tubos hidráulicos y conexiones de manguera.
- Interferencia de la manguera con la pluma (Boom) de excavadora.
- Condiciones de filtro del aceite, diafragma de acumulador y tornillos de tensores.
- Todos los sellos.
- Condición de pistón, tapa frontal y buje interior.

5-5. Aceite Hidráulico

Aceite Hidráulico Recomendado

Normalmente, cualquier aceite para la máquina del base puede utilizarse en el martillo hidráulico. Sin embargo, ya que el trabajo del martillo hidráulico va a calentar mucho mas que en la condición del trabajo de la excavación, hay que checar la viscosidad del aceite. Cuando utiliza el martillo hidráulico continuamente, la temperatura del aceite se normaliza en el cierto nivel, dependiendo de las condiciones y la máquina de base. A esa temperatura, la viscosidad del aceite hidráulico deber ser 20 – 40 cST.

ATENCION

- Normalmente, la temperatura del aceite hidráulico del martillo y la máquina de base debe estar controlado entre 40°C- 60°C.
- Cuando ha operado el martillo hidráulico a la temperatura mas de 80°C, deberia checar los sellos.

| Fabricante (Marca) | Aceite Hidráulico | |
|--------------------|---|--|
| | ISO VG 68 | ISO VG 46 |
| Esso | Nuto H68 | Univis N 46 |
| Shell | Tellus oil 68 | Tellus oil 46 |
| Mobile | DTE 16 | DTE 15 |
| Gulf | Harmony 68 | Harmony 46 |
| | For hot weather use (Para uso de clima caliente) | For cold weather use (Para uso de clima frio) |

Reemplazo de aceite hidráulico y Filtro de Aceite

La contaminación del aceite hidráulico puede causar el perjuicio a las partes, no solamente del martillo hidráulico sino también en las partes de la máquina de base. Recomendamos el reemplazo del aceite hidráulico y filtro de aceite como se muestra en la siguiente tabla, la cual está en base de la operación de 100%.

| | | |
|--------------------|------------------|---------------------------------|
| Aceite hidráulico | Primer 250 horas | Basado en la operación del 100% |
| | Cada 600 horas | |
| Filtros del Aceite | Primer 50 horas | |
| | Cada 100 horas | |

Viscosidad de aceite hidráulico

No debe operar el martillo hidráulico si la viscosidad del aceite sobrepasa 1000 cST, ni debe operar en la situación de la viscosidad menos de 15 cST.

Viscosidad demasiado alta del aceite

- Dificultad de arranque
- Rigidez de la operación
- Impacto irregular del martillo hidráulico
- Riesgo de cavitación en bombas y martillo hidráulico
- Adhesión de válvula
- Si el filtro está muy contaminado, los componentes hidráulicos pueden averiarse por la válvula de desviación abierta.

Viscosidad demasiado baja

- Pérdida de eficiencia por la fuga interna
- Perjuicio a los sellos, o-Anillos (o-Rings)
- Desgaste acelerado de las partes por la lubricación muy baja.

Enfriamiento

El rango máximo de temperatura del aceite hidráulico permitido en la operación continua del martillo es 50-80°C (120-175°F), dependiendo de la viscosidad del aceite en el sistema. Por eso, se necesita un termómetro del aceite hidráulico.

Si no tiene este termómetro en la máquina de base, debería instalarlo. La temperatura del aceite hidráulico depende de la condición del ambiente, eficiencia del sistema de enfriamiento de la máquina de base y el uso del martillo. Cuando usan el martillo continuamente, es necesario tener el sistema de enfriamiento con la capacidad extra de enfriamiento, comparado con el trabajo normal de excavación...

Temperatura del aceite hidráulico

La temperatura normal de la operación del aceite es -20°C+80°C (-4°F+175°F).

Si la temperatura es más baja que -20°C(-4°F), el aceite hidráulico debe ser pre-calentado antes de operación para evitar la fractura del diafragma del acumulador.

Para precalentar el aceite hidráulico, debe operar la máquina de base (sin operación del martillo hidráulico) hasta la temperatura del aceite sube hasta el rango de la temperatura especificada.

Durante la operación, el aceite se queda caliente.

Si la temperatura del aceite hidráulica sobrepasa el límite especificado, debe parar el equipo y esperar la operación hasta cuando el aceite se enfria al rango de la temperatura especificada de la operación.

5-6. Engrase

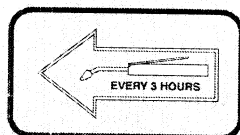
Advertencia

- Engrase insuficiente puede causar el desgaste anormal de la tapa frontal y la pica, y también la fractura de pica

- Engrasar al niple en la cabeza frontal cada 3 horas
- Ajustar el intervalo de engrase y la cantidad según las tasas del desgaste de la pica y condición de trabajo.

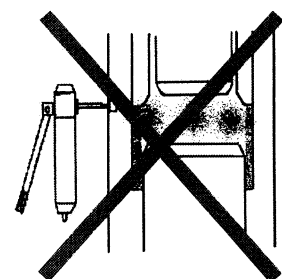
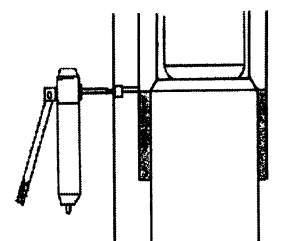
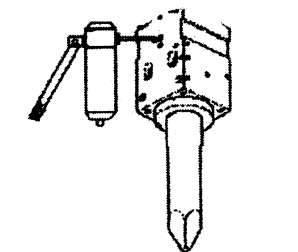
ATENCION

- La espica de la pica debe estar bien lubricada antes de instalarse en el cabezal frontal.
- Etiqueta de Engrase (P/no. FB80006)



ATENCION

- Durante la lubricación, el martillo hidráulico debe estar levantado contra la pica y debe asegurar que la grasa penetre entre la pica y buje interno.



Grasa lubricante recomendada (NIGI NO. 2)

| Fabricante (Marca) | Grasa |
|--------------------|-----------------------|
| Esso | Beacon Q2 |
| Shell | Retinax AM |
| Mobile | Mobile Grease special |

 **FEELENG®**

5-7. Inspección y Carga de Gas Nitrógeno (N2)

5-7. Inspección y Carga de Gas Nitrógeno (N2)

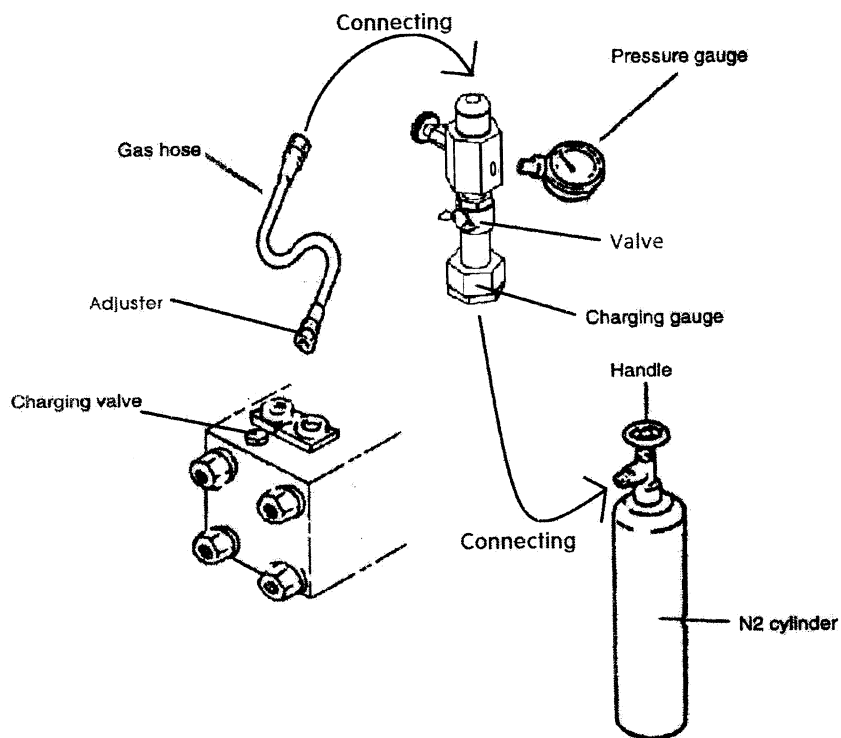
5.7.1.Cabezal Trasero

PRECAUCION

- No quedarse en frente de la pica cuando cargan el gas nitrógeno en el cabezal trasero.
- El gas nitrógeno en el cabezal trasero debe ser descargado completamente, al reemplazar el tornillo de tensor y al desarmar el cuerpo principal.

ADVERTENCIA

- Usar el gas nitrógeno solamente.
- La temperatura del cuerpo principal de martillo debe estar normal durante inspección o durante la carga del gas nitrógeno en el cabezal trasero.



(Fig. 5-7-1)

- (1) Conectar la manguera del gas con el cilindro de gas nitrógeno.
- (2) Girar la manija de manometro de carga a la izquierda antes de instalar el manometro de carga.
- (3) Instalar el manometro de carga a la válvula de carga.
(Asegurarse de que O -anillo debe estar instalado en el manometro de carga.)
- (4) Conectar la otra terminal de la manguera de gas al manometro de carga.
- (5) Girar despacio la manija del manometro de carga a la derecha para arreglar la presión de carga y girar la manija del cilindro de gas nitrógeno a la derecha.
- (6) Girar la manija del manometro de carga a la izquierda y despues girar la manija del cilindro del gas nitrógeno a la izquierda para cerrarlo.

ATENCION

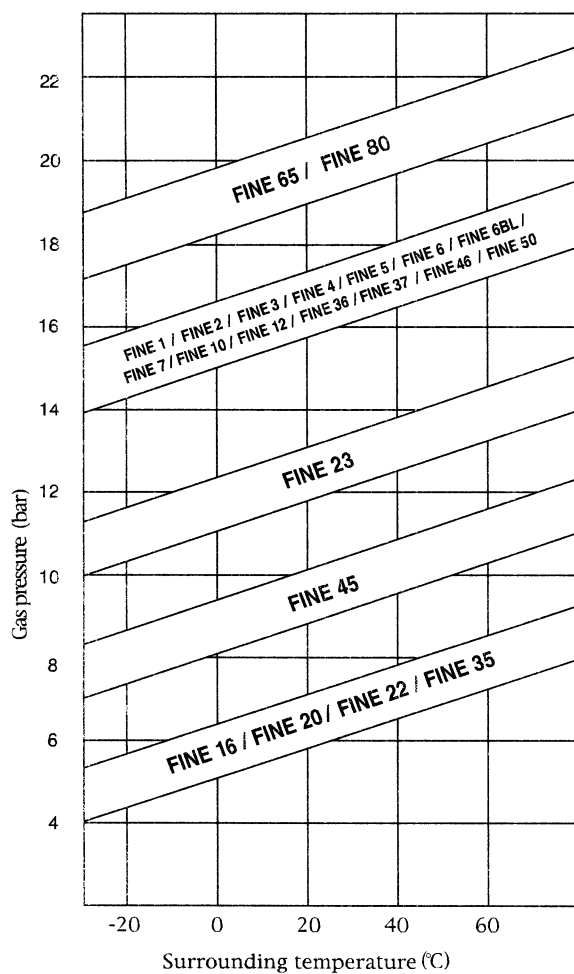
- **Para sellar la presión de gas nitrógeno, referirse a la Fig. 5-7-2**

- (7) Cerrar la tapa del manometro de carga despues de quitar la manguera de gas .
- (8) Recheckar la presión de carga en el cabezal trasero mientras girando la manija del manometro de carga a la derecha.

ATENCION

- **Cuando carga el gas nitrógeno en el cabezal trasero completamente segun el siguiente procemiento (1 – 8), desconectar el manometro de carga de la válvula de carga de cabezal trasero despues de girar la manija del manometro de carga a la izquierda. Sin embargo, si necesita ajustar la presión de gas de carga en el cabezal trasero, hay que seguir los procedimientos que estan mencionados en (9) – (13).**

- (9) Desconectar la manguera de gas del manometro de carga.
- (10) Instalar el manometro de carga a la válvula de carga del cabezal trasero completamente.
- (11) Cuando gira la manija de manometro de carga a la derecha, la presión de gas en el cabezal trasero esta indicada en el manometro de presión.
- (12) Si la presión de gas es baja, debe tratar de los procedimientos (1) – (8) nuevamente, hasta cuando la presión de gas sube al nivel de presión especificado.
- (13) Si la presión de gas es excesivo, girar despacio el ajustador del manometro de carga a la izquierda, y la presión de gas va a salir de cabezal trasero. Cuando la cantidad de presión de gas muestra correctamente, cerrar el ajustador a la derecha. Cuando la presión de gas es demasiado alta, el martillo no va funcionar. Asegurarse de que la presión de gas este al nivel de presión especificada y o-anillo en manometro de carga este instalado.



(Fig. 5-7-2)

| Model | Charging pressure (bar) |
|------------------|-------------------------|
| FINE 1 / 2 | 16 ~ 17 |
| FINE 3 / 4 | 16 ~ 17 |
| FINE 5 / 6 / 6BL | 16 ~ 17 |
| FINE 7 / 8BL | 16 ~ 17 |
| FINE 10 / 12 | 16 ~ 17 |
| FINE 16 | 6 ~ 7 |
| FINE 20 / 22 | 6 ~ 7 |
| FINE 21 | 16 ~ 17 |
| FINE 23 | 12 ~ 13 |
| FINE 35 | 6 ~ 7 |
| FINE 36 | 16 ~ 17 |
| FINE 37 | 16 ~ 17 |
| FINE 45 | 9 ~ 10 |
| FINE 46 / 50 | 16 ~ 18 |
| FINE 65 | 20 ~ 21 |
| FINE 80 | 18 ~ 20 |

A) Inspección de presión de carga

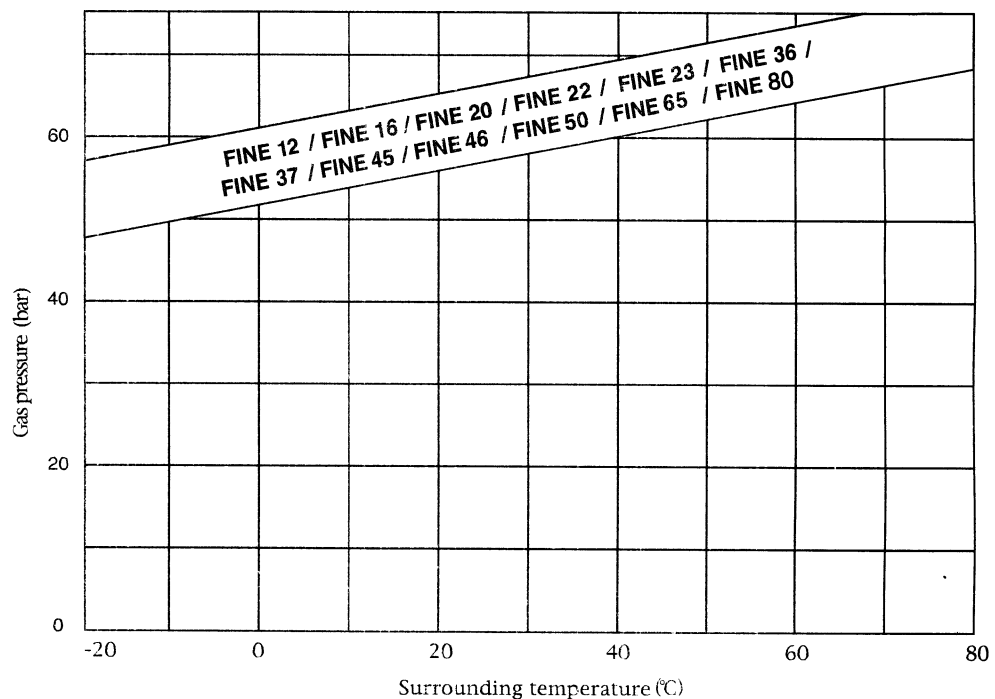
- (1) Girar la manija del manometro de carga a la izquierda..
- (2) Quitar la clavija en el acumulador y apretar el manometro de carga completamente.
- (3) Quitar la tapa de ajustador al acumulador.
- (4) Girar el ajustador a la izquierda despacio para indicar la presión de carga de acumulador.
- (5) Quitar el manometro de carga y apretar la clavija y tapa.
- (Asegurarse de que o- anillo (ring) debe estar instalado en la clavija y tapa.)

B) Acumulador de Carga con gas nitrógeno

- (1) Despues de inspeccionar la presión de carga.
- (2) Conectar la manguera de gas con el manometro de carga y cilindro de gas N2. .
- (3) Girar el ajustador a la izquierda despues de quitar la tapa del ajustador.
- (4) Girar despacio la manija del cilindro de gas N2 a la izquierda para cargar acumulador con gas N2.

Para la presión de carga de gas, referirse a Fig. 5-7-4

- (5) Cuando el acumulador esta cargado con el gas N2 completamente, cerrar el ajustador totalmente..
- (6) Girar la manija del cilindro de gas N2 a la derecha para cerrar.
- (7) Relajar el ajustador del manometro de carga para descargar el gas N2 en la manguera de gas.
- (8) Quitar la manguera de gas del manometro de carga al cilindro de gas N2.
- (9) Despues de quitar la manguera de gas, ajustar la presión, refiriendose a **A) Inspección de la Presión de carga.**
- (10) Despues de cargar el acumulador con gas N2, checar la fuga de gas del ajustador, clavija de acumulador.



(Fig. 5-7-4)

5-8. Calibración de Presión

La calibración de presión del martillo hidráulico debe ser mas baja que la de presión de la máquina de base para proteger la bomba principal de la máquina .

Normalmente, calibrar la presión del martillo aprox. **5-10kg/cm²** mas baja que la de máquina de base, cuando la presión principal de la máquina del base es mas baja que la tabla abajo mostrada.

Si la presión de calibración del martillo es mas alta que la tabla de abajo:

va a afectar la vida de la bomba principal , los sellos y la pica en el martillo hidráulico

Si la presión de calibración del martillo hidráulico es mas baja que la tabla de abajo :

el funcionamiento del martillo va a rebajar.

| Recommended Setting pressure and Operating pressure for hydraulic breaker(bar) | | |
|--|------------------|---|
| Model | Setting pressure | Operating pressure |
| FINE 1 / 2 / 3 | 150 ~ 170 | 90 ~ 110 |
| FINE 4 | 150 ~ 170 | 90 ~ 120 |
| FINE 5 / 6BL / 7BL | 160 ~ 180 | 90 ~ 120(FINE 5, 6BL) 90 ~ 130(FINE 7BLX) |
| FINE 6 | 160 ~ 180 | 110 ~ 140 |
| FINE 7 / 8BL | 170 ~ 190 | 130 ~ 150 |
| FINE 10 | 180 ~ 200 | 150 ~ 170 |
| FINE 12 | 180 ~ 200 | 150 ~ 180 |
| FINE 16 | 180 ~ 200 | 150 ~ 180 |
| FINE 20 | 190 ~ 210 | 160 ~ 180 |
| FINE 21 | 180 ~ 200 | 160 ~ 180 |
| FINE 22 / 23 | 190 ~ 210 | 160 ~ 180 |
| FINE 35 / 36 | 200 ~ 220 | 160 ~ 180 |
| FINE 37 | 200 ~ 220 | 160 ~ 180 |
| FINE 45 | 210 ~ 230 | 160 ~ 180 |
| FINE 46 / 50 / 65 | 210 ~ 230 | 160 ~ 200(FINE 46) 160 ~ 180(FINE 50 / 65) |
| FINE 80 | 220 ~ 260 | 180 ~ 210 |

5-9. Inspección del sello

ADVERTENCIA

- Reemplazar los sellos por cada 2,000 horas de la operación actual.

1) Si cualquier fuga de aceite del martillo hidráulico va a suceder, los sellos deben reemplazarse.

Para reconocer donde los sellos estan mal, referirse al dibujo siguiente:



2) Cuando se encuentra con el sello malo, debe determinar y rectificar la causa del perjuicio.

Cuando cambia el sello, engrasar el sello y puesto de sello, y agarra con dedo pulgar, indice y medio según la marcación.

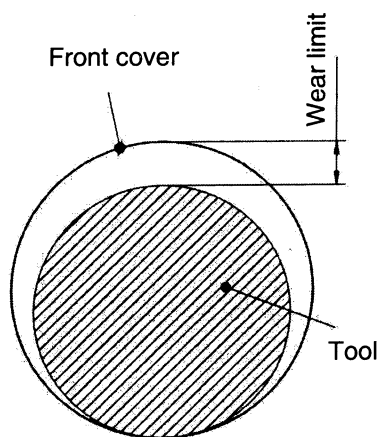
Tener cuidado de no romper el sello por la deformacion excesiva.

5-10. Inspección de Desgaste

5-10-1. Tapa frontal

Si la distancia entre la pica y la tapa frontal es demasiado grande, esto puede causar el perjuicio o romper el martillo por el contacto irregular del pistón.

La siguiente tabla muestra el límite del desgaste de la pica del martillo y la tapa frontal.



| Model | Wear Limit (mm) |
|--|-----------------|
| FINE 1 / 2 / 3 / 4 / 5 / 5BL / 6 / 6BL / 7 / 8BL | 4 |
| FINE 10 / 12 / 16 / 20 / 21 / 22 / 23 | 6 |
| FINE 36 / 37 / 45 / 46 / 50 / 65 / 80 | 8 |

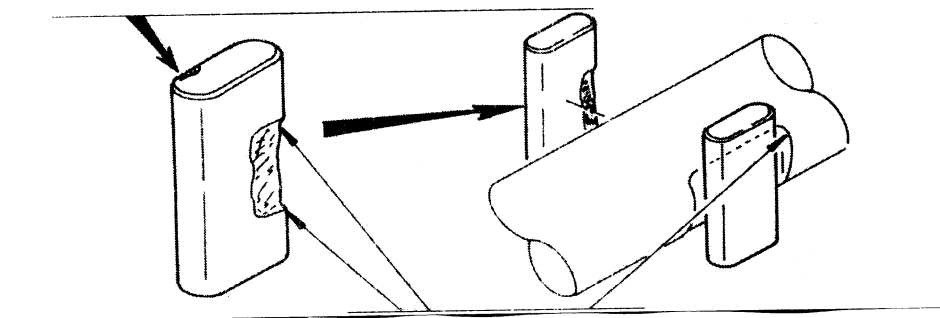
5-10-2. Perno de la pica

ATENCION

- Cambiar la cara de los pernos de las picas por cada 100 o 150 horas de la operación actual.
- Reemplazar los pernos de la pica por cada 500 horas de la operación.

- A) Cuando cada perno de la pica es demasiado deformado, es difícil reemplazar la pica, por eso, después de operar el martillo hidráulico por cada 100 o 150 horas, cambiar la cara de cada perno que contacta con la pica (las caras de cada perno se pueden usar.)
- B) Cuando reemplaza cada perno de la pica, debe checar cada parte por desgaste, fractura, entalladura, etc. especialmente y eliminar las rebabas y hinchazón en los pernos de la pica.
- C) Reemplazar la pica después de rectificar las partes desgastadas de la tapa frontal y los pernos de la pica.

Cuando cambia la dirección de los pernos de la pica, colocar los pernos de la pica por lado contrario.

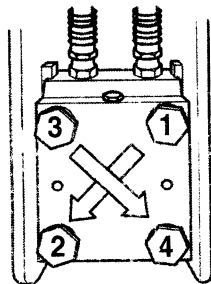


Eliminar las rebabas y hinchazón con amolador.

5-11. Inspección y reemplazo de los tornillos tensores

CAUCION

- Descargar completamente el gas nitrógeno en el cabezal trasero antes de relajar los tornillos tensores.
- 1) Descargar el gas nitrógeno en el cabezal trasero completamente antes de relajar los tornillos tensores.
 - 2) Quitar todos los tornillos tensores e inspeccionar si tiene algunas fisuras y perjuicios en los tornillos tensores.
 - 3) Al armar los tornillos, apretar los tornillos una vuelta, una vez en secuencia diagonal :
no cada tuerca una vuelta, no completamente una vez.
 - 4) Usar la llave de torque (Torque-Wrench) de rango especificado. (Referirse a la tabla de torque)



5-12 Tabla de torque

- (1) Antes de iniciar la operación del martillo, debe checar todos los tipos de tornillos y tuercas por su tensión incluso a los tornillos tensores, tornillos de acumulador, tornillos de caja de válvula, tornillo de tapa de válvula y tornillo de soporte (bracket). También, asegurese de apretar otra vez cualquier tornillo y tuerca flojos según la tensión especificada.

Si usa el martillo con los tornillos y tuercas sueltos, va a causar una fuga del aceite y también puede romper los tornillos. Esto puede resultar una operación defectuosa.

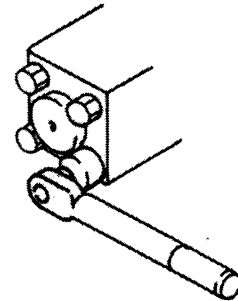
- (2) Después de las primeras 10 horas de operación, debe apretar los tornillos y tuercas de todos los componentes y sección.

- (3) Primero, apretar ligeramente los tornillos y tuercas, refiriéndose a la siguiente tabla de fuerza de tensión.

Los tornillos y tuercas debe estar atornillados alternativay diagonalmente hasta que los tornillos y tuercas estan apretados con torque uniforme.

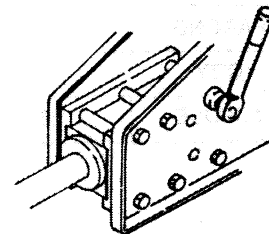
■ Through bolt

| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 1 / 2 / 3 / 4 | 35 |
| FINE 5 / 5BL / 6BL | 40 |
| FINE 7 / 8BL | 100 |
| FINE 10 | 150 |
| FINE 12 / 16 | 170 |
| FINE 20 / 21 / 22 / 23 | 250 |
| FINE 36 | 350 |
| FINE 37 / 45 | 450 |
| FINE 46 | 480 |
| FINE 50 | 500 |
| FINE 65 | 550 |
| FINE 80 | 750 |



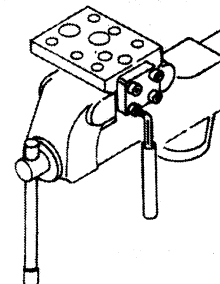
■ Bracket bolt

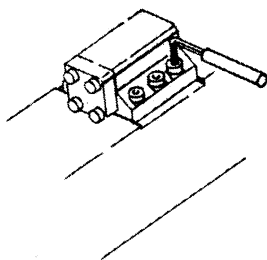
| Model | Torque (Kg-m) |
|--------------------|---------------|
| FINE 1 / 2 / 3 / 4 | 35 |
| FINE 5 / 5BL / 6BL | 40 |
| FINE 7 / 8BL | 100 |
| FINE 10 | 150 |
| FINE 12 / 16 | 170 |
| FINE 20 / 22 | 250 |
| FINE 21 / 23 / 36 | 350 |
| FINE 37 / 45 / 46 | 450 |
| FINE 50 / 65 | 500 |
| FINE 80 | 750 |



■ Socket bolt - valve cover

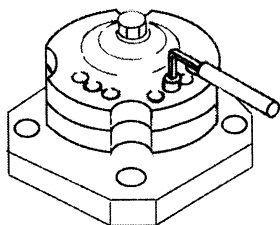
| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 16 / 20 / 22 | 60 |
| FINE 35 / 36 / 45 / 50 | 35 |
| FINE 80 | 60 |





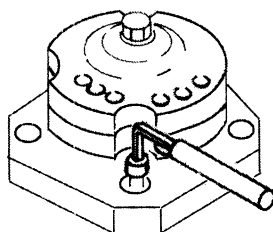
■ Socket bolt - valve housing

| Model | Torque (Kg-m) |
|--------------|---------------|
| FINE 16 | 35 |
| FINE 20 / 22 | 35 |
| FINE 35 / 36 | 35 |
| FINE 45 / 50 | 35 |
| FINE 80 | 100 |



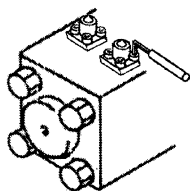
■ Socket bolt - accumulator cover

| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 12 / 16 | 20 |
| FINE 20 / 21 / 22 / 23 | 25 |
| FINE 35 / 36 / 37 | 35 |
| FINE 45 / 46 / 50 / 65 | 35 |
| FINE 80 | 60 |



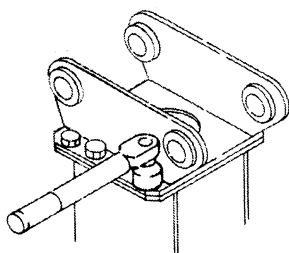
■ Accumulator body

| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 12 / 16 | 60 |
| FINE 20 / 21 / 22 / 23 | 60 |
| FINE 35 / 37 | 100 |
| FINE 36 / 45 / 46 / 50 | 60 |
| FINE 65 | 100 |
| FINE 80 | 170 |



■ Flange adaptor

| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 16 | 15 |
| FINE 20 / 21 / 22 / 23 | 15 |
| FINE 35 / 36 / 37 | 15 |
| FINE 45 / 46 / 50 / 65 | 15 |
| FINE 80 | 35 |



■ Bolt-mount cap

| Model | Torque (Kg-m) |
|------------------------|---------------|
| FINE 1 / 2 / 3 / 4 | 20 |
| FINE 5 | 20 |
| FINE 6 / 7 | 30 |
| FINE 10 | 30 |
| FINE 12 / 16 | 55 |
| FINE 20 / 21 | 55 |
| FINE 22 / 23 | 95 |
| FINE 35 / 36 / 37 | 95 |
| FINE 45 | 95 |
| FINE 46 / 50 / 65 / 80 | 120 |

5-13. Almacenamiento

■ Cuando la operación esta interrumpida o despues de la operación:

Cuando la operación esta interrumpida o despues de la operación, debe mover la máquina de base a la tierra plana.

Eliminar el barro del martillo hidráulico y meterlo a la caja de madera.

PRECAUCION

- No tocar la pica apenas se paro el tabajo ya que es muy caliente.

- Checar si existe alguna fuga de aceite del sistema hidráulico y tambien si la pica esta dañada.
- Si el martillo hidraulico se operaba en el río, debe secar el cuerpo del martillo y aplicar la grasa en el cabezal frontal.

■ Cuando el martillo hidráulico no se usa mas de 3 semanas.

PRECAUCION

- Si descuida los siguiente procedimientos, va a generar el oxido en el cuerpo principal y va a causar los problemas muy serios.

- Descargar el gas nitrógeno de el cabezal trasero y acumulador. Despues, empujar el pistón para evitar el oxido en el cilindro.
- Ensamblar la pica y almacenar el martillo adentro despues de aplicar la grasa a cada parte, especialmente las partes internas del cabez frontal.

6. Operación

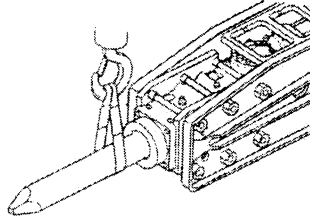
Antes de arrancar la máquina de base montado con el martillo hidráulico, checar la máquina cuidadosamente para prevenir cualquier problema.

6-1 Instalación de la pica

■ Instalacion

PRECAUCION

- El perjuicio personal puede suceder por la caída de la pica durante el reemplazo.
- Asegurarse de usar la grua cuando maneja la pica y las partes pesadas.



ADVERTENCIA

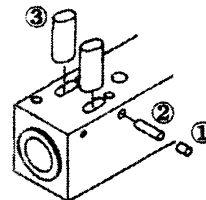
- Ponerse los zapatos de seguridad para proteger los pies.

- 1) Poner el martillo hidráulico horizontalmente en el bloque de madera para que el acumulador se ponga arriba.
- 2) Quitar la tapa de goma o perno de resorte ① y perno de paro ② en la cabeza frontal de lado contrario por usar el martillo de goma y el perno de presión (El perno de presión esta en la caja de herramienta)

ATENCION

- Antes de destapar el perno de paro, debe confirmar si no esta alguien cerca.
- Despues de quitar e instalar ① la tapa de goma 2 o 3 veces, debe cambiarla por la nueva ①.

- (3) Sacar los pernos de pica ③ despues de insertar el perno de presión en el hueco del perno de la pica de lado abajo y quitar los pernos de la pica del cabezal frontal.
- (4) Insertar la pica en el cabezal frontal.



ATENCION

- Aplicar la grasa en el superficie del area de tija y area del impacto de la pica.

- (5) Insertar los pernos de la pica, y despues meter el perno de paro y tapa de goma o el perno del resorte en cabezal frotal.
- (6) Utilizar el martillo de goma y el perno de presión y apretar la tapa de goma o el perno del resorte en cabezal frontal.

■ Desmontaje

El desmontaje de la pica se hace en la orden reversa de la instalación.

6-2. Operación de Seguridad

1) Precauciones para la operación de seguridad

PRECAUCION

- Puede resultar en el perjuicio o muerte personal por la operación inadecuada o pobre mantenimiento.
- Asegurarse de la seguridad por cualquier problema o accidente alrededor de la máquina de base antes de arrancarlo.

Inspección

Checar la máquina de la base y martillo hidráulico para usarlo seguramente y prevenir de cualquier problema antes de operación.

Precalentamiento de la máquina

Especialmente en el invierno o en el area fria, debe precalentar la máquina de la base primero antes de la operación del martillo.

Mantenimiento de Seguridad

Antes de empezar el trabajo, revisar las características geológicas y geográficas del lugar de trabajo y tener cuidado de la fisura de la tierra o derrumbamiento del edificio.

2) Precaución durante el transito o paro de la máquina de la base.

Tránsito

Durante el tránsito, el martillo hidráulico debe ser mantenido horizontalmente con la tierra y 40 o 50cm arriba de la tierra.

Precaución de tránsito en el inclinado

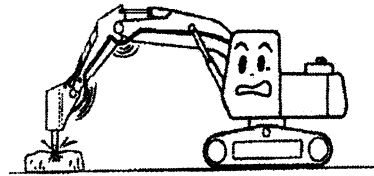
Durante el tránsito abajo en el area inclinada, rebajar RPM del motor y mantener el angulo de pluma y brazo a 90° a 110°.

Paro

Cuando se para la máquina, debe levantar el martillo hidráulico verticalmente y poner la terminal de la pica en el piso.

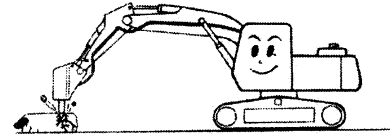
3) Operación con la Seguridad

Parar la operación del martillo hidráulico, si las mangueras vibran demasiado. Checar la presión de gas en el acumulador y cabezal trasero del martillo hidráulico.

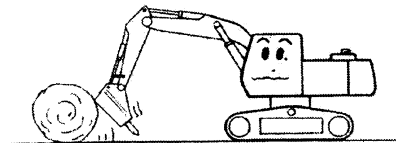


Parar la operación del martillo hidráulico cuando algún objeto se rompe.

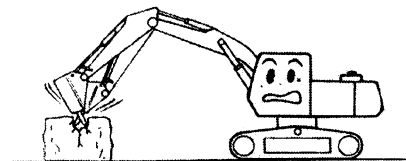
Si la operación continúa con impacto vacío, puede resultar en el desgaste excesivo de los componentes o perjuicio de las partes, tales como buje interior o pistón.



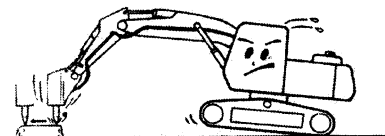
No usar el martillo hidráulico para mover las rocas con la terminal de la pica o con el cuerpo del martillo.



No usar la pica como palanca, ya que el martillo hidráulico puede tener algún perjuicio en el tornillo tensores, pica, cabezal frontal y tapa frontal..



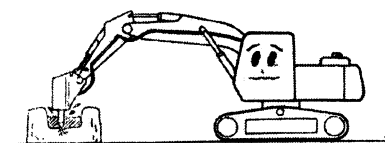
Cambiar el punto de impacto del objeto si no se rompe el objeto dentro de 30 segundos.



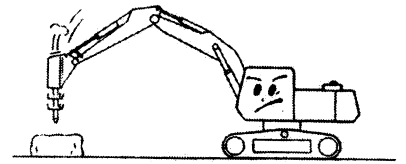
No usar el martillo hidráulico en el agua. La corrosión del martillo hidráulico o no lubricación puede causar el perjuicio de los componentes hidráulicos.

- Debe instalar Kit de sumergido cuando trabaja el martillo en el agua,

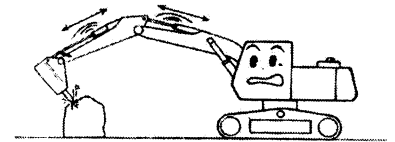
Favor contactar con nuestro distribuidor, si lo necesita



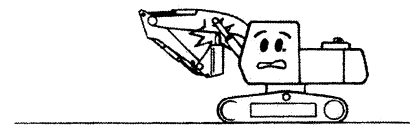
No usar el martillo hidráulico como el martillo de percusión.
Ya que el martillo hidráulico es mas pesado que el cucharon de excavadora, ese tipo de uso puede causar el perjuicio de cabezal frontal o mecanismo de swing de la máquina de la base.



No operar el martillo con los cilindros extendidos de boom o brazo. Esto puede causar el choque del martillo hidráulico y perjudicar la máquina de la base.



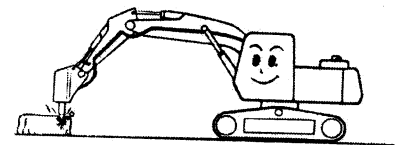
No enrollar la punta de la pica en el brazo o la pluma de la máquina de la base durante el tránsito o parqueo.



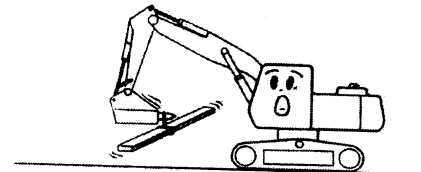
No golpear a un punto mas de 30 segundos. Si el objeto no se rompe, parar y cambiar el punto de objeto.

Si trabaja en un punto demasiado tiempo, va a crear el polvo excesivo de la piedra debajo de la pica.

Los polvos puede afectar el impacto y puede causar el daño del sello de piston.

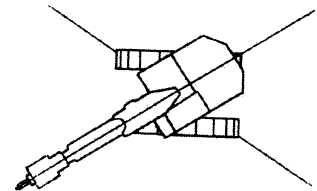


Nunca utilizar el martillo hidráulico como el transportador.
Esto puede golpear la máquina del transporte o perjudicar la máquina de la base.



Operar el martillo hidráulico solamente la parte frontal o trasera de la máquina de la base.

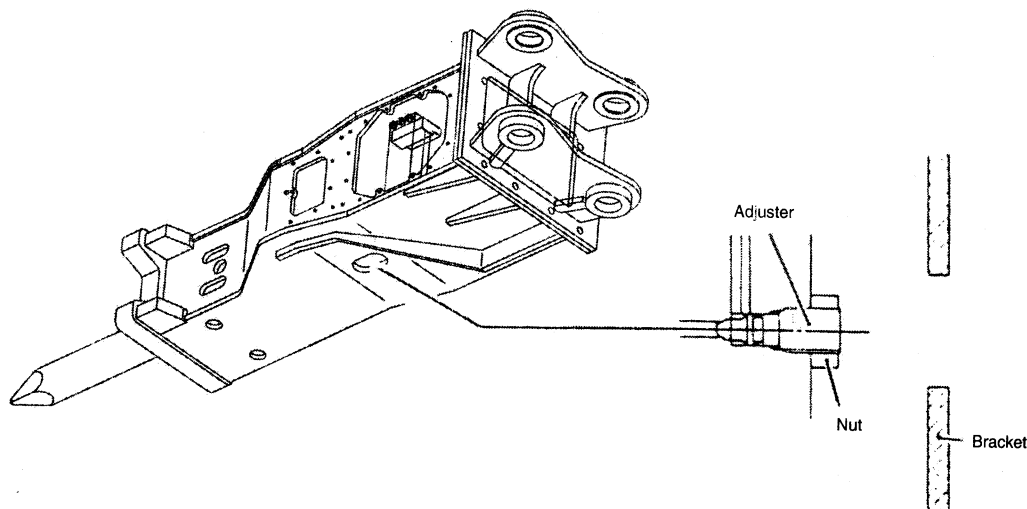
No usar el martillo a lado de la máquina de base. Esto puede golpear la excavadora o el perjuicio de aparato de swing de la máquina de base.



6-3 Funcionamiento del Ajustador (FINE 16 / FINE 20 / FINE 22 / FINE 35/36 FINE 45/46)

6-3-1. Ajustador del Cilindro

El martillo hidráulico FINE esta diseñado para que el BPM (Golpe por Minuto) puede ajustarse con la presión y el consumo de aceite se mantenga constantemente por el cambio de golpe del pistón. Y el martillo puede utilizarse ampliamente. Sin embargo, el BPM (Golpe por Minuto) se incrementa, la fuerza de impacto se rebaja. Por eso, el BPM (Golpe por Minuto) debe ajustarse segun la condición del trabajo.



El ajustador de cilindro esta instalado a lado derecho el cilindro.

ATENCION

- El ajustador del cilindro esta completamente apretado cuando el martillo se entrega.

Cuando el ajustador de cilindro esta apretado completamente, la carrera del pistón va a ser máximo y el golpe de impacto por minuto va a ser mínimo.

Por otro lado, cuando el ajustador esta suelto con dos giros aprox, la carrera de pistón va a ser mínimo y el golpe por minuto (BPM) va a ser máximo.

ATENCION

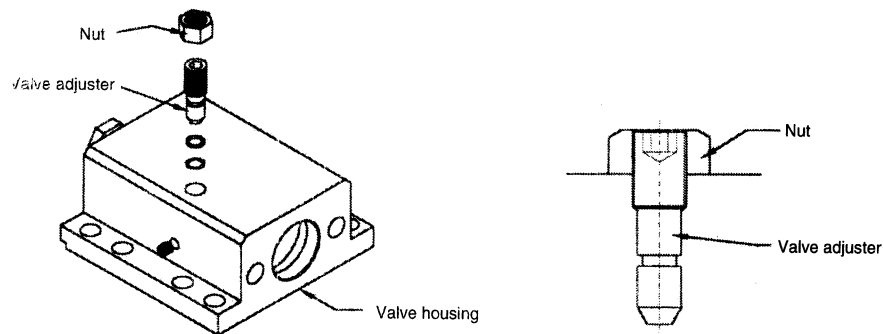
- Aun si el ajustador esta suelto mas de dos giros, el golpe de impacto no se incrementa.

6-3-2. Ajustador de la Válvula

El ajustador de la válvula esta instalado en la caja de válvula. Los golpes de impactos y el consumo de aceite se incrementa cuando el ajustador esta abierto y cuando esto esta cerrado, el impacto y consumo del aceite reduce. Cuando el flujo de aceite de la máquina de la base es mas bajo o cuando el martillo esta instalado en la máquina del base grande, con el ajustador de válvula puede controlar la cantidad del flujo del aceite artificialmente.

ATENCION

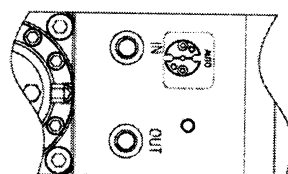
- El martillo hidráulico no puede trabajar, si el ajustador de válvula esta completamente cerrado.



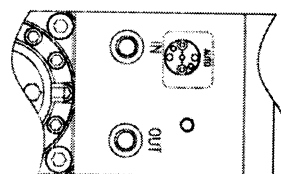
■ Adjustment

| Adjusting items | Procedure | Oil flow rate | Operating pressure | Bpm | Impact power | At delivery |
|--------------------------------|-----------|---------------|--------------------|----------|--------------|--------------|
| Cylinder adjuster | Open | No change | No change | Increase | Decrease | Fully closed |
| | Closed | No change | No change | Decrease | Increase | |
| Valve adjuster | Open | Increase | Decrease | Increase | Decrease | 2 1/2 |
| | Closed | Decrease | Increase | Decrease | Increase | Turn out |
| Charging pressure in back head | Increase | Decrease | Increase | Decrease | Increase | Specified |
| | Decrease | Increase | Decrease | Increase | Decrease | |

6-4. Function of auto stop on/off control.(FINE5 / 12 / 23 / 37 / 46 / 65 / 80)



Auto Stop On



Auto Stop Off

7. Solución del Problema

Esta guía de solución del problema esta preparada para ayudar al operador para encontrar la causa probable y remedio cuando se ocurre el problema. Si se encuentra con el problema, favor obtener los detalles de los siguientes puntos de chequeo y contactar con el taller de servicio o distribuidor.

ATENCION

• Checar los artículos mencionados abajo y contactar con el taller del servicio para checar y reparar cualquier artículo que el operador no pueda solucionar.

Punto de Chequeo


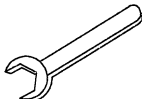
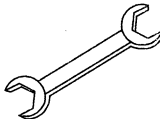
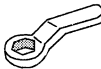




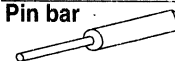
| Punto de Chequeo (Causa) | Remedio |
|--|---|
| 1. Golpe no es suficiente. Después de parar el motor, deprimir el pedal y checar si el carrete mueve la carrera suficiente | ◆ Ajustar la conexión de pedal y la union de cable de control. |
| 2. La vibración de manguera es más grande en la operación del martillo hidráulico. ◆ La manguera de aceite de la linea de alta presión vibra excesivamente. (La presión de gas de acumulador se rebaja.) ◆ La manguera de aceite de la linea de baja presión vibra excesivamente. (La presión de gas de el cabezal trasero se rebaja) | ◆ Recargar el gas nitrógeno y checar ◆ Recargar el gas. Aunque el acumulador o cabezal trasero esta recargado, sin embargo si hay fuga de gas, diafragma o válvula de carga puede estar dañada. |
| 3. Aunque el pistón opera, sin embargo, no golpea la pica (La tija de la pica esta perjudicada o retenida) | ◆ Sacar la pica y checar. Si la pica esta retenida, reparar con amoladora o cambiar la pica y/o los pernos de la pica. |
| 4. Aceite hidráulico no es suficiente. | ◆ Rellenar el aceite hidráulico |
| 5. El aceite hidráulico esta deteriorado o contaminado. ◆ Color de aceite hidráulico se cambia a blanco o no viscoso. (El aceite con color blanco contiene la burbuja de aire o agua.) | ◆ Cambiar todo el aceite hidráulico en el sistema hidráulico de la máquina de la base. |
| 6. Elemento de filtro de linea esta atorado | ◆ Lavar o reemplazar el elemento del filtro. |
| 7. Tasa de impacto se aumenta excesivamente. (La fractura o mal ajuste de ajustador de válvula o fuga de gas nitrogeno de cabezal trasero.) | ◆ Ajustar o reemplazar la parte dañada y checar la presión de gas nitrógeno en el cabezal trasero. |
| 8. Tasa de Impacto se rebaja demasiado. (La presión de gas de cabezal trasero es excesiva) | ◆ Ajustar la presión de gas nitrógeno en el cabezal trasero. |
| 9. La máquina de base anda mal o débil en tránsito. (La bomba de la máquina de base es defectuosa o no es adecuada la calibracion de presión de alivio principal.) | ◆ Contactar con el taller de servicio de máquina de base. |

| Sintoma | Causa | Medida requerida |
|---|--|---|
| No Golpe | <ol style="list-style-type: none"> 1. La presión de gas nitrógeno excesivo del cabezal trasero. 2. Válvula de paro esta cerrada. 3. Falta del aceite hidráulico. 4. Ajuste de presión inadecuado de la válvula de alivio. 5. La falla de conexión de la manguera hidráulica. 6. Contaminación de aceite hidráulico en el cabezal trasero. | <ol style="list-style-type: none"> 1. Re-ajustar la presión de gas nitrógeno en el cabezal trasero. 2. Abrir la válvula de paro 3. Llenar el aceite hidráulico. 4. Reajustar la presión de válvula. 5. Apretar o reemplazar 6. Reemplazar O-anillo del cabezal trasero o sellos del retenedor de sello. |
| Fuerza baja de impacto | <ol style="list-style-type: none"> 1. Fuga de la línea o bloqueo 2. Atorado el filtro de retorno de tanque 3. Falta de aceite hidráulico 4. Contaminación del aceite hidráulico o deterioro del calor. 5. Funcionamiento pobre de la bomba principal. 6. Gas nitrógeno bajo en el cabezal trasero.. 7. Tasa de flujo bajo por el mal-ajuste del ajustador de válvula. 8. Pica esta fuera de rango para la posición de golpe. | <ol style="list-style-type: none"> 1. Checar las líneas 2. Lavar el filtro o reemplazar. 3. Llenar el aceite hidráulico 4. Reemplazar el aceite hidráulico 5. Contactar con el taller del servicio autorizado. 6. Rellenar el gas nitrógeno. 7. Reajustar el ajustador de la válvula. 8. Empujar la pica para la operación de excavadora. |
| Impacto Irregular | <ol style="list-style-type: none"> 1. La presión baja del gas nitrógeno en el acumulador 2. Pistón malo o el deslizamiento de la superficie de la válvula. 3. Pistón mueve arriba/abajo sin golpear en la cámara de la pica. | <ol style="list-style-type: none"> 1. Rellenar el gas nitrógeno y checar el acumulador. Reemplazar el diafragma si es necesario. 2. Contactar con el distribuidor autorizado. 3. Empujar abajo la pica para la operación de excavadora. |
| Movimiento defectuoso de la pica | <ol style="list-style-type: none"> 1. Diámetro incorrecto de la pica 2. La pica y los pernos de la pica están estorbados por el desgaste de los pernos de la pica. 3. Buje interior y la pica están estorbados. 4. La pica deformada y el área del impacto del pistón deformado. | <ol style="list-style-type: none"> 1. Reemplazar la pica correcta. 2. Suavizar la superficie rústica de la pica. 3. Suavizar la superficie rústica del buje interior. Y reemplazarlo si es necesario. 4. Reemplazar la pica por la nueva. |
| Fuerza de reducción repentina y vibración de la línea de presión. | <ol style="list-style-type: none"> 1. Fuga de gas del acumulador 2. Perjuicio de Diafragma | <ol style="list-style-type: none"> 1. Reemplazar la diafragma, si es necesario. |
| Fuga de Aceite de la tapa frontal | <ol style="list-style-type: none"> 1. Sello desgastado de cilindro | <ol style="list-style-type: none"> 1. Reemplazar los sellos por los nuevos. |
| Fuga de gas del cabezal trasero. | <ol style="list-style-type: none"> 1. Perjuicio de O-Anillo y/o del sello de gas | <ol style="list-style-type: none"> 1. Reemplazar los sellos relativos por los nuevos. |

8. Service tools


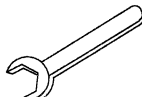
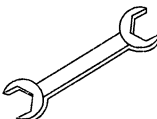





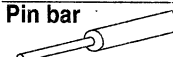
8-1. Standard service tools

B : BOX TYPE, T : TOP TYPE, S : SIDE TYPE

| Description | Dimension (mm) | Application | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|-------------|---|---|--------|---|---|--------|-------|---|--------|---|---|--------|---|---|-------------|--------|---|---|----------|---|
| | | FINE 1 | | | FINE 2 | | | FINE 3 | | | FINE 4 | | | FINE 5 | | | FINE 5BL | FINE 6 | | | FINE 6BL | |
| | | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | | B | T | S | B | T |
| Tool Box  | Medium | 1 | | | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| | Large | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| Spanner-single  | 27 | 1 | | | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| | 30 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 32 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 36 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 41 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 46 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 50 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 19x22 | 1 | | | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | | | - | - |
| Spanner-double  | 22x24 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 24x27 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 27x30 | - | | | - | | | - | | | - | - | - | - | - | - | - | 1 | | | - | - |
| | 30x32 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 32x36 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 46x50 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | Spanner-ring | 27 | 1 | | | 1 | | | 1(30) | | | - | - | - | - | - | - | - | - | | | - |
| 36 | | - | | | - | | | - | | | 1 | 1 | 1 | - | - | - | - | - | | | - | - |
| 41 | | - | | | - | | | - | | | - | - | - | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| Slugging-wrench  | 46 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | 1 |
| | 60 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 65 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 70 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 75 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 85 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| L-wrench  | 5 | 1 | | | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| | 6 | - | | | - | | | - | | | - | - | - | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| | 8 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 10 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 12 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 14 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 17 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 19 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| 21 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - | |
| T-wrench  | 14 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| Eye-bolt  | 12 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 16 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| | 20 | - | | | - | | | - | | | - | - | - | - | - | - | - | - | | | - | - |
| Grease gun  | 400cc | 1 | | | 1 | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 |
| Pin bar  | Ø10 | 1 | | | 1 | | | 1 | | | - | - | - | - | - | - | - | - | | | - | - |
| | Ø14 | - | | | - | | | - | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(12) | | | 1 | 1 |


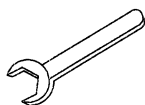
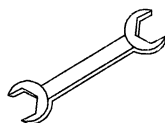
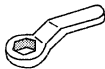



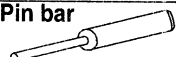
Standard service tools

B : BOX TYPE, T : TOP TYPE, S : SIDE TYPE

| Description | Dimension (mm) | Application | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|-------------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|--|--|--|
| | | FINE 7 | | | FINE 10 | | | FINE 12 | | | FINE 16 | | | FINE 20 | | | FINE 21 | | | FINE 22 | | | | | |
| | | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | | | |
| Tool Box  | Medium | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | - | - | - | | - | - | - | - | | - | - | | | | |
| | Large | - | - | - | - | - | - | - | - | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| Spanner-single  | 27 | - | - | - | - | - | - | 1 | 1 | | - | - | - | | - | - | 1 | 1 | | 1 | 1 | | | | |
| | 30 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 32 | - | - | - | - | - | - | - | - | | - | - | - | | 1 | 1 | - | - | | - | - | | | | |
| | 36 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 41 | - | - | - | - | - | - | - | - | | 1 | 1 | 1 | | 1 | 1 | - | - | | - | - | | | | |
| | 46 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 50 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | 1 | 1 | | 1 | 1 | | | | |
| Spanner-double  | 19x22 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| | 22x24 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 24x27 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 27x30 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 30x32 | - | - | - | - | - | - | - | - | | 1 | 1 | 1 | | - | - | - | - | | - | - | | | | |
| | 32x36 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 46x50 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| Spanner-ring | 36 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 46 | 1 | 1 | 1 | - | 1 | 1 | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 50 | - | 1 | 1 | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| Slugging-wrench  | 55 | - | - | - | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | - | - | - | - | | - | - | | | | |
| | 60 | - | - | - | - | - | - | - | - | | - | 1 | 1 | | - | - | - | 1 | | - | - | | | | |
| | 65 | - | - | - | - | - | - | - | - | | - | - | - | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| | 75 | - | - | - | - | - | - | - | - | | - | - | - | | 1 | 1 | - | - | | - | 1 | | | | |
| | 80 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 85 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| L-wrench  | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| | 6 | - | - | - | 1 | 1 | 1 | 1 | 1 | | - | - | - | | - | - | - | - | | 1 | 1 | | | | |
| | 8 | - | - | - | - | - | - | 1 | 1 | | - | - | - | | - | - | 1 | 1 | | 1 | 1 | | | | |
| | 10 | - | - | - | - | - | - | - | - | | 1 | 1 | 1 | | - | - | - | - | | - | - | | | | |
| | 12 | - | - | - | - | - | - | - | - | | - | - | - | | 1 | 1 | - | - | | - | - | | | | |
| | 14 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 17 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 19 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| 21 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | | |
| T-wrench  | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 14 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| Eye-bolt  | 12 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| | 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |
| Grease gun  | 400cc | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| Pin bar  | Ø14 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | |
| | Ø15 | - | - | - | - | - | - | - | - | | - | - | - | | - | - | - | - | | - | - | | | | |


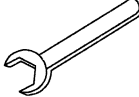
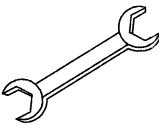





Standard service tools

B : BOX TYPE, T : TOP TYPE, S : SIDE TYPE

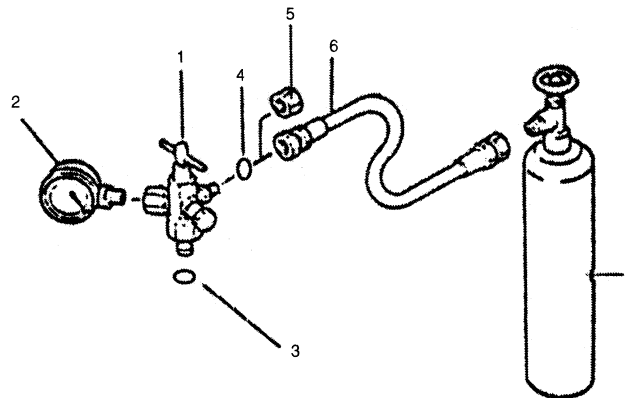
| Description | Dimension (mm) | Application | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|-------------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|---------|---|---|
| | | FINE 23 | | | FINE 35 | | | FINE 36 | | | FINE 37 | | | FINE 45 | | | FINE 46 | | | FINE 50 | | |
| | | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | | | |
| Tool Box  | Medium | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | - | | - | - | - |
| | Large | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| Spanner-single  | 27 | 1 | 1 | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 30 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 32 | - | - | | - | 1 | 1 | 1 | 1 | | 1 | 1 | | - | - | - | 1 | | | - | - | - |
| | 36 | - | - | | - | - | - | - | - | | - | - | | 1 | 1 | 1 | - | | | 1 | 1 | 1 |
| | 41 | - | - | | - | 1 | 1 | - | 1 | | - | - | | - | - | - | - | | | - | - | - |
| | 46 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 50 | 1 | 1 | | - | - | - | 1 | - | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | |
| Spanner-double  | 14x17 | - | - | | - | - | - | - | - | | - | - | | 1 | 1 | 1 | - | | | 1 | 1 | 1 |
| | 19x22 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| | 24x27 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 27x30 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 30x32 | - | - | | - | - | - | - | - | | - | - | | - | - | - | 1 | | | - | - | - |
| | 32x36 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 46x50 | - | - | | - | - | - | - | - | | - | - | | - | - | - | 1 | | | - | - | - |
| Spanner-ring | 36 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 46 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 50 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| Slugging-wrench  | 55 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 70 | - | - | | 1 | 1 | 1 | 1 | 1 | | - | - | | - | - | - | - | | | - | - | - |
| | 75 | 1 | 1 | | - | 1 | 1 | - | 1 | | 1 | 1 | | 1 | 1 | 1 | - | | | - | - | - |
| | 80 | - | - | | - | - | - | - | - | | - | - | | - | - | - | 1 | | | - | - | - |
| | 85 | - | - | | - | - | - | - | - | | - | - | | - | 1 | 1 | - | | | 1 | 1 | 1 |
| | 105 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| L-wrench  | 5 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| | 6 | 1 | 1 | | - | - | - | - | - | | 1 | 1 | | - | - | - | 1 | | | - | - | - |
| | 8 | 1 | 1 | | - | - | - | - | - | | - | - | | - | - | - | 1 | | | - | - | - |
| | 10 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 12 | - | - | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | - | - | - | 1 | | | - | - | - |
| | 14 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 17 | - | - | | - | - | - | - | - | | - | - | | - | - | - | 1 | | | - | - | - |
| | 19 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| 21 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - | |
| T-wrench | 14 | | | | | | | | | | | | | | | | | | | | | |
| Socket | 1/2" x 30 | 1 | - | | - | - | - | - | - | | 1 | - | | - | - | - | 1 | | | - | - | - |
| Socket Wrench | 1/2" x 380 | 1 | - | | | | | | | | 1 | - | | | | | 1 | | | | | |
| Eye-bolt  | 12 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| | 16 | | | | | | | | | | | | | | | | | | | | | |
| | 20 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |
| Grease gun  | 400cc | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| Pin bar  | Ø14 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 |
| | Ø15 | - | - | | - | - | - | - | - | | - | - | | - | - | - | - | | | - | - | - |

Standard service tools

B : BOX TYPE, T : TOP TYPE, S : SIDE TYPE

| Description | Dimension (mm) | Application | | | | | | | | | | | | | | | | | |
|--|-------------------|-------------|---|---|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FINE 65 | | | FINE 80 | | | | | | | | | | | | | | |
| | | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S | B | T | S |
| Tool Box  | Medium | - | | - | - | | | | | | | | | | | | | | |
| | Large | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Spanner-single  | 27 | - | | - | - | | | | | | | | | | | | | | |
| | 30 | - | | - | - | | | | | | | | | | | | | | |
| | 32 | - | | - | - | | | | | | | | | | | | | | |
| | 36 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | 41 | - | | - | - | | | | | | | | | | | | | | |
| | 46 | - | | - | - | | | | | | | | | | | | | | |
| | 55 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Spanner-double  | 14x17 | - | | - | 1 | | | | | | | | | | | | | | |
| | 19x22 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | 24x27 | - | | - | - | | | | | | | | | | | | | | |
| | 27x30 | - | | - | - | | | | | | | | | | | | | | |
| | 30x32 | - | | - | - | | | | | | | | | | | | | | |
| | 32x36 | - | | - | - | | | | | | | | | | | | | | |
| | 46x50 | - | | - | - | | | | | | | | | | | | | | |
| Slugging-wrench  | 36 | - | | - | - | | | | | | | | | | | | | | |
| | 46 | - | | - | - | | | | | | | | | | | | | | |
| | 50 | - | | - | - | | | | | | | | | | | | | | |
| | 55 | 1 | | 1 | - | | | | | | | | | | | | | | |
| | 60 | - | | - | - | | | | | | | | | | | | | | |
| | 75 | - | | - | - | | | | | | | | | | | | | | |
| | 80 | - | | - | - | | | | | | | | | | | | | | |
| | 85 | 1 | | 1 | - | | | | | | | | | | | | | | |
| L-wrench  | 105 | - | | - | 1 | | | | | | | | | | | | | | |
| | 5 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | 6 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | 8 | - | | - | - | | | | | | | | | | | | | | |
| | 10 | - | | - | - | | | | | | | | | | | | | | |
| | 12 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | 14 | - | | - | - | | | | | | | | | | | | | | |
| | 17 | - | | - | - | | | | | | | | | | | | | | |
| | 19 | - | | - | - | | | | | | | | | | | | | | |
| T-wrench | 21 | - | | - | - | | | | | | | | | | | | | | |
| | 14 | - | | - | - | | | | | | | | | | | | | | |
| Socket | 3/4" x 36 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Socket Wrench | 3/4" | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Eye-bolt  | 12 | - | | - | - | | | | | | | | | | | | | | |
| | 16 | - | | - | - | | | | | | | | | | | | | | |
| | 20 | - | | - | - | | | | | | | | | | | | | | |
| Grease gun  | 400cc | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Pin bar  | Ø14 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| | Ø15 | - | | - | - | | | | | | | | | | | | | | |

8-2. Nitrogen gas charging kit (P/No. B00000082000)



Charging kit assembly

| No. | Part Name | Part No. | Q'ty |
|-----|-----------------------|--------------|------|
| - | Charging kit assembly | B00000082000 | 1set |

Charging kit detail

| No. | Part Name | Part No. | Q'ty |
|-----|-----------------------------|-----------------------|------|
| 1 | Charging gauge | P05000003000 | 1 |
| | Charging gauge(Only FINE15) | P05000005000 | |
| 2 | Pressure gauge | P46010010000 | 1 |
| 3 | O-ring | P20700011000 | 1 |
| 4 | O-ring | P20700008000 | 1 |
| 5 | Cap | F00511132200 | 1 |
| 6 | Gas hose | F2G25A300 | 1 |
| 7 | N2 gas cylinder | B04000080000(3.4 l) | 1 |
| | | B15000080000(10.2 l) | |

9. Selección de la Pica

9-1. Guía de selección de la Pica

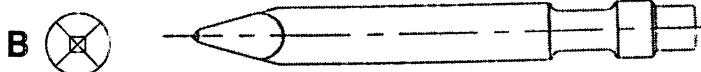
ADVERTENCIA

● La selección correcta de la pica mas adecuada para el trabajo es muy importante no solamente en el aumento de productividad sino tambien para la vida de la misma pica



A : Tipo Cinsel

- Adecuado para todo los tipos de trabajos en cavación, trinchera de las rocas suaves/medio estratificada.



B : Tipo lápiz

- Adecuado para la demolición del concreto pequeño o mediano, y para la roca suave, no estratificada



C : Tipo de cara plana (Chato)

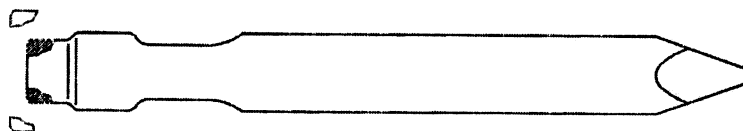
- Adecuado para romper los bloqueos de los duros medianos o reducir los tamaños de los bloques pequeños.

9-2. Juicio de reclamo de la pica

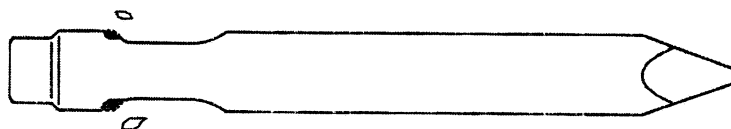
Para ayudar a los usuarios para que utilicen nuestros productos correctamente y asegurar la vida de operación a largo tiempo, este criteria de juicio de reclamo muestra los ejemplos defectuosos que puedan ocurrir durante uso y standards de disposición aplicable en cada caso.

■ Fractura de la area de impacto del pistón o esquina de contacto de los pernos de la pica (Fig. 1 and 2)

No es común la fractura de punto de impacto del pistón o esquina del contacto de los pernos de la pica. Este fenomenon ocurre cuando la fuerza de impacto esta concentrado en la esquina de la pica por no estar plano el pistón y punto de impacto de la pica. Si ocurre este problema, no se puede aplicar la garantía.



(Fig. 1)



(Fig. 2)

■ Deformación plástica del area de impacto del pistón (Fig. 3)

No existe mucha posibilidad de deformación plástica de la pica por el pistón. Tales defectos pueden ocurrir por los defectos de la fuerza del material o fragilidad, causado por los defectos del tratamiento del calor.

Si ocurre este defecto, se aplica la garantía.

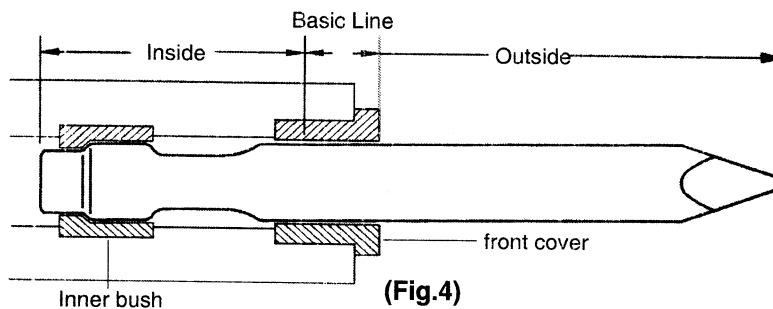


(Fig.3)

■ La fractura dentro de la línea básica (Fig.4 and 5)

Si ocurre la fractura del producto en cualquier dirección en el punto dentro de la tapa frontal como mostrado en <Fig.5>, o de la línea básica en (Fig.4), esto puede ocurrir por el material defectuoso, tratamiento defectuoso del calor; deformación de la pica o mala figura del cuello de la pica. Si ocurren estos defectos en la pica, se aplica la garantía.

Aparte de las causas mencionadas arriba, la fractura del producto dentro de la línea básica también puede ocurrir. Si el intervalo entre la tapa frontal y la pica se amplía por el desgaste excesivo de la tapa frontal, la unión con la doblez de la carga excesiva está aplicada al martillo hidráulico. Si cualquier rastro del agarre, causado por la fricción entre la tapa frontal y la pica, está observado en la superficie del cuerpo de la pica y si está claro que la fractura del producto está centralizado alrededor del área del agarre, estos productos no se cubren por la garantía.



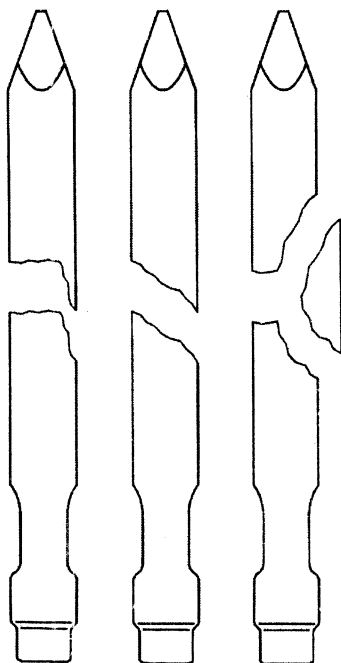
(Fig.4)



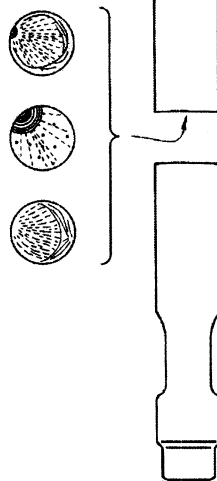
(Fig.5)

■ La Fractura fuera de línea básica (Fig. 6,7 y 8)

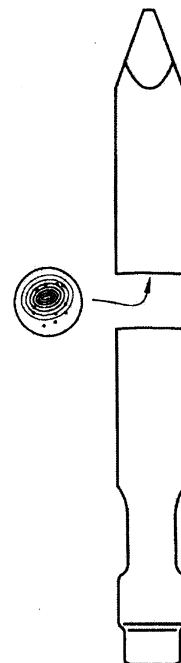
Si ocurre la fractura de pica en el punto fuera de la tapa frontal, como mostrado en <Fig. 6> de la línea básica mostrada en <Fig. 4>, esto puede ser por la carga de doblez excesiva que se ha aplicado a la pica. Esta carga de doblez excesiva podría ocurrir cuando algún material se ha metido en la pica y la pica se ha jalado o empujado o cuando la pica fue golpeada o cuando esto no está en la posición perfectamente perpendicular a la superficie del material y fue aplicada a trabajar. Las fracturas en general están en la forma mostrada en <Fig.7>. La Fractura de fatiga de la forma de almeja se ocurre en las áreas cerca del punto de inicio de la fractura, causado por la concentración de estrés que resulta de la carga de doblez. Este tipo de fractura puede también ocurrir por la cicatriz del cuerpo de la pica durante el uso. Ya que este tipo de fractura ocurre por la costumbre del trabajo inadecuado como aclarado arriba, no se puede cubrir por la garantía. Sin embargo, si el punto de inicio de fractura de fatiga ocurre dentro del cuerpo de la pica en lugar de la superficie de la pica mostrada en <Fig. 8>, se puede aplicar la garantía, ya que esta fractura puede causar por el defecto del material.



(Fig. 6)



(Fig. 7)



(Fig. 8)

■ Aplastamiento de punta de la pica (Fig. 9)

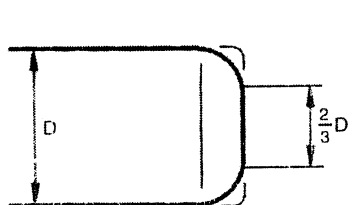
La pica del martillo esta tratada de calor contra resistencia de alta fractura y desgaste. El defecto tal como aplastamiento de la punta de la pica no esta estimado en las condiciones de la operación normal. Sin embargo, si la pica golpea continuamente por el tiempo largo sin demoler o perforar los materiales, la temperatura de la punta va a subir muy alto, induciendo el recocido del material tratado de calor y resultando en la deformación plástica (Aplastamiento) en lugar del desgaste. Como esta aclarada arriba, la fractura de la punta de la pica fue causada por la manera inadecuada del trabajo, esto no se cubre por la garantía.



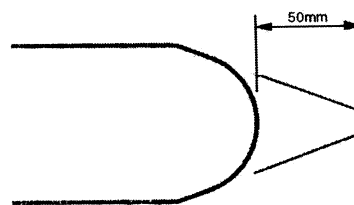
(Fig. 9)

■ Desgaste de la punta de la pica (Fig. 10)

Las tasas y tipos de desgaste de la punta de la pica se varían por los materiales de trabajo y por la manera del trabajo. Si el diámetro de la punta desgastada de la punta de cinsel de la pica es menor de $\frac{2}{3}$ del diámetro del cuerpo de la pica, como mostrada en <Fig. 10> y si la punta de la pica nuevamente puntada es desgastada mas de 50mm largo de la punta, esto es considerado como el desgaste normal de la pica. Por eso, este tipo de desgaste normal mostrado en <Fig. 10>, no se cubre por la garantía.



Chisel point tool



Pointed tool

(Fig. 10)

GARANTIA

1. Condiciones de garantía

FEEL Industrial Engineering Co., Ltd., (en lo sucesivo, "FEELENG"), garantiza que los accesorios y las piezas hidráulicas del Martillo de FEELENG están libres de defectos de material y mano de obra. Los términos de la garantía están limitados a 12 (doce) meses o 1000 (mil) horas de funcionamiento, lo que ocurra primero después de la fecha de la primera entrega al usuario final.

2. Limitación de la garantía

FEELENG no garantizará ningún daño causado por sobrecarga, negligencia o uso inadecuado.

A continuación, se enumeran los casos que no están cubiertos por la garantía, por ejemplo.

- 1) Daños por materiales extraños o contaminación del sistema hidráulico o aceite
- 2) Uso de piezas que no sean productos genuinos de FEELENG.
- 3) Descuido del procedimiento de operación, inspección o mantenimiento descrito en el manual de FEELENG.
- 4) Caída de producto durante el transporte
- 5) Desgaste normal de las piezas descritas a continuación, excepto por material defectuoso o mano de obra deficiente en la fabricación.
 - Cabezal frontal, tapa frontal, Buje interior, Pernos, Pica, Kit de sellos, diafragma.

3. Procedimiento del Reclamo.

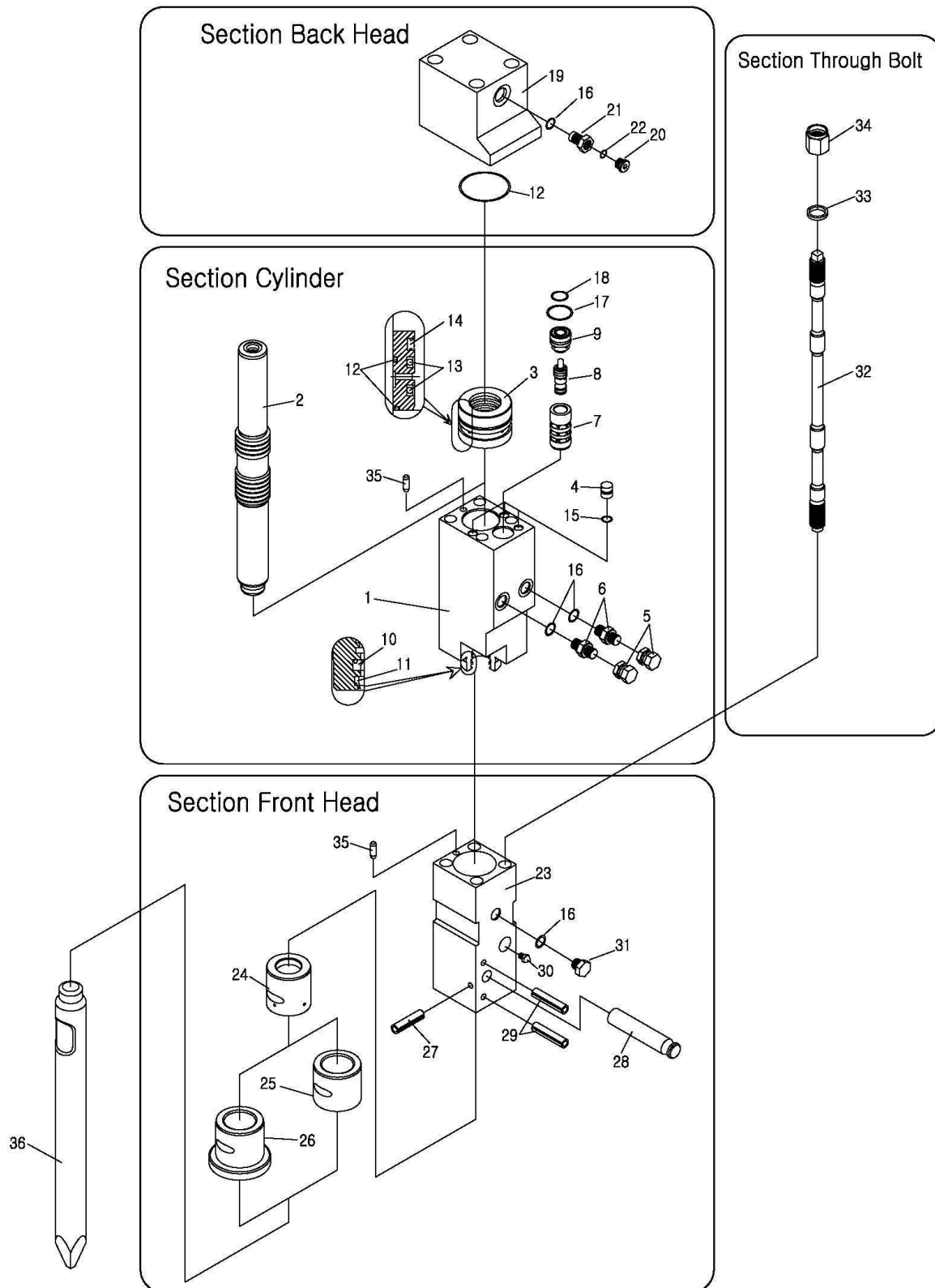
- 1) Los clientes o distribuidores deben comunicar con FEELENG dentro de los 15 días posteriores a la fecha de falla.
- 2) Al notificar a FEELENG sobre el reclamo o los problemas por la garantía, los clientes o distribuidores deben proporcionar a FEELENG un informe del síntoma del problema y las evidencias disponibles, como fotos.
- 3) FEELENG tiene derecho a inspeccionar las piezas dañadas. Si FEELENG solicita a los clientes y distribuidores que devuelvan las piezas y productos dañados, deben cumplir con la solicitud.
- 4) La garantía se limita por el reemplazo de las piezas dañadas o se compensan con el importe del precio de las piezas. No se cubre los gastos de tiempo de inactividad, ni costos de mano de obra, ni cargos por transporte y kilometraje

4. Sucesión de garantía

Con la reventa dentro del período de garantía, el resto del período de garantía se transferirá a un nuevo propietario.



Exploded View of *FINE* 1X



Parts List for Main Body

Model : FINE 1X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|----------------------------------|-------------|
| *** | Assembly-Main Body | B01110010 | B01110000100 | 1SET | | |
| *** | Assembly-Cylinder | B02111000 | B02110010000 | 1SET | including no. 1~9 | |
| 1 | Cylinder | B02111100 | B02110011000 | 1 | | |
| 2 | Piston | B02111200 | B02110012000 | 1 | | |
| 3 | Seal-Retainer | B02111300 | B02110013000 | 1 | | |
| 4 | Plug-Teflon | B02111620 | B02110016200 | 3 | Ø15x14L | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B02114000 | B02110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B02114250 | B02110042500 | 1 | | |
| 8 | Valve | B02114100 | B02110041000 | 1 | | |
| 9 | Valve-Plug | B02114200 | B02110042000 | 1 | | |
| 10 | U-Packing | P21200401 | P20102040000 | 1 | ISI 40 | |
| 11 | Seal-Dust | P22200401 | P20202040000 | 1 | DSI 40 | |
| 12 | O-Ring | P2710060G | P20701060000 | 2 | G60-1B | |
| 13 | Seal-Step | P25000370 | P20500037000 | 2 | SPNS37 | |
| - | O-Ring | - | - | 2 | | |
| 14 | Seal-Gas | P24000370 | P20400037000 | 1 | PPY37 | |
| 15 | O-Ring | P2700011P | P20700011000 | 3 | P11-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 17 | O-Ring | P2700030P | P20700030000 | 1 | P30-1B | |
| 18 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| *** | Assembly-Back Head | B02113000 | B02110030000 | 1SET | including no. 19~21 | |
| 19 | Back Head | B02113100 | B02110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 20,21 | |
| 20 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 21 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P2710060G | P20701060000 | 1 | G60-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 22 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B01112010 | B01110020100 | 1SET | including no. 23~26,29~31 | |
| 23 | Front Head | B01112100 | B01110021000 | 1 | | |
| 24 | Inner Bush | B01112300 | B01110023000 | 1 | Ø55x54L | |
| 25 | Front Cover | B01112210 | B01110022100 | 1 | BOX TYPE | |
| 26 | Front Cover | B01112200 | B01110022000 | 1 | TOP TYPE | |
| 29 | Pin-Spring | P08110080 | P08101008000 | 2 | Ø10x80L | |
| 30 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 31 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Parts List for Main Body

Model : FINE 1X

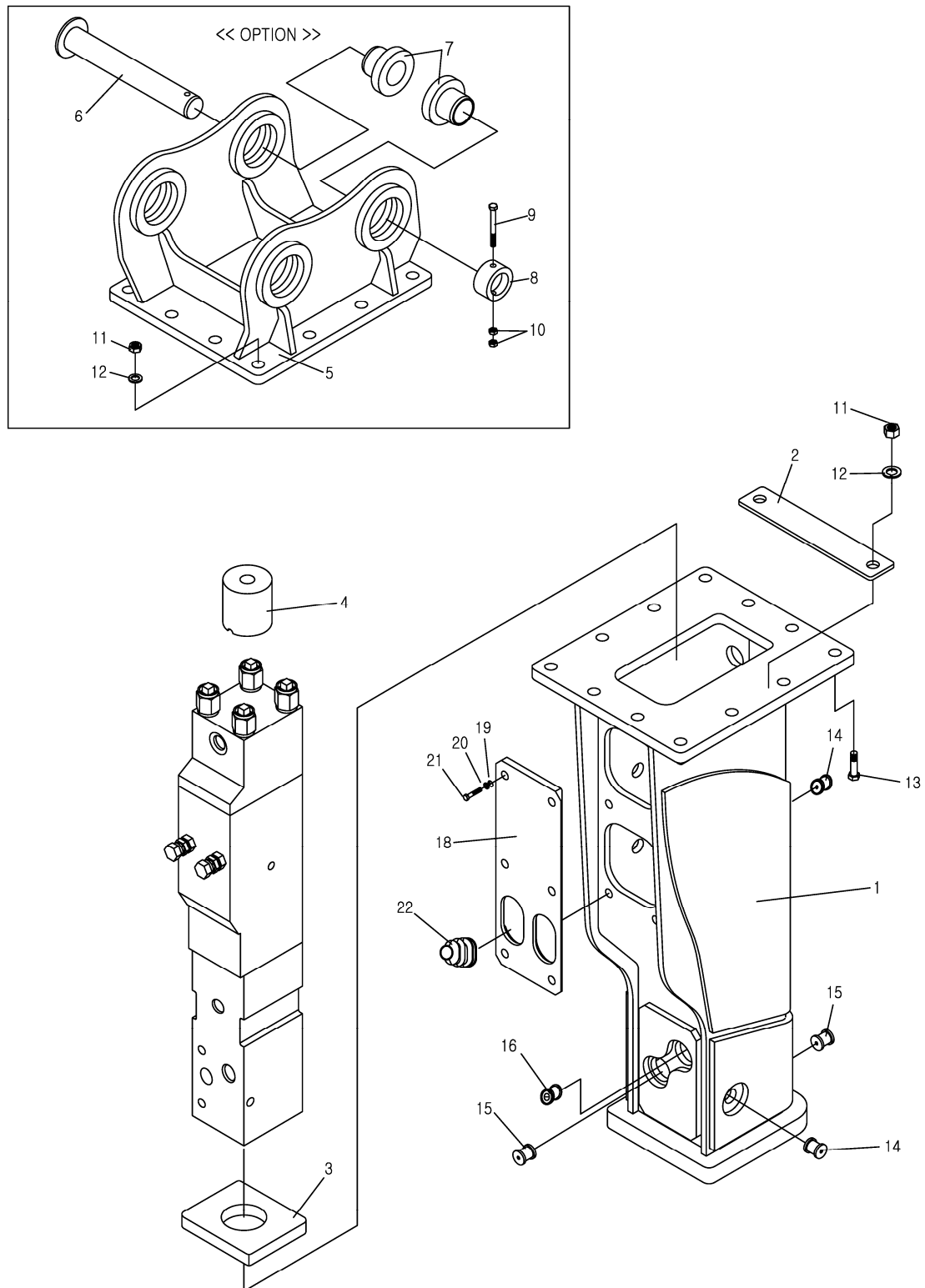
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Through Bolt | B02115000 | B02110050000 | 4SET | including no. 32~34 | |
| 32 | Through Bolt | B02115100 | B02110051000 | 4 | | |
| 33 | Washer | B02115200 | B02110052000 | 4 | | |
| 34 | Nut-Upper | B02115300 | B02110053000 | 4 | | |
| 27 | Pin-Spring | P08110060 | P08101006000 | 1 | Ø10x60L | |
| 28 | Pin-Tool | B02112400 | B02110024000 | 1 | Ø24x117L | |
| 35 | Pin-Knock | B04111400 | B04110014000 | 2 | Ø8x23L | |
| 36 | Tool-Moil Point | B01112510 | B01110025100 | 1 | Alternative | |
| - | Tool-Wedge Point | B01112520 | B01110025200 | 1 | Alternative | |
| - | Tool-Blunt End | B01112540 | B01110025400 | 1 | Alternative | |
| *** | Seal Kit-Complete | B02117000 | B02110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0200800T | B0200008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B0200800B | B0200008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008101 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 1X(New Design)*



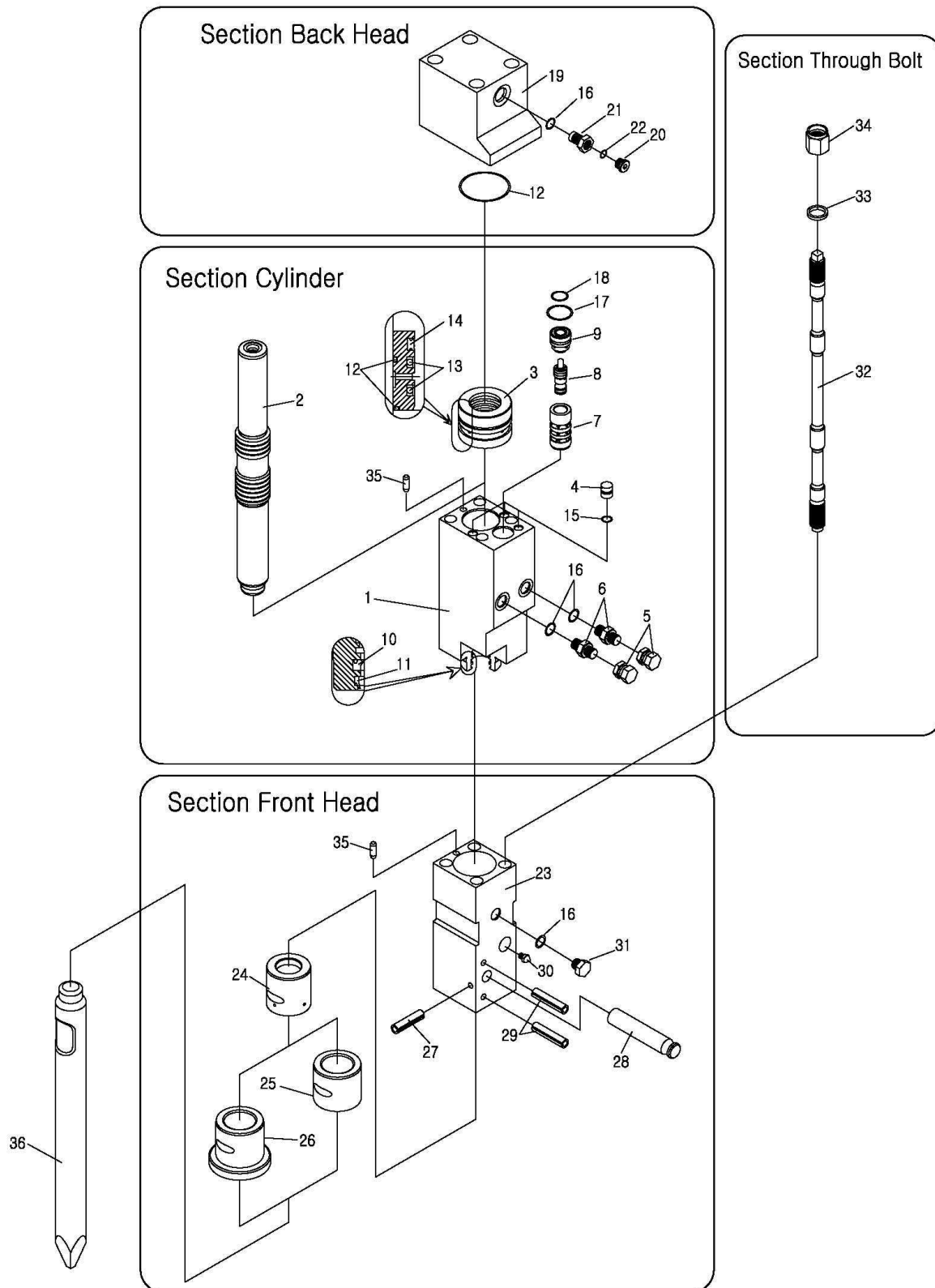
Parts List for Box-New Design

Model : FINE 1X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|-------------------------|
| 1 | Assembly-Box Bracket | - | B01560010000 | 1 | | |
| 2 | Plate-Cover | - | B02560020000 | 1 | | |
| 3 | Damper-Bottom | - | B01510052000 | 1 | | |
| 4 | Damper-Upper | - | B02510051000 | 1 | | |
| *** | Assembly-Mount Cap | - | B02660000000 | 1 | including no. 5~13 | |
| 5 | Mount Cap | - | B02660010000 | 1 | OPTION | |
| 6 | Pin-Bracket | - | P43030295250 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44030060380 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45030070250 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11010101000 | 2 | M10*100L | |
| 10 | Nut-Hex | - | P12010100000 | 4 | M10 | |
| *** | Assembly-Bolt-Hex | - | B02410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylon | - | P12020140000 | 12 | M14 | |
| 12 | Washer-Spring | - | P13021140000 | 12 | M14 | |
| 13 | Bolt-Hex | - | P11010140500 | 12 | M14*50L | |
| 14 | Plug-Rubber | - | B04560064400 | 1 | Ø20x9(Stop Pin) | Low noise type (option) |
| 15 | Plug-Rubber | - | B04560064200 | 4 | Ø34x9 | |
| 16 | Plug-Rubber | - | B05560064300 | 1 | Ø34x9 (Grease) | |
| 18 | Cover | - | B02560061000 | 1 | | |
| 19 | Washer-Plain | - | P13010100000 | 6 | M10 | |
| 20 | Washer-Spring | - | P13021100000 | 6 | M10 | |
| 21 | Bolt-Hex | - | P11010100300 | 6 | M10x30L | |
| 22 | Hose Belloss | - | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE 2X*



Parts List for Main Body

Model : FINE 2X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|-------------|
| *** | Assembly-Main Body | B02110010 | B02110000100 | 1SET | | |
| *** | Assembly-Cylinder | B02111000 | B02110010000 | 1SET | including no. 1~9 | |
| 1 | Cylinder | B02111100 | B02110011000 | 1 | | |
| 2 | Piston | B02111200 | B02110012000 | 1 | | |
| 3 | Seal-Retainer | B02111300 | B02110013000 | 1 | | |
| 4 | Plug-Teflon | B02111620 | B02110016200 | 3 | Ø15x14L | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B02114000 | B02110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B02114250 | B02110042500 | 1 | | |
| 8 | Valve | B02114100 | B02110041000 | 1 | | |
| 9 | Valve-Plug | B02114200 | B02110042000 | 1 | | |
| 10 | U-Packing | P21200401 | P20102040000 | 1 | ISI 40 | |
| 11 | Seal-Dust | P22200401 | P20202040000 | 1 | DSI 40 | |
| 12 | O-Ring | P2710060G | P20701060000 | 2 | G60-1B | |
| 13 | Seal-Step | P25000370 | P20500037000 | 2 | SPNS37 | |
| - | O-Ring | - | - | 2 | | |
| 14 | Seal-Gas | P24000370 | P20400037000 | 1 | PPY37 | |
| 15 | O-Ring | P2700011P | P20700011000 | 3 | P11-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 17 | O-Ring | P2700030P | P20700030000 | 1 | P30-1B | |
| 18 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| *** | Assembly-Back Head | B02113000 | B02110030000 | 1SET | including no. 19~21 | |
| 19 | Back Head | B02113100 | B02110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 20,21 | |
| 20 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 21 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P2710060G | P20701060000 | 1 | G60-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 22 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B02112010 | B02110020100 | 1SET | including no. 23~26, 29~31 | |
| 23 | Front Head | B02112100 | B02110021000 | 1 | | |
| 24 | Inner Bush | B02112300 | B02110023000 | 1 | Ø60x58L | |
| 25 | Front Cover | B02112210 | B02110022100 | 1 | BOX TYPE | |
| 26 | Front Cover | B02112200 | B02110022000 | 1 | TOP TYPE | |
| 29 | Pin-Spring | P08110080 | P08101008000 | 2 | Ø10x80L | |
| 30 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 31 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Parts List for Main Body

Model : FINE 2X

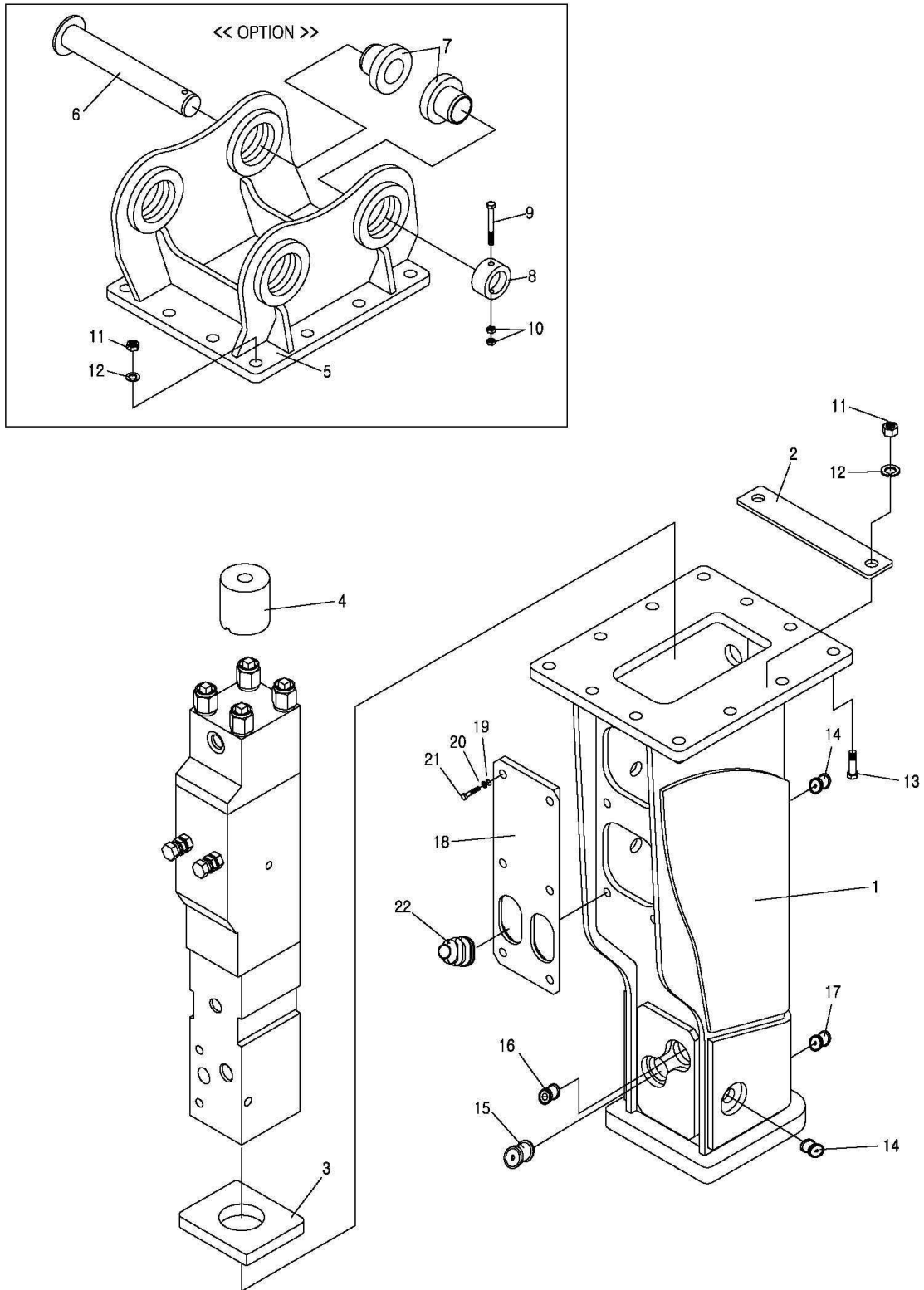
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Through Bolt | B02115000 | B02110050000 | 4SET | including no. 32~34 | |
| 32 | Through Bolt | B02115100 | B02110051000 | 4 | | |
| 33 | Washer | B02115200 | B02110052000 | 4 | | |
| 27 | Pin-Spring | P08110060 | P08101006000 | 1 | Ø10x60L | |
| 28 | Pin-Tool | B02112400 | B02110024000 | 1 | Ø24x117L | |
| 35 | Pin-Knock | B04111400 | B04110014000 | 2 | Ø8x23L | |
| 36 | Tool-Moil Point | B02112510 | B02110025100 | 1 | Alternative | |
| - | Tool-Wedge Point | B02112520 | B02110025200 | 1 | Alternative | |
| - | Tool-Blunt End | B02112540 | B02110025400 | 1 | Alternative | |
| *** | Seal Kit-Complete | B02117000 | B02110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0200800T | B0200008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B0200800B | B0200008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008101 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 2X(New Design)*



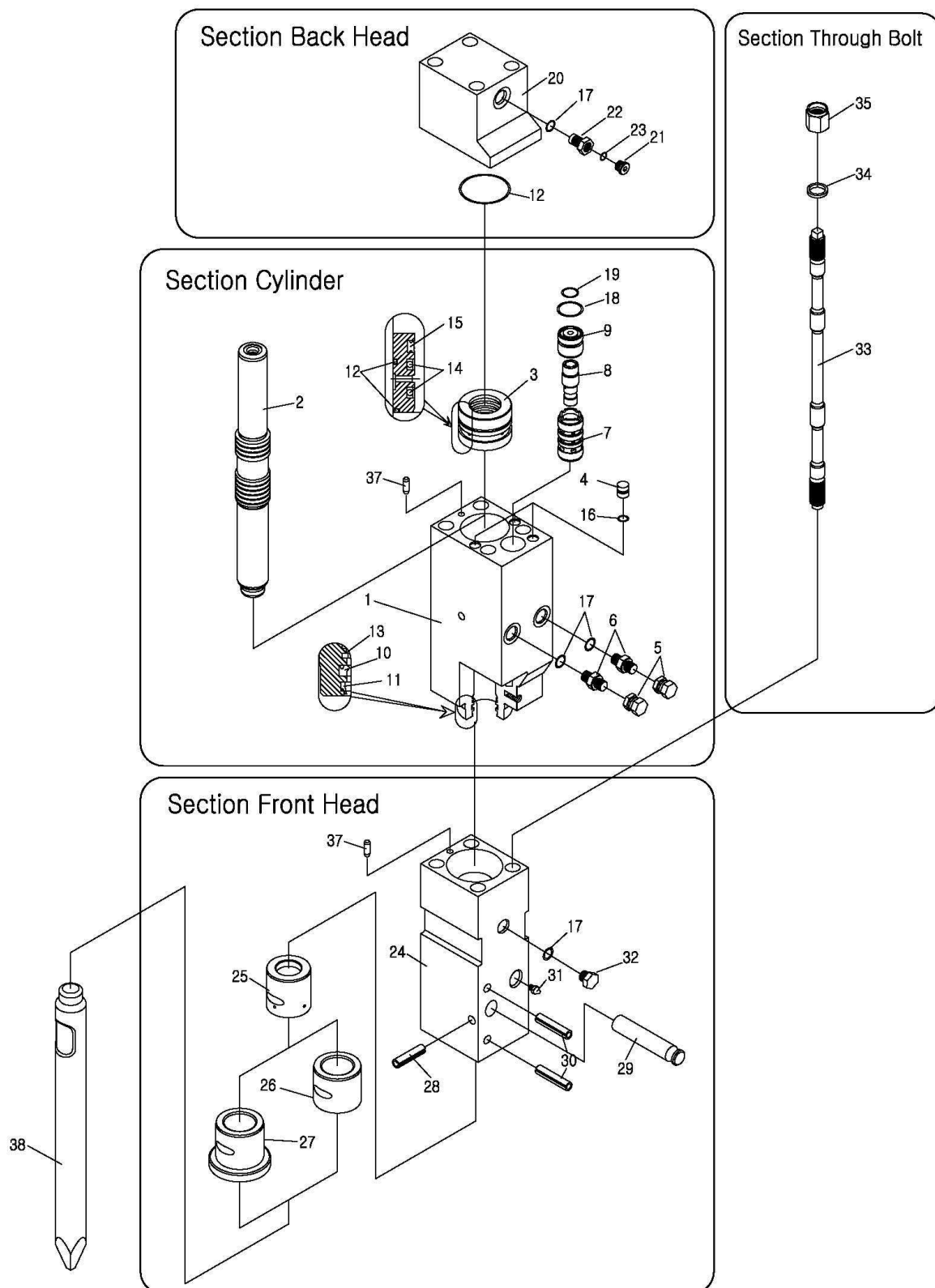
Parts List for Box-New Design

Model : FINE 2X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|-------------------------|
| 1 | Assembly-Box Bracket | - | B02560010000 | 1 | | |
| 2 | Plate-Cover | - | B02560020000 | 1 | | |
| 3 | Damper-Bottom | - | B02510052000 | 1 | | |
| 4 | Damper-Upper | - | B02510051000 | 1 | | |
| *** | Assembly-Mount Cap | - | B02660000000 | 1 | including no. 5~13 | |
| 5 | Mount Cap | - | B02660010000 | 1 | OPTION | |
| 6 | Pin-Bracket | - | P43030295250 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44030060380 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45030070250 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11010101000 | 2 | M10*100L | |
| 10 | Nut-Hex | - | P12010100000 | 4 | M10 | |
| *** | Assembly-Bolt-Hex | - | B02410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylon | - | P12020140000 | 12 | M14 | |
| 12 | Washer-Spring | - | P13021140000 | 12 | M14 | |
| 13 | Bolt-Hex | - | P11010140500 | 12 | M14*50L | |
| 14 | Plug-Rubber | - | B04560064100 | 4 | Ø30x9 | Low noise type (option) |
| 15 | Plug-Rubber | - | B04560064200 | 1 | Ø40x9 | |
| 16 | Plug-Rubber | - | B04560064300 | 1 | Ø35x9 (Grease) | |
| 17 | Plug-Rubber | - | B04560064400 | 1 | Ø20x9 | |
| 18 | Cover | - | B02560061000 | 1 | | |
| 19 | Washer-Plain | - | P13010100000 | 6 | M10 | |
| 20 | Washer-Spring | - | P13021100000 | 6 | M10 | |
| 21 | Bolt-Hex | - | P11010100300 | 6 | M10x30L | |
| 22 | Hose Belloss | - | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE 3X*



Parts List for Main Body

Model : FINE 3X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|---------------------|---------------------|-------------|-----------------------------------|-------------|
| *** | Assembly-Main Body | B03110000100 | B03110000101 | 1SET | | |
| *** | Assembly-Cylinder | B03110010000 | B03110010001 | 1SET | including no. 1~9 | |
| 1 | Cylinder | B03110011000 | B03110011001 | 1 | | |
| 2 | Piston | B03111200 | B03110012000 | 1 | | |
| 3 | Seal-Retainer | B03111300 | B03110013000 | 1 | | |
| 4 | Plug-Teflon | B04111620 | B04110016200 | 3 | Ø15x16L | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B03114000 | B03110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B03114250 | B03110042500 | 1 | | |
| 8 | Valve | B03114100 | B03110041000 | 1 | | |
| 9 | Valve-Plug | B03114200 | B03110042000 | 1 | | |
| 10 | U-Packing | P21200451 | P20102045000 | 1 | ISI 45 | |
| 11 | Seal-Dust | P22200451 | P20202045000 | 1 | DSI 45 | |
| 12 | O-Ring | P2710065G | P20701065000 | 2 | G65-1B | |
| 13 | Seal-Buffer | P23000451 | P20301045000 | 1 | Ø45x50.4x3t | |
| 14 | U-Packing | P21200421 | P20102042200 | 2 | Ø42.2 | |
| 15 | Seal-Gas | P24000422 | P20400042200 | 1 | Ø42.2 | |
| 16 | O-Ring | P2700011P | P20700011000 | 3 | P11-1B | |
| 17 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 18 | O-Ring | P2700030P | P20700030000 | 1 | P30-1B | |
| 19 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| *** | Assembly-Back Head | B03110030000 | B03110030001 | 1SET | including no. 20~22 | |
| 20 | Back Head | B03110031000 | B03110031001 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 21,22 | |
| 21 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 22 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P2710065G | P20701065000 | 1 | G65-1B | |
| 17 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 23 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B03110020100 | B03110020101 | 1SET | including no. 24~27, 30~32 | |
| 24 | Front Head | B03110021000 | B03110021001 | 1 | | |
| 25 | Inner Bush | B03112300 | B03110023000 | 1 | Ø65x66L | |
| 26 | Front Cover | B03112210 | B03110022100 | 1 | BOX TYPE | |
| 27 | Front Cover | B03112200 | B03110022000 | 1 | TOP TYPE | |
| 30 | Pin-Spring | P08110080 | P08101008000 | 2 | Ø10x80L | |
| 31 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 32 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 17 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Parts List for Main Body

Model : FINE 3X

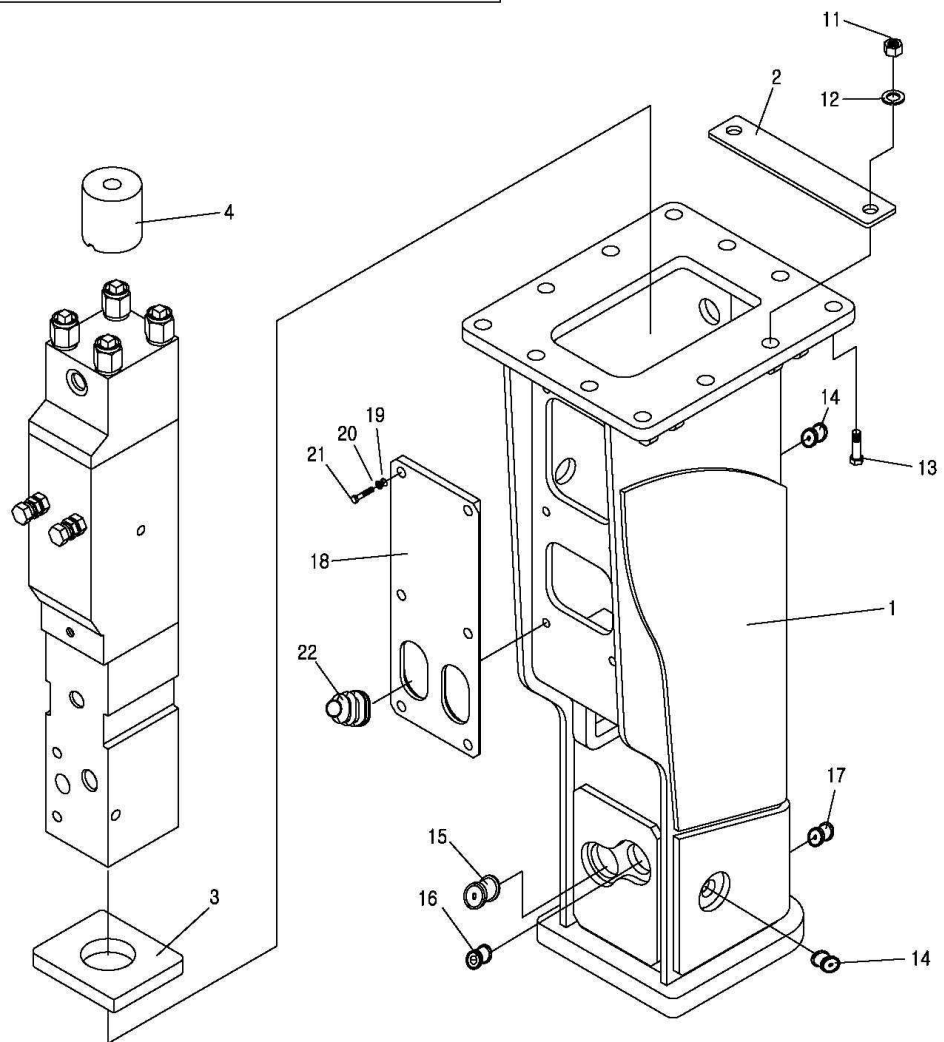
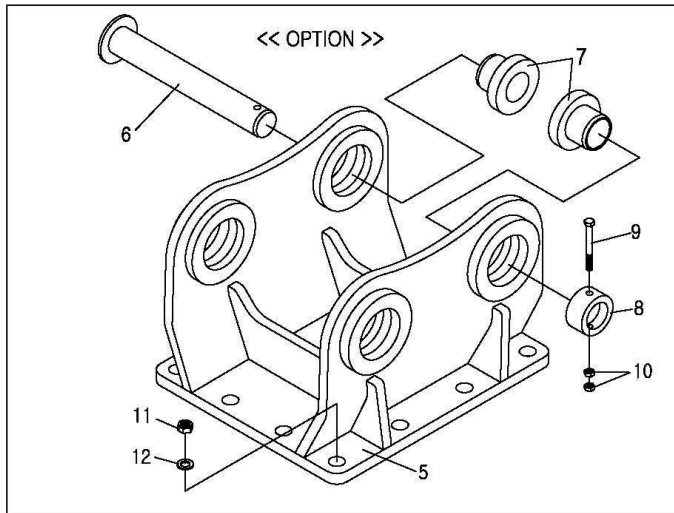
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Through Bolt | B03115000 | B03110050000 | 4SET | including no. 33~35 | |
| 33 | Through Bolt | B03115100 | B03110051000 | 4 | | |
| 34 | Washer | B03115200 | B03110052000 | 4 | | |
| 35 | Nut-Upper | B03115300 | B03110053000 | 4 | | |
| 28 | Pin-Spring | P08110060 | P08101006000 | 1 | Ø10x60L | |
| 29 | Pin-Tool | B03112400 | B03110024000 | 1 | Ø24x117L | |
| 37 | Pin-Knock | B04111400 | B04110014000 | 2 | Ø8x23L | |
| 38 | Tool-Moil Point | B03112510 | B03110025100 | 1 | Alternative | |
| - | Tool-Wedge Point | B03112520 | B03110025200 | 1 | Alternative | |
| - | Tool-Blunt End | B03112540 | B03110025400 | 1 | Alternative | |
| *** | Seal Kit-Complete | B03117000 | B03110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0300800T | B0300008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B0300800B | B0300008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 3X(New Design)*



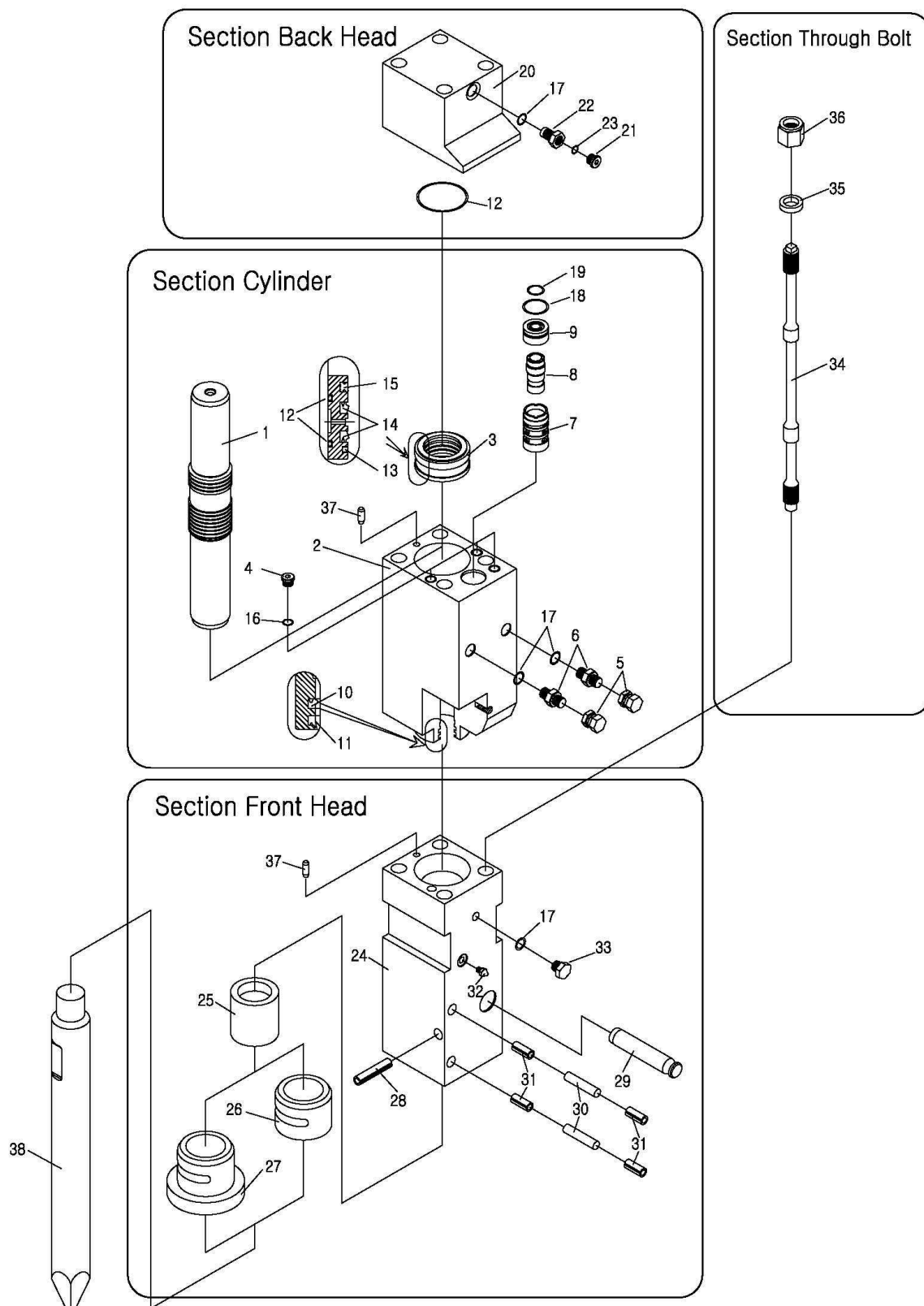
Parts List for Box-New Design

Model : FINE 3X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|-----------------------|-------------------------|
| 1 | Assembly-Box Bracket | - | B03560010000 | 1 | | |
| 2 | Plate-Cover | - | B03560020000 | 1 | | |
| 3 | Damper-Bottom | - | B03510052000 | 1 | | |
| 4 | Damper-Upper | - | B03560051000 | 1 | | |
| *** | Assembly-Mount Cap | - | B03660000000 | 1 | including no. 5~13 | |
| 5 | Mount Cap | - | B03660010000 | 1 | OPTION | |
| 6 | Pin-Bracket | - | P43045305300 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44045060271 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45045080300 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11014121100 | 2 | M12x110L | |
| 10 | Nut-Hex | - | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | - | B04410050000 | 12SET | including no. 10~13 | |
| 11 | Nut-Hex Nylon | - | P12020160000 | 12 | M16 | |
| 12 | Washer-Spring | - | P13021160000 | 12 | M16 | |
| 13 | Bolt-Hex | - | P11010160600 | 12 | M16x60L | |
| 14 | Plug-Rubber | - | B05560064100 | 4 | Ø30x9 (Stop Pin) | Low noise type (option) |
| 15 | Plug-Rubber | - | B04560064200 | 1 | Ø40x9 (Tool Pin) | |
| 16 | Plug-Rubber | - | B04560064300 | 1 | Ø35x9 (Grease) | |
| 17 | Plug-Rubber | - | B04560064400 | 1 | Ø20x18(Tool Pin-Rear) | |
| 18 | Cover | - | B03560061000 | 1 | | |
| 19 | Washer-Plain | - | P13010100000 | 6 | M10 | |
| 20 | Washer-Spring | - | P13021100000 | 6 | M10 | |
| 21 | Bolt-Hex | - | P11010100300 | 6 | M10x30L | |
| 22 | Hose Belloss | - | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE 4, 4X, 4T*



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 4, 4X, 4T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|-------------|
| *** | Assembly-Main Body | B04110010 | B04110000100 | 1SET | | |
| *** | Assembly-Cylinder | B04111000 | B04110010000 | 1SET | including no. 1~9 | |
| 1 | Piston | B04111200 | B04110012000 | 1 | | |
| 2 | Cylinder | B04111100 | B04110011000 | 1 | | |
| 3 | Seal-Retainer | B04111300 | B04110013000 | 1 | | |
| 4 | Socket Plug | P19102011 | P14020010011 | 3 | PF 1/4" (Ø18x4t) | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B04114000 | B04110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B04114250 | B04110042500 | 1 | | |
| 8 | Valve | B04114100 | B04110041000 | 1 | | |
| 9 | Valve-Plug | B04114200 | B04110042000 | 1 | | |
| 10 | U-Packing | P21200531 | P20102053000 | 1 | ISI 53 | |
| 11 | Seal-Dust | P22200531 | P20202053000 | 1 | DSI 53 | |
| 12 | O-Ring | P2710070G | P20701070000 | 2 | G70-1B | |
| 13 | Seal-Buffer | P23000501 | P20301050000 | 1 | Ø50x57x3.4t | |
| 14 | U-Packing | P21200501 | P20102050000 | 2 | ISI 50 | |
| 15 | Seal-Gas | P24000500 | P20400050000 | 1 | B/SHAMBAN50.17*5.33 | |
| 16 | O-Ring | P2700011P | P20700011000 | 3 | P11-1B | |
| 17 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 18 | O-Ring | P2700032P | P20700032000 | 1 | P32-1B | |
| 19 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| *** | Assembly-Back Head | B04113000 | B04110030000 | 1SET | including no. 20~22 | |
| 20 | Back Head | B04113100 | B04110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 21,22 | |
| 21 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 22 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P2710070G | P20701070000 | 1 | G70-1B | |
| 17 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 23 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B04112010 | B04110020100 | 1SET | including no. 24~27, 30~33 | |
| 24 | Front Head | B04112100 | B04110021000 | 1 | | |
| 25 | Inner Bush | B04112300 | B04110023000 | 1 | | |
| 26 | Front Cover | B04112210 | B04110022100 | 1 | BOX TYPE | |
| 27 | Front Cover | B04112200 | B04110022000 | 1 | TOP TYPE | |
| 30 | Pin-Stop | B04112610 | B04110026100 | 2 | Ø16x65L | |
| 31 | Pin-Spring | P08116030 | P08101603000 | 4 | Ø16x30L | |
| 32 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 33 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 17 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Parts List for Main Body

Model : FINE 4, 4X, 4T

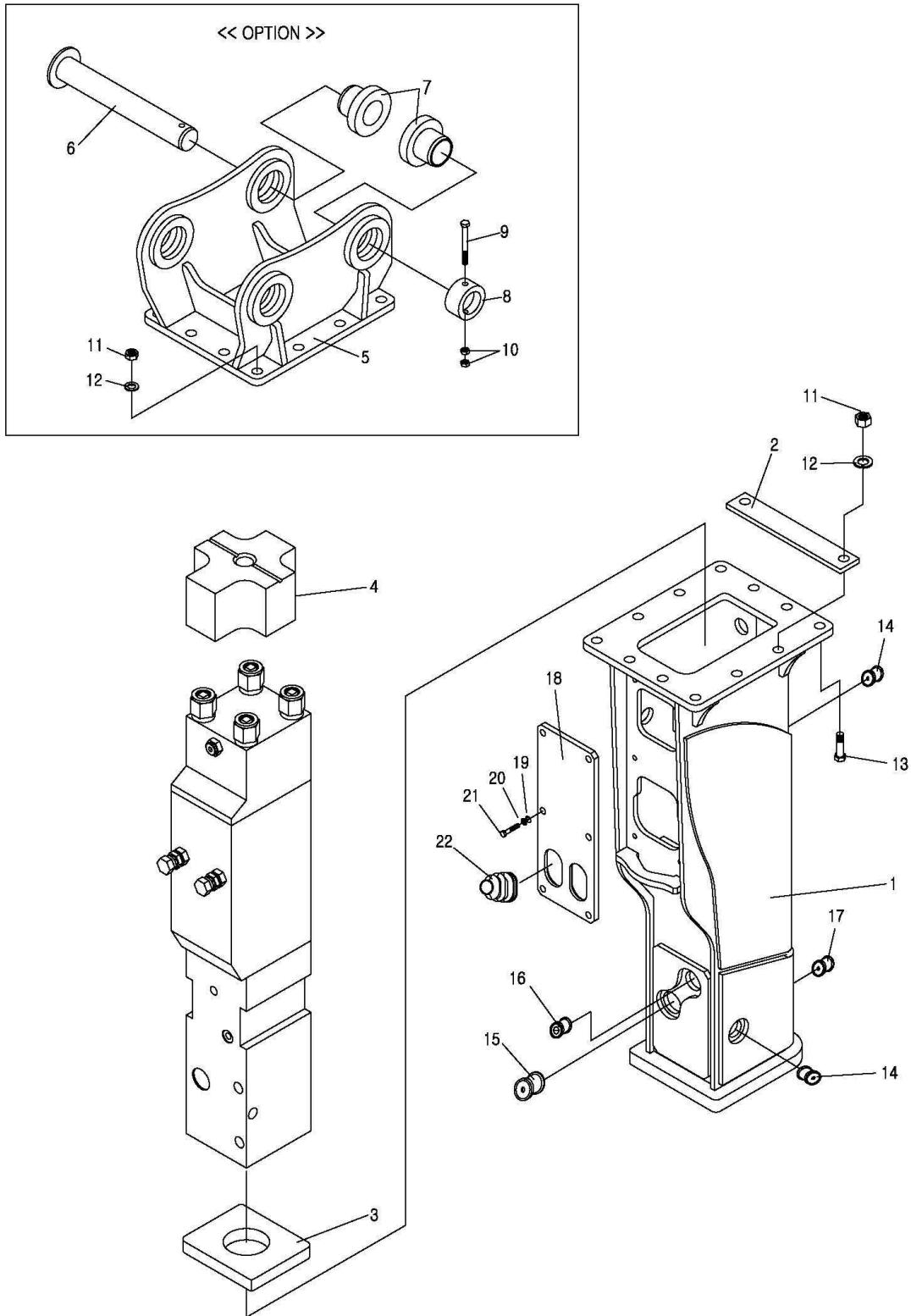
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|---------------------|----------------|
| *** | Assembly-Through Bolt | B04115000 | B04110050000 | 4SET | including no. 34~36 | |
| 34 | Through Bolt | B04115100 | B04110051000 | 4 | | |
| 35 | Washer | B04115200 | B04110052000 | 4 | | |
| 36 | Nut-Upper | B04115300 | B04110053000 | 4 | | |
| 28 | Pin-Spring | P08116080 | P08101608000 | 1 | Ø16x80L | |
| 29 | Pin-Tool | B04112400 | B04110024000 | 1 | Ø30x129L | |
| 37 | Pin-Knock | B04111400 | B04110014000 | 2 | Ø8x23L | |
| 38 | Tool-Moil Point | B04112510 | B04110025100 | 1 | Alternative | |
| - | Tool-Wedge Point | B04112520 | B04110025200 | 1 | Alternative | |
| - | Tool-Blunt End | B04112540 | B04110025400 | 1 | Alternative | |
| *** | Seal Kit-Complete | | | 1SET | | ~ s/no.04/2249 |
| *** | Seal Kit-Complete | B04117000 | B04110070000 | 1SET | | s/no.04/2250~ |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0400800T | B0400008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B0400800B | B0400008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 4X(New Design)*



Bracket-Box type-New Design type: Unit serial no.

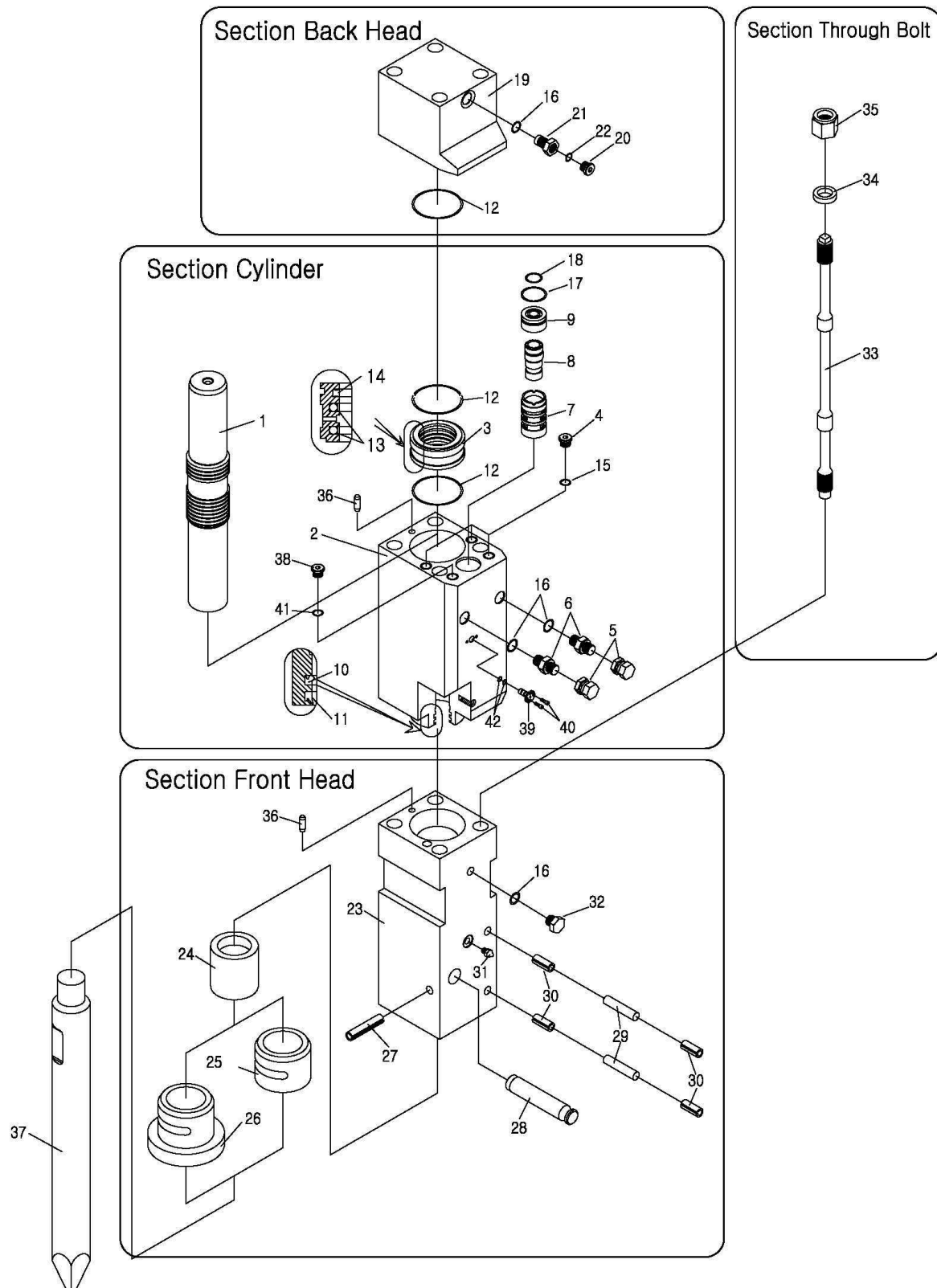
Parts List for Box-New Design

Model : FINE 4X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|-----------------------|-------------------------|
| 1 | Assembly-Box Bracket | - | B04560010000 | 1 | | |
| 2 | Plate-Cover | - | B04560020000 | 1 | | |
| 3 | Damper-Bottom | - | B04510052000 | 1 | | |
| 4 | Damper-Upper | - | B04510051001 | 1 | | |
| *** | Assembly-Mount Cap | - | B04660000000 | 1 | including no. 5~13 | |
| 5 | Mount Cap | - | B04660010000 | 1 | OPTION | |
| 6 | Pin-Bracket | - | P43045305300 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44045060271 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45045080300 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11010121100 | 2 | M12x110L | |
| 10 | Nut-Hex | - | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | - | B04410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylon | - | P12020160000 | 12 | M16 | |
| 12 | Washer-Spring | - | P13021160000 | 12 | M16 | |
| 13 | Bolt-Hex | - | P11010160600 | 12 | M16x60L | |
| 14 | Plug-Rubber | - | B05560064100 | 4 | Ø30x9 (Stop Pin) | Low noise type (option) |
| 15 | Plug-Rubber | - | B04560064200 | 1 | Ø40x9 (Tool Pin) | |
| 16 | Plug-Rubber | - | B04560064300 | 1 | Ø35x9 (Grease) | |
| 17 | Plug-Rubber | - | B04560064400 | 1 | Ø20x9 (Tool Pin-Rear) | |
| 18 | Cover | - | B04530061000 | 1 | | |
| 19 | Washer-Plain | - | P13010100000 | 6 | M10 | |
| 20 | Washer-Spring | - | P13021100000 | 6 | M10 | |
| 21 | Bolt-Hex | - | P11010100300 | 6 | M10x30L | |
| 22 | Hose Belloss | - | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE 5, 5X, 5T, 5S, 5BL*



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 5, 5X, 5T, 5S,5BL

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|----------------|
| *** | Assembly-Main Body | B05110012 | B05110000102 | 1SET | | |
| *** | Assembly-Cylinder | B05111001 | B05110010001 | 1SET | including no. 1~9, 39, 40 | |
| 1 | Piston | B05111200 | B05110012000 | 1 | | |
| 2 | Cylinder | B05111101 | B05110011001 | 1 | | |
| 3 | Seal-Retainer | B05111300 | B05110013000 | 1 | | |
| 4 | Socket Plug | P19101810 | P14023180010 | 3 | M18xP1.5 | |
| 38 | Socket Plug | P19102011 | P14020010011 | 1 | PF1/4"(Ø18*4t) | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B05114000 | B05110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B05114250 | B05110042500 | 1 | | |
| 8 | Valve | B05114100 | B05110041000 | 1 | | |
| 9 | Valve-Plug | B05114200 | B05110042000 | 1 | | |
| 39 | Auto Stop Valve | B05111700 | B05110017000 | 1 | | |
| 40 | Bolt-Socket | P12008020 | P11020080200 | 2 | M8xP1.25x20L | |
| 10 | U-Packing | P21200701 | P20102070000 | 1 | ISI 70 | |
| 11 | Seal-Dust | P22200701 | P20202070000 | 1 | DSI 70 | |
| 12 | O-Ring | P27202390 | P20702239000 | 2 | AS568-239 | |
| 13 | Seal-Step | P25000680 | P20500068000 | 2 | Ø68 | |
| - | O-Ring | | | 2 | | |
| 14 | Seal-Gas | P24000680 | P20400068000 | 1 | Ø68 | |
| 15 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 17 | O-Ring | P2710040G | P20701040000 | 1 | G40-1B | |
| 18 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| 41 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 42 | O-Ring | P2700012P | P20700012000 | 2 | P12-1B | |
| *** | Assembly-Back Head | B05113000 | B05110030000 | 1SET | including no. 19~21 | |
| 19 | Back Head | B05113100 | B05110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 20,21 | |
| 20 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 21 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P27202390 | P20702239000 | 1 | AS568-239 | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 22 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B05112011 | B05110020101 | 1SET | including no. 23~26, 29~32 | |
| 23 | Front Head | B05112101 | B05110021001 | 1 | | |
| 24 | Inner Bush | B05112301 | B05110023001 | 1 | | s/no.05/1701 ~ |
| 25 | Front Cover | B05112210 | B05110022100 | 1 | BOX TYPE | |
| 26 | Front Cover | B05112200 | B05110022000 | 1 | TOP TYPE | |

Parts List for Main Body

Model : FINE 5, 5X, 5T, 5S,5BL

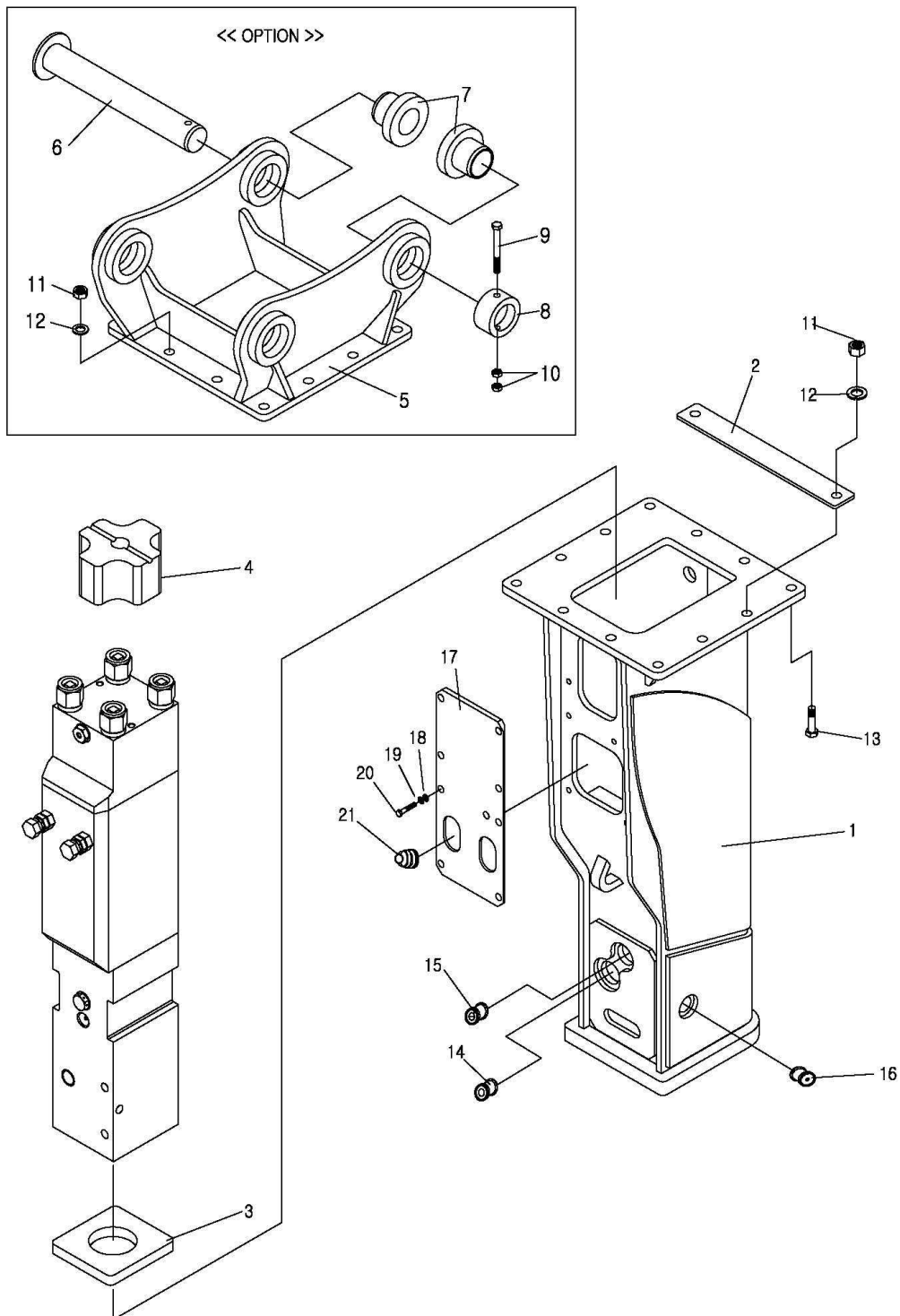
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|--------------|
| 29 | Pin-Stop | B05112610 | B05110026100 | 2 | Ø16 * 75.5L | |
| 30 | Pin-Spring | P08116040 | P08101604000 | 4 | Ø16x40L | |
| 31 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 32 | Air Cap | B00002700 | B00000027000 | 1 | | ~s/no.05/170 |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B05115000 | B05110050000 | 4SET | including no. 33~35 | |
| 33 | Through Bolt | B05115100 | B05110051000 | 4 | | |
| 34 | Washer | B05115200 | B05110052000 | 4 | | |
| 35 | Nut-Upper | B05115300 | B05110053000 | 4 | | |
| 27 | Pin-Spring | P08116080 | P08101608000 | 1 | Ø16x80L | |
| 28 | Pin-Tool | B05112401 | B05110024001 | 1 | Ø38 * 155L | |
| 36 | Pin-Knock | B04111400 | B04110014000 | 2 | | |
| 37 | Tool-Moil Point | B05112512 | B05110025102 | 1 | Alternative | |
| - | Tool-Wedge Point | B05112522 | B05110025202 | 1 | Alternative | |
| - | Tool-Blunt End | B05112542 | B05110025402 | 1 | Alternative | |
| *** | Seal Kit-Complete | B05117000 | B05110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0500800B | B0500008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B0500800T | B0500008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 5X(New Design)*



Bracket-Box type-New Design : Unit serial no.

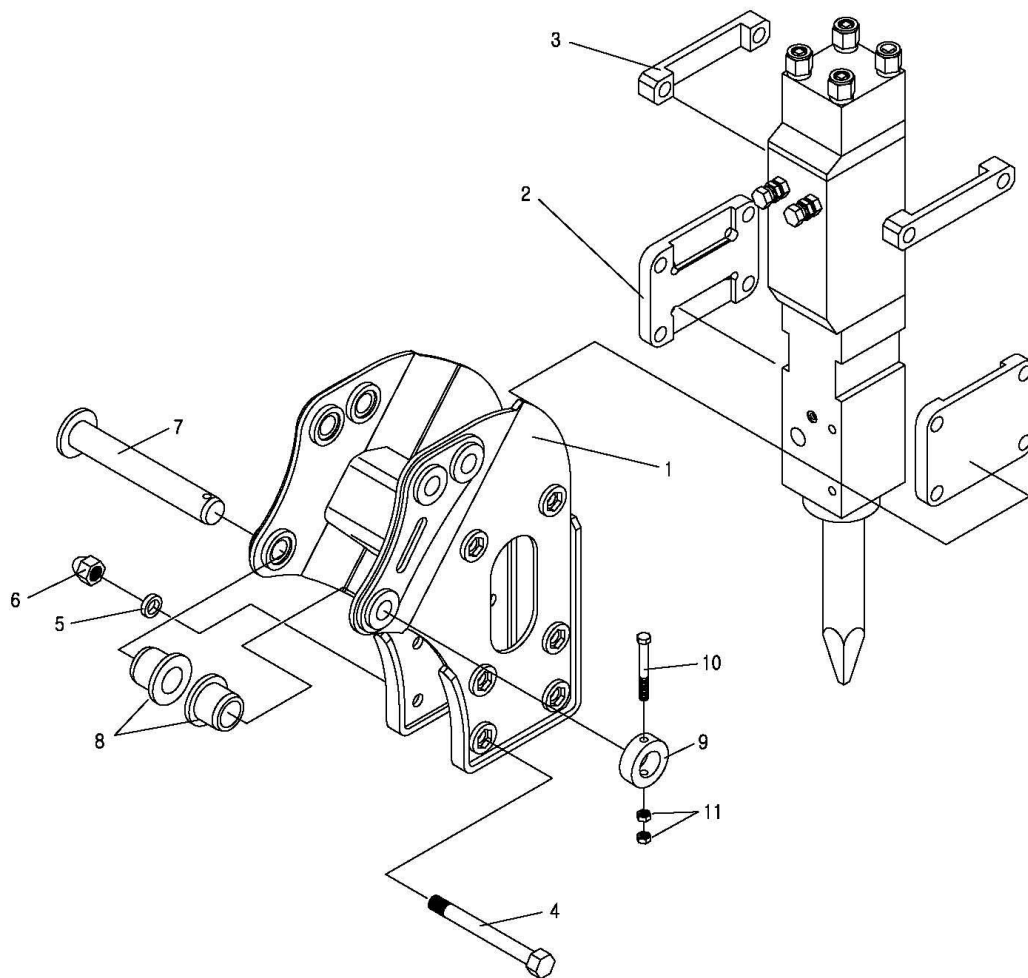
Parts List for Box-New Design

Model : FINE 5X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|------------------------|
| 1 | Assembly-Box Bracket | | B05560010000 | 1SET | BOX TYPE | New Design |
| 2 | Plate-Cover | | B05560020000 | 1 | | |
| 3 | Damper-Bottom | | B05510052000 | 1 | | |
| 4 | Damper-Upper | | B05510051000 | 1 | | |
| *** | Assembly-Mount Cap | | B05660000000 | 1SET | including no. 5~13 | |
| 5 | Mount Cap | | B05660010000 | 1SET | OPTION | |
| 6 | Pin-Bracket | | P43045435300 | 2 | Alternative | |
| 7 | Bush-Bracket | | P44045075700 | 4 | Alternative | |
| 8 | Ring-Stop | | P45045100300 | 2 | Alternative | |
| 9 | Bolt-Hex | | P11014121100 | 2 | M12x110L | |
| 10 | Nut-Hex | | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | | B04410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylock | | P12020160000 | 12 | M16 | |
| 12 | Washer-Spring | | P13021160000 | 12 | M16 | |
| 13 | Bolt-Hex | | P11015160600 | 12 | M16x60L | |
| 14 | Plug-Rubber | | B05560064200 | 1 | Ø45x12(Tool Pin) | Low noise type(option) |
| 15 | Plug-Rubber | | B05560064300 | 1 | Ø40x12(Grease) | |
| 16 | Plug-Rubber | | B05560064100 | 4 | Ø30x12(Stop Pin) | |
| 17 | Cover | | B05560061000 | 1 | | |
| 18 | Washer-Plain | | P13010120000 | 9 | M12 | |
| 19 | Washer-Spring | | P13021120000 | 9 | M12 | |
| 20 | Bolt-Hex | | P11010120350 | 9 | M12x35L | |
| 21 | Hose Belloss | | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE 5BL*



Parts List for BL Bracket

Model : FINE 5BL

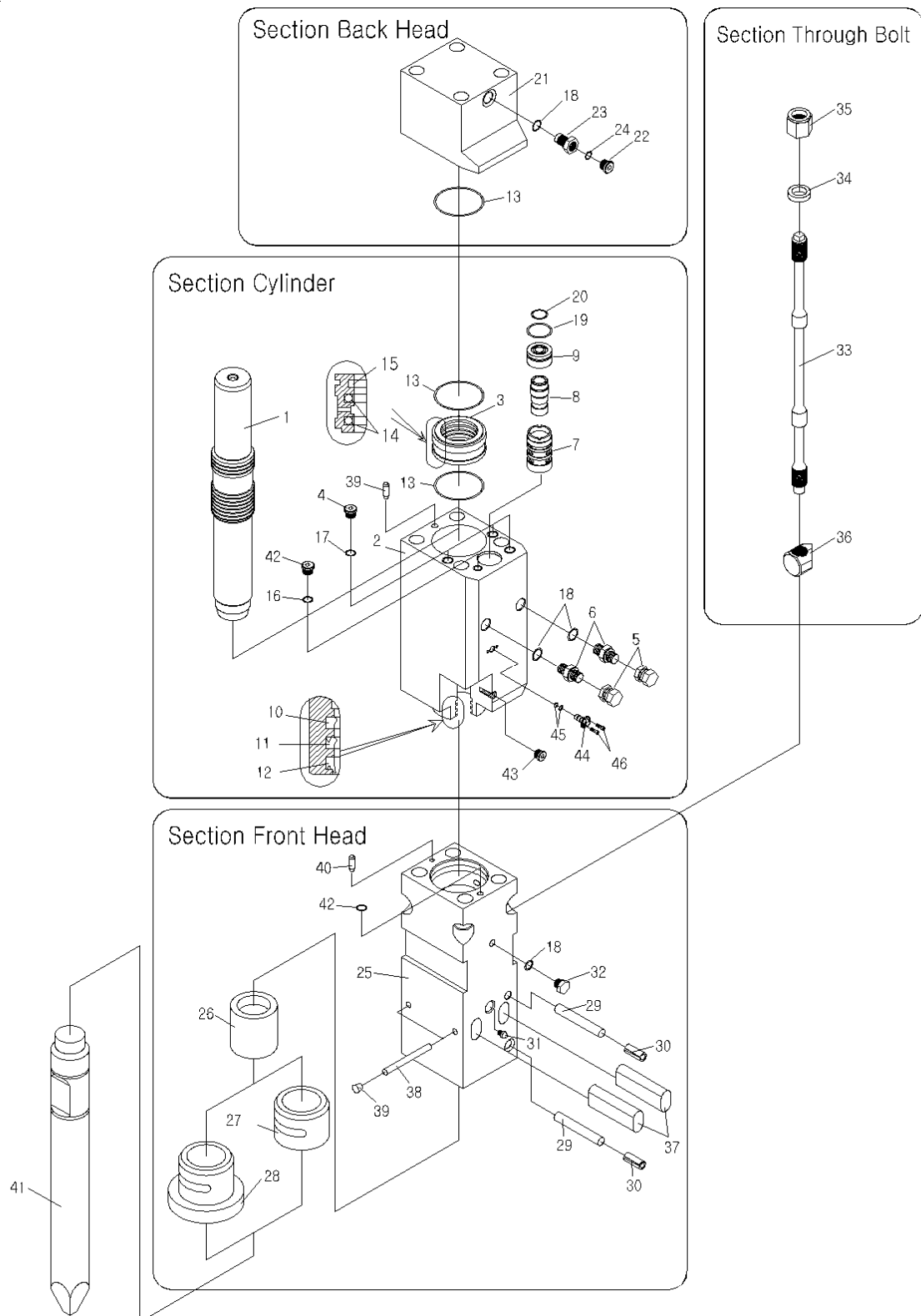
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|------|-------------------|-------------|
| 1 | Assembly-Bracket BL | L05221000 | L05210010000 | 1SET | | |
| 2 | Set-Plate | L05223000 | L05210030000 | 2 | | |
| 3 | Guide-Plate | L05224000 | L05210040000 | 2 | | |
| *** | Assembly-Bracket Bolt | B05315000 | B05310050000 | 6SET | including no. 4~6 | |
| 4 | Bolt-Hex | P11527240 | P11015272400 | 6 | M27xP2.0x240L | |
| 5 | Washer-Spring | P15127000 | P13021270000 | 6 | M27 | |
| 6 | Nut-Cap | P13C27000 | P12030270000 | 6 | M27 | |
| 7 | Pin-Bracket | P43045407 | P43045407300 | 2 | Alternative | |
| 8 | Bush-Bracket | P44045400 | P44045064400 | 4 | Alternative | |
| 9 | Ring-Stop | P45045300 | P45045080300 | 2 | Alternative | |
| 10 | Bolt-Hex | P11012110 | P11010121100 | 2 | M12x110L | |
| 11 | Nut-Hex | P13012000 | P12010120000 | 4 | M12 | |

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| | |
|---------------------------|---|
| FINE6 MainBody..... | 1 |
| FINE6 Box-New Design..... | 2 |



Exploded View of *FINE 6X*



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 6X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|---------------------|---------------------|-------------|-----------------------------|-------------|
| *** | Assembly-Main Body | B06110000101 | B06110000102 | 1SET | | |
| *** | Assembly-Cylinder | B06111010 | B06110010001 | 1SET | including no. 1~9,43 | |
| 1 | Piston | B06111200 | B06110012000 | 1 | | |
| 2 | Cylinder | B06111100 | B06110011001 | 1 | | |
| 3 | Seal-Retainer | B06111300 | B06110013000 | 1 | | |
| 4 | Socket Plug | P19101810 | P14023180010 | 3 | M18xP1.5 | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F00511133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F00111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B06114000 | B06110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B06114250 | B06110042500 | 1 | | |
| 8 | Valve | B06114100 | B06110041000 | 1 | | |
| 9 | Valve-Plug | B06114200 | B06110042000 | 1 | | |
| 10 | Seal-Buffer | P23000751 | P20301075000 | 1 | HBV 75 | |
| 11 | U-Packing | P21200751 | P20102075000 | 1 | ISI 75 | |
| 12 | Seal-Dust | P22100751 | P20202075000 | 1 | DSI 75 | |
| 13 | O-Ring | P2710100G | P20701100000 | 2 | G100-1B | |
| 14 | Seal-Step | P25000730 | P20500073000 | 2 | Ø73 | |
| - | O-Ring | | | 2 | | |
| 15 | Seal-Gas | P24000730 | P20400073000 | 1 | Ø73 | |
| 16 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 17 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| 18 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 19 | O-Ring | P2700042P | P20700042000 | 1 | P42-1B | |
| 20 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| *** | Assembly-Back Head | B06113001 | B06110030001 | 1SET | including no. 21~23 | |
| 21 | Back Head | B06113100 | B06110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 22,23 | |
| 22 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 23 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 13 | O-Ring | P2710100G | P20701100000 | 1 | G100-1B | |
| 18 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 24 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B06110020001 | B06110020002 | 1SET | including no. 25~33 | |
| 25 | Front Head | B06110021001 | B06110021002 | 1 | | |
| 26 | Inner Bush | B06112301 | B06110023001 | 1 | | |
| 27 | Front Cover | B06112211 | B06110022101 | 1 | BOX TYPE | |
| 28 | Front Cover | B06112201 | B06110022001 | 1 | TOP TYPE | |
| 29 | Pin-Front Head | B06112620 | B06110026200 | 2 | Ø16x110L | |
| 30 | Pin-Spring | P08116040 | P08101604000 | 2 | Ø16x40L | |
| 31 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |

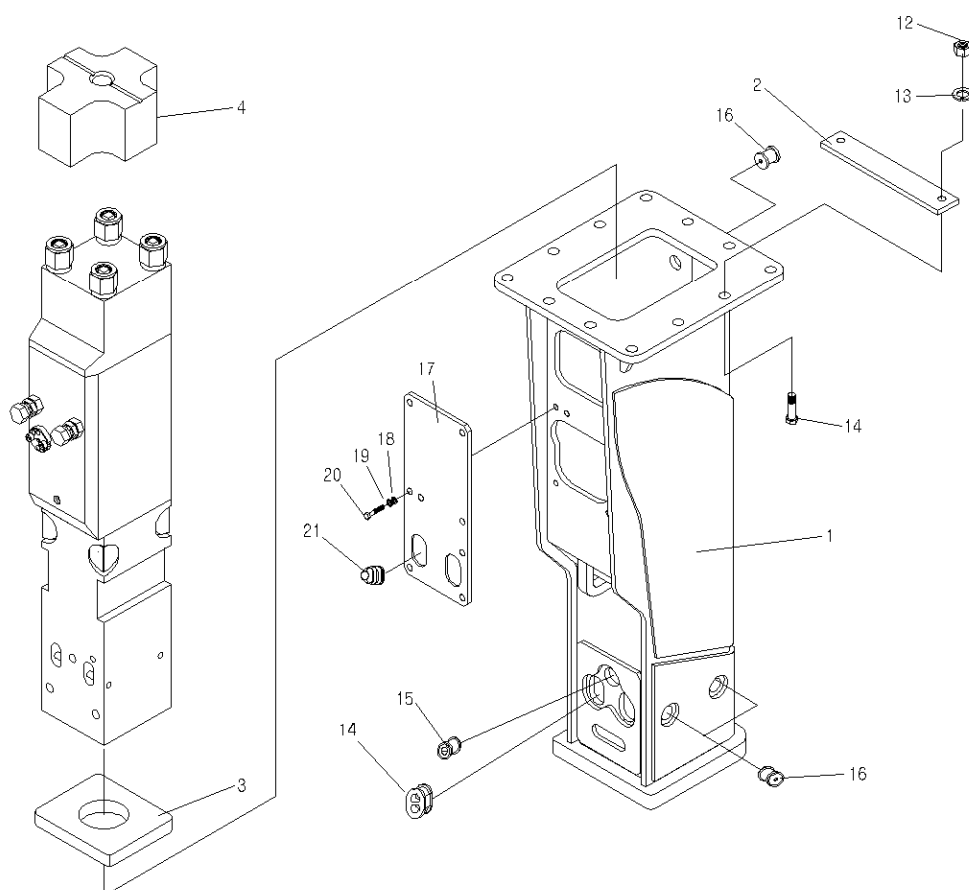
Parts List for Main Body

Model : FINE 6X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|---------------------|---------------------|-------------|----------------------------|-------------|
| 32 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 18 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B06110050000 | B06110050001 | 4SET | including no. 33~36 | |
| 33 | Through Bolt | B06110051000 | B06110051001 | 4 | | |
| 34 | Washer | B05115200 | B05110052000 | 4 | | |
| 35 | Nut-Upper | B05115300 | B05110053000 | 4 | | |
| 36 | Nut-Bottom | B06110054000 | | 4 | M27*P2.0 | |
| 37 | Pin-Tool | B06112400 | B06110024000 | 2 | | |
| 38 | Pin-Stop | B06112610 | B06110026100 | 2 | Ø16x127L | |
| 39 | Plug-Rubber | B07112810 | B07110028100 | 2 | Ø17xØ21x14 | |
| 40 | Pin-Knock | B04111400 | B04110014000 | 2 | Ø8x23L | |
| 41 | Tool-Moil Point | B06112512 | B06110025102 | 1 | Alternative | |
| - | Tool-Wedge Point | B06112522 | B06110025202 | 1 | Alternative | |
| - | Tool-Blunt End | B06112542 | B06110025402 | 1 | Alternative | |
| 42 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 43 | Socket Plug | P19102011 | P14020010011 | 2 | PF 1/4"(Ø18*4t) | |
| 44 | Auto Stop Valve | | B05110017000 | 1 | Ø44*48L | |
| 45 | O-Ring | | P20700012000 | 2 | P12-1B | |
| 46 | Bolt-Socket | | P11020080200 | 2 | M8*20L | |
| *** | Seal Kit-Complete | B06117000 | B06110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0600801B | B0600008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B06008010 | B0600008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



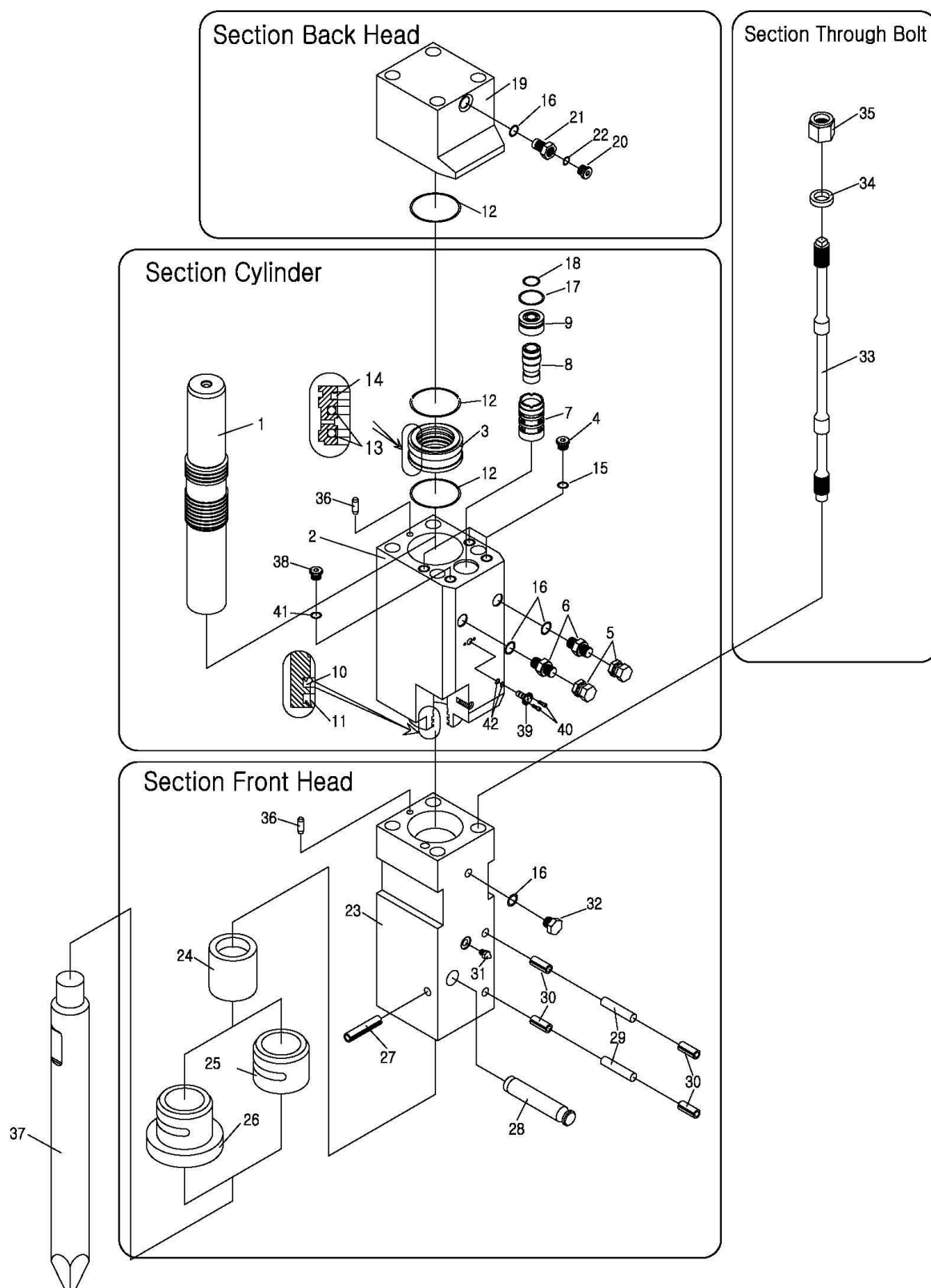
Parts List for Box-New Design

Model : FINE 6X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|------------------------|
| 1 | Assembly-Box Bracket | | B06560010000 | 1SET | BOX TYPE | New Design |
| 2 | Plate-Cover | | B05560020000 | 1 | | |
| 3 | Damper-Bottom | | B06510052000 | 1 | | |
| 4 | Damper-Upper | | B05510051000 | 1 | | |
| *** | Assembly-Mount Cap | | B06660000000 | 1SET | including no. 5~13 | |
| 5 | Mount Cap | | B06660010000 | 1SET | OPTION | |
| 6 | Pin-Bracket | | P43045435300 | 2 | Alternative | |
| 7 | Bush-Bracket | | P44045075700 | 4 | Alternative | |
| 8 | Ring-Stop | | P45045100300 | 2 | Alternative | |
| 9 | Bolt-Hex | | P11010121100 | 2 | M12x110L | |
| 10 | Nut-Hex | | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | | B07410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylock | | P12020200000 | 12 | M20 | |
| 12 | Washer-Spring | | P13021200000 | 12 | M20 | |
| 13 | Bolt-Hex | | P11010200700 | 12 | M20x70L | |
| 14 | Plug-Rubber | | B06560064200 | 2 | Ø40x56x12(Tool Pin) | Low noise type(option) |
| 15 | Plug-Rubber | | B05560064300 | 1 | Ø40x12(Grease) | |
| 16 | Plug-Rubber | | B05560064100 | 8 | Ø30x12(Stop Pin) | |
| 17 | Cover | | B06560061000 | 1 | | |
| 18 | Washer-Plain | | P13010120000 | 9 | M12 | |
| 19 | Washer-Spring | | P13021120000 | 9 | M12 | |
| 20 | Bolt-Hex | | P11010120350 | 9 | M12x35L | |
| 21 | Hose Belloss | | B05530063000 | 2 | 1/2" | |



Exploded View of *FINE* 6BL, 7BLX



Parts List for Main Body

Model : FINE 6BL, 7BLX

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|----------------|
| *** | Assembly-Main Body | L06110000 | L06110000001 | 1SET | | |
| *** | Assembly-Cylinder | B05111001 | B05110010001 | 1SET | including no. 1~9 | |
| 1 | Piston | B05111200 | B05110012000 | 1 | | |
| 2 | Cylinder | B05111101 | B05110011001 | 1 | | |
| 3 | Seal-Retainer | B05111300 | B05110013000 | 1 | | |
| 4 | Socket Plug | P19101810 | P14023180010 | 3 | M18xP1.5 | |
| 38 | Socket Plug | P19102011 | P14020010011 | 1 | PF1/4"(Ø18*4t) | |
| *** | Assembly-Adapter Flange | B04113300 | B04110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103330 | F005111133300 | 2 | PF1/2" | |
| 6 | Adapter | F01113330 | F001111133300 | 2 | PF1/2" | |
| *** | Assembly-Valve | B05114000 | B05110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B05114250 | B05110042500 | 1 | | |
| 8 | Valve | B05114100 | B05110041000 | 1 | | |
| 9 | Valve-Plug | B05114200 | B05110042000 | 1 | | |
| 39 | Auto Stop Valve | B05111700 | B05110017000 | 1 | | |
| 40 | Bolt-Socket | P12008020 | P11020080200 | 2 | M8xP1.25x20L | |
| 10 | U-Packing | P21200701 | P20102070000 | 1 | ISI 70 | |
| 11 | Seal-Dust | P22100701 | P20202070000 | 1 | DSI 70 | |
| 12 | O-Ring | P27202390 | P20702239000 | 2 | AS568-239 | |
| 13 | Seal-Step | P25000680 | P20500068000 | 2 | Ø68 | |
| - | O-Ring | | | 2 | | |
| 14 | Seal-Gas | P24000680 | P20400068000 | 1 | Ø68 | |
| 15 | O-Ring | P2700016P | P20700016000 | 4 | P16-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 2 | P18-1B | |
| 17 | O-Ring | P2700040P | P20700040000 | 1 | P40-1B | |
| 18 | O-Ring | P2710025G | P20701025000 | 1 | G25-1B | |
| 41 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 42 | O-Ring | P2700012P | P20700012000 | 2 | P12-1B | |
| *** | Assembly-Back Head | B05113000 | B05110030000 | 1SET | including no. 19~21 | |
| 19 | Back Head | B05113100 | B05110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 20,21 | |
| 20 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 21 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 12 | O-Ring | P27202390 | P20702239000 | 1 | AS568-239 | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 22 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | L06112000 | L06110020000 | 1SET | including no. 23~26, 29~32 | |
| 23 | Front Head | L06112100 | L06110021000 | 1 | | |
| 24 | Inner Bush | L06112300 | L06110023000 | 1 | | s/no.05/1701 ~ |
| 25 | Front Cover | L06112210 | L06110022100 | 1 | BOX TYPE | |
| 26 | Front Cover | L06112200 | L06110022000 | 1 | TOP TYPE | |

Parts List for Main Body

Model : FINE 6BL, 7BLX

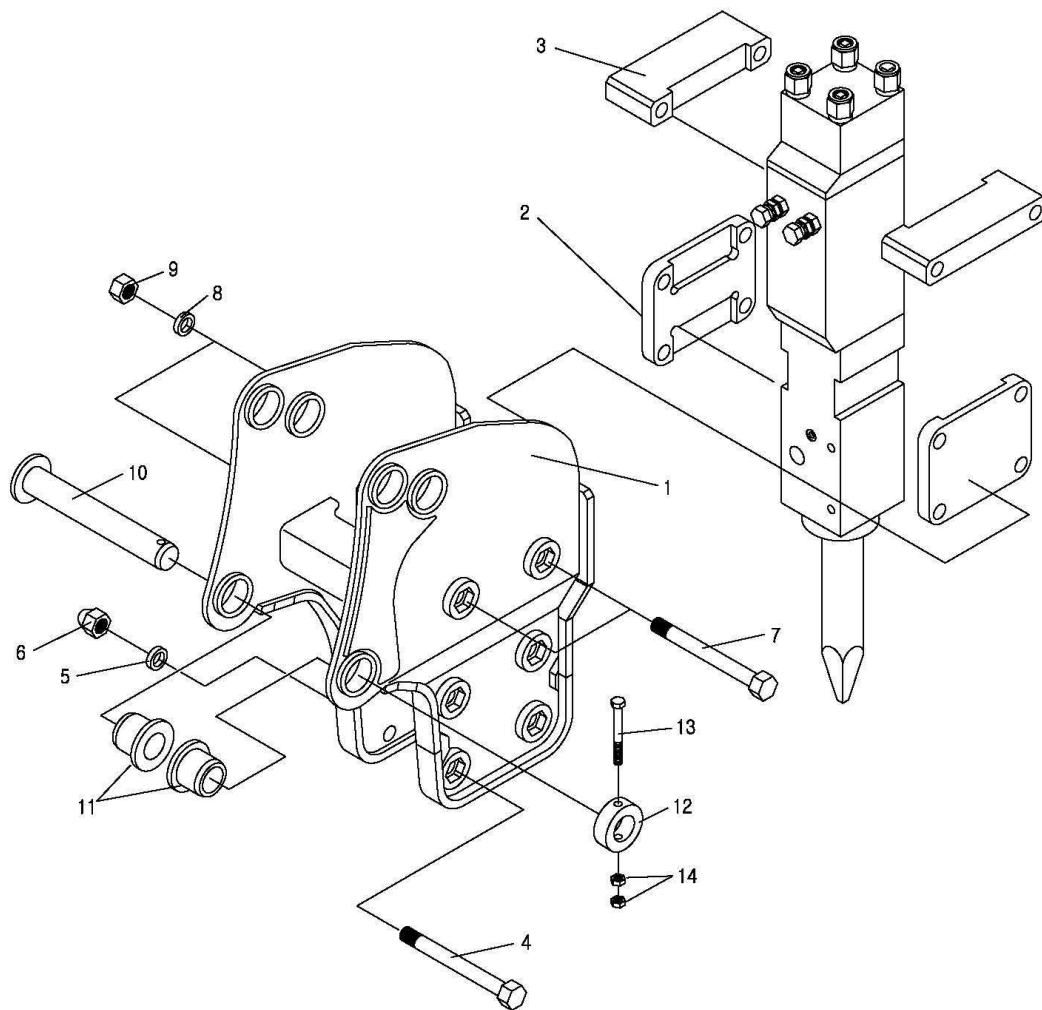
| Item No. | Description | Part No. | Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|--------------|
| 29 | Pin-Stop | B05112610 | B05110026100 | 2 | Ø16 * 75.5L | |
| 30 | Pin-Spring | P08116040 | P08101604000 | 4 | Ø16x40L | |
| 31 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 32 | Air Cap | B00002700 | B00000027000 | 1 | | ~s/no.05/170 |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B05115000 | B05110050000 | 4SET | including no. 33~35 | |
| 33 | Through Bolt | B05115100 | B05110051000 | 4 | | |
| 34 | Washer | B05115200 | B05110052000 | 4 | | |
| 35 | Nut-Upper | B05115300 | B05110053000 | 4 | | |
| 27 | Pin-Spring | P08116080 | P08101608000 | 1 | Ø16x80L | |
| 28 | Pin-Tool | B05112400 | B05110024000 | 1 | Ø30x156L | |
| 36 | Pin-Knock | B04111400 | B04110014000 | 2 | | |
| 37 | Tool-Moil Point | L06112511 | L06110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | L06112521 | L06110025201 | 1 | Alternative | |
| - | Tool-Blunt End | L06112541 | L06110025401 | 1 | Alternative | |
| *** | Seal Kit-Complete | B05117000 | B05110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | L0600800B | L0600008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | L06008000 | L0600008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 6BL*



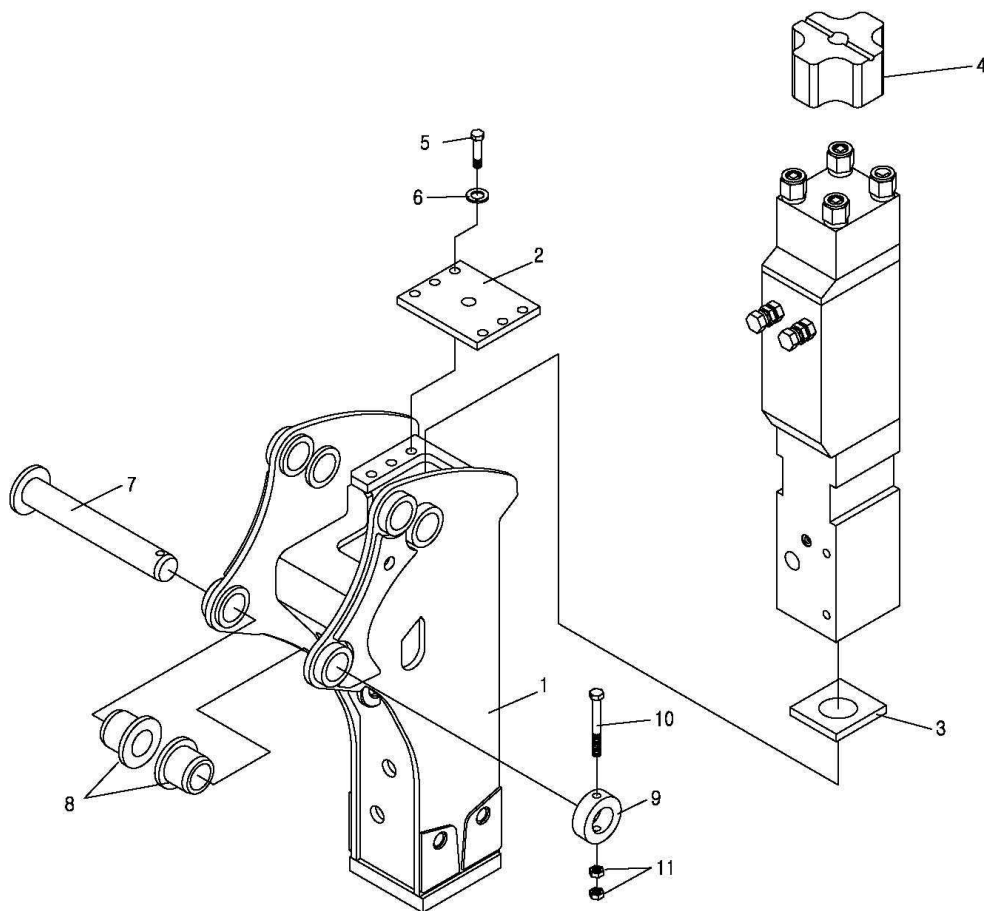
Parts List for BL Bracket

Model : FINE 6BL

| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|------|-------------------|----------------|
| 1 | Assembly-BL Bracket | L06311000 | L06310010000 | 1SET | | |
| 2 | Set-Plate | L06313000 | L06310030000 | 2 | | |
| 3 | Guide-Plate | L06314000 | L06310040000 | 2 | | |
| *** | Assembly-Bracket Bolt | B05315000 | B05310050000 | 4SET | including no. 4~6 | |
| 4 | Bolt-Hex | P11527240 | P11015272400 | 4 | M27xP2.0x240L | |
| 5 | Washer-Spring | P15127000 | P13021270000 | 4 | M27 | |
| 6 | Nut-Cap | P13C27000 | P12030270000 | 4 | M27 | |
| *** | Assembly-Bracket Bolt | L06315000 | L06310050000 | 2SET | including no. 7~9 | s/no. 05/2281~ |
| 7 | Bolt-Hex | P11530350 | P11015303500 | 2 | M30xP2.0x350L | s/no. 05/2281~ |
| 8 | Washer-Spring | P15130000 | P13021300000 | 2 | M30 | s/no. 05/2281~ |
| 9 | Nut-Cap | P13C30000 | P12030300000 | 2 | M30 | s/no. 05/2281~ |
| 10 | Pin-Bracket | P43045407 | P43045407300 | 2 | Alternative | |
| 11 | Bush-Bracket | P44045400 | P44045064400 | 4 | Alternative | |
| 12 | Ring-Stop | P45045300 | P45045080300 | 2 | Alternative | |
| 13 | Bolt-Hex | P11012110 | P11010121100 | 2 | M12x110L | |
| 14 | Nut-Hex | P13012000 | P12010120000 | 4 | M12 | |



Exploded View of *FINE 7BLX*



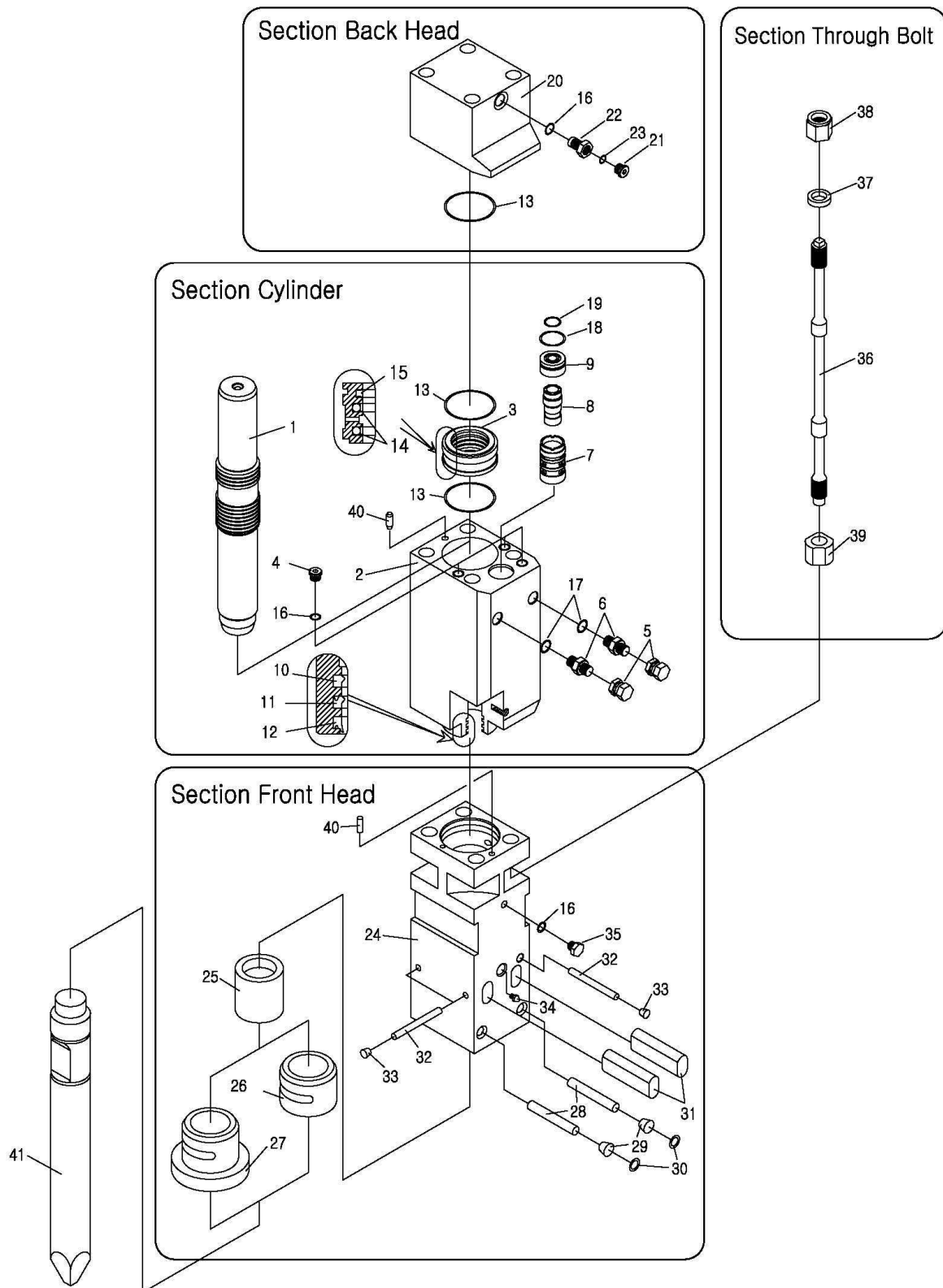
Parts List for BL Bracket

Model : FINE 7BLX

| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------|-----------|--------------|------|-------------|-------------|
| 1 | Assembly-Box Bracket(BL) | L07510000 | L07510000000 | 1SET | | |
| 2 | Plate-Cover | L07512000 | L07510020000 | 1 | | |
| 3 | Damper-Bottom | B05500020 | B05510052000 | 1 | | |
| 4 | Damper-Upper | B05500010 | B05510051000 | 1 | | |
| 5 | Bolt-Hex | P11020045 | P11010200450 | 6 | M20*45L | |
| 6 | Washer-Spring | P15120000 | P13021200000 | 6 | M20 | |
| 7 | Pin-Bracket | P43045407 | P43045407300 | 2 | Alternative | |
| 8 | Bush-Bracket | P44045400 | P44045064400 | 4 | Alternative | |
| 9 | Ring-Stop | P45045300 | P45045080300 | 2 | Alternative | |
| 10 | Bolt-Hex | P11012110 | P11010121100 | 2 | M12x110L | |
| 11 | Nut-Hex | P13012000 | P12010120000 | 4 | M12 | |



Exploded View of *FINE 7X, 7T, 7S, 8BL*



Parts List for Main Body

Model : FINE 7X, 7T, 7S, 8BL

| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|-------------|
| *** | Assembly-Main Body | B07110010 | B07110000100 | 1SET | | |
| *** | Assembly-Cylinder | B07111000 | B07110010000 | 1SET | Including no. 1~9 | |
| 1 | Piston | B07111200 | B07110012000 | 1 | | |
| 2 | Cylinder | B07111100 | B07110011000 | 1 | | |
| 3 | Seal-Retainer | B07111300 | B07110013000 | 1 | | |
| 4 | Socket Plug | P19104010 | P14020050010 | 3 | PF1/2" | |
| *** | Assembly-Adapter Flange | B07113300 | B07110033000 | 2SET | Including no. 5,6 | |
| 5 | Cap-Adapter | F05103440 | F00511134400 | 2 | PF3/4" | |
| 6 | Adapter | F01113440 | F00111134400 | 2 | PF3/4" | |
| *** | Assembly-Valve | B07114000 | B07110040000 | 1SET | Including no. 7~9 | |
| 7 | Valve-Guide | B07114250 | B07110042500 | 1 | | |
| 8 | Valve | B07114100 | B07110041000 | 1 | | |
| 9 | Valve-Plug | B07114200 | B07110042000 | 1 | | |
| 10 | Seal-Buffer | P23000851 | P20301085000 | 1 | HBV 85 | |
| 11 | U-Packing | P21200851 | P20102085000 | 1 | ISI 85 | |
| 12 | Seal-Dust | P22200851 | P20202085000 | 1 | DSI 85 | |
| 13 | O-Ring | P2710115G | P20701115000 | 2 | G115-1B | |
| 14 | Seal-Step | P25000835 | P20500083500 | 2 | SPNS 83.5 | |
| - | O-Ring | | | 2 | | |
| 15 | Seal-Gas | P24000835 | P20400083500 | 1 | PPY 83.5 | |
| 16 | O-Ring | P2700018P | P20700018000 | 3 | P18-1B | |
| 17 | O-Ring | P2700024P | P20700024000 | 2 | P24-1B | |
| 18 | O-Ring | P2710045G | P20701045000 | 1 | G45-1B | |
| 19 | O-Ring | P2710030G | P20701030000 | 1 | G30-1B | |
| *** | Assembly-Back Head | B07113000 | B07110030000 | 1SET | Including no. 20~22 | |
| 20 | Back Head | B07113100 | B07110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | Including no. 21,22 | |
| 21 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 22 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 13 | O-Ring | P2710115G | P20701115000 | 1 | G115-1B | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 23 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| *** | Assembly-Front Head | B07112010 | B07110020100 | 1SET | Including no. 24~30, 32~35 | |
| 24 | Front Head | B07112100 | B07110021000 | 1 | | |
| 25 | Inner Bush | B07112300 | B07110023000 | 1 | | |
| 26 | Front Cover | B07112210 | B07110022100 | 1 | BOX TYPE | |
| 27 | Front Cover | B07112200 | B07110022000 | 1 | TOP TYPE | |
| 28 | Pin-Front Head | B07112620 | B07110026200 | 2 | | |
| 29 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20xØ23x14 | |
| 30 | Snap Ring | P07150200 | P07010102100 | 2 | | |
| 32 | Pin-Stop | B07112610 | B07110026100 | 1 | | |

Parts List for Main Body

Model : FINE 7X, 7T, 7S, 8BL

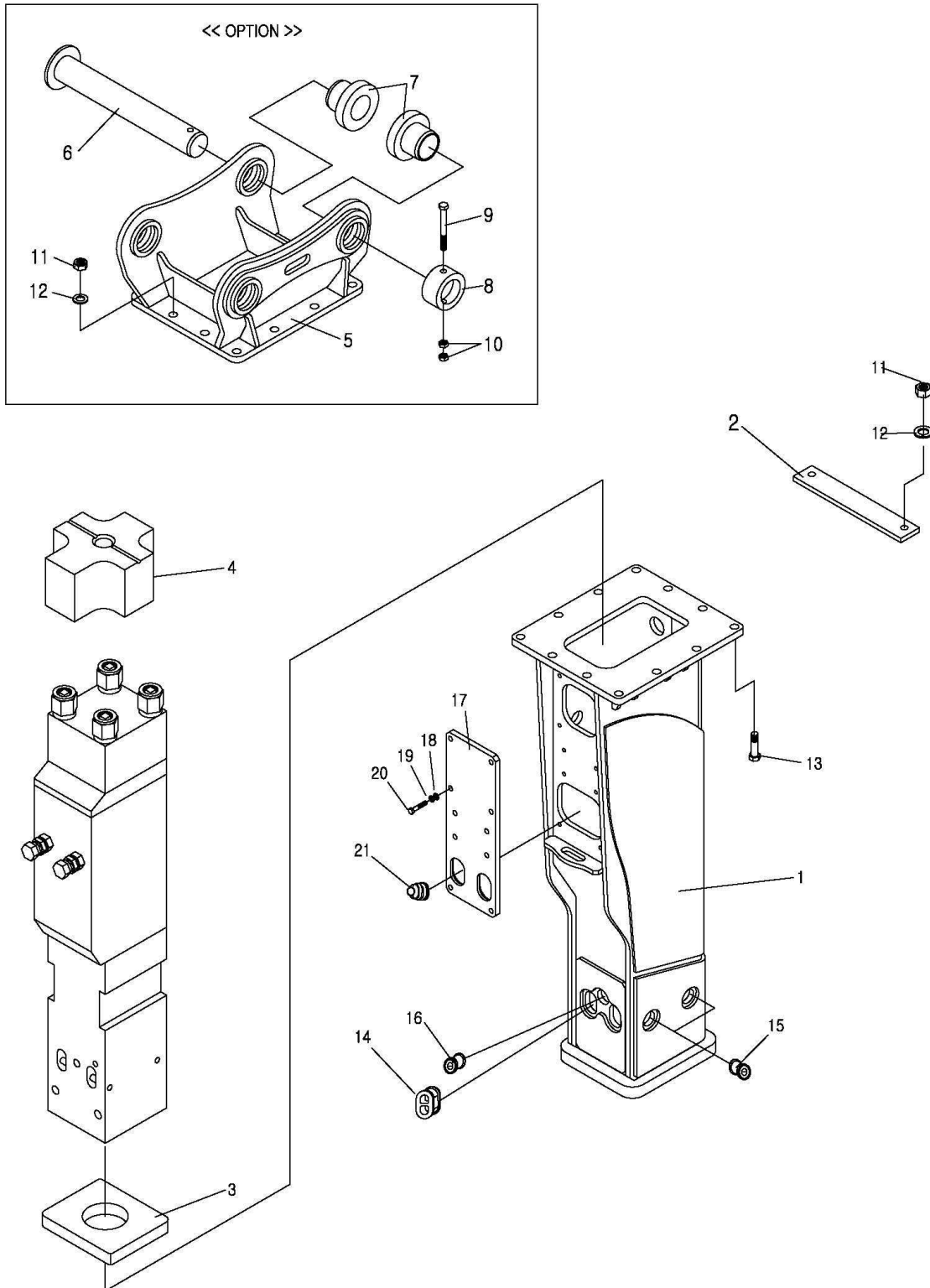
| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| 33 | Plug-Rubber | B07112810 | B07110028100 | 1 | Ø17xØ21x14 | |
| 34 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 35 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 16 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B07115000 | B07110050000 | 4SET | Including no. 36~39 | |
| 36 | Through Bolt | B07115100 | B07110051000 | 4 | | |
| 37 | Washer | B07115200 | B07110052000 | 4 | | |
| 38 | Nut-Upper | B07115300 | B07110053000 | 4 | | |
| 39 | Nut-Bottom | B07115400 | B07110054000 | 4 | | |
| 31 | Pin-Tool | B07112400 | B07110024000 | 2 | | |
| 32 | Pin-Stop | B07112610 | B07110026100 | 2 | | |
| 33 | Plug-Rubber | B07112810 | B07110028100 | 2 | Ø17xØ21x14 | |
| 40 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 41 | Tool-Moil Point | B07112511 | B07110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B07112521 | B07110025201 | - | Alternative | |
| - | Tool-Blunt End | B07112541 | B07110025401 | - | Alternative | |
| *** | Seal kit-Complete | B07117000 | B07110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B0700800B | B0700008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B0700800T | B0700008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 7X(New Design)*



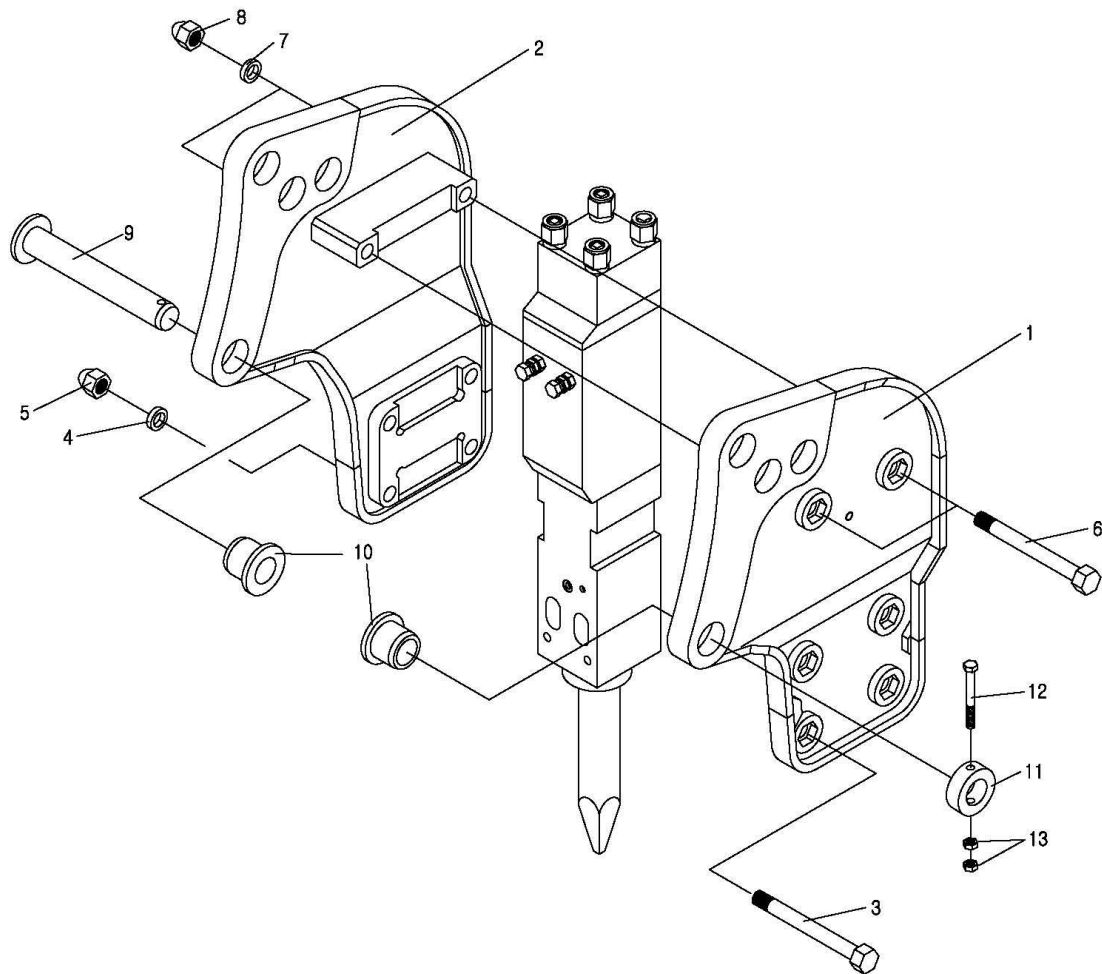
Parts List for Box-New Design

Model : FINE 7X

| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|------------------------|
| 1 | Assembly-Box Bracket | - | B07560010000 | 1SET | | |
| 2 | Plate-Cover | - | B07560020000 | 1 | | |
| 3 | Damper-Bottom | - | B07510052000 | 1 | | |
| 4 | Damper-Upper | - | B07510051000 | 1 | | |
| *** | Assembly-Mount Cap | - | B07660000000 | 1SET | Including no. 5~13 | |
| 5 | Mount Cap | - | B07660010000 | 1SET | OPTION | |
| 6 | Pin-Bracket | - | P43050445300 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44050075520 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45050100300 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11010121300 | 2 | M12x130L | |
| 10 | Nut-Hex | - | P12014120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | - | B07410050000 | 12SET | Including no. 11~13 | |
| 11 | Nut-Hex Nylock | - | P12020200000 | 12 | M20 | |
| 12 | Washer-Spring | - | P13021200000 | 12 | M20 | |
| 13 | Bolt-Hex | - | P11010200700 | 12 | M20x70L | |
| 14 | Plug-Rubber | - | B07560064200 | 2 | 50x74x24 | Low noise type(option) |
| 15 | Plug-Rubber | - | B12560064100 | 8 | Ø45x30 | |
| 16 | Plug-Rubber | - | B12560064300 | 1 | Ø50x32 | |
| 17 | Cover | - | B07560061000 | 1 | | |
| 18 | Washer-Plain | - | P13010120000 | 10 | M12 | |
| 19 | Washer-Spring | - | P13021120000 | 10 | M12 | |
| 20 | Bolt-Hex | - | P11010120350 | 10 | M12x35L | |
| 21 | Hose Belloss | - | B10530063000 | 2 | 3/4" | |



Exploded View of *FINE 8BL*



Bracket-Backhoe Loader: Unit serial no.

Parts List for BL Bracket

Model : FINE 8BL

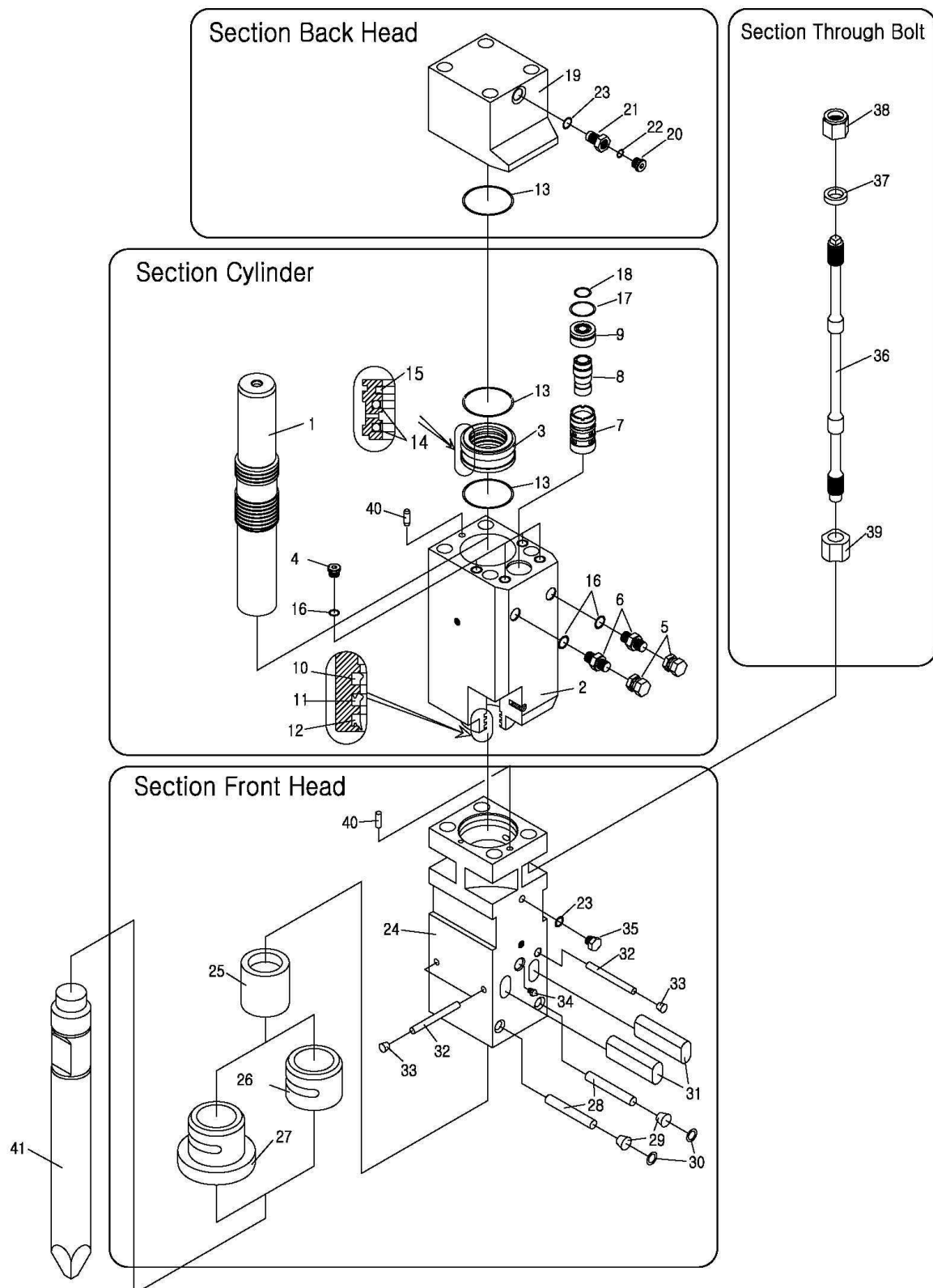
| Item no. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|------|-------------------|-------------|
| 1 | Assembly-Bracket, RH | L08312000 | L08310020000 | 1 | | |
| 2 | Assembly-Bracket, LH | L08311000 | L08310010000 | 1 | | |
| *** | Assembly-Bracket Bolt | B07315000 | B07310050000 | 4SET | | |
| 3 | Bolt-Hex | P11530280 | P11015302800 | 4 | M30x280 | |
| 4 | Washer-Spring | P15130000 | P13021300000 | 4 | M30 | |
| 5 | Nut-Cap | P13C30000 | P12030300000 | 4 | M30 | |
| *** | Assembly-Bracket Bolt | L08315000 | L08310050000 | 2SET | including no. 6~8 | |
| 6 | Bolt-Hex | P11530330 | P11015303300 | 2 | M30x330 | |
| 7 | Washer-Spring | P15130000 | P13021300000 | 2 | M30 | |
| 8 | Nut-Cap | P13C30000 | P12030300000 | 2 | M30 | |
| 9 | Pin-Bracket | P43050410 | P43050407300 | 2 | Alternative | |
| 10 | Bush-Bracket | P44050350 | P44050075350 | 4 | Alternative | |
| 11 | Ring-Stop | P45050300 | P45050100300 | 2 | Alternative | |
| 12 | Bolt-Hex | P11012130 | P11010121300 | 2 | M12x130L | |
| 13 | Nut-Hex | P13012000 | P12010120000 | 4 | M12 | |

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| | |
|----------------------------|---|
| FINE10 MainBody..... | 1 |
| FINE10 Box-New Design..... | 2 |



Exploded View of *FINE* 10X, 10T, 10S



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 10X, 10T, 10S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|---------------|
| *** | Assembly-Main Body | B10110010 | B10110000100 | 1SET | | |
| *** | Assembly-Cylinder | B10111000 | B10110010000 | 1SET | including no. 1~9 | |
| 1 | Piston | B10111200 | B10110012000 | 1 | | |
| 2 | Cylinder | B10111100 | B10110011000 | 1 | | |
| 3 | Seal-Retainer | B10111300 | B10110013000 | 1 | | |
| 4 | Socket Plug | P19105010 | P14020070010 | 4 | PF3/4" | |
| *** | Assembly-Adapter Flange | B07113300 | B07110033000 | 2SET | including no. 5,6 | |
| 5 | Cap-Adapter | F05103440 | F00511134400 | 2 | PF3/4" | |
| 6 | Adapter | F01113440 | F00111134400 | 2 | PF3/4" | |
| *** | Assembly-Valve | B10114000 | B10110040000 | 1SET | including no. 7~9 | |
| 7 | Valve-Guide | B10114250 | B10110042500 | 1 | | |
| 8 | Valve | B10114100 | B10110041000 | 1 | | |
| 9 | Valve-Plug | B10114200 | B10110042000 | 1 | | |
| 10 | Seal-Buffer | P23001001 | P20301100000 | 1 | HBV 100 | |
| 11 | U-Packing | P21201001 | P20102100000 | 1 | ISI 100 | |
| 12 | Seal-Dust | P22201001 | P20202100000 | 1 | DSI 100 | |
| 13 | O-Ring | P2710135G | P20701135000 | 2 | G135-1B | |
| 14 | U-Packing | P21200981 | P20102098000 | 2 | ISI 98 | s/no.10/2000~ |
| 15 | Seal-Gas | P24000980 | P20400098000 | 1 | PPY 98 | |
| 16 | O-Ring | P2700024P | P20700024000 | 6 | P24-1B | |
| 17 | O-Ring | P2700052P | P20700052000 | 1 | P52-1B | |
| 18 | O-Ring | P2710035G | P20701035000 | 1 | G35-1B | |
| *** | Assembly-Back Head | B10113000 | B10110030000 | 1SET | including no. 19~21 | |
| 19 | Back Head | B10113100 | B10110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 20,21 | |
| 20 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 21 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 13 | O-Ring | P2710135G | P20701135000 | 1 | G135-1B | |
| 22 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 23 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B10112010 | B10110020100 | 1SET | including no. 24~30, 32~35 | |
| 24 | Front Head | B10112100 | B10110021000 | 1 | | |
| 25 | Inner Bush | B10112300 | B10110023000 | 1 | | |
| 26 | Front Cover | B10112210 | B10110022100 | 1 | BOX TYPE | |
| 27 | Front Cover | B10112200 | B10110022000 | 1 | TOP TYPE | |
| 28 | Pin-Front Head | B15112620 | B15110026200 | 2 | | |
| 29 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20 | |
| 30 | Snap Ring | P07150260 | P07010102600 | 2 | Ø26 HOLE TYPE | |
| 32 | Pin-Stop | B10112610 | B10110026100 | 1 | | |
| 33 | Plug-Rubber | B07112810 | B07110028100 | 1 | Ø17xØ21x14 | |
| 34 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |

Parts List for Main Body

Model : FINE 10X, 10T, 10S

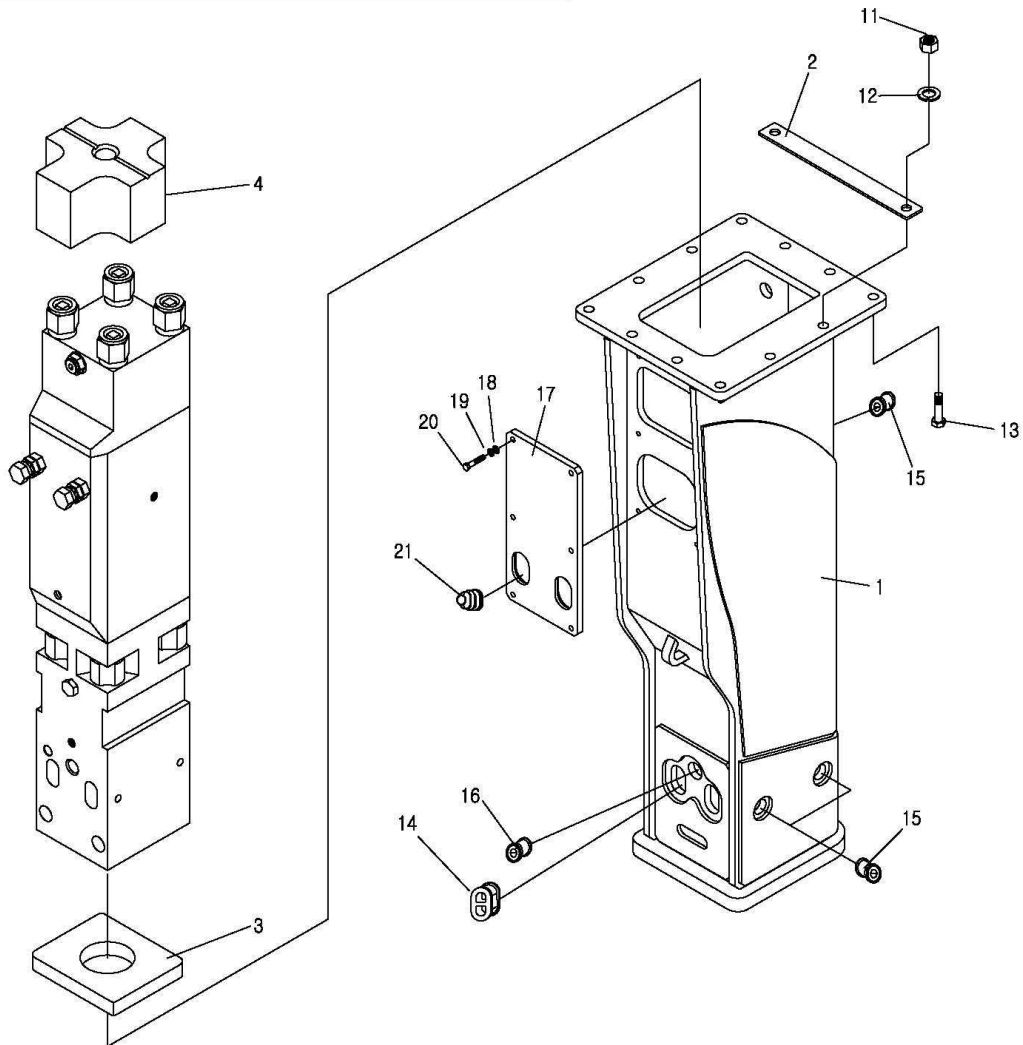
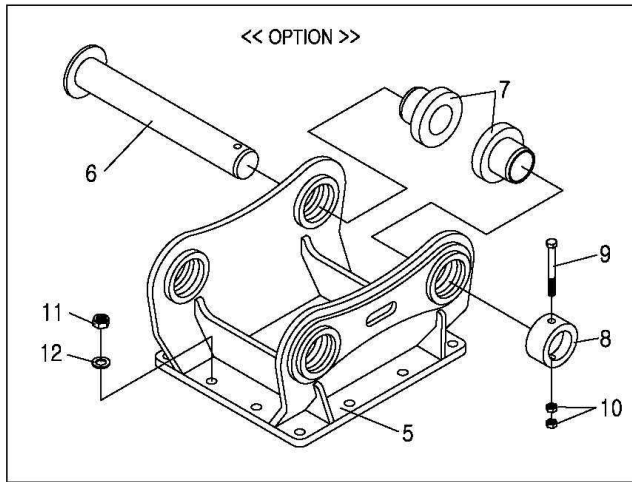
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|---------------|
| 35 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 23 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B10115000 | B10110050000 | 4SET | including no. 36~39 | |
| 36 | Through Bolt | B10115100 | B10110051000 | 4 | | |
| 37 | Washer | B10115200 | B10110052000 | 4 | | |
| 38 | Nut-Upper | B10115300 | B10110053000 | 4 | | |
| 39 | Nut-Bottom | B10115400 | B10110054000 | 4 | | |
| 31 | Pin-Tool | B10112401 | B10110024001 | 2 | | |
| 32 | Pin-Stop | B10112610 | B10110026100 | 2 | | |
| 33 | Plug-Rubber | B07112810 | B07110028100 | 2 | Ø17xØ21x14 | |
| 40 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 41 | Tool-Moil Point | B10112511 | B10110025101 | 1 | 선택, Alternative | |
| - | Tool-Wedge Point | B10112521 | B10110025201 | - | 선택, Alternative | |
| - | Tool-Blunt End | B10112541 | B10110025401 | - | 선택, Alternative | |
| *** | Seal kit-Complete | B10117000 | B10110070000 | 1SET | | s/no.10/2000~ |
| *** | Seal kit-Complete | | | 1SET | | ~s/no.10/1000 |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B1000800B | B1000008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B1000800T | B1000008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 10X(New Design)*



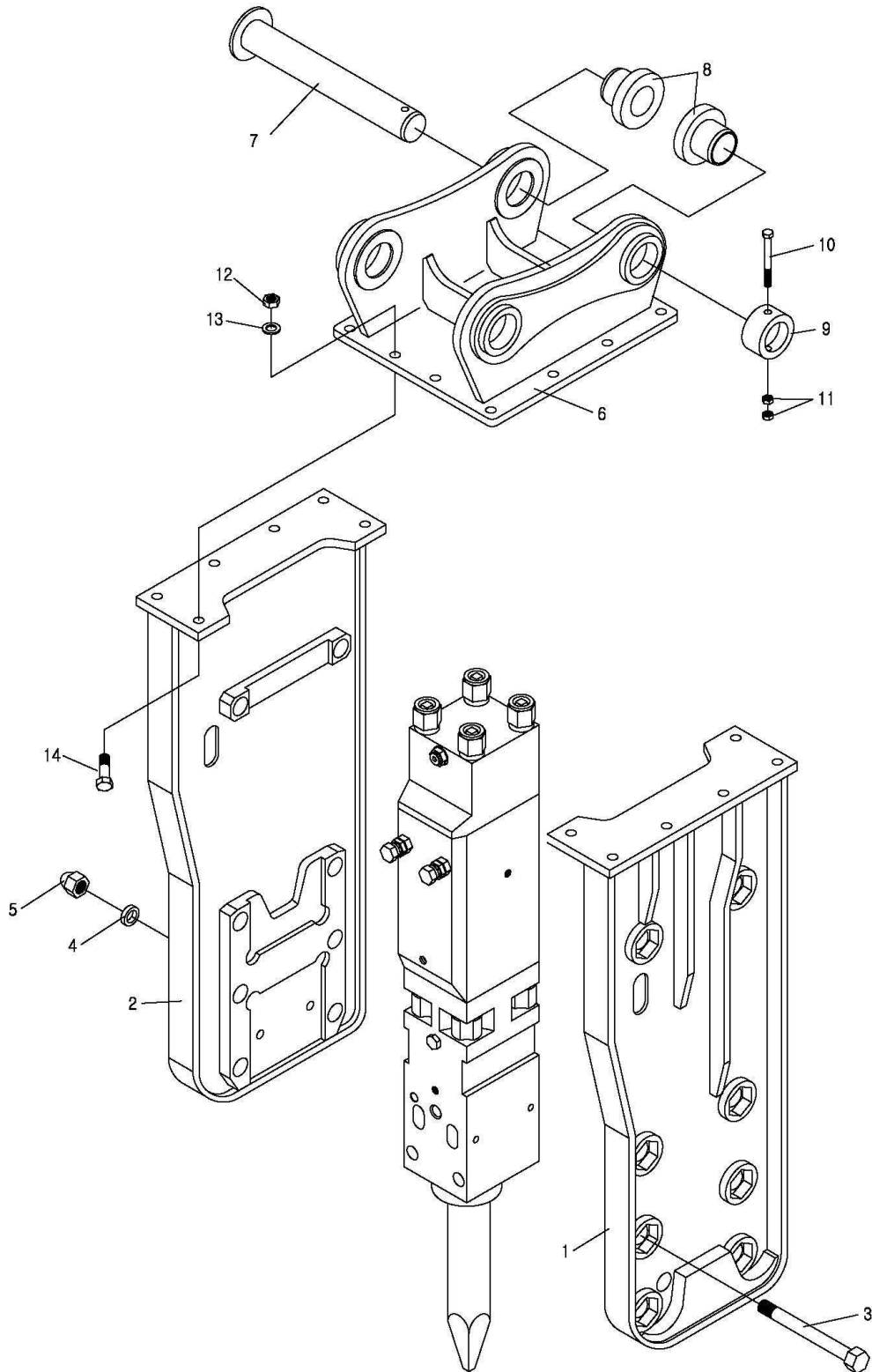
Parts List for Box-New Design

Model : FINE 10X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|---------------------|------------------------|
| 1 | Assembly-Box Bracket | - | B10560010000 | 1SET | | |
| 2 | Plate-Cover | - | B10510020000 | 1 | | |
| 3 | Damper-Bottom | - | B10510052000 | 1 | | |
| 4 | Damper-Upper | - | B10510051000 | 1 | | |
| *** | Assembly-Mount Cap | - | B10660000000 | 1SET | including no. 5~13 | |
| 5 | Mount Cap | - | B10660010000 | 1SET | OPTION | |
| 6 | Pin-Bracket | - | P43060485300 | 2 | Alternative | |
| 7 | Bush-Bracket | - | P44060095400 | 4 | Alternative | |
| 8 | Ring-Stop | - | P45060120300 | 2 | Alternative | |
| 9 | Bolt-Hex | - | P11010121500 | 2 | M12x150L | |
| 10 | Nut-Hex | - | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | - | B07410050000 | 12SET | including no. 11~13 | |
| 11 | Nut-Hex Nylock | - | P12020200000 | 12 | M20 | |
| 12 | Washer-Spring | - | P13021200000 | 12 | M20 | |
| 13 | Bolt-Hex | - | P11010200700 | 12 | M20x70L | |
| 14 | Plug-Rubber | - | B12560064200 | 2 | 71X43X16 | Low noise type(option) |
| 15 | Plug-Rubber | - | B12560064100 | 8 | Ø45x30 | |
| 16 | Plug-Rubber | - | B12560064300 | 1 | Ø50x32 | |
| 17 | Cover | - | B12560061000 | 1 | | |
| 18 | Washer-Plain | - | P13010120000 | 6 | M12 | |
| 19 | Washer-Spring | - | P13021120000 | 6 | M12 | |
| 20 | Bolt-Hex | - | P11010120350 | 6 | M12x35L | |
| 21 | Hose Belloss | - | B10530063000 | 2 | 3/4" | |



Exploded View of *FINE 10T*



Bracket-Top (open type): Unit serial no.

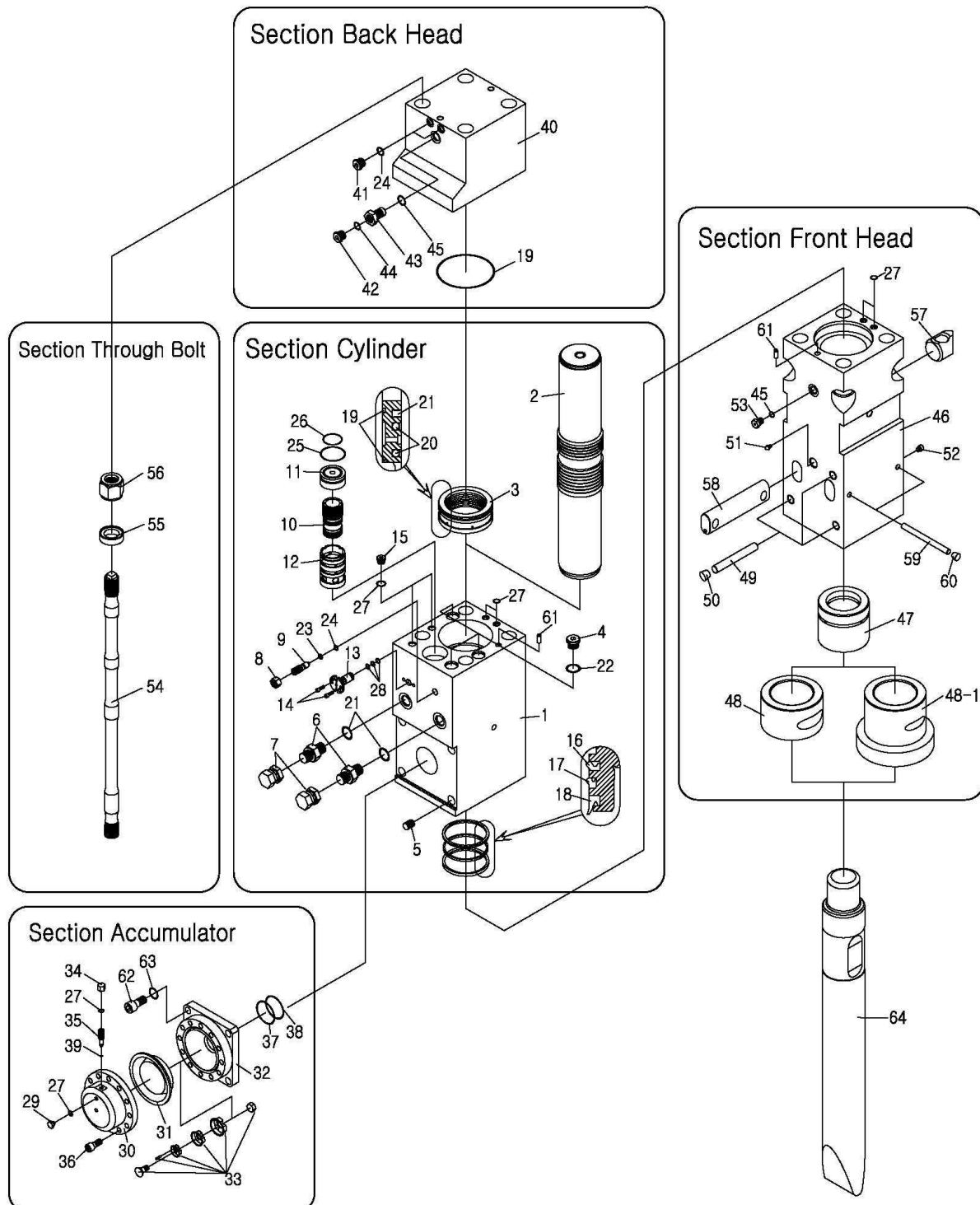
Parts List for Top Bracket

Model : FINE 10T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B10312001 | B10310020001 | 1 | NEW | |
| 2 | Assembly-Bracket, LH | B10311001 | B10310010001 | 1 | NEW | |
| *** | Assembly-Bracket Bolt | B10315000 | B10310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Hex | P11530310 | P11015303100 | 8 | M30xP2.0x310L | |
| 4 | Washer-Spring | P15130000 | P13021300000 | 8 | M30 | |
| 5 | Nut-Cap | P13C30000 | P12030300000 | 8 | M30 | |
| *** | Assembly-Mount Cap | - | B10410000001 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B10410001 | B10410010001 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43060440 | P43060440300 | 2 | Alternative | |
| 8 | Bush-Bracket | P44060150 | P44060080150 | 4 | Alternative | |
| 9 | Ring-Stop | P45060300 | P45060120300 | 2 | Alternative | |
| 10 | Bolt-Hex | P11012150 | P11010121500 | 2 | M12x150L | |
| 11 | Nut-Hex | P13012000 | P12010120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | B10415000 | B07410050000 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14020000 | P12020200000 | 12 | M20 | |
| 13 | Washer-Spring | P15120000 | P13021200000 | 12 | M20 | |
| 14 | Bolt-Hex | P11020070 | P11010200700 | 12 | M20xP2.5x70L | |



Exploded View of *FINE* 12X



Main body: Unit serial no.

Part List for Main Body

Model : FINE 12X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | B12110012 | B12110000102 | 1SET | | |
| *** | Assembly-Cylinder | B12111000 | B12110010000 | 1SET | including no. 1~14 | |
| 1 | Cylinder | B12111102 | B12110011002 | 1 | | |
| 2 | Piston | B12111200 | B12110012000 | 1 | | |
| 3 | Seal-Retainer | B12111300 | B12110013000 | 1 | | |
| 4 | Socket Plug | P19105010 | P14020070010 | 3 | PF3/4" | |
| 5 | Insert Coil | P16724360 | P15007243600 | 4 | M24xP3.0x1.5D | |
| *** | Assembly-Adapter Flange | B20113310 | B20110034000 | 2SET | BOX TYPE | |
| 6 | Adapter | F01113440 | F00111134400 | 2 | PF3/4" | |
| 7 | Cap-Adapter | F05103440 | F00511134400 | 2 | PF3/4" | |
| *** | Assembly-Valve Adjuster | B23114600 | B23110046000 | 1SET | including no. 8,9 | |
| 8 | Nut-Hex | P13318000 | P12013180000 | 1 | M18xP1.5 | |
| 9 | Valve-Adjuster | B23114610 | B23110046100 | 1 | NUT 포함 | |
| *** | Assembly-Valve | B12114000 | B12110040000 | 1SET | including no. 10~12 | |
| 10 | Valve | B12114101 | B12110041001 | 1 | | |
| 11 | Plug-Valve | B12114200 | B12110042000 | 1 | | |
| 12 | Guide-Valve | B12114251 | B12110042501 | 1 | | |
| 13 | Auto Stop Valve | B12111700 | B12110017000 | 1 | | |
| 14 | Bolt-Socket | P12008020 | P11020080200 | 2 | M8xP1.25x20L | |
| 15 | Socket Plug | P19103010 | P14020030010 | 2 | PF3/8" | |
| 16 | Seal-Buffer | P23101101 | P20301110000 | 1 | HBV 110 | |
| 17 | U-Packing | P21201101 | P20102110000 | 1 | ISI 110 | |
| 18 | Seal-Dust | P22201101 | P20202110000 | 1 | DSI 110 | |
| 19 | O-Ring | P2710135G | P20701135000 | 2 | G135-1B | |
| 20 | Seal-Step | P25001080 | P20500108000 | 2 | Ø108 | |
| - | O-Ring | | | 2 | | |
| 21 | Seal-Gas | P24001080 | P20400108000 | 1 | Ø108 | |
| 22 | O-Ring | P2700024P | P20700024000 | 5 | P24-1B | |
| 23 | Back Up Ring | P28PS0110 | P20801011000 | 1 | P11-T2 | |
| 24 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 25 | O-Ring | P2710060G | P20701060000 | 1 | G60-1B | |
| 26 | O-Ring | P2710045G | P20701045000 | 1 | G45-1B | |
| 27 | O-Ring | P2700014P | P20700014000 | 4 | P14-1B | |
| 28 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| *** | Assembly-Accumulator | B15116000 | B15110060000 | 1SET | including no. 29~36 | |
| 29 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 30 | Cover-Accumulator | B15116200 | B15110062000 | 1 | | |
| 31 | Diaphragm | B15117400 | B15110064000 | 1 | Ø150 | |
| 32 | Body-Accumulator | B15116100 | B15110061000 | 1 | | |
| 33 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 34 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 35 | Charging-Adjuster | B15116500 | B15110065000 | 1 | M12xP1.25 | |
| 36 | Bolt-Socket | P12316040 | P11023160400 | 12 | M16xP1.5x40L | |
| 27 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 37 | Back Up Ring | P28GF0800 | P20812080000 | 1 | G80(85x87.4x2.4)-T3 | |
| 38 | O-Ring | P2710080G | P20701080000 | 1 | G80-1B | |

Part List for Main Body

Model : FINE 12X

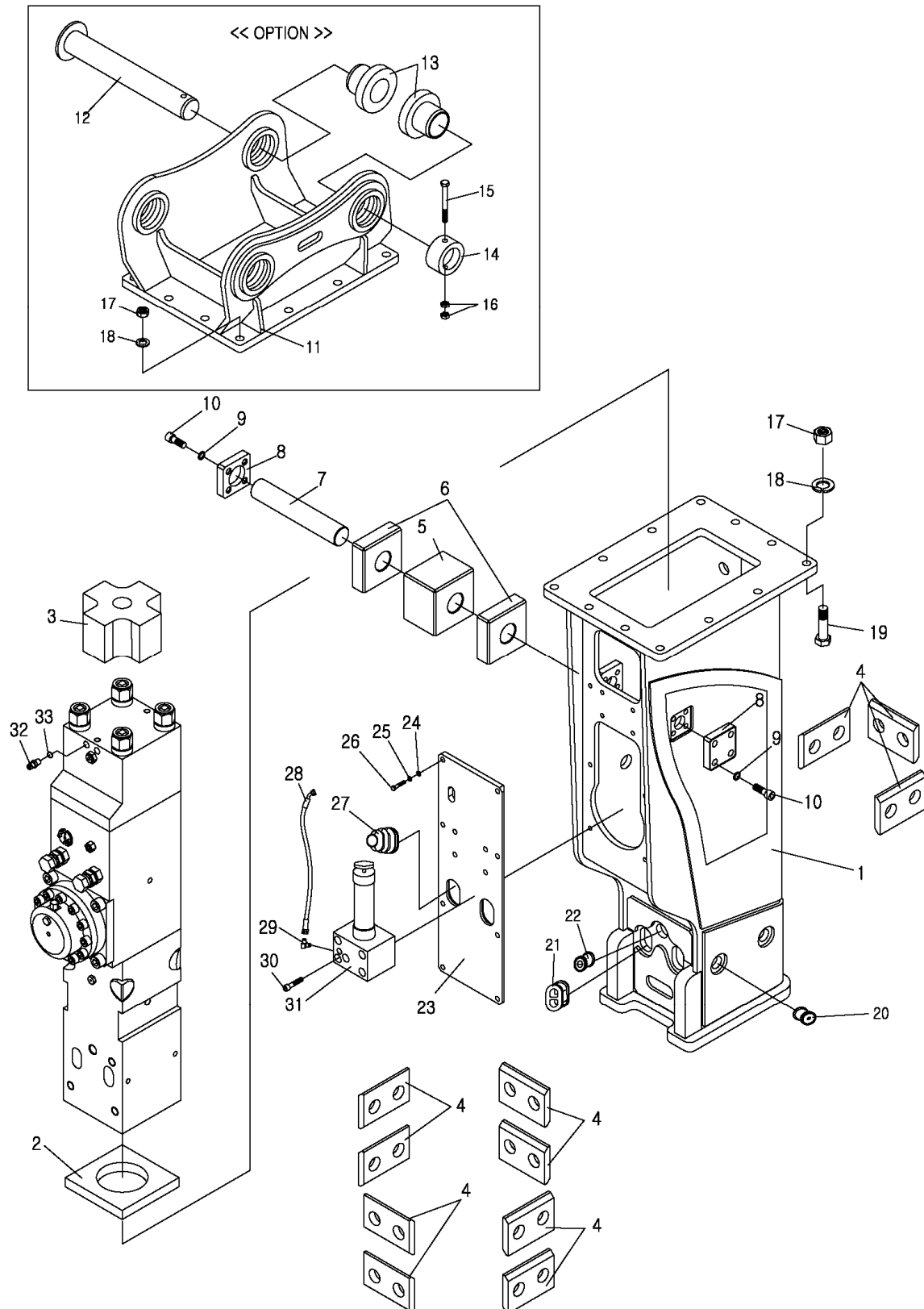
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------|-------------|
| 39 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B12113000 | B12110030000 | 1SET | including no. 40~43 | |
| 40 | Back Head | B12113100 | B12110031001 | 1 | | |
| 41 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" (10mm) | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 42, 43 | |
| 42 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 43 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 19 | O-Ring | P2710135G | P20701135000 | 1 | G135-1B | |
| 24 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| 44 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B12112010 | B12110020100 | 1SET | including no. 46~53 | |
| 46 | Front Head | B12112100 | B12110021000 | 1 | | |
| 47 | Inner Bush | B12112300 | B12110023000 | 1 | | |
| 48 | Front Cover | B12112210 | B12110022100 | 1 | Box Type | |
| 48-1 | Front Cover | B12112200 | B12110022000 | 1 | Side Top Type | |
| 49 | Pin-Front Head | B12112620 | B12110026200 | 3 | Ø20x154L | |
| 50 | Plug-Rubber | B07112820 | B07110028200 | 3 | Ø20xØ23x14t | |
| 51 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 52 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 53 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 27 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | B12115000 | B12110050001 | 4SET | including no. 54~57 | |
| 54 | Through Bolt | B15115100 | B12110051000 | 4 | | |
| 55 | Washer | B15115200 | B12110052000 | 4 | | |
| 56 | Nut-Upper | B15115300 | B12110053000 | 4 | | |
| 57 | Nut-Bottom | B12115400 | B12110054001 | 4 | | |
| 58 | Pin-Tool | B12112400 | B12110024000 | 2 | | |
| 59 | Pin-Stop | B12112610 | B12110026100 | 2 | Ø17.5x179L | |
| 60 | Plug-Rubber | B07112810 | B07110028100 | 2 | Ø17xØ21x14t | |
| 61 | Pin-Knock | B15111400 | B15110014000 | 2 | Ø12x30L | |
| 62 | Bolt-Socket | P12024060 | P11020240600 | 4 | M24xP3.0x60L | |
| 63 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| 64 | Tool-Moil Point | B12112511 | B12110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B12112521 | B12110025201 | 1 | Alternative | |
| - | Tool-Blunt End | B12112541 | B12110025401 | 1 | Alternative | |
| *** | Seal Kit-Complete | B12117000 | B12110070001 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|----------|
| A-1 | Box Set-Service Tools | B1200800B | B1200008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B1200800T | B1200008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B04008200 | B04000080000 | 1 | | 3.4liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 12X(New Design)*



Bracket-Box type-New Design type: Unit serial no.

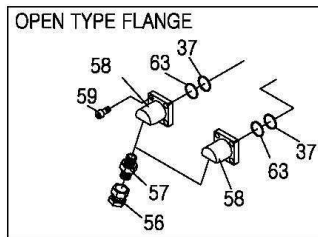
Parts List for Box-New Design

Model : FINE 12X

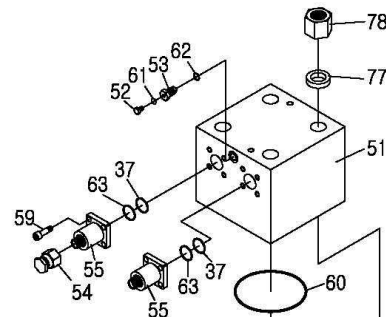
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|----------------------|----------|--------------|-------|-------------------------|-------------------------|
| 1 | Assembly-Box Bracket | | B12560010000 | 1SET | | |
| 2 | Damper-Bottom | | B12510052000 | 1 | Urethane | |
| 3 | Damper-Upper | | B15510051000 | 1 | Urethane | |
| 4 | Damper-Plate | | B12510053000 | 11 | Urethane | |
| 5 | Damper-Support | | B12560054000 | 1 | Urethane | |
| 6 | Block-Support | | B12560033001 | 2 | Urethane | |
| 7 | Pin-Support | | B12560031000 | 1 | | |
| 8 | Stopper-Pin | | B12560032000 | 2 | | |
| 9 | Washer-Node lock | | P13034160000 | 8 | M14 | |
| 10 | Bolt-Socket | | P11020140300 | 8 | M14x30L | |
| *** | Assembly-Mount Cap | | B12660000000 | 1SET | including no. 11~19 | |
| 11 | Mount Cap | | B12660010000 | 1SET | OPTION | |
| 12 | Pin-Bracket | | P43060485300 | 2 | Alternative | |
| 13 | Bush-Bracket | | P44060090400 | 4 | Alternative | |
| 14 | Ring-Stop | | P45060120300 | 2 | Alternative | |
| 15 | Bolt-Hex | | P11014121500 | 2 | M12x150L | |
| 16 | Nut-Hex | | P12014120000 | 4 | M12 | |
| *** | Assembly-Bolt-Hex | | B12410050000 | 12SET | including no. 15~17 | |
| 17 | Nut-Hex Nylock | | P12020200000 | 12 | M20 | |
| 18 | Washer-Spring | | P13021200000 | 12 | M20 | |
| 19 | Bolt-Hex | | P11010200800 | 12 | M20x80L | |
| 20 | Plug-Rubber | - | B12560064100 | 8 | Ø35x16(Stop Pin) | Low noise type (option) |
| 21 | Plug-Rubber | - | B12560064200 | 2 | 71x43x16(Tool Pin) | |
| 22 | Plug-Rubber | - | B12560064300 | 1 | Ø40x16(Grease) | |
| 23 | Cover | - | B12560061000 | 1 | | |
| 24 | Washer-Plain | - | P13010120000 | 14 | M12 | |
| 25 | Washer-Spring | - | P13021120000 | 14 | M12 | |
| 26 | Bolt-Hex | - | P11010120350 | 14 | M12 | |
| 27 | Hose Belloss | - | B10530063000 | 2 | | |
| 28 | Hose(5#X45 5#) | - | F10211110080 | 1 | 1/4"(70BAR)x400L | AUTO GREASE(option) |
| 29 | 90 Elbow | - | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 30 | Bolt-Socket | - | P11020121100 | 4 | M12x110L | |
| 31 | Auto Grease unit | - | P42040010000 | 1 | Inter Lube | |
| 32 | Connector | - | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4"5# | |
| 33 | O-Ring | - | P20700011000 | 1 | P11-1B | |



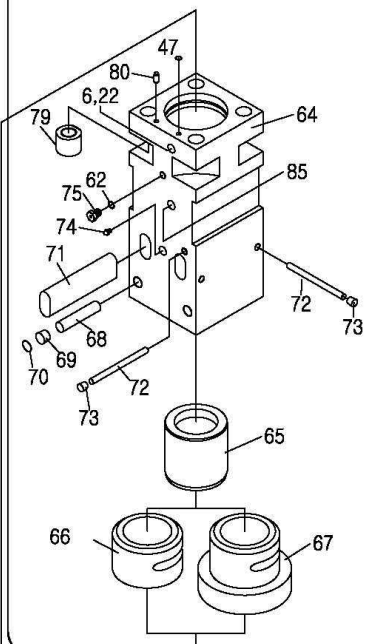
Exploded View of *FINE* 16X, 16T, 16S



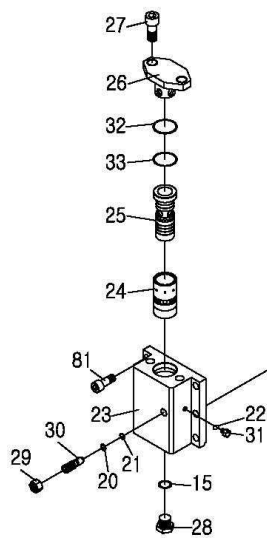
Section Back Head



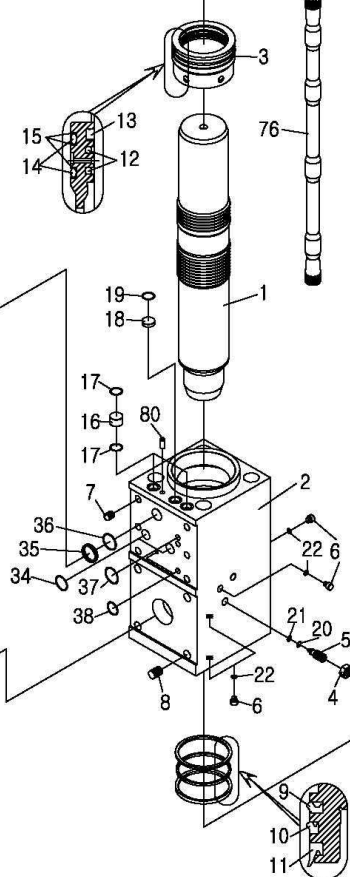
Section Front Head



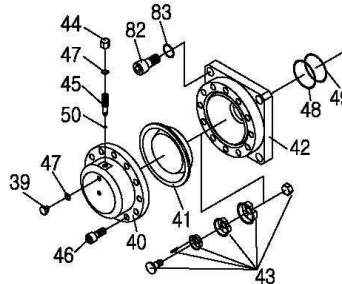
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Part List for Main Body

Model : FINE 16X, 16T, 16S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | - | B16110000100 | 1SET | | |
| *** | Assembly-Cylinder | - | B16110010000 | 1SET | including no. 1~8 | |
| 1 | Piston | B15111200 | B15110012000 | 1 | | |
| 2 | Cylinder | - | B16110011001 | 1 | | |
| 3 | Seal-Retainer | B15111300 | B15110013000 | 1 | | |
| *** | Assembly-Cylinder Adjuster | B15111500 | B15110015000 | 1SET | including no. 4,5 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 5 | Cylinder-Adjuster | B15111510 | B15110015100 | 1 | | |
| 6 | Socket Plug | P19102010 | P14020010010 | 4 | PF1/4" (10mm) | |
| 7 | Insert Coil | P16620300 | P15006203000 | 6 | M20xP2.5x1.5D | |
| 8 | Insert Coil | P16724360 | P15007243600 | 4 | M24xP3.0x1.5D | |
| 9 | Seal-Buffer | P23001241 | P20301124000 | 1 | HBV 124 | |
| 10 | U-Packing | P21101241 | P20101124000 | 1 | IDI 124 | |
| 11 | Seal-Dust | P22301241 | P20203124000 | 1 | LPI 124 | |
| 12 | Seal-Step | P25001200 | P20500120000 | 2 | SPNS 120 | |
| - | O-Ring | | | 2 | | |
| 13 | Seal-Gas | P24001200 | P20400120000 | 1 | Ø120 | |
| 14 | O-Ring | P2700145P | P20700145000 | 2 | P145-1B | |
| 15 | Back Up Ring | P28PS1450 | P20801145000 | 3 | P145-T2 | |
| 16 | Bush-Teflon | B15111610 | B15110016100 | 2 | Ø32xØ22x24L | |
| 17 | O-Ring | P2700026P | P20700026000 | 4 | P26-1B | |
| 18 | Plug-Teflon | B15111620 | B15110016200 | 1 | Ø30x15L | |
| 19 | O-Ring | P2700024P | P20700024000 | 1 | P24-1B | |
| 20 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 21 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 22 | O-Ring | P2700011P | P20700011000 | 4 | P11-1B | |
| *** | Assembly-Valve Housing | B15114000 | B15110040000 | 1SET | including no. 23~31 | |
| 23 | Valve-Housing | B15114300 | B15110043000 | 1 | | |
| 24 | Valve | B15114100 | B15110041000 | 1 | | |
| 25 | Valve-Plug | B15114200 | B15110042000 | 1 | | |
| 26 | Cover-Housing, Valve | B15114510 | B15110045100 | 1 | | |
| 27 | Bolt-Socket | P12524055 | P11025240550 | 2 | M24xP2.0x55L | |
| 28 | Plug-Housing, Valve | B15114400 | B15110044000 | 1 | | |
| *** | Assembly-Valve Adjuster | B15114600 | B15110046000 | 1SET | including no. 29,30 | |
| 29 | Nut-Hex | P13320000 | P12013200000 | 1 | M20xP1.5 Adjuster | |
| 30 | Valve-Adjuster | B15114610 | B15110046100 | 1 | | |
| 31 | Socket Plug | P19102011 | P14020010011 | 2 | PF1/4" (4mm) | |
| 20 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 21 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 22 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 32 | Back Up Ring | P28GS0550 | P20811055000 | 1 | G55-T2 | |

Part List for Main Body

Model : FINE 16X, 16T, 16S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|-----------|--------------------------------|------------------|---------------------|-------------|--------------------------------------|--------------------------|
| 33 | O-Ring | P2710055G | P20701055000 | 1 | G55-1B | |
| 34 | O-Ring | P2710035G | P20701035000 | 2 | G35-1B | |
| 35 | Back Up Ring | P28GF0450 | P20812045000 | 1 | G45(50x52.4x2.4)-T3 | |
| 36 | O-Ring | P2710045G | P20701045000 | 1 | G45-1B | |
| 37 | O-Ring | P2710040G | P20701040000 | 1 | G40-1B | |
| 38 | O-Ring | P2710025G | P20701025000 | 2 | G25-1B | |
| *** | Assembly-Accumulator | B15116000 | B15110060000 | 1SET | including no. 39~46 | |
| 39 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 40 | Cover-Accumulator | B15116200 | B15110062000 | 1 | | |
| 41 | Diaphragm | B15117400 | B15110064000 | 1 | Ø150 | |
| 42 | Body-Accumulator | B15116100 | B15110061000 | 1 | | |
| 43 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 44 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 45 | Charging-Adjuster | B15116500 | B15110065000 | 1 | M12xP1.25 | |
| 46 | Bolt-Socket | P12316040 | P11023160400 | 12 | M16xP1.5x40L | |
| 47 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 48 | Back Up Ring | P28GF0800 | P20812080000 | 1 | G80(85x87.4x2.4)-T3 | |
| 49 | O-Ring | P2710080G | P20701080000 | 1 | G80-1B | |
| 50 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | - | B16110030000 | 1SET | including no. 51~59 | |
| 51 | Back Head | - | B16110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 52,53 | |
| 52 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 53 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B20113310 | B20110034000 | 2SET | BOX TYPE | |
| 54 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2.0 | |
| 55 | Adapter-Flange | B20123310 | B20110033300 | 2 | M42xP2.0 (BOX TYPE) | |
| *** | Assembly-Adapter Flange | B20113300 | B20110033000 | 2SET | SIDE TOP TYPE | |
| 56 | Cap-Adapter | F05103500 | F00511135000 | 2 | PF1"x5# | |
| 57 | Adapter | F01434550 | F00121245500 | 2 | PT1"x PF1"5# | |
| 58 | Adapter-Flange | B20113320 | B20110038100 | 2 | 30도 (SIDE TOP TYPE) | |
| 59 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| 37 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| 60 | O-Ring | P2710180G | P20701180000 | 1 | G180-1B | |
| 61 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 62 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 63 | Back Up Ring | P28GS0400 | P20811040000 | 2 | G40-T2 | |
| *** | Assembly-Front Head | - | B16110020100 | 1SET | including no. 64~70, 72~75, 6 | |
| 64 | Front Head | - | B16110021001 | 1 | | |
| 65 | Inner Bush | B15112300 | B15110023000 | 1 | | |
| 66 | Front Cover | B15112210 | B15110022100 | 1 | | for Box Type & "E" serie |

Part List for Main Body

Model : FINE 16X, 16T, 16S

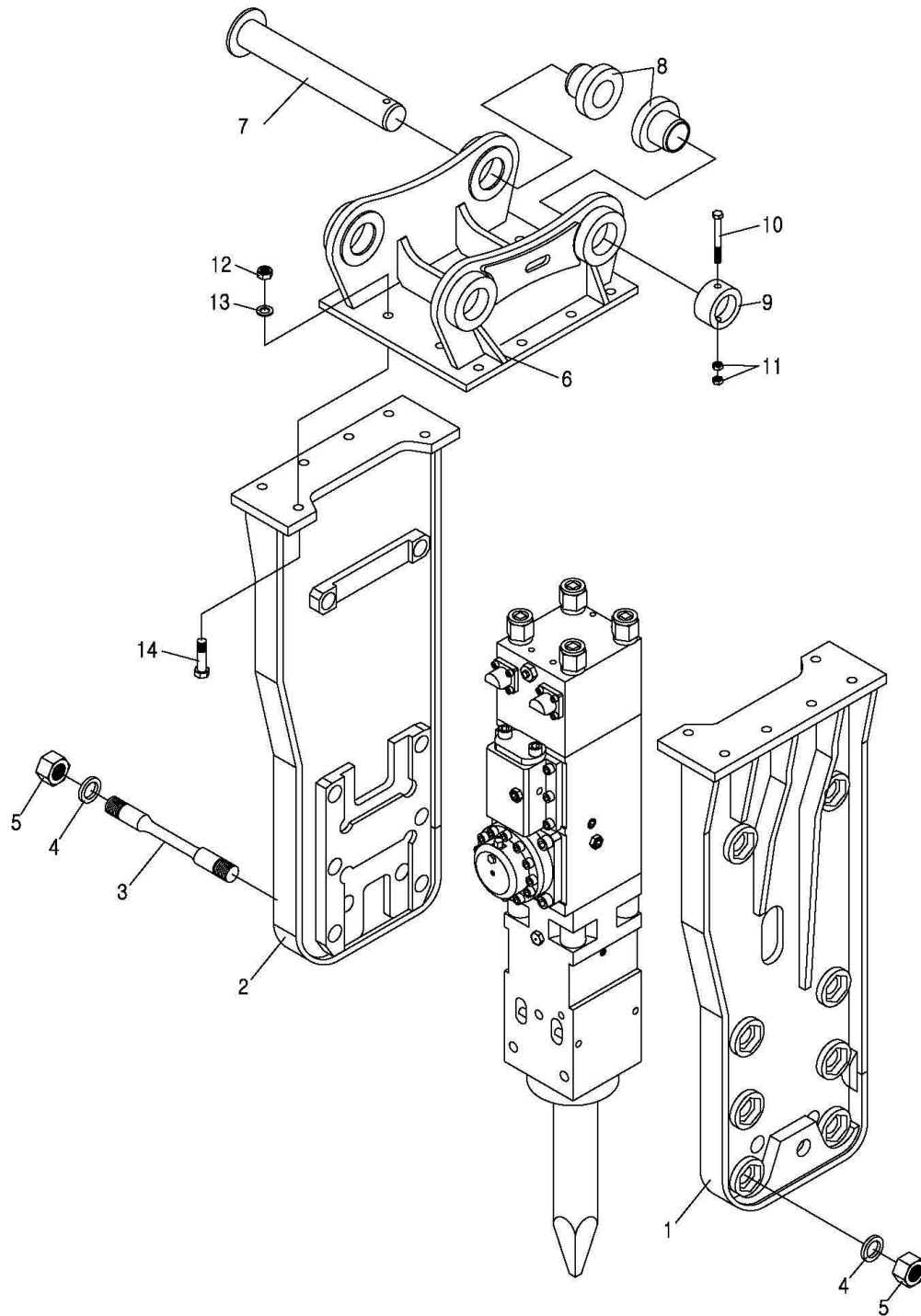
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|--|---------------|
| 67 | Front Cover | B15112200 | B15110022000 | 1 | | for Open Type |
| 68 | Pin-Front Head | B15112620 | B15110026200 | 2 | Ø26x135L | |
| 69 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20 | |
| 70 | Snap Ring | P07150260 | P07010102600 | 2 | Ø26 HOLE TYPE | |
| 72 | Pin-Stop | B15112610 | B15110026100 | 1 | | |
| 73 | Plug-Rubber | B07112810 | B07110028100 | 1 | Ø17xØ21x14 | |
| 74 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 75 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 6 | Socket Plug | P19102010 | P14020010010 | 1 | PF1/4" (10mm) | |
| 22 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 47 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 62 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | - | B16110050000 | 4SET | including no. 76~79 | |
| 76 | Through Bolt | - | B16110051000 | 4 | | |
| 77 | Washer | - | B16110052000 | 4 | | |
| 78 | Nut-Upper | - | B16110053000 | 4 | | |
| 79 | Nut-Bottom | - | B16110054000 | 4 | | |
| 71 | Pin-Tool | B15112401 | B15110024001 | 2 | | |
| 72 | Pin-Stop | B15112610 | B15110026100 | 2 | (Only Old Type, Top&Side Type) | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 73 | Plug-Rubber | B07112810 | B07110028100 | 2 | Ø17xØ21x14(Only Old Type, Top&Side Type) | |
| 80 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 81 | Bolt-Socket | P12020055 | P11020200550 | 6 | M20xP2.5x55L | |
| 82 | Bolt-Socket | P12024060 | P11020240600 | 4 | M24xP3.0x60L | |
| 83 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| 84 | Tool-Moil Point | B15112511 | B15110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B15112521 | B15110025201 | - | Alternative | |
| - | Tool-Blunt End | B15112541 | B15110025401 | - | Alternative | |
| *** | Seal Kit-Complete | B15117000 | B15110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B1500800B | B1500008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B1500800T | B1500008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008101 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 16T*



Bracket-Top (open type): Unit serial no.

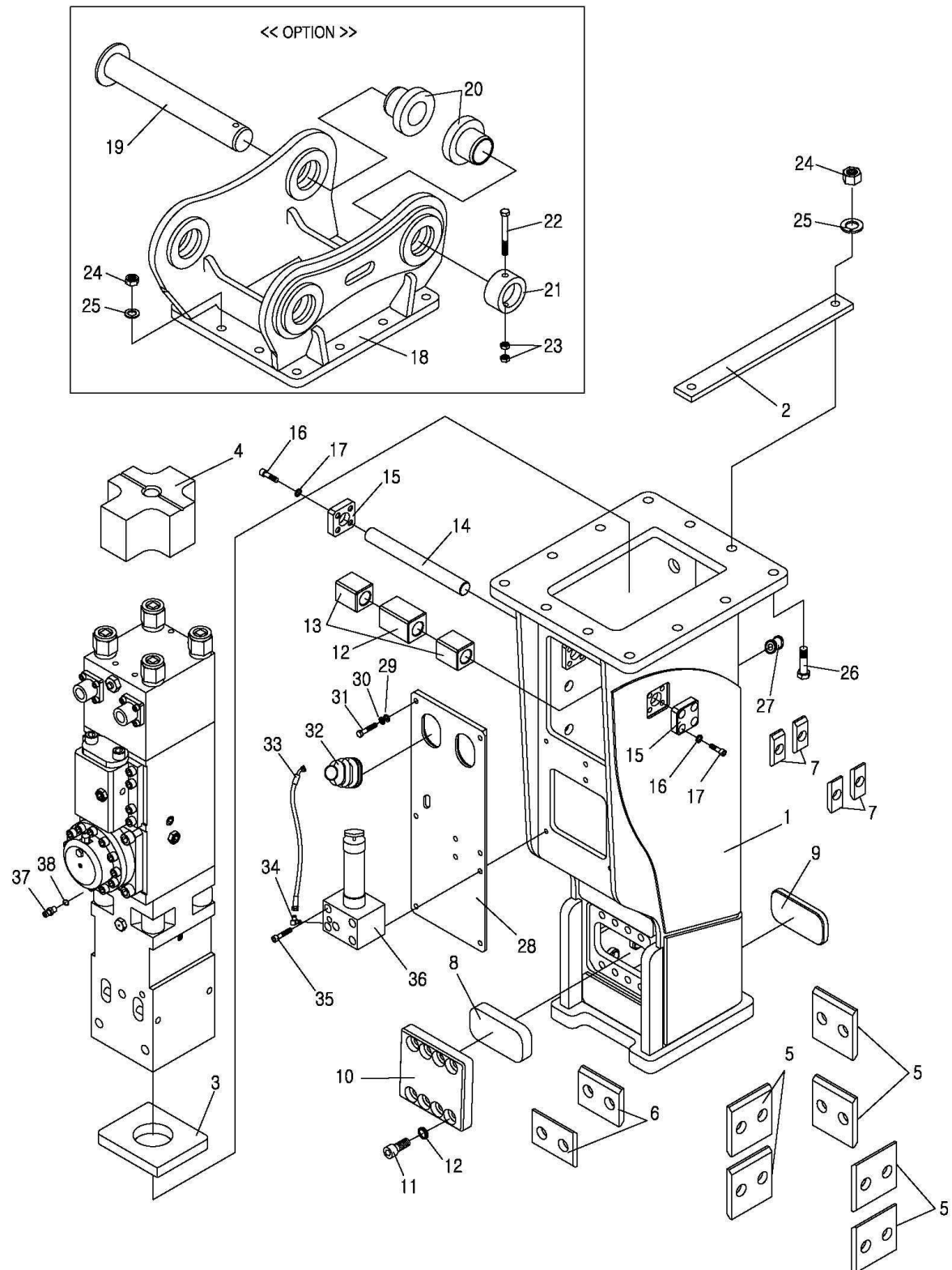
Parts List for Top Bracket

Model : FINE 16T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B15312001 | B15310020001 | 1 | | |
| 2 | Assembly-Bracket, LH | B15311001 | B15310010001 | 1 | | |
| *** | Assembly-Bracket Bolt | B15315000 | B15310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B15315100 | B15310051000 | 8 | | |
| 4 | Washer-Bracket | B15315200 | B15310052000 | 16 | | |
| 5 | Nut-Bracket | B15315300 | B15310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B15410000001 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B15410003 | B15410010003 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43080560 | P43080560400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44080140 | P44080950140 | 4 | Alternative | |
| 9 | Ring-Stop | P45080400 | P45080140400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016180 | P11015161800 | 2 | M16x180L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B20415002 | B20410050002 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14024000 | P12020240000 | 12 | M24 | |
| 13 | Washer-Spring | P15124000 | P13021240000 | 12 | M24 | |
| 14 | Bolt-Hex | P11724100 | P11017241000 | 12 | M24xP3.0x100L | |



Exploded View of *FINE* 16X(New Design)



Parts List for Box-Low noise

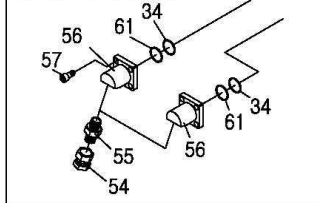
Model : FINE 16X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|----------|--------------|-------|-----------------------|------------------------|
| 1 | Assembly-Box Bracket | | B1556000000 | 1SET | BOX TYPE | Low noise type |
| 2 | Plate-Cover | | B15560020000 | 1 | | |
| 3 | Damper-Bottom | | B15510052000 | 1 | Urethane | |
| 4 | Damper-Upper | | B15510051000 | 1 | Urethane | |
| 5 | Damper-Plate | | B20510053000 | 6 | Urethane | |
| 6 | Damper-Plate | | B12510053000 | 2 | Urethane | |
| 7 | Damper-Back | | B15510056000 | 4 | Urethane | |
| 8 | Damper-Front | | B15560057000 | 1 | Urethane | |
| 9 | Damper-Rear | | B23560058001 | 1 | Urethane | |
| 10 | Cover-Damper | | B15560057100 | 1 | | |
| 11 | Bolt-Socket | | P11020160250 | 8 | M16x25L | |
| 12 | Washer-Node Lock | | P13034160000 | 8 | M16 | |
| *** | Assembly-Support Plate | - | B15560030000 | 1SET | Including no. 12~17 | |
| 12 | Damper-Support | | B15560054000 | 1 | Urethane | |
| 13 | Block-Support | | B15560033000 | 2 | Urethane | |
| 14 | Pin-Support | | B15560031000 | 1 | | |
| 15 | Stopper-Pin | | B12560032000 | 2 | | |
| 16 | Bolt-Socket | | P11020140300 | 8 | M14x30L | |
| 17 | Washer-Node Lock | | P13034140000 | 8 | M14 | |
| *** | Assembly-Mount Cap | | B15660000000 | 1SET | including no. 18~26 | |
| 18 | Mount Cap | | B15660010000 | 1SET | OPTION | |
| 19 | Pin-Bracket | | P43080560400 | 2 | Alternative | |
| 20 | Bush-Bracket | | P44080950140 | 4 | Alternative | |
| 21 | Ring-Stop | | P45080140400 | 2 | Alternative | |
| 22 | Bolt-Hex | | P11015161800 | 2 | M16x180L | |
| 23 | Nut-Hex | | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | | B20410050002 | 12SET | including no. 24~26 | |
| 24 | Nut-Hex Nylock | | P12020240000 | 12 | M24 | |
| 25 | Washer-Spring | | P13021240000 | 12 | M24 | |
| 26 | Bolt-Hex | | P11017241000 | 12 | M24x100L | |
| 27 | Plug-Rubber | | B12510064100 | 2 | Round Type Ø48x35 | Low noise type(option) |
| 28 | Cover | | B15560061000 | 1 | | |
| 29 | Washer-Plain | | P13010120000 | 9 | M12 | |
| 30 | Washer-Spring | | P13021120000 | 9 | M12 | |
| 31 | Bolt-Hex | | P11010120350 | 9 | M12X35L | |
| 32 | Hose Belloss | | B20530063000 | 2 | | |
| 33 | Hose(5#X45 5#) | | F10211110090 | 1 | 1/4"(70BAR)x450L | AUTO GREASE(option) |
| 34 | 90 Elbow | | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 35 | Bolt-Socket | | P11020121100 | 4 | M12x110L | |
| 36 | Auto Grease unit | | P42040010000 | 1 | Inter Lube | |
| 37 | Connector | | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4" | |
| 38 | O-Ring | | P20700011000 | 1 | P11-1B | |

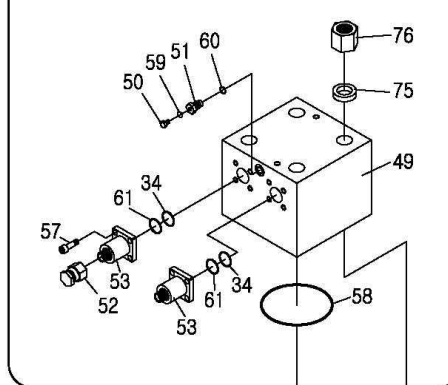


Exploded View of *FINE* 20T, 20S

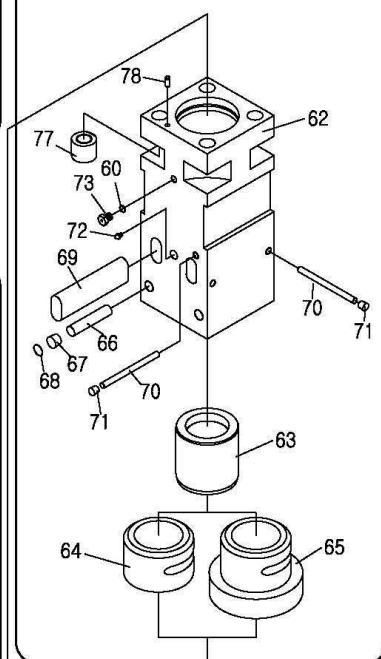
OPEN TYPE FLANGE



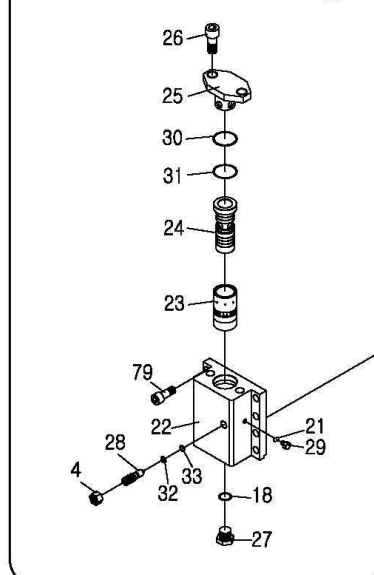
Section Back Head



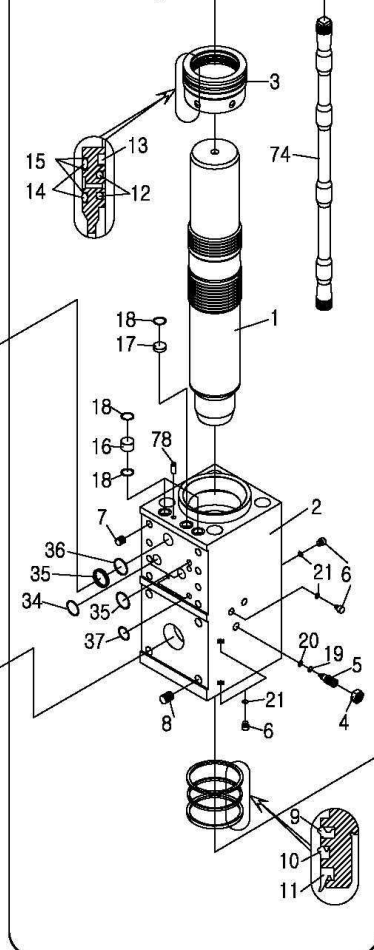
Section Front Head



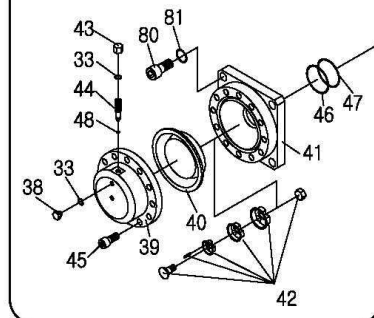
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Part List for Main Body

Model : FINE 20T, 20S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------------------|------------------|---------------------|-------------|------------------------------|-------------|
| *** | Assembly-Main Body | B20110000 | B20110000000 | 1SET | | |
| *** | Assembly-Cylinder | B20111000 | B20110010000 | 1SET | including no. 1~8 | |
| 1 | Piston | B20111200 | B20110012000 | 1 | | |
| 2 | Cylinder | B20111100 | B20110011000 | 1 | | |
| 3 | Seal-Retainer | B20111300 | B20110013000 | 1 | | |
| *** | Assembly-Cylinder Adjuster | B15111500 | B15110015000 | 1SET | including no. 4,5 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 5 | Cylinder-Adjuster | B15111510 | B15110015100 | 1 | | |
| 6 | Socket Plug | P19102010 | P14020010010 | 4 | PF1/4" (10mm) | |
| 7 | Insert Coil | P16620300 | P15006203000 | 8 | M20xP2.5x1.5D | |
| 8 | Insert Coil | P16724360 | P15007243600 | 4 | M24xP3.0x1.5D | |
| 9 | Seal-Buffer | P23001401 | P20301140000 | 1 | HBV 140 | |
| 10 | U-Packing | P21101401 | P20101140000 | 1 | IDI 140 | |
| 11 | Seal-Dust | P22301401 | P20203140000 | 1 | LPI 140 | |
| 12 | Seal-Step | P25001350 | P20500135000 | 2 | Ø135 | |
| - | O-Ring | | | 2 | | |
| 13 | Seal-Gas | P24001350 | P20400135000 | 1 | Ø135 | |
| 14 | O-Ring | P2710165G | P20701165000 | 2 | G165-1B | |
| 15 | Back Up Ring | P28GS1650 | P20811165000 | 3 | G165-T2 | |
| 16 | Bush-Teflon | B20111610 | B20110016100 | 2 | Ø35xØ25x26L | |
| 17 | Plug-Teflon | B20111620 | B20110016200 | 1 | Ø35x13L | |
| 18 | O-Ring | P2700029P | P20700029000 | 5 | P29-1B | |
| 19 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 20 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 21 | O-Ring | P2700011P | P20700011000 | 4 | P11-1B | |
| *** | Assembly-Valve Housing | B20114000 | B20110040000 | 1SET | including no. 4,22~29 | |
| 22 | Valve-Housing | B20114300 | B20110043000 | 1 | | |
| 23 | Valve | B20114100 | B20110041000 | 1 | | |
| 24 | Valve-Plug | B20114200 | B20110042000 | 1 | | |
| 25 | Cover-Housing, Valve | B20114510 | B20110045100 | 1 | | |
| 26 | Bolt-Socket | P12524055 | P11025240550 | 2 | M24xP2.0x55L | |
| 27 | Plug-Housing, Valve | B20114400 | B20110044000 | 1 | | |
| *** | Assembly-Valve Adjuster | B20114600 | B20110046000 | 1SET | including no. 4,28 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 28 | Valve-Adjuster | B20114610 | B20110046100 | 1 | | |
| 29 | Socket Plug | P19102011 | P14020010011 | 1 | PF1/4" (3mm) | |
| 18 | O-Ring | P2700029P | P20700029000 | 1 | P29-1B | |
| 21 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 30 | Back Up Ring | P28GS0600 | P20811060000 | 1 | G60-T2 | |
| 31 | O-Ring | P2710060G | P20701060000 | 1 | G60-1B | |
| 32 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |

Part List for Main Body

Model : FINE 20T, 20S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|--------------------------|
| 33 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 34 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| 35 | Back Up Ring | P28GF0450 | P20812045000 | 1 | G45(50x52.4x2.4)-T3 | |
| 36 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 37 | O-Ring | P2710030G | P20701030000 | 2 | G30-1B | |
| *** | Assembly-Accumulator | B20116000 | B20110060000 | 1SET | including no. 38~45 | |
| 38 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 39 | Cover-Accumulator | B20116200 | B20110062000 | 1 | | |
| 40 | Diaphragm | B20117400 | B20110074000 | 1 | Ø170 | |
| 41 | Body-Accumulator | B20116100 | B20110061000 | 1 | | |
| 42 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 43 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 44 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 45 | Bolt-Socket | P12318050 | P11023180500 | 12 | M18xP1.5x50L | |
| 33 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 46 | Back Up Ring | P28GF0800 | P20812080000 | 1 | G80(85x87.4x2.4)-T3 | |
| 47 | O-Ring | P2710080G | P20701080000 | 1 | G80 | |
| 48 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B20113000 | B20110030000 | 1SET | including no. 49~57 | |
| 49 | Back Head | B20113100 | B20110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no.50,51 | |
| 50 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 51 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B20113310 | B20110034000 | 2SET | BOX TYPE | |
| 52 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2 | |
| 53 | Adapter-Flange | B20123310 | B20110033300 | 2 | M42xP2 (BOX TYPE) | |
| 54 | Cap-Adapter | F05103500 | F00511135000 | 2 | PF1"5# | |
| *** | Assembly-Adapter Flange | B20113300 | B20110033000 | 2SET | SIDE TOP TYPE | |
| 55 | Adapter | F01434550 | F00121245500 | 2 | PT1"x PF1"5# | |
| 56 | Adapter-Flange | B20113320 | B20110038100 | 2 | PT1"(Side) 30ド | |
| 57 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| 34 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| 58 | O-Ring | P2710200G | P20701200000 | 1 | G200-1B | |
| 59 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 60 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 61 | Back Up Ring | P28GS0400 | P20811040000 | 2 | G40-T2 | |
| *** | Assembly-Front Head | B20112000 | B20110020000 | 1SET | including no. 62~68, 70~73 | |
| 62 | Front Head | B20112100 | B20110021000 | 1 | | |
| 63 | Inner Bush | B20152300 | B20150023000 | 1 | | s/no. 20/101 ~ 20/3159 |
| 64 | Front Cover | B20112210 | B20110022100 | 1 | | for Box Type & "E" serie |
| 65 | Front Cover | B20112200 | B20110022000 | 1 | | for Open Type |

Part List for Main Body

Model : FINE 20T, 20S

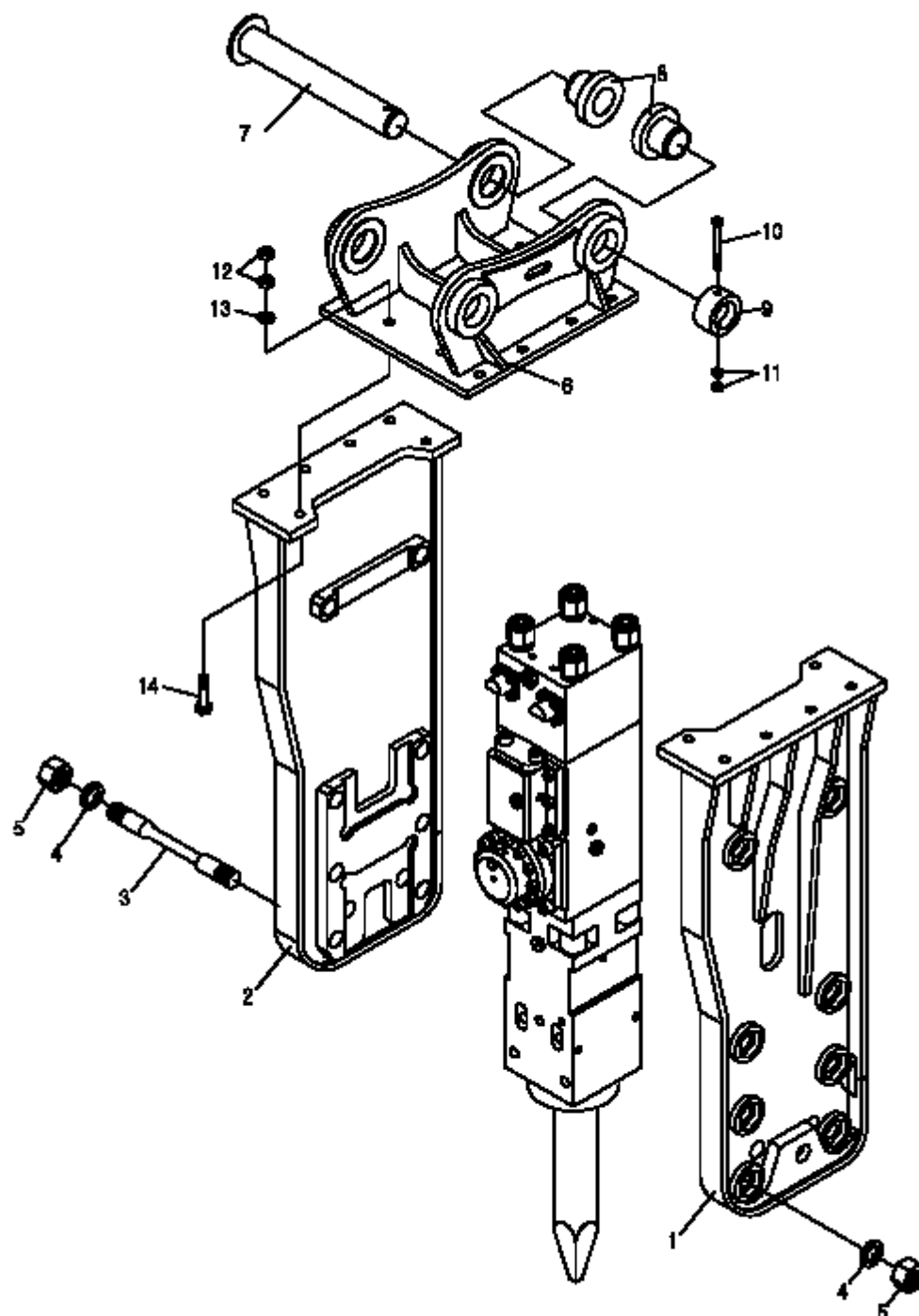
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|----------------|
| 66 | Pin-Front Head | B20112620 | B20110026200 | 2 | Ø30x145L | |
| 67 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø29xØ32x24 | |
| 68 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 70 | Pin-Stop | B20112610 | B20110026100 | 1 | Ø20x219L | |
| 71 | Plug-Rubber | B07112820 | B07110028200 | 1 | Ø20xØ23x14 | |
| 72 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 73 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 60 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B20115001 | B20110050001 | 4SET | including no. 74~77 | s/no.20/3160 ~ |
| 74 | Through Bolt | B20115100 | B20110051000 | 4 | | |
| 75 | Washer | B20115200 | B20110052000 | 4 | | s/no.20/3160 ~ |
| 76 | Nut-Upper | B20115300 | B20110053000 | 4 | | s/no.20/3160 ~ |
| 77 | Nut-Bottom | B20115401 | B20110054001 | 4 | | |
| 69 | Pin-Tool | B20112400 | B20110024000 | 2 | | |
| 70 | Pin-Stop | B20112610 | B20110026100 | 2 | Ø20x219L | |
| 71 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20xØ23x14 | |
| 78 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 79 | Bolt-Socket | P12020055 | P11020200550 | 8 | M20xP2.5x55L | |
| 80 | Bolt-Socket | P12024060 | P11020240600 | 4 | M24xP3.0x60L | |
| 81 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 82 | Tool-Moil Point | B20112511 | B20110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B20112521 | B20110025201 | - | Alternative | |
| - | Tool-Blunt End | B20112541 | B20110025401 | - | Alternative | |
| *** | Seal Kit-Complete | B20117000 | B20110070000 | 1SET | | STD. |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|-------------|-----------|
| A-1 | Box Set-Service Tools | B200080TS | B2000008S000 | 1SET | TRENCH TYPE | |
| - | Box Set-Service Tools | B2000800B | B2000008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B2000800T | B2000008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 20T*



Bracket-Top (open type): Unit serial no.

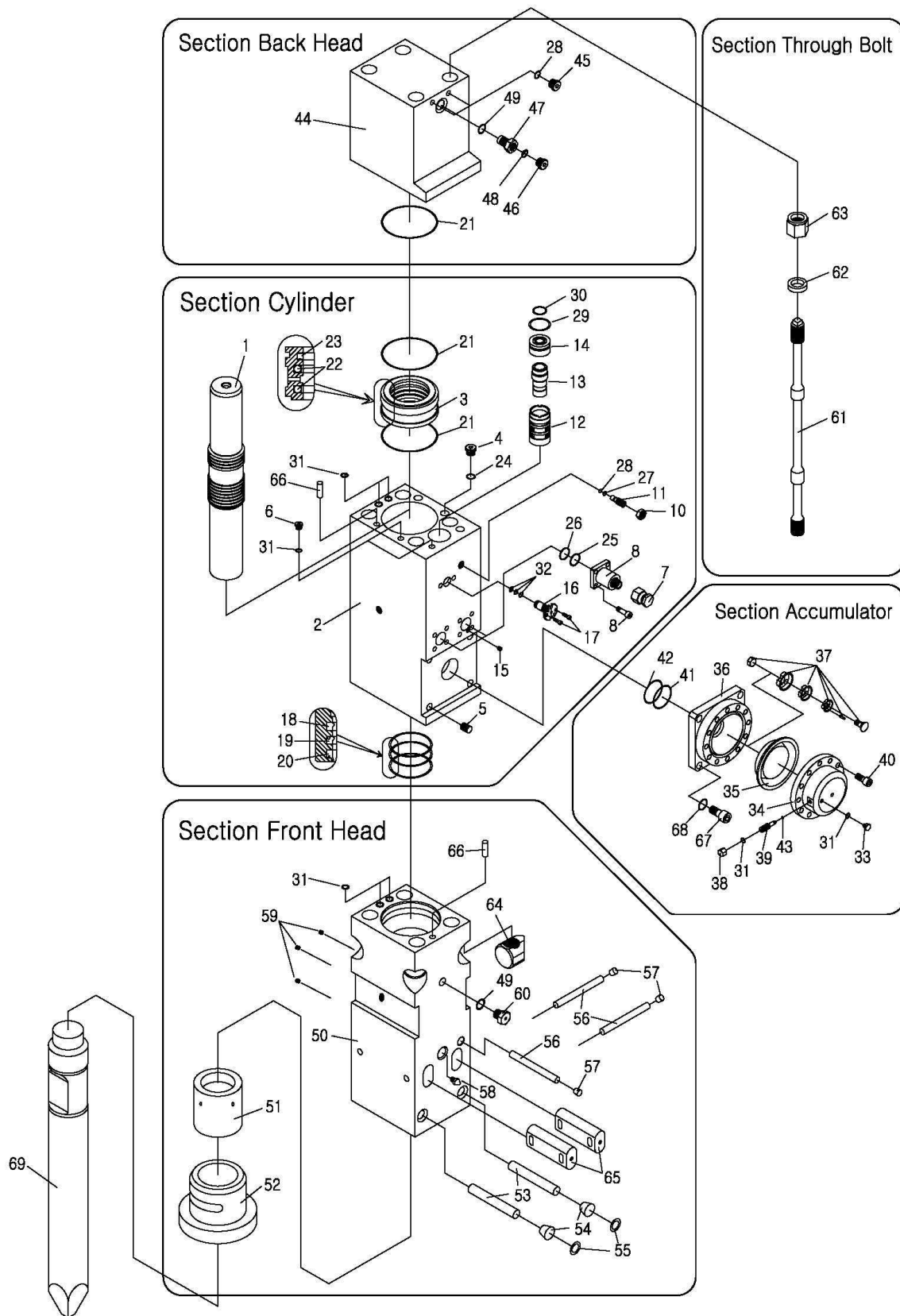
Parts List for Top Bracket

Model : FINE 20T, 22T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B20312001 | B20310020002 | 1 | NEW | |
| 2 | Assembly-Bracket, LH | B20311001 | B20310010002 | 1 | NEW | |
| *** | Assembly-Bracket Bolt | B20315000 | B20310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B20315100 | B20310051000 | 8 | | |
| 4 | Washer-Bracket | B20315200 | B20310052000 | 16 | | |
| 5 | Nut-Bracket | B20315300 | B20310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B20410000002 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B20410001 | B20410010003 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43080560 | P43080560400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44080140 | P44080095140 | 4 | Alternative | |
| 9 | Ring-Stop | P45080400 | P45080140400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016180 | P11015161800 | 2 | M16x180L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B20415002 | B20410050002 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex | | P12010240000 | 24 | M24 | |
| 13 | Washer-Spring | P15124000 | P13021240000 | 12 | M24 | |
| 14 | Bolt-Hex | P11724100 | P11017241100 | 12 | M24xP3.0x110L | |



Exploded View of *FINE* 23X, 23T, 23S



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 23X, 23T, 23S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|-----------|--------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | B23110011 | B23110000101 | 1SET | | |
| *** | Assembly-Cylinder | B23111001 | B23110010001 | 1SET | Including no. 1~17 | |
| 1 | Piston | | B23110012002 | 1 | | |
| 2 | Cylinder | B23151101 | B23150011001 | 1 | | |
| 3 | Seal-Retainer | B23111300 | B23110013000 | 1 | | |
| 4 | Socket Plug | P19102110 | P14025270010 | 3 | M27xP2.0 | |
| 5 | Insert Coil | P16724360 | P15007243600 | 4 | M24x3.0x1.5D | |
| 6 | Socket Plug | P19103010 | P14020030010 | 2 | PF3/8" | |
| *** | Assembly-Adapter Flange | B20113310 | B20110034000 | 2SET | BOX TYPE | |
| 7 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2 | |
| 8 | Adapter-Flange | B20123310 | B20110033300 | 2 | M42xP2 | |
| 9 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| *** | Assembly-Valve Adjuster | B23114600 | B23110046000 | 1SET | Including no. 10,11 | |
| 10 | Nut-Hex | P13318000 | P12013180000 | 1 | M18xP1.5 | |
| 11 | Valve-Adjuster | B23114610 | B23110046100 | 1 | NUT포함 | |
| *** | Assembly-Valve | B23114000 | B23110040000 | 1SET | Including no. 12~14 | |
| 12 | Guide-Valve | B23114300 | B23110043000 | 1 | | |
| 13 | Valve | B23114100 | B23110041000 | 1 | | |
| 14 | Plug-Valve | B23114200 | B23110042000 | 1 | | |
| 15 | Hollow Plug | P17008000 | P16000080000 | 1 | PT1/8" | |
| 16 | Auto Stop Valve | B12111700 | B12110017000 | 1 | | |
| 17 | Bolt-Socket | P12008020 | P11020080200 | 2 | M8xP1.25x20L | |
| 18 | Seal-Buffer | P23001401 | P20301140000 | 1 | HBV 140 | |
| 19 | U-Packing | P21201401 | P20102140000 | 1 | ISI 140 | |
| 20 | Seal-Dust | P22201401 | P20202140000 | 1 | DSI 140 | |
| 21 | O-Ring | P2710170G | P20701170000 | 3 | G170-1B | |
| 22 | Seal-Step | P25001380 | P20500138000 | 2 | SPNS 138 | |
| - | O-Ring | | | 2 | | |
| 23 | Seal-Gas | P24001380 | P20400138000 | 1 | PPY 138 | |
| 24 | O-Ring | P2700024P | P20700024000 | 3 | P24-1B | |
| 25 | Back Up Ring | P28GS0400 | P20811040000 | 2 | G40-T2 | |
| 26 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| 27 | Back Up Ring | P28PS0110 | P20801011000 | 1 | P11-T2 | |
| 28 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 29 | O-Ring | P2710070G | P20701070000 | 1 | G70-1B | |
| 30 | O-Ring | P2710045G | P20701045000 | 1 | G45-1B | |
| 31 | O-Ring | P2700014P | P20700014000 | 4 | P14-1B | |
| 32 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| *** | Assembly-Accumulator | B20116000 | B20110060000 | 1SET | Including no. 33~40 | |
| 33 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 34 | Cover-Accumulator | B20116200 | B20110062000 | 1 | | |
| 35 | Diaphragm | B20117400 | B20110074000 | 1 | Ø170 | |
| 36 | Body-Accumulator | B20116100 | B20110061000 | 1 | | |
| 37 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 38 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 39 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25x48L | |
| 40 | Bolt-Socket | P12318050 | P11023180500 | 12 | M18xP1.5x50Lx12.9T | |
| 31 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 41 | Back Up Ring | P28GF0800 | P20812080000 | 1 | G80(85x87.4x2.4)-T3 | |

Parts List for Main Body

Model : FINE 23X, 23T, 23S

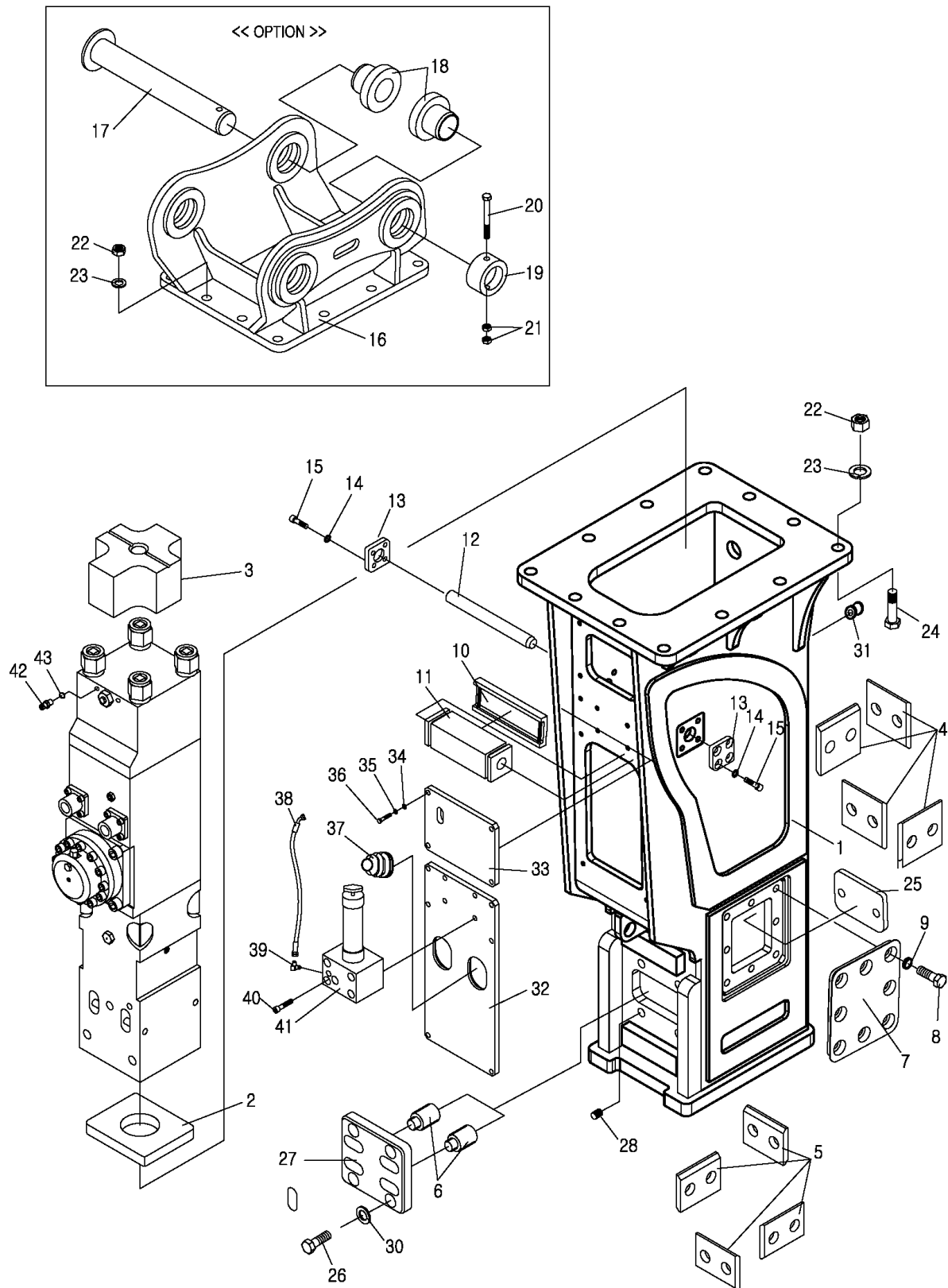
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|--|-------------|
| 42 | O-Ring | P2710080G | P20701080000 | 1 | G80-1B | |
| 43 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B23113000 | B23110030000 | 1SET | Including no. 44~47 | |
| 44 | Back Head | B23153100 | B23150031000 | 1 | | |
| 45 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | Including no. 46, 47 | |
| 46 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 47 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 21 | O-Ring | P2710170G | P20701170000 | 1 | G170-1B | |
| 28 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| 48 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 49 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B23112011 | B23110020101 | 1SET | Including no. 50~60 | |
| 50 | Front Head | B23152103 | B23150021003 | 1 | | |
| 51 | Inner Bush | B23152300 | B23150023000 | 1 | 일체형(신형) | |
| 52 | Front Cover | B23112201 | B23110022001 | 1 | BOX | |
| 52-1 | Front Cover | B20112200 | B20110022000 | 1 | TOP | |
| 53 | Pin-Front Head | B20112620 | B20110026200 | 2 | Ø30xL145 | |
| 54 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø29xØ32x24T | |
| 55 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 56 | Pin-Stop | B20112610 | B20110026100 | 1 | | |
| 57 | Urethane Plug | B20112810 | B23110028100 | 1 | | |
| 58 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 59 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 60 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 49 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 31 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | B23115001 | B23110050001 | 4SET | Including no. 61~64 | |
| 61 | Through Bolt | B23115100 | B23110051000 | 4 | | |
| 62 | Washer | B23115200 | B23110052000 | 4 | | |
| 63 | Nut-Upper | B23115300 | B23110053000 | 4 | | |
| 64 | Nut-Bottom | B23115401 | B23110054001 | 4 | | |
| 65 | Pin-Tool | B23112400 | B23110024000 | 2 | | |
| 56 | Pin-Stop | B20112610 | B20110026100 | 2 | (Only Old Type, Top&Side Type) | |
| 57 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20 * Ø23 * 14T (Only Old Type, Top&Side Type) | |
| 66 | Pin-Knock | B15111400 | B15110014000 | 2 | Ø12 x L30 | |
| 67 | Bolt-Socket | P12024060 | P11020240600 | 4 | M24xP3.0x60L | |
| 68 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| 69 | Tool-Moil Point | B23112511 | B23110025101 | 1 | 선택, Alternative | |
| - | Tool-Wedge Point | B23112521 | B23110025201 | - | 선택, Alternative | |
| - | Tool-Blunt End | B23112541 | B23110025401 | - | 선택, Alternative | |
| *** | Seal kit-Complete | - | B23110070001 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B2300800B | B2300008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B2300800T | B2300008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 23X(New Design)*



Parts List for Box-New Design

Model : FINE 23X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|-----------|--------------|-------|---------------------|-------------------------|
| 1 | Assembly-Box Bracket | - | B23560010004 | 1SET | BOX TYPE | New Design |
| 2 | Damper-Bottom | - | B23510052001 | 1 | Urethane | |
| 3 | Damper-Upper | - | B20510051000 | 1 | Urethane | |
| 4 | Damper-Plate | - | B20510053000 | 4 | Urethane | |
| 5 | Damper-Plate | - | B12510053000 | 4 | Urethane | |
| 6 | Damper-Front | - | B23560057001 | 1 | Urethane | |
| 7 | Damper-Side | - | B23560055001 | 2 | | |
| 8 | Bolt-Hex | - | P11010200400 | 16 | M20x40L | |
| 9 | Washer-Spring | - | P13021200000 | 16 | M20 | |
| *** | Assembly-Support Plate | - | B23510030000 | 1SET | Including no. 10~15 | |
| 10 | Block-Support | - | B23560033000 | 2 | MC NYLON | |
| 11 | Damper-Support | - | B23560054000 | 1 | Urethane | |
| 12 | Pin-Support | - | B23510031002 | 1 | | |
| 13 | Stopper-Pin | - | B23510032002 | 2 | | |
| 14 | Washer-Node lock | - | P13034160000 | 8 | M16 | |
| 15 | Bolt-Socket | - | P11020160400 | 8 | M16x40L | |
| *** | Assembly-Mount Cap | - | B23660000000 | 1SET | Including no. 16~23 | |
| 16 | Mount Cap | - | B23660010001 | 1SET | OPTION | |
| 17 | Pin-Bracket | - | P43080655400 | 2 | Alternative | |
| 18 | Bush-Bracket | - | P44080120640 | 4 | Alternative | |
| 19 | Ring-Stop | - | P45080140400 | 2 | Alternative | |
| 20 | Bolt-Hex | - | P11015161800 | 2 | M16x180L | |
| 21 | Nut-Hex | - | P12015160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | - | B22410050000 | 12SET | Including no. 22~24 | |
| 22 | Nut-Hex Nylock | - | P12020300000 | 12 | M30 | |
| 23 | Washer-Spring | - | P13021300000 | 12 | M30 | |
| 24 | Bolt-Hex | - | P11018301100 | 12 | M30x110 | |
| 25 | Damper-Rear | - | B23560058002 | 1 | Urethane | |
| 26 | Bolt-Hex | - | P11010200500 | 4 | M20x50L | |
| 27 | Cover-Damper | - | B23560057104 | 1 | | |
| 28 | Insert Coil | P16620300 | P15006203000 | 4 | M20x2.5x1.5D | |
| 9 | Washer-Spring | - | P13021200000 | 4 | M20 | |
| 31 | Plug-Rubber | - | B23560064100 | 2 | Round Type | Low noise type (option) |
| 32 | Cover-Bottom | - | B23560062000 | 1 | | |
| 33 | Cover-Upper | - | B23560061000 | 1 | | |
| 34 | Washer-Plain | - | P13010120000 | 14 | M12 | |
| 35 | Washer-Spring | - | P13021120000 | 14 | M12 | |
| 36 | Bolt-Hex | - | P11010120350 | 14 | M12 | |
| 37 | Hose Belloss | - | B20530063000 | 2 | | |

Parts List for Box-New Design

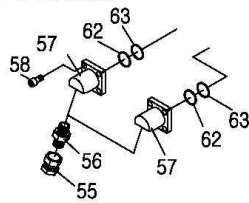
Model : FINE 23X

| | | | | | | |
|----|------------------|---|--------------|---|-------------------------|---------------------|
| 38 | Hose(5#X45 5#) | - | F10211110114 | 1 | 1/4"(70BAR)x600L | AUTO GREASE(option) |
| 39 | 90 Elbow | - | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 40 | Bolt-Socket | - | P11020121100 | 4 | M12x110L | |
| 41 | Auto Grease unit | - | P42040010000 | 1 | Inter Lube | |
| 42 | Connector | - | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4"5# | |
| 43 | O-Ring | - | P20700011000 | 1 | P11-1B | |

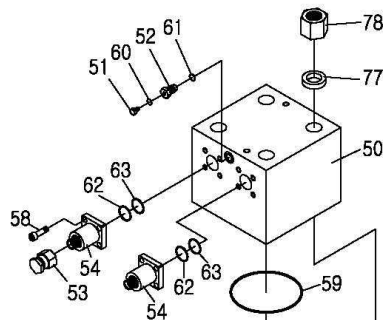


Exploded View of *FINE 35T, 35S*

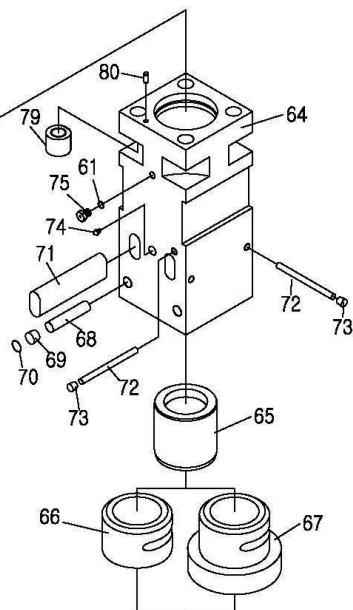
OPEN TYPE FLANGE



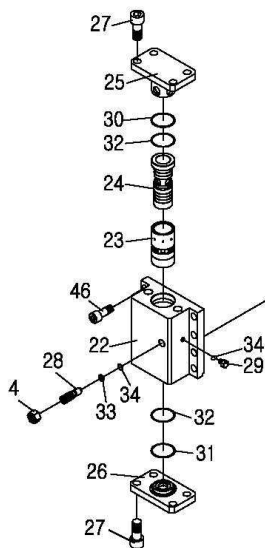
Section Back Head



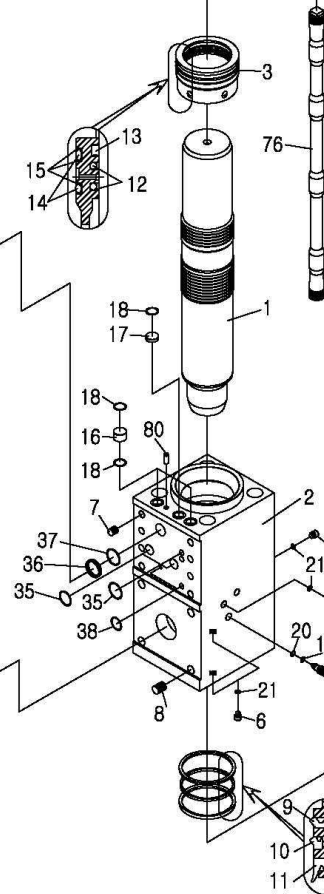
Section Front Head



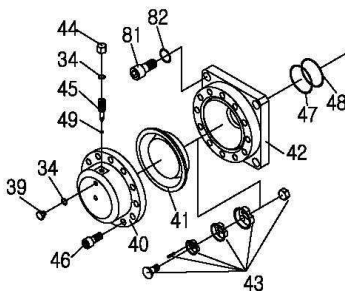
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 35T, 35S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------------------|------------------|---------------------|-------------|------------------------------|-------------|
| *** | Assembly-Main Body | B35110002 | B35110000002 | 1SET | | |
| *** | Assembly-Cylinder | B35111002 | B35110010002 | 1SET | including no. 1~8 | |
| 1 | Piston | B35111200 | B35110012000 | 1 | | |
| 2 | Cylinder | B35111102 | B35110011002 | 1 | S/R 107mm | |
| 3 | Seal-Retainer | B35111301 | B35110013001 | 1 | 107mm | |
| *** | Assembly-Cylinder Adjuster | B15111500 | B15110015000 | 1SET | including no. 4,5 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 5 | Cylinder-Adjuster | B15111510 | B15110015100 | 1 | | |
| 6 | Socket Plug | P19102010 | P14020010010 | 4 | PF1/4" (10mm) | |
| 7 | Insert Coil | P16620300 | P15006203000 | 8 | M20xP2.5x1.5D | |
| 8 | Insert Coil | P16830300 | P15008303000 | 4 | M30xP3.5x1.0D | |
| 9 | Seal-Buffer | P23001551 | P20301155000 | 1 | HBV 155 | |
| 10 | U-Packing | P21101551 | P20101155000 | 1 | IDI 155 | |
| 11 | Seal-Dust | P22301551 | P20203155000 | 1 | LPI 155 | |
| 12 | Seal-Step | P25001500 | P20500150000 | 2 | Ø150 | |
| - | O-Ring | | | 2 | | |
| 13 | Seal-Gas | P24001500 | P20400150000 | 1 | Ø150 | |
| 14 | O-Ring | P2710180G | P20701180000 | 2 | G180-1B | |
| 15 | Back Up Ring | P28GS1800 | P20811180000 | 3 | G180-T2 | |
| 16 | Bush-Teflon | B35111610 | B35110016100 | 2 | Ø38xØ28x28L | |
| 17 | Plug-Teflon | B35111620 | B35110016200 | 1 | Ø38x14L | |
| 18 | O-Ring | P2700032P | P20700032000 | 5 | P32-1B | |
| 19 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 20 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 21 | O-Ring | P2700011P | P20700011000 | 4 | P11-1B | |
| *** | Assembly-Valve Housing | B35114000 | B35110040000 | 1SET | including no. 4,22~29 | |
| 22 | Valve-Housing | B35114300 | B35110043000 | 1 | | |
| 23 | Valve | B35114100 | B35110041000 | 1 | | |
| 24 | Valve-Plug | B35114200 | B35110042000 | 1 | | |
| 25 | Cover-Upper, Valve | B35114510 | B35110045100 | 1 | | |
| 26 | Cover-Bottom, Valve | B35114520 | B35110045200 | 1 | | |
| 27 | Bolt-Socket | P12020050 | P11020200500 | 8 | M20xP2.5x50L | |
| *** | Assembly-Valve Adjuster | B35114600 | B35110046000 | 1SET | including no. 4,28 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 28 | Valve-Adjuster | B35114610 | B35110046100 | 1 | | |
| 29 | Socket Plug | P19103010 | P14020030010 | 1 | PF3/8" (3mm) | |
| 30 | Back Up Ring | P28GS0650 | P20811065000 | 1 | G65-T2 | |
| 31 | Back Up Ring | P28GF0650 | P20812065000 | 1 | G65(70x72.4x2.4)-T3 | |
| 32 | O-Ring | P2710065G | P20701065000 | 2 | G65-1B | |
| 33 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |

Parts List for Main Body

Model : FINE 35T, 35S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|---------------------------|
| 35 | O-Ring | P2710045G | P20701045000 | 3 | G45-1B | |
| 36 | Back Up Ring | P28GF0550 | P20812055000 | 1 | G55(60x62.4x2.4)-T3 | |
| 37 | O-Ring | P2710055G | P20701055000 | 1 | G55-1B | |
| 38 | O-Ring | P2710030G | P20701030000 | 2 | G30-1B | |
| *** | Assembly-Accumulator | B35116000 | B35110060001 | 1SET | including no. 39~46 | |
| 39 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 40 | Cover-Accumulator | B35116201 | B35110062001 | 1 | | |
| 41 | Diaphragm | B35117400 | B35110074000 | 1 | Ø190 | |
| 42 | Body-Accumulator | B35116101 | B35110061001 | 1 | | |
| 43 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 44 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 45 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 46 | Bolt-Socket | P12020055 | P11020200550 | 12 | M20xP2.5x55L | |
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 47 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105x109x4.6)-T3 | |
| 48 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 49 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B35113000 | B35110030000 | 1SET | including no. 50~58 | |
| 50 | Back Head | B35113100 | B35110031000 | 1 | | s/no.35/280~ |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 51,52 | |
| 51 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 52 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B20113310 | B20110034000 | 2SET | BOX TYPE | |
| 53 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2(BOX TYPE) | |
| 54 | Adapter-Flange | B20123310 | B20110033300 | 2 | M42xP2 (BOX TYPE) | |
| *** | Assembly-Adapter Flange | B20113300 | B20110033000 | 2SET | SIDE TOP TYPE | |
| 55 | Cap-Adapter | F05103500 | F00511135000 | 2 | PF1"5# | |
| 56 | Adapter | F01434550 | F00121245500 | 2 | PT1"x PF1"5# | |
| 57 | Adapter-Flange | B20113320 | B20110038100 | 2 | 30도 (SIDE TOP TYPE) | |
| 58 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| 59 | O-Ring | P2710215G | P20701215000 | 1 | G215-1B | |
| 60 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 61 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 62 | Back Up Ring | P28GS0400 | P20811040000 | 2 | G40-T2 | |
| 63 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| *** | Assembly-Front Head | B35112000 | B35110020000 | 1SET | including no. 64~70, 72~75 | |
| 64 | Front Head | B35112100 | B35110021000 | 1 | | |
| 65 | Inner Bush | B35112300 | B35110023000 | 1 | | ~ s/no. 35/255 |
| 66 | Front Cover | B35112210 | B35110022100 | 1 | | for Box Type & "E" Serise |
| 67 | Front Cover | B35112200 | B35110022000 | 1 | | for Open Type |
| 68 | Pin-Front Head | B20112620 | B20110026200 | 2 | | |

Parts List for Main Body

Model : FINE 35T, 35S

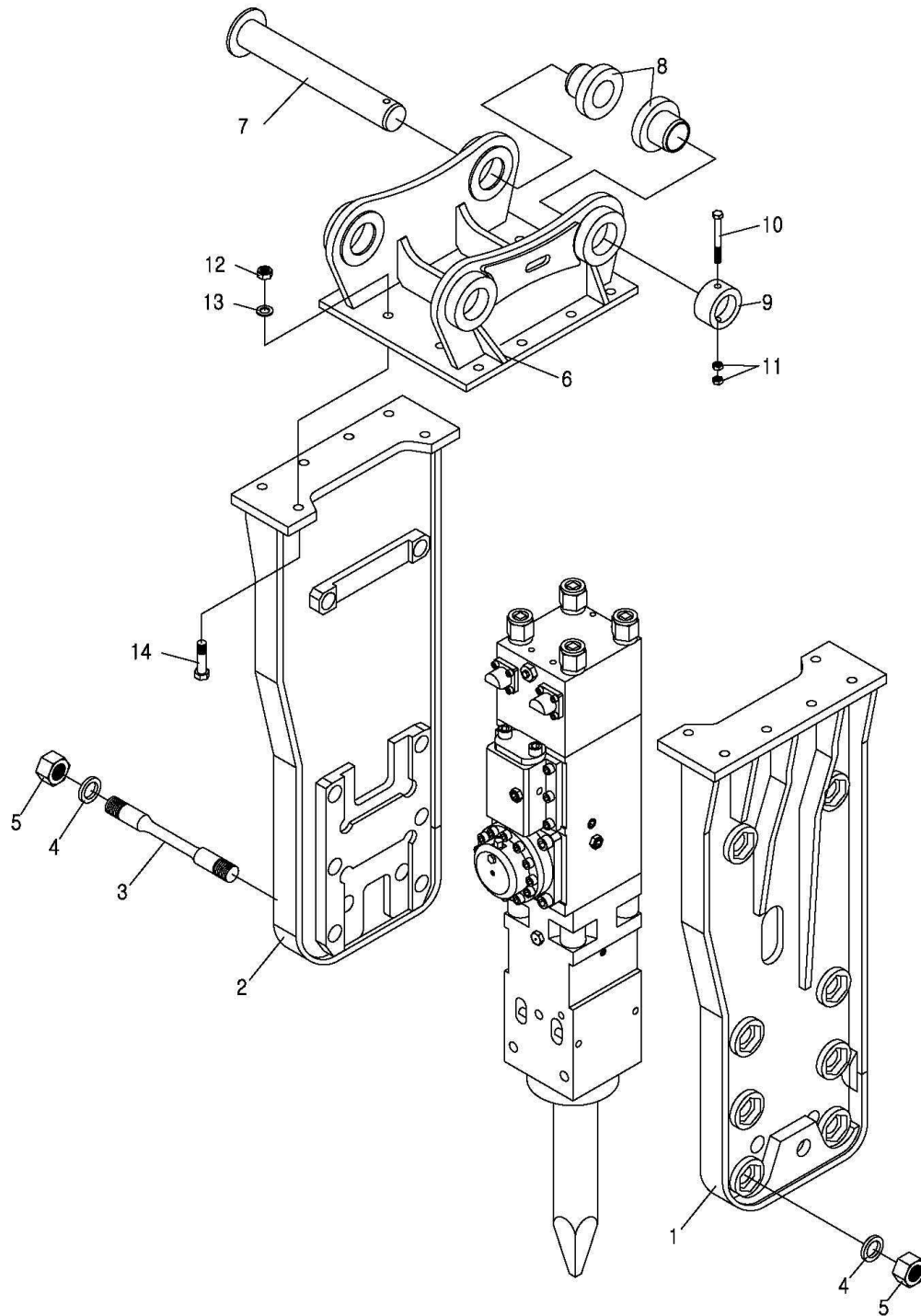
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|---------------------|
| 69 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø29xØ32x24 | |
| 70 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 72 | Pin-Stop | B35112610 | B35110026100 | 1 | | |
| 73 | Plug-Rubber | B07112820 | B07110028200 | 1 | Ø20xØ23x14 | |
| 74 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 75 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 61 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B35115000 | B35110050000 | 4SET | including no. 76~79 | s/no.35/280~ |
| 76 | Through Bolt | B35115100 | B35110051000 | 4 | | |
| 77 | Washer-Through Bolt | B35115200 | B35110052000 | 4 | | s/no.35/280~ |
| 78 | Nut-Upper | B35115300 | B35110053000 | 4 | | |
| 79 | Nut-Bottom | B35115400 | B35110054000 | 4 | | |
| 46 | Bolt-Socket | P12020055 | P11020200550 | 8 | M20xP2.5x55L | |
| 71 | Pin-Tool | B35112400 | B35110024000 | 2 | | |
| 72 | Pin-Stop | B35112610 | B35110026100 | 2 | | |
| 73 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20xØ23x14 | |
| 80 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 81 | Bolt-Socket | P12030070 | P11020300800 | 4 | M30xP3.0x80L | |
| 82 | Washer-Node lock | P15430000 | P13034300000 | 4 | M30 | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 83 | Tool-Moil Point | B35112511 | B35110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B35112521 | B35110025201 | - | Alternative | |
| - | Tool-Blunt End | B35112541 | B35110025401 | - | Alternative | |
| *** | Seal Kit-Complete | B35117000 | B35110070000 | 1SET | | STD. |
| *** | Seal Kit-Complete | B35117100 | B35110071000 | 1SET | Alternative | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B3500800T | B3500008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B3500800B | B3500008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 35T*



Bracket-Top (open type): Unit serial no.

Parts List for Top Bracket

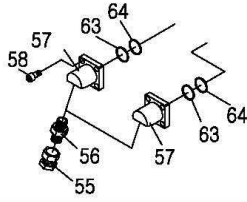
Model : FINE 35T, 36T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B36312000 | B36310020000 | 1 | NEW | |
| 2 | Assembly-Bracket, LH | B36311000 | B36310010000 | 1 | NEW | |
| *** | Assembly-Bracket Bolt | B35315000 | B35310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B35315100 | B35310051000 | 8 | | |
| 4 | Washer-Bracket | B35315200 | B35310052000 | 16 | | |
| 5 | Nut-Bracket | B35315300 | B35310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B35410000001 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B35410001 | B35410010001 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43090640 | P43090640400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44090450 | P44090120450 | 4 | Alternative | |
| 9 | Ring-Stop | P45090400 | P45090140400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016180 | P11015161800 | 2 | M16x180L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B22415000 | B22410050000 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14030000 | P12020300000 | 12 | M30 | |
| 13 | Washer-Spring | P15130000 | P13021300000 | 12 | M30 | |
| 14 | Bolt-Hex | P11830110 | P11018301100 | 12 | M30xP3.5x110L | |

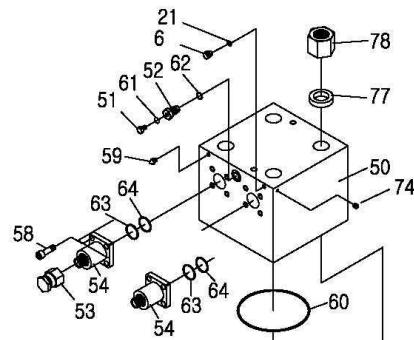


Exploded View of *FINE* 36X, 36T

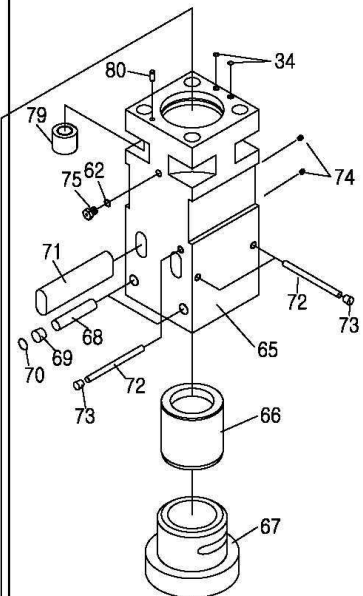
OPEN TYPE FLANGE



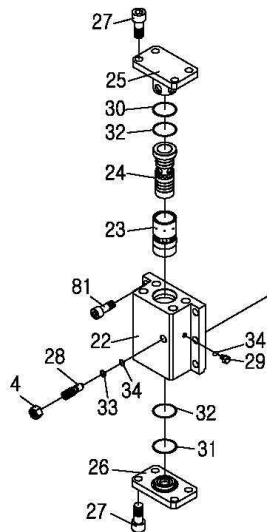
Section Back Head



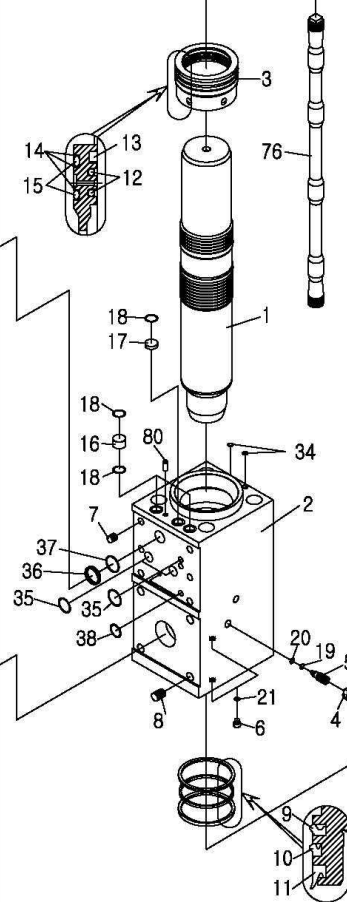
Section Front Head



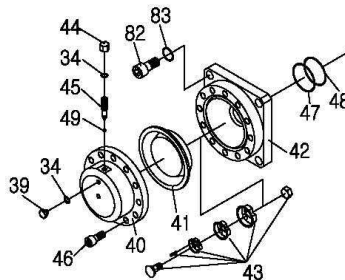
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 36X, 36T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------------------|------------------|---------------------|-------------|------------------------------|-------------|
| *** | Assembly-Main Body | B36110000 | B36110000000 | 1SET | | |
| *** | Assembly-Cylinder | B36111000 | B36110010000 | 1SET | including no. 1~8 | |
| 1 | Piston | B36111200 | B36110012000 | 1 | | |
| 2 | Cylinder | B36151100 | B36150011000 | 1 | | |
| 3 | Seal-Retainer | B36111300 | B36110013000 | 1 | | |
| *** | Assembly-Cylinder Adjuster | B15111500 | B15110015000 | 1SET | including no. 4,5 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 5 | Cylinder-Adjuster | B15111510 | B15110015100 | 1 | | |
| 6 | Socket Plug | P19102010 | P14020010010 | 4 | PF1/4" (10mm) | |
| 7 | Insert Coil | P16620300 | P15006203000 | 8 | M20xP2.5x1.5D | |
| 8 | Insert Coil | P16724360 | P15007243600 | 4 | M24xP3x1.5D | |
| 9 | Seal-Buffer | P23001401 | P20301140000 | 1 | HBV 140 | |
| 10 | U-Packing | P21101401 | P20101140000 | 1 | IDI 140 | |
| 11 | Seal-Dust | P22301401 | P20203140000 | 1 | LPI 140 | |
| 12 | Seal-Step | P25001350 | P20500135000 | 2 | SPNS 135 | |
| - | O-Ring | | | 2 | | |
| 13 | Seal-Gas | P24001350 | P20400135000 | 1 | PPY 135 | |
| 14 | O-Ring | P2710185G | P20701185000 | 2 | G185-1B | |
| 15 | Back Up Ring | P28GS1850 | P20811185000 | 3 | G185-T2 | |
| 16 | Bush-Teflon | B35111610 | B35110016100 | 2 | Ø38xØ28x28L | |
| 17 | Plug-Teflon | B35111620 | B35110016200 | 1 | Ø38x14L | |
| 18 | O-Ring | P2700032P | P20700032000 | 5 | P32-1B | |
| 19 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 20 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 21 | O-Ring | P2700011P | P20700011000 | 4 | P11-1B | |
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Valve Housing | B35114000 | B35110040000 | 1SET | including no. 4,22-29 | |
| 22 | Valve-Housing | B35114300 | B35110043000 | 1 | | |
| 23 | Valve | B35114100 | B35110041000 | 1 | | |
| 24 | Plug-Valve | B35114200 | B35110042000 | 1 | | |
| 25 | Cover-Upper, Valve | B35114510 | B35110045100 | 1 | | |
| 26 | Cover-Bottom, Valve | B35114520 | B35110045200 | 1 | | |
| 27 | Bolt-Socket | P12020050 | P11020200500 | 8 | M20xP2.5x50L | |
| *** | Assembly-Valve Adjuster | B35114600 | B35110046000 | 1SET | including no. 4,28 | |
| 4 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 Adjust | |
| 28 | Valve-Adjuster | B35114610 | B35110046100 | 1 | | |
| 29 | Socket Plug | P19103010 | P14020030010 | 1 | PF3/8" (3mm) | |
| 30 | Back Up Ring | P28GS0650 | P20811065000 | 1 | G65-T2 | |
| 31 | Back Up Ring | P28GF0650 | P20812065000 | 1 | G65(70X72.4X2.4)-T3 | |
| 32 | O-Ring | P2710065G | P20701065000 | 2 | G65-1B | |
| 33 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |

Parts List for Main Body

Model : FINE 36X, 36T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|----------------------------------|-------------|
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 35 | O-Ring | P2710045G | P20701045000 | 3 | G45-1B | |
| 36 | Back Up Ring | P28GF0550 | P20812055000 | 1 | G55(60x62.4x2.4)-T3 | |
| 37 | O-Ring | P2710055G | P20701055000 | 1 | G55-1B | |
| 38 | O-Ring | P2710030G | P20701030000 | 2 | G30-1B | |
| *** | Assembly-Accumulator | B20116000 | B20110060000 | 1SET | including no. 39~46 | |
| 39 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 40 | Cover-Accumulator | B20116200 | B20110062000 | 1 | | |
| 41 | Diaphragm | B20117400 | B20110074000 | 1 | Ø170 | |
| 42 | Body-Accumulator | B20116100 | B20110061000 | 1 | | |
| 43 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 44 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 45 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25x48L | |
| 46 | Bolt-Socket | P12318050 | P11023180500 | 12 | M18xP1.5x50Lx12.9T | |
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 47 | Back Up Ring | P28GF0800 | P20812080000 | 1 | G80(85x87.4x2.4)-T3 | |
| 48 | O-Ring | P2710080G | P20701080000 | 1 | G80-1B | |
| 49 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B36113000 | B36110030000 | 1SET | including no. 6,74,50~59 | |
| 6 | Socket Plug | P19102010 | P14020010010 | 1 | PF1/4" (10mm) | |
| 50 | Back Head | B36153100 | B36150031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 51,52 | |
| 51 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 52 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B36113310 | B36110034000 | 2SET | BOX TYPE | |
| 53 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2 (BOX TYPE) | |
| 54 | Adapter-Flange | B36123310 | B36110033300 | 2 | M42xP2 (BOX TYPE) | |
| *** | Assembly-Adapter Flange | B20113300 | B20110033000 | 2SET | SIDE TOP TYPE | |
| 55 | Cap-Adapter | F05103500 | F00511135000 | 2 | PF1"5# (SIDE TOP) | |
| 56 | Adapter | F01434550 | F00121245500 | 2 | PT1"x PF1"5# (SIDE TOP) | |
| 57 | Adapter-Flange | B20113320 | B20110038100 | 2 | 30도 (SIDE TOP TYPE) | |
| 58 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| 59 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 74 | Hollow Plug | P17001000 | P16000010000 | 4 | PT1/4" | |
| 21 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 60 | O-Ring | P2710215G | P20701215000 | 1 | G215-1B | |
| 61 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 62 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 63 | Back Up Ring | P28GS0400 | P20811040000 | 2 | G40-T2 | |
| 64 | O-Ring | P2710040G | P20701040000 | 2 | G40-1B | |
| *** | Assembly-Front Head | B36112000 | B36110020000 | 1SET | including no. 65~70,72~75 | |

Parts List for Main Body

Model : FINE 36X, 36T

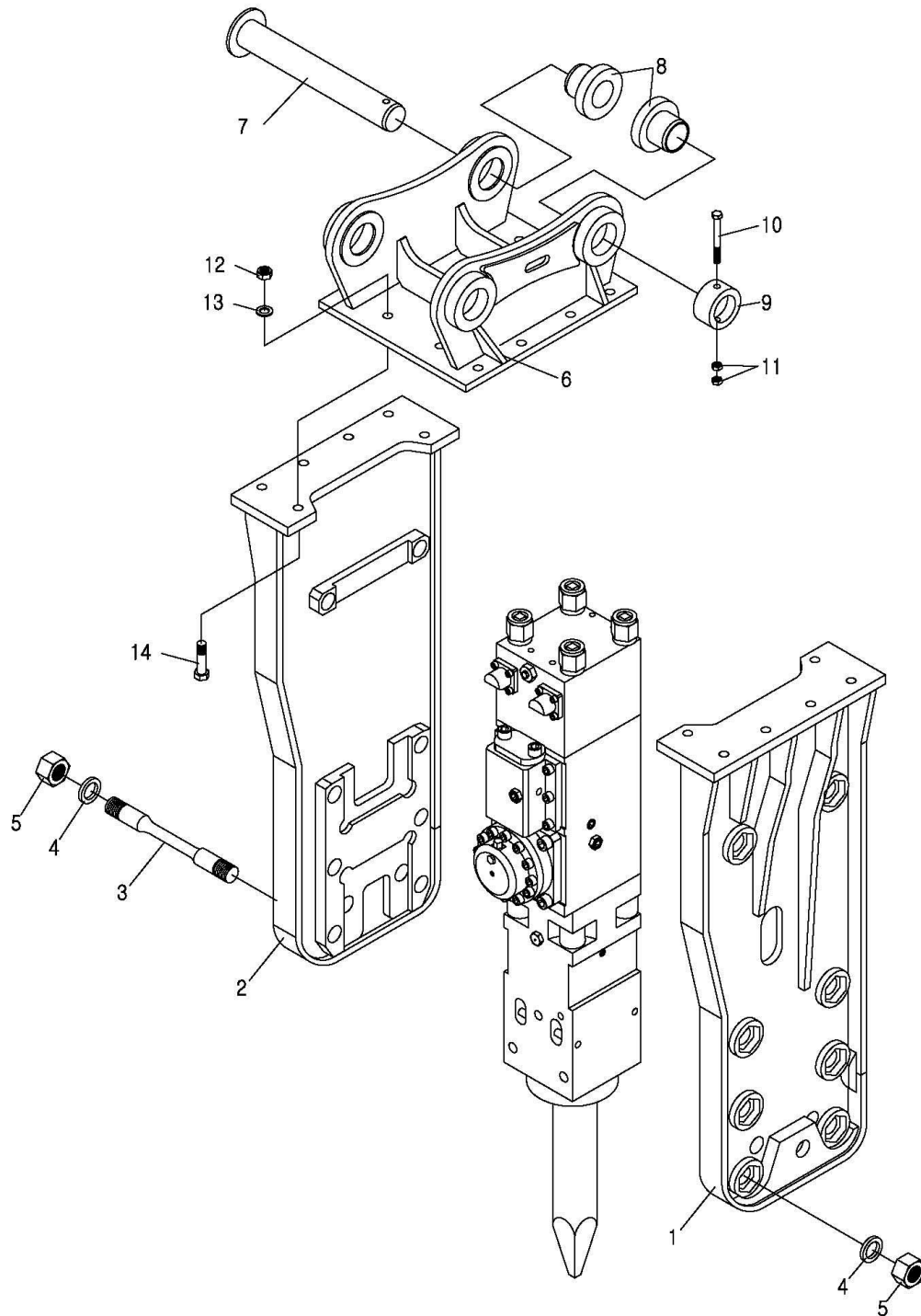
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| 65 | Front Head | B36152101 | B36150021001 | 1 | | |
| 66 | Inner Bush | B36112300 | B36110023000 | 1 | | |
| 67 | Front Cover | B36112200 | B36110022000 | 1 | BOX | |
| 67-1 | Front Cover | B30111220 | B30110012200 | 1 | TOP | |
| 68 | Pin-Front Head | B20112620 | B20110026200 | 2 | | |
| 69 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø29xØ32x24T | |
| 70 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 72 | Pin-Stop | B35112610 | B35110026100 | 1 | | |
| 73 | Plug-Rubber | B07112820 | B07110028200 | 1 | Ø20xØ23x14T | |
| 74 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 75 | Air Cap | B00002700 | B00000027000 | 1 | | |
| 62 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 34 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | B35115000 | B35110050000 | 4SET | including no. 76~79 | |
| 76 | Through Bolt | B35115100 | B35110051000 | 4 | | |
| 77 | Washer-Through Bolt | B35115200 | B35110052000 | 4 | | |
| 78 | Nut-Upper | B35115300 | B35110053000 | 4 | | |
| 79 | Nut-Bottom | B35115400 | B35110054000 | 4 | | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 71 | Pin-Tool | B36112401 | B36110024001 | 2 | | |
| 72 | Pin-Stop | B35112610 | B35110026100 | 2 | | |
| 73 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20xØ23x14T | |
| 80 | Pin-Knock | B15111400 | B15110014000 | 2 | | |
| 81 | Bolt-Socket | P12020055 | P11020200550 | 8 | M20xP2.5x55L | |
| 82 | Bolt-Socket | P12024060 | P11020240600 | 4 | M24xP3.0x60L | |
| 83 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| 84 | Tool-Moil Point | B36112511 | B36110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B36112521 | B36110025201 | - | Alternative | |
| - | Tool-Blunt End | B36112541 | B36110025401 | - | Alternative | |
| *** | Seal Kit-Complete | B36117000 | B36110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B3600800T | B3600008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B3600800B | B3600008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 36T*



Bracket-Top (open type): Unit serial no.

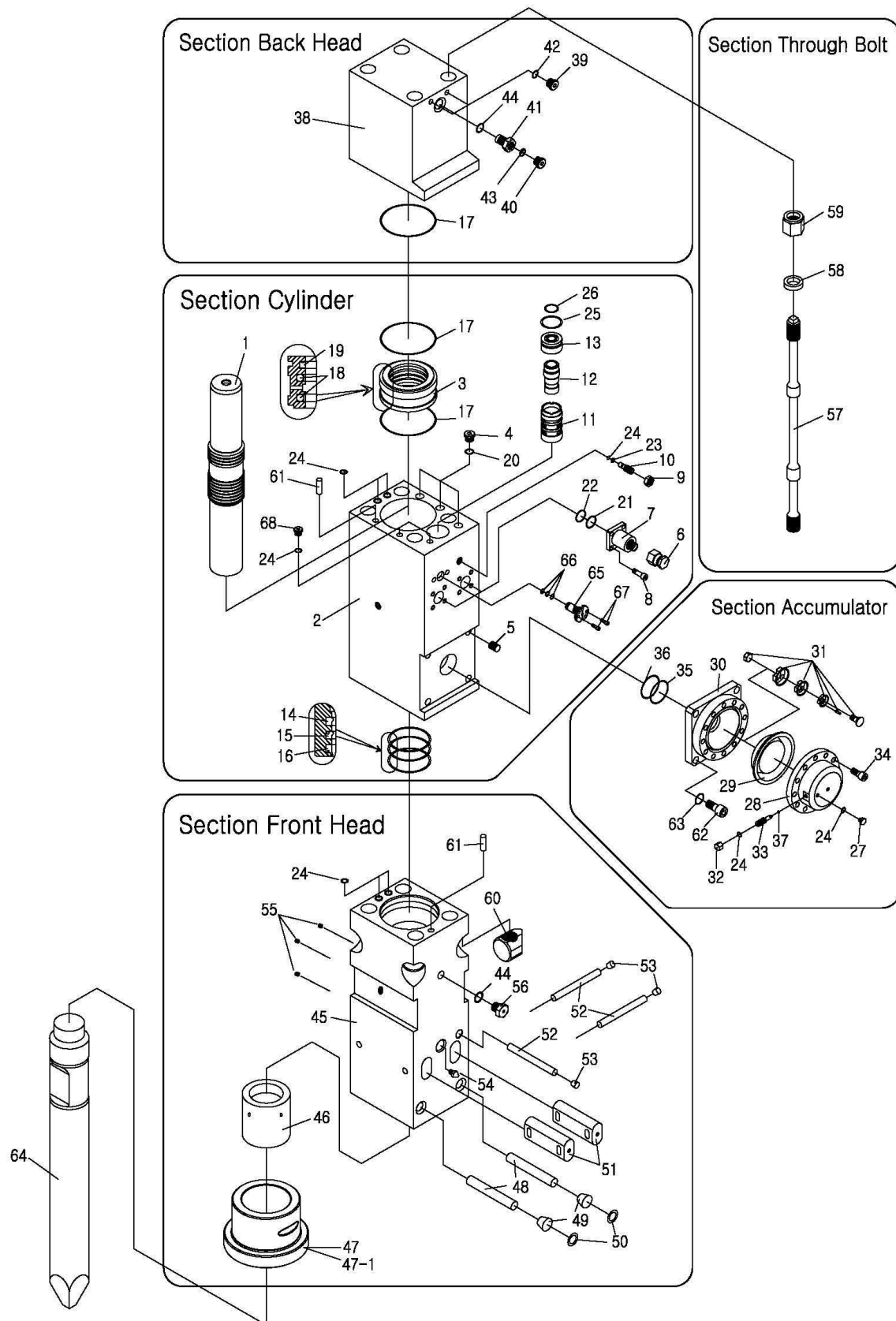
Parts List for Top Bracket

Model : FINE 35T, 36T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B36312000 | B36310020000 | 1 | NEW | |
| 2 | Assembly-Bracket, LH | B36311000 | B36310010000 | 1 | NEW | |
| *** | Assembly-Bracket Bolt | B35315000 | B35310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B35315100 | B35310051000 | 8 | | |
| 4 | Washer-Bracket | B35315200 | B35310052000 | 16 | | |
| 5 | Nut-Bracket | B35315300 | B35310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B35410000002 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B35410002 | B35410010002 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43090640 | P43090640400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44090450 | P44090120450 | 4 | Alternative | |
| 9 | Ring-Stop | P45090400 | P45090140400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016180 | P11015161800 | 2 | M16x180L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B22415000 | B22410050000 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14030000 | P12020300000 | 12 | M30 | |
| 13 | Washer-Spring | P15130000 | P13021300000 | 12 | M30 | |
| 14 | Bolt-Hex | P11830110 | P11018301100 | 12 | M30xP3.5x110L | |



Exploded View of *FINE* 37X, 37T



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 37X, 37T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | B37110013 | B37110000103 | 1SET | | |
| *** | Assembly-Cylinder | B37111002 | B37110010002 | 1SET | Including no. 1~13 | |
| 1 | Piston | B37111200 | B37110012000 | 1 | | |
| 2 | Cylinder | B37151102 | B37150011002 | 1 | | |
| 3 | Seal-Retainer | B37111300 | B37110013000 | 1 | | |
| 4 | Socket Plug | P19102310 | P14027360010 | 3 | M36xP3.0 | |
| 5 | Insert Coil | P16830450 | P15008304500 | 4 | M30x3.5x1.5D | |
| 68 | Socket Plug | P19103010 | P14020030010 | 2 | PF3/8" | |
| *** | Assembly-Adapter Flange | B37113310 | B37110034000 | 2SET | BOX TYPE | |
| 6 | Cap-Adapter | F05263C00 | F0053163C000 | 2 | M42xP2 | |
| 7 | Adapter-Flange | B37123310 | B37110033300 | 2 | M42xP2 | |
| 8 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| *** | Assembly-Valve Adjuster | B37114600 | B37110046000 | 1SET | Including no. 9,10 | |
| 9 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 | |
| 10 | Valve-Adjuster | B37114610 | B37110046100 | 1 | NUT 포함 | |
| *** | Assembly-Valve | B37114000 | B37110040000 | 1SET | Including no. 11~13 | |
| 11 | Guide-Valve | B37114300 | B37110043000 | 1 | | |
| 12 | Valve | B37114101 | B37110041001 | 1 | | |
| 13 | Plug-Valve | B37114201 | B37110042001 | 1 | | |
| 65 | Auto Stop Valve | - | B37110017000 | 1 | | |
| 67 | Bolt-Socket | - | P11020080250 | 2 | M8xP1.25x25L | |
| 14 | Seal-Buffer | P23001601 | P20301160000 | 1 | HBV 160 | |
| 15 | U-Packing | P21201601 | P20102160000 | 1 | ISI 160 | |
| 16 | Seal-Dust | P22201601 | P20202160000 | 1 | DSI 160 | |
| 17 | O-Ring | P2710195G | P20701195000 | 2 | G195-1B | |
| 18 | Seal-Step | P25001570 | P20500157000 | 2 | SPNS 157 | |
| - | O-Ring | | | 2 | | |
| 19 | Seal-Gas | P24001570 | P20400157000 | 1 | PPY 157 | |
| 20 | O-Ring | P2700032P | P20700032000 | 3 | P32-1B | |
| 21 | Back Up Ring | P28GS0450 | P20811045000 | 2 | G45-T2 | |
| 22 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 23 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |
| 24 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 25 | O-Ring | P2710085G | P20701085000 | 1 | G85-1B | |
| 26 | O-Ring | P2710055G | P20701055000 | 1 | G55-1B | |
| 24 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 66 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| *** | Assembly-Accumulator | B35116000 | B35110060001 | 1SET | including no. 27~34 | |
| 27 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 28 | Cover-Accumulator | B35116201 | B35110062001 | 1 | | |
| 29 | Diaphragm | B35117400 | B35110074000 | 1 | Ø190 | |
| 30 | Body-Accumulator | B35116101 | B35110061001 | 1 | | |
| 31 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 32 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 33 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 34 | Bolt-Socket | P12020055 | P11020200550 | 12 | M20xP2.5x55L | |
| 24 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |

Parts List for Main Body

Model : FINE 37X, 37T

| | | | | | |
|-----|--------------------|-----------|--------------|------|---------------------|
| 35 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105x109x4.6)-T3 |
| 36 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B |
| 37 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B |
| *** | Assembly-Back Head | B37113000 | B37110030000 | 1SET | Including no. 38~41 |

Parts List for Main Body

Model : FINE 37X, 37T

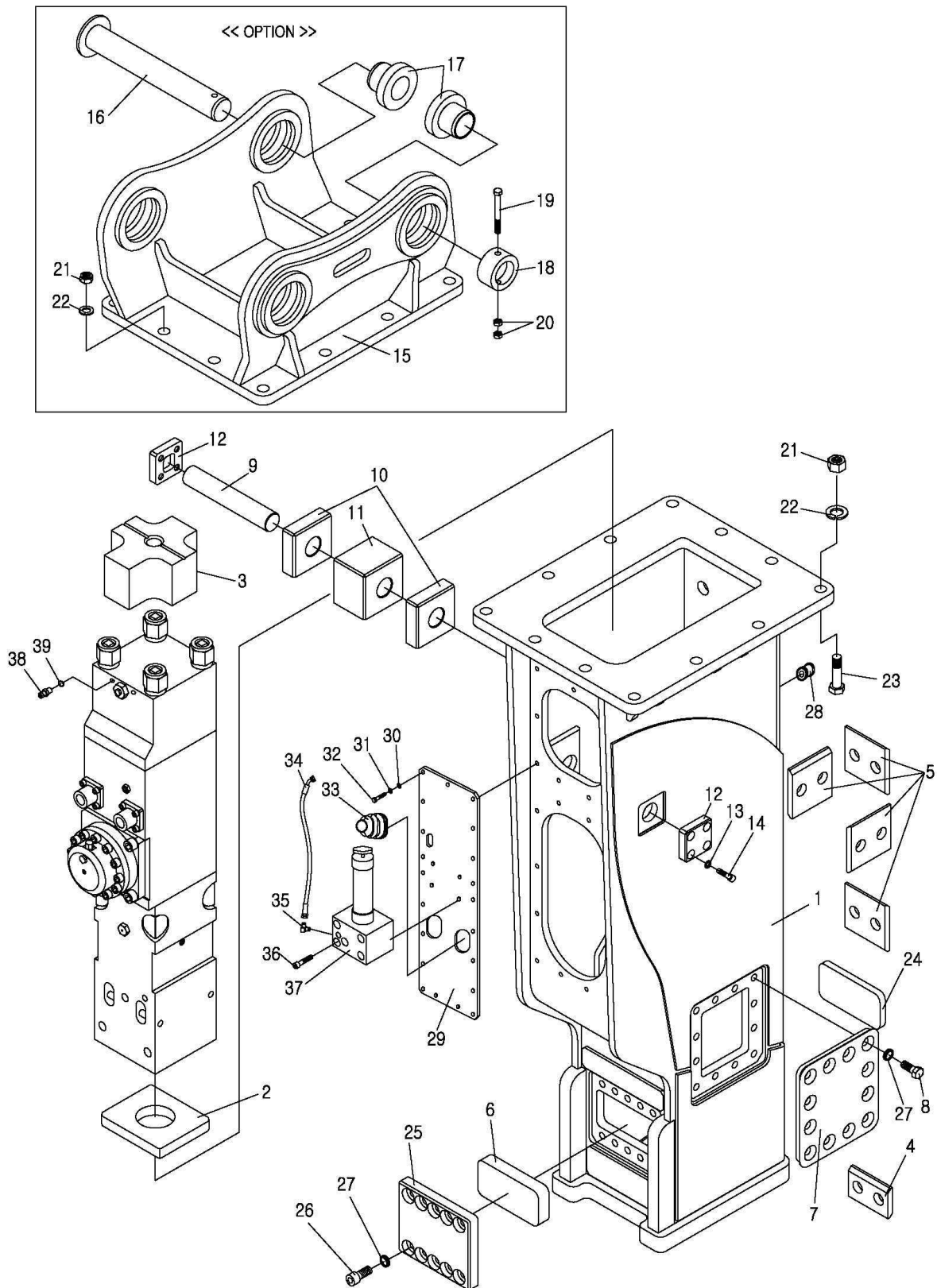
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|--|-------------|
| 38 | Back Head | B37153100 | B37150031000 | 1 | | |
| 39 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | Including no. 40,41 | |
| 40 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 41 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 17 | O-Ring | P2710195G | P20701195000 | 1 | G195-1B | |
| 42 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| 43 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 44 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B37112010 | B37110020100 | 1SET | Including no. 45~50, 52~56 | |
| 45 | Front Head | - | B37150021002 | 1 | | |
| 46 | Inner Bush | B37112300 | B37110023000 | 1 | 일체형(신형) | |
| 47 | Front Cover | - | B37110022101 | 1 | BOX | |
| 47-1 | Front Cover | - | B37110022001 | 1 | TOP | |
| 48 | Pin-Front Head | B37112620 | B37110026200 | 2 | Ø26xL253 | |
| 49 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20T | |
| 50 | Snap Ring | P07150260 | P07010102600 | 2 | Ø26 HOLE TYPE | |
| 52 | Pin-Stop | B35112610 | B35110026100 | 1 | Ø20xL239 | |
| 53 | Plug-Rubber | B07112820 | B07110028200 | 1 | Ø20 * Ø23 * 14T | |
| 54 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 55 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 56 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 44 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 24 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | - | B37110050001 | 4SET | Including no. 57~60 | |
| 57 | Through Bolt | - | B37110051001 | 4 | | |
| 58 | Washer | B37115200 | B37110052000 | 4 | | |
| 59 | Nut-Upper | - | B37110053001 | 4 | | |
| 60 | Nut-Bottom | - | B37110054001 | 4 | | |
| 51 | Pin-Tool | B37112400 | B37110024000 | 2 | | |
| 52 | Pin-Stop | MA | B35110026100 | 2 | Ø20xL239 (Only Old Type, Top&Side Type) | |
| 53 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20 * Ø23 * 14T (Only Old Type, Top&Side Type) | |
| 61 | Pin-Knock | B15111400 | B15110014000 | 2 | Ø12 x L30 | |
| 62 | Bolt-Socket | P12030080 | P11020300800 | 4 | M30*P3.5*80L | |
| 63 | Washer-Node lock | P15430000 | P13034300000 | 4 | M30 | |
| 64 | Tool-Moil Point | B37112511 | B37110025101 | 1 | 선택, Alternative | |
| - | Tool-Wedge Point | B37112521 | B37110025201 | - | 선택, Alternative | |
| - | Tool-Blunt End | B37112541 | B37110025401 | - | 선택, Alternative | |
| *** | Seal kit-Complete | B37117000 | B37110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B3700800B | B3700008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B3700800T | B3700008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 37X(New Design)*



Parts List for Box-New Design

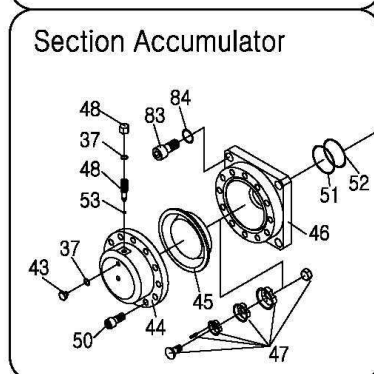
Model : FINE 37X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|----------|--------------|-------|---------------------|---------------------|
| 1 | Assembly-Box Bracket | - | B37560000001 | 1SET | BOX TYPE | New Design |
| 2 | Damper-Bottom | - | B37510052001 | 1 | Urethane | |
| 3 | Damper-Upper | - | B35510051000 | 1 | Urethane | |
| 4 | Damper-Plate | - | B12510053000 | 1 | Urethane | |
| 5 | Damper-Plate | - | B20510053000 | 7 | Urethane | |
| 6 | Damper-Front | - | B37560057000 | 1 | Urethane | |
| 7 | Damper-Side | - | B37560055001 | 2 | | |
| 8 | Bolt-Hex | - | P11010200400 | 24 | M20x40L | |
| *** | Assembly-Support Plate | - | B37560030000 | 1SET | Including no. 9~14 | |
| 9 | Pin-Support | - | B37560052000 | 1 | | |
| 10 | Block-Support | - | B37560033000 | 2 | Urethane | |
| 11 | Damper-Support | - | B37560054000 | 1 | Urethane | |
| 12 | Stopper-Pin | - | B37560053000 | 2 | | |
| 13 | Washer-Node lock | - | P13034160000 | 8 | M16 | |
| 14 | Bolt-Socket | - | P11020160450 | 8 | M16x45L | |
| *** | Assembly-Mount Cap | - | B37660000000 | 1SET | Including no. 15~23 | |
| 15 | Mount Cap | - | B37660010000 | 1SET | OPTION | |
| 16 | Pin-Bracket | - | P43090655400 | 2 | Alternative | |
| 17 | Bush-Bracket | - | P44090130550 | 4 | Alternative | |
| 18 | Ring-Stop | - | P45090140400 | 2 | Alternative | |
| 19 | Bolt-Hex | - | P11015161800 | 2 | M16x180L | |
| 20 | Nut-Hex | - | P12015160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | - | B22410050000 | 12SET | Including no. 21~23 | |
| 21 | Nut-Hex Nylock | - | P12020300000 | 12 | M30 | |
| 22 | Washer-Spring | - | P13021300000 | 12 | M30 | |
| 23 | Bolt-Hex | - | P11018301100 | 12 | M30x110L | |
| 24 | Damper-Rear | - | B37560058000 | 1 | Urethane | |
| 25 | Cover-Damper | - | B37560057101 | 1 | | |
| 26 | Bolt-Socket | - | P11020200400 | 10 | M20x40L | |
| 27 | Washer-Node lock | - | P13034200000 | 34 | M20 | |
| 28 | Plug-Rubber | - | B20530064100 | 2 | Round Type | LOW NOISE(option) |
| 29 | Cover | - | B37530061001 | 1 | | |
| 30 | Washer-Plain | - | P13010120000 | 21 | M12 | |
| 31 | Washer-Spring | - | P13021120000 | 21 | M12 | |
| 32 | Bolt-Hex | - | P11010120350 | 21 | M12x35L | |
| 33 | Hose Belloss | - | B20530063000 | 2 | | |
| 34 | Hose(5#X45 5#) | - | F10211110114 | 1 | 1/4"(70BAR)x600L | AUTO GREASE(option) |
| 35 | 90 Elbow | - | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 36 | Bolt-Socket | - | P11020121100 | 4 | M12x110L | |
| 37 | Auto Grease unit | - | P42040010000 | 1 | Inter Lube | |

Parts List for Box-New Design

Model : FINE 37X

| | | | | | |
|----|-----------|---|--------------|---|-----------------------|
| 38 | Connector | - | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4" |
| 39 | O-Ring | - | P20700011000 | 1 | P11-1B |



Part List for Main Body

Model : FINE 45X, 45T, 45S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------------------|------------------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | B45150010 | B45150000100 | 1SET | | |
| *** | Assembly-Cylinder | B45111000 | B45150010000 | 1SET | including no. 1~9 | |
| 1 | Piston | B45111201 | B45110012001 | 1 | | |
| 2 | Cylinder | B45111100 | B45150011000 | 1 | | |
| 3 | Seal-Retainer | B45111300 | B45110013000 | 1 | | |
| 4 | Plate-Cover | B45111630 | B45110016300 | 1 | Ø42x4.2T | |
| *** | Assembly-Cylinder Adjuster | B15111500 | B15110015000 | 1SET | including no. 5,6 | |
| 5 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 | |
| 6 | Cylinder-Adjuster | B15111510 | B15110015100 | 1 | | |
| 7 | Socket Plug | P19102010 | P14020010010 | 4 | PF1/4" (10mm) | |
| 8 | Insert Coil | P16620300 | P15006203000 | 8 | M20xP2.5x1.5D | |
| 9 | Insert Coil | P16724360 | P15007243600 | 4 | M24xP3x1.5D | |
| 10 | Seal-Buffer | P23001701 | P20301170000 | 1 | HBV 170 | |
| 11 | U-Packing | P21201701 | P20102170000 | 1 | ISI 170 | |
| 12 | Seal-Dust | P22201701 | P20202170000 | 1 | DSI 170 | |
| 13 | Seal-Step | P25001700 | P20500165000 | 2 | Ø165 | |
| - | O-Ring | | | 2 | | |
| 14 | Seal-Gas | P24001650 | P20400165000 | 1 | Ø165 | |
| 15 | O-Ring | P2710195G | P20701195000 | 2 | G195-1B | |
| 16 | Back Up Ring | P28GS1950 | P20811195000 | 3 | G195-T2 | |
| 17 | Bush-Teflon | B45111610 | B45110016100 | 2 | Ø42xØ32x30L | |
| 18 | Plug-Teflon | B45111620 | B45110016200 | 1 | Ø42x10.5L | |
| 19 | O-Ring | P2700036P | P20700036000 | 5 | P36-4D | |
| 20 | Back Up Ring | P28PS0120 | P20801012000 | 1 | P12-T2 | |
| 21 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 22 | O-Ring | P2700011P | P20700011000 | 4 | P11-1B | |
| 37 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| *** | Assembly-Valve Housing | B45114000 | B45110040000 | 1SET | including no. 23~31 | |
| 23 | Valve-Housing | B45114300 | B45110043000 | 1 | | |
| 24 | Valve | B45114100 | B45110041000 | 1 | | |
| 25 | Valve-Plug | B45114200 | B45110042000 | 1 | | |
| 26 | Cover-Upper, Valve | B45114510 | B45110045100 | 1 | | |
| 27 | Cover-Bottom, Valve | B45114520 | B45110045200 | 1 | | |
| 28 | Bolt-Socket | P12020060 | P11020200600 | 8 | M20xP2.5x60L | |
| *** | Assembly-Valve Adjuster | B45114600 | B45110046000 | 1SET | including no. 29,30 | |
| 29 | Nut-Hex | P13524000 | P12015240000 | 1 | M24xP2.0 | |
| 30 | Valve-Adjuster | B45114610 | B45110046100 | 1 | | |
| 31 | Socket Plug | P19103010 | P14020030010 | 1 | PF3/8" (3mm) | |
| 32 | Back Up Ring | P28GS0700 | P20811070000 | 1 | G70-T2 | |
| 33 | Back Up Ring | P28GF0700 | P20812070000 | 1 | G70(75x77.4x2.4)-T3 | |
| 34 | O-Ring | P2710070G | P20701070000 | 2 | G70-4D | |

Part List for Main Body

Model : FINE 45X, 45T, 45S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|---|---------------------------|
| 35 | Back Up Ring | P28PS0160 | P20801016000 | 1 | P16-T2 | |
| 36 | O-Ring | P2700016P | P20700016000 | 1 | P16-1B | |
| 37 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 38 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 39 | Back Up Ring | P28GF0550 | P20812055000 | 1 | G55(60x62.4x2.4)-T3 | |
| 40 | O-Ring | P2710055G | P20701055000 | 1 | G55-1B | |
| 41 | O-Ring | P2710050G | P20701050000 | 1 | G50-1B | |
| 42 | O-Ring | P2710025G | P20701025000 | 2 | G25-1B | |
| *** | Assembly-Accumulator | B45116000 | B45110060000 | 1SET | including no. 43~50 | |
| 43 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 44 | Cover-Accumulator | B45116200 | B45110062000 | 1 | | |
| 45 | Diaphragm | B45117400 | B45110064000 | 1 | Ø208 | |
| 46 | Body-Accumulator | B45116100 | B45110061000 | 1 | | |
| 47 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 48 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 49 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 50 | Bolt-Socket | P12020060 | P11020200600 | 12 | M20xP2.5x60L | |
| 37 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 51 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105x109x4.6)-T3 | |
| 52 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 53 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B45113000 | B45150030000 | 1SET | including no. 54~61 | |
| 54 | Back Head | B45113100 | B45150031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 55,56 | |
| 55 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 56 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B45113310 | B45110034000 | 2SET | including no. 57,58,59 BOX TYPE | |
| 57 | Cap-Adapter | F05103600 | F00511136000 | 2 | PF1 1/4"5# | |
| 58 | Adapter | F01433660 | F00121236600 | 2 | PF1 1/4"5# | |
| 59 | Adapter-Flange | B45113350 | B45110033600 | 2 | | for Box Type & "E" Serise |
| *** | Assembly-Adapter Flange | B45113300 | B45110033000 | 2SET | including no. 57,58,60 SIDE TOP TYPE | |
| 60 | Adapter-Flange | B45113330 | B45110034600 | 2 | | for Open Type |
| 61 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5x40L | |
| 86 | Hollow Plug | P17008000 | P16000080000 | 2 | PT1/8" | |
| 7 | Socket Plug | P19102010 | P14020010010 | 1 | PF1/4" (10mm) | |
| 22 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |
| 38 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 62 | O-Ring | P2710235G | P20701235000 | 1 | G235-1B | |
| 63 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 64 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 65 | Back Up Ring | P28GS0450 | P20811045000 | 2 | G45-T2 | |

Part List for Main Body

Model : FINE 45X, 45T, 45S

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------------|------------------|---------------------|-------------|----------------------------------|---------------------------|
| *** | Assembly-Front Head | - | B45150020101 | 1SET | including no. 66~72,74~77 | |
| 66 | Front Head | - | B45150021001 | 1 | | |
| 67 | Inner Bush | B45112300 | B45110023000 | 1 | | ~s/no. 45/242 |
| 68 | Front Cover | B45112210 | B45110022100 | 1 | | for Box Type & "E" Serise |
| 69 | Front Cover | B45112200 | B45110022000 | 1 | | for Open Type |
| 70 | Pin-Front Head | B45112620 | B45110026200 | 2 | | |
| 71 | Plug-Rubber | B45112820 | B45110028200 | 2 | Ø36xØ38x25 | |
| 72 | Snap Ring | P07150360 | P07010103600 | 2 | Ø36 HOLE TYPE | |
| 74 | Pin-Stop | B45112610 | B45110026100 | 1 | | |
| 75 | Plug-Rubber | B10112820 | B10110028200 | 1 | Ø25xØ27x20 | |
| 76 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 77 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 86 | Hollow Plug | P17008000 | P16000080000 | 2 | PT1/8" | |
| 37 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 64 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | - | B45110050001 | 4SET | including no. 78~81 | |
| 78 | Through Bolt | B45115100 | B45110051000 | 4 | | |
| 79 | Washer | B45115200 | B45110052000 | 4 | | |
| 80 | Nut-Upper | B45115300 | B45110053000 | 4 | | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 81 | Nut-Bottom | - | B45110054001 | 4 | | |
| 28 | Bolt-Socket | P12020055 | P11020200550 | 8 | M20xP2.5x55L | |
| 73 | Pin-Tool | B45112401 | B45110024001 | 2 | | |
| 74 | Pin-Stop | B45112610 | B45110026100 | 2 | | |
| 75 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20 | |
| 82 | Pin-Knock | B45111400 | B45110014000 | 2 | | |
| 83 | Bolt-Socket | P12024075 | P11020240750 | 4 | M24xP3.0x75L | |
| 84 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 | |
| 85 | Tool-Moil Point | B45112511 | B45110025101 | 1 | Alternative | |
| - | Tool-Wedge Point | B45112521 | B45110025201 | - | Alternative | |
| - | Tool-Blunt End | B45112541 | B45110025401 | - | Alternative | |
| *** | Seal Kit-Complete | B45117000 | B45110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B4500800T | B4500008T000 | 1SET | TOP TYPE | |
| - | Box Set-Service Tools | B4500800B | B4500008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



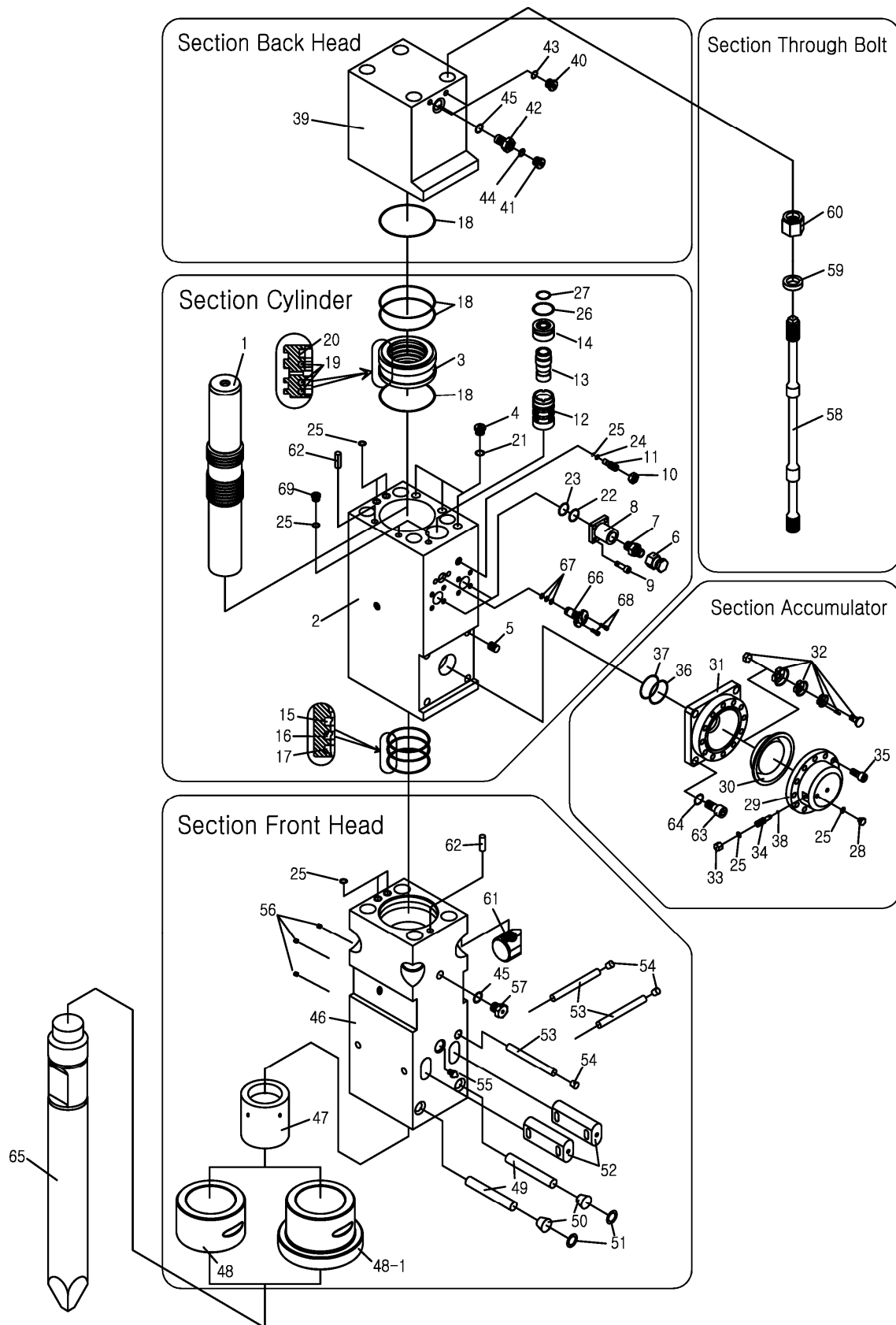
Parts List for Top Bracket

Model : FINE 45T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | - | B45310020002 | 1 | new | |
| 2 | Assembly-Bracket, LH | - | B45310010002 | 1 | new | |
| *** | Assembly-Bracket Bolt | B45315000 | B45310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B45315100 | B45310051000 | 8 | | |
| 4 | Washer-Bracket | B45315200 | B45310052000 | 16 | | |
| 5 | Nut-Bracket | B45315300 | B45310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B45410000003 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | - | B45410010003 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43100670 | P43100670400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44100440 | P44100120440 | 4 | Alternative | |
| 9 | Ring-Stop | P45100400 | P45100140400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016200 | P11010162000 | 2 | M16x180L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B22415000 | B22410050000 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14030000 | P12020300000 | 12 | M30 | |
| 13 | Washer-Spring | P15130000 | P13021300000 | 12 | M30 | |
| 14 | Bolt-Hex | P11830110 | P11018301100 | 12 | M30xP3.5x110L | |



Exploded View of *FINE 46X, 46T*



Main body: Unit serial no.

Parts List for Main Body

Model : FINE 46X, 46T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|------------------------------|-------------|
| *** | Assembly-Main Body | B46110000 | B46110000000 | 1SET | | |
| *** | Assembly-Cylinder | B46111000 | B46110010000 | 1SET | Including no. 1~14 | |
| 1 | Piston | B46111200 | B46110012000 | 1 | | |
| 2 | Cylinder | B46151101 | B46150011001 | 1 | | |
| 3 | Seal-Retainer | B46111300 | B46110013000 | 1 | | |
| 4 | Socket Plug | P19102310 | P14027360010 | 3 | M36xP3.0 | |
| 5 | Insert Coil | P16830450 | P15008304500 | 4 | M30x3.5x1.5D | |
| 69 | Socket Plug | P19103010 | P14020030010 | 2 | PF3/8" | |
| *** | Assembly-Adapter Flange | B45113310 | B45110034000 | 2SET | including no. 6,7,8,9 | |
| 6 | Cap-Adapter | F05103600 | F00511136000 | 2 | PF1 1/4"5# | |
| 7 | Adapter | F01433660 | F00121236600 | 2 | PF1 1/4"5# | |
| 8 | Adapter-Flange | B45113350 | B45110033600 | 2 | | |
| 9 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14x40L | |
| *** | Assembly-Valve Adjuster | B37114600 | B37110046000 | 1SET | Including no. 10,11 | |
| 10 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 | |
| 11 | Valve-Adjuster | B37114610 | B37110046100 | 1 | NUT포함 | |
| *** | Assembly-Valve | B46114000 | B46110040000 | 1SET | Including no. 12~14 | |
| 12 | Guide-Valve | - | B46110043001 | 1 | | |
| 13 | Valve | - | B46110041001 | 1 | | |
| 14 | Plug-Valve | - | B46110042001 | 1 | | |
| 66 | Auto Stop Valve | - | B37110017000 | 1 | | |
| 68 | Bolt-Socket | - | P11020080250 | 2 | M8xP1.25x25L | |
| 15 | Seal-Buffer | P23001751 | P20301175000 | 1 | HBV 175 | |
| 16 | U-Packing | P21201751 | P20102175000 | 1 | ISI 175 | |
| 17 | Seal-Dust | P22201751 | P20202175000 | 1 | DSI 175 | |
| 18 | O-Ring | P2710205G | P20701205000 | 3 | G205-1B | |
| 19 | Seal-Step | P25001720 | P20500172000 | 2 | SPNS 172 | |
| - | O-Ring | | | 2 | | |
| 20 | Seal-Gas | P24001720 | P20400172000 | 1 | PPY 172 | |
| 21 | O-Ring | P2700032P | P20700032000 | 3 | P32-1B | |
| 22 | Back Up Ring | P28GS0450 | P20811045000 | 2 | G45-T2 | |
| 23 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 24 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |
| 25 | O-Ring | P2700014P | P20700014000 | 3 | P14-1B | |
| 67 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |
| 26 | O-Ring | P2710095G | P20701095000 | 1 | G95-1B | |
| 27 | O-Ring | P2710065G | P20701065000 | 1 | G65-1B | |

Parts List for Main Body

Model : FINE 46X, 46T

| *** | Assembly-Accumulator | B46116000 | B46110060000 | 1SET | including no. 28~38 | |
|-----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|-------------|
| 28 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 29 | Cover-Accumulator | B45116200 | B45110062000 | 1 | | |
| 30 | Diaphragm | B45117400 | B45110064000 | 1 | Ø208 | |
| 31 | Body-Accumulator | B46116100 | B46110061000 | 1 | | |
| 32 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 33 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 34 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 35 | Bolt-Socket | P12020060 | P11020200600 | 12 | M20xP2.5x60L | |
| 25 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 36 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105x109x4.6)-T3 | |
| 37 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 38 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B46113000 | B46110030000 | 1SET | Including no. 39~42 | |
| Item No. | Description | Part No. | Part No. | Q'ty | Remarks | Application |
| 39 | Back Head | B46153100 | B46150031000 | 1 | | |
| 40 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | Including no. 41,42 | |
| 41 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 42 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 18 | O-Ring | P2710205G | P20701205000 | 1 | G205-1B | |
| 43 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| 44 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B46112000 | B46110020000 | 1SET | Including no. 46~51, 53~57 | |
| 46 | Front Head | B46152100 | B46150021000 | 1 | | |
| 47 | Inner Bush | B46112300 | B46110023000 | 1 | | |
| 48 | Front Cover | B46112210 | B46110022100 | 1 | BOX | |
| 48-1 | Front Cover | B46112200 | B46110022000 | 1 | TOP | |
| 49 | Pin-Front Head | B37112620 | B37110026200 | 2 | Ø26xL253 | |
| 50 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20T | |
| 51 | Snap Ring | P07150260 | P07010102600 | 2 | Ø26 HOLE TYPE | |
| 53 | Pin-Stop | B46112610 | B46110026100 | 1 | Ø20xL259 | |
| 54 | Plug-Rubber | B07112820 | B07110028200 | 1 | Ø20 * Ø23 * 14T | |
| 55 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 56 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 57 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 25 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | - | B46110050002 | 4SET | Including no. 58~61 | |
| 58 | Through Bolt | - | B46110051002 | 4 | | |
| 59 | Washer | - | B46110052001 | 4 | | |
| 60 | Nut-Upper | - | B46110053002 | 4 | | |
| 61 | Nut-Bottom | - | B46110054001 | 4 | | |

Parts List for Main Body

Model : FINE 46X, 46T

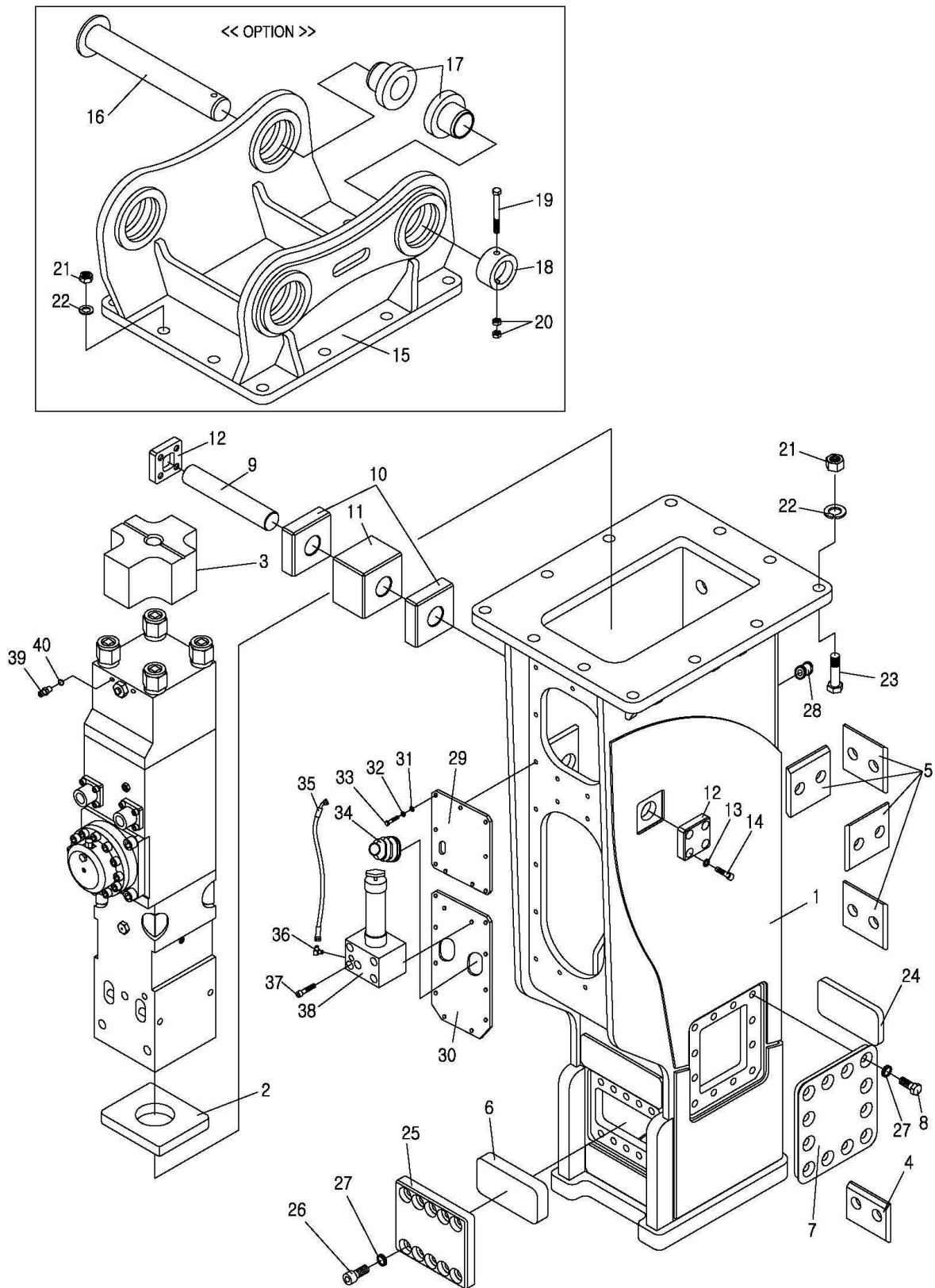
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|-----|--------------------------|------------------|---------------------|-------------|---|
| 52 | Pin-Tool | B46112400 | B46110024000 | 2 | |
| 53 | Pin-Stop | B46112610 | B46110026100 | 2 | Ø20xL259(Only Old Type, Top&Side Type) |
| 54 | Plug-Rubber | B07112820 | B07110028200 | 2 | Ø20 * Ø23 * 14T(Only Old Type, Top&Side Type) |
| 62 | Pin-Knock | B45111400 | B45110014000 | 2 | Ø18 x L38 |
| 63 | Bolt-Socket | P12030080 | P11020300800 | 4 | M30xP3.5x80L |
| 64 | Washer-Node lock | P15430000 | P13034300000 | 4 | M30 |
| 65 | Tool-Moil Point | B46112510 | B46110025100 | 1 | 선택, Alternative |
| - | Tool-Wedge Point | B46112520 | B46110025200 | - | 선택, Alternative |
| - | Tool-Blunt End | B46112540 | B46110025400 | - | 선택, Alternative |
| *** | Seal kit-Complete | B46117000 | B46110070000 | 1SET | |

Accessories

| | | | | | |
|-----|-----------------------|-----------|--------------|------|-----------|
| A-1 | Box Set-Service Tools | B4600800B | B4600008B000 | 1SET | BOX TYPE |
| - | Box Set-Service Tools | B4600800T | B4600008T000 | 1SET | TOP TYPE |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | |



Exploded View of *FINE* 46X(New Design)



Bracket-Box type-New Design type: Unit serial no.

Parts List for Box-New Design

Model : FINE 46X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|----------|--------------|-------|---------------------|---------------------|
| 1 | Assembly-Box Bracket | - | B46560000000 | 1SET | BOX TYPE | New Design |
| 2 | Damper-Bottom | - | B46510052000 | 1 | Urethane | |
| 3 | Damper-Upper | - | B46510051000 | 1 | Urethane | |
| 4 | Damper-Plate | - | B36510053000 | 1 | Urethane | |
| 5 | Damper-Plate | - | B20510053000 | 9 | Urethane | |
| 6 | Damper-Front | - | B37560057000 | 1 | Urethane | |
| 7 | Damper-Side | - | B37560055001 | 2 | | |
| 8 | Bolt-Hex | - | P11010200400 | 24 | M20x40L | |
| *** | Assembly-Support Plate | - | B46560030000 | 1SET | Including no. 9~14 | |
| 9 | Pin-Support | - | B46560031000 | 1 | | |
| 10 | Block-Support | - | B46560033000 | 2 | Urethane | |
| 11 | Damper-Support | - | B46560054000 | 1 | Urethane | |
| 12 | Stopper-Pin | - | B46560032000 | 2 | | |
| 13 | Washer-Node lock | - | P13034160000 | 8 | M16 | |
| 14 | Bolt-Socket | - | P11020160350 | 8 | M16x35L | |
| *** | Assembly-Mount Cap | - | B46660000000 | 1SET | Including no. 15~23 | |
| 15 | Mount Cap | - | B46660010000 | 1SET | OPTION | |
| 16 | Pin-Bracket | - | P43100725400 | 2 | Alternative | |
| 17 | Bush-Bracket | - | P44100150740 | 4 | Alternative | |
| 18 | Ring-Stop | - | P45100140400 | 2 | Alternative | |
| 19 | Bolt-Hex | - | P11015161800 | 2 | M16x180L | |
| 20 | Nut-Hex | - | P12015160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | - | B46410050000 | 12SET | including no. 21~23 | |
| 21 | Nut-Hex Nylock | - | P12020360000 | 12 | M36XP4 | |
| 22 | Washer-Spring | - | P13021360000 | 12 | M36 | |
| 23 | Bolt-Hex | - | P11010361300 | 12 | M36xP4x130L | |
| 24 | Damper-Rear | | B37560058000 | 1 | Urethane | |
| 25 | Cover-Damper | | B37560057101 | 1 | | |
| 26 | Bolt-Socket | - | P11020200400 | 10 | M20x40L | |
| 27 | Washer-Node lock | - | P13034200000 | 34 | M20 | |
| 28 | Plug-Rubber | - | B20530064100 | 2 | Round Type | LOW NOISE(option) |
| 29 | Cover-Upper | - | B46530061000 | 1 | | |
| 30 | Cover-Bottom | - | B46530062000 | 1 | | |
| 31 | Washer-Plain | - | P13010120000 | 24 | M12 | |
| 32 | Washer-Spring | - | P13021120000 | 24 | M12 | |
| 33 | Bolt-Hex | - | P11010120400 | 24 | M12x40L | |
| 34 | Hose Belloss | - | B45530063000 | 2 | | |
| 35 | Hose(5#X45 5#) | - | F10211110140 | 1 | 1/4"(70BAR)x700L | AUTO GREASE(option) |
| 36 | 90 Elbow | - | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 37 | Bolt-Socket | - | P11020121100 | 4 | M12x110L | |
| 38 | Auto Grease unit | - | P42040010000 | 1 | Inter Lube | |

Parts List for Box-New Design

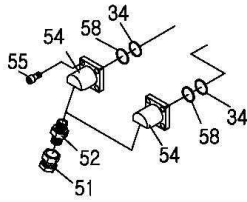
Model : FINE 46X

| | | | | | |
|----|-----------|---|--------------|---|-----------------------|
| 39 | Connector | - | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4" |
| 40 | O-Ring | - | P20700011000 | 1 | P11-1B |

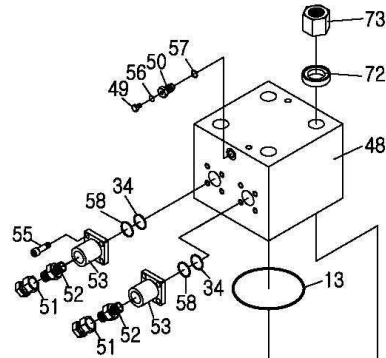


Exploded View of *FINE 50X, 50T*

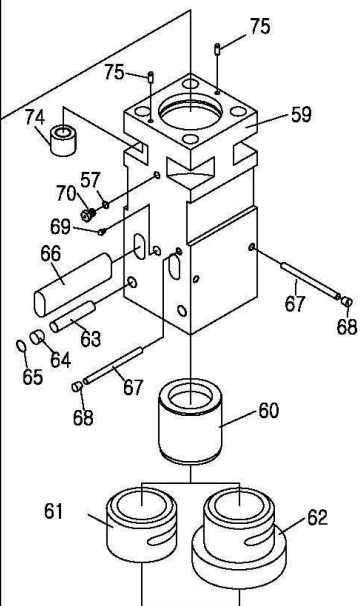
OPEN TYPE FLANGE



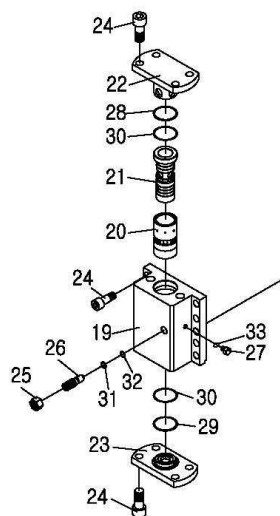
Section Back Head



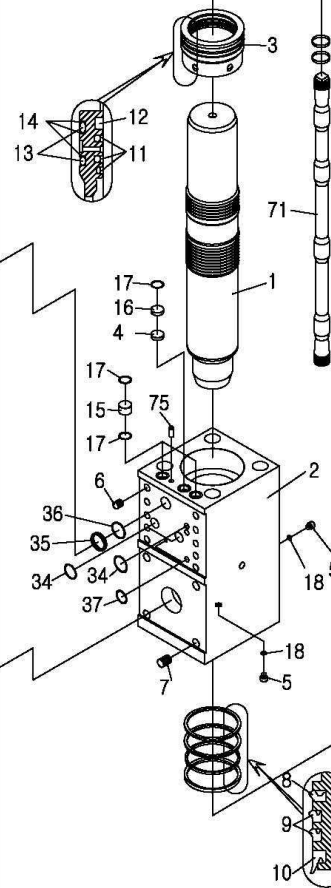
Section Front Head



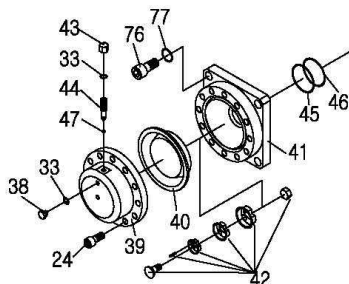
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Part List for Main Body

Model : FINE 50X, 50T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-------------------------|-----------|--------------|------|---------------------|-------------|
| *** | Assembly-Main Body | B50110010 | B50110000100 | 1SET | | |
| *** | Assembly-Cylinder | B50111000 | B50110010000 | 1SET | including no. 1~7 | |
| 1 | Piston | B50111200 | B50110012000 | 1 | | |
| 2 | Cylinder | B50111100 | B50110011000 | 1 | | |
| 3 | Seal-Retainer | B50111300 | B50110013000 | 1 | | |
| 4 | Plate-Cover | B45111630 | B45110016300 | 1 | Ø42x4.2T | |
| 5 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" (10mm) | |
| 6 | Insert Coil | P16620300 | P15006203000 | 10 | M20XP2.5X1.5D | |
| 7 | Insert Coil | P16724360 | P15007243600 | 4 | M24XP3X1.5D | |
| 8 | Seal-Buffer | P23001801 | P20301180000 | 1 | HBV 180 | |
| 9 | U-Packing | P21201801 | P20102180000 | 1 | ISI 180 | |
| 10 | Seal-Dust | P22201801 | P20202180000 | 1 | DSI 180 | |
| 11 | Seal-Step | P25001770 | P20500177000 | 3 | Ø177 | |
| - | O-Ring | | | 3 | | |
| 12 | Seal-Gas | P24001770 | P20400177000 | 1 | Ø177 | |
| 13 | O-Ring | P2710220G | P20701220000 | 2 | G220-1B | |
| 14 | Back Up Ring | P28GS2200 | P20811220000 | 3 | G220-T2 | |
| 15 | Bush-Teflon | B45111610 | B45110016100 | 2 | Ø42xØ32x30L | |
| 16 | Plug-Teflon | B45111620 | B45110016200 | 1 | Ø42x10.5L | |
| 17 | O-Ring | P2700036P | P20700036000 | 5 | P36-4D | |
| 18 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| *** | Assembly-Valve Housing | B50114000 | B50110040000 | 1SET | including no. 19~27 | |
| 19 | Valve-Housing | B50114300 | B50110043000 | 1 | | |
| 20 | Valve | B50114100 | B50110041000 | 1 | | |
| 21 | Valve-Plug | B50114200 | B50110042000 | 1 | | |
| 22 | Cover-Upper, Valve | B50114510 | B50110045100 | 1 | | |
| 23 | Cover-Bottom, Valve | B50114520 | B50110045200 | 1 | | |
| 24 | Bolt-Socket | P12020060 | P11020200600 | 8 | M20xP2.5x60L | |
| *** | Assembly-Valve Adjuster | B45114600 | B45110046000 | 1SET | including no. 25,26 | |
| 25 | Nut-Hex | P13524000 | P12015240000 | 1 | M24xP2.0 | |
| 26 | Valve-Adjuster | B45114610 | B45110046100 | 1 | | |
| 27 | Socket Plug | P19103010 | P14020030010 | 1 | PF3/8" (3mm) | |
| 28 | Back Up Ring | P28PS0700 | P20801070000 | 1 | P70-T2 | |
| 29 | Back Up Ring | P28PF0700 | P20802070000 | 1 | P70(80X83.6X4.6)-T3 | |
| 30 | O-Ring | P2700070P | P20700070000 | 2 | P70-4D | |
| 31 | Back Up Ring | P28PS0160 | P20801016000 | 1 | P16-T2 | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| 32 | O-Ring | P2700016P | P20700016000 | 1 | P16-1B | |
| 33 | O-Ring | P2700014P | P20700014000 | 1 | P14-1B | |
| 34 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 35 | Back Up Ring | P28GF0550 | P20812055000 | 1 | G55(60X62.4X2.4)-T3 | |
| 36 | O-Ring | P2710055G | P20701055000 | 2 | G55-1B | |
| 37 | O-Ring | P2710030G | P20701030000 | 2 | G30-1B | |

Part List for Main Body

Model : FINE 50X, 50T

| | | | | | | |
|----------|-------------------------|-----------|--------------|------|--------------------------------------|-------------|
| *** | Assembly-Accumulator | B45116000 | B45110060000 | 1SET | including no. 24,38~44 | |
| 24 | Bolt-Socket | P12020060 | P11020200600 | 12 | M20xP2.5x60L | |
| 38 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 39 | Cover-Accumulator | B45116200 | B45110062000 | 1 | | |
| 40 | Diaphragm | B45117400 | B45110064000 | 1 | Ø208 | |
| 41 | Body-Accumulator | B45116100 | B45110061000 | 1 | | |
| 42 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 43 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12XP1.25 | |
| 44 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12XP1.25 | |
| 33 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 45 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105X109X4.6)-T3 | |
| 46 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 47 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B50113000 | B50110030000 | 1SET | including no. 48~55 | |
| 48 | Back Head | B50113100 | B50110031000 | 1 | | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 49,50 | |
| 49 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 50 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| *** | Assembly-Adapter Flange | B45113310 | B45110034000 | 2SET | including no. 51,52,53 BOX TYPE | |
| 51 | Cap-Adapter | F05103600 | F00511136000 | 2 | PF1 1/4"5# | |
| 52 | Adapter | F01433660 | F00121236600 | 2 | PF1 1/4"5# | |
| 53 | Adapter-Flange | B45113350 | B45110033600 | 2 | PF1 1/4"5# for Box Type & "E" Serise | |
| *** | Assembly-Adapter Flange | B45113300 | B45110033000 | 2SET | including no. 51,52,54 SIDE TOP TYPE | |
| 54 | Adapter-Flange | B45113330 | B45110034600 | 2 | 30도 PF1 1/4"5# for Open Type | |
| 55 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14xP1.5X40 | |
| 13 | O-Ring | P2710220G | P20701220000 | 1 | G220-1B | |
| 34 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 56 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 57 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 58 | Back Up Ring | P28GS0450 | P20811045000 | 2 | G45-T2 | |
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
| *** | Assembly-Front Head | B50112010 | B50110020100 | 1SET | including no. 59~65, 67~70 | |
| 59 | Front Head | B50152100 | B50150021000 | 1 | | |
| 60 | Inner Bush | B50112300 | B50110023000 | 1 | | |
| 61 | Front Cover | B50112210 | B50110022100 | 1 | for Box Type & "E" Serise | |
| 62 | Front Cover | B50112200 | B50110022000 | 1 | for Open Type | |
| 63 | Pin-Front Head | B50112620 | B50110026200 | 2 | | |
| 64 | Plug-Rubber | B45112820 | B45110028200 | 2 | Ø36xØ38x25 | |
| 65 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 67 | Pin-Stop | B50112610 | B50110026100 | 1 | | |
| 68 | Plug-Rubber | B10112820 | B10110028200 | 1 | Ø25xØ27x20 | |
| 69 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 70 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 57 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Part List for Main Body

Model : FINE 50X, 50T

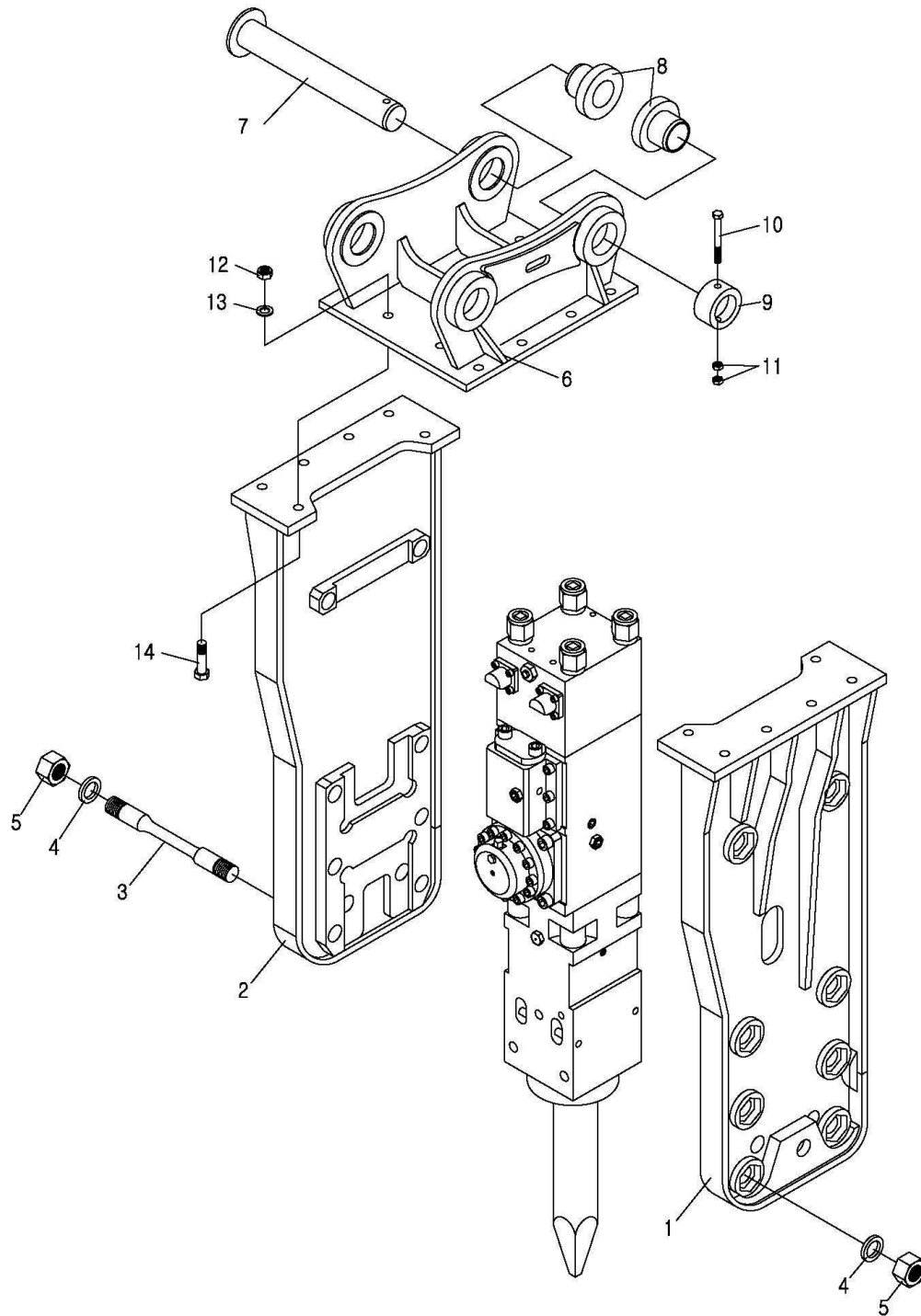
| *** | Assembly-Through Bolt | B50115000 | B50110050000 | 4SET | including no. 71~74 |
|-----|-----------------------|-----------|--------------|------|---------------------|
| 71 | Through Bolt | B50115100 | B50110051000 | 4 | |
| 72 | Washer | B50115200 | B50110052000 | 4 | |
| 73 | Nut-Upper | B50115300 | B50110053000 | 4 | |
| 74 | Nut-Bottom | B50115400 | B50110054000 | 4 | |
| 24 | Bolt-Socket | P12020060 | P11020200600 | 10 | M20xP2.5x60L |
| 66 | Pin-Tool | B50112401 | B50110024001 | 2 | |
| 67 | Pin-Stop | B50112610 | B50110026100 | 2 | |
| 68 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20 |
| 75 | Pin-Knock | B45111400 | B45110014000 | 3 | Ø18 |
| 76 | Bolt-Socket | P12024065 | P11020240650 | 4 | M24xP3.0x65L |
| 77 | Washer-Node lock | P15424000 | P13034240000 | 4 | M24 |
| 78 | Tool-Moil Point | B50112510 | B50110025100 | 1 | Alternative |
| - | Tool-Wedge Point | B50112520 | B50110025200 | - | Alternative |
| - | Tool-Blunt End | B50112540 | B50110025400 | - | Alternative |
| *** | Seal Kit-Complete | B50117000 | B50110070000 | 1SET | |

Accessories

| | | | | | |
|-----|-----------------------|-----------|--------------|------|-----------|
| A-1 | Box Set-Service Tools | B5000800B | B5000008B000 | 1SET | BOX TYPE |
| - | Box Set-Service Tools | B5000800T | B5000008T000 | 1SET | TOP TYPE |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | |



Exploded View of *FINE 50T*



Bracket-Top (open type): Unit serial no.

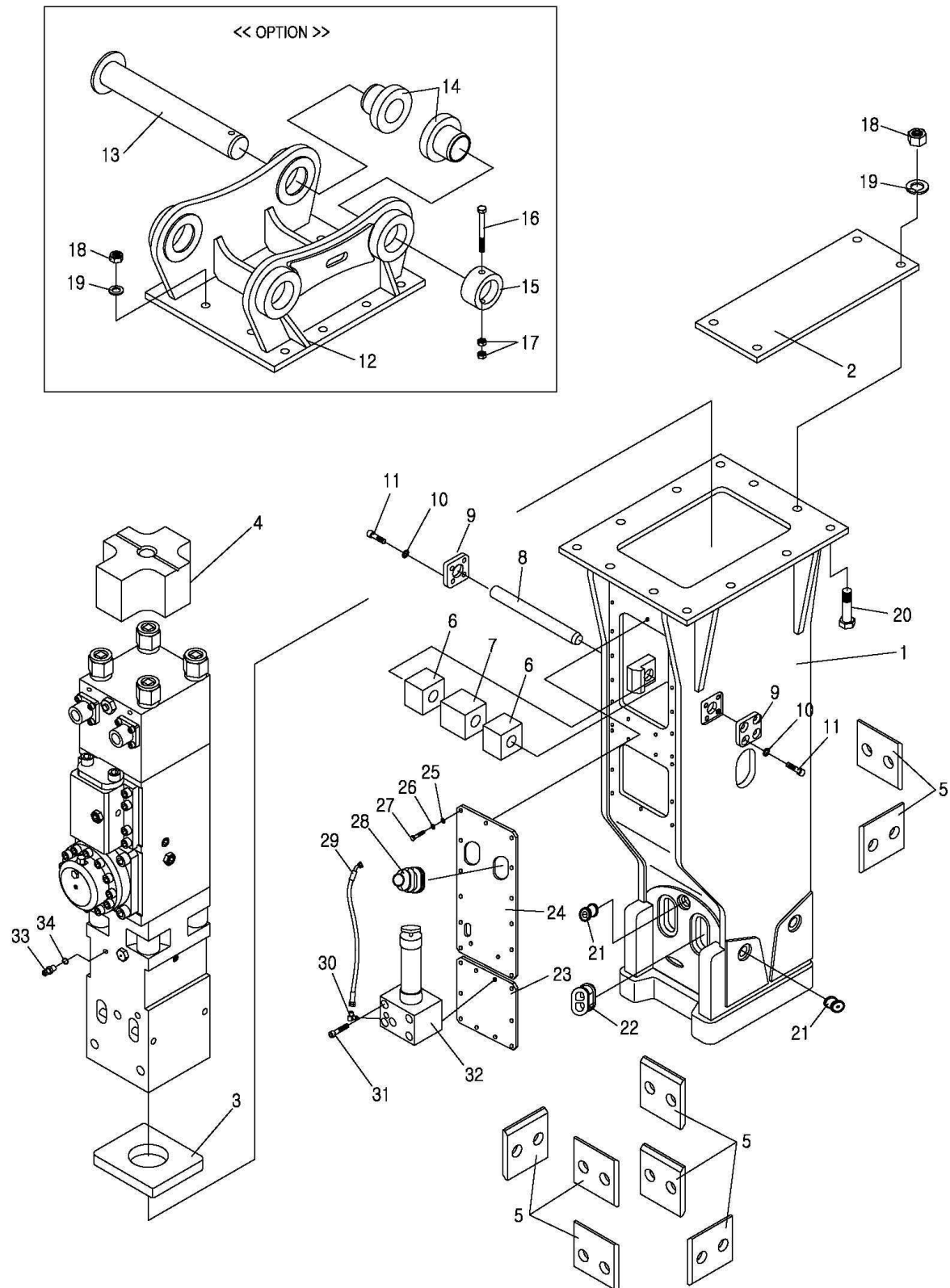
Parts List for Top Bracket

Model : FINE 50T

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-----------------------|-----------|--------------|-------|---------------------|-------------|
| 1 | Assembly-Bracket, RH | B50312000 | B50310020000 | 1 | | |
| 2 | Assembly-Bracket, LH | B50311000 | B50310010000 | 1 | | |
| *** | Assembly-Bracket Bolt | B50315000 | B50310050000 | 8SET | including no. 3~5 | |
| 3 | Bolt-Bracket | B50315100 | B50310051000 | 8 | | |
| 4 | Washer-Bracket | B50315200 | B50310052000 | 16 | | |
| 5 | Nut-Bracket | B50315300 | B50310053000 | 16 | | |
| *** | Assembly-Mount Cap | - | B50410000001 | 1SET | including no. 6~14 | |
| 6 | Mount Cap | B50410002 | B50410010002 | 1SET | OPTION | |
| 7 | Pin-Bracket | P43120710 | P43120710400 | 2 | Alternative | |
| 8 | Bush-Bracket | P44120120 | P44120140120 | 4 | Alternative | |
| 9 | Ring-Stop | P45120400 | P45120160400 | 2 | Alternative | |
| 10 | Bolt-Hex | P11016200 | P11010162000 | 2 | M16x200L | |
| 11 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B46415000 | B46410050000 | 12SET | including no. 12~14 | |
| 12 | Nut-Hex Nylock | P14036000 | P12020360000 | 12 | M36XP4 | |
| 13 | Washer-Spring | P15136000 | P13021360000 | 12 | M36 | |
| 14 | Bolt-Hex | P11036130 | P11010361300 | 12 | M36xP4X130L | |



Exploded View of *FINE 50X*



Parts List for Box-Low noise

Model : FINE 50X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|-----------|--------------|-------|-------------------------|---------------------|
| 1 | Assembly-Box Bracket | B50530000 | B50530000000 | 1SET | BOX TYPE | Low noise type |
| 2 | Plate-Cover | B50512000 | B50510020000 | 1 | | |
| 3 | Damper-Bottom | B50515200 | B50510052000 | 1 | | |
| 4 | Damper-Upper | B50515100 | B50510051000 | 1 | | |
| 5 | Damper-Plate | B36515310 | B36510053000 | 15 | | |
| *** | Assembly-Support Plate | B50513000 | B50510030000 | 1SET | including no. 6~11 | |
| 6 | Block-Support | B50505440 | B50500033000 | 2 | | |
| 7 | Damper-Support | B50505430 | B50510054000 | 1 | | |
| 8 | Pin-Support | B50513101 | B50510031001 | 1 | | |
| 9 | Stopper-Pin | B50513201 | B50510032001 | 2 | | |
| 10 | Washer-Node lock | P15416000 | P13034160000 | 8 | M16 | |
| 11 | Bolt-Socket | P12016045 | P11020160450 | 8 | M16x45L | |
| *** | Assembly-Mount Cap | - | B50620100000 | 1SET | including no. 12~20 | |
| 12 | Mount Cap | B50621000 | B50620110000 | 1SET | OPTION | |
| 13 | Pin-Bracket | P43120710 | P43120710400 | 2 | Alternative | |
| 14 | Bush-Bracket | P44120120 | P44120140120 | 4 | Alternative | |
| 15 | Ring-Stop | P45120400 | P45120160400 | 2 | Alternative | |
| 16 | Bolt-Hex | P11016200 | P11010162000 | 2 | M16x200L | |
| 17 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B46415000 | B46410050000 | 12SET | including no. 18~20 | |
| 18 | Nut-Hex Nylock | P14036000 | P12020360000 | 12 | M36 | |
| 19 | Washer-Spring | P15136000 | P13021360000 | 12 | M36 | |
| 20 | Bolt-Hex | P11036130 | P11010361300 | 12 | M36x130L | |
| 21 | Plug-Rubber | B50534100 | B50530064100 | 8 | Round Type | LOW NOISE(option) |
| 22 | Plug-Rubber | B50534200 | B50530064200 | 3 | Ellipsoid Type | |
| 23 | Cover-Bottom | B50536201 | B50530062001 | 1 | | |
| 24 | Cover-Upper | B50536101 | B50530061001 | 1 | | |
| 25 | Washer-Plain | P15012000 | P13010120000 | 25 | M12 | |
| 26 | Washer-Spring | P15112000 | P13021120000 | 25 | M12 | |
| 27 | Bolt-Hex | P11012035 | P11010120350 | 25 | M12x35L | |
| 28 | Hose Belloss | B45536300 | B45530063000 | 2 | | |
| 29 | Hose(5#X45 5#) | F22111114 | F10211110114 | 1 | 1/4"(70BAR)x600L | AUTO GREASE(option) |
| 30 | 90 Elbow | F03433110 | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 31 | Bolt-Socket | P12012110 | P11020121100 | 4 | M12x110L | |
| 32 | Auto Grease unit | P42110000 | P42040010000 | 1 | Inter Lube | |
| 33 | Connector | F01113110 | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4"5# | |
| 34 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |



Parts List for Main Body

Model : FINE 65X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|------------------------------|-------------|
| *** | Assembly-Main Body | B65110000 | B65110000000 | 1SET | | |
| *** | Assembly-Cylinder | B65111000 | B65110010000 | 1SET | Including no. 1~14 | |
| 1 | Piston | B65111200 | B65110012000 | 1 | | |
| 2 | Cylinder | B65151100 | B65110011000 | 1 | | |
| 3 | Seal-Retainer | B65111300 | B65110013000 | 1 | | |
| 4 | Socket Plug | P19102310 | P14027360010 | 3 | M36xP3.0 | |
| 5 | Insert Coil | P16830450 | P15008304500 | 4 | M30x3.5x1.5D | |
| 69 | Socket Plug | P19103010 | P14020030010 | 2 | PF3/8" | |
| *** | Assembly-Adapter Flange | B45113310 | B45110034000 | 2SET | including no. 6,7,8,9 | |
| 6 | Cap-Adapter | F05103600 | F00511136000 | 2 | PF1 1/4"5# | |
| 7 | Adapter | F01433660 | F00121236600 | 2 | PF1 1/4"5# | |
| 8 | Adapter-Flange | B45113350 | B45110033600 | 2 | | |
| 9 | Bolt-Socket | P12314040 | P11023140400 | 8 | M14x40L | |
| *** | Assembly-Valve Adjuster | B37114600 | B37110046000 | 1SET | Including no. 10,11 | |
| 10 | Nut-Hex | P13322000 | P12013220000 | 1 | M22xP1.5 | |
| 11 | Valve-Adjuster | B37114610 | B37110046100 | 1 | NUT포함 | |
| *** | Assembly-Valve | B65114000 | B65110040000 | 1SET | Including no. 12~14 | |
| 12 | Guide-Valve | - | B65110043000 | 1 | | |
| 13 | Valve | - | B65110041000 | 1 | | |
| 14 | Plug-Valve | - | B65110042000 | 1 | | |
| 66 | Auto Stop Valve | | B37110017000 | 1 | | |
| 68 | Bolt-Socket | P12008025 | P11020080250 | 2 | M8xP1.25x25L | |
| 15 | Seal-Buffer | P23001801 | P20301180000 | 1 | HBV 180 | |
| 16 | U-Packing | P21201801 | P20102180000 | 1 | ISI 180 | |
| 17 | Seal-Dust | P22201801 | P20202180000 | 1 | DSI 180 | |
| 18 | O-Ring | P2710215G | P20701215000 | 3 | G215-1B | |
| 70 | Seal-Step | P25001800 | P20500180000 | 1 | SPNS 180 | |
| - | O-Ring | | | 1 | | |
| 19 | Seal-Step | P25001760 | P20500176000 | 3 | SPNS 176 | |
| - | O-Ring | | | 3 | | |
| 20 | Seal-Gas | P24001760 | P20400176000 | 1 | PPY 176 | |
| 21 | O-Ring | P2700032P | P20700032000 | 3 | P32-1B | |
| 22 | Back Up Ring | P28GS0450 | P20811045000 | 2 | G45-T2 | |
| 23 | O-Ring | P2710045G | P20701045000 | 2 | G45-1B | |
| 24 | Back Up Ring | P28PS0140 | P20801014000 | 1 | P14-T2 | |
| 25 | O-Ring | P2700014P | P20700014000 | 5 | P14-1B | |
| 26 | O-Ring | P2710095G | P20701095000 | 1 | G95-1B | |
| 27 | O-Ring | P2710065G | P20701065000 | 1 | G65-1B | |
| 67 | O-Ring | P2700016P | P20700016000 | 3 | P16-1B | |

Parts List for Main Body

Model : FINE 65X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-----------------------------------|-------------|
| *** | Assembly-Accumulator | B65116000 | B65110060000 | 1SET | including no. 28~38 | |
| 28 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 29 | Cover-Accumulator | B45116200 | B65110062000 | 1 | | |
| 30 | Diaphragm | B45117400 | B65110064000 | 1 | Ø240 | |
| 31 | Body-Accumulator | B65116100 | B65110061000 | 1 | | |
| 32 | Assembly-Poppet Valve | B15116300 | B15110063000 | 1SET | | |
| 33 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12xP1.25 | |
| 34 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12xP1.25 | |
| 35 | Bolt-Socket | P12020060 | P11020200600 | 12 | M20xP2.5x60L | |
| 25 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 36 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105x109x4.6)-T3 | |
| 37 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 38 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | B65113000 | B65110030000 | 1SET | including no. 39~42 | |
| 39 | Back Head | B65153100 | B65150031000 | 1 | | |
| 40 | Socket Plug | P19102010 | P14020010010 | 2 | PF1/4" | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 41,42 | |
| 41 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 42 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 18 | O-Ring | P2710215G | P20701215000 | 1 | G215-1B | |
| 43 | O-Ring | P2700011P | P20700011000 | 2 | P11-1B | |
| 44 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Front Head | B65112000 | B65110020000 | 1SET | including no. 46~51, 53~57 | |
| 46 | Front Head | B65152100 | B65150021000 | 1 | | |
| 47 | Inner Bush | B65112300 | B65110023000 | 1 | | |
| 48 | Front Cover | B65112210 | B65110022100 | 1 | BOX | |
| 48-1 | Front Cover | B65112200 | B65110022000 | 1 | TOP | |
| 49 | Pin-Front Head | B37112620 | B37110026200 | 2 | Ø26xL253 | |
| 50 | Plug-Rubber | B10112820 | B10110028200 | 3 | Ø25xØ27x20T | |
| 51 | Snap Ring | P07150260 | P07010102600 | 2 | Ø26 HOLE TYPE | |
| 53 | Pin-Stop | B65112610 | B65110026100 | 1 | Ø20xL259 | |
| 55 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 56 | Hollow Plug | P17001000 | P16000010000 | 3 | PT1/4" | |
| 57 | Air Cap | B00002700 | B00000027000 | 1 | PF1/2" | |
| 45 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| 25 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| *** | Assembly-Through Bolt | - | B65110050000 | 4SET | including no. 58~61 | |
| 58 | Through Bolt | - | B65110051000 | 4 | | |
| 59 | Washer | - | B65110051000 | 4 | | |
| 60 | Nut-Upper | - | B65110053000 | 4 | | |
| 61 | Nut-Bottom | - | B65110054000 | 4 | | |

Parts List for Main Body

Model : FINE 65X

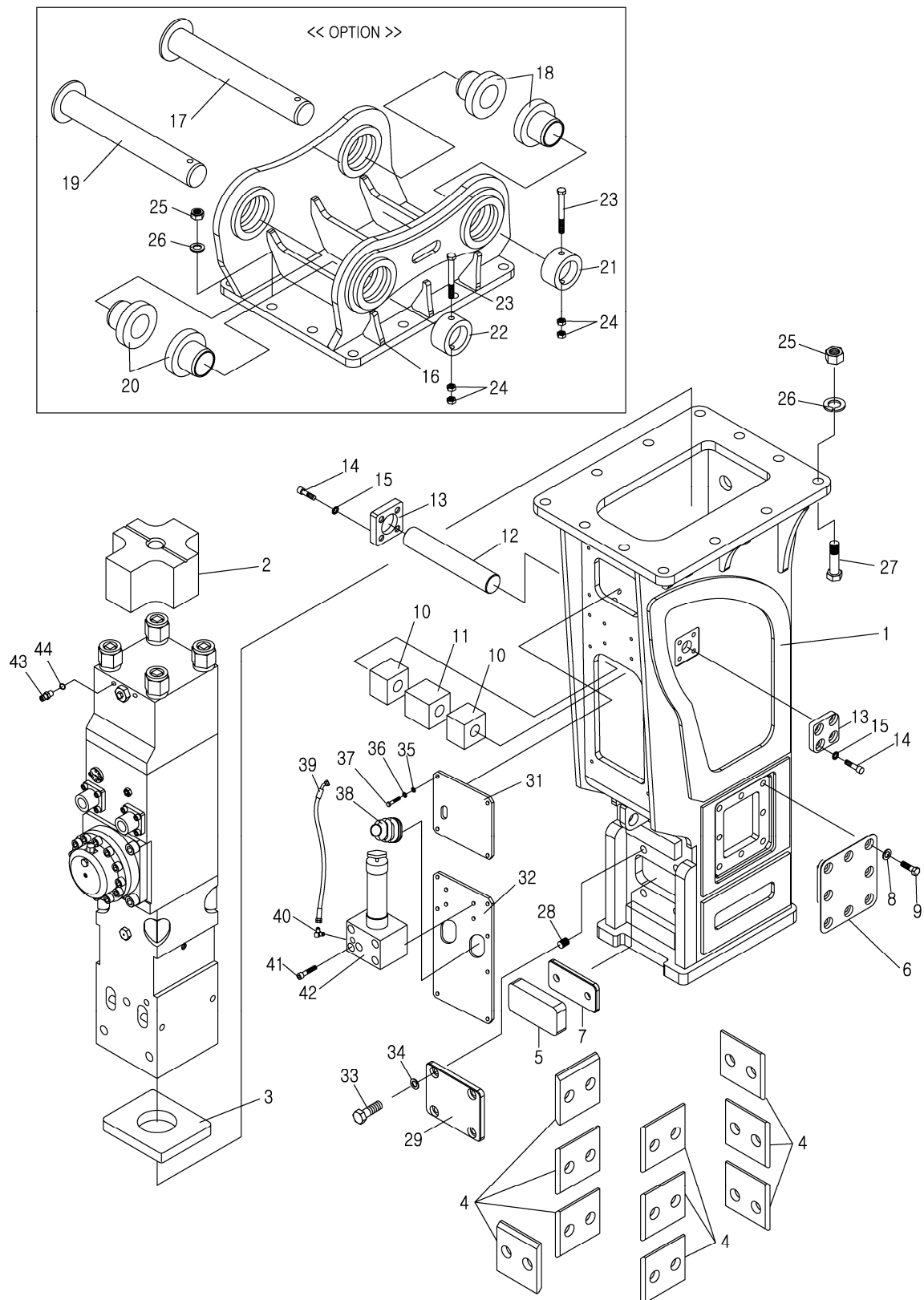
| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------|------------------|---------------------|-------------|---------------------------------|-------------|
| 52 | Pin-Tool | B65112400 | B65110024000 | 2 | | |
| 53 | Pin-Stop | B65112610 | B65110026100 | 2 | Ø20xL253(Only Top&Side Type) | |
| 50 | Plug-Rubber | B10112820 | B10110028200 | 2 | Ø25xØ27x20T(Only Top&Side Type) | |
| 62 | Pin-Knock | B45111400 | B45110014000 | 2 | Ø18 x L38 | |
| 63 | Bolt-Socket | P12030080 | P11020300800 | 4 | M30xP3.5x80L | |
| 64 | Washer-Node lock | P15430000 | P13034300000 | 4 | M30 | |
| 65 | Tool-Moil Point | B65112510 | B65110025100 | 1 | 선택, Alternative | |
| - | Tool-Wedge Point | B65112520 | B65110025200 | - | 선택, Alternative | |
| - | Tool-Blunt End | B65112540 | B65110025400 | - | 선택, Alternative | |
| *** | Seal kit-Complete | B65117000 | B65110070000 | 1SET | | |

Accessories

| | | | | | | |
|-----|-----------------------|-----------|--------------|------|----------|-----------|
| A-1 | Box Set-Service Tools | B6500800B | B6500008B000 | 1SET | BOX TYPE | |
| - | Box Set-Service Tools | B6500800T | B6500008T000 | 1SET | TOP TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 65X*



Parts List for Box-New Design

Model : FINE 65X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------------|-----------|--------------|-------|---------------------|-------------------|
| 1 | Assembly-Box Bracket | | B65560010001 | 1SET | BOX TYPE | Low noise type |
| 2 | Damper-Upper | B46515100 | B46510051000 | 1 | Urethane | |
| 3 | Damper-Bottom | | B65560052000 | 1 | Urethane | |
| 4 | Damper-Plate | B20515310 | B20510053000 | 10 | Uretahne | |
| 5 | Damper-Front | | B65560057000 | 1 | Urethane | |
| 6 | Damper-Side | | B65560055000 | 2 | - | |
| 7 | Damper-Rear | | B65560058001 | 1 | - | |
| 8 | Washer-Spring | | P13021240000 | 16 | M24 | |
| 9 | Bolt-Socket | | P11020240500 | 16 | M24*12.9T*50L | |
| *** | Assembly-Support Plate | | B65560030000 | 1SET | Including no. 10~15 | |
| 10 | Block-Support | | B65560033000 | 2 | MC Nylon | |
| 11 | Damper-Support | | B65560054000 | 1 | Ureathne | |
| 12 | Pin-Support | | B65560031000 | 1 | SCM440 | |
| 13 | Stopper-Pin | | B65510032000 | 2 | SS400 | |
| 14 | Bolt-Socket | | P11020200600 | 8 | M20*60L | |
| 15 | Washer-Node Lock | | P13034200000 | 8 | M20 | |
| *** | Assembly-Mount Cap | | B65660000000 | 1SET | OPTION | |
| 16 | Mount Cap | | B65660010000 | 1SET | OPTION | |
| 17 | Pin-Bracket | | P43110800400 | 1 | Alternative | CAT349D(Link) |
| 18 | Bush-Bracket | | P44110150300 | 2 | Alternative | CAT349D(Link) |
| 19 | Pin-Bracket | | P43120800400 | 1 | Alternative | CAT349D(Arm) |
| 20 | Bush-Bracket | | P44120150300 | 2 | Alternative | CAT349D(Arm) |
| 21 | Ring-Stop | P45110400 | P45110180400 | 1 | Alternative | CAT349D(Link) |
| 22 | Ring-Stop | P45120400 | P45120180400 | 1 | Alternative | CAT349D(Arm) |
| 23 | Bolt-Hex | P11016200 | P11015162000 | 2 | M16x200L | |
| 24 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B50415000 | B50410050000 | 12SET | including no. 25~27 | |
| 25 | Nut-Hex Nylock | P14036000 | P12020360000 | 12 | M36XP4 | |
| 26 | Washer-Spring | P15136000 | P13021360000 | 12 | M36 | |
| 27 | Bolt-Hex | P11036130 | P11010361300 | 12 | M36xP4x130L | |
| 28 | Insert Coil | | P15007243600 | 4 | M24x3.0x1.5D | |
| 29 | Cover-Damper | | B65560057101 | 1 | SS400 | |
| 33 | Bolt-Hex | | P11010240600 | 4 | M24*10.9T*60L | |
| 34 | Washer-Spring | | P13021240000 | 4 | M24 | |
| 31 | Cover-Upper | | B65560061001 | 1 | MC Nylon | LOW NOISE(option) |
| 32 | Cover-Bottom | | B65560062001 | 1 | MC Nylon | |
| 35 | Washer-Plain | P15012000 | P13010120000 | 10 | M12 | |
| 36 | Washer-Spring | P15112000 | P13021120000 | 10 | M12 | |
| 37 | Bolt-Hex | P11012040 | P11010120400 | 10 | M12x40L | |
| 38 | Hose Belloss | B45536300 | B45530063000 | 2 | | |

Parts List for Box-New Design

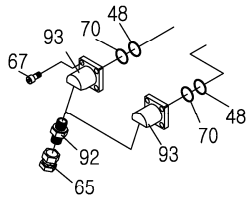
Model : FINE 65X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------|-----------|--------------|------|-----------------------|---------------------|
| 39 | Hose(5#X45 5#) | F22111140 | F10211110140 | 1 | 1/4"(70BAR)x700L | AUTO GREASE(option) |
| 40 | 90 Elbow | F03433110 | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 41 | Bolt-Socket | P12012110 | P11020121100 | 4 | M12x110L | |
| 42 | Auto Grease unit | P42110000 | P42040010000 | 1 | Inter Lube | |
| 43 | Connector | F01113110 | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4" | |
| 44 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |

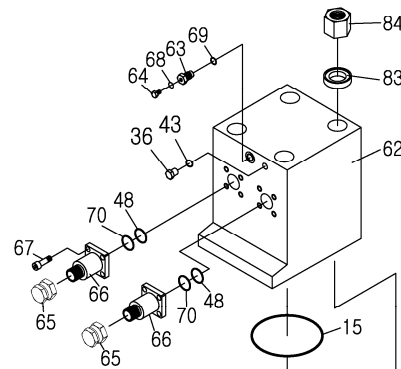


Exploded View of *FINE 80X*

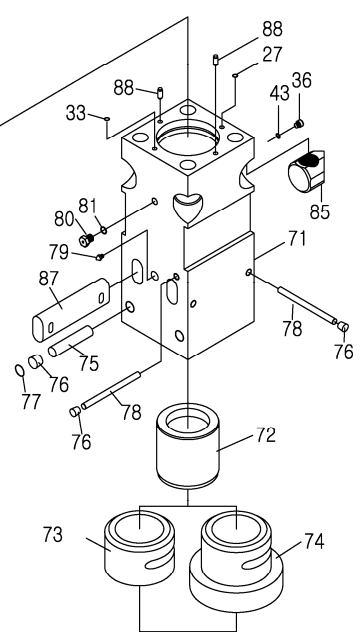
OPEN TYPE FLANGE



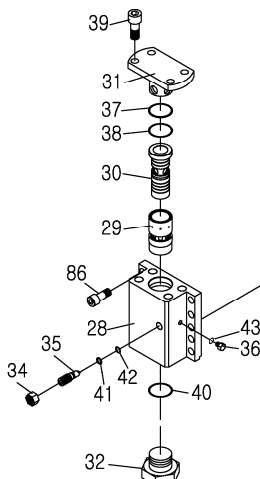
Section Back Head



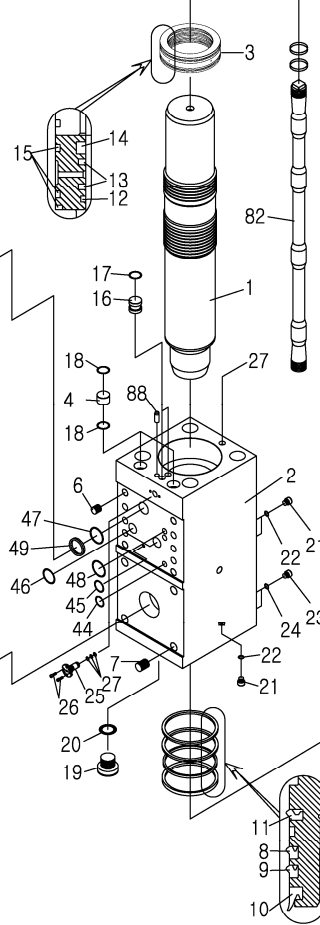
Section Front Head



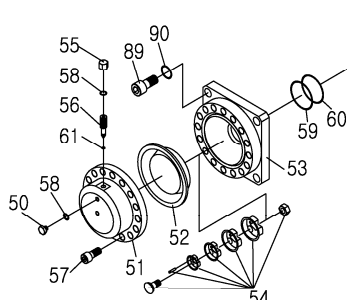
Section Valve Housing



Section Cylinder



Section Accumulator



Main body: Unit serial no.

Part List for Main Body

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-------------------------------|-----------|---------------------|-------------|----------------------------|-------------|
| *** | Assembly-Main Body | | B80110000000 | 1SET | | |
| *** | Assembly-Cylinder | | B80150010000 | 1SET | including no. 1~7 | |
| 1 | Piston | | B80110012000 | 1 | | |
| 2 | Cylinder | | B80110011000 | 1 | | |
| 3 | Seal-Retainer | | B80110013000 | 1 | | |
| 4 | Bush-Teflon | | B80110016100 | 2 | | |
| 6 | Insert Coil | | P15006304500 | 10 | M30*P3.5*1.5D | |
| 7 | Insert Coil | | P15007365400 | 4 | M36*P4.0*1.5D | |
| 8 | Seal-Buffer | | P20301200000 | 1 | HBV 200 | |
| 9 | U-Packing | | P20102200000 | 1 | ISI 200 | |
| 10 | Seal-Dust | | P20202200000 | 1 | DSI 200 | |
| 11 | Seal-Step | | P20500200000 | 1 | Ø200 | |
| 12 | Seal-Sliding | | P20900195000 | 1 | KBDS Ø195 | |
| 13 | Seal-Step | | P20500195000 | 2 | STEP Ø195 | |
| | O-Ring | | P20701200000 | 2 | G200 | |
| 14 | Seal-Gas | | P20400195000 | 1 | SKY Ø195 | |
| 15 | O-Ring | | P20701250000 | 4 | G250 | |
| 16 | Plate-Cover | | B80110016200 | 2 | Ø20x15T | |
| 17 | O-Ring | | P20700016000 | 2 | P16-T2 | |
| 18 | O-Ring | | P20700048000 | 4 | P48-1B | |
| 19 | Socket Plug | | P14020130010 | 1 | PF 1 1/2" | |
| 20 | O-Ring | | P20700045000 | 1 | P45-1B | |
| 21 | Socket Plug | | P14020030010 | 3 | PF 3/8" | |
| 22 | O-Ring | | P20700014000 | 3 | P14-1B | |
| 23 | Socket Plug | | P14020010010 | 2 | PF1/4" | |
| 24 | O-Ring | | P20700011000 | 2 | P11-1B | |
| 25 | Auto Stop Valve | - | B80110017000 | 1 | | |
| 26 | Bolt-Socket | - | P11020080250 | 2 | M8xP1.25x25L | |
| 27 | O-Ring | P2700016P | P20700016000 | 4 | P16-1B | |
| *** | Assembly-Valve Housing | | B80110040000 | 1SET | including no. 28~36 | |
| 28 | Housing-Valve | | B80110043001 | 1 | | |
| 29 | Valve | | B80110041000 | 1 | | |
| 30 | Valve-Plug | | B80110042000 | 1 | | |
| 31 | Cover-Upper, Valve | | B80110045000 | 1 | | |
| 32 | Valve Hausing Plug | | B80110044000 | 1 | | |

Part List for Main Body

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|-------------------------------------|-------------|
| *** | Assembly-Valve Adjuster | | B45110046000 | 1SET | including no. 34,35 | |
| 34 | Adjuster Nut-Valve | | B45110046200 | 1 | M24xP2.0 | |
| 35 | Valve-Adjuster | | B45110046100 | 1 | M24xP2.0 | |
| 36 | Socket Plug | | P14020050010 | 1 | PF1/2" | |
| 37 | Back Up Ring | | P20801090000 | 1 | P90-T2 | |
| 38 | O-Ring | | P20700090000 | 1 | P90-4D | |
| 39 | Bolt-Socket | | P11020240700 | 4 | M24xP3.0x70L | |
| 40 | O-Ring | | P20700038000 | 1 | P38-1B | |
| 41 | Back Up Ring | P28PS0160 | P20801016000 | 1 | P16-T2 | |
| 42 | O-Ring | P2700016P | P20700016000 | 1 | P16-1B | |
| 43 | O-Ring | | P20700018000 | 1 | P18-1B | |
| 44 | O-Ring | | P20701030000 | 1 | G30-1B | |
| 45 | O-Ring | | P20701040000 | 1 | G40-1B | |
| 46 | O-Ring | | P20701055000 | 2 | G55-1B | |
| 47 | O-Ring | | P20700075000 | 1 | P75-1B | |
| 48 | O-Ring | | P20701065000 | 1 | G65-1B | |
| 49 | Back Up Ring | | P20802075000 | 1 | P75 Flange | |
| *** | Assembly-Accumulator | B45116000 | B80110060000 | 1SET | including no. 50~57 | |
| 50 | Plug-Accumulator | B15116520 | B15110065200 | 1 | M10xP1.0 | |
| 51 | Cover-Accumulator | | B80110062000 | 1 | | |
| 52 | Diaphragm | | B80110064000 | 1 | Ø237 | |
| 53 | Body-Accumulator | | B80110061000 | 1 | | |
| 54 | Assembly-Poppet Valve | | B80110063000 | 1SET | | |
| 55 | Cap-Accumulator | B15116510 | B15110065100 | 1 | M12XP1.25 | |
| 56 | Charging-Adjuster | B20116500 | B20110065000 | 1 | M12XP1.25 | |
| 57 | Bolt-Socket | | P11020240650 | 12 | M24*P3*65L | |
| 58 | O-Ring | P2700014P | P20700014000 | 2 | P14-1B | |
| 59 | Back Up Ring | P28PF0950 | P20802095000 | 1 | P95(105X109X4.6)-T3 | |
| 60 | O-Ring | P2700095P | P20700095000 | 1 | P95-1B | |
| 61 | O-Ring | P2700005P | P20700005000 | 1 | P5-1B | |
| *** | Assembly-Back Head | | B80150030000 | 1SET | including no. 36,62~67,92~93 | |
| 62 | Back Head | | B80150031000 | 1 | | |
| 36 | Socket Plug | | P14020050010 | 1 | PF1/2" | |
| 43 | O-Ring | | P20700018000 | 1 | P18-1B | |
| 15 | O-Ring | | P20701250000 | 1 | G250-1B | |
| *** | Assembly-Charging Valve | B15113200 | B15110032000 | 1SET | including no. 63,64 | |
| 63 | Socket Plug | P19108010 | P14021100010 | 1 | M10xP1.0 | |
| 64 | Charging Valve | B15113210 | B15110032100 | 1 | | |
| 68 | O-Ring | P2700008P | P20700008000 | 1 | P8-1B | |
| 69 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |

Part List for Main Body

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|--------------------------------|------------------|---------------------|-------------|----------------------------------|---------------------------|
| *** | Assembly-Adapter Flange | | B80110034000 | 2SET | including no. 65~67 | NEW BOX TYPE |
| 65 | Cap-Adapter | | F00511137000 | 2 | PF1 1/2"5# | |
| 66 | Adapter-Flange | | B80110033801 | 2 | PF1 1/2"5# | for New Box Type |
| *** | Assembly-Adapter Flange | | B80110033000 | 2SET | including no. 65,67,92,93 | SIDE TOP TYPE |
| 92 | Adapter | | F00121237700 | 2 | PF1 1/2"-PF1 1/2"5# | |
| 93 | Adapter-Flange | | B80110034700 | 2 | 45° PT1 1/2" | for Open Type |
| 67 | Bolt-Socket | | P11023200400 | 8 | M20xP2.5X40 | |
| 48 | O-Ring | | P20701065000 | 2 | G65-1B | |
| 70 | Back Up Ring | | P20811065000 | 2 | G65-T2 | |
| *** | Assembly-Front Head | | B80150020000 | 1SET | including no. 71~80 | |
| 71 | Front Head | | B80150021000 | 1 | | |
| 72 | Inner Bush | | B80110023000 | 1 | | |
| 73 | Front Cover | | B80110022100 | 1 | | for Box Type & "E" Serise |
| 74 | Front Cover | | B80110022000 | 1 | | for Open Type |
| 75 | Pin-Front Head | | B80110026200 | 2 | | |
| 76 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø32*Ø29*24t | |
| 77 | Snap Ring | P07150300 | P07010103000 | 2 | Ø30 HOLE TYPE | |
| 78 | Pin-Stop | | B80110026100 | 1 | Box Type | |
| 76 | Plug-Rubber | B20112820 | B20110028200 | 1 | Ø32*Ø29*24t | |
| 79 | Grease Nipple | P10201000 | P10201000000 | 1 | PT1/4" | |
| 80 | Air Cap | B00002700 | B00000027000 | 1 | PF3/4"(Spool Type) | |
| 81 | O-Ring | P2700024P | P20700024000 | 1 | P24-1B | |
| 36 | Socket Plug | | P14020050010 | 1 | PF1/2" | |
| 33 | O-Ring | P2700012P | P20700012000 | 1 | P12-1B | |
| 27 | O-Ring | P2700016P | P20700016000 | 1 | P16-1B | |
| 43 | O-Ring | P2700018P | P20700018000 | 1 | P18-1B | |
| *** | Assembly-Through Bolt | B80115000 | B80110050000 | 4SET | including no. 82~85 | |
| 82 | Through Bolt | B80115100 | B80110051000 | 4 | | |
| 83 | Washer | B80115200 | B80110052000 | 4 | | |
| 84 | Nut-Upper | B80115300 | B80110053000 | 4 | | |
| 85 | Nut-Bottom | B80115400 | B80110054000 | 4 | | |
| 86 | Bolt-Socket | | P11020301000 | 10 | M30xP3.5x100L | |
| 87 | Pin-Tool | | B80110024000 | 2 | | |
| 78 | Pin-Stop | | B80110026100 | 2 | | Open Type |
| 76 | Plug-Rubber | B20112820 | B20110028200 | 2 | Ø32*Ø29*24t | Open Type |
| 88 | Pin-Knock | B45111400 | B45110014000 | 3 | Ø18 | |
| 89 | Bolt-Socket | | P11020360800 | 4 | M36xP4.0x80L | |
| 90 | Washer-Node lock | | P13034360000 | 4 | M36 | |
| 91 | Tool-Moil Point | | B80110025100 | 1 | Alternative | |
| - | Tool-Wedge Point | | B80110025200 | - | Alternative | |
| - | Tool-Conical Point | | B80110025300 | - | Alternative | |
| - | Tool-Blunt End | | B80110025400 | - | Alternative | |

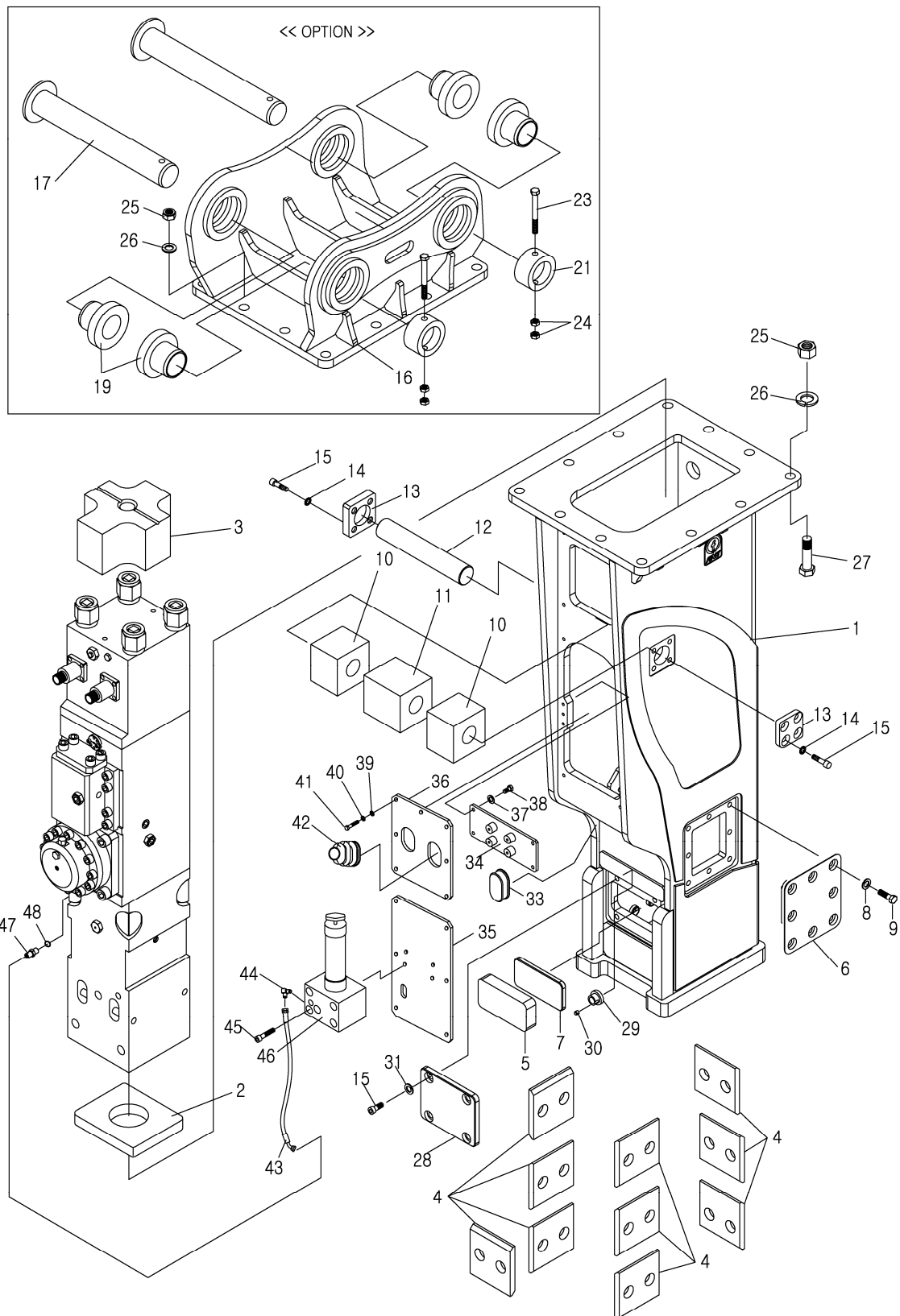
Part List for Main Body

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|--------------------|-----------------------|-----------|--------------|------|----------|-------------|
| *** | Seal Kit-Complete | | B80110070000 | 1SET | | |
| Accessories | | | | | | |
| A-1 | Box Set-Service Tools | | B8000008B000 | 1SET | BOX TYPE | |
| A-2 | Gauge Set-N2 Charging | B00008100 | B00000082000 | 1SET | | New Type |
| A-3 | Cylinder-N2 Gas | B15008200 | B15000080000 | 1 | | 10.2liter |
| A-4 | Manual Book | FB100000 | FB0100000000 | 1 | | |



Exploded View of *FINE 80X*



Bracket-Box type-New Design type: Unit serial no.

Parts List for Box-New Design

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|-------------------------------|------------------|---------------------|--------------|----------------------------|-------------|
| 1 | Assembly-Box Bracket | | B80560010000 | 1SET | NEW BOX TYPE | |
| 2 | Damper-Bottom | | B80560052000 | 1 | Urethane | |
| 3 | Damper-Upper | | B80560051000 | 1 | Urethane | |
| 4 | Damper-Plate | | B80560053000 | 10 | Urethane | |
| 5 | Damper-Front | | B80560057000 | 1 | Urethane | |
| 6 | Damper-Side | | B80560055000 | 2 | | |
| 7 | Damper-Rear | | B80560058000 | 1 | Urethane | |
| 8 | Bolt-Hex | - | P11010240501 | 16 | M24x50L | |
| 9 | Washer-Spring | - | P13021240000 | 16 | M24 | |
| *** | Assembly-Support Plate | B80563000 | B80560030000 | 1SET | including no. 10~15 | |
| 10 | Block-Support | | B80560033000 | 2 | MC Nylon | |
| 11 | Damper-Support | | B80560054000 | 1 | Urethane | |
| 12 | Pin-Support | | B80560031000 | 1 | | |
| 13 | Stopper-Pin | | B80560032000 | 2 | | |
| 14 | Washer-Node lock | | P13034240000 | 8 | M24 | |
| 15 | Bolt-Socket | | P11020240800 | 8 | M24x80L | |
| *** | Assembly-Mount Cap | - | B80660010000 | 1SET | including no. 16~24 | |
| 16 | Mount Cap | | B80620110000 | 1SET | OPTION | |
| 17 | Pin-Bracket | P43120710 | P43120710400 | 2 | Alternative | |
| 19 | Bush-Bracket | P44120120 | P44120140120 | 4 | Alternative | |
| 21 | Ring-Stop | P45120400 | P45120160400 | 2 | Alternative | |
| 23 | Bolt-Hex | P11016200 | P11010162200 | 2 | M16x220L | |
| 24 | Nut-Hex | P13016000 | P12010160000 | 4 | M16 | |
| *** | Assembly-Bolt-Hex | B80415000 | B80410050000 | 12SET | including no. 25~27 | |
| 25 | Nut-Hex Nylock | P14036000 | P12020360000 | 12 | M36 | |
| 26 | Washer-Spring | P15136000 | P13021360000 | 12 | M36 | |
| 27 | Bolt-Hex | P11036140 | P11010361400 | 12 | M36x140L | |
| 28 | Cover-Damper | - | B80560057100 | 1 | | |
| 29 | F_Damper Bush | - | B23560057200 | 4 | | |
| 30 | Knock Pin | - | B23560057300 | 4 | | |
| 31 | Washer-Spring | | P13060240000 | 4 | M24 | |
| 15 | Bolt-Socket | | P11020240500 | 4 | M24x50L | |

Parts List for Box-New Design

Model : FINE 80X

| Item No. | Description | Part No. | New Part No. | Q'ty | Remarks | Application |
|----------|------------------|-----------|--------------|------|-------------------------|---------------------|
| 33 | Plug-Rubber | | B80560064200 | 1 | Ellipsoid Type | LOW NOISE(option) |
| 34 | Plate-Support | | B80560035000 | 1 | | |
| 35 | Cover-Bottom | | B80560062000 | 1 | | |
| 36 | Cover-Upper | | B80560061000 | 1 | | |
| 37 | Washer-Spring | | P13021140000 | 4 | M14 | |
| 38 | Bolt-Hex | | P11010140350 | 4 | M14x35L | |
| 39 | Washer-Plain | | P13010120000 | 10 | M12 | |
| 40 | Washer-Spring | | P13021120000 | 10 | M12 | |
| 41 | Bolt-Hex | | P11010120400 | 10 | M12x40L | |
| 42 | Hose Belloss | | B80560063000 | 2 | | |
| 43 | Hose(5#X45 5#) | F22111114 | F10211110114 | 1 | 1/4"(70BAR)x600L | AUTO GREASE(option) |
| 44 | 90 Elbow | F03433110 | F00321231100 | 1 | PT1/4"xPF1/4"5# | |
| 45 | Bolt-Socket | P12012110 | P11020121100 | 4 | M12x110L | |
| 46 | Auto Grease unit | P42110000 | P42040010000 | 1 | Inter Lube | |
| 47 | Connector | F01113110 | F00111131100 | 1 | PF1/4"(O-RING)xPF1/4"5# | |
| 48 | O-Ring | P2700011P | P20700011000 | 1 | P11-1B | |