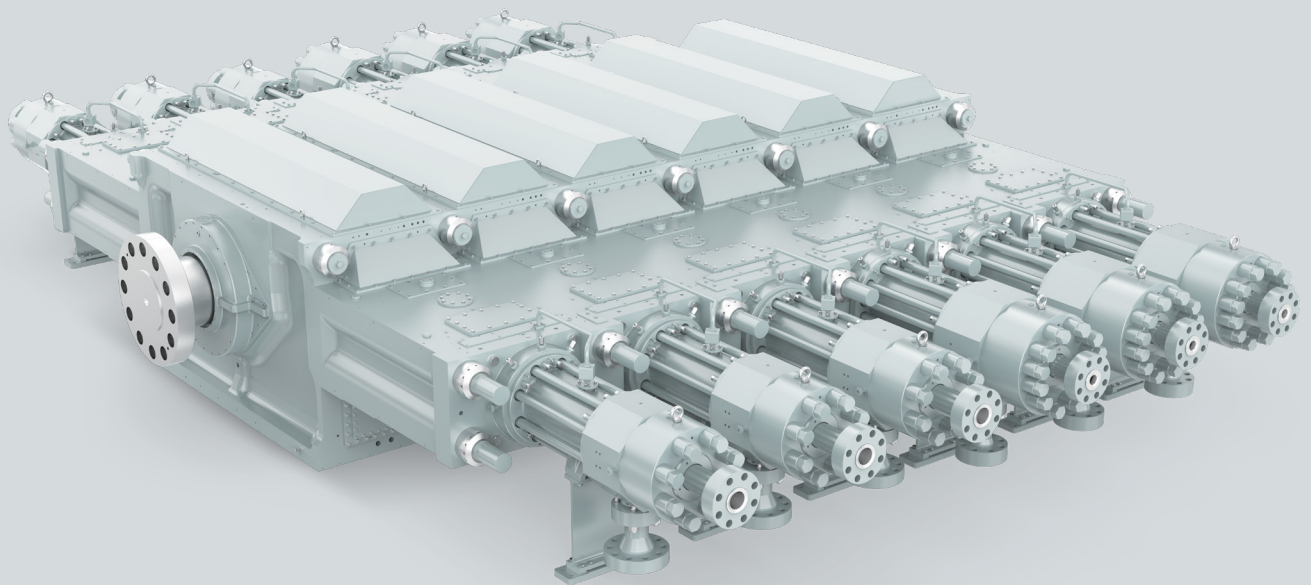


# Hyper compressors

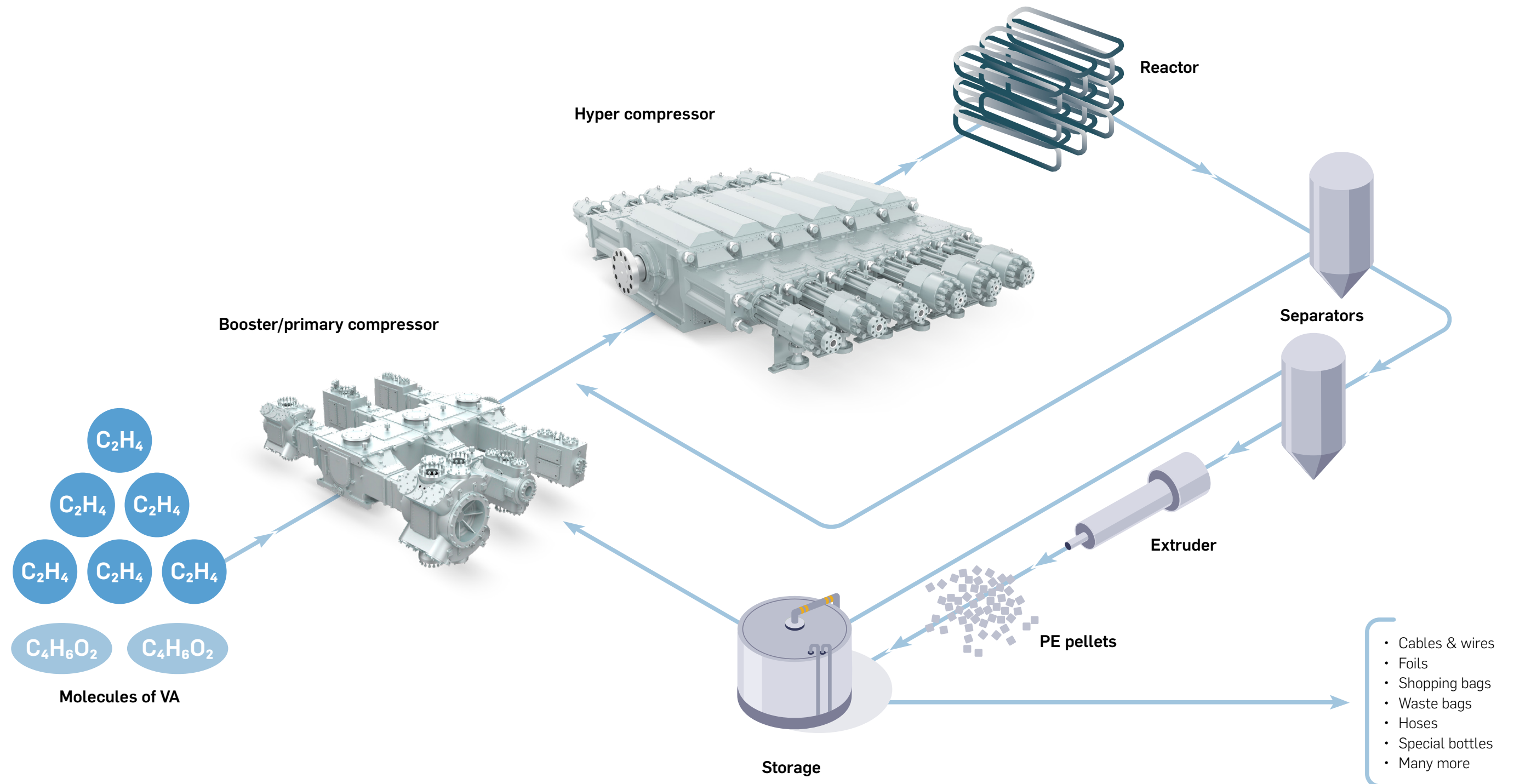
For LDPE production –  
Customers' choice since 1951



# Your process know-how and our technical experience

## A sound foundation for a beneficial partnership

The Hyper compressor is a high-pressure reciprocating compressor designed for low-density polyethylene (LDPE) and ethylene vinyl acetate (EVA) production plants. It compresses ethylene to discharge pressures of up to 3'500 bara (50'000 psia).



# Technology at its best

## Safety and reliability

### Key compressor components

For best performance and longest lifetime

#### Central valves

- Combined suction/discharge multi-poppet valve for compact design
- In full metal execution to withstand wear for long durability
- Autofrettage treated to withstand high pressures
- Optimized flow for best performance and long lifetime

#### High-pressure packings

- Applied technology based on decades of experience
- Extremely high sealing efficiency and lifetime
- Different materials and designs for various copolymer applications

#### Low-pressure packings

- Provides extra safety
- Avoids flow of ethylene into the distance piece

#### Oil seals

- Separate seals on crankgear and distance piece side
- Self-centering design

#### Bearings

- Large diameters for low specific load
- Expected lifetime > 15 years
- Tri-metal galvanic layers for increased wear protection

#### Crosshead frames

- Bottom guidance for easy service access
- Massive construction for low vibration level

#### Elastic rod couplings

- Low tolerance connection for excellent guidance of the auxiliary guide and plunger

#### Auxiliary guides

- With elastic rod
- To eliminate undesired plunger movement
- For exact plunger alignment

#### Plunger couplings

- Simple taper design to avoid tractive forces
- For less adjustment work and easy access

#### Burckhardt Hypropack™ cartridge system

- Pre-assembled module including base cup, high pressure cups, cups for the guide ring and the throttle ring, shrunk liner (cylinder) and head core (valve seat)
- For fast exchange and service

#### High-pressure packing cups

- Special design to withstand fretting
- Surface treated to avoid fissures

### Rugged design

For durability

#### Instrumentation (not illustrated)

- Latest technology implemented
- – For safe-guarding (protective circuits) and condition monitoring

#### Crankshaft

- With camshaft design
- Without webs
- Without bores
- Rigid against torsion and bending

#### Crankgear

- Three types to minimize cylinders in operation
- Robust design with low specific loads
- Welded construction for K-type
- Cast construction for F-types
- Separate oil tank, no oil sump

#### Large cross sections of cooling/flushing piping

- Extra safety in case of a plunger failure

#### Distance pieces

- To prevent ethylene from entering the crankgear
- For increased safety
- Double compartment design
- No explosion relief valve required
- Vented interspace for extra safety

#### Safety devices

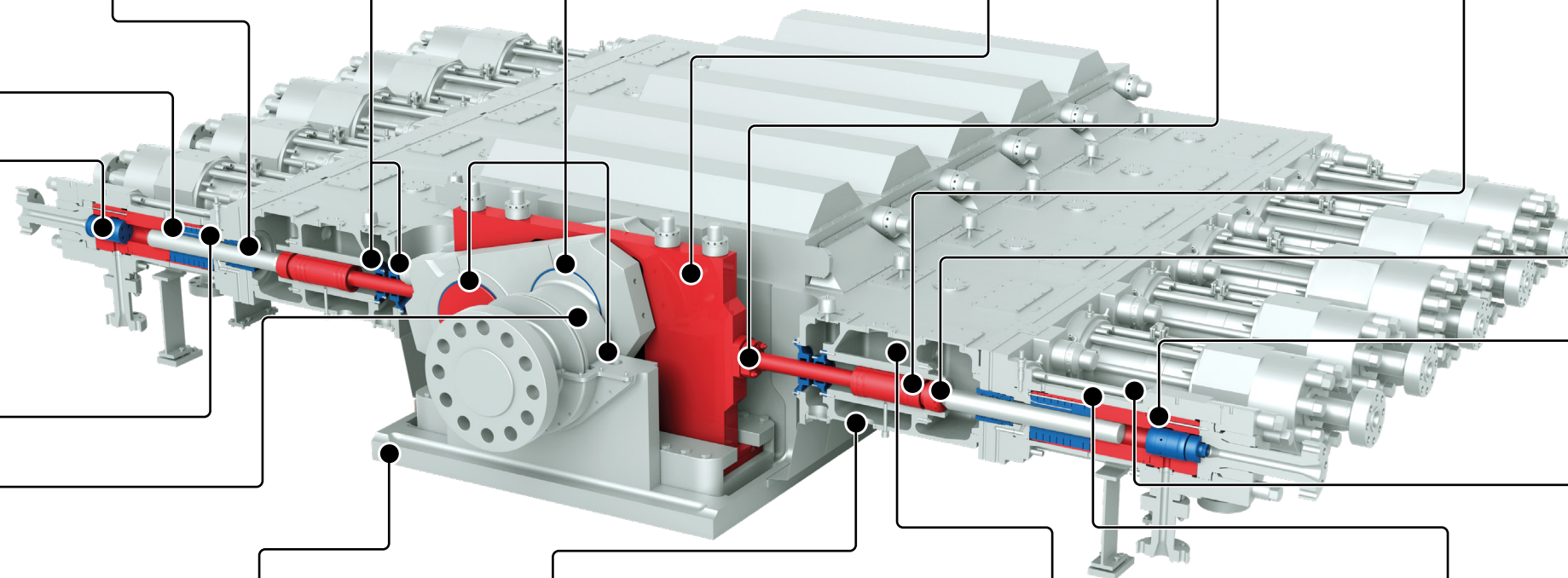
- Rupture disk provides extra safety in case of leakage of high pressure cups

#### Cylinder tie bolts

- Extra long and elastic design
- Allow safe gas decomposition

### In-house designed and manufactured main parts

For reliability



# Leading compressor technology

## For lowest life cycle costs

Our Hyper Compressors are the result of the broad experience gained by Burckhardt Compression over many decades. The second to none design has been accomplished in close collaboration with our customers throughout the world. Based on their needs, Burckhardt Compression provides a robust and reliable compressor of Swiss engineering. Certified Swiss manufacturing, quality management and committed workforce ensure a constant high quality level.



### Plant: Nanjing, China

"Our company BYC is located in China and is a joint venture between BASF and SINOPEC. We purchased two booster/primary compressors and two Hyper Compressors from Burckhardt Compression. The compressors are in operation since May 2005. Up to now, we are satisfied with the project management and the good quality of the compressors that represent high reliability – especially a long lifetime of the packings and valves.

We appreciate the good aftersales service and the periodical visits of Burckhardt Compression. In case of any issues, they provide strong and prompt technical support. We are happy to have Burckhardt Compression as a partner."

**Guan Xinchun**  
Plant Maintenance Manager, Nanjing  
BASF-YPC Company Limited



## From pre-sales to field optimization both for EPC contractors and plant operators

### Research and development

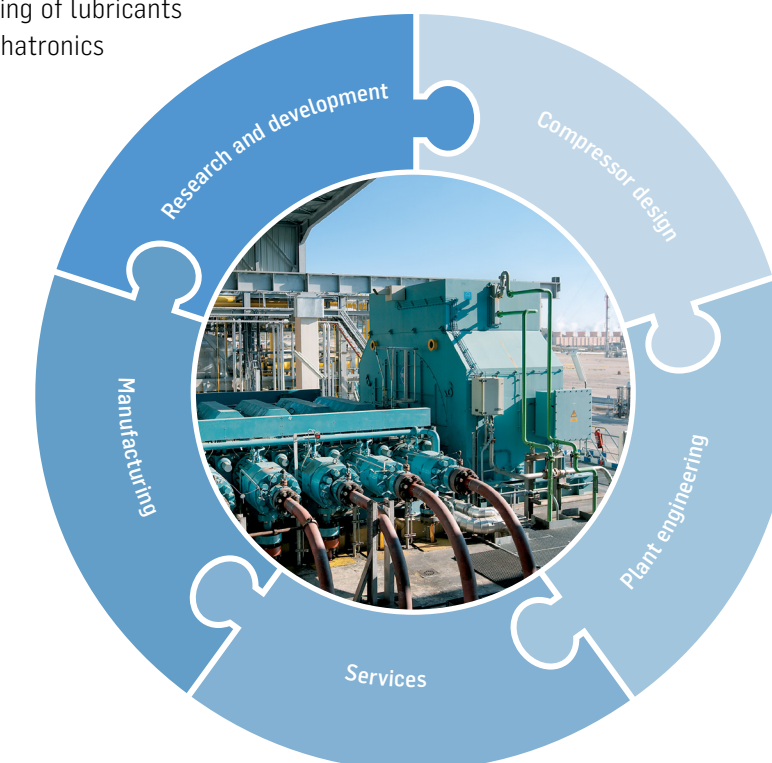
- Finite element analysis
- Research and testing of lubricants
- Mechatronics

### Compressor design

- Pre-sales support
- Engineering analysis
- Feasibility study
- Selection and sizing
- Pulsation and vibration studies
- 3D CAD
- Compressor valves
- Rings and packings

### Manufacturing

- CAM in-house machining
- Purchasing
- Assembly
- Quality assurance



### Plant engineering

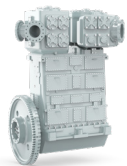
- Contracting
- Customer and standard specifications
- Lubrication skid
- Cooling water skid
- Cooling/flushing skid
- Instrument and control, motors
- PLC programming

### Services

- Engineering services
- Optimization
- Spare parts logistics
- Troubleshooting
- Revamps
- Field service
- Valve service
- Component repair
- Technical support
- Monitoring and diagnostics
- Training

## Reciprocating compressors

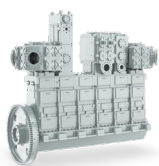
Leading technology for lowest life cycle costs



### Laby®

#### compressors

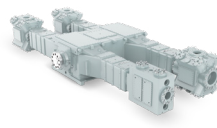
Contactless and  
oil-free



### Laby®-GI

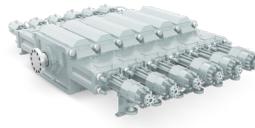
#### compressors

Fully balanced



### Process gas compressors

API 618 – lowest  
life cycle cost



### Hyper compressors

Safe and reliable  
up to 3'500 bara /  
51'000 psia



### Standard high pressure compressors

Compact package for  
demanding applications

## Compressor components

Best performance and longest lifetime

- Compressor valves
- Redura® rings & packings
- Capacity control system
- Capital parts
- Labyrinth piston compressor components
- Hyper/secondary compressor components

## Services

The full range

- Burckhardt valve service
- Spare parts logistics
- Field service
- Technical support
- Revamps & upgrades
- Component repair
- Condition monitoring & diagnostics
- Training

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