These instructions cover the whole range of Hi-Force puller kits. Not all kits contain all of the accessories described.

SAFETY PRECAUTIONS.

Always use the hand pump supplied with the kit, or ensure the maximum pressure rating of the hand pump does not exceed the following.

Capacity	**Maximum Working Pressure**
10 tonne	620 bar
20 tonne	588 bar
30 tonne	630 bar
50 tonne	572 bar

Never exceed the rated capacity of the equipment.

Always include the pressure gauge in the system.

Avoid kinks and sharp bends in hydraulic hose.

When heavy objects have been dropped onto a hose, make sure that is re tested and certificated before further use.

Ensure piston is fully retracted before disconnecting hose.

Never pressurise coupler connections when they are not connected.

Investigate all oil leaks from your system immediately.

Never carry hydraulic equipment by its hose, connections or fittings.

Always use the correct hydraulic fluid, as specified by your Hi-Force distributor.

Always use suitable eye protection, gloves and safety footwear.

Always have your equipment serviced and repaired by accredited Hi-Force Service Centres, who will use only genuine Hi-Force spare parts.

If in doubt, consult your local Hi-Force distributor or sales office.

2 WAY PULLER and 3 WAY PULLER. Fig1.

Assemble legs (4) loosely to double or triple crosshead (2 or 3) as appropriate, using straps (5) bolts and nuts (6 and 7) as shown in fig.1. N.B On the 10 tonne models the crosshead is dual purpose. Use the holes as near as possible to the hooks on the legs as the work-piece will allow.

Assemble cylinder to crosshead using short bolts (21s) provided and tapped holes in cylinder base.

Screw threaded saddle into piston.

Fit adjusting screw (8) through crosshead and cylinder.

Assemble the puller onto the work-piece and adjust as required to observe the max. 10 degree angle. Take up slack in the assembly with the adjusting screw (8).

Tighten bolts on straps to prevent movement during pulling operation.

Remove cap on cylinder coupler and fit hose. NB refer to instructions with hand pump for assembly and use.

Operate the hand pump to actuate puller. Observe the pressure gauge continuously until maximum stated pressure for kit is achieved. (Do not exceed this pressure)

Once job is complete, retract piston fully and disconnect hose. Remove puller from work-piece.

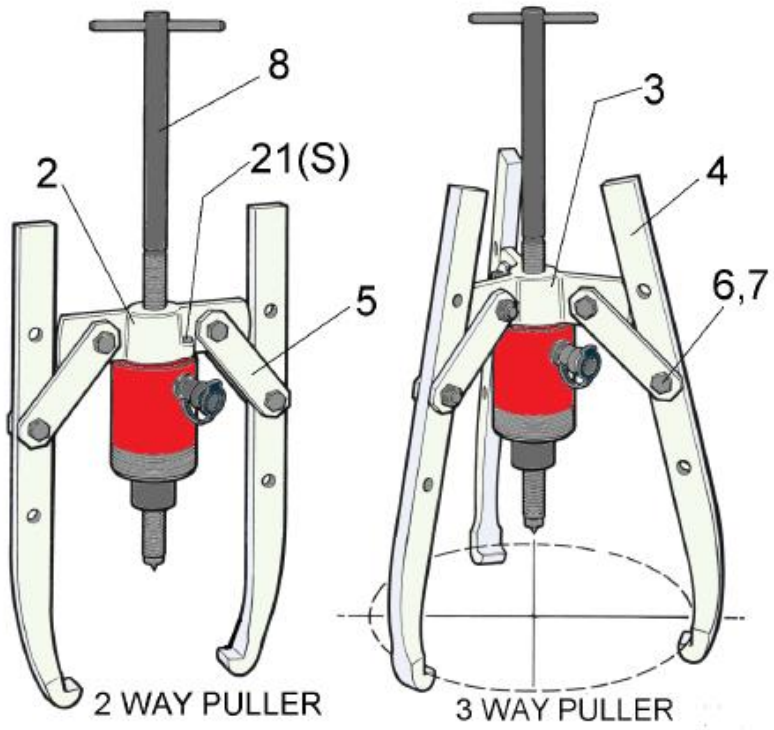


FIGURE 1

BEARING PULLER, Fig 2.

Fit the cylinder to the crossbeam (11) using the long bolts (21l) provided.

Fit threaded saddle into the piston.

Assemble the bearing puller (19) around the bearing to be removed.

Screw the rod assemblies (12) fully into the bearing puller.

Assemble the crossbeam (11) to the rods, using the clamps (13) and nuts (14) provided.

Where extra reach is required the rods may be extended by means of the rod extensions (17)and rod connectors (18). Always ensure that the connectors are fully screwed onto the rods.

Fit adjusting screw (8) through the crossbeam and the cylinder.

Take up slack in the assembly using the adjusting screw.

Remove cap on cylinder coupler and fit hose. NB refer to instructions with hand pump for assembly and use.

Operate the hand pump to actuate puller. Observe the pressure gauge continuously until maximum stated pressure for kit is achieved. (Do not exceed this pressure)

Once job is complete, retract piston fully and disconnect hose. Remove puller from work-piece.

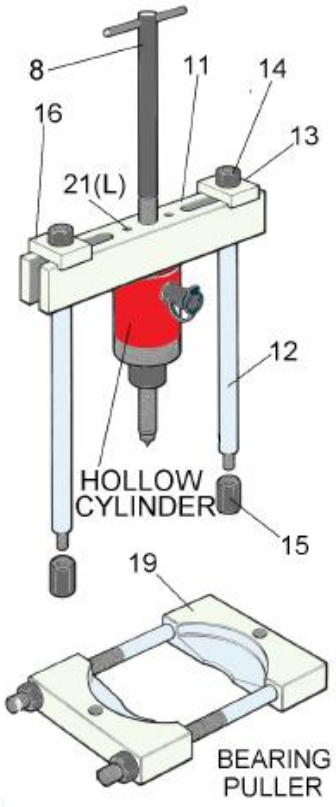
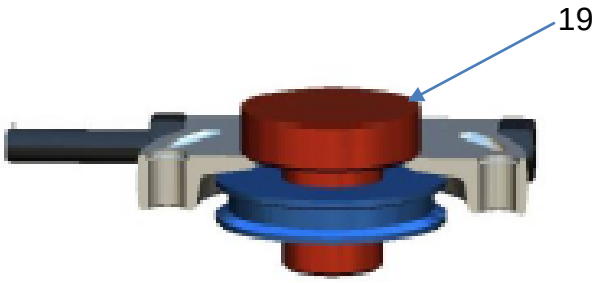
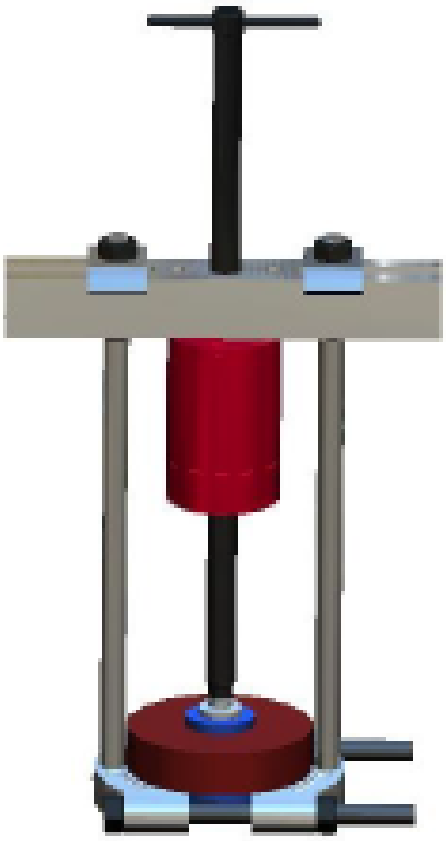


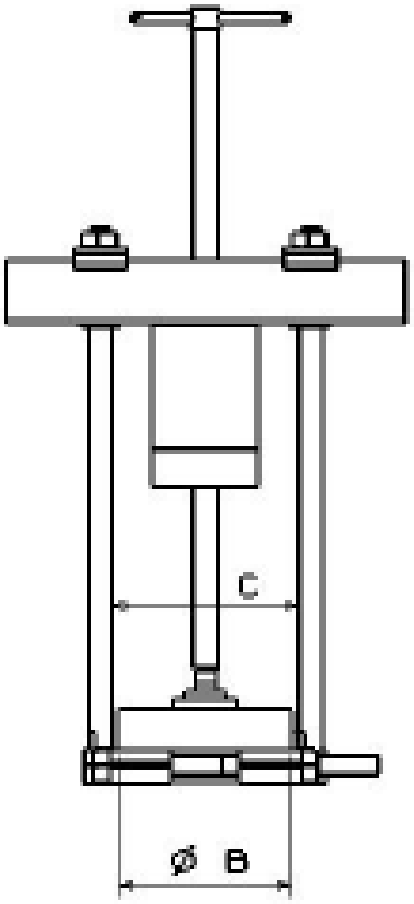
FIGURE 2

ADDITIONAL BEARING PULLER INSTRUCTIONS

CORRECT ASSEMBLY:
The Bearing Puller (19) must rest on the flat side.
The side arm bolts (12) should be positioned as close as possible to the work-piece being pulled. Ensure the 'C' dimension & 'B' dimension (See below) are as close to each other as possible. The Puller can now be operated to its maximum power.

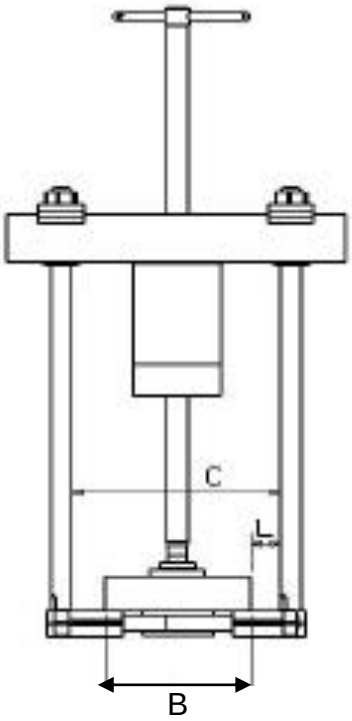






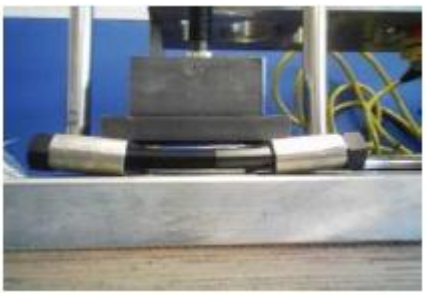
INCORRECT ASSEMBLY

The side arms bolts are positioned too far away from the work piece being pulled (See Diagram below) Therefore the dimension ‘C’ is far greater than the dimension ‘B’. This causes the Load on the bearing puller edge to be multiplied by the distance ‘L’. This means that the correct maximum force on the bearing puller cannot be reached, and this set-up may also cause the bearing puller to permanently deform and/or break.



EXAMPLES OF INCORRECT ASSEMBLY

Example 1



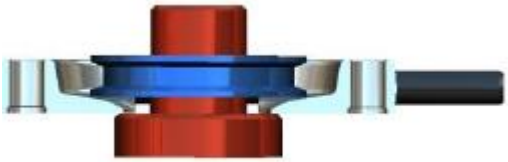
Example 2.

Example 1: 20 ton puller set-up;;
'L' dimension greater than 10mm
Applied Force: 20 ton
Bearing Puller is bending,

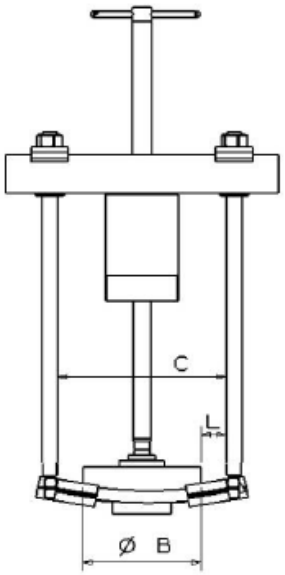
Example 2: 20 ton puller set-up
'L' Dimension is equal to 35mm
Applied Force= 15 ton
Bearing Puller is bending excessively and may break.

WORST CASE ASSEMBLY MODE

1) Bearing Puller – resting on the inner lip side, not allowing proper support.



2) The side arms are at maximum width, so dimension 'C' is far greater than dimension 'B'
3) The force on the bearing puller edges is now multiplied by the distance 'L'.



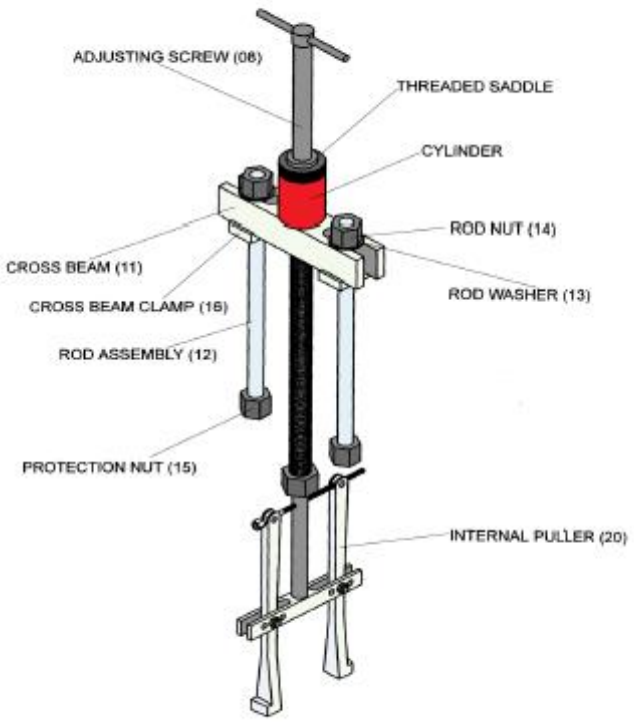
4) If the above set-up is used, the toll should never be operated at greater than 50% of the maximum stated power, as the bearing puller will bend and the threaded bolt of the bearing puller may break.

INTERNAL PULLER ATTACHMENT Fig 3.

Fit the cylinder to the crossbeam (11) using the long bolts (21l) provided.
Fit threaded saddle into the piston.
Fit adjusting screw (8) through the cylinder and crossbeam.
Assemble the rods (12) to the crossbeam using the clamps (16) nuts (14) and washers (13) provided.
Fit the protection nuts (15) onto the ends of the rods.
Where extra reach is required the rods may be extended by means of the rod extensions (17) and rod connectors (18). Always ensure that the connectors are fully screwed onto the rods.
Screw the internal puller (20) onto the end of the adjusting screw.
Assemble the puller to the work-piece, by altering the extension of the adjusting screw (8) and the legs on the internal puller.
Take up slack on the assembly using the adjusting screw.
Remove cap on cylinder coupler and fit hose. NB refer to instructions with handpump for assembly and use.
Operate the hand pump to actuate puller. Observe the pressure gauge continuously until maximum stated pressure for kit is achieved. (Do not exceed this pressure)

Once job is complete, retract piston fully and disconnect hose. Remove puller from workpiece.

FIGURE 3



INTERNAL PULLER

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