



PULLERS

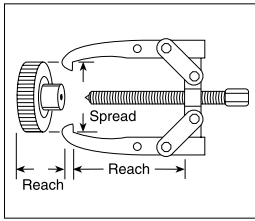
Puller "How-to" Information	130 – 131
Puller Safety Tips	131
Protective Blankets	131
Mechanical "Grip-O-Matic" Pullers	132
Mechanical Push-Pullers and Pulling Adapters	133
Hydraulic Push-Pullers	134 – 135
Hydraulic "Grip-O-Matic" Pullers	136
Bearing Splitters and Pulling Attachment	137
Slide Hammer Pullers	138 – 139
Differential Bearing Pullers	140
Blind Hole Pullers, Bearing Pullers, and A/C Clutch Pulley	141 – 142
Flange-Type Pullers	143
17-1/2 – 50-Ton Puller Sets	144 – 146

YOU CAN SOLVE THE 3 BASIC PULLING PROBLEMS...

The first thing you have to do is identify exactly what your particular pulling problem is. Once you recognize the problem, you can go on to select the right tool to solve it.

HOW TO SELECT THE RIGHT PULLER

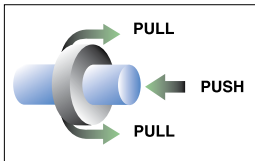
- 1: Determine the type of puller or puller combination. Which puller type is best for "getting a grip" on the part? Is a combination of puller types required?
- 2: Determine the "REACH" needed. The puller you select must have a "reach" equal to or larger than the corresponding sizes of the part.
- 3: Determine the "SPREAD" needed. The width of the part to be pulled will determine the "spread" required.
- 4: Estimate the force required. A puller with the correct "reach" and "spread" will usually have enough power. When in doubt, always use the next larger size. More power may be needed for rusted parts, or when the "area of resistance" is large.



GENERAL RULE OF THUMB:

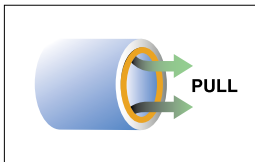
Manual pullers require that the puller screw be at least half as large (in diameter) as the shaft of the pulling job.

Hydraulic pullers need the maximum force exerted in tons to be 7–10 times the diameter of the shaft in inches.



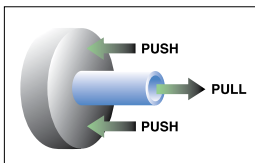
1 PULLING SOMETHING OFF A SHAFT.

Removing a gear, bearing, wheel, pulley, etc., to replace it or get at another part.



2 PULLING SOMETHING OUT OF A HOLE.

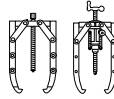
Internal bearing cups, retainers, or oil seals are usually press-fitted and are difficult to remove.



3 PULLING A SHAFT OUT OF SOMETHING.

A transmission shaft or pinion shaft is often hard to remove from a bore or housing. Use a Push-Puller with adapters if you can "get a hold of" the threaded end of the shaft. Sometimes it's possible to push a shaft through a housing, rather than pull it out. In applications of this type, the puller legs must be securely fastened to the housing and the screw may simply bear against the shaft.

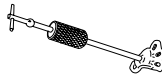
The tools to use when pulling something off a shaft:



Jaw-type puller, either manual or hydraulic. (For extra force and convenience use a hydraulic puller.) Both are available in 2- or 3-jaw versions and are used to grip the outer circumference of an attachment.



Bearing pulling attachment. Provides "knife-like" edges to get behind the component, or when there isn't a good gripping area on the part to be pulled. The splitter gets behind the component to prevent damage to the part.



Push-Puller® with attachments. External-internal adapters can thread directly into tapped holes on a component.



Slide hammer puller with selected attachments for multiple light-duty pulling tasks.

A variety of OTC adapters can be used to protect a shaft, bridge a hole, thread into tapped holes, or assist installation.

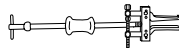
The tools to use when pulling something out of a hole:



Internal pulling attachments have narrow jaws which extend through the center of the part to be pulled. They provide a straight pull and avoid damage to housings. Designed for use with Push-Pullers or slide hammer pullers.



Push-Puller in combination with internal pulling attachment. Both mechanical and hydraulically powered versions are available.



Here a slide hammer puller is combined with an internal pulling attachment. Ideal for removing parts from blind holes, especially when there is no housing to brace puller legs against.



When there is a shaft to bear against, a forcing screw of the correct size may be used in combination with an internal pulling attachment.

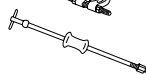
The tools to use when pulling a shaft out of something:



Push-Puller® with threaded adapter. Use a mechanical or hydraulic puller, depending on the size of the shaft to be pulled.



When the housing lacks sufficient surface for the puller legs to bear against, a pulling attachment may be used to provide support.



Slide hammer puller with threaded adapter – either external-internal or internal can be used.



Internal adapters are fastened to the external threaded end of the shaft to pull while pushing against the housing.

External-internal adapters are threaded into the shaft to pull it while pushing against the housing.

SAFETY PRECAUTIONS

⚠ WARNING: TO PREVENT PERSONAL INJURY WHEN USING PULLERS,

- Wear approved eye protection, such as safety glasses, goggles, or a face shield.
- Inspect puller for dents, cracks, or excessive wear before use. Inspect forcing screw for signs of galling or seizing. Replace worn or damaged components.
- Do not exceed puller's rated capacity, spread, or reach. Use correct size of puller for application.
- Ensure puller is correctly aligned with application and seated on component to be removed. Jaws must be parallel to forcing screw.
- Do not use wrench extensions when applying a load.
- Cover application with a shield or protective blanket before force is applied to contain flying debris should breakage occur.
- Apply force gradually. Do not use an impact wrench to apply force unless instructions specify use with an impact wrench.
- Do not strike or "sledge" puller or component.
- Do not modify puller by grinding, heating, or other means that could weaken puller strength.



ABOUT MECHANICAL PULLERS

A pulling system can exert tons of force and it is difficult to predict the exact force required for a pulling application. It is important to observe safety precautions when using a puller.

The OTC pulling system is versatile. For that reason, it is possible that various components in a pulling setup will have different tonnage ratings. The lowest capacity component determines the capacity of the entire setup. For example, when an accessory having a capacity of one ton is used with a 10-ton capacity puller, the puller setup can be used at a force of only one ton.

If you are unsure which puller or attachment to select for an application, contact your OTC tool representative or Service Solutions, LLC.

PULLER OPERATION

1. Mount the puller so its grip is tight. When using a jaw-type puller, tighten the adjusting strap bolts. For a better grip and more even pulling power, use a 3-jaw puller when possible.
2. Align puller legs and jaws. Verify the setup is rigid and the puller is square with the application.
3. Use the correct size of puller for the application. If you have applied maximum force and the component has not moved, switch to a larger capacity puller.

4. Apply force gradually. The component should give a little at a time. Do not try to speed up the application by using an impact wrench on the forcing screw.
5. Do not couple puller legs. The tonnage capacity of the puller is reduced when longer-than-standard legs are used or when legs are compressed, increasing the chance of breakage.
6. Keep reach to a minimum. Use the shortest legs possible to reach the component to be removed.
7. Install threaded puller legs evenly into the component, attachment, or adapter. Uneven legs result in greater force applied to one side of the puller, which can result in breakage.
8. Sliding plates must be on the opposite side of the cross block from the forcing screw nut or hydraulic cylinder.
9. Bearing pulling attachments may not withstand the full tonnage of the pullers with which they are used. The shape and condition of the component being pulled affects the tonnage at which puller blocks and / or studs may bend or break. Select the largest attachments that fit the component being pulled.

PULLER MAINTENANCE

Keep the puller clean, and frequently lubricate the forcing screw from threads to tip.

Protective Blankets

Think of them as "security blankets." They wrap around pulling, pressing, and other high-force jobs to protect you and your employees from work-related injuries as much as possible. They're made of high tensile, tear resistant ballistic nylon – similar to military flak jackets – that, when tested, withstood the shattering of a neck-down grade 8 bolt without any visible damage.

NOTE: Always reduce the force from the work piece prior to removing the blanket. Protective blankets may afford protection from injuries to users and others should part breakage occur. Because of the variety of situations that require guarding, it is the user's responsibility to determine the best method of protection.

1230PB

Protective blanket. 12" x 30"

2036PB

Protective blanket. 20" x 36"

2860PB

Protective blanket. 28" x 60"



1230PB



**FOR MORE DETAILS VISIT
OTCTOOLS.COM**

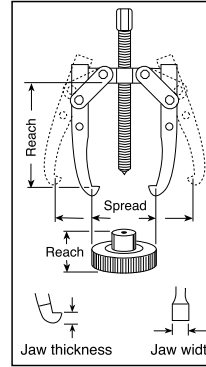
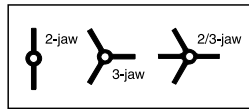
GRIP-O-MATIC® PULLERS

PROVIDING AUTOMOTIVE SERVICE SOLUTIONS FOR OVER 80 YEARS

Mechanical Grip-O-Matic® Pullers

OTC has developed the most complete line of gear and bearing pullers, enabling you to remove and install parts for fast, effective repairs. The pullers are forged from quality steel, heat treated, and subjected to rigorous tests which exceed their rated capacity.

No. 1020–1050



WARNING

Wear approved eye protection when using pullers. See page 131 for protective blankets for your pulling jobs.

	Tool No.	Capacity Style and Weight	Max Reach	Spread	Screw Size	Jaw Thickness	Width
	1020	1-Ton, 2-Jaw; 5 oz.	2-1/8"	3-1/4"	5/16"–24 x 3-7/8"	9/64"	1/4"
	1021	1-Ton, 3-Jaw; 8 oz.	2-1/8"	3-1/4"	5/16"–24 x 3-7/8"	9/64"	1/4"
	1022	2-ton, 2-Jaw; 14 oz. (Reversible Jaws)	3-1/4"	4"	3/8"–24 x 4-7/8"	Upper 3/16" Lower 1/8"	Upper 1/4" Lower 1/2"
	1023	2-ton, 2/3-Jaw; 1 lb., 5 oz. (Reversible Jaws)	3-1/4"	4-3/4"	3/8"–24 x 4-7/8"	Upper 3/16" Lower 1/8"	Upper 1/4" Lower 1/2"
	1024	5-Ton, 2-Jaw; 1 lb., 12 oz. (Reversible Jaws)	3-1/4"	6"	9/16"–20 x 6-15/16"	Upper 5/16" Lower 1/4"	Upper 3/8" Lower 3/4"
	1026	5-Ton, 2/3-Jaw; 2 lbs., 12 oz. (Reversible Jaws)	3-1/4"	7"	9/16"–20 x 6-15/16"	Upper 5/16" Lower 1/4"	Upper 3/8" Lower 3/4"
	1025	5-Ton, Long 2-Jaw; 2 lbs. (Reversible Jaws)	5-1/2"	6"	9/16"–20 x 6-15/16"	Upper 5/16" Lower 1/4"	Upper 3/8" Lower 3/4"
	1027	5-Ton, Long 2/3-Jaw; 3 lbs., 10 oz. (Rev. Jaws)	5-1/2"	7"	9/16"–20 x 6-15/16"	Upper 5/16" Lower 1/4"	Upper 3/8" Lower 3/4"
	1035	7-Ton, 2-Jaw; 4 lbs., 8 oz. (Reversible Jaws)	5"	9"	11/16"–18 x 9"	Upper 5/16" Lower 11/32"	Upper 1" Lower 1"
	1037	7-Ton, 2/3-Jaw; 6 lbs., 2 oz. (Rev. Jaws)	5"	10-1/2"	11/16"–18 x 9"	Upper 5/16" Lower 11/32"	Upper 1" Lower 1"

	Tool No.	Capacity Style and Weight	Max Reach Spread		Screw Size	Jaw Thickness	Width
	1036	7-Ton, Long 2-Jaw; 5 lbs., 6 oz.	8-3/4"	9-1/2"	11/16"–18 x 9"	11/32"	1"
	1038	7-Ton, Long 2/3-Jaw; 8 lbs., 2 oz.	8-3/4"	11"	11/16"–18 x 9"	11/32"	1"
	1039	13-Ton, 2-Jaw; 10 lbs., 13 oz.	11"	12"	13/16"–16 x 12"	9/16"	1"
	1041	13-Ton, 2/3-Jaw; 16 lbs., 4 oz.	11"	12"	13/16"–16 x 12"	9/16"	1"
	1040	13-Ton, Long 2-Jaw; 13 lbs.	15-1/4"	15-1/2"	13/16"–16 x 12"	9/16"	1"
	1042	13-Ton, Long 2/3-Jaw; 18 lbs., 12 oz.	15-1/4"	17"	13/16"–16 x 12"	9/16"	1"
	1043	17-1/2-Ton, 2-Jaw; 23 lbs.	14-1/2"	14"	1"–14 x 131/2"	13/16"	1-9/32"
	1045	17-1/2-Ton, 3-Jaw; 33 lbs.	14-1/2"	14"	1"–14 x 13-1/2"	13/16"	1-9/32"
	1044	17-1/2-Ton, Long 2-Jaw; 26 lbs.	18-3/4"	16"	1"–14 x 13-1/2"	13/16"	1-9/32"
	1046	17-1/2-Ton, Long 3-Jaw; 37 lbs.	18-3/4"	16"	1"–14 x 13-1/2"	13/16"	1-9/32"
	1047	25-Ton, 2-Jaw; 37 lbs., 8 oz.	15-1/2"	18"	1-1/4"–12 x 15-15/16"	1-1/16"	1-1/2"
	1049	25-Ton, 3-Jaw; 54 lbs.	15-1/2"	18"	1-1/4"–12 x 15-15/16"	1-1/16"	1-1/2"
	1048	25-Ton, Long 2-Jaw; 42 lbs., 12 oz.	22-1/4"	20"	1-1/4"–12 x 15-15/16"	1-1/16"	1-1/2"
	1050	25-Ton, Long 3-Jaw; 60 lbs.	22-1/4"	20"	1-1/4"–12 x 15-15/16"	1-1/16"	1-1/2"

PUSH PULLERS & THREADED ADAPTERS PULLERS



Push-Pullers®

927 10-Ton Capacity Can be used with No. 1123 bearing pulling attachment or No. 679 pulley pulling attachment. May also be used with Nos. 1150, 1151, 1152, or 1153 internal pulling attachments.

938 17-1/2 Ton Capacity Can be used with Nos. 1124 and 1130 bearing pulling attachments or Nos. 679 and 680 pulley pulling attachments. May also be used with Nos. 1150, 1151, 1153, 1165, or 1166 internal pulling attachments.

939 30-Ton Capacity Can be used with Nos. 1126 and 1127 bearing pulling attachments or No. 680 pulley pulling attachment (two 8012 adapters are required to connect 680 to puller). Can be used with No. 1165 internal pulling attachment.

Push-Pullers® Leg Extensions

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
927	8-1/4"	2-1/8" – 7-1/4"	3/4"–16 x 12"	1/2" of forcing screw tip end is threaded 5/8"–18. No. 1100 legs and No. 24827 leg ends included. Wt., 7 lbs.

Extra Legs (pair) for No. 927 Push-Puller (Reach equals leg length plus 1-1/2" with leg end caps.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1103	4-3/4" 1 lb.	1102	11-3/4" 2 lbs., 4 oz.
1100	6-3/4" 1 lb., 8 oz.	1101	15-3/4" 3 lbs., 4 oz.

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
938	11-1/2"	3-1/8" – 11-3/4"	1"-14 x 13-1/4"	Leg ends threaded 5/8"–18. No. 1106 legs and No. 24827 leg ends included. Wt., 20 lbs., 12 oz.

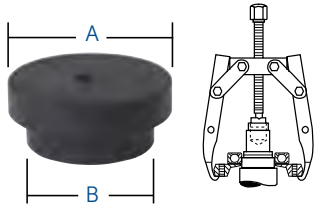
Extra Legs (pair) for No. 938 Push-Puller (Reach equals leg length plus 2" with leg end caps.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1107	4-1/2" 2 lbs., 8 oz.	1105	22-1/2" 9 lbs.
1106	9-1/2" 4 lbs., 8 oz.	1108	30" 11.5 lbs.
1104	16-1/2" 6 lbs., 8 oz.		

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
939	10-1/2"	7"–16-1/4"	1-1/2"–12 x 17-1/4"	Leg ends threaded 1"–14. No. 1109 legs and No. 28390 leg ends included. Wt., 44 lbs.

Extra Legs (pair) for No. 939 Push-Puller (Reach equals leg length plus 2" with leg end caps.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1109	8" 8 lbs.	1111	28" 22 lbs.
1110	18" 15 lbs.		

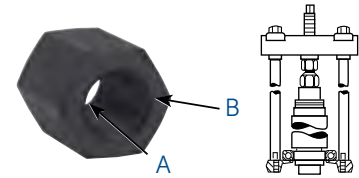


**8074, 8076 & 8075
Step Plate Adapter Sets**

Necessary for pulling and installing bearings, gears, or other parts found on hollow shafts or housings. They may be used with Grip-O-Matic® pullers and Push-Pullers®, as well as shop presses. All adapters are available separately.

Tool No.	Set No.	Dia. "A"	Dia. "B"
8057	•	1"	3/4"
8058	•	1-1/8"	7/8"
8059	•	1-1/4"	1"
8060	•	1-3/8"	1-1/8"
8061	•	1-5/8"	1-1/4"
8062	•	1-3/4"	1-3/8"
8063	•	1-7/8"	1-1/2"
8064	•	2"	1-5/8"
8065	•	2-1/8"	1-3/4"

Tool No.	Set No.	Dia. "A"	Dia. "B"
8066	•	2-3/8"	1-7/8"
8067	•	2-1/2"	2"
8068	•	2-5/8"	2-1/8"
8069	•	2-3/4"	2-1/4"
8070	•	2-7/8"	2-3/8"
8071	•	3"	2-1/2"
8072	•	3-1/4"	2-3/4"
8073	•	3-1/2"	3"



**8044
Internal Threaded Adapter Set**

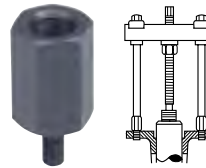
For use on the ends of Push-Puller legs or forcing screws to aid in the removal and installation of shafts, axles, and housings.

Tool No.	Internal End "A"	Internal End "B"
8035*	1/2"-20	5/8"-18
8036*	1"-14	1"-14
8037	5/8"-18	5/8"-18
8038	5/8"-18	3/4"-16
8039	5/8"-18	7/8"-14
8040	5/8"-18	1"-14
8041	5/8"-18	1-1/8"-12
8042	5/8"-18	1-1/4"-12
8043*	5/8"-18	1-1/2"-12

* Not included in set No. 8044.
Order separately. All adapters are available separately.

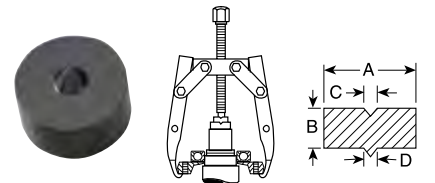
Metric and standard External-Internal Threaded Adapters

For use on the ends of Push-Puller legs or forcing screws when pulling shafts, bearing caps, pinions, etc.



Tool No.	Internal End	External End	Length
Metric Threaded Adapters			
8111	5/8"-18	M6 x 1.0	2-1/4"
8112	5/8"-18	M8 x 1.0	2-1/4"
8113	5/8"-18	M8 x 1.25	2-1/4"
8114	5/8"-18	M10 x 1.25	2-1/4"
8115	5/8"-18	M10 x 1.5	2-1/4"
8116	5/8"-18	M12 x 1.25	2-1/4"
8117	5/8"-18	M12 x 1.75	2-1/4"
8121	5/8"-18	M14 x 1.5	2-1/4"
8122	5/8"-18	M14 x 2.0	2-1/4"
8123	5/8"-18	M16 x 1.5	2-3/4"
8124	5/8"-18	M16 x 2.0	2-3/4"
8125	5/8"-18	M20 x 1.5	2-3/4"
8126	5/8"-18	M20 x 2.5	2-3/4"
8131	5/8"-18	M6 x 1.0	1-5/8"
8132	5/8"-18	M8 x 1.25	1-5/8"
8133	5/8"-18	M10 x 1.5	1-5/8"
8134	5/8"-18	M12 x 1.75	1-5/8"
8135	5/8"-18	M14 x 2.0	1-5/8"
8136	5/8"-18	M16 x 2.0	1-5/8"
8137	5/8"-18	M20 x 2.5	1-5/8"
8141	1"-14	M16 x 1.5	3"
8142	1"-14	M16 x 2.0	3"
8143	1"-14	M18 x 1.5	3"
8144	1"-14	M20 x 1.5	3"
8145	1"-14	M20 x 2.5	3"
8146	1"-14	M22 x 1.5	3"
8147	1"-14	M24 x 2.0	3"
8148	1"-14	M24 x 3.0	3"

Tool No.	Internal End	External End	Length
Standard Threaded Adapters			
206437	1/2"-20	5/8"-18	2-1/4"
8000	5/8"-18	1/4"-20	2-1/4"
8001	5/8"-18	5/16"-18	2-1/4"
8002	5/8"-18	7/16"-14	2-1/4"
8003	5/8"-18	7/16"-20	2-1/4"
8004	5/8"-18	3/8"-24	2-1/4"
8005	5/8"-18	3/8"-16	2-1/4"
8006	5/8"-18	1/2"-20	2-1/4"
8007	5/8"-18	1/2"-13	2-1/4"
8008	5/8"-18	9/16"-18	2-1/4"
8009	5/8"-18	9/16"-12	2-1/4"
8010	5/8"-18	5/8"-11	2-1/4"
8013	5/8"-18	3/4"-16	2-1/4"
8015	5/8"-18	3/4"-10	2-1/4"
8017	5/8"-18	7/8"-14	2-1/4"
8018	5/8"-18	7/8"-9	2-1/4"
8019	5/8"-18	1"-14	2-1/4"
8022	5/8"-18	1/8" pipe	2-1/4"
8012	1"-14	5/8"-18	3-3/16"
8011	1"-14	5/8"-11	2-1/2"
8014	1"-14	3/4"-16	2-1/2"
8016	1"-14	3/4"-10	2-1/2"
8020	1"-8	5/8"-18	3"
8021	1"-8	1"-14	3"
8023	1-1/4"-12	1"-14	4-1/2"
8024	1-1/4"-12	1-3/4"-12	4-3/4"
8025	1-1/4"-7	5/8"-18	4"
8027	1-1/4"-7	1"-14	4"
8029	1-5/8"-51/2	1"-14	4"
8028	1-5/8"-51/2	1"-8	4"
8030	3/4"-16	5/8"-18	2-1/4"



**8056
Shaft Protector Set**

Designed to protect shaft centers from distortion when extreme pressures are applied with either Grip-O-Matic® pullers or Push-Pullers. Shaft protectors are available separately.

Tool No.	"A"	"B"	"C" (60°)	"D" (60°)
8050	1-1/2"	3/4"	3/8"	7/16"
8051	1-1/4"	3/4"	3/8"	3/8"
8052	1"	3/4"	3/8"	5/16"
8053	3/4"	3/4"	1/4"	1/4"
8054	5/8"	5/8"	1/4"	1/4"
8055	5/8"	5/8"	3/16"	3/16"

HYDRAULIC PULLERS PULLERS



No. 1062 & 1063

Usable reach equals leg length minus 4-7/8" when using leg ends.

No. 1070 & 1071

Usable reach equals leg length minus 5-7/8" when using leg ends.

No. 1076

Usable reach equals leg length minus 10-5/8".

No. 1076 – 50-Ton Capacity Can be used with Nos. 1128 and 1129 bearing pulling attachments. Ends of legs are threaded 1-1/4"-12. Usable reach: 13-3/8". See page 135 to order threaded adapters for use with these pullers.

Hydraulic Push-Puller®

No. 1062, 1063 – 17-1/2" Ton Capacity Can be used with Nos. 1124 and 1130 bearing pulling attachments or No. 680 pulley pulling attachment. May also be used with No. 1154 internal pulling attachment. Ends of legs are threaded 5/8"-18. Usable reach: 11-5/8".

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
1063	18-1/2"	5-3/4"-11-3/4"	1"-8 x 20"	Puller with No. 1104 legs, No. 24827 leg ends, No. 4120 hyd. ram, No. 32118 adjusting screw, and No. 24814 adjusting crank. 38 lbs.
1062	18-1/2"	5-3/4"-11-3/4"	1"-8 x 20"	Puller only. 22 lbs.

Extra Legs (pair) for No. 1062, 1063 (Reach equals leg length plus 2" with leg end caps.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1107	4-1/2" 2 lbs., 8 oz.	1105	22-1/2" 9 lbs.
1106	9-1/2" 4 lbs., 8 oz.	1108	30" 11.5 lbs.
1104	16-1/2" 6 lbs., 8 oz.		

No. 1070, 1071 – 30-Ton Capacity Can be used with Nos. 1126 and 1127 bearing pulling attachments or No. 680 pulley pulling attachment (two No. 8012 adapters are required to connect No. 680 to puller). Also may be used with No. 1166 internal pulling attachment. Ends of legs are threaded 1"-14. Usable reach: 12-1/8".

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
1071	20-1/2"	7"-16-1/4"	1-1/4"-7 x 24"	Puller with No. 1110 legs, No. 28390 leg ends, No. 4121 hyd. ram, No. 34758 adjusting screw, and No. 27198 adjusting crank. 90 lbs.
1070	20-1/2"	7"-16-1/4"	1-1/4"-7 x 24"	Puller only. 56 lbs.

Extra Legs (pair) for No. 1070, 1071 (Reach equals leg length plus 2-5/8" with leg end caps.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1109	8" 8 lbs.	1111	28" 22 lbs.
1110	18" 15 lbs.		

Tool No.	Max. Reach	Max. Spread	Screw Size	Notes / Weight
1076	24"	8-1/2"-20-1/2"	1-5/8"-5-1/2" x 30-3/8"	Puller only. 106 lbs.

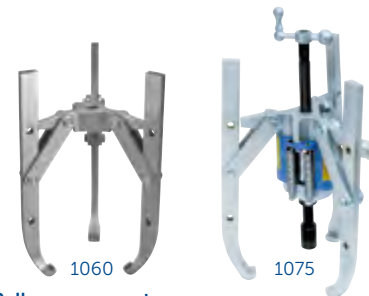
Extra Legs (pair) for No. 1076 (Reach equals leg length plus 1-1/4"-12 thd. on both leg ends.)

Tool No.	Leg Length & Wt.	Tool No.	Leg Length & Wt.
1112	24" 34 lbs.	1113	34" 47 lbs.

Hydraulic Grip-O-Matic® Puller

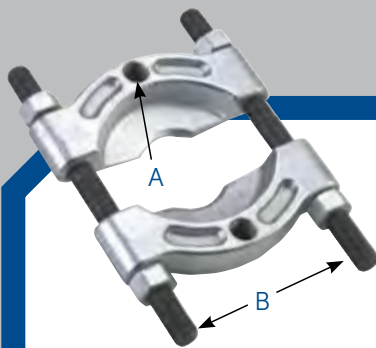
No. 1060-1080 Available in 10 to 50-ton capacities. Reliable single-acting Power Twin ram is matched with a versatile 2-jaw or 3-jaw puller. Lightweight ram can be used in other applications. You also get an adjusting screw, speed crank, and coupler where applicable. Hydraulic pump is not included; see index for pump listings.

Tool No.	MAX		Ram Capacity & Number	JAW		Screw Size & Crank No.	Style and Weight
	Reach	Spread		Thickness	Width		
1060	10"	17"	N/A	9/16"	1"	N/A	10-Ton, 2/3-Jaw; Puller Only; 17 lbs.
1065	11-1/2"	16"	17-1/2 Ton, No. 4120	13/16"	1-9/32"	1"-8 x 20" No. 24814	17-1/2 Ton, 2-Jaw; 40 lbs.
1064	11-1/2"	16"	N/A	13/16"	1-9/32"	N/A	17-1/2 Ton, 2-Jaw Puller Only; 24 lbs.
1067	11-1/2"	20"	17-1/2 Ton, No. 4120	13/16"	1-9/32"	1"-8 x 20" No. 24814	17-1/2 Ton, 3-Jaw; 53 lbs.
1066	11-1/2"	20"	N/A	13/16"	1-9/32"	N/A	17-1/2 Ton, 3-Jaw Puller Only; 37 lbs.
1073	19-7/16"	26"	30-Ton, No. 4121	1-1/8"	1-5/8"	1-1/4"-7 x 24" No. 27198	30-Ton, 2-Jaw; 91 lbs.
1072	19-7/16"	26"	N/A	1-1/8"	1-5/8"	N/A	30-Ton, 2-Jaw Puller Only; 59 lbs.
1075	19-7/16"	34"	30-Ton, No. 4121	1-1/8"	1-5/8"	1-1/4"-7 x 24" No. 27198	30-Ton, 3-Jaw; 122 lbs.
1074	19-7/16"	34"	N/A	1-1/8"	1-5/8"	N/A	30-Ton, 3-Jaw Puller Only; 90 lbs.
1080	19-7/16"	44"	N/A	1-1/8"	1-5/8"	N/A	50-Ton, 3-Jaw Puller Only; 187 lbs.



Puller components

No.	Description	Capacity
24814	Speed Crank	17-1/2 Ton
27198	Speed Crank	30 Ton
29595	Speed Crank	50 Ton
32118	Adjusting Screw	17-1/2 Ton
34758	Adjusting Screw	30 Ton
32698	Adjusting Screw	50 Ton
39448	Lube for pullers	



Bearing Splitters

No. 1121-1130 These versatile accessories feature "knife-like" edges which are easily placed behind the part to secure a gripping surface, even when clearances are extremely limited. When used with an OTC Grip-O-Matic® puller, puller jaws grip attachment's outer edge; when used with a Push-Puller, puller legs are threaded into the attachment's two tapped holes.

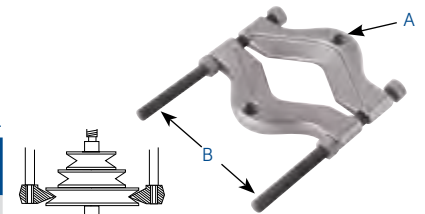
Tool No.	MAX. Spread	MIN. Spread	A	B	Weight	Application
1121	15/16"	1/4"	15/16"-18	1-11/16"	12 oz.	Use with puller Nos. 1020, 1022, & 1023.
1122	2"	1/8"	3/8"-16	2-7/16"	1 lb., 4 oz.	Use with puller Nos. 1024, 1025, 1026, 1027, 7392, & 7393.
1123	4-5/8"	1/2"	5/8"-18	4-3/8"	5 lbs.	Use with puller Nos. 1035, 1036, 1037, 1038, & 927.
1124	5-3/4"	1/2"	5/8"-18	6"	12 lbs.	Use with puller Nos. 1035, 1040, 1041, 1042, 1065, 1063, & 938.
1130	9"	1/2"	5/8"-18	6"	12 lbs., 9 oz.	Use with puller Nos. 1035, 1040, 1041, 1042, 1065, 1063, & 938.
1126	8"	5/8"	1"-14	7-1/8"	19 lbs., 12 oz.	Use with puller Nos. 1047, 1043, & 939.
1127	13-3/8"	3/4"	1"-14	10-1/4"	41 lbs., 12 oz.	Use with puller Nos. 1047, 1073, & 939.
1128	12-7/8"	5"	1-3/4"-12	13"	100 lbs.	Use with puller Nos. 1073, 1079.

A = Thread of tapped hole in adapter.
B = Distance between adjusting screws.

Pulley Pulling Attachments

Attachment clamps down into V-groove to distribute load. Use with Grip-O-Matic® pullers or Push-Pullers.

Tool No.	MAX. Spread	MIN. Spread	A	B	Weight	Application
679	5-7/8"	1-3/4"	5/8"-18	6"	4 lbs., 4 oz.	Use with puller Nos. 1035, 1036, 1037, 1038, and 927.
680	10"	1-5/8"	5/8"-18	10-1/16"	22 lbs., 4 oz.	Use with puller Nos. 1039, 1040, 1041, 1063, 1065, and 938.



A = Thread of tapped hole in adapter.
B = Distance between adjusting screws.

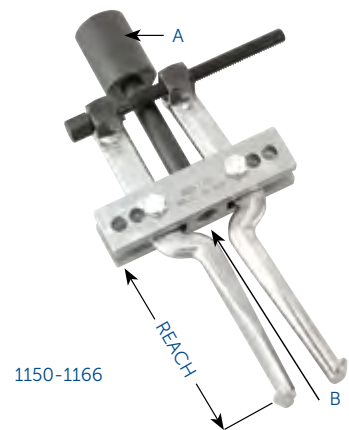
Internal Pulling Attachments

Approved by leading bearing manufacturers, OTC's internal pulling attachments remove bearing cups, oil seals, bushings, and other parts from blind holes quickly and easily. Each attachment is designed for use with a corresponding Push-Puller or slide hammer assembly.

Tool	JAW Spread	JAW Reach	A	B	Weight	Application
1153	1-1/2"-5"	2-1/8"	1"-14	5/8"-18	4 lbs., 4 oz.	Use with Nos. 927 and 938 Push-Pullers, 1155 and 1156 slide hammer pullers, or 24832 and 24833 puller screw.
1150	1-1/2"-6"	4"	1"-14	5/8"-18	4 lbs., 4 oz.	
1152	1-1/2"-6"	4"	-	5/8"-18	3 lbs., 8 oz.	
1151	1-1/2"-7"	5-1/4"	1"-14	5/8"-18	4 lbs., 8 oz.	Use with Nos. 927 and 938 Push-Pullers, 1155 and 1156 slide hammer pullers, or 24832 puller screw.
1165	3"-9"	5-7/8"	1-1/2"-12	1"-14	13 lbs., 8 oz.	Use with No. 939 Push-Puller.
1154	1-1/2"-9"	4"	1"-8	5/8"-18	4 lbs., 8 oz.	Use with No. 1063 hyd. Push-Puller.
1166	3"-9"	5-7/8"	1-1/4"-7	1"-14	13 lbs., 8 oz.	Use with No. 1071 hyd. Push-Puller.

Puller Screws

24832	13-3/4" long		5/8"-18	1 lb.	Use with Nos. 1150, 1151, 1152, and 1153. Acts as a regular forcing screw when threaded directly into the block of pulling attachment.
24833	5-1/2" long		5/8"-18	6 oz.	Use with Nos. 1150, 1152, and 1153. Acts as a regular forcing screw when threaded directly into the block of pulling attachment.



1150-1166

A = Thread of tapped hole in adapter.
B = Distance between adjusting screws.

4420

Pilot Bearing Pulling Attachment

- Use to pull a pilot bearing from the end of the crankshaft.
- Interchangeable jaws. One set of jaws covers a spread of 1/2" to 1-1/2". Other set of jaws covers a spread of 3/8" to 1-3/8". Both sets of jaws have a reach of 1".
- Reach has a min/max range of 3/16" to 1".
- Puller attaches to OTC and other slide hammers with 5/8"-18 thread.



4421

Pilot Bearing Pulling Attachment

- Removes pilot bearings, thrust washers, and smaller bearings hidden in a shaft or housing.
- Jaws require a minimum of 5/8" opening and can range up to a max of 1-1/2" diameter.
- Min/Max reach is 1/8" to 1".
- Works with both 5/8 - 18 as well as M18-1.5 threaded hammer shanks.



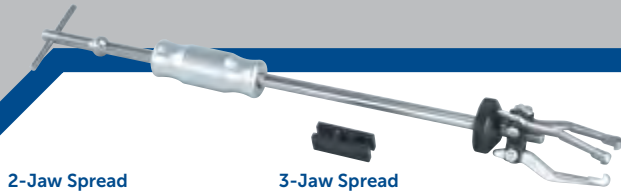
4422

Pilot Bearing Puller

- Use to pull a pilot bearing from the end of the crankshaft.
- A restriction plate catches the bridge and prevents the jaws from spinning when force is engaged.
- The "Tee Handle" design is easy-to-use and eliminates need for other tools.
- Spread covers ranges of 1/2" to 1-1/2" and 3/8" to 1-3/8".
- Reach has a min/max range of 3/16" to 1-1/4".



REVERSIBLE-JAW SLIDE HAMMER PULLERS



2-Jaw Spread				3-Jaw Spread				Overall Length
Inside Min.	Inside Max.	Outside Min.	Outside Max.	Inside Min.	Inside Max.	Outside Min.	Outside Max.	
1-1/4"	3-1/2"	1"	4-1/2"	1-1/2"	4-1/4"	1-1/2"	4-1/2"	27"

Reversible-Jaw Slide Hammer Pullers

Here are two extremely versatile pullers, which will accomplish many pulling jobs involving gears, bearings, outer races, grease retainers, oil seals, etc. Either two or three puller jaws may be used to handle "inside" pulling jobs such as bearing cups and outer races, as well as regular "outside" pulling jobs. The basic slide hammer unit can be removed and used independently. The No. 1177 slide hammer puller has a 5 lb. hammer, and the No. 1176 has a 2-1/2 lb. hammer.

- 1176** – Puller with 2-1/2 lb. hammer, 2-way and 3-way head, 27" long.
- 1177** – Same as 1176, except has a 5 lb. hammer.



Spread			Overall Length
Min.	Max.	Reach	
1-5/8"	6"	4"	28"

Slide Hammer Pullers with Cup Pulling Attachments

These pullers combine a basic slide hammer unit with a No. 1152 internal pulling attachment (described on page 129). Ideal for removing bearing cups, outer races, and oil seals from blind holes. Upon removal of the internal pulling attachment, the basic slide hammer unit, which has a 5/8"-18 threaded end, may be used with various adapters for a multitude of pulling jobs.

- 1157** – Slide hammer puller, consisting of an 1152 internal pulling attachment and an 1156 basic slide hammer unit with a 2-1/2 lb. hammer.
- 1158** – Slide hammer puller (not shown), consisting of an 1152 internal pulling attachment and an 1155 basic slide hammer unit with a 5 lb. hammer.



Basic Slide Hammer Units

May be used with an OTC internal pulling attachment (page 129), or with internal or external-internal threaded adapters (page 127).

- 1155** – Slide hammer unit is 24" long with a 5 lb. hammer, 5/8"-18 threaded end.
- 1156** – Slide hammer unit is 24" long with a 2-1/2 lb. hammer, 5/8"-18 threaded end.
- 6501** – Slide hammer unit is 17" long with a 1-3/4 lb. hammer, 1/2-20 threaded end.

6541 Pulling Hook

- This slide hammer puller attachment is used to remove seals, bearings, and other press-fit parts.
- Designed to be used with OTC No. 1155 (5 lb.) or No. 1156 (2-1/2 lb.) slide hammer, or other slide hammers having 5/8-18 threads.



27315 Pulling Hook

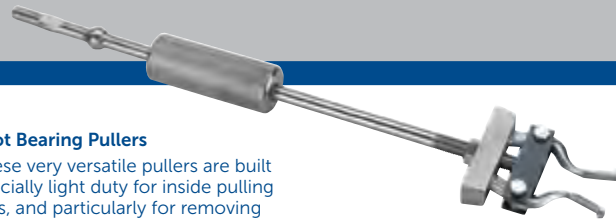
- This slide hammer puller attachment is used oil seals and bearing in situations where conventional methods won't work.
- Designed to be used with OTC No. 1155 (5 lb.) or No. 1156 (2-1/2 lb.) slide hammer, or other slide hammers having 5/8-18 threads.



34331

Sliding Hammers

- 22185** – 2-1/2 lb. sliding hammer.
- 34331** – 5 lb. sliding hammer.



Pilot Bearing Pullers

These very versatile pullers are built specially light duty for inside pulling jobs, and particularly for removing flywheel pilot bearings on automobiles, trucks, and tractors. Also very practical for pulling motor, generator, and magneto bearings.

Slide hammer unit is 17" long with a 1-3/4 lb. hammer, 1/2-20 threaded end.

Tool No.	Reach	I.D. Spread		Wt. (lbs./oz.)
		Min.	Max.	
1170	3/4"	1/2"	1-1/2"	4 / 14
1171	1"	7/8"	2-1/8"	4 / 14
1172	1-3/4"	1/2"	2"	4 / 14



Special Slide Hammer Puller

Ideal for pulling jobs in very close quarters, as in removal of small-bore bushings, bearings, oil seals, etc. Internal pulling attachment has a jaw spread of 1/2" to 1-3/8", adjusted by turning the slide hammer handle. Handle end has a 1/2"-20 thread.

- 1173** – Slide hammer unit is 17" long with a 1-3/4 lb. hammer, 1/2-20 threaded end. with 1174 head assembly.
- 1174** – Head assembly only.

5028 Slide Hammer Puller

Just 8-1/2" long to fit into tight spots, but its 1-1/2 pound hammer gives you a little extra muscle for stubborn jobs. It's perfect for pulling injector nozzles. The shank is threaded 1/2"-20 and has a 5/8"-18 threaded adapter included. Works with many OTC pulling attachments.

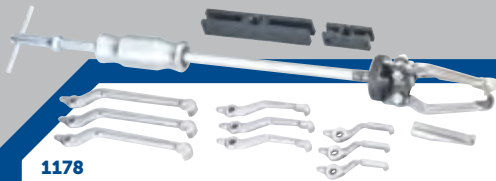


7703 Ten-Pound Slide Hammer Puller

This heavy-duty slide hammer puller gets tough with those really stuck parts. It has all the features of our smaller versions – heat treated, 24" long, and a 5/8"-18 threaded end to adapt to any of OTC's pulling attachments. The difference is the ten-pound hammer that gives you the extra muscle for really stubborn pulling jobs.



22185



1178 Slide Hammer Puller Set

This useful set contains OTC's popular No. 1176 reversible-jaw slide hammer puller, plus an assortment of special jaws and adapters. You get all the versatility of the No. 1176 (described fully on page 130), plus attachments for pulling various size pilot bearings, oil seals, bushings, timing gears, harmonic balancers, and other tightly fitted parts!

Set No. 1178 consists of:

No.	Description
1176	Reversible-jaw slide hammer puller with 2-1/2 lb. hammer
44195	Medium jaw (3 include)
32054	Pilot bearing jaw (3 include)
44148	Long jaw (3 include)
27315	Puller hook. Removes oil seals, bearings, etc.
27241	2-way cross head
36578	Cross block. Removes timing gears, harmonic balancers, pulleys, other parts having tapped holes. Uses cap screws up to 3/8" diameter. Spread with 3/8" dia. cap screws: 1-7/8" - 5-5/8".

2-Jaw Spread

Tool No.	Inside		Outside	
	Min.	Max.	Min.	Max.
44195	1-1/2"	4-1/2"	3/4"	5"
32054	3/4"	2-3/8"	-	-
44148	2-3/4"	5-1/2"	3/4"	7-1/2"
34698	1-1/4"	3-1/2"	1"	4-1/2"

3-Jaw Spread

Tool No.	Inside		Outside	
	Min.	Max.	Min.	Max.
44195	1-1/2"	4-3/4"	1"	4-1/2"
32054	1"	2-3/4"	-	-
44148	3-1/4"	6-1/4"	1"	6-1/4"
34698	1-1/2"	4-1/2"	1-1/2"	4-1/2"



6627 Grip Wrench Adapters

- For grip wrenches using single-lead thread adjusting screw.
- Adapter threads onto a slide hammer with a 5/8"-18 thread.

205378 - Grip wrench threads onto a 7/16"-14 end of adapter for pulling use.

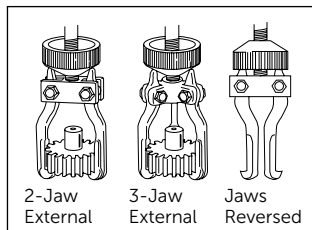
557479 - Grip wrench threads onto a 5/16"-18 end of adapter for pulling use.

557480 - Grip wrench threads onto a 1/4"-20 end of adapter for pulling use.



1179 "Silver Slapper" 8-Way Slide Hammer Puller Set

You can pull flange-type rear axles, stubborn oil seals and bearings, and other press-fit parts. Jaws can be set up for 2/3-way internal or external pulling jobs.



Application Examples

Set No. 1179 consists of:

No.	Description
1155	Slide hammer with 5 lb. hammer
7372	Rear axle pulling attachment
24544	3-way cross-head
24545	Cone
27241	2-way cross-block
27315	Puller hook attachment
34698	Pulling jaws (3) for internal or external pulling jobs
205378	Grip wrench adapter w/single lead (wrench not included)
205377	Dent puller attachment

5 lb. Hammer in Polished Chrome Finish.



4579 9-Way Slide Hammer Puller Set

- Pulls flange-type rear axles and most front-wheel drive hubs.
- Internal and external jaws provide a variety of combinations to pull bearings, gears and seals.
- Two- and three-way cross blocks and cone provide the perfect jaw configuration for most jobs.
- Set also includes a grip wrench adapter and a dent puller attachment for sheet metal or other unique pulling requirements.
- Designed for use with other OTC 5/8"-18 thread slide hammer attachments.
- Packaged in blow-molded case.



7792 Rear Axle Puller Set

The tools you need for flange-type rear axle and bearing removal on most late model passenger cars and light trucks. Set includes the No. 7374 rear axle pulling plate and a 5 lb. slide hammer. The axle bearing pullers, used with the slide hammer, make short work of removing semi-floating rear axle bearings.

Set No. 7792 consists of:

No.	Description
7374	Rear axle pulling plate with a 5 lb. slide hammer.
7495A	Rear axle bearing puller. Fits a min. bearing tube I.D. of 1" and a max. axle tube I.D. of 1-7/8".
7496A	Rear axle bearing puller. Fits min. bearing tube I.D. of 5/16" and max. axle tube I.D. of 2-3/8".
7497A	Rear axle bearing puller. Fits min. bearing tube I.D. of 1-3/8" and max. axle tube I.D. of 2-7/8".
27315	Puller hook for use with 5 lb. slide hammer in set. Removes oil seals, bearings, etc.



8-Way and 10-Way Slide Hammer Puller Sets

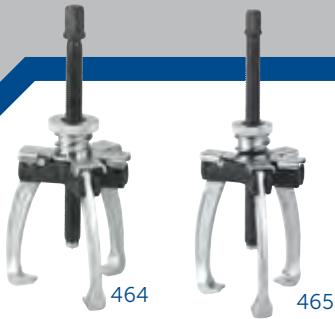
Our two most popular slide hammer puller sets—the Silver Slapper and the Silver Slapper Plus—now come packaged in a convenient plastic, blow-molded carrying/storage case. They're the same great sets with the same versatile pullers and attachments, now made even better with the addition of an organizer case. Or, if you already own either our No. 1179 or No. 1189 puller sets, we offer the plastic case separately. The case will hold either set.

7947 - Eight-way slide hammer puller set. Same contents as No. 1179 Silver Slapper set, but includes plastic carrying/storage case.

7948 - Ten-way slide hammer puller set.

63106 - Puller storage case. Blow-molded plastic.

DIFFERENTIAL BEARING PULLERS PULLERS



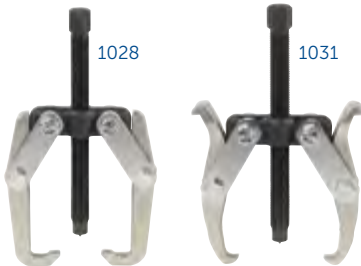
OTC "GripLock" Pullers

Manufactured to our rigorous specifications to ensure the quality professionals expect from OTC.

- Pressure bearing yoke cap holds jaws in place for ease of set up - in any orientation.
- 2 or 3 jaw application.
- Both external and internal pulling action.
- "Live Center" action forcing screw.
- Professional finished for long lasting durability...

464 – Puller with a 4" maximum reach, 3" to 4" spread.

465 – Puller with a 7" maximum reach, 3" to 7" spread.



Differential Bearing Pullers

For removing differential side carrier bearings on a wide variety of passenger cars and light trucks. Use with step plate adapter Nos. 8060, 8061, 8063, and 8064. (Step plate adapters are not included with 1028 or 1031. See page 135.)

1028 – Puller with a 3-1/2" maximum reach, 1-1/4" to 4-1/2" spread. Primarily for servicing Ford products.

1031 – Puller with a 3-1/4" maximum reach, 6" maximum spread. For servicing most General Motors, American Motors, and Chrysler products.

Bearing Cup Remover

Ideal for servicing hubs on today's popular front-wheel-drive small cars. The cone holds the jaws in place during pulling. Perfect for pulling internal bearing cups, seals, bushings, etc. Jaw spread: 15/16" to 3-1/4", reach to 3-1/2". Use with any slide hammer having a 5/8"-18 thread (OTC No. 1155 or No. 1156 or the No. 927 Push-Puller).

6542 – Bearing Cup Remover.

7136 – Bearing Cup Remover. Similar to Ford 308-047.



4520 Differential Side Bearing Pullers

- Use to remove differential side carrier bearing. Works on a wide variety of cars and light-duty trucks.
- Includes four step plate adapters to fit carrier bearings.
- Reach: 1-5/8". Spread: 2-5/8" to 3-3/8". Forcing screw is 3/4"-16 x 6-11/16" lg.

Set includes:

4520-1 – Forcing Screw / Cross Block Assembly

4520-2 – Puller Jaws / Pins (set of two each)

4520-3 – Puller Jaws Retaining Yoke

4520-4 – Step Plate Adapters (set of four)

15/16" – 1-11/32" diameter

1-1/8" – 1-1/2" diameter

1-1/4" – 1-5/8" diameter

1-1/8" – 1-3/4" diameter

1181 Multipurpose Puller Set

This assortment of puller tools gives you a wide range of job versatility. You get a 5 lb. slide hammer puller, hub puller, two sizes of OTC Grip-O-Matic® jaw-type pullers, a bearing pulling attachment, plus a cross-bar gear and pulley puller, all contained in a handy plastic storage case.

Set No. 1181 consists of:

No.	Description
1177	Slide hammer puller with a 5 lb. hammer, 2-way and 3-way heads. Reversible: either two or three jaws may be used to handle both "inside" and "outside" pulling jobs.
7208A	Front hub puller for servicing front-wheel-drive cars. Includes a spare locknut, which permits use with a No. 1177 slide hammer for rear axle flanges.
1023	2-ton combination 2- or 3-jaw Grip-O-Matic puller. Has 3-3/8" max. reach, 4-3/4" max. spread.
1027	5-ton combination 2- or 3-jaw Grip-O-Matic puller. Has 5-1/2" max. reach, 7" max. spread.
7393	Bar-type gear and pulley puller with a 5-1/2" long screw. Includes two hex head cap screws, 3/8"-16 x 3" long. Spread range: 1-1/2" to 4-1/4".
1122	Bearing pulling attachment for use with No. 1027 and No. 7393 pullers. Has 2" max spread, 1/8" min. spread.



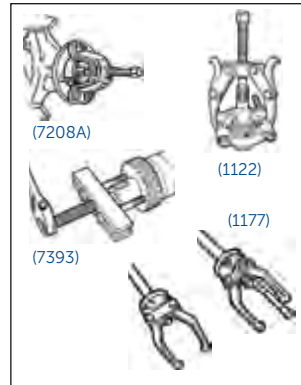
Specifications

Reach: 1-5/8"

Spread: 2-5/8" on inside holes in crossbar
3-3/8" on outside holes in crossbar

Forcing screw: 3/4"-16 mm x 6-11/16" lg.

Adapter sizes: 15/16" to 1-3/4" diameter



1184 Cone-type Puller

Reversible jaws permit handling of both internal and external pulling jobs. The 2-way/3-way head permits assembly of puller to suit the job at hand. Turning the cone on the puller head securely locks its jaws on the part to be removed. Puller reach: 2-7/8"

2-jaw spread:
Inside: 1-1/2" to 4-1/2"
Outside: 3/4" to 5"

3-jaw spread:
Inside: 1-1/2" to 4-3/4"
Outside: 1" to 4-1/2"

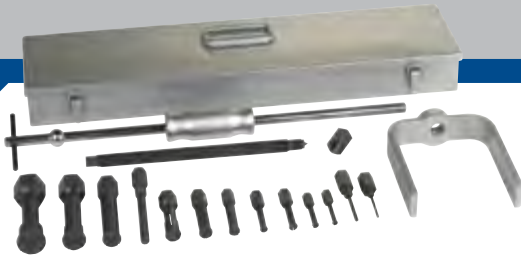
Pilot Bearing Pullers

Designed to pull flywheel pilot bearings in close quarters where a slide hammer cannot be used. Operates on many models with engine in chassis.

7318 – Pilot bearing puller. Capacity: 1/2" to 1-1/2". I.D. reach: 3/4".

7319 – Pilot bearing puller. Capacity: 7/8" to 2". I.D. reach: 1".





981 Blind Hole Puller Set

This set provides a complete selection of expanding collets ranging in size from 5/16" to 1-3/4". Collet is placed through bore of part to be removed, then expanded with actuator pin so that lips of collet secure a positive grip for pulling. Force is exerted by means of a forcing screw and a bridge assembly or a slide hammer. Individual pieces can be ordered separately.

Set No. 981 consists of:

No.	Description	No.	Description
24835	Forcing screw	28323	Metal box
24836	Forcing screw nut	33856	Collet 5/16" to 3/8"
22185	2-1/2 lb. hammer	33857	Collet 3/8" to 7/16"
208627	Shank and tee bar assembly	33858	Collet 7/16" to 1/2"
28250	Actuator pin, 1/8" dia., for use with collets 33856 & 33857	33859	Collet 1/2" to 5/8"
28253	Actuator pin, 3/16" dia., for use with collets 33858-33862	33860	Collet 5/8" to 3/4"
28256	Actuator pin, 1/2" dia., for use with collets 33863-33865	33861	Collet 3/4" to 7/8"
		33862	Collet 7/8" to 1"
		33863	Collet 1" to 1-1/4"
		33864	Collet 1-1/4" to 1-1/2"
		33865	Collet 1-1/2" to 1-3/4"
		41331	Bridge



4581 Blind Hole Bearing Puller Set

- For pulling jobs requiring an internal pull.
- Set includes four collets, which fit a wide range of applications. Select the appropriate sized collet by comparing it with the application. Insert the collet, expand it to fit the hole, then attach the slide hammer.
- Four collet sizes: 7/16" to 1/2", 9/16" to 11/16", 5/8" to 1", and 1" to 1-1/4".
- Set includes a 2-1/2 lb. slide hammer with a T-handle.
- Housed in a blow-molded plastic storage case.



4536 A/C Clutch Pulley Puller Set

- For removal of stubborn air conditioning clutch pulleys. Also can be used on many alternator, generator, power steering, and crankshaft pulleys, harmonic balancers, and fiber timing gears.
- Set includes drop-forged components: one 3/4"-16 x 5" live center forcing screw, 5-1/2" crossbar with 3 spread settings, two pairs of jaws, and a clamp bolt.
- Spread: 3" to 5"; Reach: 1" to 5".
- Includes a blow-molded plastic case.



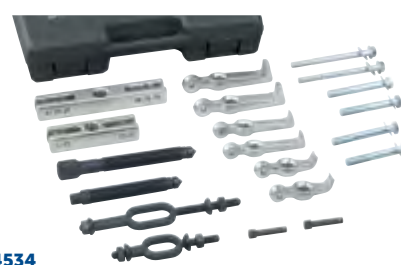
4517 7-Ton Bar-Type Puller/Bearing Separator Set

- Includes a Bearing Splitter with 4" capacity, two sets of hex push puller legs, a 8" bar type puller head mated with a custom thread forcing screw.
- Now service and maintenance professionals have a Puller/Bearing set for tough jobs, up to 7-tons, larger applications, and greater reach 8" to 16".
- As a stand alone puller/bearing splitter set or as a compliment to the 4518 version, the 4517 7-Ton Puller/Bearing Separator Set gives your maintenance/service shop the expanded capability to keep more business in house.



4532 7-Ton Multi Purpose Bearing and Puller Set

- Offers a bearing/pulley tool solution featuring a classic "H" Bar style puller block accommodating 7" to 11" application spread.
- Comes with 2 sets of forged jaws for a pulling each range of 5" to 9" – tempered for heavy-duty applications. (Jaws from OTC's 4534 are interchangeable) Two forcing screws are included for short and long pulls.
- Where a Push Puller is the best pulling choice and threaded holes are not available, the 4532 provides technicians and shops with a solution for many applications like heavy-duty pinion bearings, side bearings, alternators, generators, power steering and crankshaft pulleys, timing gears and harmonic balancers.
- Deep set transmission gears and A/C clutches. Roller gears on tracked vehicles, locking collars on pivot shafts.



4534 Multipurpose Bearing and Pulley Puller Set

- For a wide range of pulling jobs, including: bearings, alternators, generators, power steering and crankshaft pulleys, timing gears, and harmonic balancers.
- Set includes drop-forged components, which can be used in a variety of combinations. Contents of Set: 2 – Forcing Screws (Live Center): 3/4"-16 x 6-11/16" and 3/4"-16 x 5" 2 – Cross-bar Yokes: 3 pin-hole @ 3-1/4" to 5-1/2", 2 pin-hole @ 2-3/8" to 3-3/8" 2 – Clamp Bolts 3 – Pairs of Puller Jaws: 1-3/8" Max, 1-5/8" Max, 1-3/4" Max 1 – Pair of Jaw Pins with Ball Spring 3 – Pairs of Capped Bolts
- Spread: 3" to 5", Reach: 1" to 2-1/4"
- Housed in a blow-molded plastic storage case.



4518 5-Ton Bar-Type Puller/Bearing Separator Set

- This combination set includes our two most popular bearing "splitters" (2" and 3"), four sets of hex push-puller legs and a bar-type puller head with a 9/16" forcing screw. Separator tools are used with bar puller and legs for a wide variety of pulling jobs.
- The 5" puller cross-bar with a 6-1/4" forcing screw or each of the bearing separators may also be used separately or in combination with other pullers or tools.
- A blow-molded plastic storage case keeps set contents organized and protected from loss.

Tool No.	Min. Spread	Max. Spread	Tapped Holes	Distance Between Adj. Screws
4518-2	3/16"	2-3/8"	3/8-16	2-3/8"
4518-3	1/2"	2-3/8"	3/8-16	3-9/16"

PULLER/BEARING SETS PULLERS



1182 Lock-on, Jaw-type Puller Set

Components can be assembled to create several versatile puller versions for both internal and external pulling tasks. The puller head is turned to securely lock the jaws onto the part being removed. Both a 2-way and 3-way puller head are included, plus three long-reach and three short-reach puller jaws. Plastic storage box included. Easily removes gears, bearings, timing gears, harmonic balancers, and other press-fitted parts.



6618 OTC Universal Bearing Race Puller

- Rugged puller built for many races, sleeves and bearings between 40mm and 60mm.
- Jaws designed with sharp edges for secure grip - even where vertical clearance is negligible.
- Jaws have radius for better attachment to round parts.
- Firm grip based on the adjustable clamping chain.
- Puller design avoids tilting.



Gear and Pulley Pullers

These tools are perfect for removing timing gears, fan pulleys, harmonic balancers, and many other parts having tapped holes.

- Each puller will spread from 1-1/2" to 4-1/4". The puller blocks are 4-7/8" wide, tapped 5/8" - 18 UNF.
- Includes two hex head cap screws, 3/8"-16 x 3" long.

7392 - Puller with 13" long screw

7393 - Puller with 5-1/2" long screw

Similar to Ford D80L-522-A, 303-D025

522 Large Gear and Pulley Puller

Using this tool, you can easily remove a wide range of gears, pulleys, or other parts that have tapped holes.

- The spread is 2" to 7-3/4". Its block is 8-1/4" wide, and its forcing screw is 3/4"-16 x 11-5/8" long.
- Accommodates any cap screws up to 1/2" diameter.



1183 Bearing Splitter Combo Set

This combo pack contains four of OTC's most popular bearing splitters, plus a pulley pulling attachment. A rugged organizer case is included, enabling you to keep the tools together for instant use.

62885
Organizer case only (for 1183).

Set No. 1183 consists of:

No.	Description
1121	Bearing splitter. Has 15/16" max. spread and 1/4" min. spread.
1122	Bearing splitter. Has 2" max. spread and 1/8" min. spread.
1123	Bearing splitter. Has 4-5/8" max. spread and 1/2" min. spread.
1130	Bearing splitter. Has 9" max. spread and 1/2" min. spread.
679	Pulley pulling attachment with a 5-7/8" max. and 1-3/4" min. spread.



4526 Heavy-Duty Single Pressure Beam Bearing Splitter Set

- Single point of adjustment allows quick attachment of splitter to the application.
- Pressure beam provides the ultimate in secure gripping surface.
- Push Puller is thread matched to the splitter.
- Interchangeable legs shorten or lengthen the range of pull.
- Designed of high quality tool grade materials for a lifetime of use.
- For use on most bushing or bearing jobs up to 4" in diameter.

7403 Steering Wheel, Pulley, and Flywheel Puller

Here's a puller that works in a variety of applications. It pulls steering wheels on most late model cars. It also works as a regular 2/3-way puller to remove pulleys and small engine flywheels. Cap screws included (pairs): 3/8-16 x 3-1/2 in.; 5/16-18 x 3-1/2 in.; 5/16-24 x 3-1/2 in.; M8-1.25 x 90 mm; and 5/16-18 x 4 in. (SIR).

- Works on domestic cars with or without collapsible steering columns.



1180 10-Ton Capacity Push-Puller Set

Contains three popular OTC bar-type pullers in one versatile set, packed in a handy plastic storage case. Tools included permit damage-free pulling of gears, bearings, harmonic balancers, and other parts having tapped holes. Ideal for servicing heavy-duty trucks, off-road construction equipment, and machinery.

Set No. 1180 consists of:

No.	Description
927	10-ton Push-Puller, 8-3/8" reach, 2-1/8" to 7-1/4" spread. 6-3/4" puller legs. Other leg sizes are available separately. (See pages 134, 136.)
522	Gear and pulley puller; spread range when used with 1/2" cap screws: 2" to 7-3/4". Cap screws not included.
7393	Gear and pulley puller with standard 5-1/2" forcing screw, plus special 13" forcing screw. Includes two hex head cap screws, 3/8"-16 x 3" long. Special range: 1-1/2" to 4-1/4".



4527 5-Ton Single Pressure Beam Bearing Splitter Set

- Single point of adjustment allows quick attachment of splitter to the application.
- Pressure beam provides the ultimate in secure gripping surface.
- Push Puller is thread matched to the splitter.
- Interchangeable legs shorten or lengthen the range of pull.
- Designed of high quality tool grade materials for a lifetime of use.
- For use on most bushing or bearing jobs up to 3" in diameter.





7790
Flange-Type Puller Set (Grade 5)

- Versatile puller capable of removing a wide variety of components having tapped pulling holes, including harmonic balancers, gears, crankshaft pulleys, etc.
- Capable of handling 2- or 3-way bolt pulling applications.
- Works on many cars, pickups, SUVs, and small engines.
- Carries the OTC Lifetime Marathon Warranty® against defects in workmanship and material.

Contents of set:

- Puller flange: adapts to bolt circle dia. of 1-1/2" to 4-5/8".
- Forcing screw: 5-5/8" lg., 5/8-18 thread.
- Shaft protector: 1-3/16" dia. x 3/4" thick.
- Three each of the following flat washers: 1/4"; 5/16"; 3/8".
- Three each of the following bolt sizes:

- 1/4"-28 x 3" lg.	- M8 x 1.25 x 45 mm lg.
- 5/16"-24 x 3" lg.	- M8 x 1.25 x 65 mm lg.
- 5/16"-18 x 3-1/2" lg.	- M8 x 1.25 x 65 mm lg.
- 5/16"-18 x 6" lg.	- M8 x 1.25 x 90 mm lg.
- 3/8"-24 x 1-1/2" lg.	- M8 x 1.25 x 90 mm lg.
- 3/8"-16 x 2" lg.	- M10 x 1.5 x 35 mm lg.
- 3/8"-16 x 3" lg.	- M10 x 1.5 x 35 mm lg.
- 3/8"-16 x 4-1/2" lg.	



7793
Master Bolt Grip Set (Grade 8)

- Multi-Purpose applications such as steering wheels, flywheels, harmonic balancers, pulleys and gears with tapped holes.
- Includes special stepped bolts for 1990–2005 GM 3300-3800 V6 crankshaft pulleys.

Contents of set:

- 4-way slotted puller yoke and 2 lengths of hardened "live-center" forcing screws - a set of 3 interchangeable forcing screw tips is included to optimize pressure and prevent "walking".
 - Blow molded case to prevent spilling and each bolt size is molded into the storage compartment.
 - Three each of the following bolt sizes:

- M8 x 1.25 x 90mm	- 3/8"-24 UNF x 1.5"
- M8 x 1.25 x 45mm	- 3/8"-16 UNC x 2"
- 1/4"-28 UNF x 3"	- 3/8"-16 UNC x 3"
- M8 x 1.25 x 65mm	- 3/8"-16 UNC x 4.5"
- 5/16"-24 UNF x 3"	- M10 x 1.5 x 35mm
- 5/16"-18 UNC x 3.5"	
- Special Stepped Bolts – 1990 & Newer



PA7
7-Ton Capacity Four-In-One™ Puller Set

- With the parts included in the PA7, you can quickly assemble a 2/3-jaw puller with standard or long reach. 7-ton capacity, the max. reach of 8-3/4", and max. spread of 11" make it ideal for hundreds of pulling jobs. PA7 includes; 7-ton cap. Standard jaw max. reach: 5". Max. spread: 10-1/2". Long jaw max. reach: 8-3/4". Max. spread: 11".



518
Flange-type Puller

- Pulls harmonic balancers, timing gears, and other parts having two or three tapped holes.
- Slotted holes in puller body permit cap screws to be positioned to handle bolt circle diameters from 1-1/2" to 4-5/8"
- Three each of two cap screw sizes included: 3/8"-24 x 3" long and 3/8"-16 x 3" long.



525
Flange-Type Puller Combination

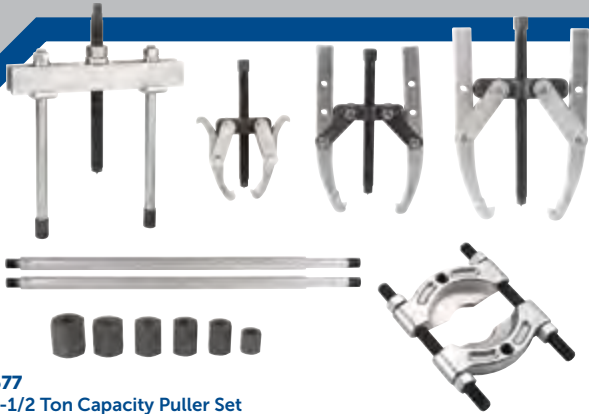
Two specialty pullers in one box. You get a flange-type puller for removal of harmonic balancers, timing gears, and other parts with two or three tapped holes. You also get a steering wheel, pulley, and flywheel puller. 525 includes: flange-type puller and steering wheel puller with four sets of cap screws. 3/8"-16 UNF x 3.5". 3/8"-24 UNF x 3.0". 5/16"-18 UNF x 3.5". 5/16"-24 UNF x 3.5".



6930
Flange-Type Puller Combination

Heavy-duty flange puller features a live center forcing screw. Includes two live center forcing screw tips and two sets of commonly used automotive bolts. Puller will work on bolt circles from 1-1/2" to 4-1/4". Three cap screws, 3/8"-24 x 3" long, and three cap screws, 3/8"-16 x 3" long.





1677 17-1/2 Ton Capacity Puller Set

This puller set gives you the versatility you want and the tonnage capacity you need to tackle parts removal and installation on many models of cars, trucks, tractors, power shovels, road building machinery, etc. Maintenance operations involving the removal and replacement of gears, bearings, wheels, and other press-fit parts can be done with ease.

Set No. 1677 consists of:

No.	Description	No.	Description
938	Push-Puller with 9-1/2" legs		Internal threaded adapters
1104	16-1/2" legs for 938 (pair)	8037	5/8"-18 x 5/8"-18
1024	2-jaw puller	8038	5/8"-18 x 3/4"-16 (2)
1036	2-jaw puller	8039	5/8"-18 x 7/8"-14
1039	2-jaw puller	8040	5/8"-18 x 1"-14
1130	Bearing splitter	8041	5/8"-18 x 1-1/8"-12
		8043	5/8"-18 x 1-1/2"-12



1676 Strong Box Puller Set

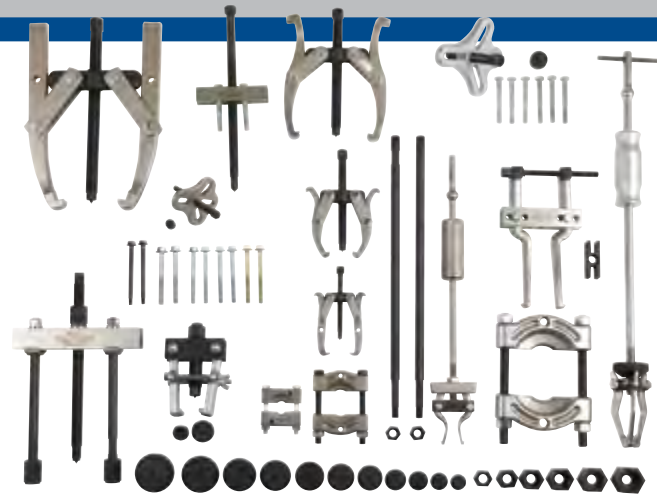
Here's a set of pullers that gives you almost unheard of versatility. You get eight pullers, five attachments, and extra puller jaws. They enable you to pull gears, bearings, pulleys, wheels, and more on cars and light trucks. All these tools are contained in a rugged, lockable metal storage cabinet you can either mount on a wall or stand on a work bench, so they are handy when you need them. Just imagine the jobs you can do with this set!

18886

Storage box only. 29-1/2" wide x 25-3/4" high x 10" deep.

Set No. 1676 consists of:

No.	Description	No.	Description
1026	2/3-jaw puller	7311A	Pitman arm puller
1037	2/3-jaw puller	1122	Bearing splitter
7392	Gear and pulley puller	1123	Bearing splitter
518	Flange-type puller	7372	Rear axle pulling adapter
7403	Steering wheel puller	43888	Long jaws for No. 1026 (3)
1170	Pilot bearing puller		
1177	Slide hammer puller	43892	Long jaws for No. 1037 (3)
		18886	Metal storage box



1675 13-Ton Capacity Puller Set

This versatile 13-ton capacity puller set removes gears, bearings, shafts, pinions, bearing outer races, and other tightly fitted parts. The set includes a Push-Puller, Grip-O-Matic® pullers, bearing pulling attachments, specialized pullers, and many accessories. You can work on all makes and models of cars and light trucks with this set.

1620

Board (3' x 4') for storing No. 1675 set (not included with set).

Set No. 1675 consists of:

No.	Description	No.	Description
927	Push-Puller with 6-3/4" legs	7310A	Pitman arm puller
1101	15-3/4" legs for 927 (pair)	8075	Step plate adapter set
1022	2-jaw puller	8035	Internal threaded adapter: 1/2" -20 x 5/8" -18 (2)
1024	2-jaw puller	8044	Internal threaded adapter set
1035	2-jaw puller	1152	Bearing cup pulling attachment
1039	2-jaw puller	1121	Bearing splitter
7392	Gear and pulley puller	1122	Bearing splitter
518	Flange-type puller	1123	Bearing splitter
7403	Steering wheel puller		
1170	Pilot bearing puller		
1176	Slide hammer puller		

1060-HYD OTC 10 Ton Hydraulic Puller Kit

The OTC 1060-HYD delivers 10 tons of force for industrial bearing service.

Engineered for a maximum spread of 17" and maximum reach of 15". OTC Grip-O-Matic® Pullers are designed with adjustable jaw positions in both 2 and 3 jaw configurations. Two pushing adapters are designed to fit the cylinder ram and act as 4.5" and 8.5" forcing screws.

- 10-Ton 2/3 Jaw Grip-O-Matic Puller Chassis.
- 10-Ton Single Cylinder Hydraulic Ram with 10-Ton Hand Operated Hydraulic Pump.
- Includes 2 Pushing Adapters (4-1/2" and 8-1/2").
- Includes 6 Piece Shaft Adapter Set.
- Ultra Heavy Duty Rolling Storage Case.
- Comes with a Quick Link Connector for suspending pulling from lifting equipment.



Hydraulic Puller Sets

17-1/2, 30-, and 50-Ton Capacity – Individual items in the sets are fully described elsewhere in this catalog. . . consult index.

1688 – 17-1/2 ton capacity hydraulic puller set

1689 – 30-ton capacity hydraulic puller set

1690 – 50-ton capacity hydraulic puller set

No.	Description	1688	1689	1690
HYDRAULICS				
4002	Single stage hydraulic hand pump assy.	x	x	x
4120	17-1/2 ton ram with threaded insert	x		
4121	30-ton ram with threaded insert		x	
4122	50-ton ram with threaded insert			x
24815	Tee adapter	x	x	x
9650	Pressure gauge	x	x	x
9767	Hydraulic hose – 6 foot	x	x	x
9798	Hose half coupler with dust cap	x	x	x
PULLERS				
1062	17-1/2 ton Push-Puller with 16-1/2" legs	x		
1066	17-1/2 ton 3-jaw hydraulic puller	x		
1070	30-ton hydraulic Push-Puller with 18" legs		x	
1074	30-ton 3-jaw hydraulic puller		x	
1076	50-ton hydraulic Push-Puller with 24" legs			x
1080	50-ton 3-jaw hydraulic puller			x
ACCESSORIES				
1105	Puller leg – 22-1/2"	x		
1111	28" legs for No. 1070		x	
1113	34" legs for No. 1076			x
1127	Bearing pulling attachment		x	x
1130	Bearing pulling attachment	x		
1154	Bearing cup pulling attachment	x		
1166	Bearing cup pulling attachment		x	
201454	Pushing adapter	x		
24814	Speed crank	x		
27198	Speed crank		x	
28228	Pushing adapter	x		
28229	Ram cap		x	
28230	Ram cap for No. 1076			x
29595	Speed crank			x
32118	Ram adjusting screw	x		
32698	Adjusting screw			x
34510	Pushing adapter		x	
34755	Pushing adapter			x
34758	Adjusting screw		x	
41226	2-way head for No. 1074		x	
41224	2-way head for No. 1066	x		
50449	2-way head for No. 1080			x
8020	1"–8 F. x 5/8"–18 M. threaded adapter	x		
8023	1-1/4"–12 F. x 1"–14 M. threaded adapter (2)			x
8028	1-5/8"–5-1/2 F. x 1"–8 M. threaded adapter			x
8029	1-5/8"–5-1/2 F. x 1"–14 M. threaded adapter			x
8036	Female threaded adapter 1"–14 x 1"–14 (2)		x	
8038	Female threaded adapter 5/8"–18 x 3/4"–16 (2)	x		



1688 17-1/2 ton capacity hydraulic puller set



1689 30-ton capacity hydraulic puller set



1690 50-ton capacity hydraulic puller set

HYDRAULIC PULLER SETS PULLERS



Hydraulic Puller Sets

1679 – 17-1/2 ton hydraulic puller set

1680 – 17-1/2 ton hyd. farm implement service set

1681 – 17-1/2 ton and 30-ton hydraulic puller set.

1682 – 17-1/2 ton, 30-ton, & 50-ton master puller set

1683 – 17-1/2 ton & 50-ton hydraulic construction equipment service set

Photo for illustrative purposes only. For complete set contents, see chart below.

Individual items in the sets are fully described elsewhere in this catalog. . . consult index.

No.	Description	1679	1680	1681	1682	1683
HYDRAULICS						
4002	Single-stage hydraulic hand pump assembly	x	x	x	x	x
4008	2-stage hyd. hand pump w/3-way control valve	x	x	x	x	x
9650	2-stage hyd. hand pump w/3-way control valve	x	x	x	(2)	x
9798	Hose half coupler with dust cap	x	x	x	(2)	x
9767	Hydraulic hose – 6 ft.	x	x	x	(2)	x
RAMS						
4120	17-1/2 ton ram with threaded insert	x	x	x	x	x
4121	30-ton ram with threaded insert	x	x	x	x	x
4122	50-ton ram with threaded insert	x	x	x	x	x
PULLERS						
1025	2-jaw puller	x	x	x	x	x
1027	5-ton capacity 2/3-jaw puller	x	x	x	x	x
1035	2-jaw puller	x	x	x	x	x
1039	2-jaw puller	x	x	x	x	x
1062	17-1/2 ton cap. hyd. Push-Puller w/16-1/2" legs	x	x	x	x	x
1105	22-1/2" legs for No. 1062 (pair)	x	x	x	x	x
1106	9-1/2" legs for No. 1062 (pair)	x	x	x	x	x
1107	4-1/2" legs for No. 1062 (pair)	x	x	x	x	x
1070	30-ton cap. hyd. Push-Puller with 18" legs	x	x	x	x	x
1109	8" legs for No. 1070 (pair)	x	x	x	x	x
1111	28" legs for No. 1070 (pair)	x	x	x	x	x
1076	50-ton cap. hyd. Push-Puller with 24" legs	x	x	x	x	x
1113	34" legs for No. 1076 (pair)	x	x	x	x	x
1066	17-1/2 ton 3-jaw Grip-O-Matic® puller	x	x	x	x	x
41224	17-1/2 ton 2-jaw puller head	x	x	x	x	x
1074	30-ton 3-jaw hyd. puller	x	x	x	x	x
1080	50-ton 3-jaw hyd. puller	x	x	x	x	x
50449	50-ton 2-jaw puller head	x	x	x	x	x
1037	Combination 2/3-jaw puller	x	x	x	x	x
41226	30-ton 2-jaw puller head	x	x	x	x	x
43892	Long jaws for No. 1037 (3)	x	x	x	x	x
1041	Combination 2/3-jaw puller	x	x	x	x	x
30902	Long jaws for No. 1041 (3)	x	x	x	x	x
1170	Pilot bearing puller	x	x	x	x	x
1176	Slide hammer puller	x	x	x	x	x
7392	Gear and pulley puller	x	x	x	x	x
24833	Short forcing screw for No. 7392	x	x	x	x	x
Accessories						
8005	5/8"–18 F x 3/8"–16 M threaded adapter (2)	x	x	x	x	x
8006	5/8"–18 F x 1/2"–20 M threaded adapter (2)	x	x	x	x	x
8807	5/8"–18 F x 1/2"–13 M threaded adapter (2)	x	x	x	x	x
8010	5/8"–18 F x 5/8"–11 M threaded adapter (2)	x	x	x	x	x
8013	5/8"–18 F x 3/4"–16 M threaded adapter (2)	x	x	x	x	x
8015	5/8"–18 F x 3/4"–10 M threaded adapter (2)	x	x	x	x	x

No.	Description	1679	1680	1681	1682	1683
8017	5/8"–18 F x 7/8"–14 M threaded adapter (2)	x	x	x	x	x
8018	5/8"–18 F x 7/8"–9 M threaded adapter (2)	x	x	x	x	x
8019	5/8"–18 F x 1"–14 M threaded adapter (2)	x	x	x	x	x
8020	1"–8 F x 5/8"–18 M threaded adapter (1)	x	x	x	x	x
8021	1"–8 F x 1"–14 M threaded adapter (1)	x	x	x	x	x
8012	1"–14 F x 5/8"–18 M threaded adapter (2)	x	x	x	x	x
8025	1-1/4"–7 F x 5/8"–18 M threaded adapter (2)	x	x	x	x	x
8027	1-1/4"–7 F x 1"–14 M threaded adapter (2)	x	x	x	x	x
8023	1-1/4"–12 F x 1"–14 M threaded adapter (2)	x	x	x	x	x
8024	1-1/4"–12 F x 1-3/4"–12 M threaded adapter (2)	x	x	x	x	x
8028	1-5/8"–5-1/2 F x 1"–8 M threaded adapter (1)	x	x	x	x	x
8029	1-5/8"–5-1/2 F x 1"–14 M threaded adapter (1)	x	x	x	x	x
8036	1"–14 F x 1"–14 F threaded adapter (2)	x	x	x	x	x
8038	5/8"–18 F x 3/4"–16 F threaded adapter	(2)	x	(2)	(2)	x
8056	Shaft protector set	x	x	x	x	x
8075	Step plate adapter set	x	x	x	x	x
8076	Step plate adapter set	x	x	x	x	x
679	Pulley pulling attachment	x	x	x	x	x
680	Pulley pulling attachment	x	x	x	x	x
8044	Internal threaded adapter set	x	x	x	x	x
10215	Hex nut: 3/4"–16 (2)	x	x	x	x	x
1154	Bearing cup pulling attachment	x	x	x	x	x
32136	Long jaws for No. 1154 (2)	x	x	x	x	x
1166	Bearing cup pulling attachment	x	x	x	x	x
34479	Reducing adapter for use with No. 1166	x	x	x	x	x
1122	Bearing splitter	x	x	x	x	x
1123	Bearing splitter	x	x	x	x	x
1126	Bearing splitter	x	x	x	x	x
1127	Bearing splitter	x	x	x	x	x
1128	Bearing splitter	x	x	x	x	x
1130	Bearing splitter	x	x	x	x	x
24814	Speed crank	x	x	x	x	x
24815	Tee adapter	x	x	x	x	x
24829	Short bolt (2)	x	x	x	x	x
24832	Special puller forcing screw	x	x	x	x	x
27198	Speed crank	x	x	x	x	x
29595	Speed crank	x	x	x	x	x
28228	Ram cap	x	x	x	x	x
28229	Ram cap	x	x	x	x	x
28230	Ram cap	x	x	x	x	x
32118	Ram adjusting screw	x	x	x	x	x
32698	Ram adjusting screw	x	x	x	x	x
34758	Ram adjusting screw	x	x	x	x	x
34510	Pushing adapter	x	x	x	x	x
34755	Pushing adapter	x	x	x	x	x
201923	Pushing adapter	x	x	x	x	x