



IDEA GENERATOR



PRODUCT IN ACTION



COMPONENT SELECTION



SYSTEM ARRANGEMENTS



HYDRAULIC & MECHANICAL POWER

Phone: (708) 865-1500 • Fax: (708) 865-0894 • Toll Free: (800) 323-9114 • www.tksimplex.com

TABLE OF CONTENTS

APPLICATIONS BY INDUSTRY: Pages 3 - 10

<i>Marine</i>	<i>Page 3</i>
<i>Railroad</i>	<i>Page 4</i>
<i>Hydro-Electric</i>	<i>Page 5</i>
<i>Fabrication</i>	<i>Page 6</i>
<i>Petro-Chemical</i>	<i>Page 7</i>
<i>Construction</i>	<i>Page 8</i>
<i>Mining</i>	<i>Page 9</i>
<i>Manufacturing</i>	<i>Page 10</i>

COMPONENT SELECTION: Pages 11 - 16

<i>Hydraulic Setup</i>	<i>Page 11</i>
<i>Hydraulic Cylinder Selection</i>	<i>Page 12</i>
<i>Hydraulic Hand Pump Selection</i>	<i>Page 13 & 14</i>
<i>Hydraulic Power Pump Selection</i>	<i>Page 15 & 16</i>

SYSTEM ARRANGEMENTS: Pages 17 - 23

<i>Hand Pump System, 1 Point Lift</i>	<i>Page 17</i>
<i>Hand Pump System, 2 Point Lift</i>	<i>Page 17</i>
<i>Electric Pump System, Single-Acting</i>	<i>Page 18</i>
<i>Electric Pump System, Double-Acting</i>	<i>Page 18</i>
<i>Air Pump System, Single-Acting</i>	<i>Page 19</i>
<i>Air Pump System, Double-Acting</i>	<i>Page 19</i>
<i>Electric Pump System, 2 Point Lift</i>	<i>Page 20</i>
<i>Gas Pump System, 4 Point Lift</i>	<i>Page 20</i>
<i>Multiple Port Connection</i>	<i>Page 21</i>
<i>Multiple Port Connection with Staggered Gauges</i>	<i>Page 21</i>
<i>Torque Wrench System</i>	<i>Page 22</i>
<i>Air Bag System, 1 Point Lift</i>	<i>Page 23</i>
<i>Air Bag System, 2 Point Lift</i>	<i>Page 23</i>

20 SERIES PUMP IN ACTION AT IRON ORE SHIP MAINTENANCE IN THE GREAT LAKES



Ship repair demands durable and reliable tools. This Simplex 20 Series pump provides trouble free hydraulic power to a variety of hydraulic cylinders, spreaders and tools. "Shipyards are not a place for unreliable hydraulic pumps and tools; Simplex tools never let us down."

RDA SERIES CYLINDERS ASSIST THE MILITARY IN LAUNCHING NEW RESEARCH VESSEL

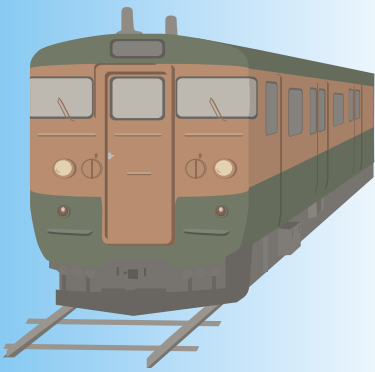


Maintenance crews relied on Simplex RDA15018 cylinders to help lift, transport, and launch a US Navy research vessel from dry dock to the ship's launch site. "Simplex cylinders were key to a successful operation."

MARINE

SIMPLEX PRODUCTS IN ACTION





NOTHING OUT PERFORMS THE SIMPLEX POW'R-RISER RAILCAR JACK



Simplex Pow'r-Risers are engineered for extreme lifting capacities to accommodate the heaviest railcars. While short enough to fit under the lowest loads, operators can add up to 32" of drop in extenders for maximum flexibility. Dual hydraulic locking systems and mechanical lock rings make the Pow'r-Riser the safest jack available. The 60, 100 & 150 ton models provide enough force to lift up any railcar in service today.

RAILROAD

RAIL MAINTENANCE SIMPLIFIED WITH SIMPLEX



Routine rail maintenance jobs are simplified with the Simplex Pow'r-Claw hydraulic track jack. Weighing just 41lbs., this lightweight hydraulic track jack packs 10 tons of lifting capacity on the toe as well as the cap. The Simplex Pow'r-Claw can be used in either the horizontal or vertical position for lifting and gauging rail.



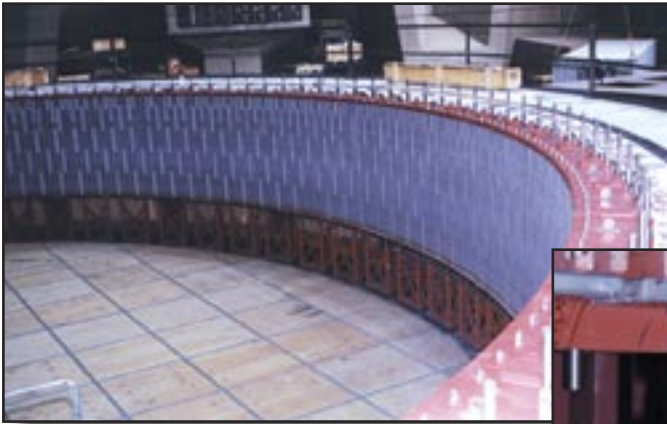
SIMPLEX PRODUCTS IN ACTION

SIMPLEX RLN SERIES LOCKNUT CYLINDERS ASSIST IN INSTALLATION



Crews at the Grand Coulee Dam faced the situation of installing this generator without falling behind on the project. Engineers turned to Simplex, utilizing a number of Simplex RLN 50 ton locknut cylinders, which enabled them to complete the job 25% faster. In addition, the locknut cylinders held the load without the extra chore of cribbing. The job was simplified with the use of Simplex Suc-O-Matic power pumps to assist in the cylinder retraction.

SIMPLEX SCREW & CAP ASSEMBLIES SUPPORT GENERATOR WALL



Assembly crews used 144 Simplex Screw and Cap Assemblies to support the outer wall of a large generator assembly at the Grand Coulee Dam. The assemblies are also used to exert pressure and stabilize the generator laminations.



HYDRO-ELECTRIC

SIMPLEX PRODUCTS IN ACTION

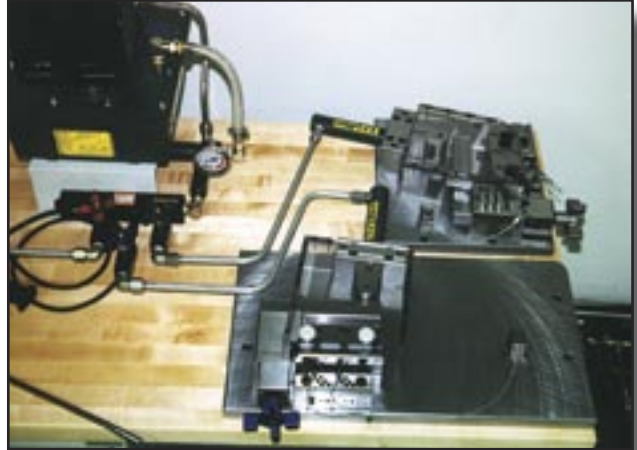
SIMPLEX
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FABRICATION

SIMPLEX R SERIES CYLINDERS ARE USED TO FABRICATE TITANIUM PINS

This medical manufacturer utilizes Simplex R-Series 5 ton cylinders in a fabricating fixture to precisely form titanium pins used in the medical industry. "Each pin we make has a custom shape to it and forming them with the use of manual benders was slow and labor intensive. In addition, our accuracy was not at an acceptable level. The Simplex 5 ton cylinders and the 20 Series power pump is exactly what we needed to perform this task efficiently and with more precision."



SIMPLEX SUPERJACKS ARE USED IN STRUCTURAL STEEL FABRICATION

Simplex A2510C Superjacks are used by this steel fabricator to stabilize and keep I-beams from warping during the welding process. Simplex mechanical Superjacks are made to be used in the harshest environments. "We selected Simplex Superjacks for the bullet proof construction and the holding power in the roughest applications." Superjacks are impervious to weld splatter as well as other contaminants that would shorten the life of hydraulic jacks.



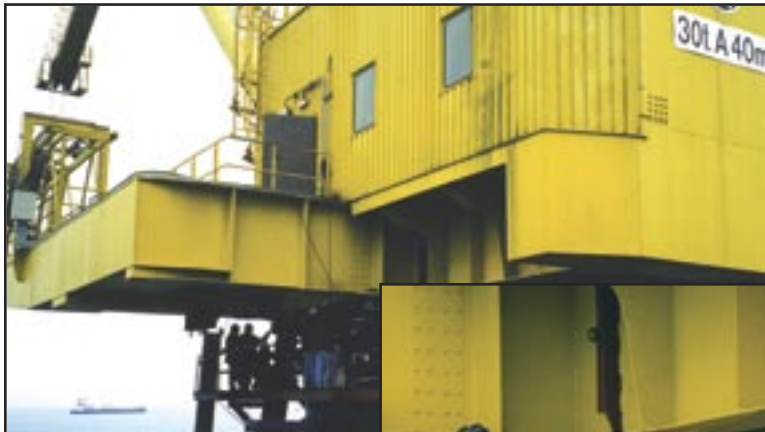
SIMPLEX PRODUCTS IN ACTION

SIMPLEX TORQUE WRENCHES ARE USED FOR HEAVY DUTY BOLTING AT THIS REFINERY

Maintenance crews at this refinery required a faster and more accurate way of loosening and tightening the bolts on this filter that is used to refine diesel fuel. Due to the frequency of the filter change out (2 filter units each needed to be changed once a week) competitor torque wrenches and pumps would fail soon after they were put into service. Soon after trying out the Simplex WT-10 with a PET7842 equipped with a heat exchanger, they were able to complete the job 30% faster with no equipment failure. "The Simplex wrench is lighter, faster and more reliable than the other wrenches we have tried in the past. We have since standardized on Simplex wrenches and pumps for all our maintenance jobs."



SIMPLEX RDA SERIES IS USED FOR HEAVY LIFTING ON THIS OFFSHORE OIL RIG



When this 40 ton capacity overhead crane on an offshore oil rig in the Gulf of Mexico needed maintenance done on its roller bearing the contractor called on Simplex to provide the lifting system to do the job. The contractor utilized (4) RDA20012 200 ton cylinders with an electric pump and a series of remote valves to advance and retract the cylinders. "With the assistance of Simplex and our local distributor we were able to finish this job with minimal down time."

PETRO-CHEMICAL

SIMPLEX PRODUCTS IN ACTION

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CONSTRUCTION

SIMPLEX RC SERIES CYLINDERS ASSIST IN HISTORICAL REHAB



Age and earthquakes have taken its toll on this historical landmark. The Mission at San Juan Capistrano needed major repairs or risk collapsing. Contractors used 24 Simplex RC121 (12 ton center-hole cylinders) in order to transfer the load of the roof so the repairs could start to take place. "The cylinders worked without a hitch and the repairs were completed on schedule."

SIMPLEX IS USED FOR HEAVY DUTY LIFTING IN TIGHT AREAS



Bridge maintenance crews needed a solution to change out the bearing pads on approximately 90 bridges along I-80.

The crew called upon a local Simplex distributor to solve their low height lifting problem. With a custom fabricated lifting fixture and two Simplex RFS50, 50 ton flat jack cylinders, connected to one Simplex 70 Series power pump, the crew had enough lifting capacity to easily lift each section of bridge, so the bearing pads could be quickly changed. "With the use of the hydraulic cylinders and pump we were able to complete the entire job ahead of schedule."



SIMPLEX PRODUCTS IN ACTION

HIGH TONNAGE RDA SERIES CYLINDERS ARE USED IN DRAG LINE MAINTENANCE



When one of the world's largest drag lines needed to be raised for roller replacement, the maintenance crew relied on the high tonnage expertise of Simplex. Weighing over 5,000 tons, this was a job for the Simplex heavy duty Pine cylinders. "We used a series of RDA50012, 500 ton capacity double-acting cylinders and PE60 5 H.P. electric power pump. With the help of Simplex and our local distributor we were able to make a successful lift and complete maintenance ahead of schedule."

SIMPLEX RATCHET JACKS ARE THE STANDARD IN THE COAL MINES

When it comes to general maintenance in the coal mines, one name is known more than any other, Simplex. Simplex ratchet jacks have been the standard ratcheting jacks in the mining industry for decades. From lifting coal cars to roof supports, the Simplex jacks have been the trusted tool when failure is not an option. "Simplex jacks last longer and are dependable for all the jobs we need them to do; it is the only jack we will use down here in the mines."



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SIMPLEX PRODUCTS IN ACTION

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MANUFACTURING

SIMPLEX RDA SERIES CYLINDERS ARE USED TO EXTRACT 30% MORE

The producer of vanilla extract needed a quicker and more efficient way of producing the extract from vanilla beans. Along with his local distributor and Simplex Representative he was able to put together a press utilizing (2) Simplex RDA15024 double acting 150 ton cylinders. Each cylinder was able to extract vanilla at the same time making the process up to 50% quicker than the previous method. As a bonus, we also realized that these powerful cylinders were able to extract 30% more vanilla than the previous method. "As a result of the tool change extracting the vanilla became much more profitable for us."



SIMPLEX AIR PUMP AND CYLINDER IS USED TO CLAMP

This clamping application required 1,500 lbs. of clamping force for this production line test fixture. The operator utilized a Simplex R55, 5 ton spring return cylinder, mounted to a clamping block. The cylinder is powered by a portable air pump, Simplex model PA91. The pump runs off of regular shop air and will produce up to 10,000 psi of hydraulic force. The three position treadle is easy to use whether as a foot switch or by hand. "This test fixture provided us up to 25% better efficiency enabling production to increase. Our profits have also increased since we have installed this fixture."

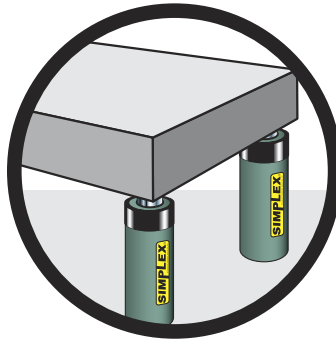


SIMPLEX PRODUCTS IN ACTION

Setting up the right system for your project is important to us. Review these considerations below to assist you in determining what is required for your particular application.

Determine the type of Lift or Tool required for your application:

- Single or multiple point lift?
- Balanced or unbalanced load?
- Guided or unguided load?
- Pulling, pressing, punching, spreading or torquing?



Choosing the right Cylinder or Tool for your specific application:

- Determine the force required (add an extra 20% as a rule of thumb).
- Determine the total amount of oil required for each cylinder(s) and/or tool(s).
- Determine the closed height, stroke requirement and diameter footprint allowable.
- Push and/or pull requirement. For cylinders, single acting, load return, spring return or double acting hydraulically driven both ways.

Choosing the right Pump source for your application based on your cylinder / tools and oil / speed requirements:

- What is the maximum system operating pressure requirement?
- What is the volume of oil required? Add all of the cylinder(s) and/or tool(s) cubic volume requirements and add 1 cubic inch per 1.66 feet of hose.
- What is the preferred source of power? (Hand, air, electric, or gas) If hand pump is selected, choose between single or two speed.
- Do you need this to be portable? (Consider weight and size)





SIMPLEX HYDRAULIC CYLINDER SELECTION CHART

Series	Description/Application	Cylinder Type	Plunger Type	Capacity Tons
R	General purpose applications, spring assisted for fast retraction.	Single-Acting	Solid	5 - 100
RAS	Aluminum lightweight construction, spring assisted for fast retraction, easy to transport and position.	Single-Acting	Solid	30 - 150
RAL	Aluminum lightweight construction, mechanical load holding / lock - spring return, easy to transport and position.	Single-Acting	Solid	50 - 150
RAC	Aluminum lightweight construction, single-acting center hole cylinder easy to transport and position.	Single-Acting	Center Hole	30 - 60
RACD	Aluminum lightweight construction, double-acting center hole cylinder easy to transport and position.	Double-Acting	Center Hole	30 - 150
RLS	Low height, spring assisted return for fast retraction.	Single-Acting	Solid	10 - 100
RFS	Lowest height available, spring assisted for fast retraction.	Single-Acting	Solid	5 - 150
RP	Pull type only, spring assisted for fast retraction.	Single-Acting	Solid	2 - 5
RLR	Jacking purpose, load return.	Single-Acting	Solid	30 - 1,000
RLN	Mechanical load holding / lock, load return.	Single-Acting	Solid	30 - 1,000
RC	Center hole construction, spring assisted for fast retraction. Used for pulling applications.	Single-Acting	Center Hole	12 - 100
RCD	Center hole construction, double-acting. Used for pulling applications, pre-stressing and post tensioning.	Double-Acting	Center Hole	30 - 660
RDA	Double-acting, controlled retraction for fast cycling.	Double-Acting	Solid	10 - 1,000



SIMPLEX HYDRAULIC HAND PUMP SELECTION CHART

MODELS		DESCRIPTION/APPLICATION
Portable / Lightweight	P20	Widely known for their rugged construction and low, back saving handle efforts. Select these single acting pumps for maximum portability and light weight construction. The metal and new aluminum alloy housings makes these pumps truly industrial grade tools. (Available in single-acting version only.)
	P22	
	P41	
	P42	
	P30	
	P32	
	P71	
	P72	
	P82	
Heavy Duty	P140	The high flow and low handle efforts in these larger pumps makes them a heavy duty grade tool. The low handle effort and fast advancement are achieved through an adjustable handle pivot. No matter if it is a small or large application, these pumps will withstand the task. (Available in single or double acting versions.)
	P140D	
	P230	
	P230D	
	P300	
	P300D	
	P461	
	P461D	
Special Application	P1603A	These pumps are designed for those special applications that require tight mounting space, backup manual power or lower pressure and high flows. Ideal for fixed applications when the pumps need to be bolted in place.
	P1604A	
	P1606A	
	P10003A	
	P10004A	
	P10006A	
	P10008A	
P100012A		

COMPONENT SELECTION

COMPONENT SELECTION

QUICK REFERENCE CHART

Use this chart to match the appropriate size hand pump to your single-acting Simplex cylinders. Match your cylinder capacity (across the top) with the cylinder strokes listed (in the left hand column). The intersecting box will give you the recommended hand pump for general applications.

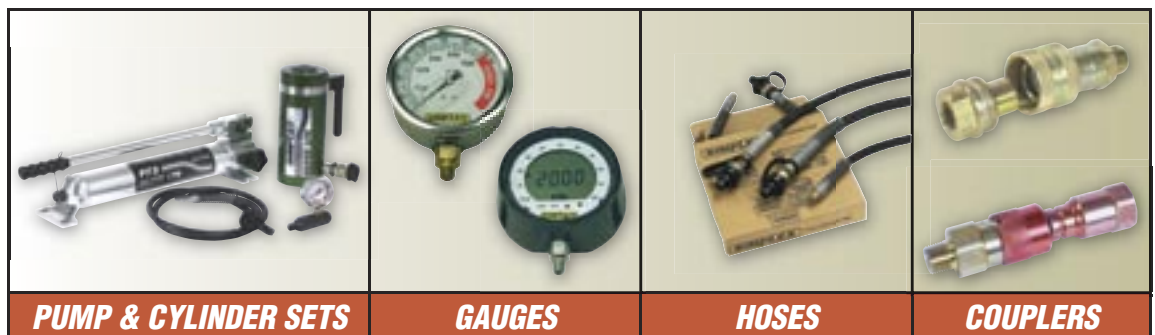
CYLINDER STROKE (in)	CYLINDER CAPACITY (TONS)										
	5 TON	10 TON	15 TON	20 TON	25 TON	30 TON	50/55 TON	60 TON	75 TON	100 TON	150 TON
1	P41/P71	P41/P71		P41/P71	P42/P72	P42/P72	P42/P72		P42/P72	P42/P72	P42/P72
2		P42/P72	P42/P72	P42/P72	P42/P72	P42/P72	P42/P72			P82/P140	P140
3	P41/P71								P82/P140		
4		P42/P72	P42/P72		P42/P72						
5	P42/P72										
6		P42/P72	P42/P72		P42/P72	P82/P140	P82/P140		P82/P140	P230	P230
7	P42/P72										
8		P42/P72	P42/P72		P82/P140	P82/P140				P230	P300
9	P42/P72										
10		P42/P72	P42/P72		P82/P140					P230	P461
12		P42/P72			P82/P140						
13								P230			
14		P42/P72	P42/P72		P82/P140						

HAND PUMP SPEED SELECTION CHART

Use this chart to determine the number of full pump handle strokes required to extend a Simplex cylinder 1". You may take handle stroke per inch and multiply it by the cylinder stroke to determine the number of strokes required to fully extend the cylinder.

HAND PUMP MODEL NO.	STROKE PER 1" OF CYLINDER TRAVEL	CYLINDER CAPACITY (TONS)									
		5 TON	10 TON	15 TON	20 TON	25 TON	30 TON	50/55 TON	60 TON	75 TON	100 TON
P41/P71	NO LOAD	7	15	21	31	34	43	73	88	106	137
	LOAD	7	15	21	31	34	43	73	88	106	137
P20/P42/P32/P82	NO LOAD	2	3	4	6	7	8	14	17	20	26
	LOAD	7	15	21	31	34	43	73	88	106	137
P72/P30	NO LOAD	2	3	4	6	7	8	13	16	18	23
	LOAD	7	15	21	31	34	48	73	88	106	137
P140/P300	NO LOAD	1	1	2	2	2	3	5	5	6	8
	LOAD	4	10	14	22	22	27	46	58	66	86
P230/P461	NO LOAD	1	1	1	1	1	1	2	2	2	3
	LOAD	3	8	11	16	18	22	38	45	54	70

HAND PUMP PRODUCTS & ACCESSORIES



SIMPLEX HYDRAULIC POWER PUMP SELECTION CHART

MOTOR TYPE	SERIES	PUMP TYPE/APPLICATION	MAXIMUM FLOW @10,000 PSI (cu. in.)	HORSE POWER
ELECTRIC	10	An intermittent power pump that is best suited to power small to medium size tools or cylinders. It's very lightweight, portable and works well on long extension cords or generators.	250 cu. in. @200 19 cu. in. @10,000	.5 HP Single Phase 115VAC or 230VAC
	20	A continuous duty power pump that is best suited to power small to medium tools and cylinders. It has more options than the 10 Series which gives you more flexibility.	400 cu. in. @600 20 cu. in. @10,000	.5 HP Single Phase Permanent Mag. 115/230VAC 50/60 Hz
	40	A continuous duty pump which is best suited in medium size tools and cylinders. It's a perfect choice for production and lifting applications due to it's reservoir sizes and valve options. Runs efficiently on 20 amps.	400 cu. in. @1,200 55 cu. in. @10,000	1.5 HP Single Phase Induction 115/230VAC 50/60 Hz
	50	A continuous duty pump which is best suited in medium to large size tools and cylinders. High flow rate runs multiple cylinders and applications effectively.	650 cu. in. @1,500 110 cu. in. @10,000	3 HP Three Phase 230/460VAC
	60	A continuous duty pump which is best suited in large size tools and cylinders. High flow rate runs multiple cylinders and tools effectively.	650 cu. in. @2,000 175 cu. in. @10,000	5 HP Three Phase 230/460VAC
	70	A continuous duty pump which is best suited in medium size tools and cylinders. It's a perfect choice for production and lifting applications due to it's reservoir sizes and valve options.	400 cu. in. @1,200 50 cu. in. @10,000	1.5 HP Single Phase Permanent Mag. 115/230VAC 50/60 Hz
COMPACT AIR	PA	An intermittent compact air pump best suited for pressing, production and shop tool applications. Runs effectively on 10CFM @60 - 150 psi.	6 & 10	N/A
AIR	PAM	A continuous duty pump which is best suited in medium size tools and cylinders. It's a perfect choice for applications where electric driven pumps is an issue or not available.	50	1.5 Air
GAS	PGM	A continuous duty pump which is best suited in medium to large size tools and cylinders. It's a perfect choice where a self-contained power unit is required.	50 & 120	3.5, 5.5, 6 & 8 HP
EXTERNAL PTO	PI	A continuous special application intensification pump. With use of an external PTO, it works well providing you 10,000 psi for tools and cylinders.	0 - 460	N/A

COMPONENT SELECTION

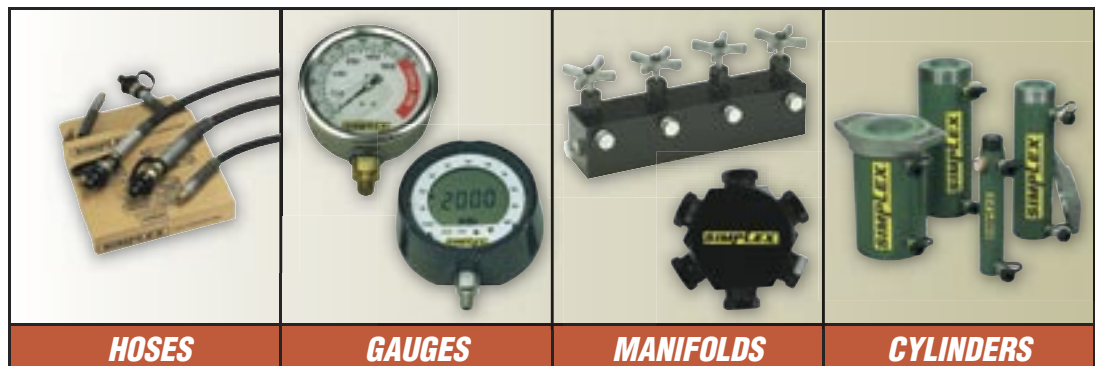
COMPONENT SELECTION

POWER PUMP SPEED SELECTION CHART

Use the speed chart below and select the right size pump to obtain the cylinder speed you desire. For multiple cylinder system speeds, divide the inches per minute by the number of cylinders in the system.



CYLINDER CAPACITY (TONS)		CYLINDER CAPACITY (TONS)				
		10 SERIES	20 SERIES	40/70 SERIES	50 SERIES	60 SERIES
10	LOADED	9	9	24	45	76
	UNLOADED	104	169	169	280	290
20/25	LOADED	4	4	10	20	33
	UNLOADED	50	75	75	132	132
30	LOADED	3	3	8 1/2	16	26
	UNLOADED	39	60	60	104	104
50/55	LOADED	2	2	5	9	15
	UNLOADED	23	35	35	61	61
60/75	LOADED	1 1/2	1 1/2	3 1/2	6	10
	UNLOADED	16	24	24	43	43
100	LOADED	1	1	3	5	8 1/2
	UNLOADED	13	19	19	34	34
150	LOADED	1/2	1/2	1 3/4	3	5
	UNLOADED	7	11	11	20	20
200	LOADED	3/8	3/8	1	2	5
	UNLOADED	5	8	8	15	15



HOSES

GAUGES

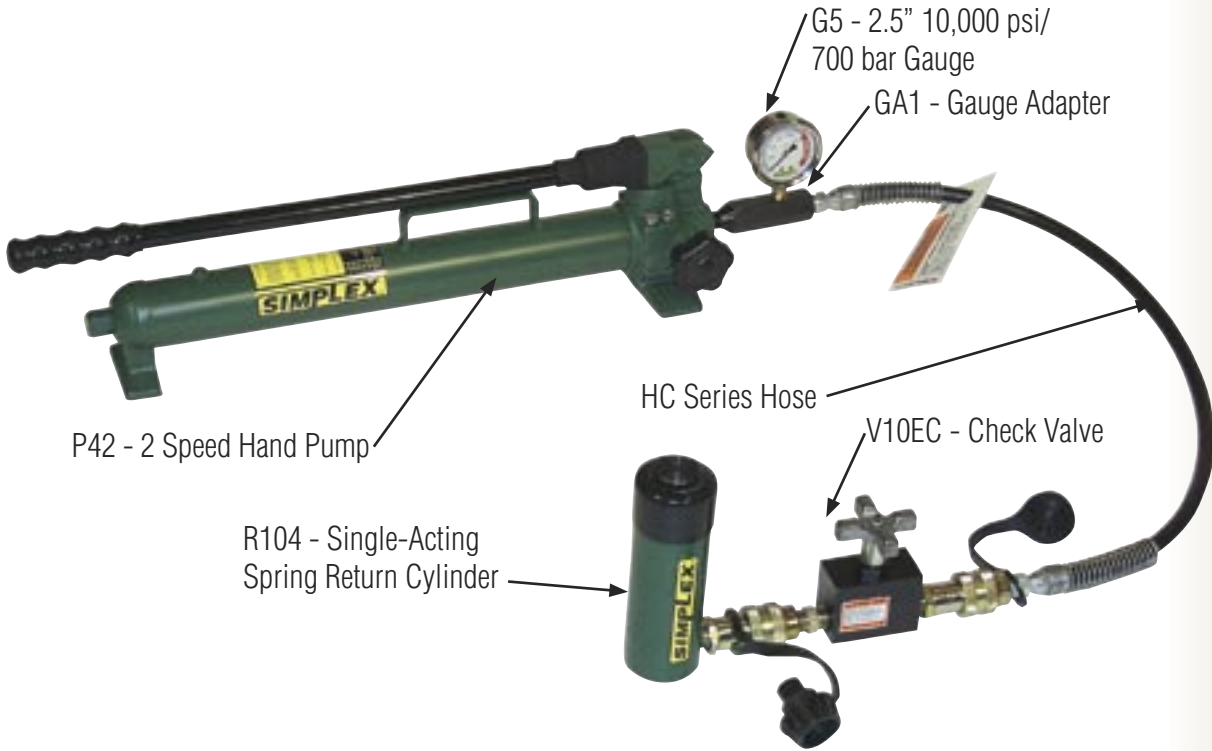
MANIFOLDS

CYLINDERS

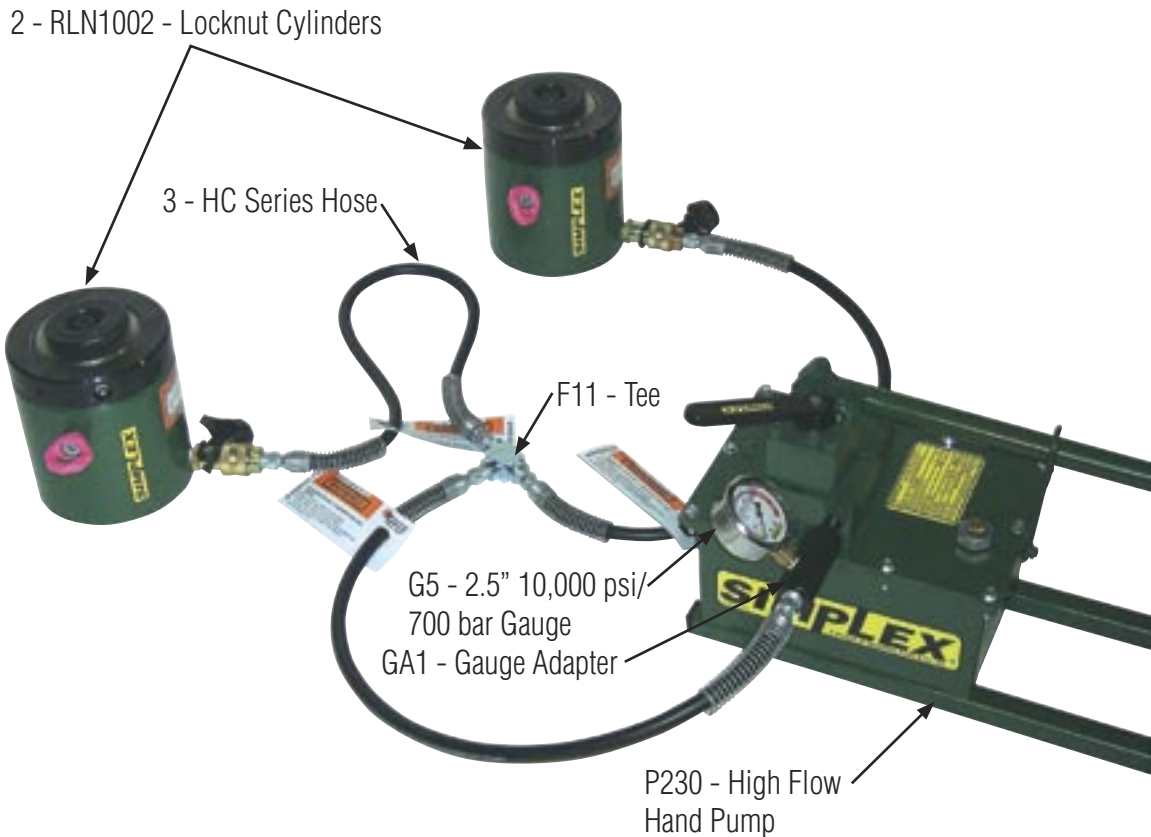


SIMPLEX SYSTEMS SELECTION

1 POINT LIFT, MANUALLY DRIVEN WITH CHECK VALVE



2 POINT LIFT, MANUALLY DRIVEN

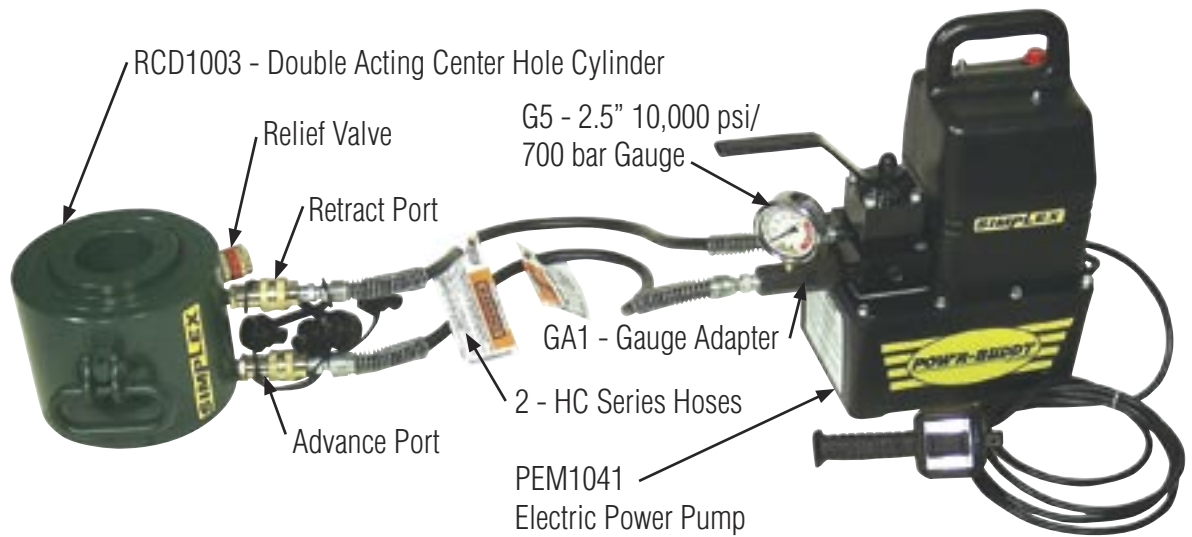


SYSTEM ARRANGEMENTS

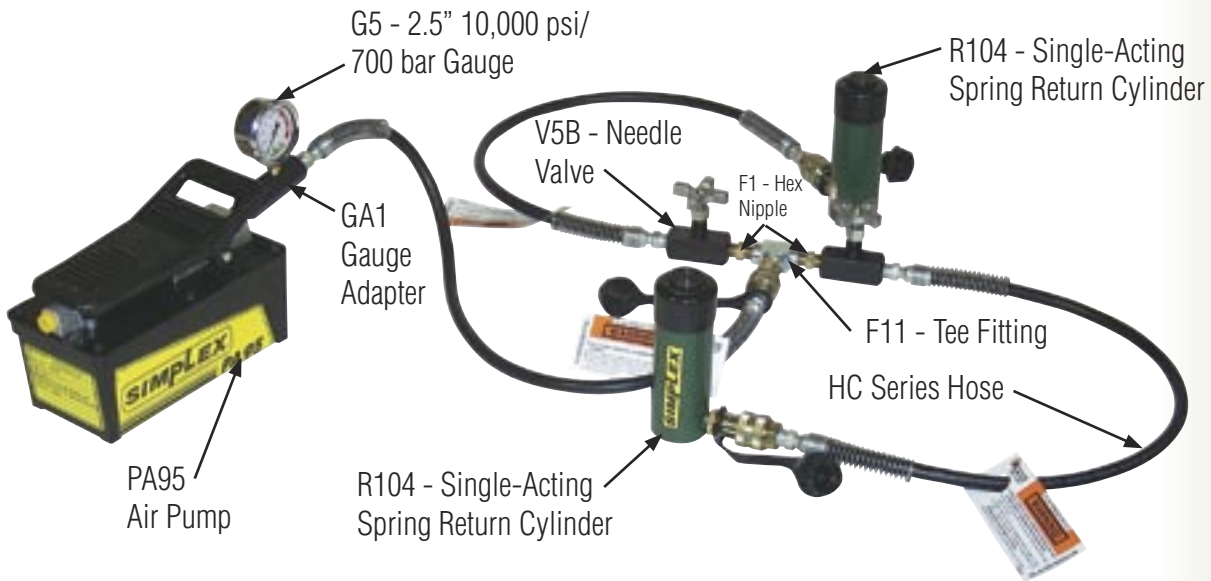
1 HYDRAULIC SPREADER, ELECTRIC DRIVEN



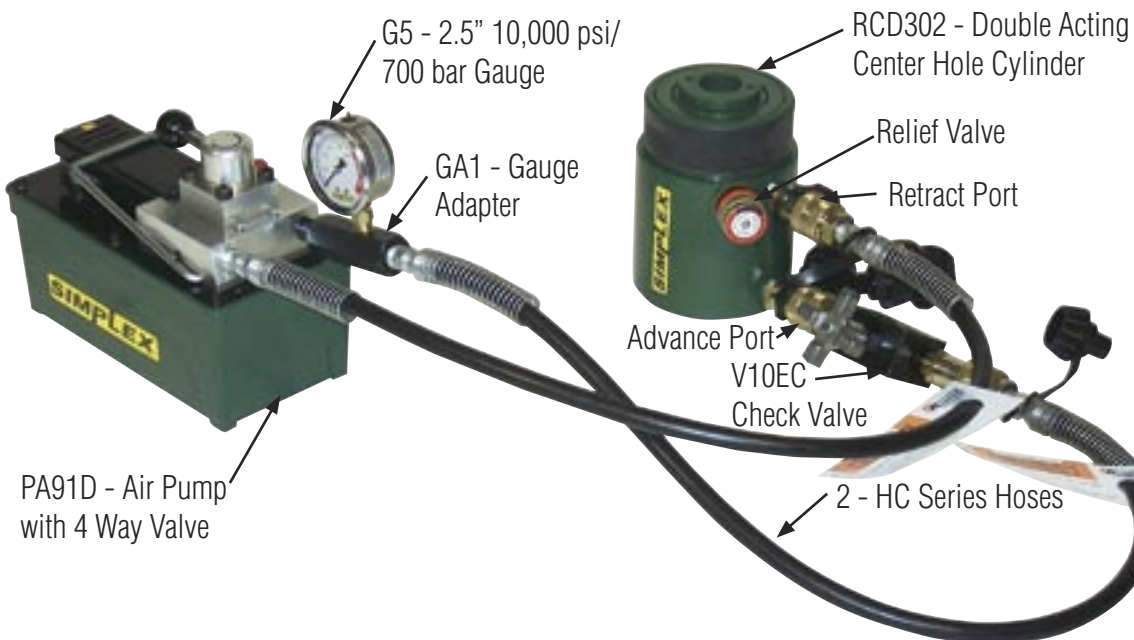
1 POINT LIFT, DOUBLE ACTING CYLINDER ELECTRICALLY DRIVEN



2 POINT LIFT, AIR DRIVEN WITH INDIVIDUAL CYLINDER CONTROL

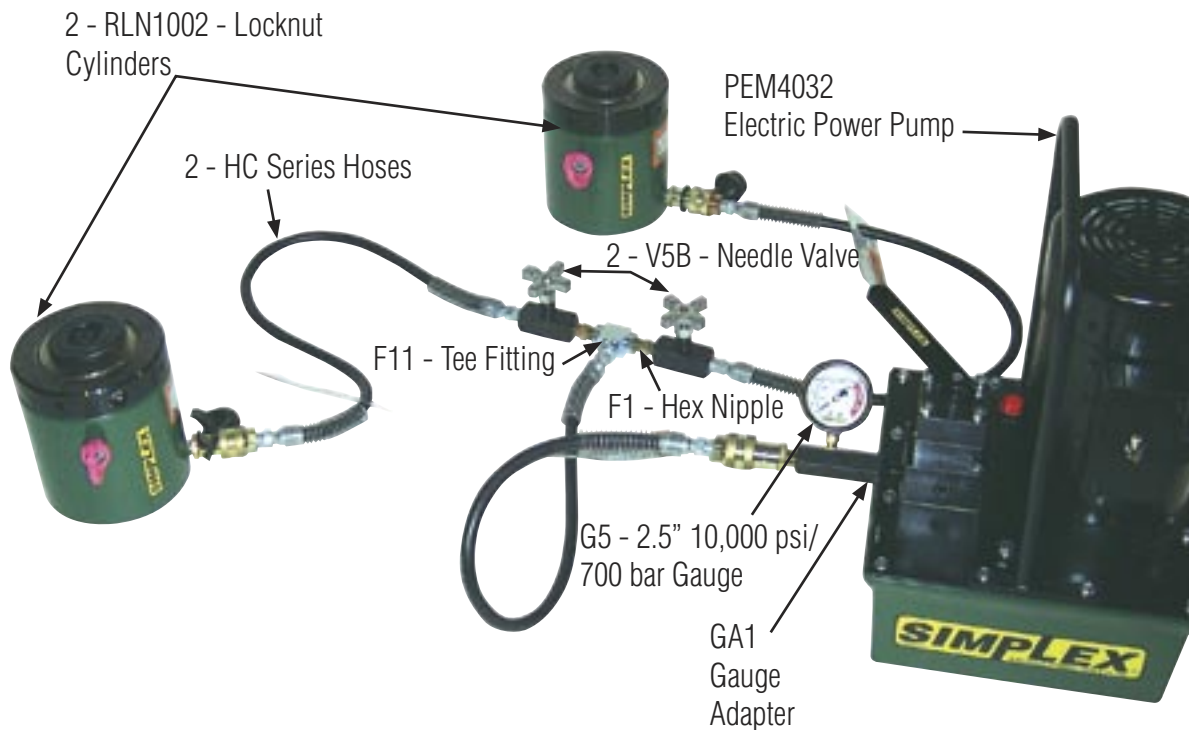


1 POINT LIFT, DOUBLE-ACTING CYLINDER AIR DRIVEN WITH CHECK VALVE

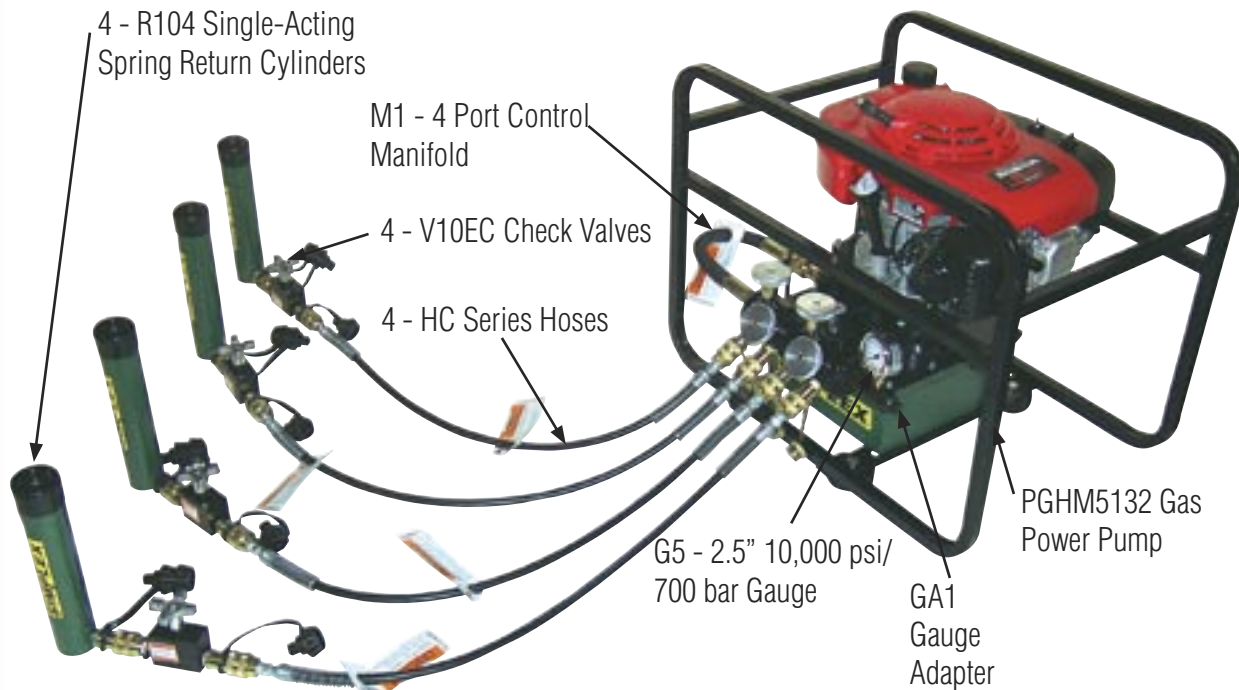


SYSTEM ARRANGEMENTS

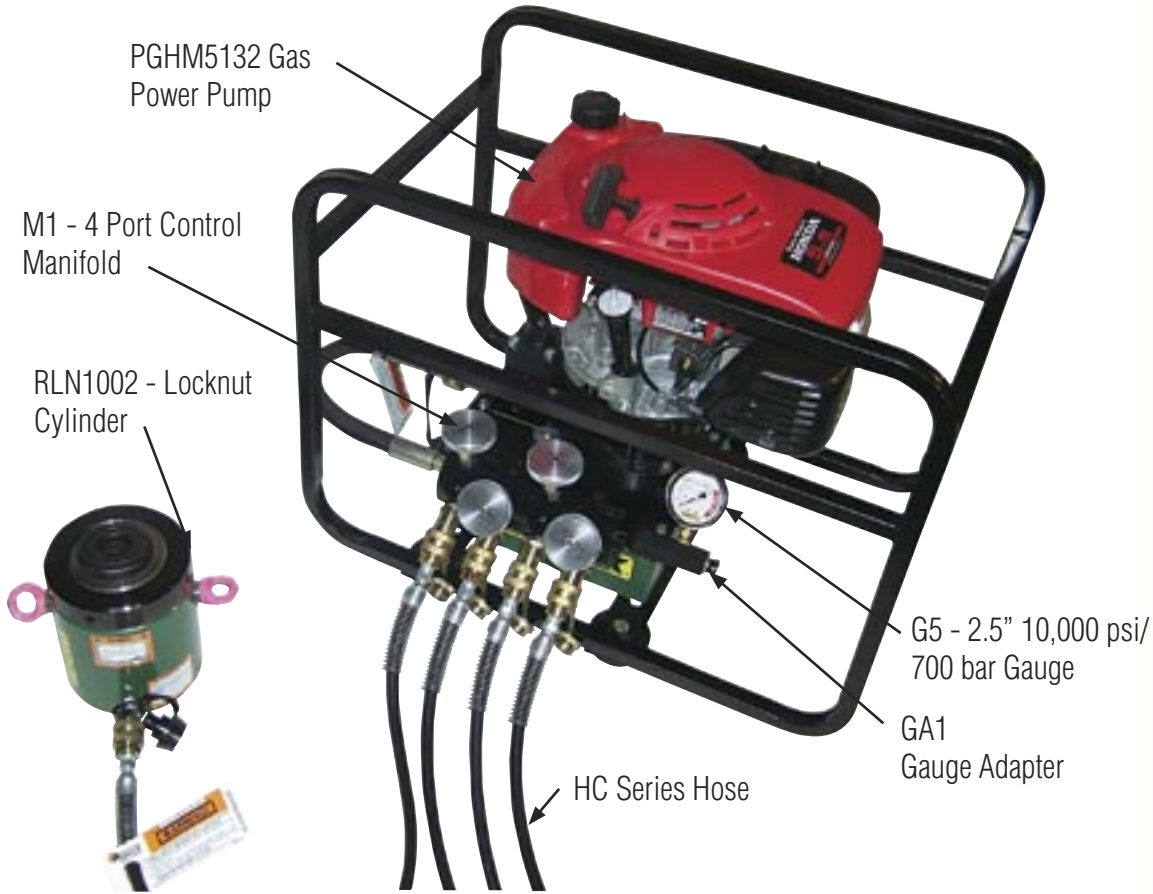
2 POINT LIFT, ELECTRICALLY DRIVEN WITH INDIVIDUAL CYLINDER CONTROL



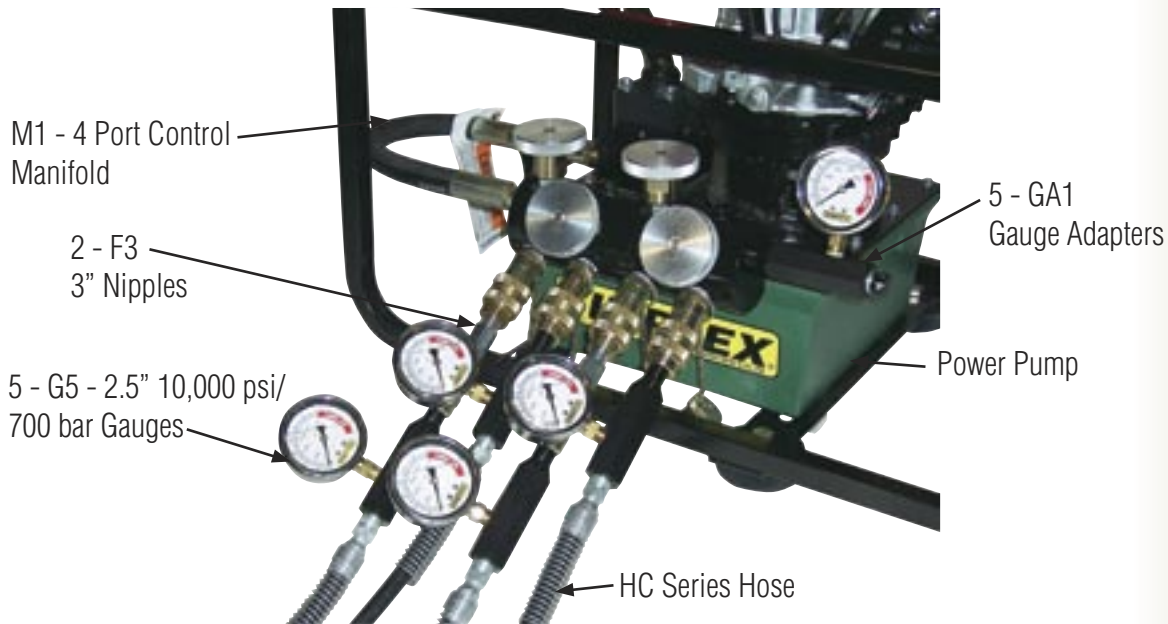
4 POINT LIFT, GAS DRIVEN WITH M1 MANIFOLD & CHECK VALVES



MULTIPLE PORT SYSTEM WITH GASOLINE POWER PUMP

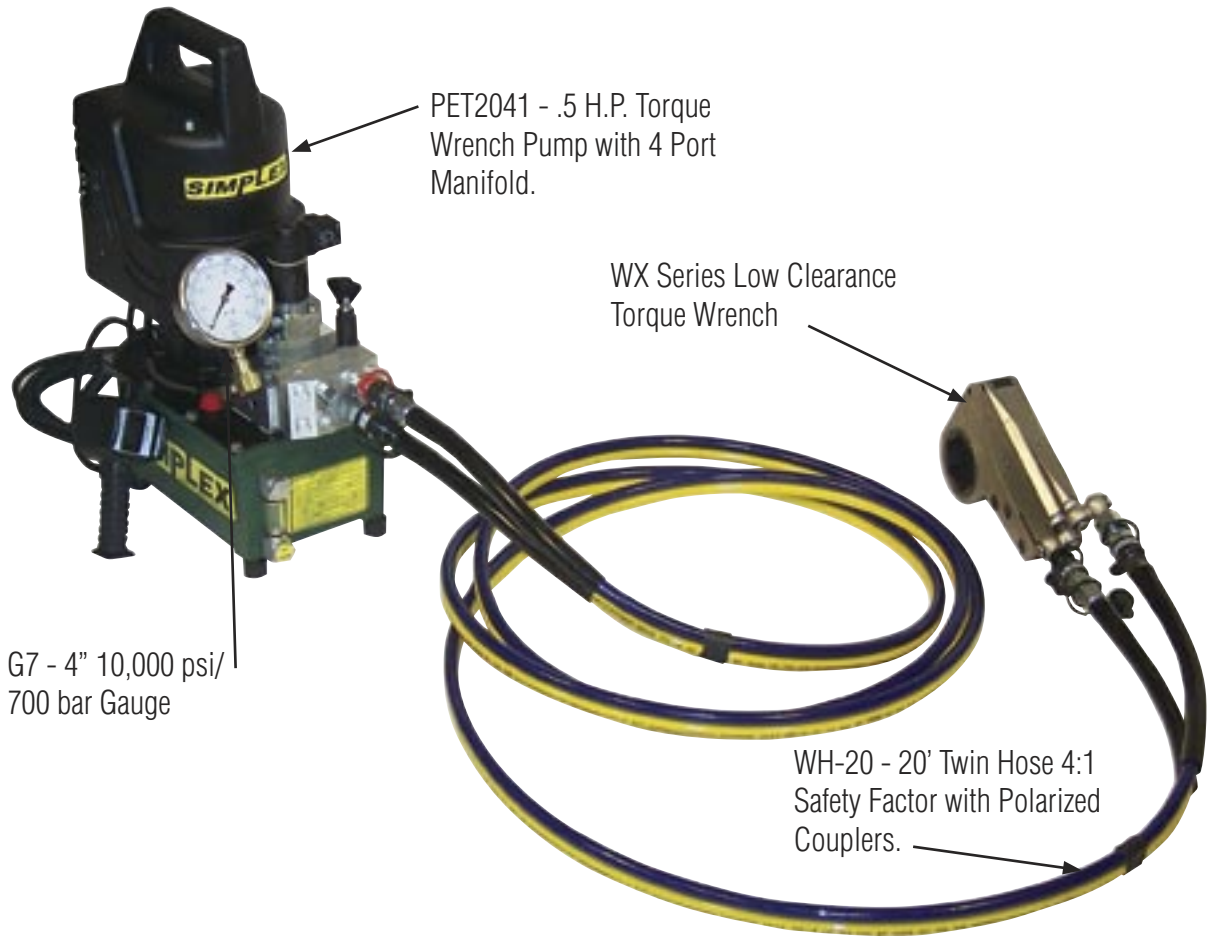


M1 WITH STAGGERED GAUGES



SYSTEM ARRANGEMENTS

1 TORQUE WRENCH, ELECTRICALLY DRIVEN



ASSORTED TORQUE WRENCH PRODUCTS AND ACCESSORIES

<p>SQUARE DRIVE WRENCHES</p>	<p>SOCKETS AND HEX ADAPTORS</p>	<p>COUPLERS AND GAUGES</p>	<p>TORQUE POWER UNITS</p>

1 POINT AIR BAG LIFT, AIR DRIVEN



2 POINT AIR BAG LIFT, AIR DRIVEN





HYDRAULIC & MECHANICAL POWER

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