

“EA” Series Hydraulic Power Unit

Why Use Hydraulic Power With Jiffy Units

- Hydraulic Power Transmission is the most dependable and flexible means of power transmission known to man. This is evidenced by the fact that the automobile brakes you trust your life to are hydraulic.
- All large aircraft use hydraulics for flaps, landing gear, brakes and controls. Why? Because hydraulics are self lubricating and super dependable under all conditions.
- Hydraulics take some of the shock out of a system due to slight compressibility of air bubbles entrained in the hydraulic fluid. This makes for the smooth machine reversals during any part of the machining cycle.
- Hydraulic motors produce more torque for a given size than electric motors. The small physical size and weight of hydraulic motors make high reversals easy, due to low inertia of rotating parts. Hydraulic motors can handle the heat developed by 100 plus reversals a minute, because the heat generated is carried from the hydraulic motor back to the fluid reservoir after each cycle, feeding cooled oil in return to the hydraulic motor.
- Hydraulic driven units can be mounted on much closer centers than electric units developing the same horsepower. This allows a smaller machine base and can save your buying multi-spindle heads.
- The *Jiffy* unit is so small and light that one person can handle and mount it on a machine.
- There is no comparison of price of electric driven versus hydraulic driven tapping systems. Any tapping job above 3/8" diameter will cost less and have longer life expectancy when using hydraulics.

What Is An “EA” Series

“EA” Series hydraulic power units range from 3 to 30 horsepower, deliver fixed or variable flows from 2 to 32 GPM with pressures up to 3000 PSI and reservoirs from 20 to 80 gallon capacity. While these power units are designed for economy, only the highest quality components have been used. Baldor and Lincoln electric motors; John S. Barnes W series fixed displacement gear pumps; Rexroth AA10VSO variable displacement piston pumps; Hycon 10μ filters, strainers (except on piston pumps), sight level gauges and filler breathers; Sun pressure relief valves; and Wika glycerin filled pressure gauges. The vertically mounted pump/motor results in a quieter and safer installation requiring much less floor space than J.I.C. style reservoirs. External pressure adjustment is standard on all units.

Sizing A Hydraulic Power Unit

CAUTION: The following is a starting point in sizing a hydraulic power unit. We have simplified the sizing approach in order to decrease the length of time it takes to size a hydraulic unit and tailored the approach towards operating the *Jiffy-Drill* and *Jiffy-Tap*. Please consult the factory or your local distributor prior to ordering to verify all components.

To properly size a power unit, you need to know the maximum total GPM you will need and the maximum pressure you want to develop. If you are using multiple tapping or drilling units, remember to add all the flow for the motors as well as the flow required for *Jiffy-Drill* spindle advancement (normally 2 GPM per spindle is sufficient). Use the following equation to determine the horsepower of the motor required to turn the pump. Round horsepower up to 3, 5, 7.5, 10, 15, 20, 25 or 30.

$$\text{horsepower} = \frac{\text{PSI} \times \text{GPM}}{1714 \times \eta} \quad \text{Where } \eta = \text{efficiency, use 0.85}$$

Determine the basic “EA” Series part number using the chart below. Always choose the next higher component if close to the limit of that component’s range. Normal tank size is 3-4 times the pump flow.

“EA” Series Model Number

E A

“EA” Series = EA

Motor Horsepower[◇]

3 HP	= 0
5 HP	= 1
7½ HP	= 2
10 HP	= 3
15 HP	= 4
20 HP	= 5
25 HP	= 6
30 HP	= 7


[◇] All motors TEFC, 1725 RPM, 230/460 VAC, 3Ø

Reservoir Size	
Single Reservoir	Double-Wide Reservoirs
20 gallons = 2	40 gallons (2 x 20 gal) = 5
30 gallons = 3	60 gallons (2 x 30 gal) = 6
40 gallons = 4	80 gallons (2 x 40 gal) = 8

Pump Flow @ 1725 RPM	
Fixed Displacement Gear Pumps	Variable Displacement Piston Pumps
2.5 gpm = A	10.5 gpm = H
3.5 gpm = C	11.5 gpm = I
5.0 gpm = E	12.5 gpm = J
6.4 gpm = F	15.2 gpm = K
8.6 gpm = G	
	4.5 gpm = Z
	4 – 8 gpm = L
	6 – 12.7 gpm = M
	10 – 20 gpm = N
	20 – 32 gpm = P

NOTE:

Not All “EA” Series Model Number Combinations Are Available from Stock

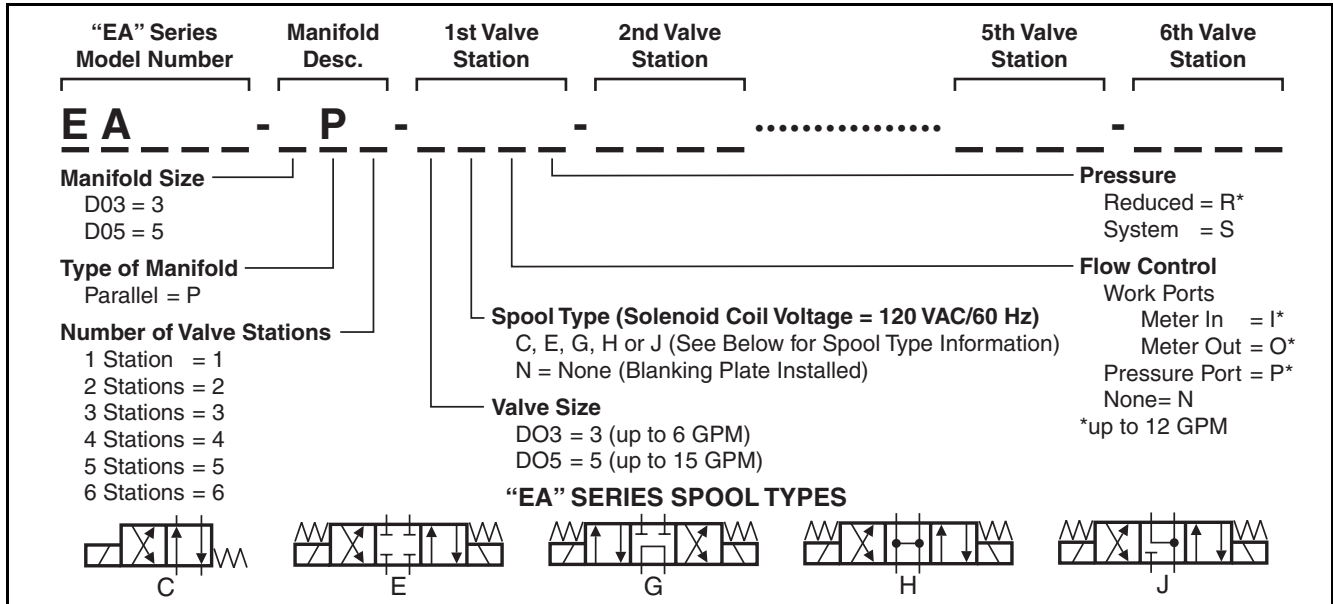


“EA” Series Without Options

“EA” Series (continued)

Adding Control Valves and Manifold

The basic “EA” Series hydraulic power unit can be supplied with control valves, pressure reducing valves, or flow controls, all plumbed using parallel bar manifold mounted directly to the power unit tank. When choosing control valves for **Jiffy-Tap**, use a “J” spool (all ports to tank in center position). If there is any leaking of the seals in the center position, the motor may rotate and advance the spindle. This will not occur when using a “J” spool. Valves for **Jiffy-Drill** can use any spool, but we recommend using “J” spools for motor control, and “E” spools for spindle control.

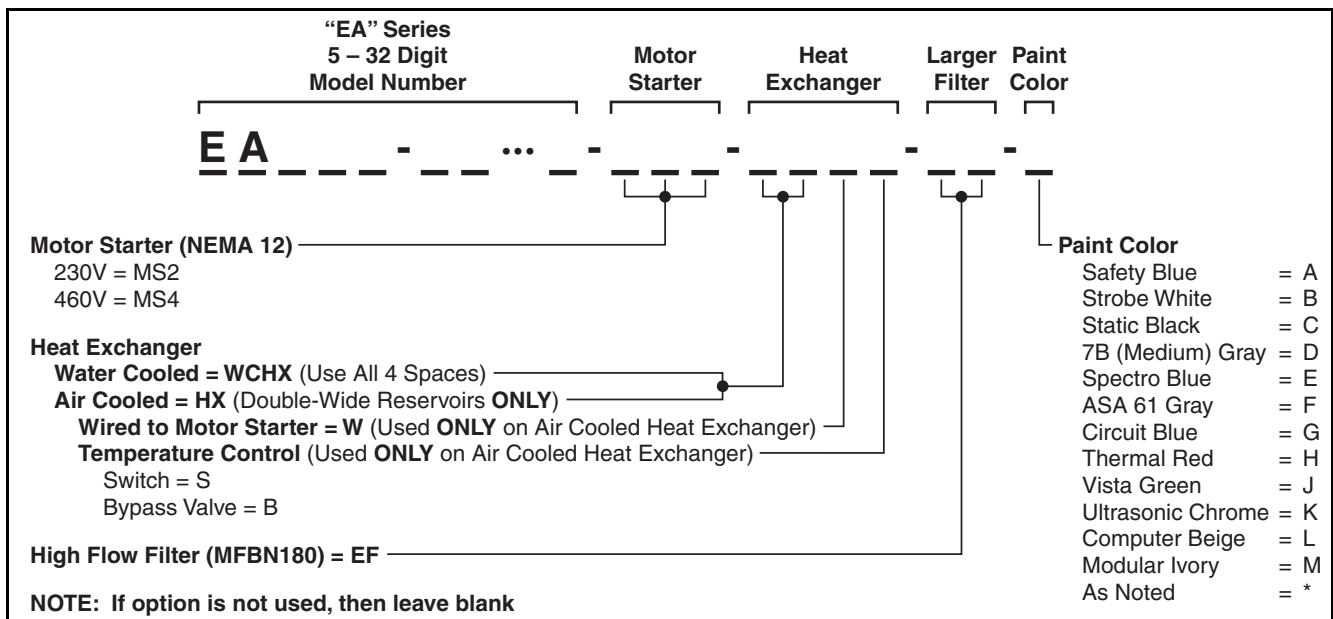


Adding Other Options

In high cycle operations, a heat exchanger is recommended. Choose between a water cooled or air cooled unit.

The power unit is primed using gray primer. If unit is to be painted, please specify color.

The following table shows the options available:

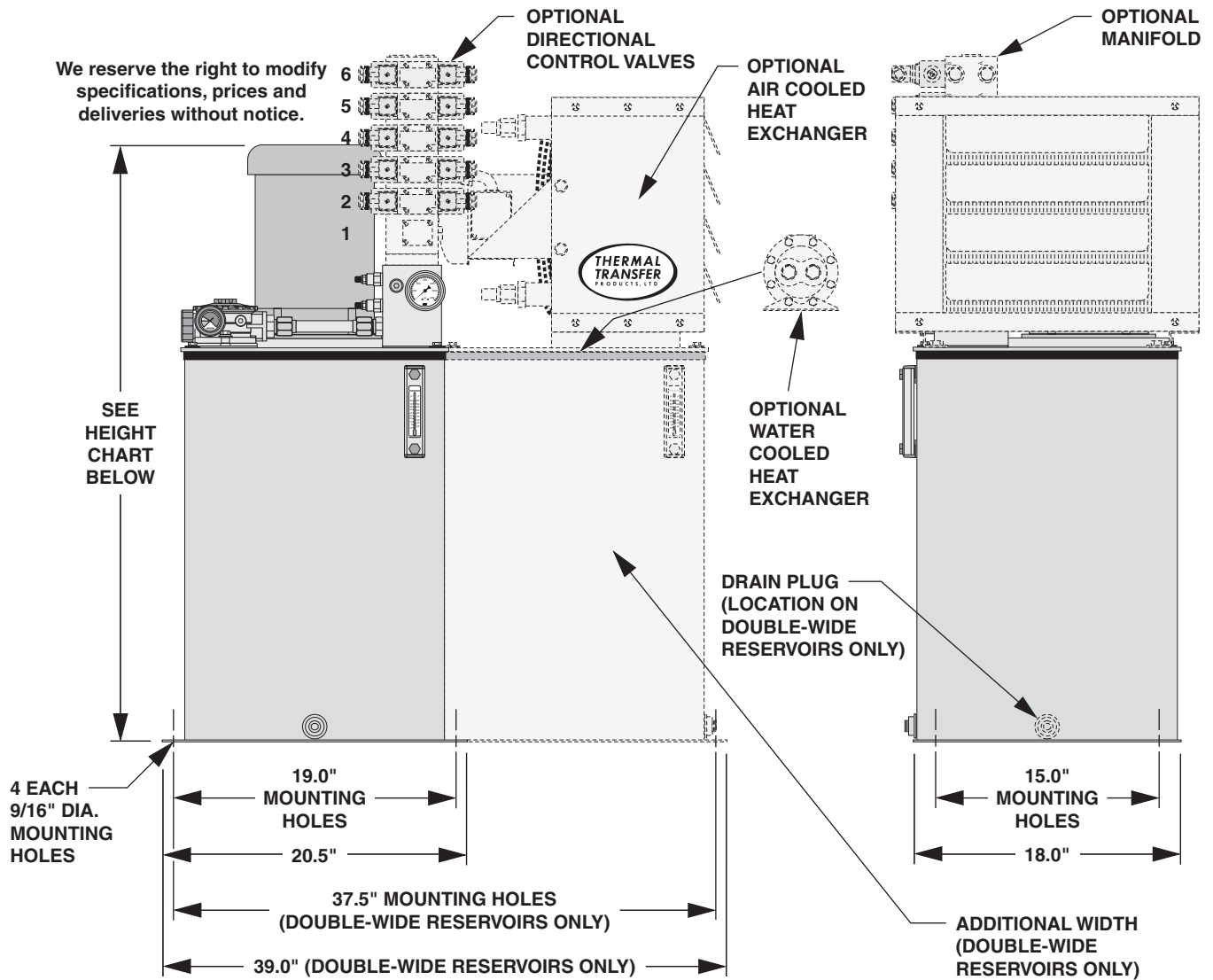


Note: You do not have to worry about sizing the hydraulic system. We will size the system for you and do it quickly.

“EA” Series (continued)

Dimensional Information

Actual configuration may change based on the components selected. Use dimensional information as a reference only.



“EA” SERIES HEIGHT* (INCHES)

MOTOR SIZE (HP)	RESERVOIR SIZE		
	20 & 40† GAL	30 & 60† GAL	40 & 80† GAL
3	35"	43"	51"
5	36"	44"	52"
7.5	38"	46"	54"
10	39"	47"	55"
15	43"	51"	59"
20		51"	59"
25		55"	63"
30		55"	63"

*Without motor starter or heat exchanger options
†Double-Wide Reservoir

“EA” SERIES PORT SIZES

PUMP SIZE	PRESSURE PORT	RETURN PORT
A, C	Male J.I.C. 8	Male J.I.C. 12
E, F, G	Male J.I.C. 16	Male J.I.C. 12
H, I	Male J.I.C. 12	Male J.I.C. 12
J, K	Male J.I.C. 16	Male J.I.C. 12
L, M, Z	Male J.I.C. 12	Male J.I.C. 12
N	Male J.I.C. 16	Male J.I.C. 12
Manifold Working Ports SAE 8 - All Sizes		
Extra Return Port (After Filter) Male J.I.C. 12		
EF Return Port Male J.I.C. 20 (No Extra Port)		

“EA” Series units can be customized to your specifications by adding sandwich valves, oil heaters, etc.

If your power unit requirements are beyond the size and capacity listed, we can also design and build a custom hydraulic power unit to your specifications. Please consult AAA Products International.