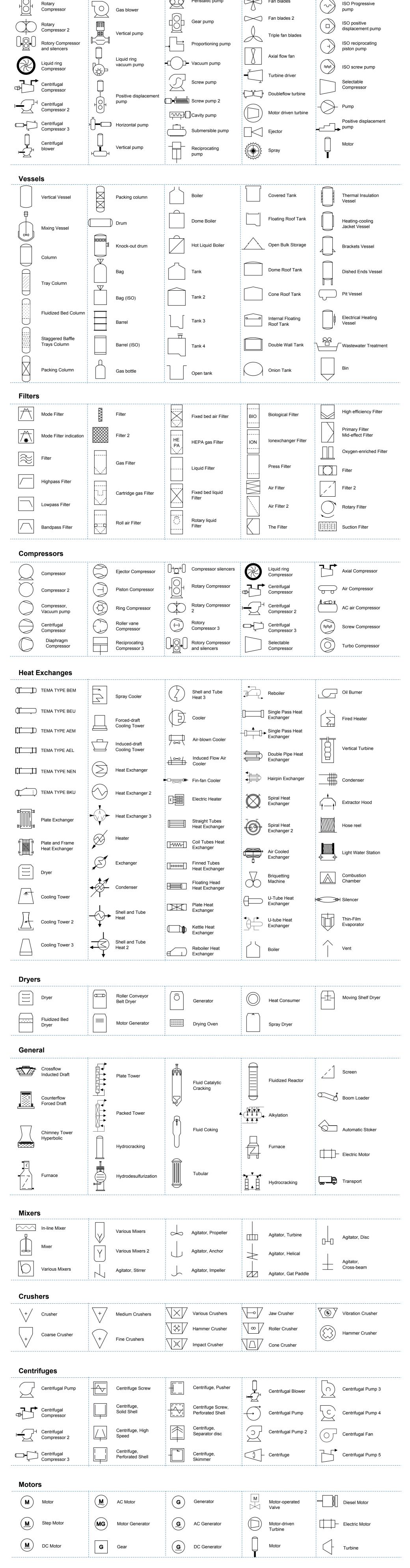
## Standard P&ID Symbols Legend | Industry Standardized P&ID Symbols

Piping and Instrument Diagram Standard Symbols Detailed Documentation provides a standard set of shapes & symbols for documenting P&ID and PFD, including standard shapes of instrument, valves, pump, heating exchanges, mixers, crushers, vessels, compressors, filters, motors and connecting shapes.

Instru	ment								
	Indicator		Computer Indicator	LC 65	Level	Μ	Magnetic	$\sum$	Or Gate
()	Behind Control		Programmable Indicator	PT 55	Controller Pressure Transmitter		Pitot Tube Type Flow	$\sum$	Not Gate
	On Central		Displayed Programmable	PR	Pressure		Pitot Tube	$\sim$	Correcting
	Control On Local		Device	55	Recorder	$\square$	Wedge Meter	$\sim$	Element
	Control Pane	$\langle \rangle$	Computer	PC 55	Pressure Controller		Target Meter	$\sum_{i=1}^{n}$	Diamond
	Behind a Local Control		Unit Control Panel	PIC 105	Pressure Indicating		-	P	Pressure Gauges
$\bigcirc$	Indicator 2		Temp Indicator	PRC 40	Pressure Recording		Weir Meter	J.	Thermometers
T	Indicator 3	ΤΤ	Temp Transmitter		Level Alarm		Ultrasonic Meter		Averaging Pitot Tube
Т	Indicator 4		Temp Recorder	25 FE			V-cone Meter	$\bigcirc$	Level Meter
	Indicator 5		Temp	$\bigcirc$	Flow Element		Venturi Meter		Coriolis Flow
		FI	Controller	TE	Temperature Element		Quick Change		Sensor Flow Nozzle
50	Odometer	FT	Flow Indicator	LG	Level Gauge	-8-	Turbine Meter		Meter
	Pressure Gauge	$\bigvee$	Transmitter	AT	Analyzer Transmitter	$\bigcirc$	Rotometer	$\rightarrow$	Flume Meter
		FR	Flow Recorder		Transducer	$\longleftrightarrow$	Double		Manhole
	– Flowmeter	FC	Flow Controller	P S			Steam Traced	—	Socket Connection
	Thermometer	LI	Level Indicator	PX X	Specialty Item		Venturi		Support Bracket
	Shared Indicator	PI	Pressure Indicator	S	Sampler	$\bigcirc$	Flowmeter		Support Leg
	Displayed Configurable		Level		_ Straightening Vanes Diaphragm		Vortex Sensor		Support Ring
	Shared Indicator	65 LR	Transmitter		Meter				
		65	Level Recorder		Rotary Meter	$\square$	And Gate	ĹJ	Support Skirt
								*	
Valves	5								
Valves	Hand-Operated		Check Valve 2	S	Solenoid Valve		4-way Plug	$\sim$	Pinch Valve
Valves			Check Valve 2 Butterfly Valve	S	Solenoid Valve	_¥²	Valve	× V	Pinch Valve Minimum Flow Valve
Valves	Hand-Operated Gate Valve Gate Valve Closed Gate			E	Solenoid Valve Hydraulic Valve				Minimum Flow
X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated		Butterfly Valve				Valve 4-way Valve Electro-Hydraulic Valve	K	Minimum Flow Valve
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve	E	Hydraulic Valve Motor-Operated	- A A	Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve		Minimum Flow Valve Auto Recirculation
X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe	EX EX PX S	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate	- G - K - K	Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve		Minimum Flow Valve Auto Recirculation Gauge
X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve	EX EX PX SX [	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block
X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve	Ko Ke Ku Ke	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve	- G - K - K	Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated
X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve
X X X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve	Ko Ke Ku Ke	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Knife Valve Excess Flow		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve
X X X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Knife Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve
X X X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve 2		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Knife Valve Excess Flow Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter
X X X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator		Butterfly Valve Flanged Valve Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Spring Gate Valve Slide Valve Slide Valve Metering Coke Knife Valve Excess Flow Valve Post Indicator		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve
X X X X X	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Diaghragm	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve 2 3-Way Plug		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve Slide Valve Metering Coke Metering Coke Excess Flow Valve Post Indicator Self Draining Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball Diaghragm Plug Valve	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve 3-Way Valve 2 3-Way Plug Valve		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Ram Valve Slide Valve Slide Valve Metering Coke Metering Coke Excess Flow Valve Post Indicator Self Draining Valve		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve Check Valve		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball Diaghragm Plug Valve Axial Compressor Centrifugal	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve 2 3-Way Plug		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Metering Coke Knife Valve Excess Flow Valve Post Indicator Self Draining Valve Diaphragm Valve Reciprocating		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating Release Valve
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve Check Valve		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball Diaghragm Plug Valve Plug Valve Axial Compressor Centrifugal pump	EX EX PX SX DX A	Hydraulic Valve Motor-Operated Valve Pilot Gate Valve Weight Gate Valve Powered Valve Float-Operated Valve Needle Valve 3-Way Valve 3-Way Valve 2 3-Way Plug Valve		Valve 4-way Valve Lectro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Knife Valve Excess Flow Valve Post Indicator Self Draining Valve Diaphragm Valve Reciprocating pump Turbine pump		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating Release Valve
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve Check Valve S Compressor Reciprocating Compressor 2		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball Diaghragm Plug Valve Axial Compressor Centrifugal pump		Hydraulic ValveMotor-Operated ValvePilot Gate ValveWeight Gate ValvePowered ValveFloat-Operated ValveNeedle Valve3-Way Valve 2 3-Way Plug ValveSump pumpPositive displacement pump 2		Valve 4-way Valve Electro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Spring Gate Valve Slide Valve Slide Valve Metering Coke Knife Valve Excess Flow Valve Post Indicator Self Draining Valve Diaphragm Valve Diaphragm Valve Reciprocating pump Turbine pump		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating Release Valve
	Hand-Operated Gate Valve Gate Valve Closed Gate Valve Hand-Operated Globe Valve Globe Valve Rotary Valve Needel Valve Control Valve Piston-Operated Valve Back Pressure Regulator Plug or Cock Valve Check Valve S Compressor Reciprocating Compressor		Butterfly Valve Flanged Valve 2 Flanged Valve 2 Angle Valve Hand-Operated Angle Globe Valve Relief Valve Angle Valve Angle Blowdown Valve Ball Normally Closed Ball Diaghragm Plug Valve Plug Valve Axial Compressor Centrifugal pump		Hydraulic ValveMotor-Operated ValvePilot Gate ValveWeight Gate ValvePowered ValveFloat-Operated ValveSuway Valve3-Way Valve3-Way Plug ValveSump pumpPositive displacement		Valve 4-way Valve Lectro-Hydraulic Valve Balanced Diaphragm Gate Valve Spring Gate Valve Spring Gate Valve Ram Valve Slide Valve Metering Coke Knife Valve Excess Flow Valve Post Indicator Self Draining Valve Diaphragm Valve Reciprocating pump Turbine pump		Minimum Flow Valve Auto Recirculation Gauge Bleeder Valve Integrated Block Valve Maual Integrated Valve Orifice Rotameter Quarter Turn Valve Double Acting Quarter Turn Valve Spring Acting Water Flow Meter Self-Operating Release Valve Diesel motor

Peristaltic pump

Fan blades



## Peripheral

	Impact Separator		Injector	(†	Elevator		Elevator 2		Vertical Shaping Machines
	Gravity Separator	$\triangleright$	Reducer		Z-form Elevator	J	Skip Hoist		Pelletizing Disc
ß	Cyclone Separator	$\square$	Rupture Disc	P	Lift	<u> </u>	Conveyor		Piston Press
	Electromagnetic Separator		Viewing Glass	Ţ	Hoists	00	Conveyor, Chain, Closed		Roller Press
	Electrostatic Precipitator Separator	$\Box$	Viewing Glass with Lighting	ļ	Aerator with Sparger	- <del>\</del> -	Conveyor, Screw, Closed	5	Crane
		$\otimes$				00000	Roller Conveyor	$\square$	Cyclone
	Solidifier		Back Draft Damper		Bag Filling Machine		Conveyor	$\sim$	Curved Gas Vent
	Permanent Magnet	<u> </u>	Box Truck		Belt Skimmer	JJJ	Overhead Conveyor		Firing System
$\sim$	Spray Nozzle	To	Manual Forklift	۵.          	Screening		Screw Conveyor	<u>سے</u>	Flame Arrestor
$\bigcirc$	Rotary Table Feeder	Ð	Truck Forklift	♥ 1		00	Scraper Conveyor		
$\bigcirc$	Proportional Feeder	<del></del>	Industrial Truck		Bucket Elevator	<del>ال</del>	Piston Extruder Shaping Machines		Palletizer
	Rotary Valve Feeder	6-0	Rolling Bin Truck		Elevator 1		Screw Extruder Shaping Machines		Chimney
	Metering Proportional Feeder	₫	Ship		Gas Flare		Horizontal Shaping Machines		Conveyor, Vibrating, Closed

## **Piping and Connecting Shapes**

	Major Pipeline		Top to Top	$\bigcirc$	Double Containment		Electrically Insulated		Expansion Joint
	Connect Pipeline	$\sim$	Sonic Signal		Flange		In-line Mixer	$\sim$	Hose
<b>&gt;</b>	Major Straight Line Pipe	$\frown$	Nuclear	D	End Caps		Separator	r.	Flexible Hose
	Straight Line Pipe		Pneumatic Control		End Cap 2	>	Bursting Disc	$\bigcirc$	Flow Indicator
	Battery Limit Line	$\times$	Pneumatic Binary				Flame Arrester	$\langle$	Bell Mouth
S	Electronic Serial		Signal Line Electric Signal	T	Breather		Drain Silencer	┝──┤	Removable Spool
н	Heat Trace		Line	Ð	Drip Pan Elbow		Exhaust Silencer	₽Ţŀ	Basket Strainer
$\rightarrow$	Side by Side	X	Electric Binary Signal Line	+ -	Flange		Strainer	$\boxtimes$	Breather
¥.,			Electric Binary Signal Line		Union		Exhaust Head	<b>I</b>	Damper
	Top-Bottom		Sleeve Joint	╡╞╴	Socket Weld	$\triangleleft$	Triangle Separator		Breakthrough
$ \rightarrow $	One-to-Many		General Joint	—	Screwed Connection	$\square$	Triangle Separator 2		Orifice
	Traced Line	$\times$	Butt Weld		Orifice Plate	$\langle$	Tundish	Γ	Clamped Flange
<b></b>	Multi-Lines		Welded		Flanged Dummy Cover	$\bigcap$	Open Vent		Coupling
<b>•</b>			Connection	Ŧ	Electrical Bounded	խ	Syphon Drain		Compensate
<b>_</b>	Mid Arrow		Mechanical Link		Slope Requirements Line	ſ	Hydrant		Coupling
	Multi-Lines Elbow	$\bigcirc$	Soldered/ Solvent		Reducer	0	Swivel Joint	$\bigotimes$	Electrically Insulated
$\left  \begin{array}{c} \\ \\ \end{array} \right $	Y-strainer	P	Blind Disc	Q	Pulsation Dampener		Detonation Arrestor		Flame Arrestor
кон Кон	Diverter Valve		Spectacle Blind	I <del>S</del> I	Duplex Strainer	(F)	Flame Arrestor		Explosion-Proof Flame Arrestor
· · ·				A	Vent Silencer	[ <u>s</u> ]	In-line Silencer	$\blacksquare$	Detonation-Proof Flame Arrestor
ΓŢ.	Y-type Strainer	Ť	Interchangeable Blind	S	Vent Olieneer	Т	Steam Trap		Fire-Resistant
I 🏵 I	Rotary Valve	ı Q	Open Disc	ΗJI	Basket Strainer	DS	Desuperheater		Flame Arrestor
	Expansion Joint 2	•	59511 2100		Cone Strainer		Ejector or Eductor	$\square$	Fire-Resistant, Explosion- Proof Flame Arrestor
>──►	Bursting Disc	Ť	Orifice Plate		Pilot Operated Relief Valve with Renote Sensor	$\bigtriangledown$	Exhaust Head	[-⊳] X X	Valve Manifold