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MAY 27 1924

WRIGHT-AUSTIN

Steam Separators
Oil Separators
Exhaust Heads

FRANKLIN
LANSING
MICHIGAN



BULLETIN-NO 302

WRIGHT-AUSTIN CO.
DETROIT, MICH., U. S. A.

Wright-Austin Company

Main Office:

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30 Church St., New York City

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WESTERN UNION CODE

MANUFACTURERS OF

Steam Separators

Oil Separators

Air Separators

Gas Separators

Exhaust Heads

Steam Traps

Grease Traps

Air Traps

Air Vents

Strainers

Alarm Water Columns

Water Gauges

Gauge Cocks

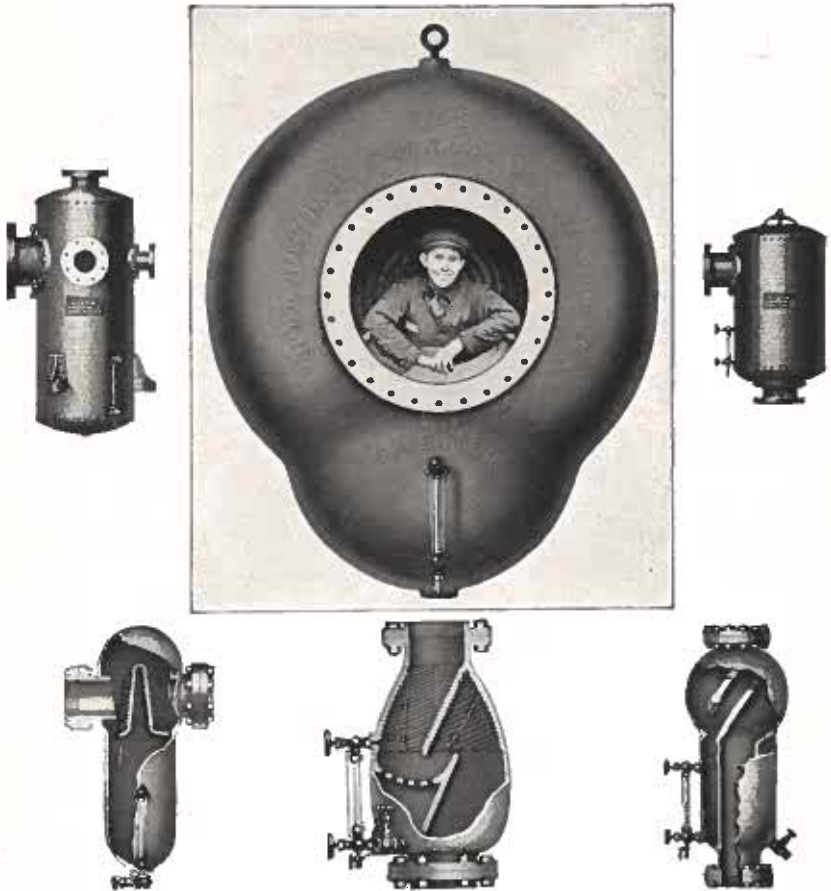
Automatic Feed Water Regulators

Automatic Receiver Pumps

Pump Governors

Send for General Catalog

Wright-Austin Separators



A Few Wright-Austin Types

**THE WRIGHT-AUSTIN LINE COMPRISES THE LARGEST
NUMBER OF TYPES AND SIZES OF SEPARATORS
MADE BY ONE MANUFACTURER IN THE WORLD**

The Wright-Austin Company now makes seventeen regular types of Separators, besides special Separators of every description. Twelve of the regular types are Steam Separators, three types are Oil Separators, two types are Air and Gas Separators. The average number of sizes per type is twelve and a majority of all sizes of all regular types is carried in Detroit Stock. Sixteen of the many special styles are illustrated in this bulletin making a total of 33 types shown.

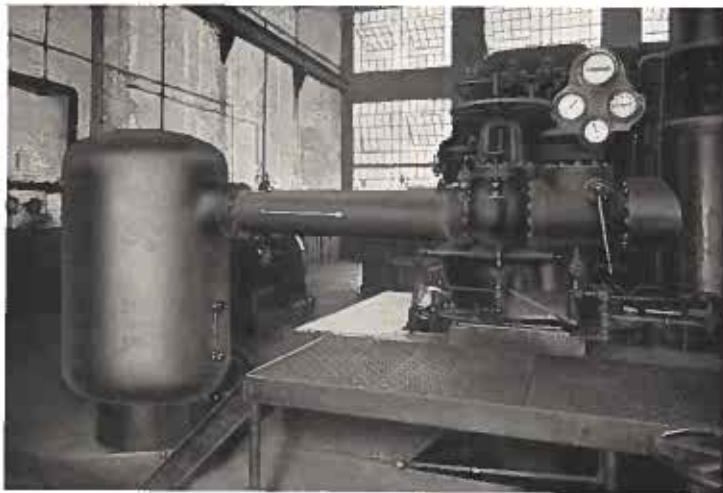
It is an immense advantage to an engineer or power plant operator to have such a large line to choose from.

CHOOSE A SEPARATOR TO SUIT YOUR CONDITIONS

In making a selection from so wide a variety of vertical, horizontal, angle and special patterns and sizes, all the advantages of the finer features of efficient separation are more easily obtained by:

- 1—The correct Separator for your every-day operating conditions—thus insuring the highest efficiency obtainable.
- 2—The most suitable Separator for your piping arrangement—this often greatly reduces the cost of installation by avoiding added expense for pipe and fitting changes. In most cases the price of the separator will be more than repaid by the saving in piping.

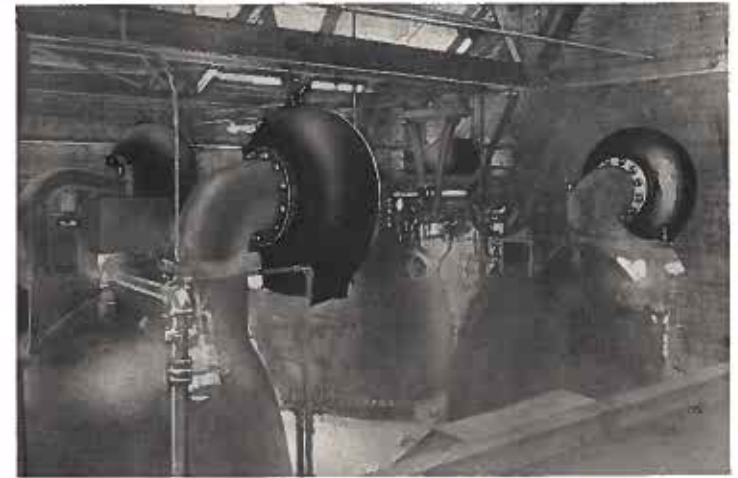
When there are only a small number of types to choose from, a customer frequently has to accept a type of Separator which does not meet the conditions perfectly. He is then obliged to adopt some makeshift in order to try to meet the situation. **THESE DIFFICULTIES DO NOT OCCUR WITH WRIGHT-AUSTIN SEPARATORS.**



Typical Installation of Riveted Steel Separator Ahead of a Steam Turbine

THIRTY YEARS EXPERIENCE MANUFACTURING SEPARATORS AS A PRINCIPAL LINE

“Excellence is no accident” and for thirty years the best brains of the Wright-Austin Company have been devoted to the manufacture of Separators of recognized efficiency. There are very few principles of separation or types of Separators which the Wright-Austin Co. has not experimented with in these thirty years. Where its apparatus is different from that of other manufacturers, investigation has approved the Wright-Austin design.



Four of the Ten Horizontal Oil Separators on Evaporators at a Large Chemical Plant

QUALITY

Wright-Austin quality is the result of first-class workmanship, the best material obtainable and designs which have been developed by thirty years of experience concentrated upon a few lines of Steam Specialties. Wright-Austin Engineering Service maintains that quality as long as the apparatus is in use.

The splendid reputation which Wright-Austin equipment has had for many years throughout the United States is due to this high quality.

THEORY AND PRACTICE OF SEPARATION

The general theory of separation of moisture, oil or other matter from flowing steam, air or gas, which is confirmed by practical experience, is the same for all gases or vapors, although apparatus for successfully applying the theory varies with the conditions.

If moving steam, air or other gas, carrying particles of condensed vapor, or foreign matter, is directed in a straight stream against a baffle, so that its flow is suddenly diverted, the moving steam or gas, being much lighter than the condensation, will flow around the baffle easily, but the heavier particles of moisture and foreign matter, striking the baffle forcibly, will be stopped and will fall by gravity out of the path of the steam or gas. **THERE IS NO OTHER WAY OF SEPARATING LIQUIDS OR SOLIDS FROM STEAM OR GAS WHICH IS AS COMPLETELY EFFECTIVE AS THIS**, notwithstanding hundreds of attempts which have been made to find other methods.

Of course, Separators must be properly proportioned to get completely satisfactory results, even when the right principle is used. Wright-Austin Sepa-

rators are correctly designed. Thirty years of satisfactory service is the best proof of that fact.

The baffle must be of sufficient size and area to collect and carry away all the moisture, oil or solid matter, in such a manner that it cannot again be picked up by the moving steam or gas. The whole Separator must, therefore, be large enough to allow for proper baffle area and in addition must have room to accommodate the sudden change of direction of the steam or gas, without causing friction loss or back pressure. When the Separator is properly designed, this results in a very substantial area at right angles to the flow of the steam or gas.

A Separator is purchased but once in the lifetime of the unit which it serves. There is no upkeep. The first cost is the last cost, but all the time the Separator goes on paying for itself over and over again in the waste eliminated, plus the increased efficiency of the unit protected.

Wright-Austin Separators represent the most up-to-date ideas, practice and improvements. They are designed with ample material for a large factor of safety and before leaving the factory every Separator is carefully inspected and tested.



Six Type "E" Horizontal Live Steam Separators in Cleveland City Water Works, Cleveland, Ohio

WRIGHT-AUSTIN STANDARD TYPES

Steam Separators for Ordinary Conditions. See Page 8

These are Vertical, Horizontal or Angle Types made of cast semi-steel or riveted steel, for saturated steam, built to A. S. M. E. Standard or Extra Heavy Schedule. Ordinarily the cast types can be shipped from Detroit Stock and the riveted steel types within three to five weeks from receipt of order.

Steam Separators for Superheated Steam. See Page 8

These have the same dimensions as the "Steam Separators for Ordinary Conditions," but they are made either of cast steel or of riveted steel, with seamless forged steel or cast steel nozzles. They are not carried in stock but can be furnished in from three to six weeks from receipt of order.

Oil Separators. See Page 28

These are Horizontal, Vertical or Angle Separators made of cast semi-steel, riveted or welded steel, built to A. S. M. E. Standard Schedule, for pressures from 0 lbs. to 40 lbs. per square inch. The Type "V" is a Horizontal Separator intended for vacuum service, that is for pressures below atmosphere. Ordinarily the Type "S" and Type "R" Oil Separators can be shipped from Detroit Stock and other types within three to five weeks from receipt of order.

Riveted Steel Receiver Separators. See Pages 22 and 36

These are all built and tested to the rigid requirements of the A. S. M. E. Boiler Code, whether they are for saturated steam, superheated steam, oil, gas or air; whether they are standard or special. They are not carried in stock but can be shipped within three to six weeks from receipt of order.

Catch-alls. See Pages 29 and 34

Catch-alls for sugar and chemical evaporators, whether condensing or non-condensing, usually require riveted steel construction to meet the local conditions. However, the Type "S" and Type "V" Separators give excellent service where it is possible to install a one-piece type of Separator.

Compressed Air Separators. See Page 38

Two Horizontal Types of Separator are available for eliminating oil and moisture from compressed air. Both are made of cast semi-steel. One type is suitable for pressures below 40 lbs., the other is suitable for 40 lbs. to 250 lbs. Ordinarily these can be shipped from Detroit Stock.

Gas Separators. See Page 36

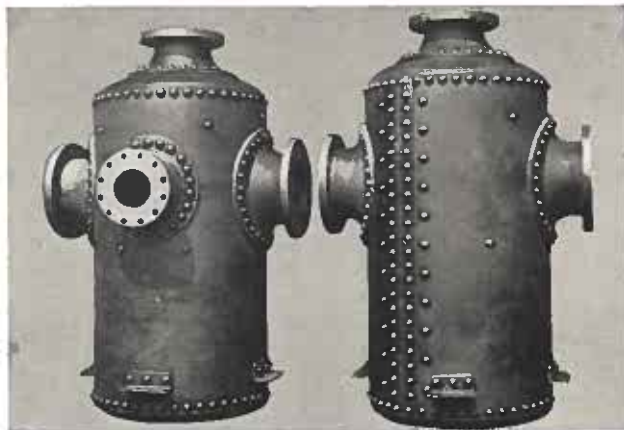
The Wright-Austin Co. is constantly furnishing Separators for eliminating oil and moisture from gas or eliminating condensed gas from vaporized gas, but conditions for such service are so variable that these must be known before a type can be recommended.

WRIGHT-AUSTIN GUARANTEE

Every Wright-Austin product is guaranteed against defective material and workmanship for one year from date of shipment.

We also guarantee the efficiency of our Separators as stated by us at time of sale; when installed, drained and operated under the conditions represented to us.

However, the best guarantee we can make is 30 years of unremitting service and integrity to thousands of good customers here, and in many foreign lands.



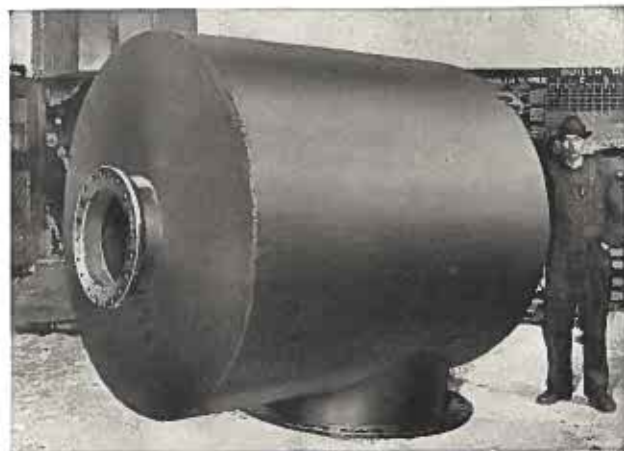
“Standard Special” Steam Separators for 200 Lbs. Pressure, 100° F. Superheat

“STANDARD SPECIAL” TYPES

The Wright-Austin Company is particularly well equipped to build Riveted or Welded Steel Receiver Separators of special design at MODERATE PRICES. The majority of such Separators may be called “Standard Specials” because the principles of their design are standard, although they are special as to dimensions and do not follow this catalogue. There is also much work in connection with them which has been standardized, so that it does not have to be repeated afresh for every Special Separator.

These “Standard Special” Separators can be furnished with semi-steel, forged steel or cast steel nozzles to fit every requirement and to suit any volume, pressure or degree of superheat.

For a complete discussion of this branch of Separator building, one in which the Wright-Austin Company stands pre-eminent, refer to page 22.



“Standard Special” Oil Separator for 28” Vacuum

INFORMATION NEEDED FOR QUOTATION

The Engineering Department of the Wright-Austin Company will advise the best equipment to use, with full information and prices, if it is informed of the conditions under which a Separator is intended to operate. THE IMPORTANCE OF THE FOLLOWING INFORMATION CANNOT BE OVER-EMPHASIZED, if prompt and effective service is to be rendered to persons ordering, requesting quotations or asking information.

Steam Separators

In asking for prices, be sure to state:

- 1—Size of pipe connection.
- 2—Working steam pressure.
- 3—Direction of steam flow through separator.
- 4—Degrees of superheat.
- 5—Standard or Extra Heavy Schedule.

Oil Separators

State:

- 1—Size of pipe connection.
- 2—Exhaust steam pressure.
- 3—Direction of steam flow through separator.

Vacuum Oil Separators

State:

- 1—Size of pipe connection.
- 2—Maximum and minimum vacuum.
- 3—Maximum pounds of steam per hour passing through separator.
- 4—Direction of steam flow through separator.

Compressed Air Separators

State:

- 1—Size of pipe connection.
- 2—Working air pressure.

Gas Separators

State:

- 1—Size of pipe connections.
- 2—Working pressure of gas.
- 3—Maximum volume of gas per hour.
- 4—Kind of gas and specific gravity.
- 5—Kind of oil to be eliminated and specific gravity.
- 6—Approximate amount of oil to be removed.

WRIGHT-AUSTIN ENGINEERING SERVICE

The Wright-Austin Company is always ready to answer questions, furnish information, or give engineering advice on the selection and installation of its product.

This Bulletin contains information required for selecting apparatus to meet ordinary conditions and we believe that the data and suggestions contained will be found sufficient to cover most installations; but when extraordinary conditions arise, or when there is doubt about the selection of equipment, the Wright-Austin Engineering Service will be found invaluable.

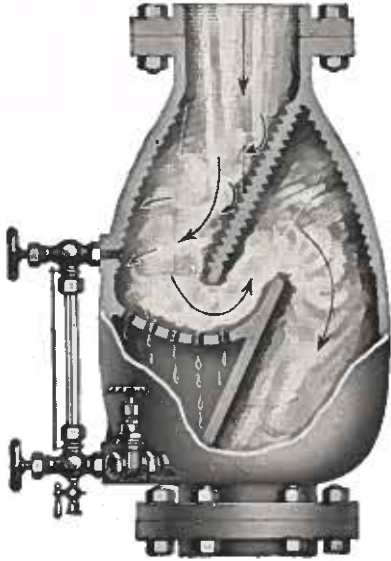
Wright-Austin Engineers are drainage experts and frequently plan entire drainage systems for prospective customers or for manufacturers of heating and drying machinery.

Engineers and Managers should feel free to call upon this service at any time. It will be cheerfully rendered and there will thus be made available to them the accumulated experience of nearly thirty years of successful production.

Vertical Steam Separators

TYPE "A"

Wright-Austin Live Steam Vertical Separator



The Type "A" is designed for installation in vertical steam lines, usually just above the throttle of the engine. It is of the baffle type, having very large internal areas.

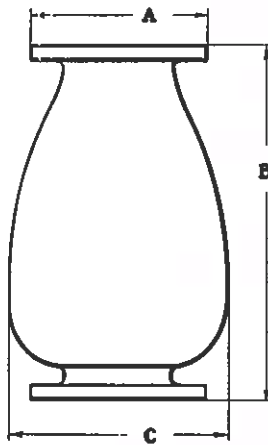
One feature contributing to the successful operation of this Separator is that the baffle plate is not set at right angles to the entering steam current, but is set so that when the incoming steam is impinged against it and rebounds to the opposite wall of the Separator, the particles of moisture are driven down the deep, slanting corrugations on walls and baffle, entirely out of the course of the steam, and into the well below where it is drained off. Passing around the lower edge of the baffle the flow of the steam is completely reversed by a quick, sharp turn upward.

This sudden reversal whips out the final trace of moisture, which continues downward and is caught in the open baffle over the well below.

Every Separator should be automatically drained by an efficient steam trap. See page 45.

Prices and Dimensions

Pipe Size	Dimensions in Inches					Wgt. Lbs.	Standard List Price Includes Water Gauge Only	Ex. Hvy. List Price Includes Water Gauge Only	Code Word
	A Stand-ard 125 lbs.	A Extra Heavy 250 lbs.	B	C	Drain				
1 1/2	S. E.	S. E.	11	7	1 1/2	45	\$27.50	\$27.50	Abate
2	S. E.	S. E.	11	7	1 1/2	45	32.50	32.50	About
2 1/2	7	7 1/2	13	8	3/4	85	40.00	44.00	Above
3	7 1/2	8 1/4	15 1/4	9	3/4	115	46.00	48.00	Actor
3 1/2	8 1/2	9	16 3/4	10	3/4	135	50.00	54.00	Alert
4	9	10	18	11	3/4	170	60.00	65.00	Adrip
4 1/2	9 1/4	10 1/2	20	12	3/4	215	75.00	78.00	Admit
5	10	11	22 1/4	13	1	240	85.00	92.00	Adult
6	11	12 1/2	25 1/4	15	1	330	108.00	120.00	Acute
7	12 1/2	14	28 1/2	17	1 1/4	440	150.00	162.00	Adept
8	13 1/2	15	31 1/2	19	1 1/4	575	185.00	220.00	Adore
10	16	17 1/2	37	23	1 1/2	910	280.00	310.00	Affix
12	19	20 1/2	40 1/4	25 1/2	1 1/2	1080	325.00	370.00	Alive



Order or inquiry must state whether Standard or Extra Heavy Separator is desired. Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Stock sizes—1 1/2" to 12", inclusive, both Standard and Extra Heavy. For Code Words for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size. 2—Working Pressure. 3—Degrees of Superheat.

TYPE "M"

Wright-Austin Live Steam Vertical Receiver Separator



As a result of good receiver capacity the Type "M" Vertical Steam Separator maintains a constant supply of dry steam at the throttle of the engine with a reserve supply for emergencies such as sudden changes of load.

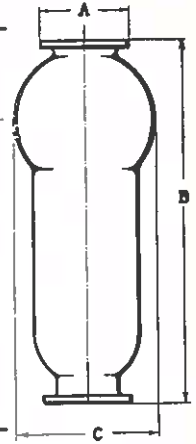
This Separator is intermediate in size and receiver capacity between the Type "A" and the Type "H" or "C" Separators shown on pages 10 and 11.

The action of the steam against the baffle plates is the same as in the other Wright-Austin Separators, the principle of which is described on page 3. Separation is positive and the condensate, being thrown into the receiver of the separator, is absolutely prevented from being picked up again by the flowing steam current.

There is a Wright-Austin Separator for every requirement and condition.

Prices and Dimensions

Pipe Size	Dimensions in Inches				Weight Pounds	List Price Includes Water Gauge Only	Code Word
	A Ext. Hvy.	B	C	Drain			
1 1/2	S. E.	16	5 5/8	1/2	60	\$31.00	Major
2	S. E.	16	5 5/8	1/2	60	36.00	Mango
2 1/2	7 1/2	18	7 5/8	3/4	95	45.00	March
3	8 1/4	19 3/4	8	3/4	140	50.00	Medal
3 1/2	9	22 1/2	8 3/4	3/4	175	62.00	Meter
4	10	26 1/4	10 1/2	3/4	230	80.00	Might
4 1/2	10 1/2	30 1/2	12	3/4	305	100.00	Minor
5	11	34	13 1/4	1	360	118.00	Model
6	12 1/2	37 1/4	16	1	475	150.00	Motor
7	14	42 1/4	18 3/4	1 1/4	665	232.00	Murra
8	15	48 1/4	20	1 1/4	950	306.00	Monte
10	17 1/2	58	27	1 1/2	1550	493.00	Middy
12	20 1/2	64	31	1 1/2	2670	712.00	Merge
14	23	70	35	2	3155	950.00	Music



Regularly furnished with Extra Heavy flanges for working pressures up to 250 lbs. per square inch. Can also be supplied with flanges faced and drilled to 125 lb. Standard Schedule if especially ordered, at same price as the Extra Heavy. Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Stock sizes 1 1/4" to 10" inclusive in Extra Heavy and Standard patterns. For Code Words for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size, 2—Working Pressure, 3—Degrees of Superheat.

TYPE "H"

Wright-Austin Live Steam Vertical Receiver Separator

The Type "H" Separator is designed to give the greatest possible volume of receiver capacity obtainable in a one-piece separator for modern high pressure service.

This Separator is especially valuable where steam is wet, due to priming of boilers, forcing of boilers, or long steam lines. Slugs of water can be removed and accommodated until the drainage system has a chance to operate.

It combines the basic principles necessary for thorough elimination of moisture from live steam, and is the first choice of many engineers.

Mounted over the throttle of engine or turbine, its cylindrical lines blend gracefully with the piping, adding an artistic touch to the plant, not obtainable by any other separator.

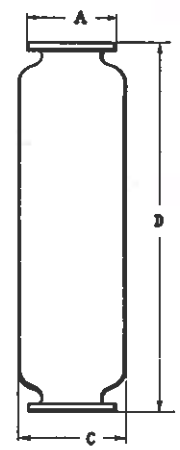
Also its shape is such that it is more easily covered by magnesia or asbestos lagging than is the case with many other separators.

Every Separator should be automatically drained by an efficient steam trap. See page 45.



Prices and Dimensions

Pipe Size	Dimensions in Inches				Weight Pounds	List Price Includes Water Gauge Only	Code Word
	Ext. Hvy.	C	D	Drain			
3	8 1/4	9 1/2	44 1/4	3/4	260	\$100.00	Habit
3 1/2	9	10 1/2	48 1/4	3/4	320	130.00	Harpy
4	10	11 3/8	52 1/4	3/4	450	170.00	Heave
4 1/2	10 1/2	11 7/8	56 1/4	3/4	500	185.00	Heath
5	11	14 1/4	60 1/4	1	730	245.00	Hepar
6	12 1/2	16 1/4	64	1	880	310.00	Hocus
7	14	18 3/8	68 1/4	1 1/4	1080	377.00	Honor
8	15	20 1/2	72 1/4	1 1/4	1300	445.00	House
10	17 1/2	22 1/2	76	1 1/2	1840	625.00	Human



Regularly furnished with Extra Heavy flanges for working pressures up to 250 lbs. per square inch. Can also be supplied with flanges faced and drilled to 125 lb. Standard Schedule if especially ordered, at same price as the Extra Heavy. Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Made to order, shipment two weeks. For Code Words for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size, 2—Working Pressure, 3—Degrees of Superheat.

TYPE "C"

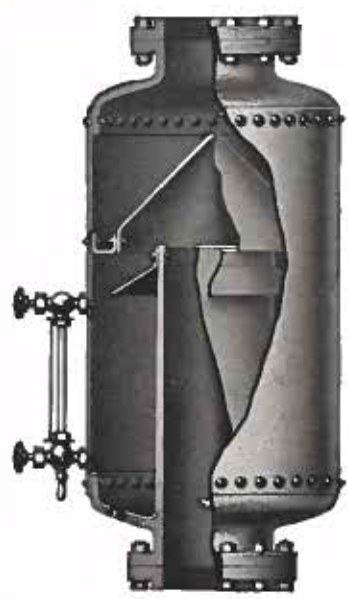
Wright-Austin Live Steam Vertical Steel Receiver Separator

The Type "C" Separator can be built for any pressure or superheat. Steam enters at the top and strikes a cone, which throws the condensation downward against the sides of the separator past the guard attached to the outlet pipe. From this point the steam must then make two sharp turns, forcing thorough separation by throwing the small particles of moisture completely out of the steam down to the drain below. The guard around the vertical outlet stops any moisture from being drawn up into the out-flowing steam current.

Standard sizes are given below, but the diameter and length of Type "C" can be changed to suit any conditions or cubical capacity desired. The general practice is three times the cubical capacity of the engine cylinder.

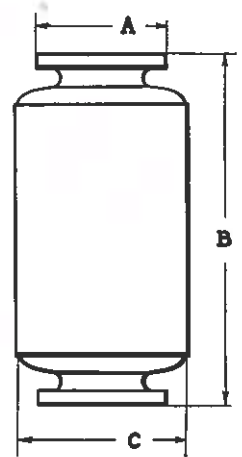
Type "C" is built and tested to the rigid requirements of the A. S. M. E. Boiler Code.

There is a Wright-Austin Separator for every requirement or condition.



Weights and Dimensions

Pipe Size	Dimensions in Inches				Weight Lbs.	Code Word
	A	B	C	Drain		
4	11	46	22	1	700	Cable
5	11	46	22	1	700	Cornet
6	12 1/2	46	22	1	700	Cameo
7	14	48	24	1 1/4	800	Canon
8	15	48	24	1 1/4	800	Carol
10	17 1/2	50	26	1 1/2	900	Carry
12	20 1/2	56	30	2	1100	Cieon
14	23	62	34	2	2080	Copse
16	25 1/2	68	38	2	2500	Costa
18	28	74	42	2 1/2	2900	Count
20	30 1/2	80	46	2 1/2	3500	Crown



Special prices on application. When ordering or obtaining prices, be sure to give: 1—Size of Pipe Connections. 2—Working Steam Pressure. 3—Degrees of Superheat—if any. 4—Direction of Steam Flow through Separator. Size of receiver may be varied from the above to suit special requirements or conditions. State dimensions or cubic volume desired. For Code Words for pressures, see page 48.

Horizontal Steam Separators

TYPE "B"

Wright-Austin Live Steam Horizontal Separator



The Type "B" is an ideal separator for limited head or side room. No part of the separator projects beyond the outside diameter of the pipe flange, except the body which hangs directly underneath. It can be installed in a horizontal pipe line that is tight up against the ceiling, or close up to parallel pipes or wall on either side.

The flow of steam may be passed through the Type "B" Separator in either direction with equal efficiency.

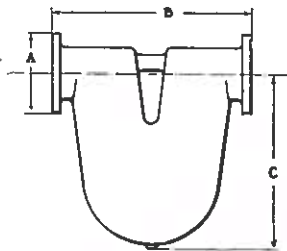
Upon striking the inclined baffle, the condensation is driven down the deep slanting corrugations out of the path of the steam current. Any moisture not caught by the upper baffle, and by the inner wall grooves, is finally separated by additional baffles located just over the well or receiver of the separator.

This corrugated construction is a distinctive Wright-Austin feature, being an important contribution toward the efficiency of the Type "B" Separator, making it one of the most popular of our entire line.

Every Separator should be automatically drained by an efficient steam trap. See page 45.

Prices and Dimensions

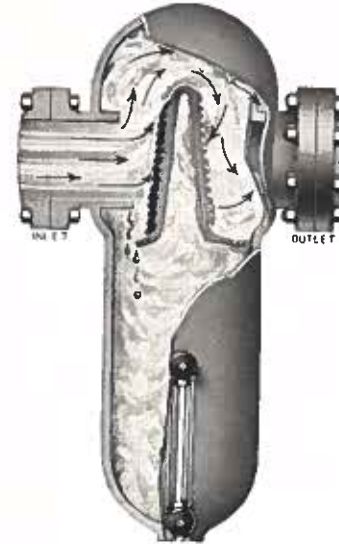
Pipe Size	Dimensions in Inches					Wgt. Lbs.	Standard List Price Includes Water Gauge Only	Extra Heavy List Price Includes Water Gauge Only	Code Word
	A Std	A Extra Hvy.	B	C	Drain				
1½	S. E.	S. E.	9	9	1½	45	\$23.00	\$23.00	Bacca
2	S. E.	S. E.	9	9	1½	45	26.00	26.00	Bravo
2½	7	7½	13¼	12	¾	115	33.00	34.00	Baker
3	7½	8¼	15¼	13	¾	125	38.00	41.00	Bandy
3½	8½	9	16	14	¾	165	48.00	51.00	Barge
4	9	10	18¼	15	¾	215	60.00	63.00	Brier
4½	9¼	10½	19¼	17	¾	265	68.00	74.00	Baton
5	10	11	20¾	20¾	1	285	78.00	81.00	Batch
6	11	12½	24¼	22	1	435	110.00	122.00	Basis
7	12½	14	27¼	25	1¼	600	156.00	160.00	Bison
8	13½	15	30¼	29	1¼	835	204.00	216.00	Blade
10	16	17½	31	36	1½	1135	276.00	288.00	Bosky
12	19	20½	36	40	1½	1580	372.00	400.00	Borax
14	21	23	39	42	2	1625	450.00	470.00	Bruin



Order or inquiry must state whether Standard or Extra Heavy Separator is desired. Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Stock sizes—1½" to 12", inclusive, both Standard and Extra Heavy. For Code Words for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size. 2—Working Pressure. 3—Degrees of Superheat.

TYPE "E"

Wright-Austin Live Steam Horizontal Receiver Separator



The Type "E" Separator is one of the most effective types manufactured. There are thousands in use and the elimination of moisture is unusually perfect.

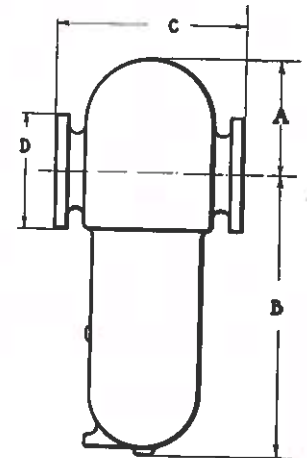
The extended inlet, overshot, corrugated angle baffle and specially protected outlet are developments in design which result in ideal separation. Moisture catches in the corrugations of the baffle and is carried to the sides, thus going into the receiver, while the steam for the most part goes over the top of the baffle.

The separator is cast in one piece without any joints or gaskets, thus preventing leaks and eliminating maintenance. The internal areas are very large, permitting complete separation of moisture, also, as a result, there is no back pressure. The receiver provides a reserve for sudden fluctuations of load or slugs of water and is midway in capacity between the Type "B" and Type "G" Separators.

There is a Wright-Austin Separator for every requirement or condition.

Prices and Dimensions

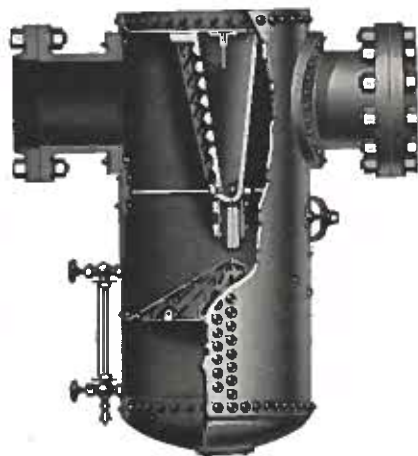
Pipe Size	Dimensions in Inches					Wgt. Lbs.	List Price Includes Water Gauge Only	Code Word
	A	B	C	D Extra Heavy	Drain			
2	5	10	9	S. E.	½	60	\$28.00	Eagle
2½	6	12	11	7½	¾	125	36.00	Eblis
3	6½	13	12¼	8¼	¾	155	43.00	Eclat
3½	7½	15	13¾	9	¾	170	54.00	Edict
4	9	17	14¾	10	¾	230	66.00	Eider
4½	10	20	16¼	10½	¾	310	78.00	Eikon
5	11	23	19	11	1	470	108.00	Eland
6	12	26	21	12½	1	565	132.00	Elate
7	13¾	29	22¾	14	1¼	715	168.00	Elbow
8	16	32	24	15	1¼	880	224.00	Enjoy
10	20	38	30	17½	1½	1550	372.00	Ensue
12	23	41	34	20½	1½	1800	462.00	Enter
14	26	44	39¾	23	2	3055	800.00	Emery



Regularly furnished with Extra Heavy flanges for working pressures up to 250 lbs. per square inch. Can also be supplied with flanges faced and drilled to 125 lb., Standard Schedule if especially ordered, at same price as the Extra Heavy. Companion flange, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Stock sizes 2" to 10" inclusive in Extra Heavy pattern. For Code Word for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size. 2—Working Pressure. 3—Degrees of Superheat.

TYPE "D"

Wright-Austin Live Steam Horizontal Steel Receiver Separator



Designed with very low head, the Type "D" Separator can be installed to advantage where pipe lines run close to ceiling or overhead obstructions. The illustration at the top of page 27, in this bulletin, although showing a "Standard Special" Separator gives a good impression of the way in which a Type "D" Separator appears when installed in close quarters.

Incorporated in this machine will be found some of the special features already described in other of our patterns. The baffle is similar to that employed in the Type "G" except it is of the undershot type, the lower part of which forms a trough draining to the sides. The cone in the lower part prevents the steam from agitating whatever water may be in the bottom of the receiver.

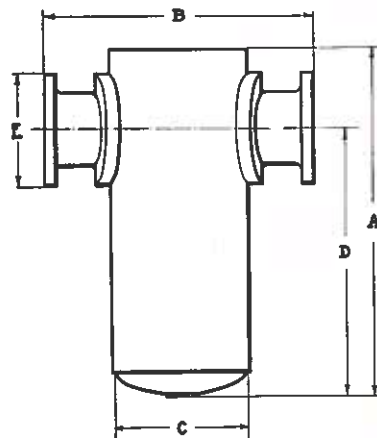
Like the Type "G" it is designed for the most exacting service for any working pressure or superheat conditions.

Built to A. S. M. E. specifications throughout.

Every Separator should be automatically drained by an efficient steam trap. See page 45.

Weights and Dimensions

Pipe Size	Dimensions in Inches						Wgt. Lbs.	Code Word
	A	B	C	D	E	Drain		
8	50	34	18	39½	15	1¼	700	Dedar
10	55	40½	22	44	17½	1½	1050	Doily
12	63½	44	24	50	20½	2	1300	Dingo
14	72½	47	26	56	23	2	2000	Drawl
16	74½	50	28	59	25½	2	2200	Drill
18	81	53	30	62	28	2½	2500	Dynam



Special prices on application.

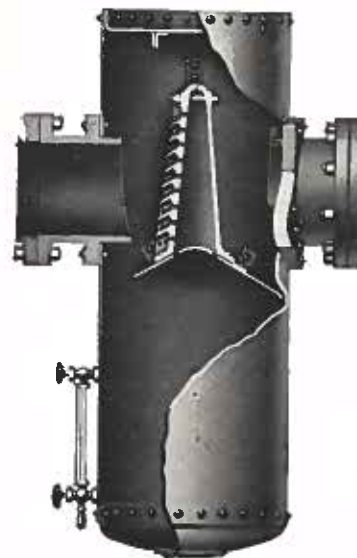
When ordering or obtaining prices, be sure to give: 1—Size of Pipe Connections. 2—Working Steam Pressure. 3—Degrees of Superheat—if any.

Size of receiver may be varied from the above to suit special requirements or conditions. State dimensions or cubic volume desired.

For Code Words for pressures, see page 48.

TYPE "G"

Wright-Austin Live Steam Horizontal Steel Receiver Separator



Extra large receiver capacity combined with the utmost efficiency are obtainable in the Type "G" Separator.

To stop vibrating of steam line or slugs of water from priming boilers, this Separator is highly recommended. It is built for the highest working pressures, also with cast steel nozzles for superheat, conforming in all respects to the A. S. M. E. Code.

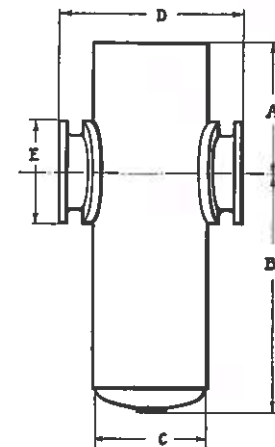
A perfect system of drainage grooves in the baffle leads to the sides, and in addition, much of the condensation in the steam is driven through perforations also draining to the sides.

Where desired to have two or more extra inlets or outlets connecting to branch pipes, this form of separator lends itself readily to such constructions, by a special arrangement of baffles.

There is a Wright-Austin Separator for every requirement or condition.

Weights and Dimensions

Pipe Size	Dimensions in Inches						Wgt. Lbs.	Code Word
	A	B	C	D	E	Drain		
10	21	40	22	40½	17½	1½	1350	Great
12	24	48	24	44	20½	2	1600	Ghaut
14	28	54	26	47	23	2	2250	Gager
16	32	60	28	50	25½	2	2850	Gaily
18	36	64	30	53	28	2½	3200	Girth
20	38	68	32	56½	30½	2½	3640	Globe
22	40	72	34	59½	33	3	4180	Goral
24	44	76	36	63	36	3	4720	Grail
26	48	80	38	66¼	38¼	3	5200	Guard



Special prices on application.

When ordering or obtaining prices, be sure to give: 1—Size of Pipe Connections. 2—Working Steam Pressure. 3—Degrees of Superheat—if any.

Size of receiver may be varied from the above to suit special requirements or conditions. State dimensions or cubic volume desired.

For Code Words for pressures, see page 48.

TYPE "L"

Wright-Austin Live Steam Horizontal Steel Receiver Separator



The Type "L" Separator fills an important place between the Type "E" and the Types "D" and "G" just described. The Separator Head containing the baffle has all the excellent features of the Type "E," namely, overshoot, corrugated, angle baffle, extended inlet and flanged ring outlet. The entire head is cast in one piece, so that there is no maintenance for this part of the separator.

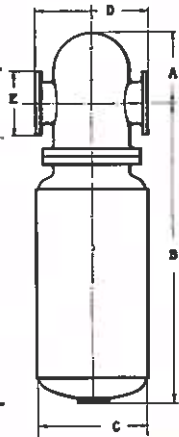
The receiver is made of riveted steel and is very much larger than that of the Type "E," in fact it is larger than the built-in receivers of the Type "D" or Type "G" Separators, thus combining the advantages of the cast iron type of separator with those of the riveted steel type. There is only one joint, namely, where the head joins the receiver. If desired, receivers of special capacity can be built as "Standard Specials" at small extra cost and used with the Type "L" separator head. See pages 22-27 inclusive.

Built and tested to A. S. M. E. Boiler Code requirements.

Every separator should be automatically drained by an efficient steam trap. See page 45.

Weights and Dimensions

Pipe Size	Dimensions in Inches						Weight Lbs.	Code Word
	A	B	C	D	E	Drain		
3	6½	36	12	12¼	8¼	¾	350	Label
4	9	40	13½	14¾	10	¾	450	Latch
5	11	45	16	19	11	1	680	Latin
6	12	50	18	21	12½	1	900	Layer
7	13¾	56	20	22¾	14	1¼	1150	Legal
8	16	64	22	24	15	1¼	1350	Livre
10	20	80	26	30	17½	1½	2190	Loach
12	23	90	30	34	20½	2	2650	Logie
14	26	102	34	39¾	23	2	3750	Lotus
16	29	112	38	41½	25½	2	4600	Lunar
18	32	120	42	43	28	2½	5765	Lyric
20	35	130	46	45	30½	2½	6700	Lusty



Special prices on application.
 When ordering or obtaining prices, be sure to give: 1—Size of pipe connections. 2—Working steam pressure. 3—Degrees of superheat—if any.
 Size of receiver may be varied from the above to suit special requirements or conditions. State dimensions or cubic volume desired.
 For Code Words for pressures, see page 48.

Angle Steam Separators

TYPE "N"

Wright-Austin Live Steam Angle Receiver Separator



Angle Separators made of cast semi-steel have a distinct place in the separator field. They save piping, as all angle separators do, and have the special advantage of being cast in one piece, thus eliminating joints and gaskets, also reducing first cost.

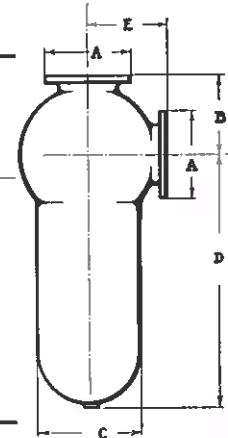
The Type "N" Separator is especially suitable for installation where piping, descending from the ceiling, enters the angle throttle valve of an engine horizontally.

This Separator is designed for steam flow in either direction, and has a receiver of good capacity. It makes an attractive appearance when installed. Its design is the result of much careful experimenting. Baffle and steam areas are sufficient for complete elimination of moisture.

There is a Wright-Austin Separator for every requirement or condition.

Prices and Dimensions

Pipe Size	Dimensions in Inches						Weight Lbs.	List Price Includes Water Gauge Only	Code Word
	A Extra Heavy	B	C	D	E	Drain			
2½	7½	4¾	5¾	8¼	4¾	¾	95	\$36.00	Nappy
3	8¼	5	6¾	12	5	¾	140	42.00	Needy
3½	9	5½	7¾	12	5½	¾	175	53.00	Neuro
4	10	6½	8¾	16½	6½	¾	230	61.00	Naugo
4½	10½	7	10¾	20	7	¾	305	80.00	Nobby
5	11	8¼	11	23	8	1	360	96.00	Noble
6	12½	9	13	25	9	1	475	120.00	Noise
7	14	11	15	28	11	1¼	665	187.00	Notch
8	15	11½	17	33½	11½	1¼	950	246.00	Notus
10	17½	15	21	40	15	1½	1550	396.00	Novel
12	20½	17	25½	43	17	1½	2670	570.00	North



Regularly furnished with Extra Heavy flanges for working pressures up to 250 lbs. per square inch.
 Can also be supplied with flanges faced and drilled to 125 lb. Standard Schedule if especially ordered, at same price as the Extra Heavy.
 Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41.
 Made to order—shipment two weeks.
 For Code Words for pressures, see page 48.
 Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size. 2—Working Pressure. 3—Degrees of Superheat.

TYPE "O"

Wright-Austin Live Steam Angle Receiver Separator



Where low head room or a short pipe connection from horizontal supply pipe down to throttle is desirable, the Type "O" Separator is the answer—it exactly fits such a condition.

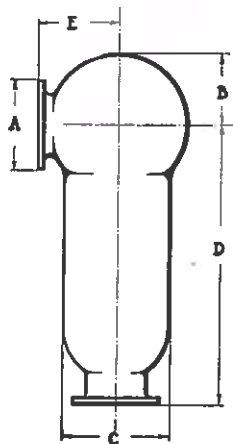
It provides the benefits of efficient separation in a minimum of pipe space, also taking the place of an elbow and short pipe, thus eliminating several joints.

This Separator is similar to the Type "N," described on the preceding page, except for the arrangement of connections. It has very good receiver capacity and is designed for complete elimination of moisture without back pressure or loss by friction.

Every separator should be automatically drained by an efficient steam trap. See page 15.

Prices and Dimensions

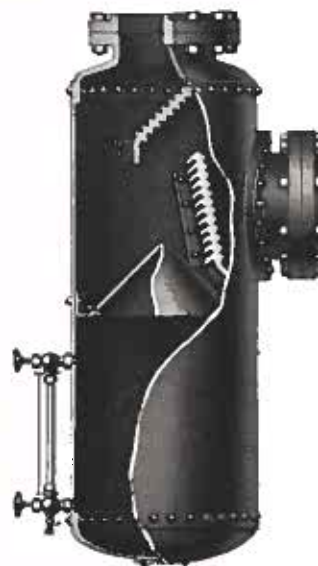
Pipe Size	Dimensions in Inches						Weight Lbs.	List Price Includes Water Gauge Only	Code Word
	A Extra Heavy	B	C	D	E	Drain			
2½	7½	3¾	5¾	13¼	4¾	¾	95	\$36.00	Obese
3	8¼	4	6¾	14¾	5	¾	140	42.00	Oasis
3½	9	4½	7¾	18	5½	¾	175	53.00	Obore
4	10	5½	8¾	19½	6½	¾	230	64.00	Ochre
4½	10½	6	10¾	23	7	¾	305	80.00	Offer
5	11	6¾	11	26	8	1	360	96.00	Orcin
6	12½	7¾	13	28	9	1	475	120.00	Ortho
7	14	9¾	15	31	11	1¼	665	187.00	Ovule
8	15	10¼	17	36½	11½	1¼	950	246.00	Overt
10	17½	13½	21	43	15	1½	1550	396.00	Ozone
12	20½	15	25½	47	17	1½	2670	570.00	Ozice



Regularly furnished with Extra Heavy flanges for working pressures up to 250 lbs. per square inch. Can also be supplied with flanges faced and drilled to 125 lb. Standard Schedule if especially ordered, at same price as the Extra Heavy. Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices, also flange drilling, see pages 40-41. Made to order—shipment two weeks. For Code Words for pressures, see page 48. Also made in cast steel for superheat. Prices quoted upon receipt of: 1—Pipe Size. 2—Working Pressure. 3—Degrees of Superheat.

TYPE "I"

Wright-Austin Live Steam Angle Steel Receiver Separator



The Type "I" Separator is designed to meet all requirements for an angle separator. It saves piping, elbows, etc. in many places where the use of horizontal or vertical separators would be impracticable or awkward.

It can be made with connections arranged as shown in the illustration, to pass steam through in either direction, or it can be made with connections at side and bottom, to pass steam in either direction. It can also be made with several inlets or outlets if desired, becoming then a "Standard Special" as described on page 22.

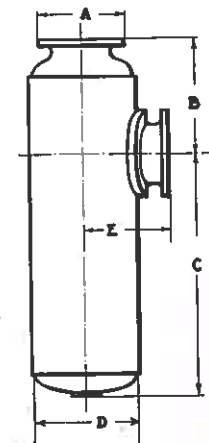
This type of separator is especially suitable for use with turbines and can be placed above or below the floor level of the turbine with good results. It has large receiver capacity, large steam storage capacity and eliminates moisture completely. See pages 2 and 27 for photographs of separators of this general type installed with turbines.

Type "I" Separators are built and tested to A.S.M.E. Boiler Code requirements for any working pressure or superheat.

There is a Wright-Austin Separator for every requirement or condition.

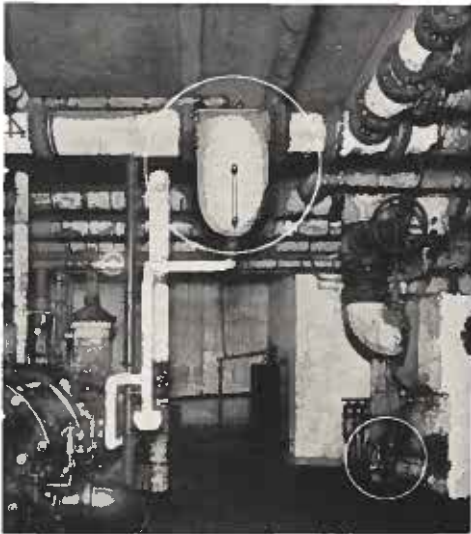
Prices and Dimensions

Pipe Size	Dimensions in Inches						Weight Lbs.	Code Word
	A	B	C	D	E	Drain		
6	12½	18	25½	16	15	1	495	Icono
8	15	21	32	18	17	1¼	780	Ictus
10	17½	25	40	22	21	1½	1085	Inlay
12	20½	29	48	24	22	2	1585	Image
14	23	33	56	26	24	2	1610	Impel
16	25½	38	60	30	25	2	2275	Incur
18	28	41	64	32	28	2½	2350	Infix
20	30½	44	68	36	31	2½	2600	Index

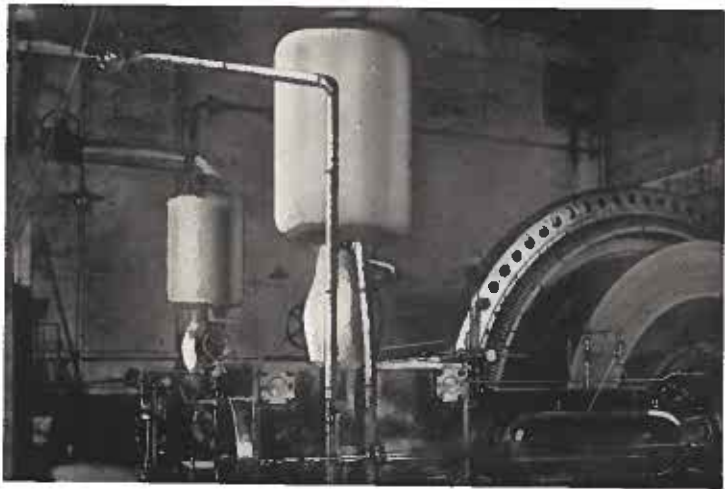


Special prices on application. When ordering or obtaining prices, be sure to give: 1—Size of Pipe Connections. 2—Working Steam Pressure. 3—Degree of Superheat—if any. 4—Direction of Steam Flow through Separator. Size of receiver may be varied from the above to suit special requirements or conditions. State dimensions or cubic volume desired. For Code Words for pressures, see page 48.

**TYPICAL INSTALLATIONS OF WRIGHT-AUSTIN
STANDARD TYPE LIVE STEAM SEPARATORS**



**A 10" Type "B" Horizontal Steam Separator
Showing Installation Near Ceiling**



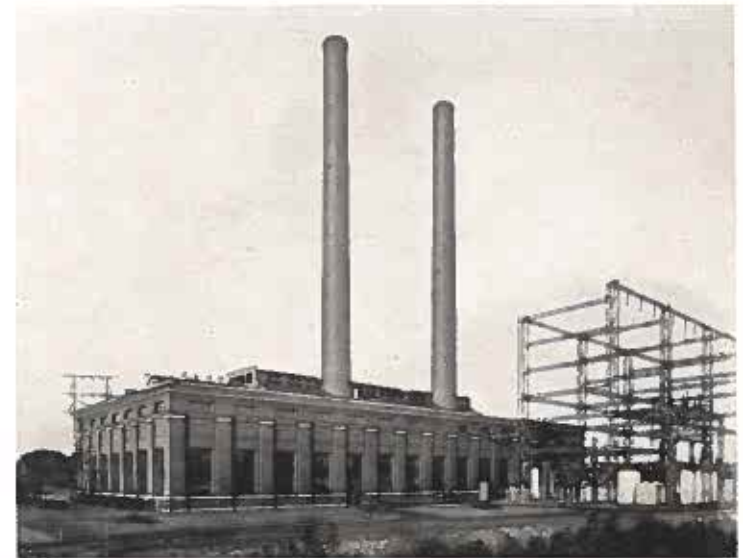
**Two 10" Type "C" Vertical Riveted Steel Receiver Steam Separators at
the Plant of The Corn Products Refining Co., Pekin, Ill.**

WHERE WRIGHT-AUSTIN SEPARATORS ARE USED



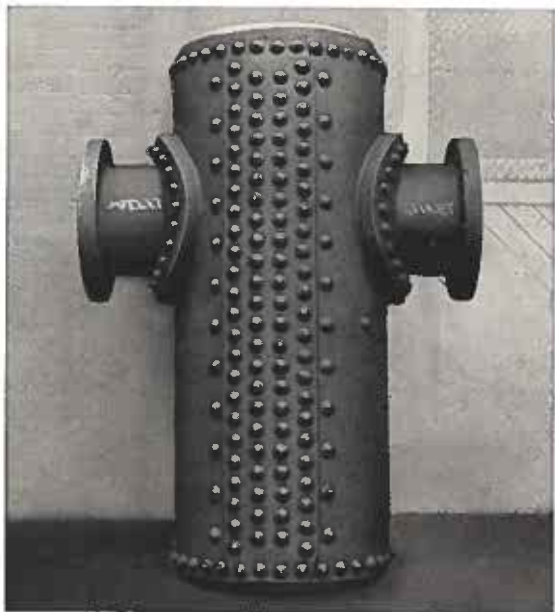
Courtesy American Architect

**Roosevelt Hotel, New York City
Seven Wright-Austin Separators (See Page 25)**



**The Battle Creek Plant of Consumers Power Co.
Serving Central Part of State of Michigan**

**“Standard Special”
Steel Receiver Steam Separators**
for
High Pressure—Superheat



Horizontal “Standard Special” Separator for 250 Lbs. Pressure, 150° F. Superheat at Rochester Steam Plant of Rochester Gas and Electric Co., Rochester, N. Y.

Certain Riveted Steel Receiver Separators have received the name “Standard Specials” because they are “Special” Separators, designed to meet customer’s conditions, but are made up from “Standard” parts and to a large extent, from “Standard” plans. The Wright-Austin Company is particularly well equipped for this work. Note the great variety of “Standard Special” Steam Separators illustrated on this page and on pages following.

“Standard Specials” cost less than special separators which are built to order in every part, because more than half the work on them has been done in the preparation of standard parts. A customer receives the benefit of this in the prices quoted.

“Standard Specials” are better designed than most special separators because the plans from which they are built have been perfected in general arrangement, during thirty years of successful manufacture, and only need to be modified as to size. Moreover, there are plans in the Wright-Austin files to suit every type of connection.



Designed for Superheated Steam at 250 Lbs. Pressure, for One of the Plants of The International Nickel Co.

“Standard Specials” are completely satisfactory because they are built TO SUIT CUSTOMER’S REQUIREMENTS as to size, connection and shape, although they retain at the same time all the advantages of correct design and moderate cost.

“Standard Specials” have behind them the Wright-Austin Guarantee and Wright-Austin Service. The Wright-Austin Company makes only equipment that wears well and does its work at all times with little or no attention. It stands back of all apparatus which it makes as long as that apparatus is in use.

On many orders there is a very great saving of time in purchasing “Standard Specials” since no time is required to perfect designs or make patterns. The time between receipt of order and date of shipment is the time actually used in the shop.

Sometimes Separators can be specially constructed by others for less money than Wright-Austin “Standard Specials,” notwithstanding the extra cost of special patterns and plans; but the reduction in cost is gained by sacrificing the life and effectiveness of the apparatus. When these separators are built up to Wright-Austin quality, they cost more than Wright-Austin “Standard Specials.”

ADVANTAGES OF STEAM SEPARATORS BUILT TO ORDER

First—Complete elimination of moisture at high steam pipe velocities. Dangerous slugs of water carried over from priming or flooded boilers or from pockets in a pipe line will be completely removed, even at high steam velocities, by a Separator having baffle area and steam space especially proportioned to the velocity and volume of the steam.

Just as Standard Separators are built for average conditions and are satisfactory for all ordinary pressures, temperatures and steam velocities, so “Standard Special” Separators can be built and should be provided when average conditions are exceeded.

The Wright-Austin Company is always glad to submit plans to suit any and all conditions.

Second—Elimination of serious vibration in steam lines. A “Standard Special” Separator having large receiver capacity and designed for the particular location will furnish an extra large supply of steam as a reserve and a cushion, thus eliminating vibration and loss of efficiency.

Third—Convenient arrangement of connections to fit piping, thus avoiding pipe changes that frequently cost more than the price of the Separator.

For instance, a Separator may have inlets for two steam supply lines and an outlet to one engine, or it may have one inlet for steam supply and two or three outlets to as many engines. Inlets and outlets may occupy all sorts of peculiar positions with respect to one another. See illustrations on page 26.

Fourth—Adaptability to any pressure and any temperature in commercial use. An examination of the illustrations on this page and on succeeding pages will give an idea of the construction possible.

Fifth—Arrangement of dimensions and volume to suit purchaser. Practically any requirement can be readily met.

Sixth—"Standard Special" Separators are especially valuable with steam turbines. They prevent slugs of water and pipe scale or other foreign matter from striking the blades of the turbine and perhaps seriously eroding or injuring them.

Engineers thought formerly that separators were not necessary with steam turbines, especially if superheated steam was used. Practical experience, however, has taught engineers and manufacturers that slugs of water and dirt get into the turbine, even with superheated steam, eroding and tearing the blades, unless a Separator is installed on the steam line. It is especially true that superheaters will not evaporate water. A slug of water due to a priming boiler will frequently pass directly through a superheater into the steam piping and so into the turbine unless a Separator is provided to catch it.

One slug of water, or a priming or flooded boiler occasioned by accident, neglect or oversight in the boiler room, can put any turbine out of commission, causing loss of time and repairs costing the price of several separators. The only preventive is a good receiver separator automatically drained by a large capacity steam trap.

Soon it will be standard practice to install a Separator with every turbine. Because of high velocities, unusual conditions, high temperature and high pressures, these separators must be "Standard Specials." See Illustration on page 2.

Seventh—These Separators permit the progressive engineer to work out his own ideas as to piping arrangements and design of apparatus without losing that expert knowledge of Separator construction which the Wright-Austin Company possesses.

CONSTRUCTION

Wright-Austin "Standard Specials" are constructed strictly in accordance with the A. S. M. E. Boiler Code. The steel used is "flange steel" as defined in the Code. The working stress is taken at 11,000 lbs. per square inch and riveted joints are designed with a factor of safety of Five to One.

Extra precautions are taken to make Separators tight, and every one is tested by hydraulic pressure to $1\frac{1}{2}$ times working pressure or more before leaving the factory.

Nozzles and connections are made of semi-steel for temperatures below 450° F.; and for temperatures above that are made of cast steel or forged steel. Customers' wishes govern to a large extent in making up nozzles.

Joints can be welded, if customers prefer this to riveting.

"Standard Special" Separators can be made for any temperature, any volume, any pressure and any steam velocity in commercial use.



Some Possibilities in the Arrangement of Outlets

TYPICAL "STANDARD SPECIAL" STEAM SEPARATORS Made to Order from Wright-Austin Standard Parts and Plans



Group of Steam Separators for 150 Lbs. Pressure
Made for Roosevelt Hotel, New York



Large, High Pressure Receiver Separator, Weighing $4\frac{1}{2}$ Tons

TYPICAL "STANDARD SPECIAL" STEAM SEPARATORS



Each Separator Has Two Inlets at Sides and One Outlet at the Bottom



Wright-Austin
"Standard Specials"
Are Moderate in Price

**TYPICAL INSTALLATIONS OF WRIGHT-AUSTIN
"STANDARD SPECIAL" RIVETED STEEL
STEAM SEPARATORS**



14' Horizontal Separator Handling 20,000 Lbs. of Steam per Hour at 250 Lb. Pressure 150° F. Superheat, Installed Close to Ceiling



12" Angle Separator Under 275 Lb. Pressure 200° F. Superheat—Side Inlet and Top Outlet

Wright-Austin Oil Separators

MECHANICAL SEPARATION OF OIL FROM EXHAUST STEAM

In this method, advantage is taken of the natural law of gravity, and the great difference in weight of the oil particles as compared with the weight of the steam in which they are contained.

The specific gravity of oil is about 0.70 as compared to water, while that of steam at 212° F. is about 0.0006, that is, the oil particles are about 1200 times heavier than the exhaust in which they are contained. Therefore, to separate the entrained oil from the steam, efficiently and completely, it is necessary to suddenly change the direction of the flow of the steam by an obstruction or baffle in the line.

The steam, being light, easily adjusts itself to the change of direction, but the heavier particles of oil and moisture, because of their great weight and the high velocity at which they are traveling, are not diverted with the steam around the baffle, but continue to shoot straight ahead like the sand in a sand blast into the collecting grooves, provided for this purpose on the baffle. The baffle is continuously washed down clean of all oil by the impact of the condensate against it.

It is obvious that in multiple baffle Separators condensate cannot reach the rear baffles, in sufficient quantities to wash them down. They become gummed up in a short time, greatly decreasing the efficiency of a Separator and requiring frequent shut-downs for cleaning.

Furthermore, efficient separation by centrifugal action can be shown clearly to be impractical. According to the laws of inertia and momentum the small particles of oil and condensate, being heavier than steam, are not appreciably affected by variations in the course of the steam current, and will continue to move along in a practically straight line, unless stopped by actual contact with an obstruction in their course, such as a baffle. They only follow the course of the steam to a limited extent and cannot be successfully thrown out of the whirling mass.

To secure the desired results under various conditions, it is, therefore, only necessary to provide, in the steam line, a Separator of correct design and ample area, having a suitable baffle, to properly eliminate the oil from the steam, and keep it out by preventing it from again coming in contact with the steam flow.

Of course, every Separator should be automatically drained by a good Trap, having extra large valve opening so that it cannot become choked up with oil. This is necessary for carrying off the oil and condensation continuously. See page 45.

Oil Separators are used on exhaust steam lines from engines, pumps, compressors, etc., to remove the oil and purify the exhaust steam so that the condensation may safely be used as distilled water for boiler feed, ice making, textile and chemical processes, laundries or any other purposes for which either exhaust steam or purified condensation may be employed.

Purified Exhaust Steam contains about 90% of its original heat and is well adapted for heating or drying purposes.

Removal of oil from steam prevents accumulation of oily film on the inside parts of radiators, heating systems, dryers, etc. Such oily film greatly de-



Type "S" Horizontal Oil Separator on the Roof of an Indiana Laundry

creases efficiency and production, offering even more heat resistance than an asbestos covering on the pipes.

Inside a steam boiler a coating of oil 1/10 of an inch thick offers as much resistance to the transmission of heat from the fuel as a boiler plate 10 inches in thickness. Oil coated boilers are fuel wasters. They become leaky and predisposed to dangerous explosions. There is no escape for the oil, because it will not evaporate, and it continues to accumulate, frequently clotting in places and causing the plates to bulge and blister. Repair bills are the result, which are many times more costly than a Wright-Austin Oil Separator.

By separating oil from exhaust steam and using the purified condensation for boiler feed, rust and scale are reduced greatly. Condensation is distilled and deaerated water. It is free from the air and oxygen or other gases which cause rust and corrosion in steam pipes and heating systems. The life of a piping system is increased, expensive replacements are often avoided, and old piping, already pitted by corrosion, may have its life extended many years.

TYPE "S"

Wright-Austin Horizontal Oil Separator

The Wright-Austin Type "S" Oil Separator is designed so that the incoming steam, with oil in suspension, strikes a large circular baffle with deep corrugations. The small particles of oil and condensate are dashed into the grooves and flow down them into the bottom of the separator.

Ample area is provided for the free passage of the steam all around the baffle thus spreading out the steam into a comparatively thin volume or layer. The small particles of oil and condensate easily pass through the thin layer and are not picked up again by the steam. This is one of the very important and exclusive features of a Wright-Austin Oil Separator found in no other make of Separators. Other Separators often wire draw the steam through ports producing high steam velocity and frequently causing back pressure.



Type "S" Horizontal Oil Separator

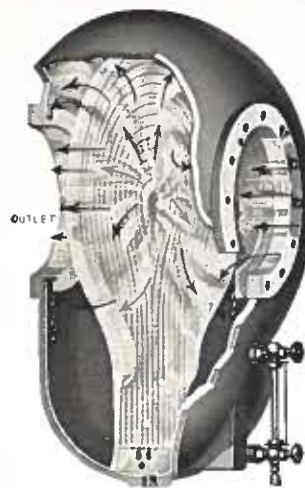
Just inside the inlet of the Wright-Austin Separator a trough is provided to catch the oil carried along the bottom of the pipe. From this trough a drain leads to the bottom of the Separator. On the rim of the baffle is a large deep shoulder to catch any oil that may possibly have been carried across the face of the baffle.

Further on, an inner flange or ring is cast just inside the outlet which will absolutely prevent the escape of any oil that might still adhere to the walls of the Separator. Once eliminated, there is no possible way for oil to again come in contact with the steam flow and be carried beyond the Separator. The oil is not only separated, but is also segregated from the steam.

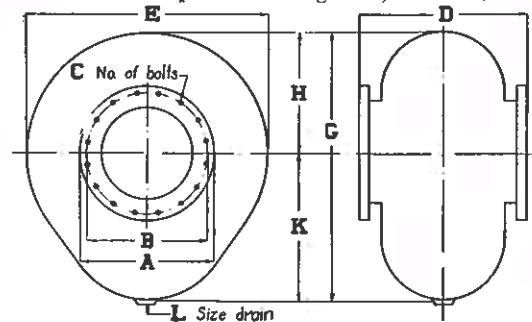
Because low pressure exhaust steam has a cubic volume several times greater than high pressure steam, larger internal areas are positively necessary. Pipe size for pipe size the Type "S" Separator has several times greater baffle and steam passage than other standard Oil Separators, which means it is manifestly more efficient. For this reason oversize Type "S" Separators are not required. **HAVING THE LARGE INTERNAL AREA, THEY WILL NOT PRODUCE BACK PRESSURE.**

The Type "S" Wright-Austin Separator and its baffle are made in one solid casting, the baffle being attached to the body of the Separator by several lugs. There are no parts to become loose or misplaced and no joints or gaskets, so it will never leak.

No oil can accumulate on the baffle, as it is continuously flushed clean by force of the hot condensate dashed against it. The Type "S" Oil Separator is **POSITIVELY SELF-CLEANING**. It will never be necessary to shut down the plant for this purpose, and when the Separator is installed, the job is forever finished—not a dollar further expense for renewals or upkeep of any kind—and the Separator is always at maximum efficiency. The first cost is the last cost.



TYPE "S"
Horizontal Oil Separator Self-Cleaning
For Description See Pages 28, 29 and 30



For Working Pressures Up to 40 Lbs.

Prices and Dimensions

Pipe Size	Dimensions in Inches										Wgt. Lbs.	List Price	Code Word
	A Std	B	C	D	E	G	H	K	L				
1 1/2	Scrd.	...	...	9 7/8	12	15 1/2	6 1/8	9 3/8	3/4	60	\$ 24.00	Saxon
2	Scrd.	...	...	10	12 1/8	15 1/2	6 1/8	9 1/8	3/4	70	27.00	Saury
2 1/2	7	5 1/2	4-5/8	10 1/4	14 1/2	17 1/8	7 1/8	10 1/8	1	150	42.00	Skiny	
3	7 1/2	6	4-5/8	10 1/2	15	18	7 1/2	10 1/2	1	165	48.00	Satin	
3 1/2	8 1/2	7	4-5/8	11	17	20	8 1/2	11 1/2	1	190	54.00	Sandy	
4	9	7 1/2	8-5/8	12	19	23	9 1/2	13 1/2	1	235	72.00	Saint	
4 1/2	9 1/4	7 3/4	8-3/4	13	21	25	10 1/2	14 1/2	1 1/4	290	80.00	Scare	
5	10	8 1/2	8-3/4	15	23	27	11 1/2	15 1/2	1 1/4	370	100.00	Scene	
6	11	9 1/2	8-3/4	17	25	30	12 1/2	17 1/2	1 1/2	475	122.00	Scope	
7	12 1/2	10 3/4	8-3/4	17 1/2	27	33	13 1/2	19 1/2	1 1/2	580	156.00	Screw	
8	13 1/2	11 3/4	8-3/4	18	29	36	14 1/2	21 1/2	1 1/2	670	170.00	Scrap	
10	16	14 1/4	12-7/8	19	32	40	16 1/2	23 1/2	1 1/2	830	228.00	Scull	
12	19	17	12-7/8	20	34	42	17 1/2	24 1/2	1 1/2	1040	300.00	Sight	
14	21	18 3/4	12-1	20	36	43	18 1/2	24 1/2	1 1/2	1160	348.00	Seize	
16	23 1/2	21 1/4	16-1	22	40	44	20 1/2	23 1/2	1 1/2	1350	400.00	Sense	
18	25	22 3/4	16-1 1/8	24	42	46	21 1/2	24 1/2	1 1/2	1530	456.00	Sepal	
20	27 1/2	25	20-1 1/8	26	44	49	22 1/2	26 1/2	1 1/2	1660	528.00	Serve	
22	29 1/2	27 1/4	20-1 1/4									Sewer	
24	32	29 1/2	20-1 1/4									Sexto	
26	34 1/4	31 3/4	24-1 1/4									Shack	
28	36 1/2	34	28-1 1/4									Shear	
30	38 3/4	36	28-1 3/8									Shore	
32	41 3/4	38 1/2	28-1 1/2									Shrub	
34	43 3/4	40 1/2	32-1 1/2									Shunt	
38	48 3/4	45 1/4	32-1 5/8									Shift	
42	53	49 1/2	36-1 5/8									Shyly	
46	57 1/4	53 3/4	40-1 5/8									Sibyl	
48	59 1/2	56	44-1 5/8									Siege	

General Dimensions
Weights and Prices
on Application

Built in regular patterns up to 48". See special patterns on page 36.
Sizes 2 1/2" to 10" inclusive, built with nozzle flange connections, larger sizes with close flanges and furnished with stud bolts.

Eye bolts placed on 12" size and over.

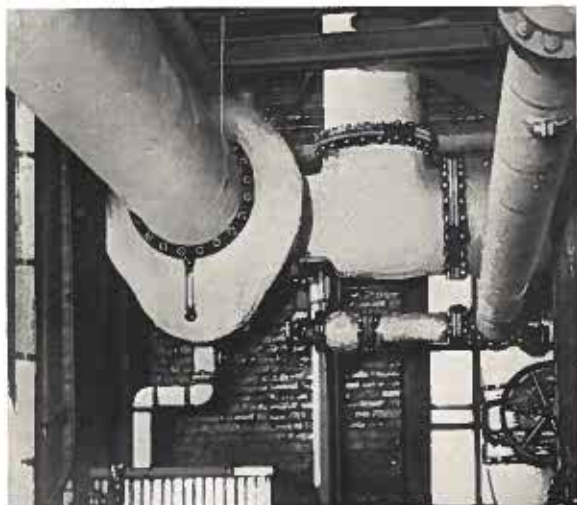
Water gauges furnished on all sizes except 1 1/4" and 2".

Price includes water gauge only.

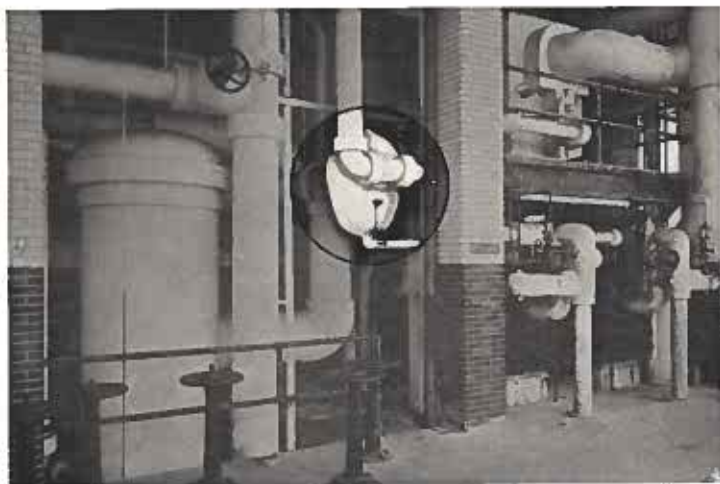
Companion flanges, drain valve and nipple can be furnished at extra cost. For prices and flange drilling see page 40.

Sizes up to and including 14" usually in stock.

**TYPICAL INSTALLATIONS OF WRIGHT-AUSTIN
TYPE "S" HORIZONTAL OIL SEPARATORS**



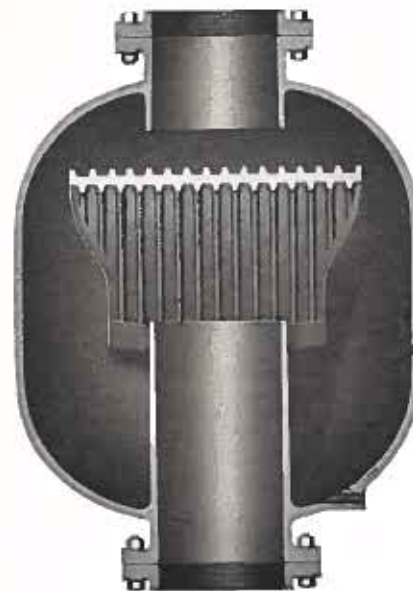
**A Type "S" Oil Separator in the Plant of a
Dyeing and Finishing Company**



**An 8" Type "S" Horizontal Oil Separator in the
Power House of a Large Automobile Factory**

TYPE "R"

Wright-Austin Vertical Oil Separator—Self Cleaning



The Wright-Austin Type "R" Vertical Oil Separator embodies all the essentials for perfect oil separation—large clearance areas, large baffles, proper angles, etc.

It also is self-cleaning and will make a most excellent installation, where a vertical pattern is necessary.

The Type "R" has rightly earned its place beside the well known and nationally used Type "S" Oil Separator, described on pages 29 to 32 inclusive.

Every Separator should be automatically drained by an efficient steam trap. See page 45.

Prices and Dimensions

Pipe Size	Diam. Flanges	Dimensions in Inches			Weight Pounds	List Price	Code Word
		A	B	Drain			
4	9	15	20 ⁷ / ₈	1	230	\$ 66.00	Rally
5	10	17	24 ¹ / ₈	1 ¹ / ₄	315	88.00	Rapid
6	11	18	28 ⁵ / ₈	1 ¹ / ₂	450	120.00	Ramie
7	12 ¹ / ₂	24 ¹ / ₂	37 ¹ / ₂	1 ¹ / ₂	785	330.00	Range
8	13 ¹ / ₂	25 ¹ / ₂	37 ¹ / ₂	1 ¹ / ₂	920	336.00	Raven
10	16	32 ³ / ₄	41 ⁷ / ₈	1 ¹ / ₂	1280	366.00	Rebus
12	19	32 ³ / ₄	42	1 ¹ / ₂	1340	372.00	Redan

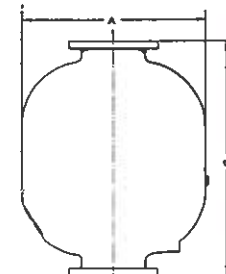
Price includes water gauge only. Flanges faced and drilled to A. S. M. E. Standard Schedule.

Companion flanges, drain valve and nipple, can be furnished at extra cost.

For prices and flange schedules, see page 40.

See special patterns on page 36.

Made to order—shipment two weeks.



**For Working
Pressures
Up to 40 Lbs.**

TYPE "V"

Wright-Austin Vacuum Oil Separator

Vacuum Separators for the elimination of oil and moisture from exhaust steam, under medium and high vacuums, are always made of a suitable size for the operating conditions because of the great difference in the cubic volume of a pound of steam under different vacuums. Every Separator is carefully figured out beforehand to suit the conditions, and for that reason Wright-Austin Vacuum Oil Separator installations have been conspicuously successful.

Catchalls under vacuum for sugar and chemical evaporators are determined in the same way, insuring the highest efficiency.

Before we can definitely quote for vacuum service we must have—

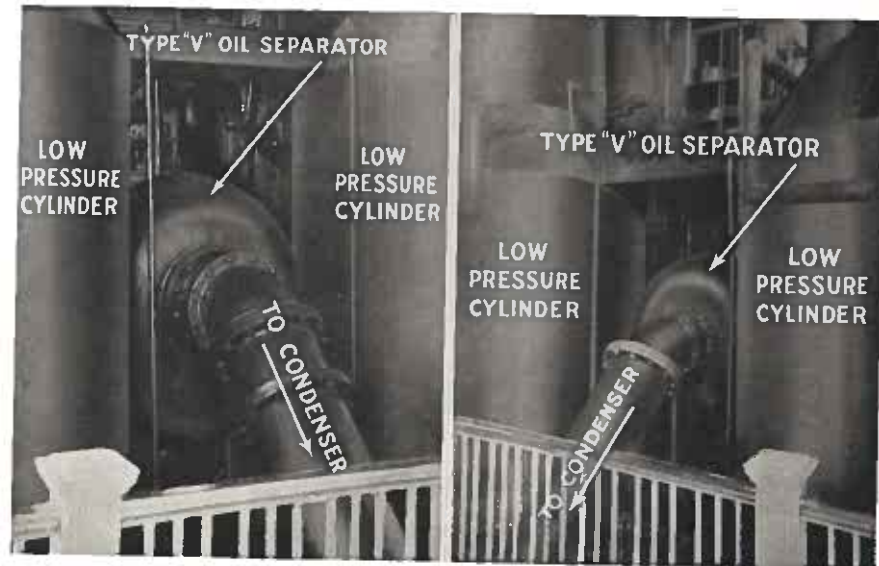
- 1—Size of pipe connections.
- 2—Maximum pounds of steam per hour.
- 3—Maximum, normal and minimum inches of vacuum.
- 4—Direction of steam flow through separator.

When the oil is extracted from exhaust steam without impairing the vacuum, engineers concede the following advantages:

1—A Saving in Water, because the same feed water may be used continuously, with the addition of fresh water to replace loss by leakage, evaporation, etc. This is a saving of considerable importance in plants where water supply must be purchased.

2—A Saving in Fuel. The water of condensation delivered to the hot well contains a large number of heat units, most of which are saved in returning this water to the boilers.

3—A Saving in Boiler Repairs, etc. A supply of distilled water is obtained for boiler feed purposes. Being practically free from oil and other impurities, this water will prevent boiler trouble due to scale, foaming, leaky tubes, bulged plates or burnt shells, and for like reasons the necessity for frequently cleaning the boilers is often avoided.



Two Wright-Austin Type "V" Vacuum Oil Separators Installed in Close Quarters Between the Low Pressure Cylinders of the Pumping Engines at the Toledo Waterworks, Toledo, Ohio

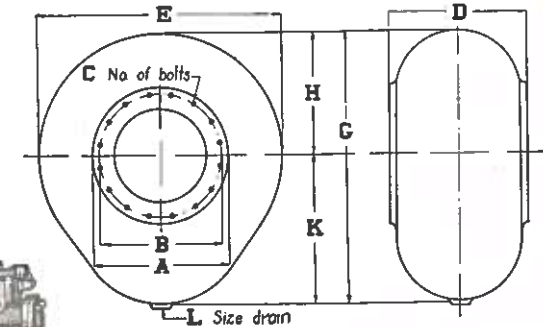
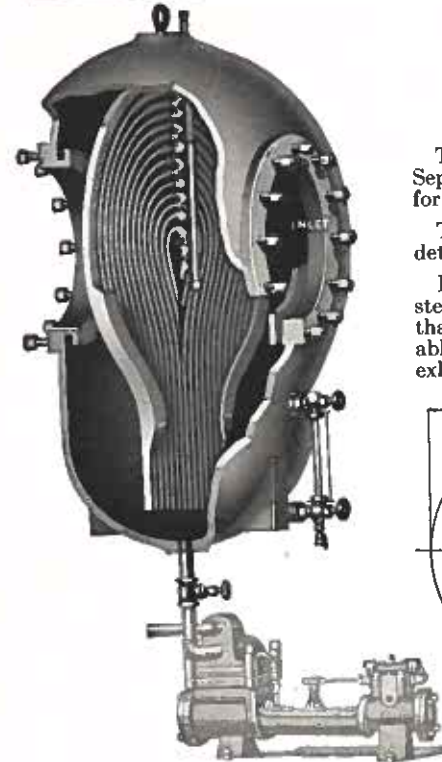
TYPE "V"

Vacuum Oil Separator
Self Cleaning

The illustration at the right shows a Type "V" Separator with our Special Vacuum Pump attached for drainage.

The Type "V" Separator contains all the excellent details of construction embodied in the Type "S."

It is guaranteed to extract the oil from exhaust steam operating under a vacuum, to such an extent that this steam when condensed will be entirely suitable for boiler feed or any other purpose for which exhaust steam condensate is used.



Prices and Dimensions

Pipe Size	Dimensions in Inches										Wgt. Lbs.	Code Word
	A St'd	B	C	D	E	G	H	K	L			
8	13 1/2	11 3/4	8- 3/4	20	34	42	17 1/2	24 1/2	1 1/2	800	Visit	
10	16	14 1/4	12- 1/8	20	36	43	18 1/2	24 1/2	1 1/2	925	Value	
12	19	17	12- 1/8	22	40	44	20 1/2	23 1/2	1 1/2	1125	Vutal	
14	21	18 3/4	12-1	24	42	46	21 1/2	24 1/2	1 1/2	1375	Venal	
16	23 1/2	21 1/4	16-1	26	44	49	22 1/2	26 1/2	1 1/2	1475	Verge	
18	25	22 3/4	16-1 1/8	30	48	55	24 1/2	30 1/2	2	2075	Vesta	
20	27 1/2	25	20-1 1/8	33	54	62	27 1/2	34 1/2	2	2500	Vicar	
22	29 1/2	27 1/4	20-1 1/4	36	58	68	29 1/2	38 1/2	2	3050	Vowel	
24	32	29 1/2	20-1 1/4	38	61	71	32 1/2	41 1/2	2 1/2	4000	Vixen	
26	34 1/2	31 3/4	24-1 1/4	40	69	80	34 1/2	45 1/2	2 1/2	5650	Vivid	
28	36 1/2	34	28-1 1/4	42	71	86	37 1/2	48 1/2	2 1/2	6000	Vigil	
30	38 3/4	36	28-1 3/8	44	80	93	40 1/2	52 1/2	3	6500	Villa	
34	43 3/4	38 1/2	32-1 1/2	44	90	105	45 1/2	59 1/2	3	7500	Vapor	
38	48 3/4	40 1/2	32-1 5/8	48	100	116	50 1/2	65 1/2	3	8300	Vobbe	
40	50 3/4	45 1/4	36-1 5/8	48	106	120	53 1/2	66 1/2	3	9500	Verse	
42	53	49 1/2	36-1 5/8	48	112	129	56 1/2	72 1/2	3	10500	Vomer	

Special prices on application.

Made with close flanges, and furnished with stud bolts, also eye bolts, and inside spray attachment.

When ordering or obtaining prices, be sure to give: 1—Size of Pipe Connections. 2—Maximum Pounds of Steam per Hour. 3—Maximum, Normal and Minimum Inches of Vacuum. 4—Direction of Steam Flow through Separator.

Also made of riveted steel construction for Horizontal, Vertical or Angle connections to suit conditions.

**“Standard Special”
Steel Receiver Oil Separators
for
Low Pressure—Vacuum**



One 42" and One 18" Steel Receiver Vacuum Oil Separators

Oil Separators can be built to order from Standard patterns and Standard designs, at moderate prices, to suit customer's special conditions, in the same manner that Riveted Steel Steam Separators can be built. See page 22 for general information on "Standard Special" Separators.

Welded joints can be furnished when desired. Separators are built in accordance with the A. S. M. E. Code unless otherwise specified. Their construction follows the description given on page 24.

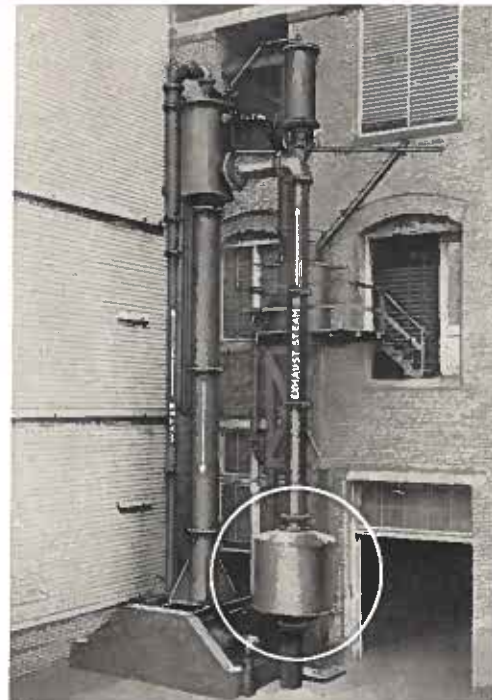
ADVANTAGES OF OIL SEPARATORS BUILT TO ORDER

First—Complete elimination of oil at any velocity and for any volume of steam per hour.

When exhaust steam is to be returned to the boiler, used for ice making, heating systems, drying, steam cooking, etc., it is imperative that oil be entirely removed. If conditions are out of the ordinary, the only sure way to accomplish this is to build a Separator to meet the conditions.

Second—Convenient arrangement of connections to suit piping.

Third—Arrangement of volume and dimensions to suit customer's desires or engineer's designs.

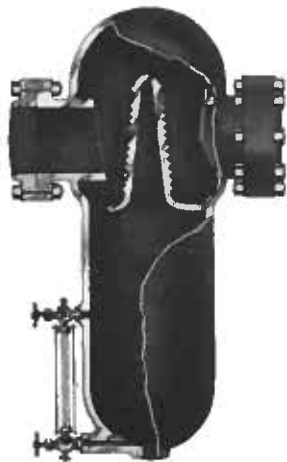


A Large "Standard Special" Vacuum Oil Separator, 8 Feet High on Exhaust Steam Pipe between Engines and Barometric Condenser



Two 16" "Standard Special" Steel Angle Receiver Oil Separators Furnished to Eliminate Oil and Moisture from Exhaust Steam Before Use in 2,000 KW. Low Pressure Turbines

Horizontal Separators for Compressed Air and Gas



TYPE "E"
For Pressures Above 40 Lbs.



TYPE "S"
For Pressures from 0 to 40 Lbs.

Wright-Austin Type "E" and Type "S" Horizontal Separators are specially adapted for the complete extraction of oil and moisture from air or gas. The Type "E" is used with pressures above 40 lbs. per square inch, the Type "S" at pressures from 0 to 40 lbs. per square inch.

Hundreds of these Separators are in use throughout the United States on air service and according to reports constantly received, they are giving complete satisfaction.

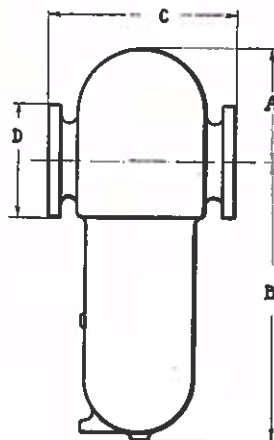
The selection of the Type "E" and the Type "S" Separators for use with air and gas was not a haphazard choice but the result of careful experimenting and some modification of design to make the Separators suitable for both steam and air. As a result, they are as well adapted to air and gas service as though they had been designed for these alone.

Detailed descriptions of these Separators will be found on pages 13 and 31 as well as on page 39 opposite.

The proper installation of Separators on compressed air systems has been thoroughly studied by Wright-Austin engineers. Advice as to the best size and location of Separators will be given, without obligation, to any one making inquiry or forwarding a sketch of his piping system.

These Separators are also used to extract liquid from gaseous chemicals to a considerable extent and the Wright-Austin Engineering Department will advise as to such use at any time.

TYPE "E"

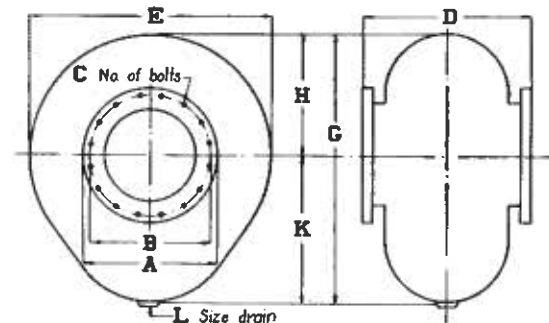


Pipe Size	Dimensions in Inches					Wgt. Lbs.	List Price Includes Water Gauge Only	Code Word
	A	B	C	D S't'd	Drain			
2	5	10	9	S. E.	1/2	60	\$28.00	Exert
2 1/2	6	12	11	7	3/4	125	36.00	Erupt
3	6 1/2	13	12 1/4	7 1/2	3/4	155	43.00	Essay
3 1/2	7 1/2	15	13 3/8	8 1/2	3/4	170	51.00	Entry
4	9	17	14 3/4	9	3/4	230	66.00	Ephod
4 1/2	10	20	16 1/4	9 1/4	3/4	310	78.00	Epoch
5	11	23	19	10	1	470	108.00	Erase
6	12	26	21	11	1	565	132.00	Estop
7	13 3/4	29	22 3/4	12 1/2	1 1/4	715	168.00	Ether
8	16	32	24	13 1/2	1 1/4	880	221.00	Evict

Regularly furnished with flanges drilled to A. S. M. E. Standard Schedule for working pressures up to 125 lbs. per square inch. Can also be furnished for Extra Heavy Schedule at same price, see page 13.

Companion flanges, also drain valve and nipple, can be furnished at extra cost. For prices and flange drilling see page 40. Carried in stock.

TYPE "S"



Pipe Size	Dimensions in Inches										Wgt. Lbs.	List Price	Code Word
	A S't'd	B	C	D	E	G	H	K	L				
1 1/2	Scrd.	.....	.....	9 7/8	12	15 1/2	6 3/8	9 3/8	3/4	60	\$ 24.00	Saxon
2	Scrd.	.....	.....	10	12 1/8	15 1/2	6 3/8	9 1/8	3/4	70	27.00	Saury
2 1/2	7	5 1/2	4 - 5/8	10 1/4	14 1/2	17 7/8	7 1/8	10 1/8	1	150	42.00	Skiny	
3	7 1/2	6	4 - 5/8	10 1/2	15	18	7 1/2	10 1/2	1	165	48.00	Satin	
3 1/2	8 1/2	7	4 - 5/8	11	17	20	8 1/2	11 1/2	1	190	54.00	Sandy	
4	9	7 1/2	8 - 5/8	12	19	23	9 1/2	13 1/2	1	235	72.00	Saint	
4 1/2	9 1/4	7 3/4	8 - 3/4	13	21	25	10 1/2	14 1/2	1 1/4	290	80.00	Scare	
5	10	8 1/2	8 - 3/4	15	23	27	11 1/2	15 1/2	1 1/4	370	100.00	Scene	
6	11	9 1/2	8 - 3/4	17	25	30	12 1/2	17 1/2	1 1/2	475	122.00	Scope	
7	12 1/2	10 3/4	8 - 3/4	17 1/2	27	33	13 1/2	19 1/2	1 1/2	580	156.00	Screw	
8	13 1/2	11 3/4	8 - 3/4	18	29	36	14 1/2	21 1/2	1 1/2	670	170.00	Scrap	

Water gauges furnished on all sizes except 1 1/2" and 2."

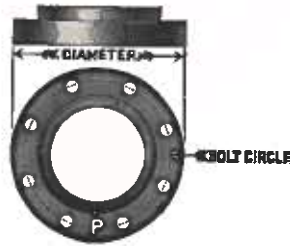
Price includes water gauge only.

Companion flanges, drain valve and nipple, can be furnished at extra cost. For prices and flange drilling see page 40.

Carried in stock.

STANDARD COMPANION FLANGES

A. S. M. E. Standard Drilling Schedule, Effective January 1, 1914
For 125 Lbs. Working Pressure



Size Inches	Diam. of Flanges Inches	Thick-ness of Flanges Inches	Bolt Circle Inches	Number of Bolts	Size of Bolts Inches	Length of Bolts Inches	List Price *
1	4	7/16	3	4	7/16	1 1/2	.....
1 1/4	4 1/2	1/2	3 3/8	4	7/16	1 1/2	.....
1 1/2	5	5/8	3 7/8	4	7/16	1 3/4	.....
2	6	3/4	4 3/4	4	5/8	2	.....
2 1/2	7	1 1/8	5 1/2	4	5/8	2 1/4	\$3.20
3	7 1/2	3/4	6	4	5/8	2 1/4	3.70
3 1/2	8 1/2	1 1/8	7	4	5/8	2 1/2	4.40
4	9	1 1/4	7 1/2	8	5/8	2 3/4	5.70
4 1/2	9 1/4	1 1/4	7 3/4	8	3/4	2 3/4	6.30
5	10	1 1/2	8 1/2	8	3/4	2 3/4	6.70
6	11	1	9 1/2	8	3/4	3	7.80
7	12 1/2	1 1/8	10 3/4	8	3/4	3	9.80
8	13 1/2	1 1/8	11 3/4	8	3/4	3 1/4	11.70
9	15	1 1/8	13 1/4	12	3/4	3 1/4	14.70
10	16	1 1/8	14 1/4	12	7/8	3 1/2	17.00
12	19	1 1/4	17	12	7/8	3 1/2	22.50
14	21	1 3/8	18 3/4	12	1	4	30.50
15	22 1/4	1 3/8	20	16	1	4	
16	23 1/2	1 7/8	21 1/4	16	1	4	
18	25	1 3/4	22 3/4	16	1 1/8	4 1/2	
20	27 1/2	1 1/2	25	20	1 1/8	4 3/4	
22	29 1/2	1 1/2	27 1/4	20	1 1/4	5	
24	32	1 7/8	29 1/2	20	1 1/4	5 1/4	
26	34 1/4	2	31 3/4	24	1 1/4	5 1/2	
28	36 1/2	2 1/8	34	28	1 1/4	5 1/2	
30	38 3/4	2 1/8	36	28	1 3/8	5 3/4	
32	41 3/4	2 1/4	38 1/2	28	1 1/2	6 1/4	
34	43 3/4	2 3/8	40 1/2	32	1 1/2	6 1/2	
36	46	2 3/8	42 3/4	32	1 1/2	6 1/2	
38	48 3/4	2 3/8	45 1/4	32	1 5/8	6 3/4	
40	50 3/4	2 1/2	47 1/4	36	1 5/8	7	

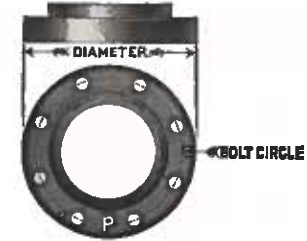
For list price of Standard Reducing Companion Flanges add 35% to list in preceding column.

Prices on Application

*Price includes two companion flanges, bolts and nuts.
Bolt holes are drilled 1/8 inch larger than nominal diameter of bolts.
Use code word "Rodeo" if companion flanges are wanted with Separator.
Drain valve and nipple on next page.

EXTRA HEAVY COMPANION FLANGES

A. S. M. E. Extra Heavy Drilling Schedule, Effective January 1, 1914
For Working Pressure Up to 250 Lbs.



Size Inches	Diam. of Flanges Inches	Thick-ness of Flanges Inches	Bolt Circle Inches	Number of Bolts	Size of Bolts Inches	Length of Bolts Inches	List Price *
1	4 1/2	1 1/8	3 1/4	4	1/2	2	.....
1 1/4	5	3/4	3 3/4	4	1/2	2 1/4	.....
1 1/2	6	1 1/8	4 1/2	4	5/8	2 1/2	.....
2	6 1/2	1 1/8	5	4	5/8	2 1/2	\$4.50
2 1/2	7 1/2	1	5 7/8	4	3/4	3	5.10
3	8 1/4	1 1/8	6 5/8	8	3/4	3 1/4	6.60
3 1/2	9	1 1/8	7 1/4	8	3/4	3 1/4	8.00
4	10	1 1/4	7 7/8	8	3/4	3 1/2	9.40
4 1/2	10 1/2	1 1/4	8 1/2	8	3/4	3 1/2	9.80
5	11	1 3/8	9 1/4	8	3/4	3 3/4	10.40
6	12 1/2	1 7/8	10 5/8	12	3/4	3 3/4	13.00
7	14	1 1/2	11 7/8	12	7/8	4	16.80
8	15	1 5/8	13	12	7/8	4 1/4	19.00
9	16 1/4	1 3/4	14	12	1	4 3/4	23.80
10	17 1/2	1 7/8	15 1/4	16	1	5	33.50
12	20 1/2	2	17 3/4	16	1 1/8	5 1/4	41.70
14	23	2 1/8	20 1/4	20	1 1/8	5 1/2	55.00
15	24 1/2	2 1/8	21 1/2	20	1 1/4	5 3/4	
16	25 1/2	2 1/4	22 1/2	20	1 1/4	6	
18	28	2 3/8	24 3/4	24	1 1/4	6 1/4	
20	30 1/2	2 1/2	27	24	1 3/8	6 1/2	
22	33	2 5/8	29 1/4	24	1 1/2	7	
24	36	2 3/4	32	24	1 5/8	7 1/2	
26	38 1/4	2 13/16	34 1/2	28	1 5/8	7 3/4	
28	40 3/4	2 1/2	37	28	1 5/8	8	
30	43	3	39 1/4	28	1 3/4	8 1/4	
32	45 1/4	3 1/8	41 1/2	28	1 7/8	8 1/2	
34	47 1/2	3 1/4	43 1/2	28	1 7/8	9	
36	50	3 3/8	46	32	1 7/8	9 1/4	
38	52 1/4	3 7/8	48	32	1 7/8	9 1/4	
40	54 1/2	3 7/8	50 1/4	36	1 7/8	9 1/2	

Prices on Application

For list price of Extra Heavy Reducing Companion Flanges add 40% to list in preceding column.

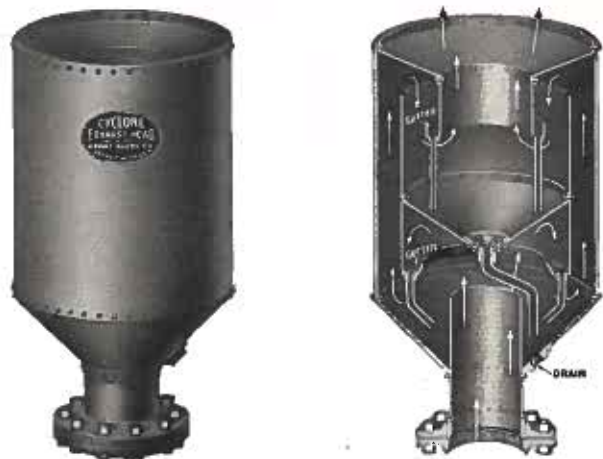
Drain Valve and Nipple for Separators

Size Inches	List Price	Size Inches	List Price
1/2	\$ 1.60	1 1/2	5.00
3/4	2.00	2	7.20
1	2.80	2 1/2	13.40
1 1/4	3.70		

*See foot notes on page 40.

Wright-Austin Exhaust Heads

"CYCLONE" EXHAUST HEAD



Made of Heavy Galvanized Steel, with Copper Drip Pipes Inside

Two kinds of "Cyclone" Exhaust Heads are made—Heavy Duty and Standard. Both are of the same design and differ only in dimensions and price.

The Heavy Duty is recommended where a large volume of steam is exhausted. For medium or light service the Standard is suitable.

Both are constructed of first-grade steel heavily galvanized, and provided with copper drip pipes inside that will never rust.

The steam, after being deflected by the cone, again turns, passing up between the outer and inner shells (follow the course of the arrows shown in the sectional view), and is impinging a second time against another inverted cone which forms the top. Here again provision is made to catch the condensation in a trough or gutter around the outlet pipe, and in copper drip pipes which drain it below the steam current.

In no other Exhaust Head will be found a combination of four complete reversals of the steam, double drain gutters with copper drip pipes and especially large areas and outlet, (see dimensions) slowing down the steam velocity so that it leaves this head more like the smoke from a chimney—without back pressure, absolutely noiseless and free from moisture.

Too much emphasis cannot be placed on the highly efficient and lasting qualities of the "Cyclone" Exhaust Head. It is without an equal among Exhaust Heads and will invariably outlive the plant it serves. Both Heavy Duty and Standard are fully guaranteed.

Wright-Austin Heavy Duty "Cyclone" Exhaust Head

Size of Exhaust Pipe Inches	Diam. of Outlet Inches	Outside Diam. Inches	Height Inches	Size of Drip Inches	Weight Pounds	List Price	Code Word
1	4	10	18½	½	30	\$32.00	Pagan
1½	4	10	18½	½	30	32.00	Paint
2	5	12	21	¾	35	37.00	Panel
2½	5	12	21	¾	35	37.00	Paper
3	6½	14	23¾	1	60	46.00	Party
3½	6½	14	23¾	1	60	46.00	Paste
4	8	16	26¾	1	72	54.00	Patch
4½	8	16	26¾	1	72	54.00	Peach
5	8½	18	30½	1¼	98	70.00	Pecan
6	11	21	37	1¼	130	80.00	Pedal
7	13	24	41½	1¼	178	112.00	Pence
8	15	27	44½	1½	208	140.00	Peony
9	15¾	30	46¾	1½	250	165.00	Piano
10	18⅝	33	52	1½	319	205.00	Piece
12	20	37	57½	2	425	270.00	Piper
14	22	42	60½	2½	550	375.00	Pitch
16	26½	46	72	2½	700	520.00	Plate
18	29	54	83	3	925	625.00	Plead
20	32	63	91	3	1120	720.00	Plush

Sizes up to 2½ inches are furnished with standard thread nipples. Sizes 3 inches to 12 inches are made with flange unions. Standard flange connection can be furnished when specified. Sizes 14 inches and larger are regularly provided with a standard flange. In sizes over 20 inches the flange on the exhaust head is made to conform in diameter and drilling with the flange on the exhaust pipe.

For standard flange schedule see page 40.

Made in regular sizes up to 40 inches. Prices and details upon request.

Wright-Austin Standard "Cyclone" Exhaust Head

Size of Exhaust Pipe Inches	Diam. of Outlet Inches	Outside Diam. Inches	Height Inches	Size of Drip Inches	Weight Pounds	List Price	Code Word
2	4	10	18½	½	30	\$32.00	Point
2½	4	10	18½	½	30	32.00	Poise
3	5	10	18½	½	30	35.00	Polar
3½	5	10	18½	½	30	35.00	Poppy
4	5¾	12	21¾	¾	40	44.00	Porch
4½	5¾	12	21¾	¾	40	44.00	Poser
5	6½	14	23¾	1	65	52.00	Powan
6	8	16	27	1	80	64.00	Prank
7	8½	18	31	1¼	110	80.00	Preen
8	11	21	37½	1¼	140	88.00	Prism
9	13	24	41¾	1¼	190	110.00	Proof
10	15	27	44½	1½	225	118.00	Prune
12	15¾	30	46¾	1½	265	160.00	Pulse
14	18⅝	33	52⅞	1½	335	190.00	Punic
16	20	37	57½	2	440	254.00	Pupil
18	22	42	60½	2½	570	300.00	Purge
20	26½	46	72	2½	725	500.00	Putty

Sizes up to 3½ inches are furnished with standard thread nipples. Sizes 4 inches to 12 inches are made with flange unions. Standard flange connection can be furnished when specified. Sizes 14 inches and larger are regularly provided with a standard flange. In sizes over 20 inches the flange on the exhaust head is made to conform in diameter and drilling with the flange on the exhaust pipe.

For standard flange schedules, see page 40.

Made in regular sizes up to 40 inches. Prices and details upon request.

WRIGHT-AUSTIN CAST IRON EXHAUST HEAD



With large clearance areas and ample cooling and collecting surface, the Wright-Austin Cast Iron Exhaust Head has embodied in its design all the fundamental principles required for complete separation of oil and water from exhaust steam.

The large clearance area slows down the steam to a point where separation is possible and absolutely prevents back pressure.

Thoroughly guaranteed, and if not satisfactory in every respect, may be returned at our expense.

It is inexpensive and permanent. Costs nothing for maintenance.

Prices and Dimensions

Dimensions in Inches										
Size Exhaust Pipe	Diameter	Height	Diameter Flange	Bolt Circle	Bolts Size	Drip Pipe	Bolts No.	Weight Pounds	List Price	Code Word
1	8	8	Scrd.	.....	.....	3/4	.....	25	\$20.00	Zebra
1 1/2	8	8	"	.....	.....	3/4	.....	25	20.00	Zenis
2	9	9	"	.....	.....	1	.....	35	25.00	Zurra
2 1/2	9	9	"	.....	.....	1	.....	35	25.00	Zenth
3	11	11	"	.....	.....	1	.....	55	30.00	Ziwer
3 1/2	11	11	"	.....	.....	1	.....	55	30.00	Zabie
4	12	12	"	.....	.....	1	.....	65	40.00	Zoner
4 1/2	12	12	"	.....	.....	1	.....	65	40.00	Zuwth
5	14	14	"	.....	.....	1 1/4	.....	80	50.00	Zomba
6	16	16	11	9 1/2	3/4	1 1/4	8	120	60.00	Zutin
7	18	18	12 1/2	10 3/4	3/4	1 1/4	8	185	75.00	Zacon
8	20	20	13 1/2	11 3/4	3/4	1 1/4	8	215	90.00	Zibbe
10	23	23	16	14 1/4	7/8	2	12	320	125.00	Zloye
12	28	28	19	17	7/8	2 1/2	12	500	150.00	Zmona
14	31	31	21	18 3/4	1	2 1/2	12	700	200.00	Zrabe

Sizes up to and including 5 inches have threaded pipe connection. Larger sizes flanged, Standard Schedule. For drilling see page 40.
Carried in stock.

DRAINING STEAM AND OIL SEPARATORS

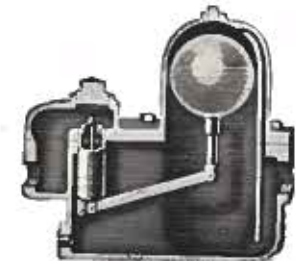
The efficiency and even the usefulness of every Separator depends upon the immediate removal of the moisture (and oil) collected, and the best practical method is by a good automatic Steam Trap. As the amount of condensation varies greatly, each Separator should be automatically drained.



The Wright-Austin "Emergency" Steam Trap is especially adapted for draining live steam separators on account of the 3-valve feature enabling it to handle enormous slugs of water instantly, or a small amount of condensation with one valve. It is absolutely reliable and closes steam tight when there is

no water coming to the trap.

For handling the oil and condensation eliminated from exhaust steam by oil Separators, the Wright-Austin "Victor" Low Pressure Oil Trap is recommended. The discharge valve in this Trap is very large and opens outward away from the seat in the same direction as the outgoing oil and water, so that it will easily handle any thick, gummy oil from the Separator that will flow through the pipe.



These Traps are described in Bulletin No. 201 which will be forwarded upon request.

Tables

TABLE I

Properties of Saturated Steam

From 29.0" Vacuum to Atmospheric Pressure

(Reprinted from "Steam Tables For Condenser Work" by courtesy of the Wheeler Condenser and Engineering Co.)

Vacuum in In. of Hg. referred to a 30" Bar. (Hg. at 58.4° F)	Absolute Pressure in In. of Hg. at 32° F	Absolute Pressure in Lb. per Sq. In.	Temperature Fahrenheit	Specific Volume Cu. Ft. per Lb.	Heat of the Liquid	Total Heat of Steam	Entropy of Water	Entropy of Steam
29.0	0.997	0.488	79.07	657.0	47.11	1094.3	0.0913	2.0358
28.5	1.495	0.732	91.70	446.2	59.70	1100.0	0.1146	2.0015
28.0	1.994	0.977	101.15	339.6	69.12	1104.1	0.1316	1.9772
27.5	2.493	1.221	108.70	275.2	76.64	1107.4	0.1449	1.9585
27.0	2.991	1.465	115.06	231.9	82.98	1110.2	0.1560	1.9434
26.5	3.490	1.710	120.55	200.2	88.46	1112.6	0.1654	1.9306
26.0	3.989	1.954	125.38	176.7	93.28	1114.7	0.1736	1.9197
25.5	4.487	2.198	129.75	158.1	97.64	1116.5	0.1812	1.9100
25.0	4.98	2.44	133.77	143.0	101.65	1118.3	0.1879	1.9013
24.0	5.98	2.93	140.64	129.0	108.51	1121.3	0.1994	1.8867
23.0	6.98	3.42	146.78	104.5	114.64	1123.9	0.2096	1.8739
22.0	7.97	3.90	152.16	92.3	120.02	1126.2	0.2185	1.8631
21.0	8.97	4.39	157.00	82.6	124.86	1128.2	0.2263	1.8535
20.0	9.97	4.88	161.42	74.8	129.28	1130.1	0.2334	1.8449
19.0	10.97	5.37	165.42	68.5	133.28	1131.8	0.2398	1.8372
18.0	11.96	5.86	169.14	63.1	137.00	1133.4	0.2457	1.8302
17.0	12.96	6.35	172.63	58.6	140.50	1134.8	0.2512	1.8238
16.0	13.96	6.84	175.93	54.6	143.80	1136.1	0.2564	1.8177
15.0	14.95	7.32	179.03	51.17	146.91	1137.4	0.2612	1.8121
14.0	15.95	7.81	181.92	49.03	149.80	1138.6	0.2658	1.8070
13.0	16.95	8.30	184.68	45.55	152.57	1139.7	0.2701	1.8021
12.0	17.95	8.79	187.31	43.18	155.21	1140.7	0.2742	1.7975
11.0	18.94	9.28	189.83	41.05	157.73	1141.7	0.2780	1.7932
10.0	19.94	9.77	192.23	39.13	160.14	1142.3	0.2817	1.7890
9.0	20.94	10.26	194.52	37.40	162.44	1143.6	0.2853	1.7852
8.0	21.94	10.75	196.73	35.79	164.68	1144.5	0.2887	1.7815
7.0	22.93	11.23	198.87	34.33	166.81	1145.4	0.2919	1.7779
6.0	23.93	11.72	200.94	33.00	168.88	1146.3	0.2951	1.7745
5.0	24.93	12.21	202.92	31.76	170.89	1147.0	0.2981	1.7712
4.0	25.92	12.70	204.85	30.62	172.81	1147.6	0.3010	1.7680
3.0	26.92	13.19	206.71	29.55	174.68	1148.4	0.3038	1.7650
2.0	27.92	13.68	208.52	28.57	176.50	1149.1	0.3065	1.7621
1.0	28.92	14.17	210.28	27.66	178.27	1149.7	0.3092	1.7593
0.0	29.92	14.67	212.00	26.79	180.00	1150.4	0.3118	1.7565

From Standard Authorities—Not Guaranteed

TABLE II

Properties of Saturated Steam

(Condensed by Kent from Marks and Davis' Steam Tables.)

Gage Pressure Pounds per Square Inch	Absolute Pressure Pounds per Square Inch	Temperature Fahrenheit	Total Heat above 32° F.		Latent Heat $L = H - h$, Heat-units	Volume Cubic Feet in 1 pound of Steam	Weight of 1 Cubic Foot Steam, Pound	Entropy of the Water	Entropy of Evaporation
			In the Water h , Heat-units	In the Steam H , Heat-units					
0.0	14.70	212.0	180.0	1150.4	970.4	26.79	0.03732	0.3118	1.4417
0.3	15	213.0	181.0	1150.7	969.7	26.27	0.03806	0.3133	1.4416
1.3	16	216.3	184.4	1152.0	967.6	24.79	0.04042	0.3183	1.4311
2.3	17	219.4	187.5	1153.1	965.6	23.38	0.04277	0.3229	1.4215
3.3	18	222.4	190.5	1154.2	963.7	22.16	0.04512	0.3273	1.4127
4.3	19	225.2	193.4	1155.2	961.8	21.07	0.04746	0.3315	1.4045
5.3	20	228.0	196.1	1156.2	960.0	20.08	0.04980	0.3355	1.3965
6.3	21	230.6	198.8	1157.1	958.3	19.18	0.05213	0.3393	1.3887
7.3	22	233.1	201.3	1158.0	956.7	18.37	0.05445	0.3430	1.3811
8.3	23	235.5	203.8	1158.8	955.1	17.62	0.05676	0.3465	1.3739
9.3	24	237.8	206.1	1159.6	953.5	16.93	0.05907	0.3499	1.3670
10.3	25	240.1	208.4	1160.4	952.0	16.30	0.0614	0.3532	1.3604
11.3	26	242.2	210.6	1161.2	950.6	15.72	0.0636	0.3564	1.3542
12.3	27	244.4	212.7	1161.9	949.2	15.18	0.0659	0.3594	1.3483
13.3	28	246.4	214.8	1162.6	947.8	14.67	0.0682	0.3623	1.3425
14.3	29	248.4	216.8	1163.2	946.4	14.19	0.0705	0.3652	1.3367
15.3	30	250.3	218.8	1163.9	945.1	13.74	0.0728	0.3680	1.3311
16.3	31	252.2	220.7	1164.5	943.8	13.32	0.0751	0.3707	1.3257
17.3	32	254.1	222.6	1165.1	942.5	12.93	0.0773	0.3733	1.3205
18.3	33	255.8	224.4	1165.7	941.3	12.57	0.0795	0.3759	1.3155
19.3	34	257.6	226.2	1166.3	940.1	12.22	0.0818	0.3784	1.3107
20.3	35	259.3	227.9	1166.8	938.9	11.89	0.0841	0.3808	1.3060
30.3	45	274.5	243.4	1171.6	928.2	9.39	0.1065	0.4021	1.2614
40.3	55	287.1	256.3	1175.4	919.0	7.78	0.1285	0.4196	1.2309
50.3	65	298.0	267.5	1178.5	911.0	6.65	0.1503	0.4344	1.2024
60.3	75	307.6	277.4	1181.1	903.7	5.81	0.1721	0.4474	1.1778
70.3	85	316.3	286.3	1183.4	897.1	5.16	0.1937	0.4590	1.1561
80.3	95	324.1	294.5	1185.4	890.9	4.65	0.2151	0.4694	1.1367
85.3	100	327.8	298.3	1186.3	888.0	4.429	0.2258	0.4743	1.1277
95.3	110	334.8	305.5	1188.0	882.5	4.047	0.2472	0.4834	1.1108
105.3	120	341.3	312.3	1189.6	877.2	3.726	0.2683	0.4919	1.0954
115.3	130	347.4	318.6	1191.0	872.3	3.452	0.2897	0.4998	1.0809
125.3	140	353.1	324.6	1192.2	867.6	3.219	0.3107	0.5075	1.0675
135.3	150	358.5	330.2	1193.4	863.2	3.012	0.3320	0.5142	1.0550
145.3	160	363.6	335.6	1194.5	858.8	2.834	0.3529	0.5208	1.0431
155.3	170	368.5	340.7	1195.4	854.7	2.675	0.3738	0.5269	1.0321
165.3	180	373.1	345.6	1196.4	850.8	2.533	0.3948	0.5328	1.0215
175.3	190	377.6	350.4	1197.3	846.9	2.406	0.4157	0.5384	1.0114
185.3	200	381.9	354.9	1198.1	843.2	2.290	0.437	0.5437	1.0019
210.3	225	301.9	365.5	1199.9	834.4	2.046	0.489	0.5562	0.9799
235.3	250	401.1	375.2	1201.5	826.3	1.850	0.541	0.5676	0.9600
260.3	275	409.6	384.3	1203.0	818.6	1.688	0.593	0.5780	0.9420
285.3	300	417.5	392.7	1204.1	811.3	1.551	0.645	0.5878	0.9251

From Standard Authorities—Not Guaranteed

TABLE III
Expansion of Cast Iron, Steel and Brass Pipe
 (Expansion from 0° F. in Inches per 100 Feet of Pipe)

Pressure in Lbs. per Sq. In.	Temperature in Degrees F.	Cast Iron Inches	Steel Inches	Brass Inches
0	212	1.59	1.75	2.55
5	227	1.70	1.87	2.75
10	239	1.79	1.97	2.90
20	259	1.99	2.19	3.17
30	271	2.11	2.32	3.40
50	298	2.29	2.52	3.73
75	318	2.48	2.73	4.03
100	338	2.67	2.94	4.32
125	353	2.80	3.08	4.60
150	365	2.89	3.12	4.80
175	378	3.00	3.30	5.00
200	389	3.08	3.33	5.20
225	397	3.20	3.50	5.35
250	406	3.30	3.65	5.45
275	414	3.38	3.75	5.60
300	422	3.47	3.87	5.73
...	450	3.89	4.08	6.18
...	475	4.20	4.41	6.68
...	500	4.45	4.67	7.06
...	525	4.75	4.99	7.55
...	550	5.05	5.30	8.03
...	575	5.36	5.63	8.52
...	600	5.70	5.98	9.06
...	625	6.05	6.35	9.62
...	650	6.40	6.71	10.18
...	675	6.78	7.12	10.78
...	700	7.15	7.50	11.37

From Standard Authorities—Not Guaranteed

CODE WORDS FOR PRESSURES

Pressure in Lbs.	Code
100.....	Plumb
125.....	Poker
150.....	Plane
175.....	Pivot
200.....	Prime
225.....	Power
250.....	Punch

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