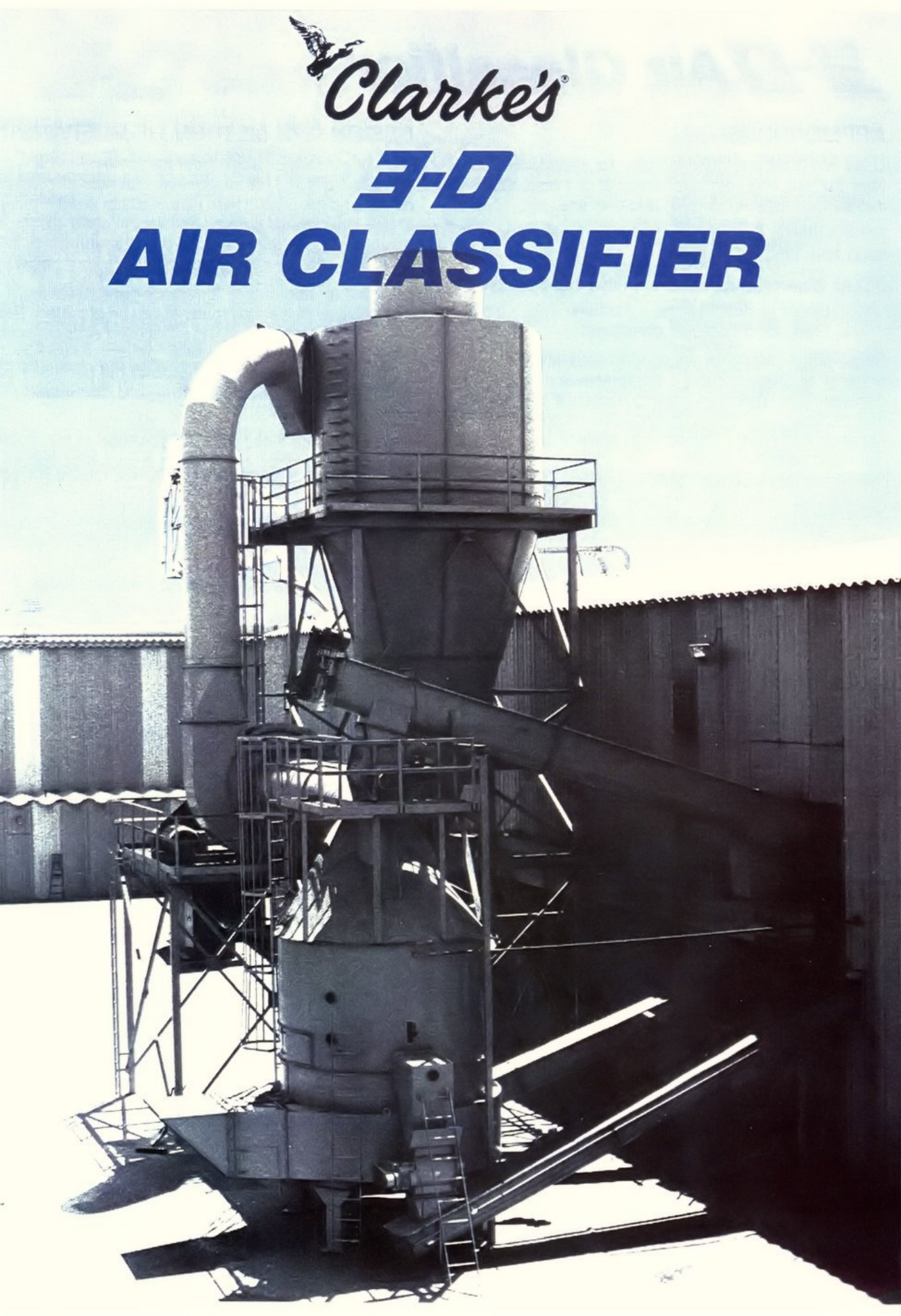
Clarke's®

3-D AIR CLASSIFIER



3-D Air Classifier

APPLICATIONS

Used in the particleboard industry for classifying wood fiber, surface and core layer material or mixed chips into surface layer, core layer and oversize.

For eliminating foreign material (sand, rock, metal or bark) from process material.

3-D Air Classifiers are supplied in four basic designs:

- Single or double-stage classifiers
- Fresh air or recycled classifiers

Single-stage classifiers are used to separate the material into two fractions – acceptable and coarse material, with respect to three dimensional configuration: thickness, shape and density. Two-stage classifiers separate into three fractions, e.g., surface layer, core layer and coarse material.

With fresh air classifiers, Type N, the air quantity required for classifying is drawn in from the immediate surrounding area of the classifier and is discharged to atmosphere.

Recycled classifiers, Type R, discharge only 5% of the classifying air to atmosphere. The remaining 95% is recycled to the air inlet of the classifier.

DESIGN AND METHOD OF OPERATION

With single-stage installations, the material to be classified falls into the suspension chamber through an airlock and the central feed pipe. Agitator arms rotating above the material support screen uniformly distribute the material over the screening area through which the air enters into the suspension chamber from below.

By using an appropriate air velocity, any desired classification of the total material can be obtained. The fraction of the material that is suitable for suspension is carried away with the vertical air current, while the heavier, coarse material is moved to the perimeter of the classifier by the agitator arms and discharged through the airlock.

Any fine particles that may be contained in the coarse material are recirculated into the suspension chamber by the bypass air entering through the coarse material flap.

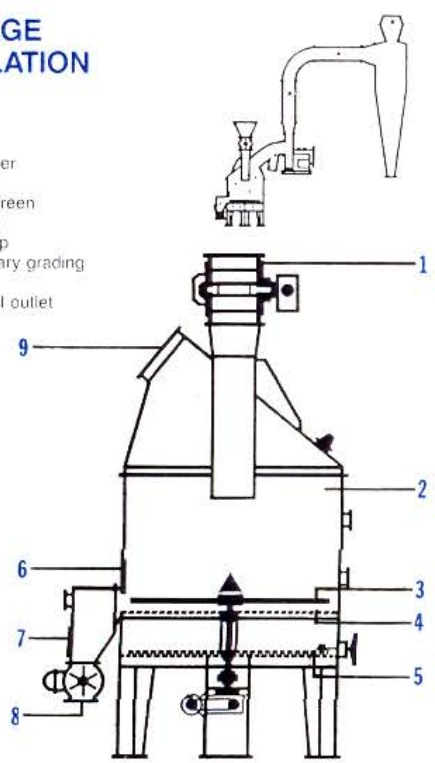
With two-stage installations, this process takes place successively, once in the upper first-stage and then in the lower second-stage. The coarse material and foreign bodies are discharged in the lower stage.

ADVANTAGES

Low space requirements and versatility in installation, low operating costs, minimum stock of spare parts required, rapid replacement of worn parts, our experience with several hundred installations around the world and our reputation for excellent service.

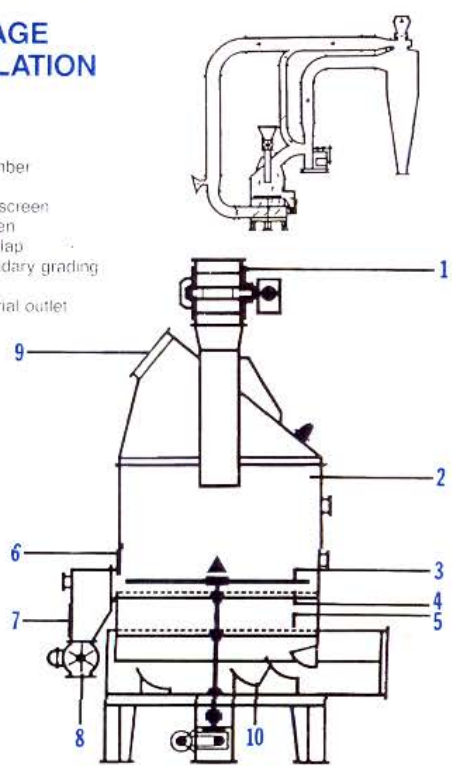
SINGLE STAGE 3-D INSTALLATION TYPE N

1. Infeed airlock
2. Suspension chamber
3. Agitator arm
4. Material support screen
5. Air diffusing screen
6. Coarse material flap
7. Bypass for secondary grading
8. Airlock
9. Acceptable material outlet



SINGLE STAGE 3-D INSTALLATION TYPE R

1. Infeed airlock
2. Suspension chamber
3. Agitator arm
4. Material support screen
5. Air diffusing screen
6. Coarse material flap
7. Bypass for secondary grading
8. Airlock
9. Acceptable material outlet
10. Turning vanes



3-D Sand Removal Feature

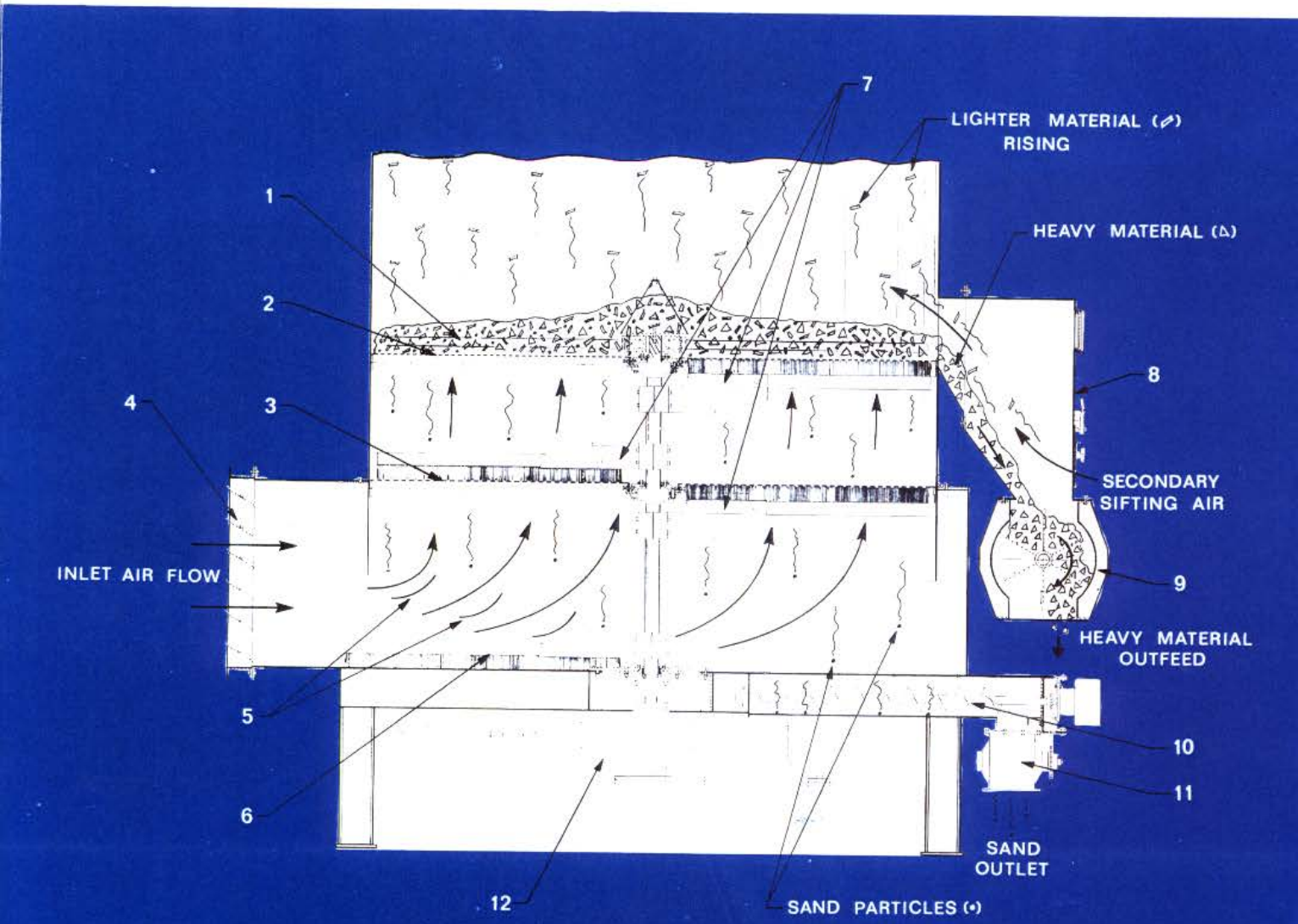
Sand particles, up to 3/32" in size, fall through the two screens to the floor of the classifier. The lower brush then moves the sand to the screw conveyor, thence to the sand outlet.

The larger size, heavy material is removed from the system through the heavy material outfeed hopper.

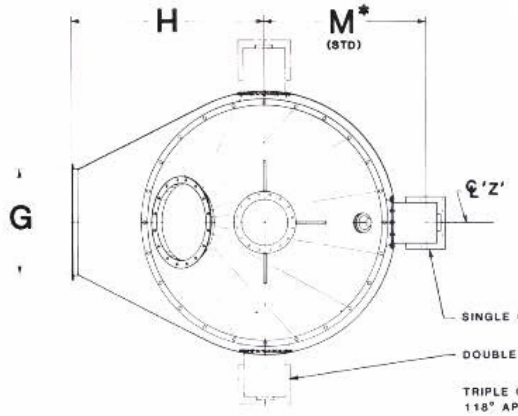
The lighter material is transported to a cyclone separator by the classifying air.

To assure consistent performance, the upper brushes turn with the agitator unit and keep the screen openings clear of dust and large particles.

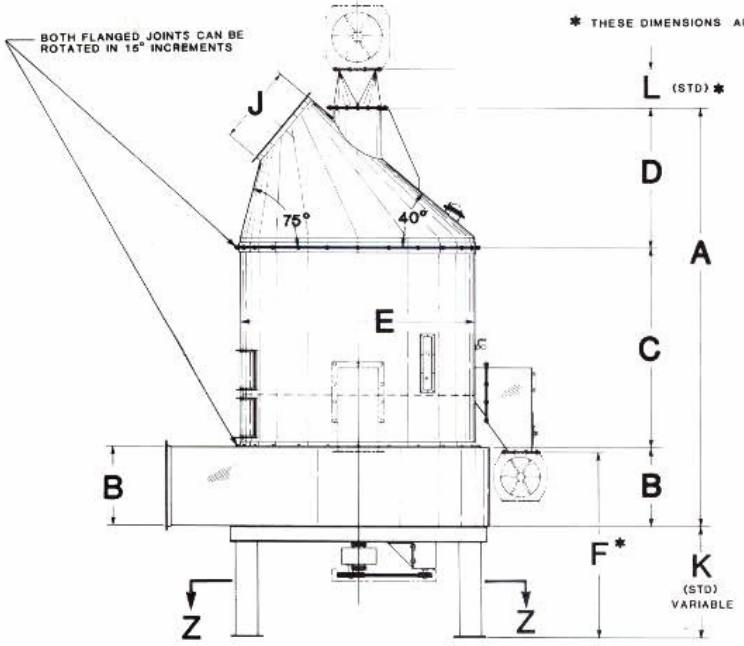
1 – AGITATOR ARM
2 – MATERIAL SUPPORT SCREEN
3 – AIR DIFFUSING SCREEN
4 – INLET AIR DAMPER
5 – TURNING VANES
6 – LOWER BRUSH
7 – SCREEN CLEANING BRUSHES
8 – HEAVY MATERIAL HOPPER
9 – AIRLOCK
10 – SAND CONVEYOR
11 – AIRLOCK
12 – CLASSIFIER DRIVE

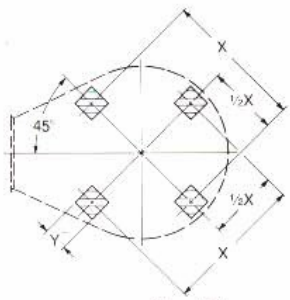


3-D



3-D AIR CLASSIFIER
DENSITY - SHAPE - THICKNESS
TM





SIZE	DIMENSIONS														SHIPPING WEIGHT, LBS
	A	B	C	D	E	F	G	H	J	K	L	M	X	Y	
3.0	12'-7"	26"	76"	49"	79"	66½"	36"	59"	24"	46"	13"	56"	75"	12" SQ.	4,068
3.5	12'-10"	28"	76"	50"	84"	68½"	38"	66"	26"	46"	14"	61"	80"	12" SQ.	4,610
4.0	13'-1½"	29½"	76"	52"	89"	69½"	40"	72¾"	30"	46"	14"	61"	86"	12" SQ.	5,016
4.5	13'-9½"	29½"	80"	56"	94"	69½"	40"	78½"	30"	46"	14"	65"	90"	12" SQ.	5,424
5.0	14'-6½"	29½"	84"	61"	99"	67½"	40"	82½"	32"	46"	15"	68"	94"	12" SQ.	5,830
5.5	15'-2"	32"	86"	64"	104"	76"	44"	86½"	32"	52"	15"	72"	100"	12" SQ.	6,507
6.0	15'-6"	32"	86"	66"	109"	73¾"	44"	90½"	34"	52"	15"	78½"	109"	12" SQ.	7,863
7.0	16'-10"	36"	94"	72"	118"	85¼"	48"	94½"	36"	60"	15"	84"	118"	12" SQ.	8,950
8.0	17'-10"	40"	98"	76"	126"	87¼"	51"	98½"	41"	60"	15"	89½"	125"	16" SQ.	10,000
10.0	19'-8"	47"	106"	83"	142"	89"	69"	110¼"	44"	60"	16"	103"	142¼"	16" SQ.	12,475

Clarke's® Sheet Metal, Inc.
660 Conger Street • P.O. Box 2428
Eugene, Oregon USA 97402-0139
541-343-3395 • FAX 541-345-1447

www.clarkes-ind.com
email: quality@clarkes-ind.com