












| | | |
|----------|--------------------------------------|----|
| I | Product at a glance | 2 |
| | ◆Product line-up | 9 |
| | Water condensation proof type | 10 |
| | Automatic control type | 12 |
| N | Ceiling diffuser | 18 |
| | For system ceiling | 22 |
| | Multi flow type | 28 |
| D | Linear type | 30 |
| | Nozzle type | 34 |
| | Universal grille | 37 |
| E | Octopus duct system | 38 |
| | Return grille | 40 |
| | Floor type | 47 |
| X | ◆New product / Special product | 49 |

Product at a glance

| | | | | | | | |
|--|--|---|--|-------|---------|--------|----------|
| Water condensation proof type | P.10 | ND-C2 | P.10 | ND-KP | P.10 | ND-E2 | |
| |  |  |  | | | | |
| | P.10 | ND-EP | P.10 | ND-KL | P.10 | ND-VTL | |
| |  |  |  | P.10 | ND-VHS | | |
| | | |  | | | | |
| P.10 | ND-MKG | P.11 | E2 · GW | P.11 | C2 · PE | P.11 | ND-E2-GW |
|  |  |  |  | | | | |

| | | | | | | | |
|---|---|--|---|-------|------|---------|------|
| Automatic control type | P.12 | ATTN | P.13 | ATNTS | P.14 | ATMKG-W | |
| |  |  |  | | | | |
| | P.14 | ATBH | P.15 | ATKL | P.16 | ATVTL | |
| |  |  |  | P.16 | ATVH | | |
| | | |  | | | | |
| P.16 | RAKK | P.16 | KSD | P.17 | ATC2 | P.17 | ATEP |
|  |  |  |  | | | | |

| | | | | | | |
|--|---|---|---|------|------|-----|
| Ceiling diffuser | P.18 | C2 | P.18 | KP | P.19 | E2 |
| |  |  |  | | | |
| | P.19 | EP | P.20 | ACS | P.20 | ACP |
| |  |  |  | P.21 | ACE2 | |
| | | |  | | | |
| P.21 | ACEP | | | | | |
|  | | | | | | |

| | | | | | | | |
|---|---|---|---|------|------|------|-------|
| For system ceiling | P.22 | STE | P.22 | STEP | P.23 | STE2 | |
| |  |  |  | | | | |
| | P.23 | STEP2 | P.24 | STEC | P.25 | STL | |
| |  |  |  | P.25 | STGL | | |
| | | |  | | | | |
| P.26 | STAL | P.26 | STL-CF | P.27 | OML | P.27 | STL-2 |
|  |  |  |  | | | | |

Product at a glance

| | | | | | | |
|-----------------|------|-----|------|-----|------|----|
| Multi flow type | P.28 | KT1 | P.29 | KPD | P.29 | KX |
| | | | | | | |

| | | | | | | |
|-------------|------|-----|------|----|------|----|
| Linear type | P.30 | VTL | P.31 | VL | P.32 | KL |
| | | | | | | |

| | | | |
|------|-----|------|------|
| P.33 | KPL | P.33 | MTKL |
| | | | |

| | | | | | | |
|-------------|------|-----|------|-------|------|-------|
| Nozzle type | P.34 | MKG | P.35 | MKG-W | P.36 | PK-CH |
| | | | | | | |

| | | | | | | |
|------------------|------|---|------|----|------|----|
| Universal grille | P.37 | H | P.37 | VH | P.37 | VS |
| | | | | | | |

| | |
|------|-----|
| P.37 | VHS |
| | |

| | | | | | | |
|---------------------|------|-------|------|-------------|------|---------------|
| Octopus duct system | P.38 | ODS-6 | P.38 | Chamber box | P.38 | Flexible duct |
| | | | | | | |

| | | | | | | |
|---------------|------|------|------|------|------|----------------------|
| Return grille | P.40 | SL-V | P.40 | SL-H | P.40 | With Inspection port |
| | | | | | | |

| | | | | | | | |
|------|-------|------|-------|------|-------|------|-------|
| P.41 | SLS-V | P.41 | SLS-H | P.42 | FRG-V | P.42 | FRS-V |
| | | | | | | | |

| | | | | | | | |
|------|--------|------|----|------|----|------|-----|
| P.43 | Filter | P.43 | PG | P.44 | DG | P.44 | NLG |
| | | | | | | | |

| | | | | | | | |
|------|----|------|----|------|-----|---------------------|-----|
| P.45 | LV | P.45 | GL | P.46 | STG | P.46 | STS |
| | | | | | | | |
| | | | | | | ※For system ceiling | |

| | | | | | | |
|------------|------|-----|------|-------|------|-----|
| Floor type | P.47 | KMR | P.47 | SKF-E | P.48 | SKF |
| | | | | | | |

Product at a glance

New product /
Special product

P.50 CD BOX



P.50 LINEAR BOX



P.52 Linear diffuser for vessel



P.53 KL-F



P.53 Curved KL



P.50 BIO Diffuser



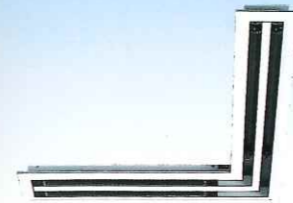
P.50 CD Support



P.50 CD Hook



P.53 L shape VTL



P.53 KKP



P.53 MKG-T



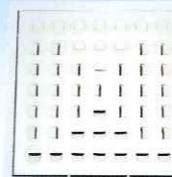
P.50 C2P



P.51 KT1-2A4B



P.51 OPUS Diffuser



P.53 MKG-SK



P.54 MKG-B



P.54 Split Tower Nozzle



P.51 STKT1-2AT



P.51 KT1-SP



P.51 STE-PT



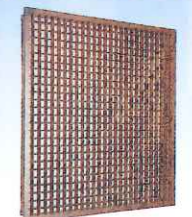
P.54 PS II



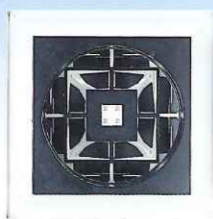
P.54 SED III



P.54 Wood-grain paint Diffuser



P.51 STE-MP



P.52 KT1 with Special BOX



P.52 KS (symmetry)



P.54 Wooden Diffuser



P.52 Implanted STE



P.52 FKD



P.52 FVL



Our factory, *Kucho Giken Kogyo Co., Ltd.* is
ISO9001 certified manufacturing factory.



Product line-up

Water condensation proof type

| | |
|--------------|----|
| ND type | 10 |
| GW · PE type | 11 |

Automatic control type

| | |
|----------------------------|----|
| ATTN type | 12 |
| ATNTS type | 13 |
| ATMKG-W type | 14 |
| ATBH type | 14 |
| ATKL type | 15 |
| ATVTL type | 16 |
| ATVH type | 16 |
| RAKK type | 16 |
| KSD type | 16 |
| ATC series product variety | 17 |

Ceiling diffuser

| | |
|-----------|----|
| C2 type | 18 |
| KP type | 18 |
| E2 type | 19 |
| EP type | 19 |
| ACS type | 20 |
| ACP type | 20 |
| ACE2 type | 21 |
| ACEP type | 21 |

For system ceiling

| | |
|-------------|----|
| STE type | 22 |
| STEP type | 22 |
| TE2 type | 23 |
| STEP2 type | 23 |
| STEC type | 24 |
| STL type | 25 |
| STGL type | 25 |
| STAL type | 26 |
| STL-CF type | 26 |
| OML type | 27 |
| STL-2 type | 27 |

Multi flow type

| | |
|---------------|----|
| KT1 type | 28 |
| KPD · KX type | 29 |

Linear type

| | |
|-----------|----|
| VTL type | 30 |
| VL type | 31 |
| KL type | 32 |
| KPL type | 33 |
| MTKL type | 33 |

Nozzle type

| | |
|------------|----|
| MKG type | 34 |
| MKG-W type | 35 |
| PK-CH type | 36 |

Universal grille

| | |
|------------------------|----|
| H · VH · VS · VHS type | 37 |
|------------------------|----|

Octopus duct system

| | |
|----------|----|
| ODS type | 38 |
|----------|----|

Return grille

| | |
|----------------|----|
| SL type | 40 |
| SLS type | 41 |
| FRG · FRS type | 42 |
| Filter | 43 |
| PG type | 43 |
| DG type | 44 |
| NLG type | 44 |
| LV type | 45 |
| GL type | 45 |
| STG type | 46 |
| STS type | 46 |

Floor type

| | |
|------------|----|
| KMR type | 47 |
| SKF-E type | 47 |
| SKF type | 48 |

※Surface is finished by melamine resin baking paint.

●Specification in this catalog may be changed subject to product improvement. Check detail with drawing for approval.

COOLTECH

Water condensation proof type
Automatic control type
Ceiling diffuser
For system ceiling
Multi flow type
Linear type
Nozzle type
Universal grille
Octopus duct system
Return grille
Floor type

NON DEW TYPE DIFFUSER [ND TYPE]

<Features>

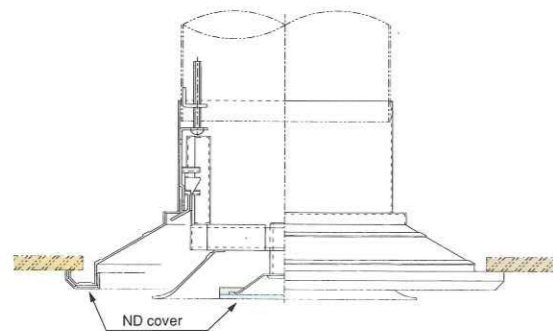
In the lobby or restaurant where the temperature difference between outside & inside the room and humidity is high, water condensation on the diffuser gets problem. Kuken solve this problem by only adopting the cover on the diffuser.

- Existing Kuken diffuser can modify to ND type just by adopting the cover on it.
(As for ceiling diffuser, inner cone / inner pan should be also exchanged.)
- No heater is applied. No need for wiring & running cost.
- Due to no water condensation, it gets no stain / smudge.
- As the cover is transparent, the design appears clear.
- The features of ND type will remain the same as the one without cover.

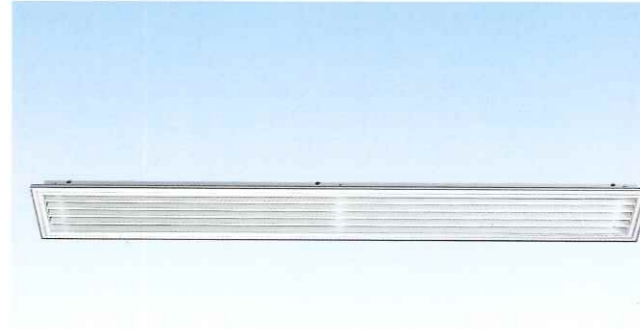
ND-E2



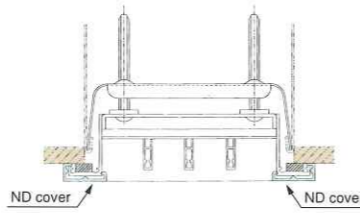
<ND-E2>



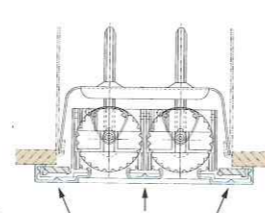
ND-KL



<ND-KL>



<ND-VTL>



ND TYPE LINE-UP

ND-C2



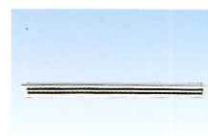
ND-KP



ND-EP



ND-VTL



ND-VH



ND-MKG



- ※ND-C2, ND-KP should be used only for horizontal air supply.
- ※Outer dimensions are increased by 5mm when ND cover is adopted.
- ※Supply temperature should be 50°C or below.
- ※Consult Kuken if any other ND type is required.

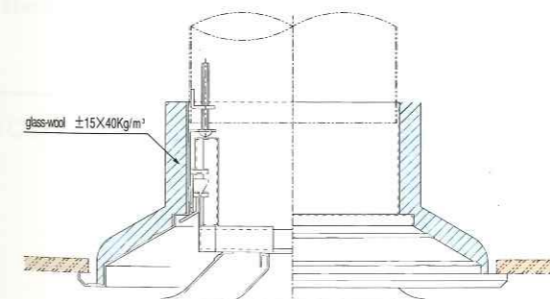
DIFFUSER WITH HEAT INSULATOR [GW TYPE / PE TYPE]

<Features>

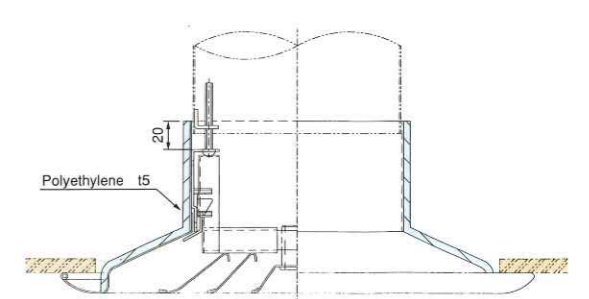
When the temperature difference between supply air & the roof space and humidity is high, heat insulator is being attached on the diffuser at the job site. Using GW / PE type can save this extra work at job site.

- As heat insulator is attached in the factory, only thing to do is to install the diffuser.
- Stable heat insulating effect.
- No worry for water condensation when ND cover is also adopted.
- 2 kinds of heat insulators can be selected subject to the budget.

GW type (Lined with glass-wool)



PE type (Lined with Polyethylene)



GW / PE TYPE LINE-UP

E2 · GW



C2 · PE



ND-E2 · GW



※Consult Kuken if any other GW / PE type is required.

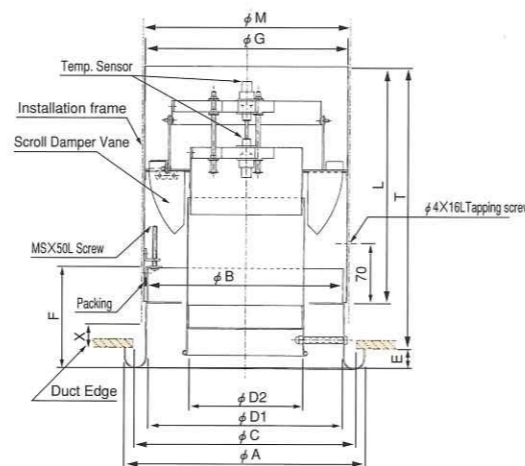
AUTOMATIC THROW ADJUSTABLE NOZZLE

["Twister nozzle" : ATTN TYPE]

<Features>

Most suitable for the room having high ceiling and large temperature difference, such as theaters and halls. Adjust the throw automatically by built-in twister damper vanes.

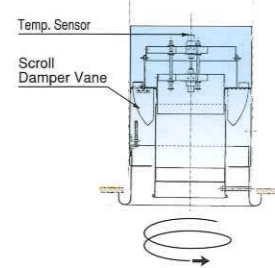
1. Built-in temperature sensor works no electric power.
 2. Shorter throw when cooling, longer throw out of inner nozzle when heating can be obtained automatically.
 3. Due to no chamber structure, the nozzle can be connected directly with the duct.
- ※ATTN with much shorter throw when cooling is also available. Consult Kuken in case.
 ※Cooling formation : 17°C or lower of diffusing air / Heating formation : 28°C or above.



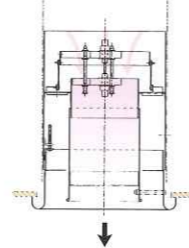
※Supply air temperature should be 50°C or below.

Air Path Diagram

IN COOLING



IN HEATING



Dimensions

| Size | ∅ A | ∅ B | ∅ C | ∅ D1 | ∅ D2 | E | F | ∅ G | L | M | T | X |
|------|-----|-----|-----|------|------|----|-----|-----|-----|-----|---------|----|
| #8 | 240 | 185 | 220 | 190 | 115 | 20 | 80 | 196 | 250 | 200 | 290~320 | 30 |
| 10 | 290 | 235 | 270 | 240 | 140 | 25 | 80 | 246 | 260 | 250 | 295~325 | 30 |
| 12 | 350 | 285 | 320 | 290 | 165 | 27 | 110 | 296 | 280 | 300 | 343~373 | 30 |
| 14 | 410 | 335 | 370 | 340 | 190 | 30 | 110 | 346 | 280 | 350 | 340~370 | 30 |
| 16 | 460 | 385 | 420 | 390 | 215 | 30 | 110 | 396 | 310 | 400 | 370~400 | 30 |
| 18 | 510 | 435 | 470 | 440 | 240 | 30 | 140 | 446 | 340 | 450 | 430~460 | 30 |
| 20 | 560 | 485 | 520 | 490 | 290 | 30 | 140 | 496 | 370 | 500 | 460~490 | 30 |

UNIT : mm

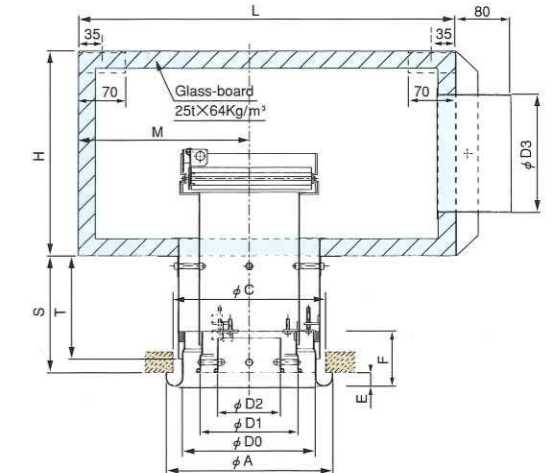
AUTOMATIC THROW ADJUSTABLE NOZZLE

[ATNTS TYPE]

<Features>

Most suitable for the room having high ceiling and large temperature difference, such as theaters and halls. Adjust the throw automatically by changing the air path.

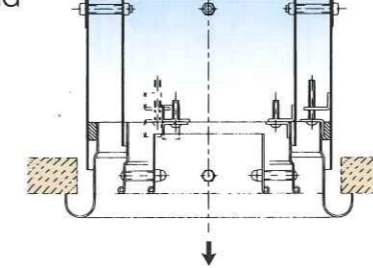
1. Built-in temperature sensor works no electric power.
 2. Same supply air velocity as MKG nozzle when cooling, faster velocity and longer throw when heating.
 3. Equipped with chamber-box made of glass-board contributing to acoustic absorption & heat insulation effect.
 4. Inside the nozzle are hardly seen due to the structure of triple nozzle.
- ※Cooling formation : 17°C or lower of diffusing air / Heating formation : 28°C or above.



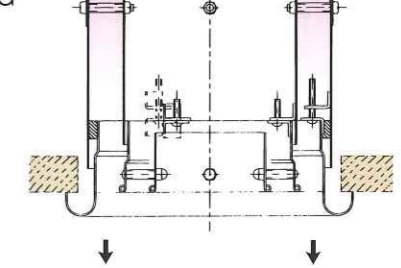
※The diffusing temperature should be 50°C or below.

Air Path Diagram

IN COOLING



IN HEATING



Dimensions

| Size | ∅ D 0 | ∅ D 1 | ∅ D 2 | ∅ D 3 | ∅ A | ∅ C | W | H | L | M | S | T | F | E |
|------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| # 8 | 190 | 140 | 90 | 173 | 240 | 220 | 450 | 300 | 550 | 250 | 170 | 130 | 80 | 20 |
| 10 | 240 | 190 | 115 | 198 | 290 | 270 | 500 | 300 | 550 | 250 | 200 | 150 | 80 | 25 |
| 12 | 290 | 240 | 140 | 248 | 350 | 320 | 550 | 350 | 550 | 250 | 210 | 180 | 110 | 27 |
| 14 | 340 | 240 | 140 | 298 | 410 | 370 | 600 | 400 | 600 | 300 | 230 | 180 | 110 | 30 |
| 16 | 390 | 290 | 190 | 348 | 460 | 420 | 650 | 450 | 600 | 300 | 250 | 195 | 110 | 30 |
| 18 | 440 | 340 | 215 | 348 | 510 | 470 | 700 | 450 | 650 | 325 | 250 | 195 | 140 | 30 |
| 20 | 490 | 390 | 240 | 398 | 560 | 520 | 750 | 500 | 700 | 350 | 300 | 230 | 140 | 30 |

UNIT : mm

AUTOMATIC AIR SUPPLY DIRECTION CHANGEABLE NOZZLE [ATMKG-W TYPE]

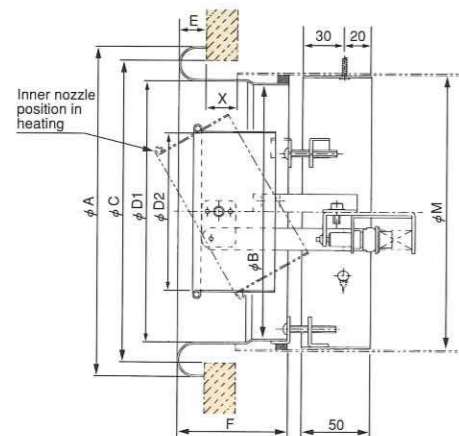
<Features>

Round type nozzle suitable for side walls, changeable air supply direction automatically.

1. Supply air horizontally when cooling and slant-downwards when heating to prevent unnecessary uplifting airflow.
2. Built-in temperature sensor activates inner nozzle with no electric power.

※Inner nozzle can be inclined more. Consult Kuken in case.

※Use plate shutter (PS II) for air volume control.

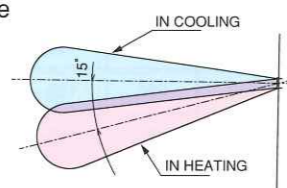


※Cooling formation : 17°C or lower of diffusing air / Heating formation : 28°C or above.

※Minimum size is #6 (φ 140). Each dimension being not indicated is subject to MKG-W type.

AIRFLOW PATTERN

ATMKG-W type



AUTOMATIC AIR SUPPLY DIRECTION CHANGEABLE NOZZLE [ATBH TYPE]

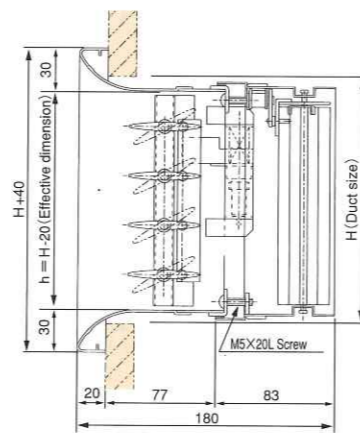
<Features>

Square type nozzle suitable for side walls, changeable air supply direction automatically.

1. Supply air horizontally when cooling and slant-downwards when heating to prevent unnecessary uplifting airflow.
2. Built-in temperature sensor activates vanes with no electric power.

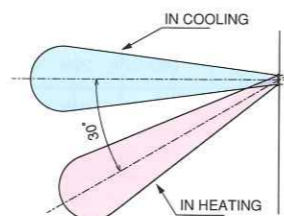
※Square nozzle type is also available. Consult Kuken in case.

※Use shutter for air volume control.



※Minimum size is 200mm for both W & H.

ATBH type



AUTOMATIC THROW CHANGEABLE LINER DIFFUSER [ATKL TYPE]

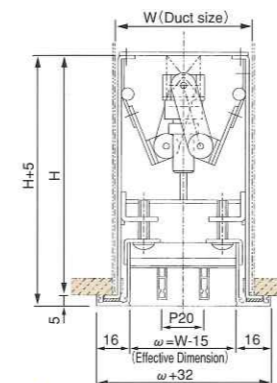
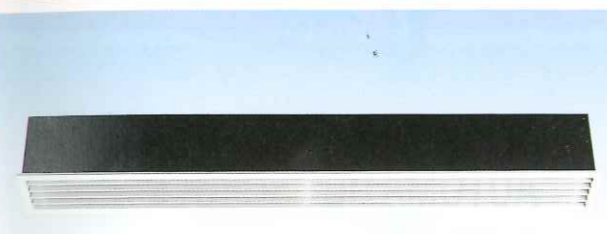
<Features>

Suitable for the lobby with high ceiling or ceiling of halls. Changes the air supply path automatically by detecting the diffusing temperature.

1. Diffuse air through whole area when cooling, and supply air out of smaller area when heating to have longer throw.
2. Built-in temperature sensor activates the area controller with no electric power.
3. The face is totally identical to KL type.

※The mechanism of air flow change actuator is different for the size from #3 to #10 and #12 to #20. Check with the drawing. Consult Kuken for the details.

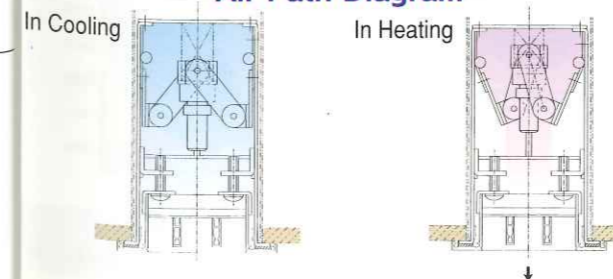
ATKL-6



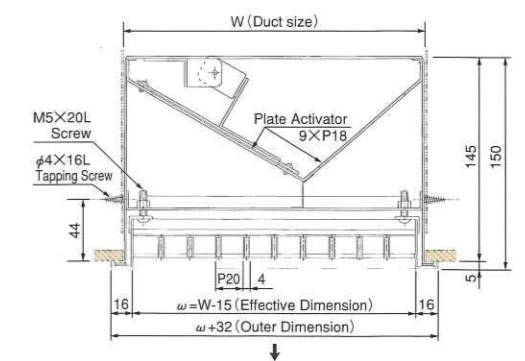
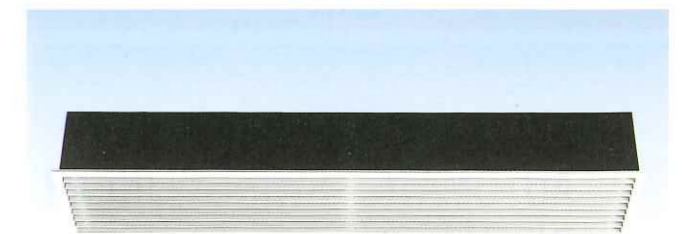
Dimensions

| Model | W | ω | No. of vane | H |
|-------|-----|-----|-------------|-----|
| 3 | 65 | 50 | 2 | 114 |
| 4 | 82 | 67 | 2 | 114 |
| 5 | 99 | 84 | 3 | 129 |
| 6 | 116 | 101 | 4 | 129 |
| 8 | 133 | 118 | 5 | 129 |
| 10 | 150 | 135 | 6 | 129 |

Air Path Diagram



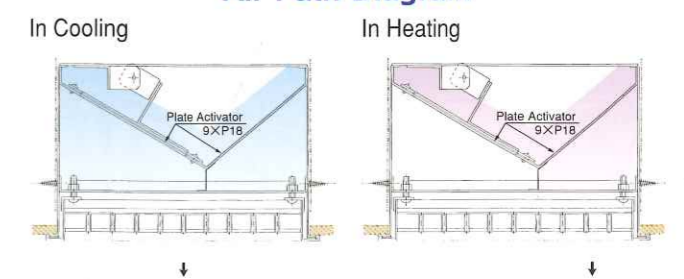
ATKL-12



Dimensions

| Model | W | ω | No. of vane |
|-------|-----|-----|-------------|
| 12 | 167 | 152 | 7 |
| 14 | 184 | 169 | 8 |
| 16 | 201 | 186 | 8 |
| 18 | 218 | 203 | 9 |
| 20 | 235 | 220 | 10 |

Air Path Diagram



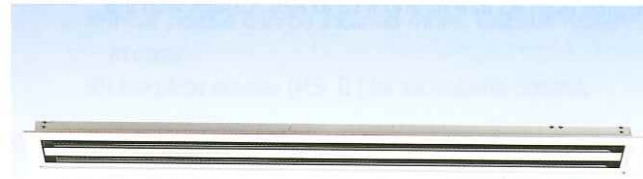
AUTOMATIC WIND DIRECTION CHANGEABLE LINEAR DIFFUSER [ATVTL TYPE]

<Features>

Sense supply air temperature and change supply air direction automatically.

1. Built-in temperature sensor works with no electric power.
2. Supply air direction changes automatically, horizontal air supply in cooling and vertical air supply in heating.

※From #1 to #4 can be manufactured.
 ※Consult Kuken for dimension details.



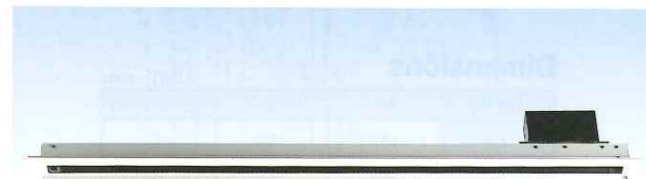
AUTOMATIC "SWING" LINEAR DIFFUSER [RAKK TYPE]

<Features>

Realizes comfortability and energy saving based on the concept of " Air current stimulant air-conditioning" .

1. Cyclic airflow direction change (Horizontal→Slant→Vertical→Slant→Horizontal) can be obtained.
2. Most suitable for entrance hall, shopping center and platform in subway.

※Equipped with synchronous motor (AC24V or AC100V)



AUTOMATIC WIND DIRECTION CHANGEABLE GRILLE [ATVH TYPE]

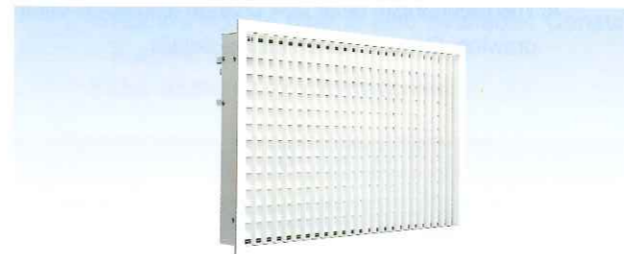
Patent Pending/
Utility model right reserved

<Features>

Change supply air direction automatically Suitable for side wall at lobbies.

1. Supply air horizontally when cooling and slant-downwards when heating to prevent unnecessary uplifting airflow.
2. Built-in temperature sensor activates vanes with no electric power.

※Minimum size is 200mm for both W & H.



AUTOMATIC "SCROLL" DIFFUSER [KSD TYPE]

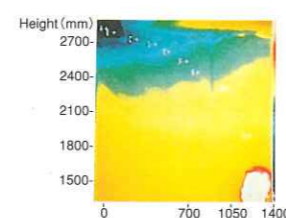
Patent Pending

<Features>

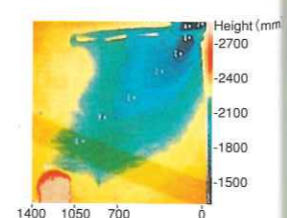
New concept diffuser that scroll flow to residents stimulates their sensible temperature.

1. Comfortable flow similar to natural wind can be gained since intermittent flow is sensed .
2. As sensible temperature is lower, room temperature can be adjusted in rather high which contributes to energy saving.

※Equipped with synchronous motor (AC24V or AC100V)



Conventional
(Horizontal air supply)



KSD
(Scrolled air supply)

AUTOMATIC DIRECTION CHANGEABLE CEILING DIFFUSER [ATC SERIES]

<Features>

Suitable supply air pattern can be gained automatically by built-in sensor detecting the supply air temperature.

1. Built-in temperature sensor works with no electric power.
2. Supply air pattern will be changed automatically, horizontal in cooling and vertical in heating.
3. Totally same dimensions with standard ceiling diffusers.

※Adopting SED air damper or SED III is recommended for equal air supply.

※Mount inner cone firmly.

※Cooling formation : 17°C or below of diffusing air / Heating formation : 28°C or above.

ATC2



Horizontal air supply in cooling

ATEP



Vertical air supply in heating

ATC series product variety

ATKP



ATACS



ATE2



ATACEP



※Consult Kuken if any other ATC series is required.

MULTI-LAYERED CONE TYPE ROUND DIFFUSER [C2 TYPE]

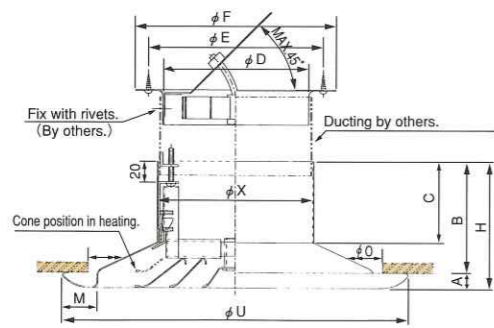
<Features>

Most popular multi-layered cone type round diffuser for air-conditioning and ventilation .

1. High induction efficiency of this model contributes to great temperature difference between supply air and room air.
2. Chance to have draft is minimized because supply velocity is slower compared with neck velocity.
3. Just by changing the position of inner cone, desirable air flow patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner cone firmly. Check it by pulling inner cone down slightly.



Dimensions

| Size | ϕ U | ϕ D | ϕ X | ϕ O | H | A | B | C | M | ϕ E | ϕ F |
|--------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|
| # 12.5 | 290 | 119 | 127 | 240 | 115 | 15 | 100 | 80 | 35 | 154 | 172 |
| 15 | 340 | 144 | 152 | 290 | 125 | 15 | 110 | 80 | 35 | 179 | 197 |
| 20 | 440 | 194 | 202 | 380 | 135 | 20 | 115 | 80 | 40 | 229 | 247 |
| 25 | 520 | 244 | 252 | 460 | 145 | 20 | 125 | 80 | 40 | 279 | 297 |
| 30 | 610 | 294 | 302 | 550 | 155 | 25 | 130 | 80 | 45 | 329 | 347 |
| 35 | 710 | 344 | 352 | 630 | 165 | 25 | 140 | 80 | 50 | 379 | 397 |
| 37.5 | 780 | 369 | 378 | 700 | 175 | 30 | 145 | 80 | 50 | 402 | 422 |
| 40 | 900 | 394 | 403 | 840 | 180 | 25 | 155 | 80 | 55 | 433 | 450 |
| 45 | 980 | 444 | 453 | 910 | 185 | 25 | 160 | 80 | 55 | 483 | 500 |

※Maximum size for KP : #37.5

PAN TYPE ROUND DIFFUSER [KP TYPE]

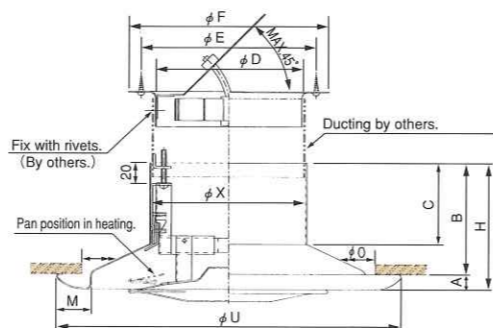
<Features>

Most popular pan type round diffuser for air-conditioning and ventilation .

1. Due to low volume air is induced, supply air throw can be longer than C2 type.
2. As the throw is longer than C2 type, KP can be installed on higher ceilings.
3. Just by changing the position of inner pan, desirable supply air patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner cone firmly. Check it by pulling inner cone down slightly.



MULTI-LAYERED CONE TYPE SQUARE DIFFUSER [E2 TYPE]

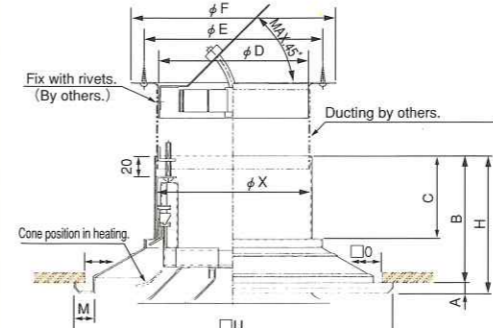
<Features>

Most popular multi-layered cone type square diffuser for air-conditioning and ventilation .

1. High induction efficiency of this model contributes to great temperature difference between supply air and room air.
2. Having draft is minimized because supply air velocity is slower compared with neck velocity.
3. Just by changing the position of inner cone, desirable air flow patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner cone firmly. Check it by pulling inner cone down slightly.



Dimensions

| Size | □ U | ϕ D | ϕ X | □ O | H | A | B | C | M | ϕ E | ϕ F |
|--------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|
| # 12.5 | 285 | 119 | 127 | 265 | 134 | 10 | 124 | 82 | 20 | 154 | 172 |
| 15 | 310 | 144 | 152 | 290 | 134 | 10 | 124 | 82 | 20 | 179 | 197 |
| 20 | 360 | 194 | 202 | 340 | 134 | 10 | 124 | 82 | 20 | 229 | 247 |
| 25 | 410 | 244 | 252 | 390 | 134 | 10 | 124 | 82 | 20 | 279 | 297 |
| 30 | 460 | 294 | 302 | 440 | 134 | 10 | 124 | 82 | 20 | 329 | 347 |
| 35 | 510 | 344 | 352 | 490 | 134 | 10 | 124 | 82 | 20 | 379 | 397 |

PAN TYPE SQUARE DIFFUSER [EP TYPE]

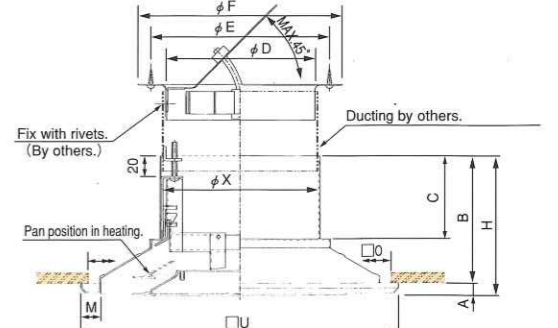
<Features>

Most popular pan type square diffuser for air-conditioning and ventilation .

1. Due to low volume air is induced, supply air throw can be longer than E2 type.
2. As the throw is longer than E2 type, EP can be installed on higher ceilings.
3. Just by changing the position of inner pan, desirable supply air patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner pan firmly. Check it by pulling inner pan down slightly.



ANTI COANDA TYPE (CEILING CONTAMINATION PROOF) CEILING DIFFUSER<ROUND TYPE> [ACS TYPE]

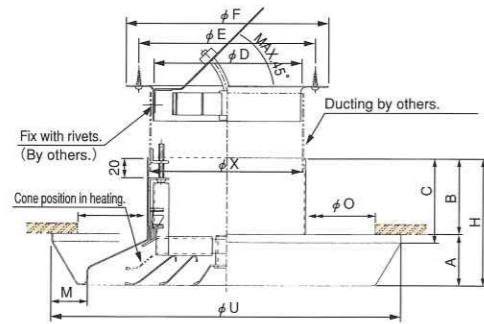
<Features>

Multi-layered cone type round diffuser for air-conditioning and ventilation.

1. High induction efficiency of this model contributes to great temperature difference between supply air and room air.
2. Having draft is minimized because supply air velocity is slower compared with neck velocity.
3. Just by changing the position of inner cone, desirable air flow patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner cone firmly. Check it by pulling inner cone down slightly.



Dimensions

| Size | φ U | φ D | φ X | φ O | H | A | B | C | M | φ E | φ F |
|--------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|
| # 12.5 | 290 | 119 | 127 | 240 | 115 | 50 | 65 | 80 | 35 | 154 | 172 |
| 15 | 340 | 144 | 152 | 290 | 125 | 50 | 75 | 80 | 35 | 179 | 197 |
| 20 | 440 | 194 | 202 | 380 | 135 | 50 | 85 | 80 | 40 | 229 | 247 |
| 25 | 520 | 244 | 252 | 460 | 145 | 50 | 95 | 80 | 40 | 279 | 297 |
| 30 | 610 | 294 | 302 | 550 | 155 | 50 | 105 | 80 | 45 | 329 | 347 |
| 35 | 710 | 344 | 352 | 630 | 165 | 50 | 115 | 80 | 50 | 379 | 397 |
| 37.5 | 780 | 369 | 378 | 700 | 175 | 50 | 125 | 80 | 50 | 402 | 422 |

unit : mm

ANTI COANDA TYPE (CEILING CONTAMINATION PROOF) CEILING DIFFUSER<SQUARE TYPE> [ACE2 TYPE]

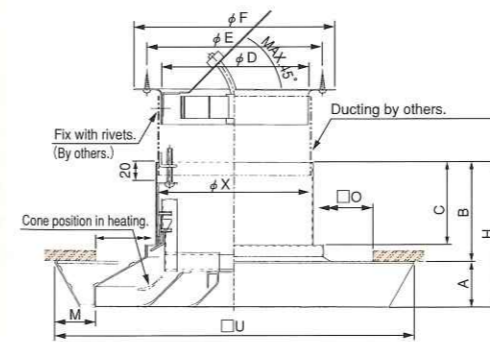
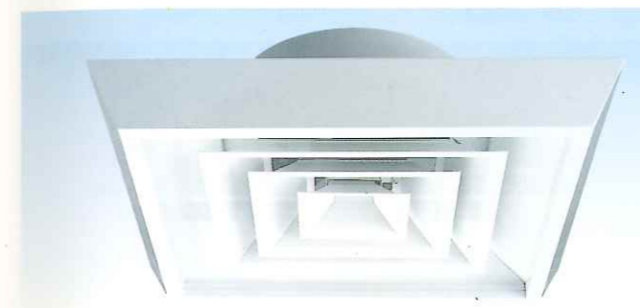
<Features>

Multi-layered cone type square diffuser for air-conditioning and ventilation.

1. As the inner cone is common for E2 type, features are also same as E2 type.
2. Having draft is minimized because supply air velocity is slower compared with neck velocity.
3. Just by changing the position of inner cone, desirable air supply patterns for cooling and heating are ensured.

※Adopting SED air damper for equal air supply and adopting SED III or plate shutter (PS II) for air volume control is recommended.

※Mount inner cone firmly. Check it by pulling inner cone down slightly.



Dimensions

| Size | □ U | φ D | φ X | □ O | H | A | B | C | M | φ E | φ F |
|--------|-----|-----|-----|-----|-----|----|----|----|----|-----|-----|
| # 12.5 | 325 | 119 | 127 | 245 | 134 | 45 | 89 | 82 | 40 | 154 | 172 |
| 15 | 350 | 144 | 152 | 270 | 134 | 45 | 89 | 82 | 40 | 179 | 197 |
| 20 | 400 | 194 | 202 | 320 | 134 | 45 | 89 | 82 | 40 | 229 | 247 |
| 25 | 450 | 244 | 252 | 370 | 134 | 45 | 89 | 82 | 40 | 279 | 297 |
| 30 | 500 | 294 | 302 | 420 | 134 | 45 | 89 | 82 | 40 | 329 | 347 |
| 35 | 550 | 344 | 352 | 470 | 134 | 45 | 89 | 82 | 40 | 379 | 397 |

unit : mm

DIFFUSER FOR SYSTEM CEILING (T-BAR DIFFUSER)

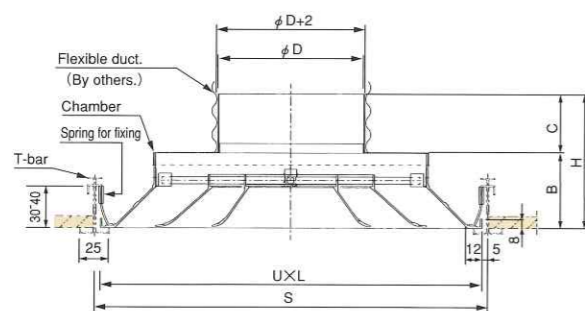
[STE TYPE]

Utility model right reserved

<Features>

Multi-layered cone type square diffuser for air-conditioning and ventilation.

1. Suitable for T-bar, system ceiling.
2. Having draft is minimized because air flow pattern is only horizontal.
3. 4 kinds of neck diameter is available according to air volume.
 - ※Adopting SEDⅢ or plate shutter (PSⅡ) for air volume control is recommended.
 - ※Mount outer cone & inner cone firmly. Using drop-proof wire (as an option) is recommended.
 - ※STE suitable with lighting equipment are also available. Consult Kuken for details.



Dimensions

| U | L | φ D | B | C | H | S |
|-----|-----|-----|----|----|-----|-----|
| 320 | 320 | 123 | 63 | 50 | 113 | 330 |
| 320 | 320 | 148 | 63 | 50 | 113 | 330 |
| 320 | 320 | 173 | 63 | 50 | 113 | 330 |
| 320 | 320 | 198 | 63 | 50 | 113 | 330 |

Unit : mm

Dimensions

| U | L | φ D | B | C | H | S |
|-----|-----|-----|----|----|-----|-----|
| 320 | 480 | 123 | 63 | 50 | 113 | 330 |
| 320 | 480 | 148 | 63 | 50 | 113 | 330 |
| 320 | 480 | 173 | 63 | 50 | 113 | 330 |
| 320 | 480 | 198 | 63 | 50 | 113 | 330 |

Unit : mm

※Reconfirm the dimensions when shutter is attached. Dimension C & H will be changed.

DIFFUSER FOR SYSTEM CEILING(T-BAR DIFFUSER)

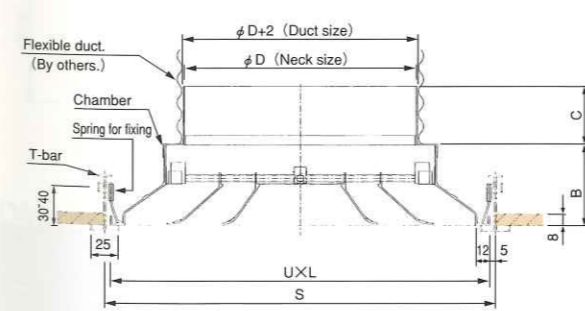
[STE2 TYPE]

Utility model right reserved

<Features>

T-bar diffuser having also vertical air flow pattern by pulling inner cone down.

1. Even in case the temperature difference between supply air and room air is large, good heating effect can be gained by vertical air flow.
2. Easy to change the inner cone position.
3. 2 kinds of neck diameter are available according to air volume.
 - ※Adopting SEDⅢ or plate shutter (PSⅡ) for air volume control is recommended.
 - ※Mount outer cone and inner cone firmly. Using drop-proof wire (as an option) is recommended.



Dimensions

| U | L | φ D | B | C | H | S |
|-----|-----|-----|----|----|-----|-----|
| 320 | 320 | 173 | 68 | 50 | 118 | 330 |
| 320 | 320 | 198 | 68 | 50 | 118 | 330 |

Unit : mm

※Reconfirm the dimensions when shutter is attached. Dimension C & H will be changed.

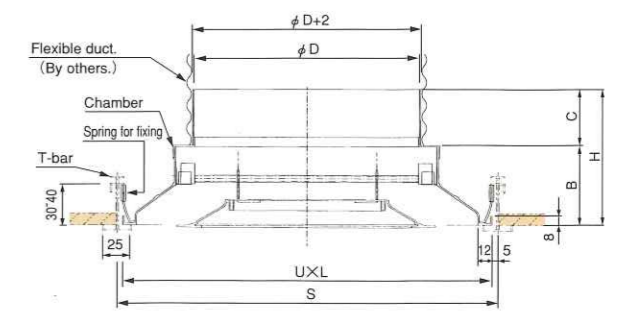
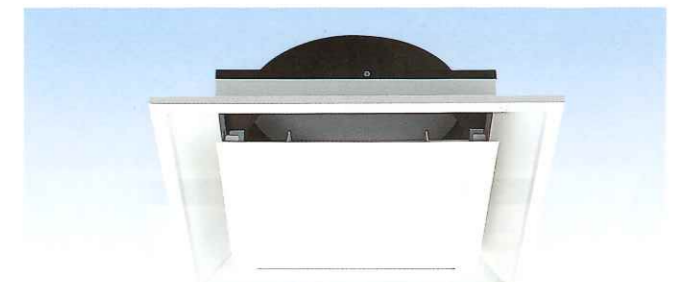
[STEP2 TYPE]

Utility model right reserved

<Features>

T-bar diffuser having also vertical airflow pattern by pulling inner pan down.

1. Even in case the temperature difference between supply air and room air is large, good heating effect can be gained by vertical air flow.
2. Easy to change the inner pan position.
3. 2 kinds of neck diameter is available according to air volume.
 - ※Adopting SEDⅢ or plate shutter (PSⅡ) for air volume control is recommended.
 - ※Mount outer cone and inner pan firmly. Using drop-proof wire (as an option) is recommended.



DIFFUSER FOR SYSTEM CEILING (T-BAR DIFFUSER)

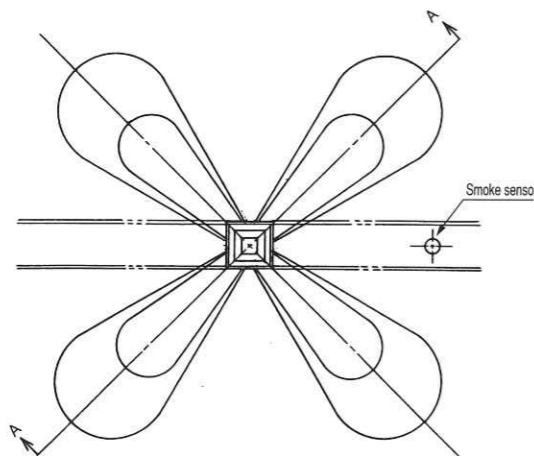
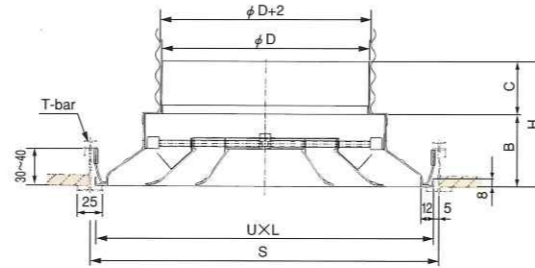
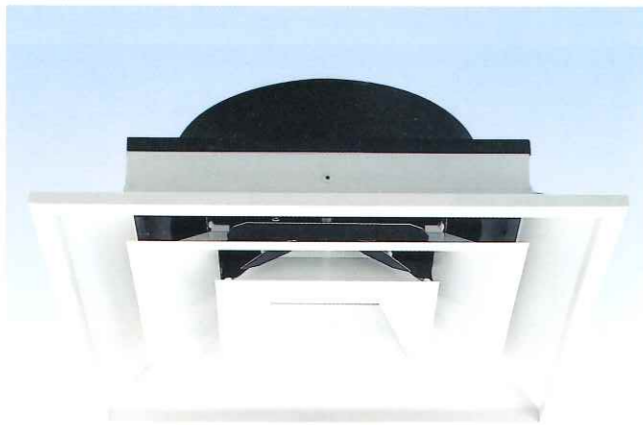
[STEC TYPE]

<Features>

For T-bar ceiling system, air diffuser and return air opening are often set together on the ceiling and this leads undesirable air short circuit. In such case, STEC can solve the problem as it supplies air slant downwards. (Refer to the sketch below.)

1. As air supply pattern is diagonal and slant-downwards, no chance for having draft and no air flow dead zone.
2. Contamination on the ceiling can be prevented due to slant-downwards air supply pattern.
3. Diffusing air will not hit the sprinkler or smoke sensor, if they are mounted on the same bar. (Refer to the sketch below.)

※Mount outer cone and inner cone firmly even though drop-proof wire is provided as standard.



For system ceiling

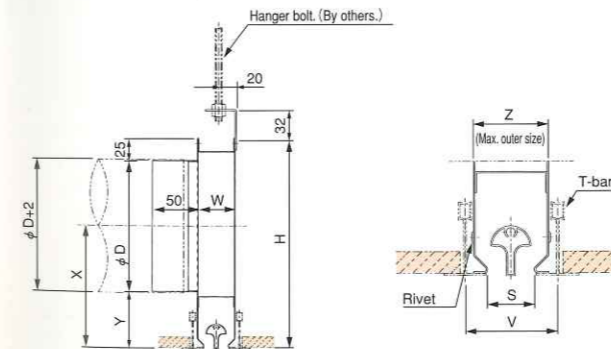
LINEAR DIFFUSER FOR SYSTEM CEILING (T-BAR LINEAR DIFFUSER)

[STL TYPE]

<Features>

Air supply direction changeable linear diffuser for narrow pitch T bar gap.

1. Air supply direction can be changed as horizontal -> slant-downwards -> vertical by moving the vane.
2. Low noise and low static pressure loss can be realized by the shape of the face.
3. Heat insulation finish by electrostatic implanting is also available.
4. Air volume controllable type, by vane is also available.



Dimensions

| Model | L | S | V | W | Z | ϕD | H | X | Y | Q | |
|--------|----|------|----|----|----|----------|-----|-----|-------|----|-----|
| STL-37 | 08 | 800 | 21 | 45 | 37 | 38.6 | 123 | 210 | 123.5 | 62 | 30° |
| | 11 | 1100 | | | | | 148 | 235 | 136 | | 25° |
| | 14 | 1400 | | | | | 173 | 260 | 148.5 | | 25° |
| STL-42 | 08 | 800 | 26 | 50 | 42 | 43.6 | 148 | 235 | 136 | 62 | 30° |
| | 11 | 1100 | | | | | 173 | 260 | 148.5 | | 25° |
| | 14 | 1400 | | | | | 198 | 285 | 161 | | 25° |

※Besides above chart, size Y=162 (H dimension + 100mm) can be produced on request for taller height requirement.

Dimensions

| Model | L | Q | S | V | W | Z | ϕD | Y | X | H | A |
|---------|----|------|-----|----|----|------|----------|-----|----|-----|-----|
| STGL-37 | 08 | 800 | 45° | 21 | 47 | 37.2 | 38.6 | 123 | 72 | 134 | 220 |
| | 11 | 1100 | 25° | | | | | 148 | 72 | 146 | 245 |
| | 14 | 1400 | 25° | | | | | 173 | 72 | 159 | 270 |
| STGL-40 | 08 | 800 | 30° | 26 | 50 | 40.2 | 41.6 | 148 | 72 | 146 | 245 |
| | 11 | 1100 | 25° | | | | | 173 | 72 | 159 | 270 |
| | 14 | 1400 | 25° | | | | | 198 | 72 | 171 | 295 |

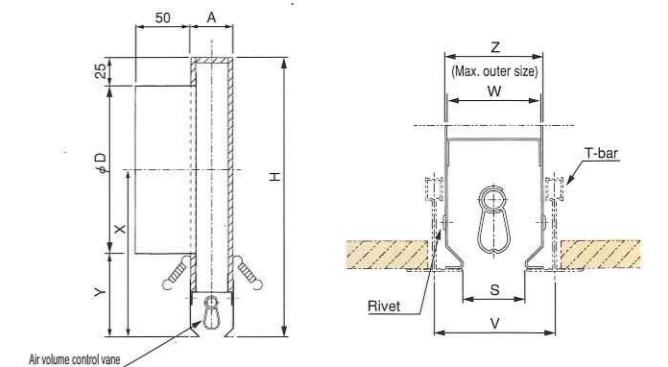
※Besides above chart, size Y=172 (H dimension + 100mm) can be produced on request for taller height requirement.

[STGL TYPE]

<Features>

STL type made by glass wool board.

1. Lightweight & sound absorption effect.
 2. The vane can control the air volume as well as air direction.
 3. Equipped with fixing spring with T-bar
- ※ND-STGL type, having implanted diffusing area is also available. Consult Kuken for details.



For system ceiling

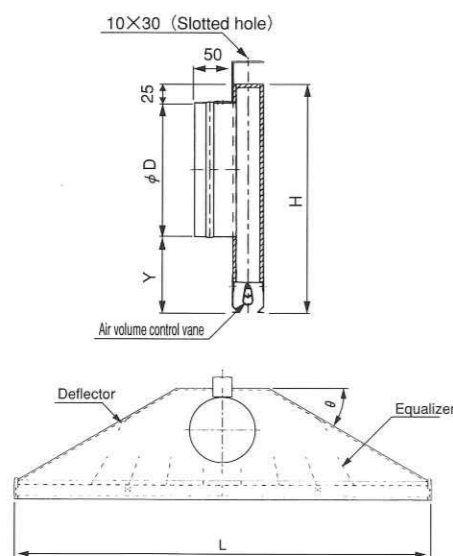
LINEAR DIFFUSER FOR SYSTEM CEILING (T-BAR LINEAR DIFFUSER)

[STAL TYPE] Utility model right reserved

<Features>

Linear diffuser with equal air flow, for narrow pitch T bar gap.

1. Supply air equally and restrain uncomfortable draft.
2. Air supply direction can be changed as horizontal -> slant-downwards -> vertical by moving the vane.
3. The vane can control the air volume as well as air direction.
4. Restrain interference among air flows.

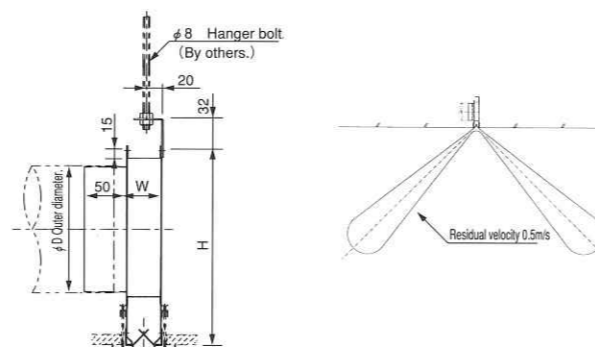


[STL-CF TYPE] Patent Pending

<Features>

STL type supplying air slant-downward from left & right side. (Refer to diffusing pattern below.)

1. Prevent the draft just below the diffuser.
 2. Restrain the short-circuit when return opening is located on the ceiling.
- ※Fixed air supply direction.
 ※STL-CF made by glass wool board is also available. Consult Kuken for details.



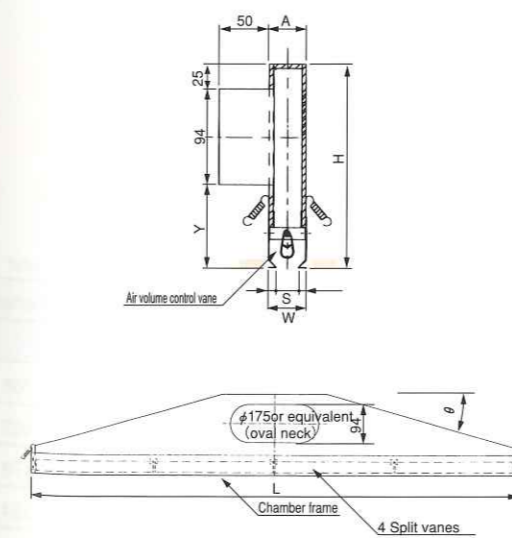
LINEAR DIFFUSER FOR SYSTEM CEILING (T-BAR LINEAR DIFFUSER)

[OML TYPE] Patent Pending/Utility model right reserved

<Features>

Linear diffuser with various air flow, for narrow pitch T bar gap.

1. Protean air flow pattern by split vanes.
 2. Vanes can control the air volume as well as air direction, generating low noise.
- ※Consult Kuken for details.

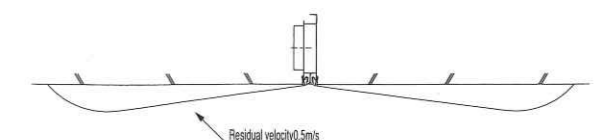
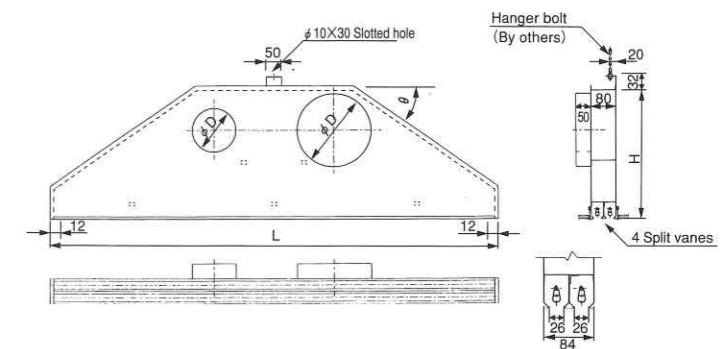
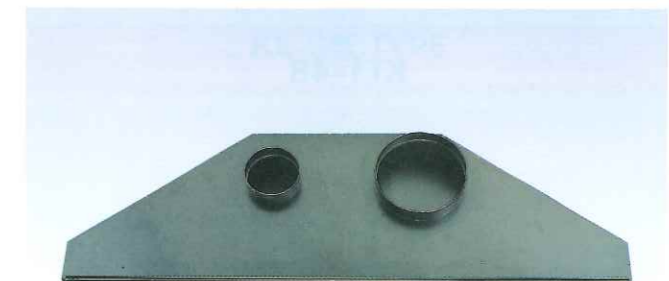


[STL-2 TYPE] Patent Pending/Utility model right reserved

<Features>

STL type correspond to larger air volume.

1. Diffuse doubled air volume which normal STL can do.
 2. Diffuse mixed air from both sides.
- ※Consult Kuken for details.



※Consult Kuken for connecting port size and quantity.

MULTI FLOW DIFFUSER [KT1 TYPE]

<Features>

1 way, 2way, 3way and 4way air supply patterns can be chosen.

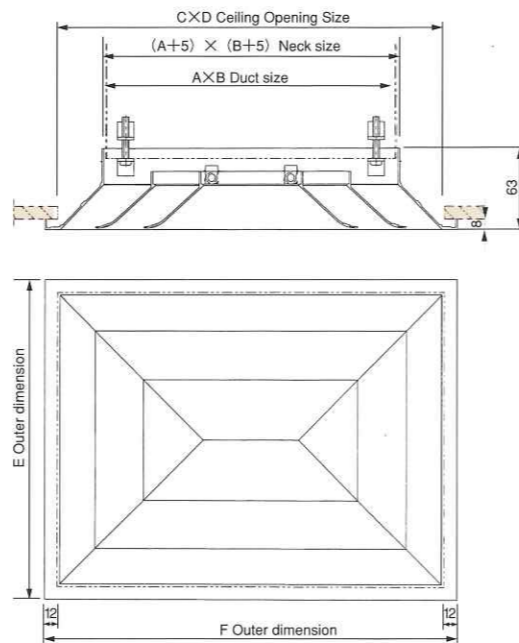
1. Having draft is minimized because air supply pattern is only horizontal.

※Using the shutter is recommended for air volume control. Shutter smoothly operates from full open to full close and provide equal diffusing due to its opposed opening vanes.

※Round neck for flexible ducting is also available. In case of round neck, plate shutter (PS II) or SED III is recommended for air control.

※Mount outer cones and inner cones firmly.

KT1-4B



Dimensions

| Size | Duct size | Ceiling Opening Size | Outer dimension | Size | Duct size | Ceiling Opening Size | Outer dimension |
|------|-----------|----------------------|-----------------|------|-----------|----------------------|-----------------|
| | AxB | CxD | EXF | | AxB | CxD | EXF |
| 1515 | 152x152 | 230x230 | 250x250 | 2260 | 228x608 | 306x686 | 326x706 |
| 2222 | 228x228 | 306x306 | 326x326 | 2230 | 228x304 | 306x382 | 326x402 |
| 3030 | 304x304 | 382x382 | 402x402 | 2238 | 228x380 | 306x458 | 326x478 |
| 3838 | 380x380 | 458x458 | 478x478 | 2245 | 228x456 | 306x534 | 326x554 |
| 4545 | 456x456 | 534x534 | 554x554 | 2253 | 228x532 | 306x610 | 326x630 |
| 5353 | 532x532 | 610x610 | 630x630 | 3038 | 304x380 | 382x458 | 402x478 |
| 6060 | 608x608 | 686x686 | 706x706 | 3045 | 304x456 | 382x534 | 402x554 |
| 1522 | 152x228 | 230x306 | 250x326 | 3053 | 304x532 | 382x610 | 402x630 |
| 1530 | 152x304 | 230x382 | 250x402 | 3060 | 304x608 | 382x686 | 402x706 |
| 1538 | 152x380 | 230x458 | 250x478 | 3845 | 380x456 | 458x534 | 478x554 |
| 1545 | 152x456 | 230x534 | 250x554 | 4553 | 456x532 | 534x610 | 554x630 |
| 1553 | 152x532 | 230x610 | 250x630 | 4560 | 456x608 | 534x686 | 554x706 |
| 1560 | 152x608 | 230x686 | 250x706 | | | | |

unit : mm

MULTI FLOW DIFFUSER [KPD TYPE] · [KX TYPE]

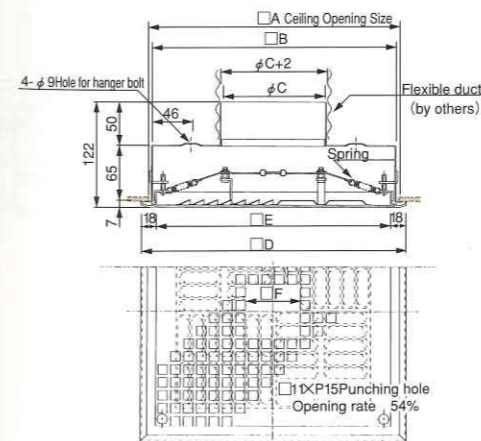
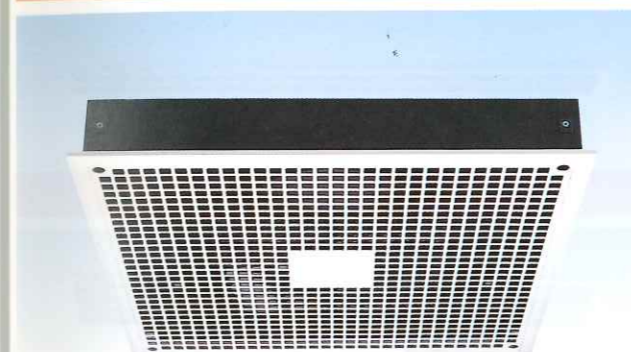
<Features>

Punching type diffuser and return opening installed on the ceiling. (The face of KX-S type can be opened easily and rectifiers can be handled easily.)

1. 1~4 way air supply pattern can be gained by adjusting equalizing plates.

※Plate shutter (PS II) or SED III is recommended for air control.

KPD-S TYPE

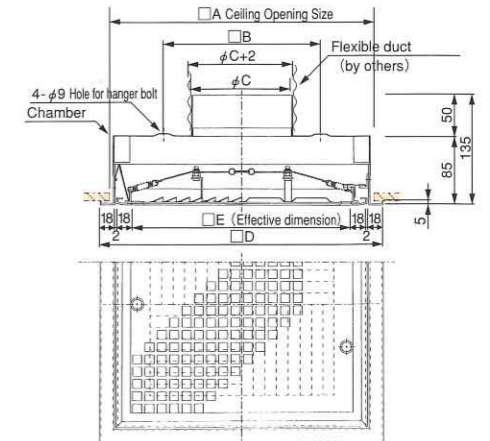


Dimensions

| Model | A | B | D | E | F | φ C | | |
|-------|-----|-----|-----|-----|----|-----|-----|-----|
| 33 | 290 | 283 | 307 | 271 | 64 | 123 | 148 | 173 |
| 44 | 390 | 383 | 407 | 371 | 64 | 173 | 198 | 248 |
| 55 | 480 | 473 | 497 | 461 | 94 | 198 | 248 | 298 |
| 66 | 570 | 563 | 587 | 551 | 94 | 298 | 348 | 373 |

unit : mm

KX-S型 TYPE



Dimensions

| Model | A | B | D | E | φ C | | |
|-------|-----|-----|-----|-----|-----|-----|-----|
| 33 | 300 | 210 | 326 | 250 | 123 | 148 | 173 |
| 44 | 400 | 310 | 426 | 350 | 173 | 198 | 248 |
| 55 | 500 | 410 | 526 | 450 | 198 | 248 | 298 |
| 66 | 600 | 510 | 626 | 550 | 298 | 348 | 373 |

unit : mm

LINEAR DIFFUSER

[VTL TYPE]

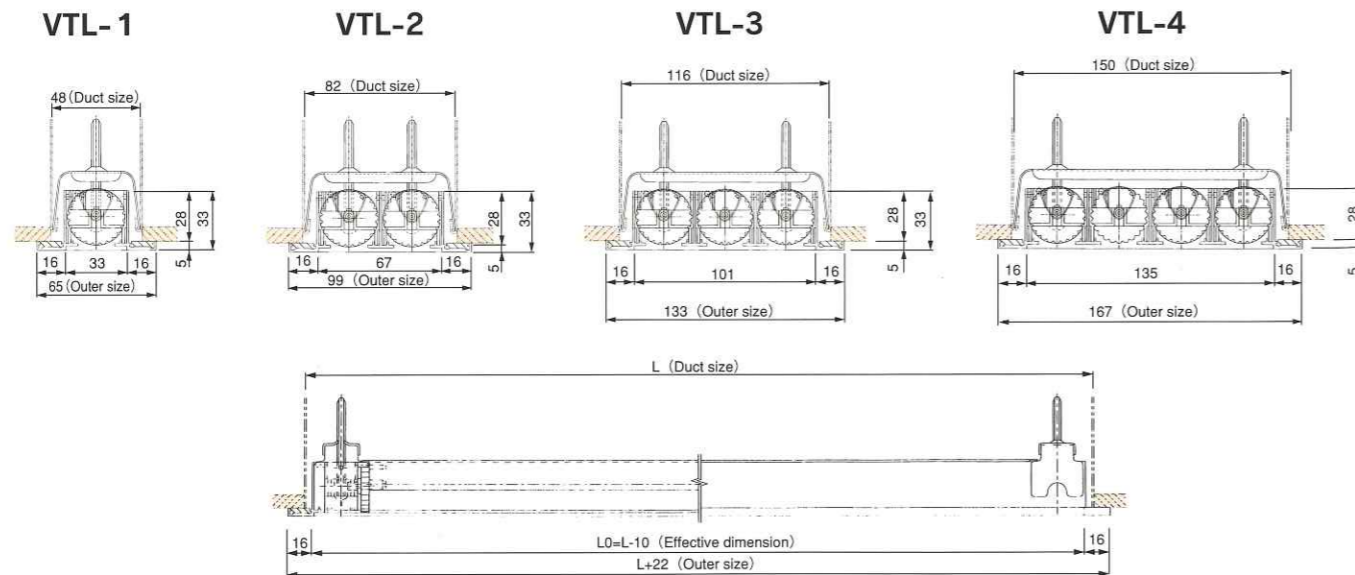
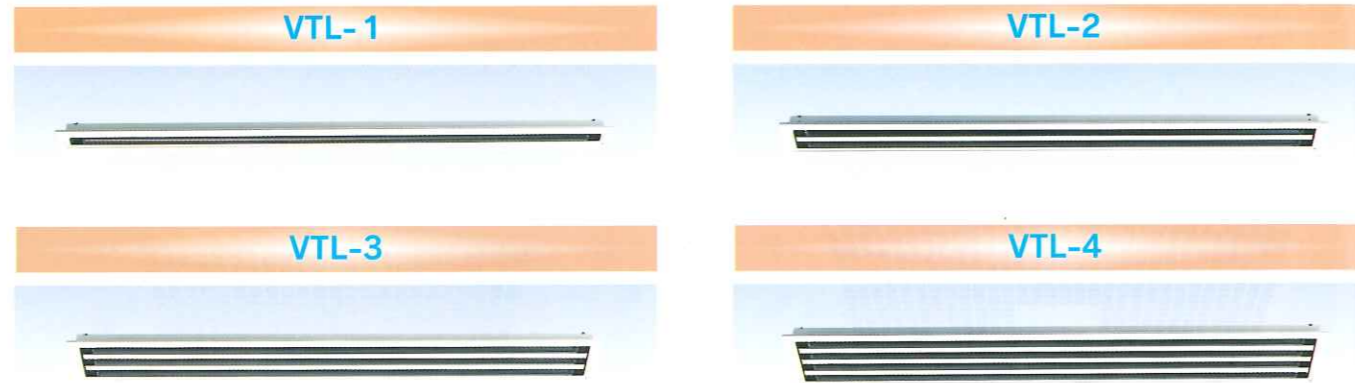
<Features>

Linear diffuser taking advantage of vortex flow effectively. Installed on the ceiling at exits, elevators, and perimeter, etc.. and used as providing air-curtain effect.

1. Linear diffuser that controls air pattern by using vortex flow.
2. Low static pressure & low noise level due to simple structure and ideal cross section shape.
3. Changeable air supply pattern (Vertical / Horizontal / Slant-down) easily by rotating the dials on both ends.
4. When long size, 2m or more, is required, the diffuser shall be divided. However, the openings are continuous and appeared as one piece made.

※For air volume control, rectifier changeable diffusing direction is recommended.

※Caution : Duct size & opening size are different from our conventional ones.



Horizontal air supply

Slant downwards air supply

Vertical air supply



LINEAR DIFFUSER

[VL TYPE]

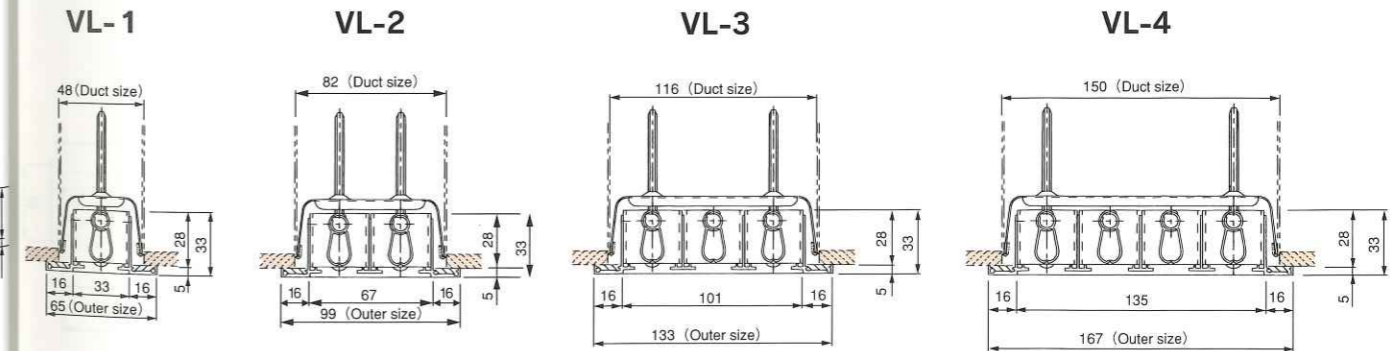
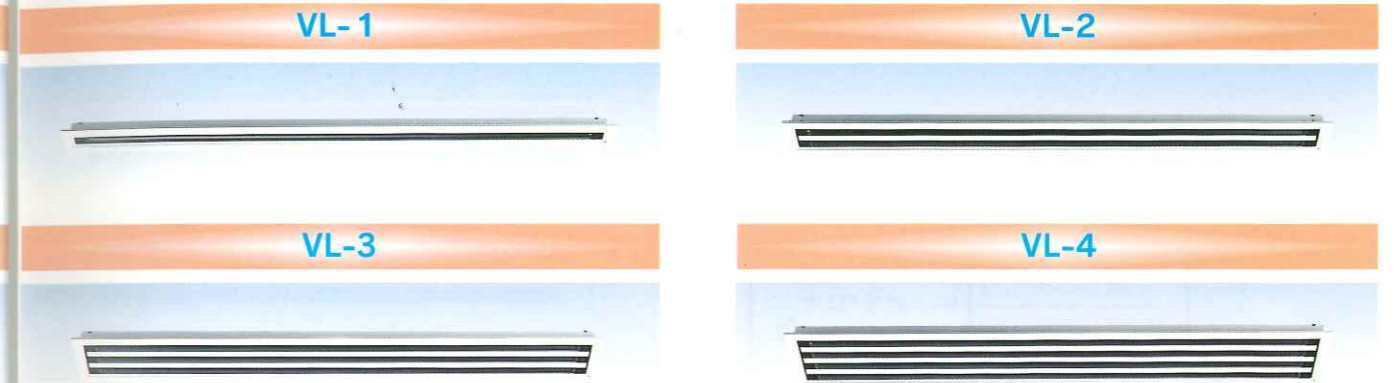
<Features>

Linear diffuser installed on the ceiling at exits, elevators, etc... Newly designed vane contributes easy control on air volume control, as well as air supply direction control.

1. Easy controllable vane. It enables horizontal air supply from both sides.
2. Common design & duct size with VTL type.
3. No need to attach shutter at the backside unlike the conventional type. Thus, easy on installation due to light weight.
4. ND cover can be attached .

※For air volume control, rectifier changeable diffusing direction is recommended.

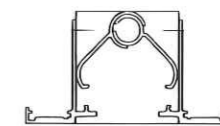
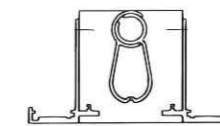
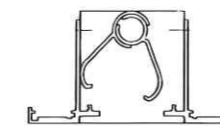
※Caution : Duct size & opening size are different from our conventional ones.



Horizontal air supply from left side

Vertical air supply

Totally closed



Horizontal air supply from both side

Horizontal air supply

Slant downwards air supply

Vertical air supply



LINEAR DIFFUSER

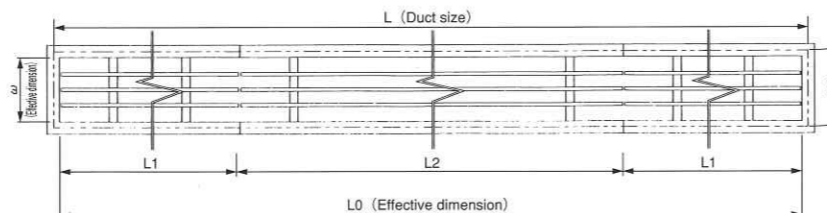
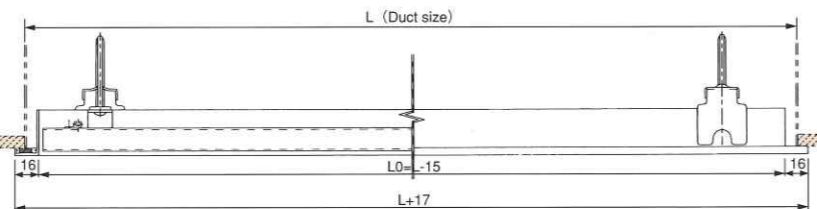
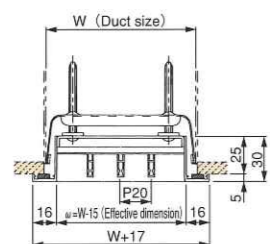
[KL TYPE]

<Features>

Simple Linear diffuser installed on the ceiling at exits, lobbies, etc... and used as providing air curtain effect.

1. Low static pressure loss & low noise level. Longer throw.
 2. Even it needs to be divided, the openings are continuous and appeared as one piece made.
 3. Enable to be used as return port.
- ※Only vertical air supply. Unable to change air supply direction.
 ※Rectifier is recommended for air volume control.
 ※Caution : Duct size & opening size are different from our conventional ones.

KL-6



KL-12



Dimensions

| Type | W | ω | No. of vanes | Type | W | ω | No. of vanes |
|------|-----|-----|--------------|------|-----|-----|--------------|
| 1 | 31 | 16 | 0 | 10 | 150 | 135 | 6 |
| 2 | 48 | 33 | 1 | 12 | 167 | 152 | 7 |
| 3 | 65 | 50 | 2 | 14 | 184 | 169 | 8 |
| 4 | 82 | 67 | 2 | 16 | 201 | 186 | 8 |
| 5 | 99 | 84 | 3 | 18 | 218 | 203 | 9 |
| 6 | 116 | 101 | 4 | 20 | 235 | 220 | 10 |
| 8 | 133 | 118 | 5 | | | | |

LINEAR DIFFUSER

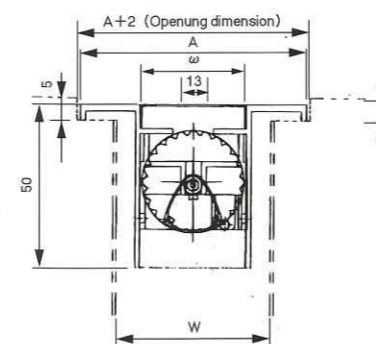
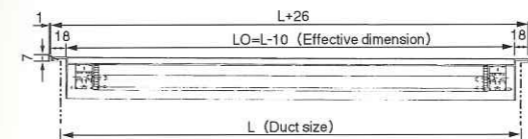
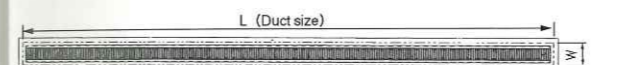
[KPL TYPE]

<Features>

Linear diffuser mounted on pericounter.

1. Clear design with guard punching diffusing port.
 2. The vanes can change diffusing direction.
 3. Air volume controllable vane type can be produced upon request.
- ※KPL-1 & KPL-2 are available.

KPL-1



Dimensions

| Type | W | ω | A | No. of vanes |
|------|----|----|-----|--------------|
| 1 | 48 | 33 | 69 | 1 |
| 2 | 82 | 67 | 103 | 2 |

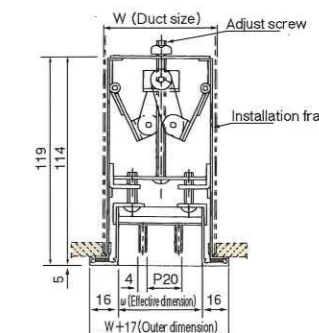
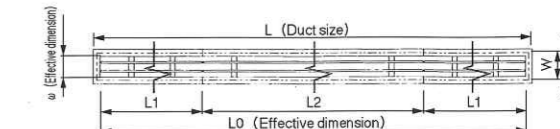
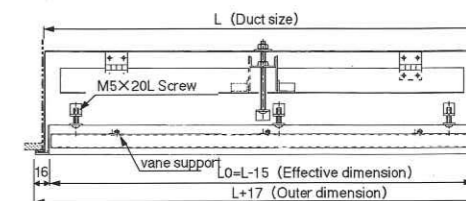
[MTKL TYPE]

<Features>

KL with manual throw controller, installed on the ceiling.

1. Enable to control throw by manual controller.
 2. Outer design and duct sizes are common with KL type.
- ※Unable to change diffusing direction. Vertical only.
 ※ Product range is # 3 ~ # 10 shown below.

MTKL-6



Dimensions

| Type | W | ω | No. of vanes |
|------|-----|-----|--------------|
| 3 | 65 | 50 | 2 |
| 4 | 82 | 67 | 2 |
| 5 | 99 | 84 | 3 |
| 6 | 116 | 101 | 4 |
| 8 | 133 | 118 | 5 |
| 10 | 150 | 135 | 6 |

Linear type

Linear type

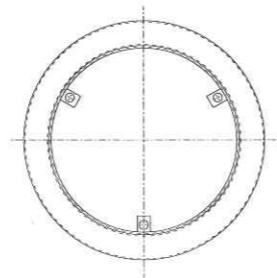
NOZZLE TYPE DIFFUSER [MKG TYPE]

<Features>

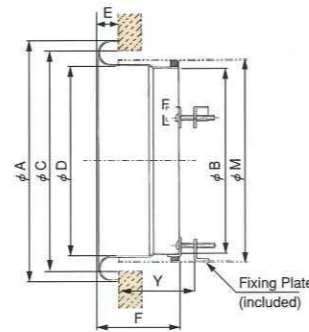
Most suitable for the areas where longer throw is required, such as theaters, halls, lobbies, and high ceiling in gymnasium.

1. Low static pressure loss & noise level. Longer throw.
2. Enable to connect directly with spiral duct.

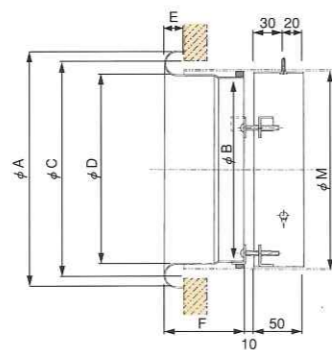
※Attaching Plate shutter (PS- II) is recommended. T dimension will change accordingly, in case.



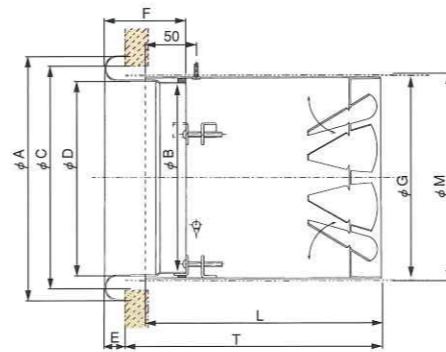
For direct connection with spiral duct



With installation frame



With plate shutter



Dimensions

| Size | φ A | φ B | φ C | φ D | E | F | φ G | L | φ M | T | Y |
|------|-----|-----|-----|-----|----|-----|-----|-----|-----|---------|---------|
| # 3 | 97 | 60 | 85 | 65 | 15 | 50 | — | — | 75 | — | 45~60 |
| 4 | 132 | 85 | 120 | 90 | 15 | 50 | 98 | 170 | 100 | 170~185 | 45~60 |
| 5 | 157 | 110 | 145 | 115 | 15 | 50 | 123 | 185 | 125 | 195~210 | 45~60 |
| 6 | 182 | 135 | 170 | 140 | 15 | 55 | 148 | 205 | 150 | 230~245 | 50~65 |
| 7 | 207 | 160 | 195 | 165 | 15 | 55 | 173 | 230 | 175 | 255~270 | 50~65 |
| 8 | 240 | 185 | 220 | 190 | 20 | 80 | 198 | 230 | 200 | 270~285 | 70~85 |
| 9 | 265 | 210 | 245 | 215 | 20 | 80 | 223 | 260 | 225 | 300~315 | 70~85 |
| 10 | 290 | 235 | 270 | 240 | 25 | 80 | 248 | 270 | 250 | 325~340 | 65~80 |
| 12 | 350 | 285 | 320 | 290 | 27 | 110 | 298 | 320 | 300 | 385~400 | 95~110 |
| 14 | 410 | 335 | 370 | 340 | 30 | 110 | 348 | 370 | 350 | 450~465 | 90~105 |
| 16 | 460 | 385 | 420 | 390 | 30 | 110 | 398 | 430 | 400 | 520~535 | 90~105 |
| 18 | 510 | 435 | 470 | 440 | 30 | 140 | 448 | 460 | 450 | 550~565 | 120~135 |
| 20 | 560 | 485 | 520 | 490 | 30 | 140 | 498 | 470 | 500 | 600~615 | 120~135 |

※For # 3 size, only face part can be supplied.

NOZZLE TYPE DIFFUSER [MKG-W TYPE]

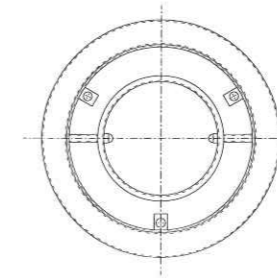
<Features>

Most suitable for the walls in theaters, halls, and lobbies. As inner nozzle can be adjustable, ascending air current in heating can be prevented and spot air supply for certain place can be easily gained.

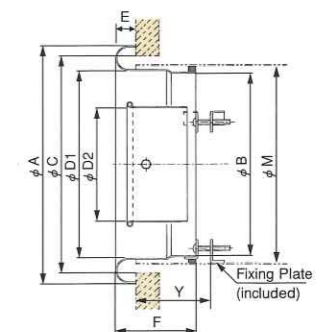
1. Inside of the nozzle is difficult to be seen due to inner nozzle. Clear design.
2. Enable to connect directly with spiral duct.

※Attaching Plate shutter (PS- II) is recommended. T dimension will change accordingly, in case.

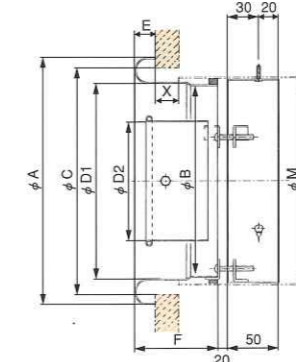
※Consult Kuken for MKG-W-360 of which inner nozzle can rotate 360°.



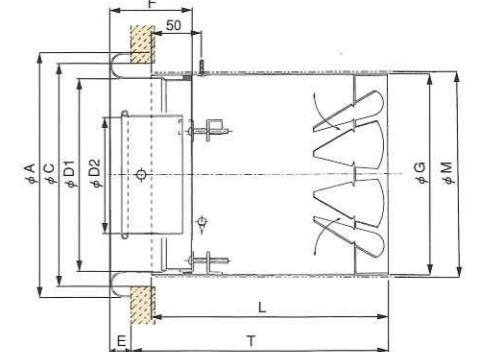
For direct connection with spiral duct



With installation frame



With plate shutter



Dimensions

| Size | φ A | φ B | φ C | φ D1 | φ D2 | E | F | φ G | L | φ M | T | X | Y |
|------|-----|-----|-----|------|------|----|-----|-----|-----|-----|---------|----|---------|
| # 6 | 182 | 135 | 170 | 140 | 90 | 15 | 55 | 148 | 205 | 150 | 230~245 | 30 | 50~65 |
| 7 | 207 | 160 | 195 | 165 | 90 | 15 | 55 | 173 | 230 | 175 | 255~270 | 30 | 50~65 |
| 8 | 240 | 185 | 220 | 190 | 115 | 20 | 80 | 198 | 230 | 200 | 270~285 | 30 | 70~85 |
| 9 | 265 | 210 | 245 | 215 | 140 | 20 | 80 | 223 | 260 | 225 | 300~315 | 30 | 70~85 |
| 10 | 290 | 235 | 270 | 240 | 140 | 25 | 80 | 248 | 270 | 250 | 325~340 | 30 | 65~80 |
| 12 | 350 | 285 | 320 | 290 | 190 | 27 | 110 | 298 | 320 | 300 | 385~400 | 30 | 95~110 |
| 14 | 410 | 335 | 370 | 340 | 240 | 30 | 110 | 348 | 370 | 350 | 450~465 | 30 | 90~105 |
| 16 | 460 | 385 | 420 | 390 | 240 | 30 | 110 | 398 | 430 | 400 | 520~535 | 30 | 90~105 |
| 18 | 510 | 435 | 470 | 440 | 290 | 30 | 140 | 448 | 460 | 450 | 550~565 | 30 | 120~135 |
| 20 | 560 | 485 | 520 | 490 | 340 | 30 | 140 | 498 | 470 | 500 | 600~615 | 40 | 120~135 |

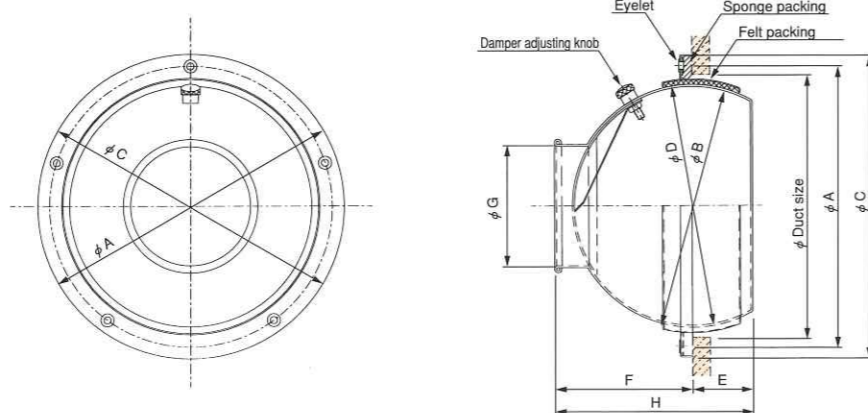
NOZZLE TYPE DIFFUSER

[Punkar Louver : PK-CH TYPE]

<Features>

Mainly used for kitchen, airport, marine vessels, factory. As the outlet can be adjustable, air can be supplied wherever required.

1. Most suitable for spot cooling.
2. Max. outlet inclination angle is 40° from the center to any direction.
3. Equipped with easily- adjustable air volume damper.



Dimensions

| Size | φ A | φ B | φ C | φ D | φ E | φ F | φ G | φ H | Duct | No. of screw |
|------|-----|-----|-----|-----|-----|-----|-----|-----|------|--------------|
| # 3 | 97 | 75 | 115 | 82 | 19 | 48 | 37 | 67 | 85 | 3 |
| 4 | 122 | 99 | 140 | 106 | 26 | 59 | 49 | 85 | 110 | 4 |
| 5 | 152 | 130 | 170 | 136 | 37 | 76 | 64 | 113 | 140 | 5 |
| 6 | 173 | 149 | 190 | 156 | 41 | 91 | 72 | 132 | 160 | 5 |
| 7 | 213 | 177 | 231 | 184 | 44 | 105 | 90 | 149 | 193 | 5 |
| 8 | 230 | 193 | 250 | 201 | 41 | 117 | 99 | 158 | 215 | 5 |
| 10 | 304 | 267 | 322 | 275 | 53 | 161 | 140 | 214 | 280 | 5 |
| 12 | 342 | 303 | 360 | 319 | 56 | 194 | 165 | 250 | 325 | 5 |
| 14 | 342 | 303 | 360 | 319 | 56 | 194 | 190 | 250 | 325 | 5 |
| 16 | 451 | 407 | 469 | 419 | 92 | 254 | 230 | 346 | 430 | 8 |
| 18 | 511 | 470 | 529 | 485 | 106 | 297 | 260 | 403 | 490 | 8 |
| 20 | 511 | 470 | 529 | 485 | 104 | 299 | 310 | 403 | 490 | 8 |

※Recheck each dimension with the drawing. Consult Kuken for the details.

Nozzle type

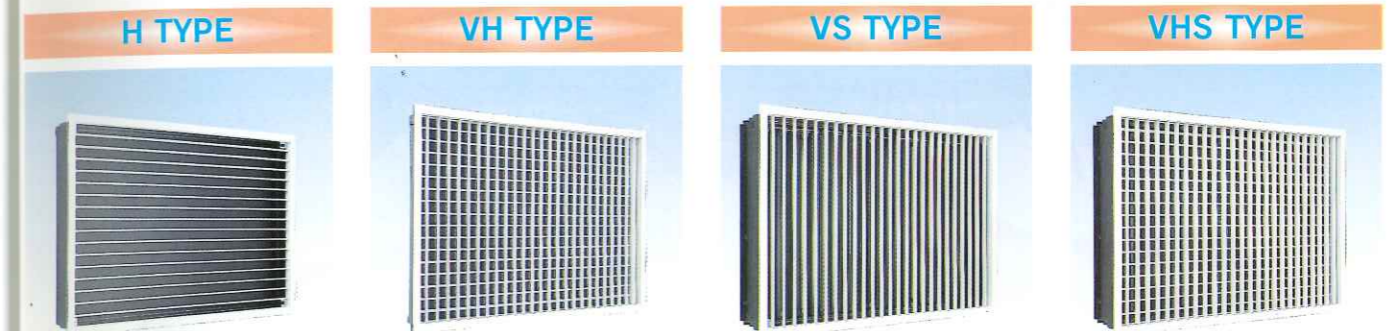
UNIVERSAL GRILLE

[H TYPE, VH TYPE, VS TYPE, VHS TYPE]

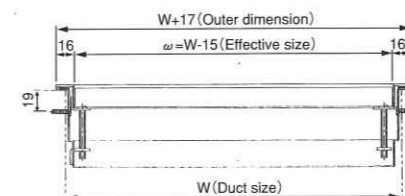
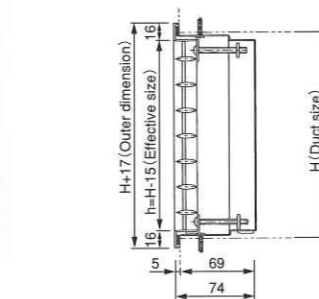
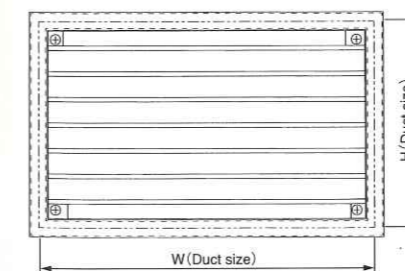
<Features>

Most conventional type of diffusers. Suitable any space such as office, lobby, theater. Being installed on the ceiling and on walls.

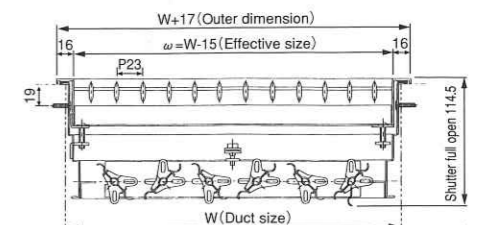
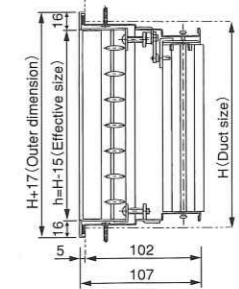
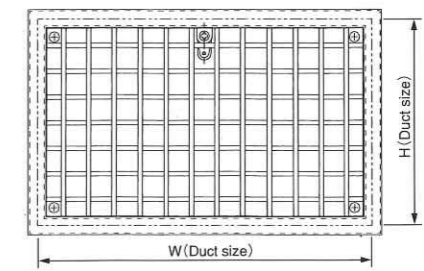
1. In the view of design & application, desirable diffuser can be selected from wide variety : Vertical vane (V), Horizontal vane (H), Combination (VH, HV) with or without shutter (S). (Universal grille with shutter is called as "Register".)
 2. As vanes can be adjustable, diffusing direction and throw can be also adjustable.
- ※Maximum manufacturing size is $W \times H \leq 1m^2$. (longer side up to 2400mm. <with shutter 1800mm>) If sizes exceed above, it comes in a split form into 2 or more.
- ※In case of 4 or more split forms, spacer should be connected to duct prior to installation. (Refer to drawing for size and mounting position of spacer.)
- ※Refer to drawing for the types not shown in this page, split ones dimensions, and installation.
- ※Use these universal grilles with maximum velocity passing through grilles at 8m/s or less.



H type with installation frame



VHS TYPE



Universal grille

OCTOPUS DUCT SYSTEM

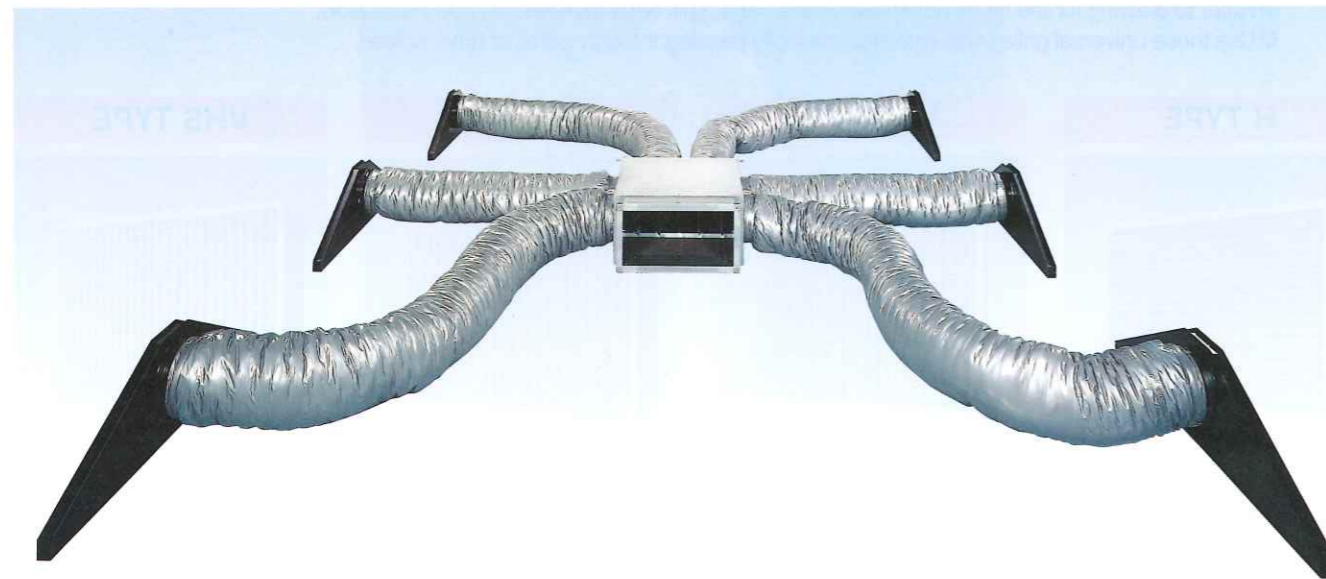
[ODS TYPE]

<Features>

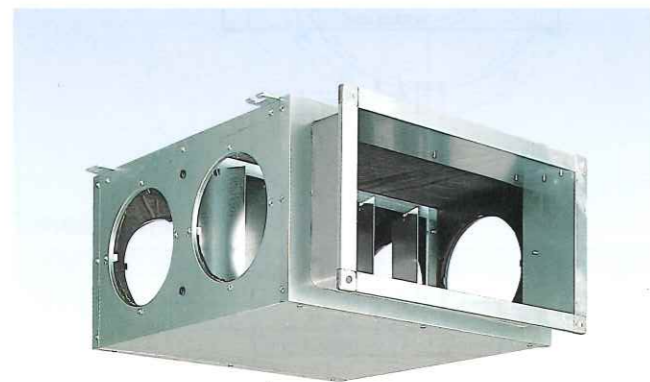
Using conventional octopus system, Kuken introduces the integrated system which consists of chamber box, flexible ducts, diffusers. Greater advantages compared with spiral duct system.

1. As chamber boxes, flexible ducts, diffusers can be ordered as one purchase order, transaction on placing order and controlling delivery date can be minimized.
2. As this whole system is manufactured in the factory, stable quality can be gained and works at site can be minimized.
3. Easy connection between chamber box & flexible ducts, between flexible ducts & diffusers.

※Consult Kuken if VAV or CAV is required together with this system.



Chamber box



- Compact & Light weight (60% Decreased with Kuken conventional type) contributes easy hoisting work.
- No need to control air volume balance due to built-in balancing plate.
- Low noise, Low pressure loss, High air tightness, High heat insulation

Flexible duct



- Made of glass-wool with excellent sound absorption & heat insulation.
- Enable to be packed as compressed form due to high compressive strength.

Patent Pending/
Utility model right reserved
Trade mark Pending

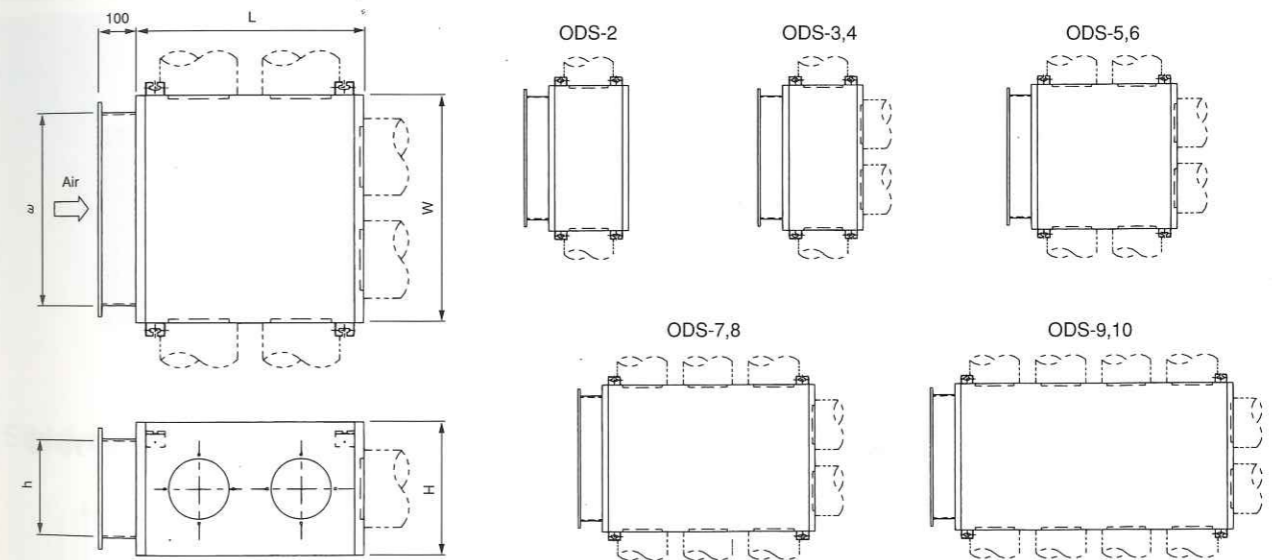
DIFFUSER



○Any diffusers can be attached, such as linear diffusers, ceiling diffusers.

○Flexible duct connection nipple (One-touch), as an option gives adjustable flexible length.

※Octopus system for return ports is also available. (No heat insulation for chamber box. Flexible ducts are to be aluminum ones.)



Dimensions

Unit : mm

| Type | Chamber size | | | Inlet size | | Flexible duct | Weight About (Kg) |
|----------|--------------|-----|-----|------------|-----|---------------|-------------------|
| | L | W | H | ω | h | Diameter | |
| ODS-2 | 330 | 600 | 320 | 500 | 250 | φ150 | 7 |
| ODS-3,4 | | | | | | | 8 |
| ODS-5,6 | 600 | 600 | 320 | 500 | 250 | φ175 | 10 |
| ODS-7,8 | 870 | | | | | φ200 | 14 |
| ODS-9,10 | 1140 | | | | | | 18 |

SLIT TYPE RETURN GRILLE

[SL TYPE]

<Features>

Most conventional type of return grille. Suitable any space.

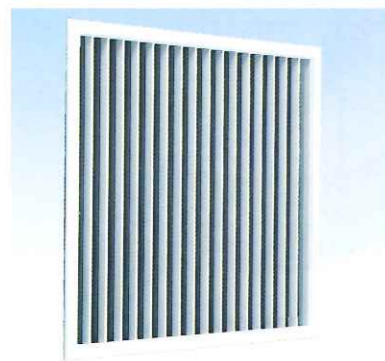
1. In the view of design & application, desirable diffuser can be selected from wide variety : Vertical vane (V), Horizontal vane (H), with or without shutter.

※Small size maximum manufacturing size is $W \times H \leq 1m^2$. (longer side up to 1800mm) If sizes exceed above, it comes to a large size. Large size's maximum manufacturing size is $W \times H \leq 2.5m^2$. (longer side up to 2400mm, shutter or FDS will be in twin split form.) If sizes exceed above, in a split form into 2 or more.

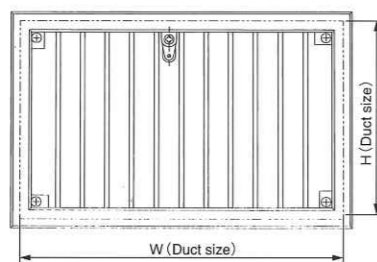
※In case of 4 or more split forms, spacer should be connected to duct prior to installation. (Refer to drawing for size and mounting position of spacer.)

※Consult Kuken for the frame width, split form dimensions.

SL-V



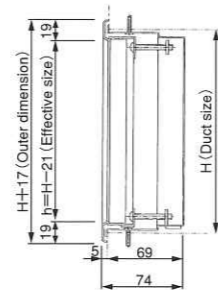
Small size V slit



SL-H



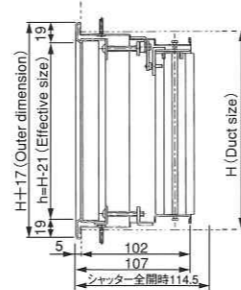
With installation frame (SL-V type)



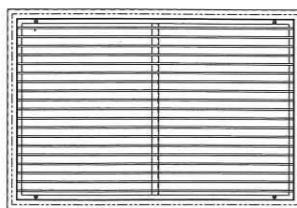
<With Inspection port>



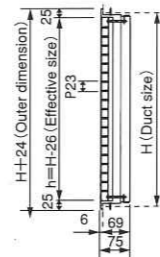
With shutter (SL-VS type)



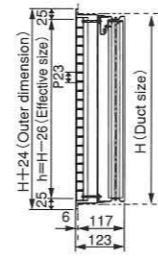
Large size H slit



With installation frame (SL-V type)



With shutter (SL-HS type)



SIGHT AVOIDANCE SLIT TYPE RETURN GRILLE

[SLS TYPE]

<Features>

Installed on the walls at the places such as theaters, machine rooms and passages. Entire sight avoidance seen from certain positions can hide the portion which should not be seen.

1. In the view of design & application, desirable return grille can be selected from wide variety : Vertical vane (V), Horizontal vane (H), with or without shutter.

※Maximum manufacturing size for the one with installation frame is $W \times H \leq 2.5m^2$. (longer side up to 2400mm).

※Maximum manufacturing size for the one with small size shutter is $W \times H \leq 1.0m^2$. (longer side up to 1800mm). If sizes exceed above, in a split form into 2 or more.

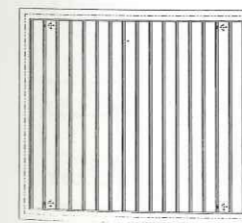
※Maximum manufacturing size for the one with large size shutter is $W \times H \leq 2.5m^2$. (longer side up to 2400mm, shutter or FDS will be in twin split form.). If sizes exceed above, in a split form into 2 or more.

※In case of 4 or more split forms, spacer should be connected to duct prior to installation. (Refer to drawing for size and mounting position of spacer.)

SLS-V



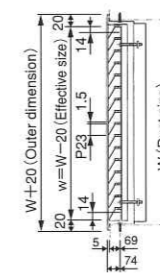
Sight avoidance V slit



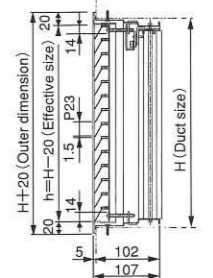
SLS-H



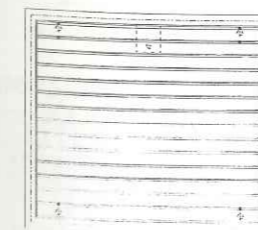
With installation frame (SLS-V type)



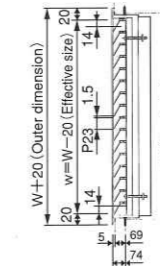
With small size shutter (SLS-VS type)



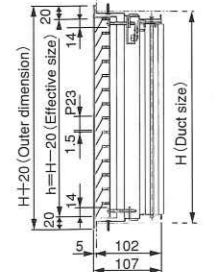
Sight avoidance H slit



With installation frame (SLS-H type)



With small size shutter (SLS-HS type)



RETURN GRILLE

[FRG TYPE] · [FRS TYPE]

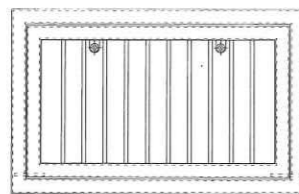
<Features>

Return grille of which inner frame can be open & close, equipped with filter. Most suitable for the hotel guest rooms and package air-conditioning equipment.

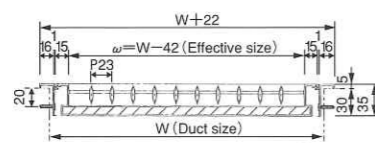
- In the view of design & application, desirable return grille can be selected from wide variety : Vertical vane (V), Horizontal vane (H), with or without shutter.
 - Standard filter is Saran filter. (Viledon filter is also available.)
- ※Maximum manufacturing size for the one with one piece inner frame is $W \times H \leq 0.64\text{m}^2$. (longer side up to 1200mm).
 ※Maximum manufacturing size for the one with split inner frames is $W \times H \leq 1.0\text{m}^2$. (longer side up to 2400mm). If sizes exceed above, in a split form into 2 or more. For the one with shutter, longer side is up to 1800mm.
 ※In case of 4 or more split forms, spacer should be connected to duct prior to installation.
 (Refer to drawing for size and mounting position of spacer.)
 ※VH & HV type are available for FRG type. Refer to drawing for dimensions.

FRG-V, Universal grille type

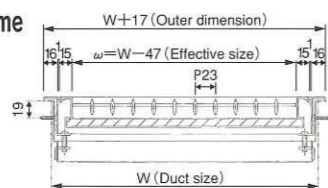
Vanes adjustable



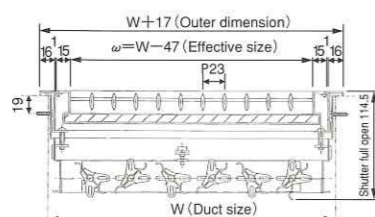
Face only



With installation frame

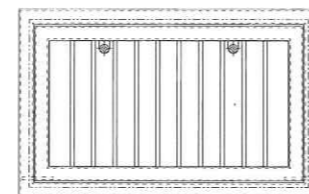
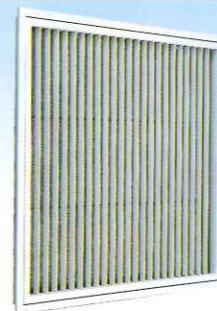


With shutter

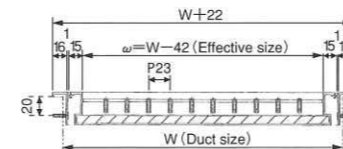


FRS-V, Slit type

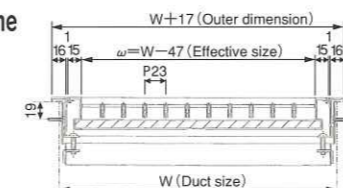
Vanes fixed



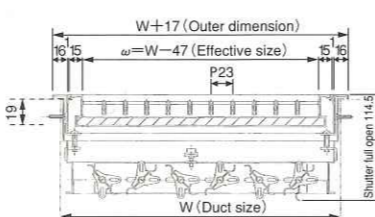
Face only



With installation frame



With shutter



FILTER

<Features>

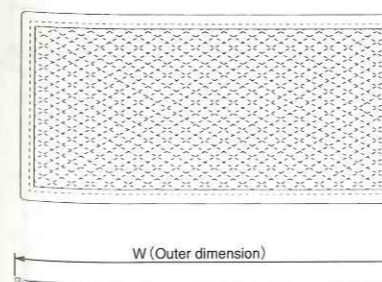
Installed in return grille or outdoor intake, preventing dusts coming into.

- Filters can be reused by washing with water.
- ※Standard color
 Saran filter : Black
 Viledon filter :White
 ※Maximum manufacturing size is $W \times H \leq 0.64\text{m}^2$. (longer side up to 1200mm).

Saran filter



Viledon filter



Dimensions

| Filter | Model | Filter t | Product t |
|---------|----------|----------|-----------|
| Saran | — | 1 | 5 |
| | FS-1705W | 5.5 | 7 |
| Viledon | PS/300 | 10 | 10 |
| | PS/400 | 14 | 18 |
| | PS/600 | 20 | 22 |

Unit : mm

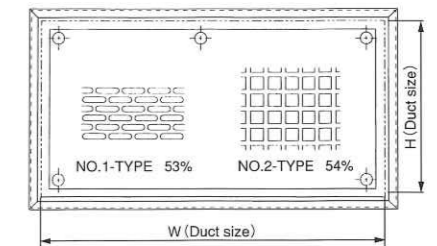
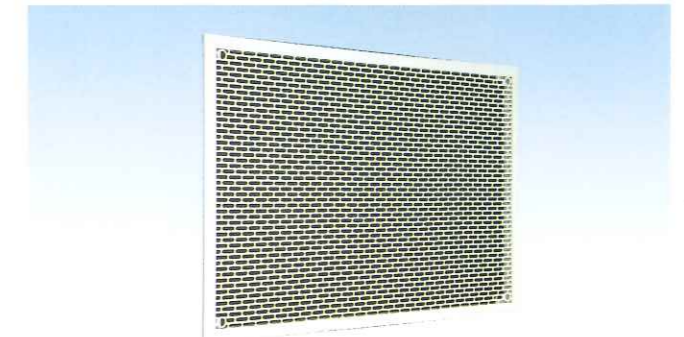
PUNCHING TYPE RETURN PORT

[PG TYPE]

<Features>

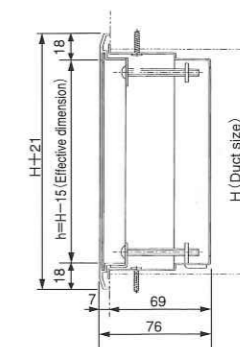
Return grille applying punching plate, suitable for office.

- Selectable from 2 punching designs.
 - By attaching shutter, air volume control can be made easily.
- ※Maximum manufacturing size is $W \times H \leq 0.64\text{m}^2$. (longer side up to 1200mm). If sizes exceed above, in a split form into 2 or more.
 ※In case of 4 or more split forms, spacer should be connected to duct prior to installation.
 (Refer to drawing for size and mounting position of spacer.)

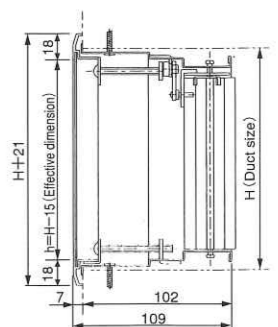


※Consult Kuken for punching design except above.

With installation frame (PG type)



With shutter (PGS type)



DOOR GRILLE

[DG TYPE]

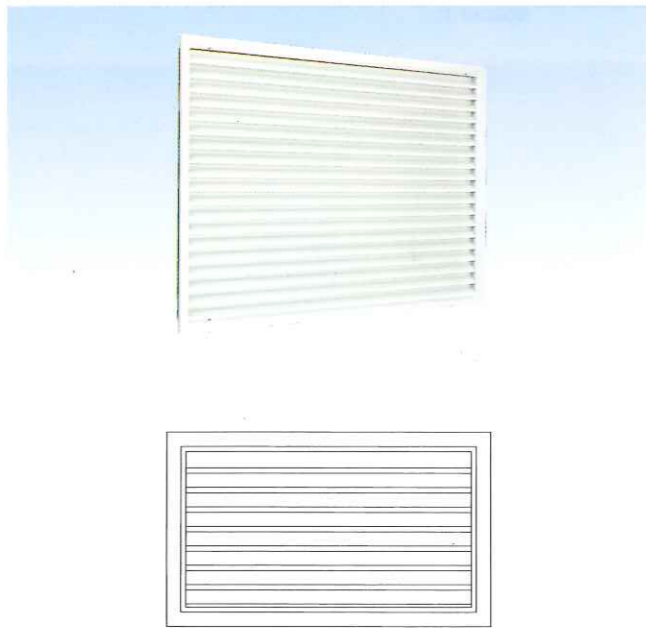
<Features>

Installed on door or wall. Mainly used for ventilation purpose.

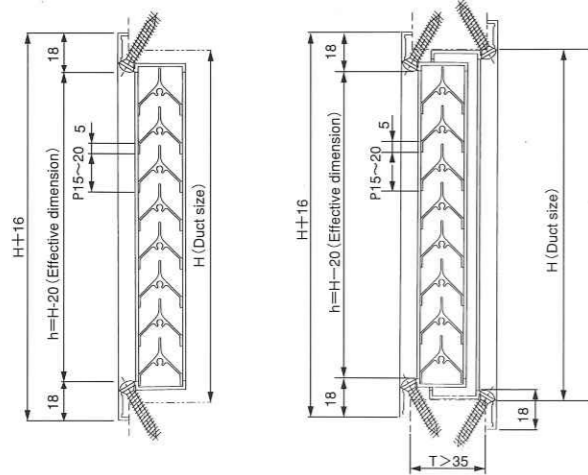
1. Ideal vane design considered for sight avoidance.

※Maximum manufacturing size is $W \times H \leq 1.0\text{m}^2$. (longer side up to 1500mm). If sizes exceed above, in a split form into 2 or more.

※In case of 4 or more split forms, spacer should be connected to duct prior to installation. (Refer to drawing for size and mounting position of spacer.)



With companion frame



LIGHT-BARRIER GRILLE

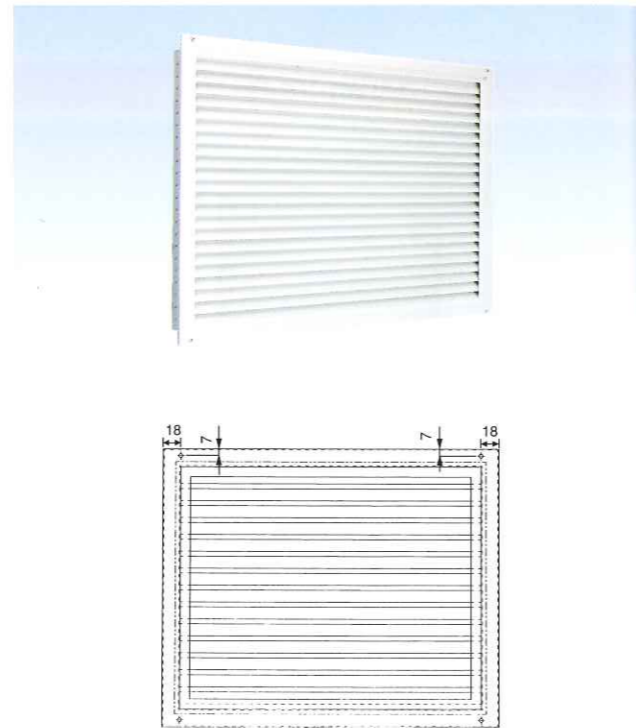
[NLG TYPE]

<Features>

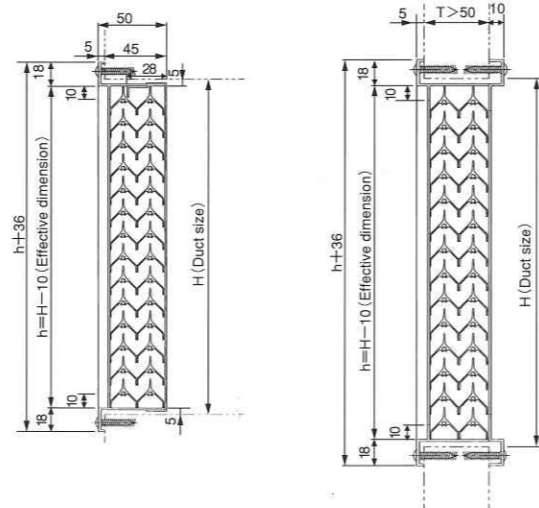
For the place where light-proof is required

1. By adopting 2 V-shaped vanes, light should be blocked
2. Higher efficiency can be gained by double type

※Maximum manufacturing size is $W \times H \leq 1.0\text{m}^2$. (longer side up to 1500mm). If sizes exceed above, in a split form into 2 or more.



With companion frame



LOUVER

[LV TYPE]

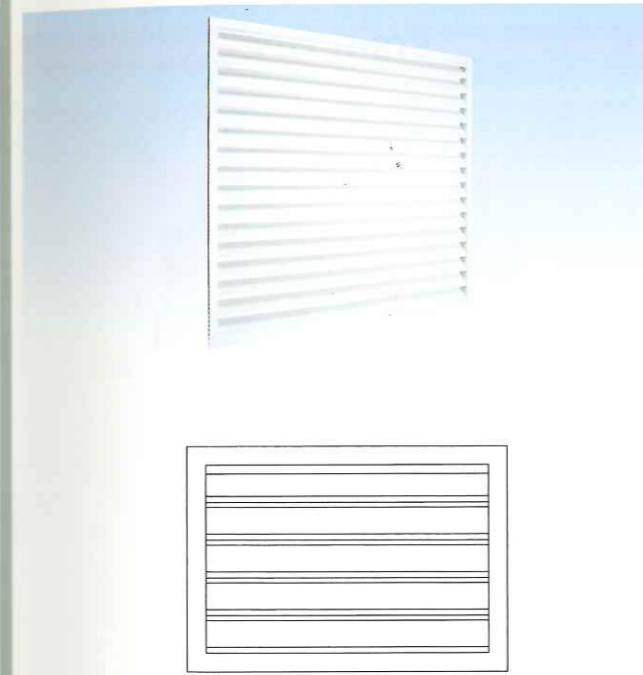
<Features>

Used both for air supply & air return.

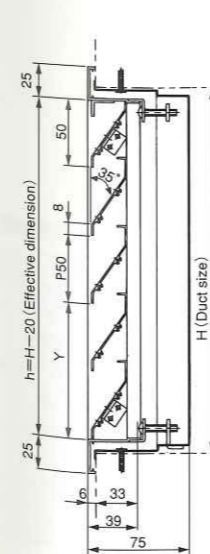
Installed indoors

1. Sight avoidance effect can be obtained if it is installed under the eye level.

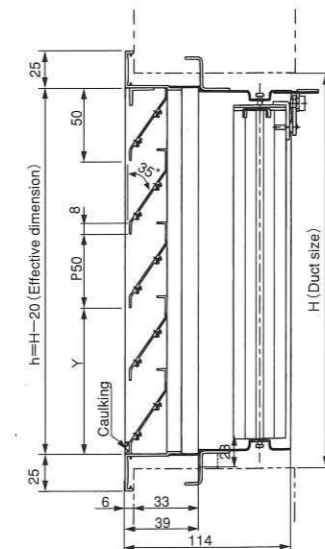
※Maximum manufacturing size is $W \times H \leq 2.5\text{m}^2$. (Max W:1500mm, Max H:2000mm). If sizes exceed above, in a split form into 2 or more.
 ※In case of 4 or more split forms, spacer should be connected to duct prior to installation. (Refer to drawing for size and mounting position of spacer.)



With installation frame



With shutter



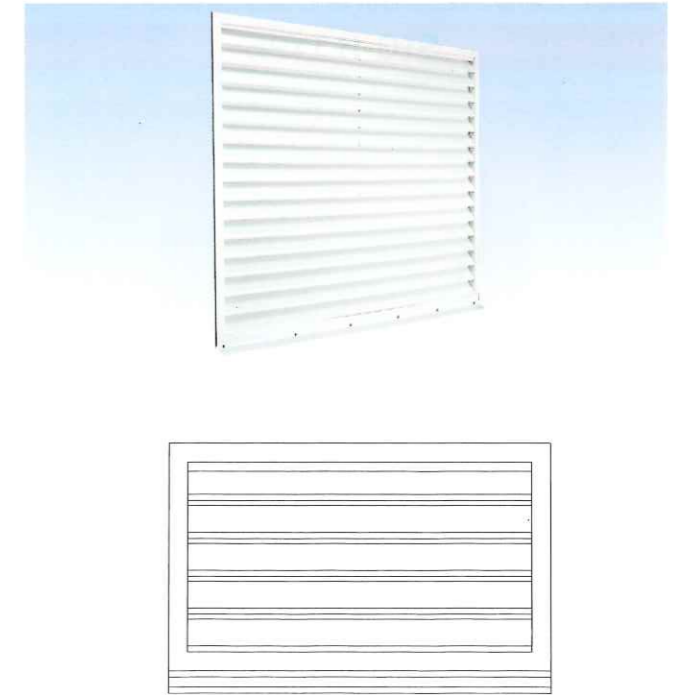
OUTDOOR LOUVER <GARALLI>

[GL TYPE]

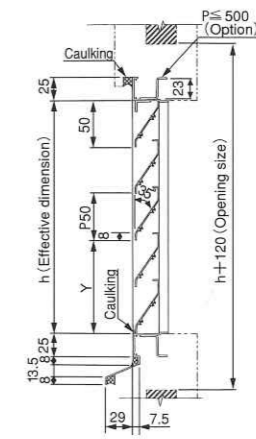
<Features>

Used both for ambient air supply & air return. Installed outdoors and equipped with rain drain.

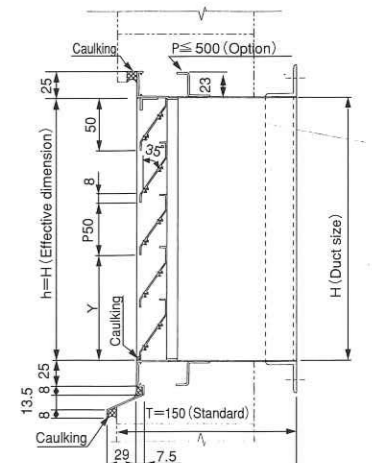
1. Vane is structured to prevent rain drop coming into indoors.
2. Imbed type & duct connection type are available.



Imbed type



Duct connection type



T-BAR RETURN GRILLE

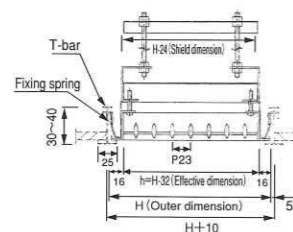
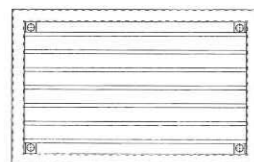
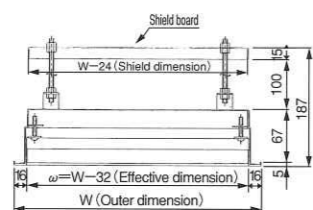
[STG TYPE]

<Features>

Return grille for ceiling chamber.
Equipped with shield board as standard.

1. Selectable among vertical vane type, horizontal vane type and HV (Horizontal & Vertical) vane type.
 2. Universal grille type and adjustable vanes.
- ※Applying shutter for air volume is recommended.
※Slip prevention wire (option) would be also recommended.

STG-H TYPE



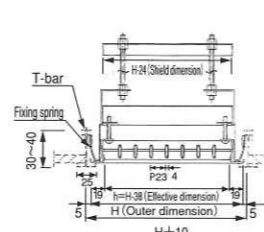
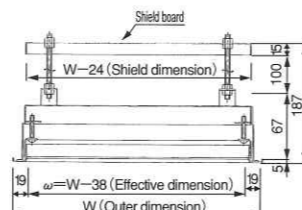
[STS TYPE]

<Features>

Return grille for ceiling chamber.
Equipped with shield board as standard.

1. Selectable among vertical vane type, and horizontal vane type.
 2. Universal grille type and fixed vanes.
- ※Applying shutter for air volume is recommended.
※Slip prevention wire (option) would be also recommended.

STS-H TYPE



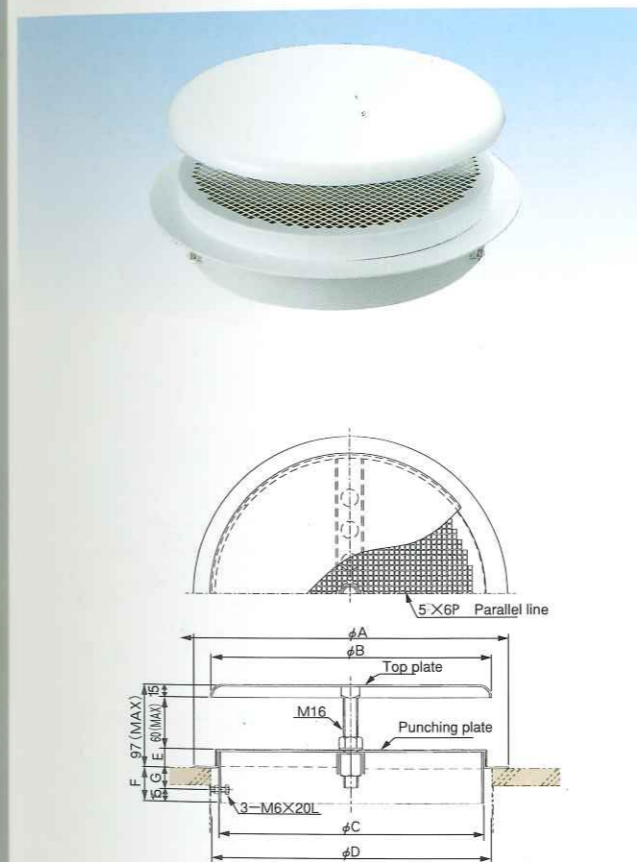
FLOOR MULTI TYPE

[KMR TYPE]

<Features>

Round type return grille for movie theaters or halls, to be installed on the floor around footrest of the seats.

1. Air volume can be adjusted by changing the height of top plate.
2. Low resistance can minimize pressure loss and sound level.
3. It can be used also as diffuser.
4. Strong structure and good durability due to being made of steel plate.
5. Punching plate avoids something falling into the floor.



Dimensions

Unit : mm

| Size | φ A | φ B | φ C | φ D | E | F | G |
|------|-----|-----|-----|-----|----|----|----|
| # 6 | 198 | 175 | 154 | 175 | 20 | 42 | 27 |
| 8 | 253 | 225 | 204 | 225 | 20 | 42 | 27 |
| 10 | 309 | 275 | 253 | 275 | 22 | 40 | 25 |
| 12 | 363 | 325 | 305 | 325 | 22 | 40 | 25 |

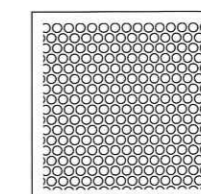
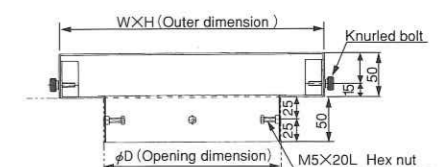
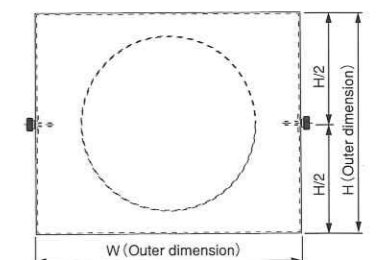
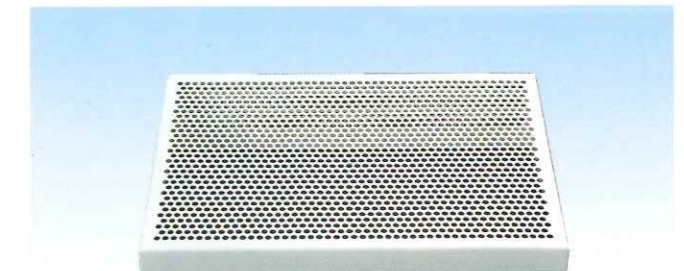
[SKF-E TYPE]

<Features>

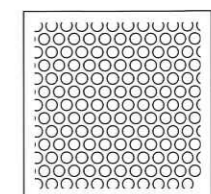
Square type return grille installed on the floor footrest.

1. Selectable among 3 punching patterns. (Please refer to patterns below.)
2. Low resistance can minimize pressure loss and sound level.
3. It can be used also as diffuser.
4. Strong structure and good durability due to being made of steel plate.

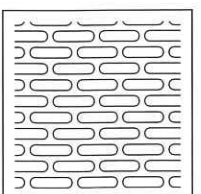
※Adopting shutter for air volume control is recommended.



A-type



B-type



C-type

※Punching patterns besides above can be manufactured. Consult in such case.

FLOOR MULTI TYPE [SKF TYPE]

<Features>

Floor diffuser most applicable in free-access floor. Ideal air flow pattern can be gained by combination of 4-split top plates (supply air direction control plates).

1. Air volume can be adjusted easily by just 1 piece of coin. (For 2000DL type)
2. Realized withstand loading weight 200Kg/cm² due to applying special synthetic resin for top plates.
3. Selectable air volume (High - Medium - Low) through control box and low energy consumption.
4. Applicable for low height floor (H=100mm)

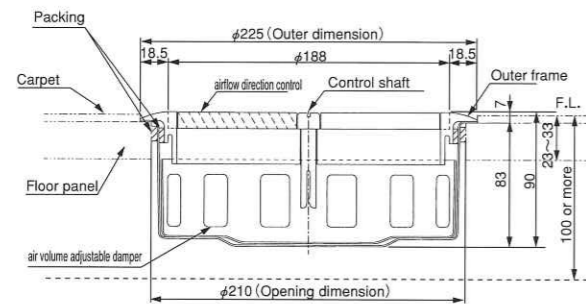
SKF-200DL TYPE



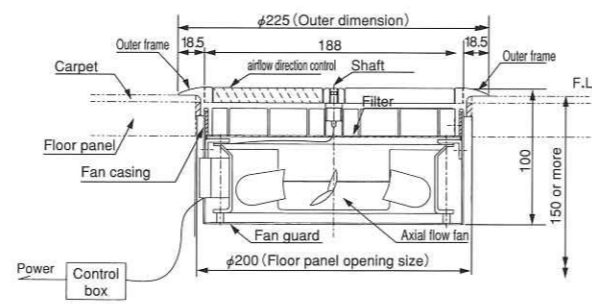
SKF-200FML TYPE



Air flow adjustable type



Fan type



1-direction air supply



4-direction air supply

New product / Special product

| | |
|----------------------------------|----|
| CD BOX | 50 |
| LINEAR BOX | 50 |
| BIO Diffuser | 50 |
| CD Support | 50 |
| CD Hook | 50 |
| C2P | 50 |
| KT1-2A4B | 51 |
| OPUS Diffuser | 51 |
| STKT1-2AT | 51 |
| KT1-SP | 51 |
| STE-PT | 51 |
| STE-MP | 51 |
| KT1 with Special BOX | 52 |
| KS | 52 |
| Implanted STE | 52 |
| FKD | 52 |
| FVL | 52 |
| Linear diffuser for vessel | 52 |
| KL-F | 53 |
| Curved KL | 53 |
| L shape VTL | 53 |
| KKP | 53 |
| MKG-T | 53 |
| MKG-SK | 53 |
| MKG-B | 54 |
| Split Tower Nozzle | 54 |
| PSII | 54 |
| SEDIII | 54 |
| Wood-grain paint Diffuser | 54 |
| Wooden Diffuser | 54 |

COMFORT ESTIMATE

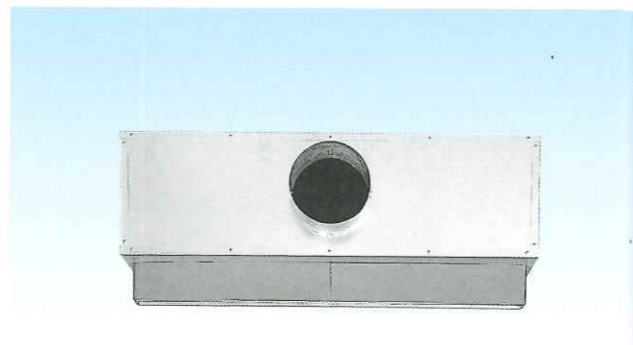
CD BOX (For ceiling diffuser) Patent pending

Compact chamber box most suitable for Kuken Ceiling / Linear diffusers. Due to compact size, total height and installation time can be minimized.

1. Outside panels are made of galvanized steel. Since non-woven fabric glassboard are lined inside, water condensation can be minimized and sound absorption effect can be gained.
2. ANEMO BOX can control air volume and its neck can be rotated.
3. Short pipe portion is lined with heat-insulation substance (Polyethylene).



LINEAR BOX (For Linear diffuser) Patent pending



BIO Diffuser Trade mark registered Patent pending

Diffuser with antibacterial & deodorant filter containing microcapsule filled with natural herbal essence.

1. It deodorizes smell of cigarettes instantly.
2. The one of chamber box shape can be also used as air volume controller and rectifier.



CD Support Patent pending

No hanger bolts are required for installation. The support can be connected light gauge die steel in ceiling.

1. Short pipe can be connected after making ceiling hole.
2. Easy positioning adjustment.



CD Hook Patent pending

Hanger for ceiling diffuser with which diffuser positioning can be easily adjusted.

1. Equipped with air volume controller.
2. Short pipe with heat insulation is available on request.
3. Installation time can be minimized.



C2P

Unique design from the combination of C2 & KP.

1. C2 type ceiling diffuser that the pan take the place of its center cone.
2. EP2, similar one but square shape can be manufactured on request.
3. Various types, such as Anti-coanda type, are available.



KT1-2A4B

Combination of KT1 2-direction flow & KT1 4-direction flow. Even in rectangular shape, equal airflow pattern to 4-direction can be gained.

1. Available for normal ceiling and for system ceiling.
2. Both round neck type and square neck type can be manufactured.



STKT1-2AT

Thermostat (by others) can be installed inside punching plate.

1. 2-direction horizontal air discharge. Designed to induce room air toward punching board easily.



STE-PT

Diffuser for system ceiling suitable for room partition. Center cone is split.

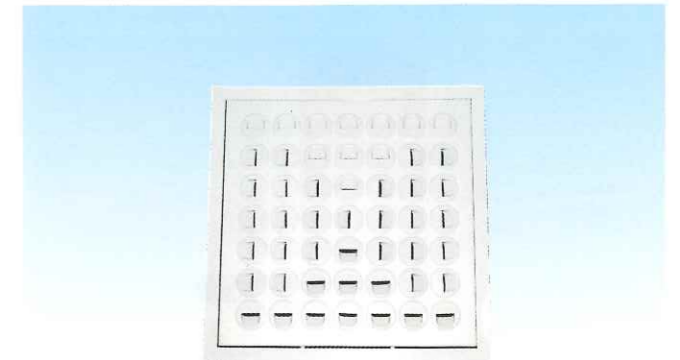
1. Only horizontal airflow.
2. Pan type can be also manufactured.



OPUS Diffuser Design right registered Patent pending

Diffuser equipped with OPUS air nozzle (by Senior Coleman, UK) can perform multifarious airflow pattern.

1. Multifarious airflow pattern by rotating air nozzle.
2. Linear type, or other shapes can be also manufactured on request.



KT1-SP

Sprinkler head (by others) can be installed on pan portion.

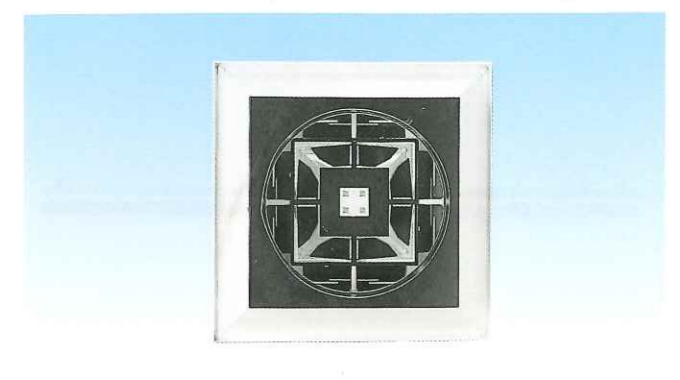
1. Equipped with chamber box. Horizontal airflow only.
2. Various sizes are available.



STE-MP Patent pending

Airflow deflector attachable with STE type diffuser after installation of diffuser can control various airflow pattern.

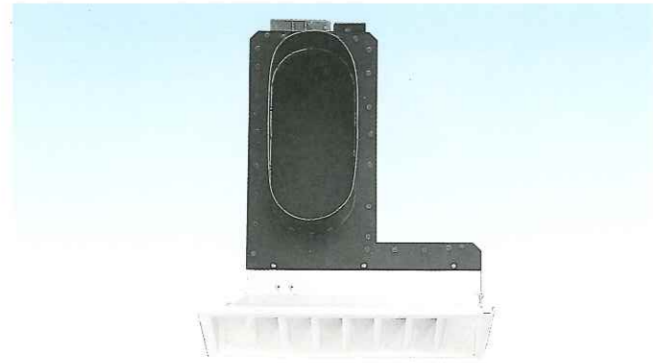
1. Various airflows (Horizontal, Vertical, Slant-downward from 4 corners, Horizontal from 4 corners) can be gained.
2. Slant-downward airflow prevents short-circuit of discharged air.



KT1 with Special BOX

Equipped with chamber box with elliptical neck. Suitable for system ceiling for electric bulb.

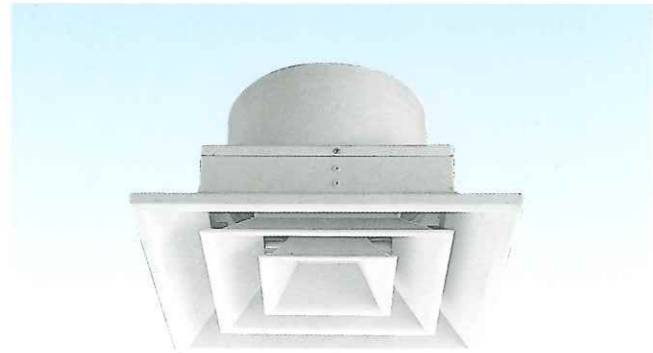
1. Light weight & compact.
2. Equipped with slide shutter as air volume controller.
3. Horizontal airflow only.



Implanted STE

Avoid water condensation by electrical implant on diffuser or chamber box.

1. Most of diffusers can be implanted, such as ceiling diffuser, linear diffuser, system ceiling diffuser.

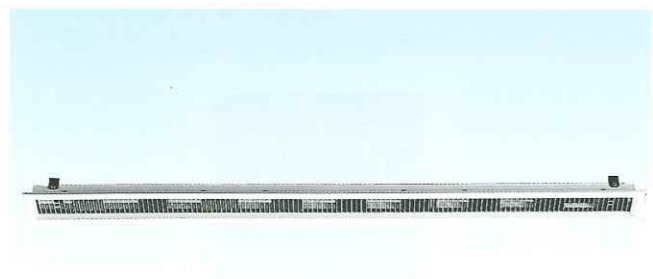


FVL

Utility model right reserved

Linner diffuser for large air volume. Slant-downward diffusing pattern from both sides contributes shorter throw.

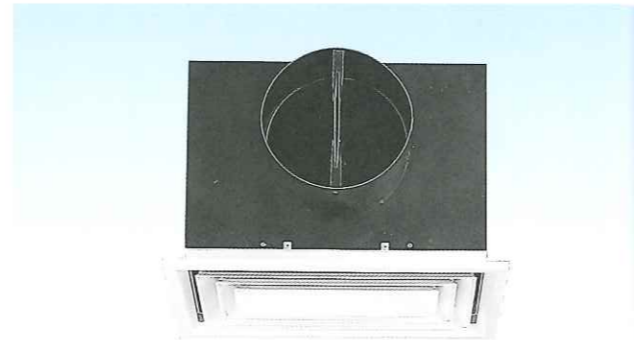
1. Built-in cross type deflector behind punching face contributes larger air induction.



KS

Symmetry diffuser structured by straight line. Used as return port as well.

1. Small size can be manufactured on request.
2. Horizontal airflow only.

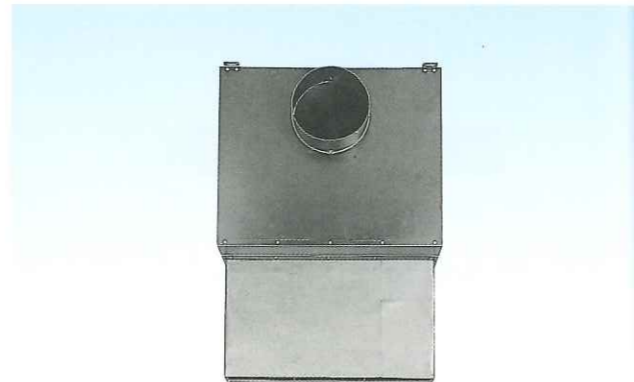


FKD

Patent pending

Equipped with chamber box in which automatic throw controller is built. Corresponded with KL type diffuser, rectangular nozzle, etc..

1. Throw controller senses airflow temperature to control throw during cooling / heating.

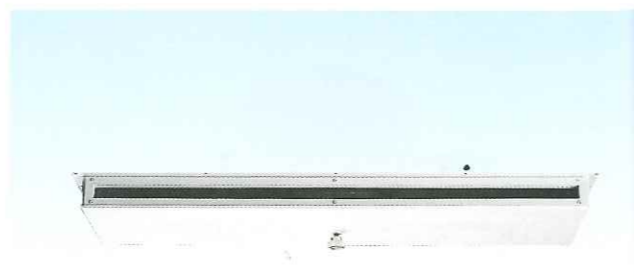


Linear diffuser for vessel

Utility model right reserved

Easy installations by opening neck hole on ceiling and connect.

1. Initial cost can be minimized due to short installation time.
2. Easy air volume control by exposed air control knob.
3. Inside is lined with glass wool and is heat-insulated.

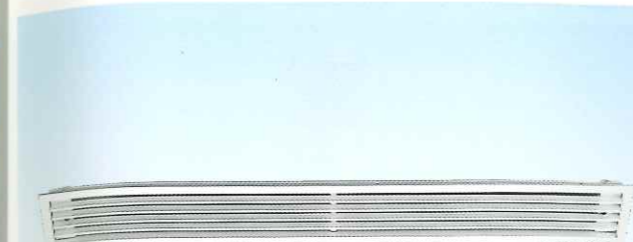


KL-F

Utility model right reserved

KL Linear type diffuser with filter, easy attaching & detaching inner vanes only by PUSH & PULL action.

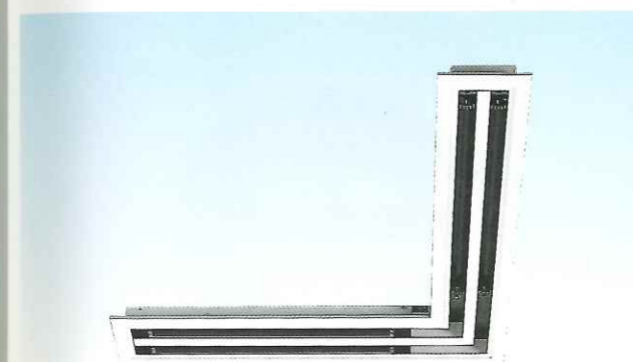
1. Easy cleaning & exchanging filters.
2. Slit type is also available.



L shape VTL

L shape VTL type. Suitable for corner portion. No connection gap found.

1. Controllable airflow same as standard VTL type. (Some portion should be fixed. Consult Kuken for details.)



MKG-T

Fixed triple nozzle type realized by making inner nozzle double.

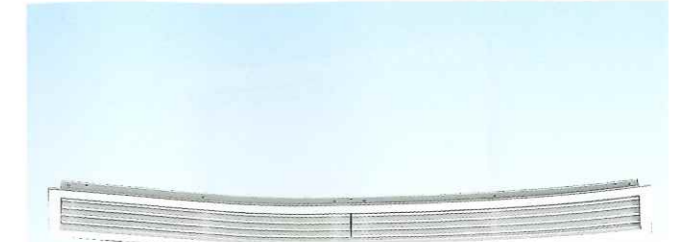
1. Fine design. Hard to see inside the nozzle.
- ※Adjustable inner nozzle type is also available.



Curved KL

Curved KL type linear diffuser. Most suitable curved portions in the building.

1. Both frames & vanes can be curved in good looking.
- ※Consult for minimum R (radius) and how to be curved.



KKP

Unique designed rectangular shape punkar louver.

1. Inner vanes are adjustable and able to control airflow direction.
- ※No vertical vane type is also available.



MKG-SK

Larger external frame area. Provide good design most suitable for interior ornament.

- ※Angled surface type can be manufactured, suitable for inclined ceiling & inclined wall.

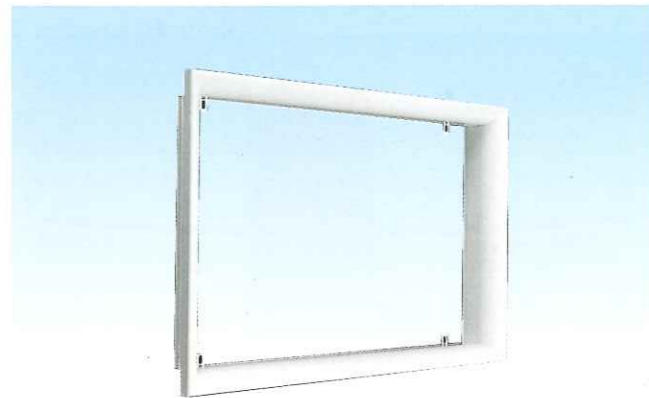


※Consult Kuken for the details of the products shown above.

MKG-B

Rectangular nozzle with bell mouth shape.

1. Low static pressure loss, low sound level, longer throw.



PS II

Utility model right reserved

Newly developed shutter. Made of steel plate lined with unwoven cloths on both side.

1. Easy airflow control.
2. High air tightness in total close. Low static pressure loss, low sound level.
3. Continuous vending strength : 300times or more.



Wood-grain paint Diffuser

Painted in wooden grain pattern. Suitable for the room mainly made of wood.

1. It does not look like metal-made.
- ※ND cover is recommended to prevent water condensation.



Split Tower Nozzle

Patent pending

Pole shape diffuser for larger space. Refrain unnecessary updraft during heating by built-in airflow direction controller.

1. Horizontal airflow during cooling, slant-downward airflow during heating.
2. Airflow direction controller sensing airflow temperature is built in.
3. Return port can be also manufactured.



SED III

Patent pending

Newly developed shutter. Good featured shutter with almost no pressure in total open.

1. Opening ratio can be easily checked by watching shutter vanes.
2. Applied with various diffusers.



Wooden Diffuser

Made of Japanese cedar or Japanese cypress. Most suitable for the room mainly made of woods.

1. Prevents water condensation by heat retention feature of wood.
- ※Consult for the condition on water condensation.



※Consult Kuken for the details of the products shown above.

MEMO